

The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

CERTIFIED MAIL

November 14, 2005



Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Information Technology Unit

Reference: Compliance File CI-6027 and NPDES No. CA0001309

Subject: 3rd Quarter 2005 NPDES Discharge Monitoring Report Submittal–
Santa Susana Field Laboratory

Dear Sir/Madam,

The Boeing Company hereby submits the discharge monitoring report (DMR) for the Santa Susana Field Laboratory (SSFL) for the 3rd Quarter of 2005. This DMR provides the results of the sampling that occurred for the SSFL outfalls identified in Appendix A. of this report for the period of July 1st through September 30th of 2005 as required by National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309. This quarterly DMR provides all information and data, including rainfall summaries, liquid waste shipment summaries, and analytical reports. All analyses of sampled discharges were conducted at a laboratory certified for such analysis by the appropriate agency in accordance with current EPA guidelines, procedures, or as specified in the monitoring program

Due to a lack of rain or industrial discharges during this monitoring period, sampling required under California Water Code Section 13267 request letter sent to the Boeing Company on May 20, 2004 could not be performed at Outfalls 003 or 011.

EXECUTIVE SUMMARY OF THIRD QUARTER 2005 MONITORING DATA

Due to the lack of rainfall at the facility during this quarter as noted in Appendix B, no storm water monitoring was conducted. There were no discharges associated with the domestic sewage treatment plants (Outfalls 015, 016, and 017). All sanitary waste was shipped offsite and appropriately managed at locations noted in Appendix C.

Only Outfall 012 had discharges that required monitoring. The results of which can be found in Appendix D. This Outfall monitors flow from the Alfa Engine Test facility, and as required in the NPDES the results reported herein were sent to the Board within 24 hours upon notification from Boeing's contractor of the final results.

SUMMARY OF NON-COMPLIANCE AND CORRECTIVE ACTIONS TAKEN

One instance of non-compliance was noted during the 3rd quarter 2005 monitoring period as noted in Appendix E. On August 19th, 2005 a temperature of 93.4°F was detected at Outfall 012, the Alfa Rocket engine test stand. This result exceeds the discharge limit of 86° F. A review of the sampling procedures, rocket engine test activities and ambient temperature did not reveal the reason for this slightly elevated temperature. The fact that this was the first time the temperature was elevated since monitoring was initiated at this location, and has not been repeated since, indicates this was an anomaly and not due to any specific process condition.

DATA VALIDATION DISCUSSION

Data validation was performed on the analytical results and quality control elements were found to be within acceptable limits for all analytical methods reported, except as noted on the analytical summary tables. Laboratory analytical reports, including validation reports and notes, are included in Appendix F. Attachment T-A of the NPDES permit issued to the Santa Susana Facility presents the State Water Resources Control Board (SWRCB) minimum levels (MLs) for use in reporting and determining compliance with NPDES permit limits. The analytical laboratory achieved these MLs for this reporting period. However, some constituents' daily maximum and/or monthly average discharge limits in the NPDES permit are less than their respective MLs, and less than the laboratory reporting limit (RL). In cases where the permit limit is less than the RL and ML, the RL was used to determine compliance. The specific constituents that have permit limits that are less than the RL and ML are mercury (daily maximum permit limit of 0.10 ug/L and 0.13 ug/L, monthly average limit of 0.05 ug/L, RL of 0.2 ug/L), cyanide (monthly average limit of 4.3 ug/L, RL of 5.0 ug/L), and Bis-(2-ethylhexyl) phthalate (daily maximum permit limit of 4.0, RL of 5.0 ug/L). Of these compounds, during the 3rd Quarter 2005, none were detected at concentrations equal to or greater than its RL.

FACILITY CONTACT

If there are any questions regarding this report or its enclosures, you may contact Mr. Paul Costa at (818) 586-9177.

CERTIFICATION

I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.



November 14, 2005

Page 3

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violation.



Executed on the 14th of November 2005 at The Boeing Company, Santa Susana Field Laboratory.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Steve Lafflam'.

Steve Lafflam
Division Director
Safety, Health and Environmental Affairs

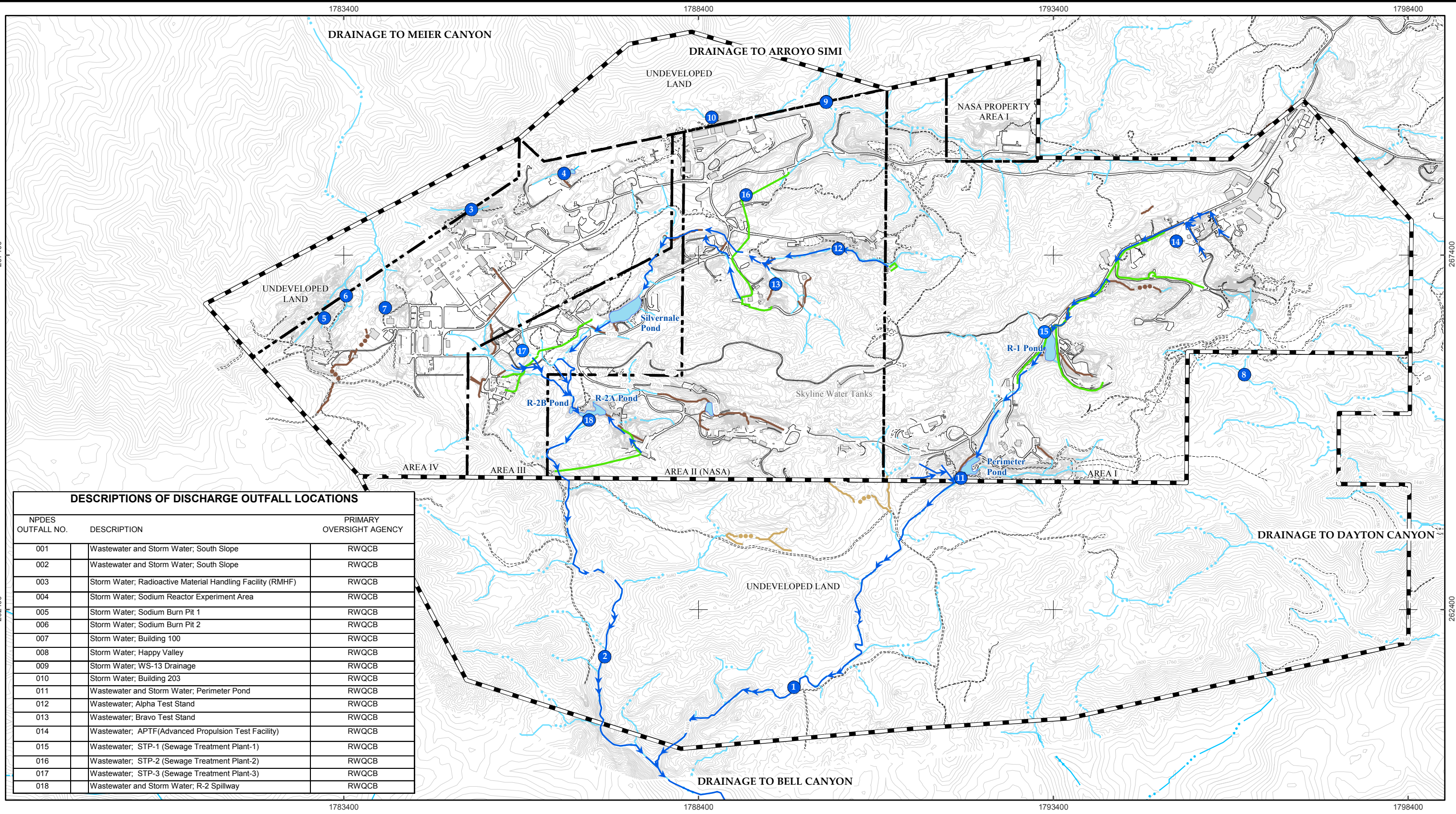
SL:pj

- Appendices:
- A Figure 1 Storm Water Drainage System and Outfall Locations
 - B 3rd Quarter 2005 Rainfall Data Summary
 - C 3rd Quarter 2005 Liquid Waste Shipment Summary Tables
 - D 3rd Quarter 2005 Summary Tables, Discharge Monitoring Data, Outfall 012
 - E 3rd Quarter 2005 Summary of Permit Limit Exceedances
 - F 3rd Quarter 2005 Analytical Laboratory Reports and Chain-of-Custody

cc: Jim Pappas, Department of Toxic Substances Control
Robert Marshall, California State University – Northridge, Library
Dale Redfield, Simi Valley Library
Lynn Light, Platt Branch, Los Angeles Library
Stephen Baxter, Department of Toxic Substances Control

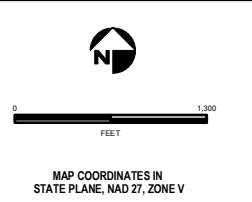
SHEA- 102723

APPENDIX A
NPDES OUTFALL LOCATIONS



DESCRIPTIONS OF DISCHARGE OUTFALL LOCATIONS

NPDES OUTFALL NO.	DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001	Wastewater and Storm Water; South Slope	RWQCB
002	Wastewater and Storm Water; South Slope	RWQCB
003	Storm Water; Radioactive Material Handling Facility (RMHF)	RWQCB
004	Storm Water; Sodium Reactor Experiment Area	RWQCB
005	Storm Water; Sodium Burn Pit 1	RWQCB
006	Storm Water; Sodium Burn Pit 2	RWQCB
007	Storm Water; Building 100	RWQCB
008	Storm Water; Happy Valley	RWQCB
009	Storm Water; WS-13 Drainage	RWQCB
010	Storm Water; Building 203	RWQCB
011	Wastewater and Storm Water; Perimeter Pond	RWQCB
012	Wastewater; Alpha Test Stand	RWQCB
013	Wastewater; Bravo Test Stand	RWQCB
014	Wastewater; APTF(Advanced Propulsion Test Facility)	RWQCB
015	Wastewater; STP-1 (Sewage Treatment Plant-1)	RWQCB
016	Wastewater; STP-2 (Sewage Treatment Plant-2)	RWQCB
017	Wastewater; STP-3 (Sewage Treatment Plant-3)	RWQCB
018	Wastewater and Storm Water; R-2 Spillway	RWQCB



- Legend**
- NPDES Outfalls (RWQCB Primary Oversight Authority)
 - Treated Effluent Pathways
 - HPDE Transmission Pipelines
 - Natural Drainage
 - Concrete Lined Drainage
 - Graded Drainage
 - Surface Water Reclamation Ponds

- Base Map Legend**
- SSFL Property Boundary
 - Administrative Area Boundary
 - Ground Elevation Contours
 - Drainage Pathways
 - A/C Curbing
 - Dirt Road
 - Existing Building or Structure

Storm Water Drainage Systems and Outfall Locations

Date: May 09, 2005
 File: r:\rock\plots\arcmap\ npdes_locations_permit_only.mxd

APPENDIX B

3rd QUARTER 2005 RAINFALL DATA SUMMARY

TABLE B-1 (Page 1 of 3)
DAILY RAINFALL SUMMARY

THE BOEING COMPANY-ROCKETDYNE
NPDES PERMIT NUMBER
CA0001309

JULY 2005

Station: AREA4
Parameter: Rain
Month/Year: July 2005

HOUR OF DAY

DAY OF THE MONTH	HOUR OF DAY																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE B-1 (Page 2 of 3)
DAILY RAINFALL SUMMARY

THE BOEING COMPANY-ROCKETDYNE
NPDES PERMIT NUMBER
CA0001309

AUGUST 2005

Station: AREA4
Parameter: Rain
Month/Year: August 2005

HOUR OF DAY

DAY OF THE MONTH	HOUR OF DAY																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE B-1 (Page 3 of 3)
DAILY RAINFALL SUMMARY

THE BOEING COMPANY-ROCKETDYNE
NPDES PERMIT NUMBER
CA0001309

SEPTEMBER 2005

Station: AREA4
Parameter: Rain
Month/Year: September 2005

HOUR OF DAY

DAY OF THE MONTH	HOUR OF DAY																							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV
30	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV	INV

INV Invalid data due to a power failure in the area caused by the Topanga Wildfires.

APPENDIX C

LIQUID WASTE SHIPMENTS SUMMARY TABLES

**TABLE C-1
THE BOEING COMPANY - ROCKETDYNE
NPDES PERMIT CA0001309
LIQUID WASTE SHIPMENTS
JULY 2005**

DATE SHIPPED	TYPE OF LIQUID	QTY.	UNITS	TRANSPORTER	DESTINATION
7/6/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
7/6/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
7/11/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
7/11/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
7/11/2005	B/1301 non-hazrinse water	36,500	LBS.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.
7/15/2005	Waste Labpac Flam Liq	85	LBS.	ONYX ENVIRONMENTAL SERVICES INC. 1704 W. FIRST ST. AZUSA, CA. 91702	ONYX ENVIRONMENTAL SERVICES INC. 1704 W. FIRST ST. AZUSA, CA. 91702
	Waste Labpac Ox Liq, Corr	131	LBS.		
	Waste Labpac Cor Liq, Basic, Org	5	LBS.		
	Waste Mixed Solvents	47	LBS.		
	Waste Mixed Solvents	37	LBS.		
	Waste Loosepac Corr Liq, Basic, Org Amino	121	LBS.		
	Waste Loosepac Paint Related Materials	172	LBS.		
	Waste Mixed Acids - no metals	2889	LBS.		
	Waste 301 Alkaline Cleaning Soln, KOH, NA	922	LBS.		
	Waste Paint Waswater	372	LBS.		
	Waste Oil / Water (N/R)	287	LBS.		
	Waste Oil / Water (N/R)	1154	LBS.		
	Waste Rinse Water [N/R] with trave concrete	94	LBS.		
7/18/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
7/18/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
7/18/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
7/25/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
7/25/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
7/25/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus

**TABLE C-2
THE BOEING COMPANY - ROCKETDYNE
NPDES PERMIT CA0001309
LIQUID WASTE SHIPMENTS
August 05**

DATE SHIPPED	TYPE OF LIQUID	QTY.	UNITS	TRANSPORTER	DESTINATION
8/1/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
8/1/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/1/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/3/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
8/3/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/8/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
8/8/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/15/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
8/15/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/22/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/22/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/22/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson
8/24/2005	Perlite & Water	10,610	LBS.	McKITTRICK WASTE TREATMENT SITE	McKITTRICK WASTE TREATMENT SITE
	Perlite & Water	36,190	LBS.	56533 HWY 53 WEST, MCKITTRICK, CA 93251	56533 HWY 53 WEST, MCKITTRICK, CA 93251
8/29/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/29/2005	WASTE WATER FROM AREA II SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Saugus
8/29/2005	WASTE WATER FROM AREA I SEWAGE TREATMENT PLANT	5000	GAL.	SOUTHWEST PROCESSORS INC. 4120 BANDINI BLVD. LOS ANGELES, CA.	LACSD Carson

APPENDIX D

SUMMARY TABLES, DISCHARGE MONITORING DATA
OUTFALL 012

**3rd QUARTER 2005 REPORTING SUMMARY NOTES
THE BOEING COMPANY - ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

Notes:

1. For Dioxins and Furans, laboratory results may have been reported in picograms/liter (pg/L). However, the permit limit is stated in micrograms/liter ($\mu\text{g/L}$). To evaluate permit compliance, the laboratory results have been converted to $\mu\text{g/L}$, as necessary, to calculate the TCDD TEQ.
2. TCDD TEQs for the purpose of determining permit compliance are the sum of the products of the detected dioxin congener concentration multiplied by that congener's TEF. The resulting compliance TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 40 of the NPDES permit.
3. For some sample dates, pH was determined with a field instrument and was noted as such. These results were not validated. Since pH does not have an RL, the possible pH range is shown in the RL column.
4. The NPDES permit limits for mercury of 0.10 $\mu\text{g/L}$ (Outfalls 1-2) and 0.13 $\mu\text{g/L}$ (Outfalls 3-7) are not achievable by the laboratory; therefore, the laboratory reporting limit of 0.20 $\mu\text{g/L}$ was used to determine compliance.
5. The volume discharged at the Alfa Test Stand (Outfall 012) is estimated based on the run time of the test.
6. All of the following abbreviations and/or notes may not occur on every table.

-92.9 +/-200	A negative radiochemical analytical result indicates the count rate of the sample was less than the background condition
\$	reported result or other information was incorrectly reported by the laboratory; result was corrected by the data validator
--	based on validation of the data, a qualifier was not required
-/-	no permit limit established for daily maximum or monthly average
<(value)	analyte not detected at a concentration greater than or equal to the DL, MDL, or RL (see laboratory report for specific detail)
*	result not validated
*1	improper preservation of sample
*2	the ICP/MS ppb check standard was recovered above the control limit; therefore, the constituent detected was qualified as estimated (J)
*3	initial and or continuing calibration recoveries were outside acceptable control limits

3rd QUARTER 2005 REPORTING SUMMARY NOTES
THE BOEING COMPANY - ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309

*5	blank spike/blank spike duplicate relative percent difference was outside the control limit
*10	value was estimated detect or estimated non detect (J,UJ) due to deficiencies in quantitation of the constituent including constituents reported by the laboratory as Estimated Maximum Possible Concentration (EMPC) values
*11	no calibration was performed for this compound; result is reported as a tentatively identified compound (TIC)
ANR	analysis not required; e.g., constituent or outfall was not required by the permit to be sampled and analyzed (annual, semi-annual, etc.)
B	laboratory method blank contamination
C	calibration %RSD or %D were noncompliant
C5	Calibration verification %R was outside method control limits
%D	percent difference between the initial and continuing calibration relative response factors
deg F	degrees Fahrenheit
DL	detection limit
DNQ	detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less then the laboratory reporting limit)
E	duplicates show poor agreement
H	holding time was exceeded
I	ICP interference check solution results were unsatisfactory
J	estimated value
K	The sample dilution's set-up did not meet the oxygen depletion criteria of at least 2 mg/l. Therefore, the reported result is an estimated value only.
L2	the laboratory control sample %R was below the method control limits
L	laboratory control sample %R was outside control limits
LOD	limit of detection
M1	matrix spike (MS) and/or MS duplicate were above the acceptance limits due to sample matrix interference
M2	the MS and/or MS duplicate were below the acceptance limits due to sample matrix interference
MDL	method detection limit
MGD	million gallons per day
mg/L	milligrams per liter
ml/L/hr	milliliters per liter per hour
NA	not applicable; no permit limit established for the constituent and/or outfall
ND	analyte value less than the LOD or MDL
NM	not measured or determined
NTU	nephelometric turbidity unit
pCi/L	picocuries per liter
pg/L	picograms per liter
Q	matrix spike recovery outside of control limits
R	as a validation qualifier, results are rejected; the presence or absence of analyte cannot be verified

**3rd QUARTER 2005 REPORTING SUMMARY NOTES
THE BOEING COMPANY - ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

R	(reason code in parentheses) %R for calibration not within control limits
RL	laboratory reporting limit
RL-1	reporting limit raised due to sample matrix effects
%RSD	percent relative standard deviation
S	surrogate recovery was outside control limits
TEQ	toxic equivalent
T	presumed contamination, as indicated by a detect in the trip blank
TU _c	toxicity units (chronic)
U	result not detected
µg/L	micrograms per liter
UJ	result not detected at the estimated reporting limit
umhos/cm	micromhos per centimeter
WHO TEF	World Health Organization toxic equivalency factor
^	analysis not completed due to hold time exceedence or insufficient sample volume

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

July 1 through July 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	7/8/2005	
			RESULT	VALIDATION QUALIFIER
Ammonia as Nitrogen (N)	mg/L	-/-	ND < 0.30	U
Biochemical Oxygen Demand (BOD 5 day)	mg/L	-/-	ND < 0.59	U
Oil & Grease	mg/L	-/-	ND < 0.94	U
Perchlorate	ug/L	-/-	ND < 0.80	UJ (R)
pH (Field)	pH units	6.5-8.5/-	7.14	*
Total Settleable Solids	ml/L	-/-	ND < 0.10	U
Temperature	deg. F	86/-	81.5	*
Total Cyanide	ug/L	-/-	ANR	ANR
Total Dissolved Solids	mg/L	-/-	300	--
Total Suspended Solids	mg/L	-/-	ND < 10	U
Turbidity	NTU	-/-	40	--
Volume Discharged	MGD	-/-	0.055	*
METALS				
Antimony	ug/L	-/-	ANR	ANR
Arsenic	ug/L	-/-	ANR	ANR
Beryllium	ug/L	-/-	ANR	ANR
Cadmium	ug/L	-/-	ANR	ANR
Chromium	ug/L	-/-	ANR	ANR
Copper	ug/L	-/-	ANR	ANR
Lead	ug/L	-/-	ANR	ANR
Mercury	mg/L	-/-	ANR	ANR
Nickel	ug/L	-/-	ANR	ANR
Selenium	ug/L	-/-	ANR	ANR
Silver	ug/L	-/-	ANR	ANR
Thallium	ug/L	-/-	ANR	ANR
Zinc	ug/L	-/-	ANR	ANR
ORGANICS				
Benzene	ug/L	-/-	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	ANR	ANR
Chloroform	ug/L	-/-	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	ANR	ANR
1,4-Dioxane	ug/L	-/-	ND < 1.0	U
Ethylbenzene	ug/L	-/-	ANR	ANR
Tetrachloroethene	ug/L	-/-	ANR	ANR
Toluene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

July 1 through July 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	7/8/2005	
			RESULT	VALIDATION QUALIFIER
1,1,1-Trichloroethane	ug/L	-/-	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	ANR	ANR
Trichloroethene	ug/L	-/-	ANR	ANR
Vinyl chloride	ug/L	-/-	ANR	ANR
TPH				
EFH (C13 - C22)	mg/L	-/-	0.16	J (DNQ)
GRO (C4 - C12)	mg/L	-/-	ND < 0.050	U
TRPH	mg/L	-/-	5.3	--
ADDITIONAL ANALYTES				
1,1,2,2-Tetrachloroethane	ug/L	-/-	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	ANR	ANR
1,2,3-Trichloropropane	ug/L	-/-	ND < 0.85	U
1,2-Dibromoethane (EDB)	ug/L	-/-	ND < 0.32	U
1,2-Dichlorobenzene	ug/L	-/-	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	ANR	ANR
2-Chlorophenol	ug/L	-/-	ANR	ANR
2-Methyl-4,6-dinitrophenol	ug/L	-/-	ANR	ANR
2-Nitrophenol	ug/L	-/-	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	ANR	ANR
4,4'-DDD	ug/L	-/-	ANR	ANR
4,4'-DDE	ug/L	-/-	ANR	ANR
4,4'-DDT	ug/L	-/-	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	ANR	ANR
4-Nitrophenol	ug/L	-/-	ANR	ANR
Acenaphthene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

July 1 through July 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	7/8/2005	
			RESULT	VALIDATION QUALIFIER
Acrolein	ug/L	-/-	ANR	ANR
Acrylonitrile	ug/L	-/-	ANR	ANR
Aldrin	ug/L	-/-	ANR	ANR
alpha-BHC	ug/L	-/-	ANR	ANR
Anthracene	ug/L	-/-	ANR	ANR
Aroclor-1016	ug/L	-/-	ANR	ANR
Aroclor-1221	ug/L	-/-	ANR	ANR
Aroclor-1232	ug/L	-/-	ANR	ANR
Aroclor-1242	ug/L	-/-	ANR	ANR
Aroclor-1248	ug/L	-/-	ANR	ANR
Aroclor-1254	ug/L	-/-	ANR	ANR
Aroclor-1260	ug/L	-/-	ANR	ANR
Benzidine	ug/L	-/-	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	ANR	ANR
Benzo(g,h,I)perylene	ug/L	-/-	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	ANR	ANR
beta-BHC	ug/L	-/-	ANR	ANR
bis (2-Chloroethyl) ether	ug/L	-/-	ANR	ANR
bis (2-ethylhexyl) Phthalate	ug/L	-/-	ANR	ANR
bis(2-Chloroethoxy) methane	ug/L	-/-	ANR	ANR
bis(2-Chloroisopropyl) ether	ug/L	-/-	ANR	ANR
Bromodichloromethane	ug/L	-/-	ANR	ANR
Bromoform	ug/L	-/-	ANR	ANR
Bromomethane	ug/L	-/-	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	ANR	ANR
Chlordane	ug/L	-/-	ANR	ANR
Chlorobenzene	ug/L	-/-	ANR	ANR
Chloroethane	ug/L	-/-	ANR	ANR
Chloromethane	ug/L	-/-	ANR	ANR
Chrysene	ug/L	-/-	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	ANR	ANR
delta-BHC	ug/L	-/-	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	ANR	ANR
Dibromochloromethane	ug/L	-/-	ANR	ANR
Dieldrin	ug/L	-/-	ANR	ANR
Diethylphthalate	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

July 1 through July 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	7/8/2005	
			RESULT	VALIDATION QUALIFIER
Diisopropyl ether	ug/L	-/-	ND < 0.25	UJ (C)
Dimethylphthalate	ug/L	-/-	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	ANR	ANR
Endosulfan I	ug/L	-/-	ANR	ANR
Endosulfan II	ug/L	-/-	ANR	ANR
Endosulfan sulfate	ug/L	-/-	ANR	ANR
Endrin	ug/L	-/-	ANR	ANR
Endrin aldehyde	ug/L	-/-	ANR	ANR
Fluoranthene	ug/L	-/-	ANR	ANR
Fluorene	ug/L	-/-	ANR	ANR
Heptachlor	ug/L	-/-	ANR	ANR
Heptachlor epoxide	ug/L	-/-	ANR	ANR
Hexachlorobenzene	ug/L	-/-	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	ANR	ANR
Hexachloroethane	ug/L	-/-	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	ANR	ANR
Isophorone	ug/L	-/-	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	ANR	ANR
Methylene Chloride	ug/L	-/-	ANR	ANR
Methyl-tert-butyl ether	ug/L	-/-	ND < 0.32	U
Monomethyl Hydrazine	ug/L	-/-	ANR	ANR
Naphthalene	ug/L	-/-	ND < 4.5	U
Nitrobenzene	ug/L	-/-	ANR	ANR
n-Nitrosodimethylamine	ug/L	-/-	ND < 3.7	U
n-Nitroso-di-n-propylamine	ug/L	-/-	ANR	ANR
n-Nitrosodiphenylamine	ug/L	-/-	ANR	ANR
Pentachlorophenol	ug/L	-/-	ANR	ANR
Phenanthrene	ug/L	-/-	ANR	ANR
Phenol	ug/L	-/-	ANR	ANR
Pyrene	ug/L	-/-	ANR	ANR
tertiary Butyl Alcohol	ug/L	-/-	ND < 3.1	U
Toxaphene	ug/L	-/-	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

August 1 through August 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	8/16/2005		8/19/2005	
			RESULT	VALIDATION QUALIFIER	RESULT	VALIDATION QUALIFIER
Ammonia as Nitrogen (N)	mg/L	-/-	ND < 0.30	U	ND < 0.30	U
Biochemical Oxygen Demand (BOD 5 day)	mg/L	-/-	3.0	--	2.3	--
Oil & Grease	mg/L	-/-	ND < 0.94	U	ND < 0.94	U
Perchlorate	ug/L	-/-	ND < 0.80	U	ND < 0.80	U
pH (Field)	pH units	6.5-8.5/-	6.80	*	7.06	*
Total Settleable Solids	ml/L	-/-	ND < 0.10	U	ND < 0.10	U
Temperature	deg. F	86/-	77.0	*	93.4	*
Total Cyanide	ug/L	-/-	ANR	ANR	ANR	ANR
Total Dissolved Solids	mg/L	-/-	310	--	310	--
Total Suspended Solids	mg/L	-/-	17	--	10	--
Turbidity	NTU	-/-	49	--	18	--
Volume Discharged	MGD	-/-	0.055	*	0.055	*
METALS						
Antimony	ug/L	-/-	ANR	ANR	ANR	ANR
Arsenic	ug/L	-/-	ANR	ANR	ANR	ANR
Beryllium	ug/L	-/-	ANR	ANR	ANR	ANR
Cadmium	ug/L	-/-	ANR	ANR	ANR	ANR
Chromium	ug/L	-/-	ANR	ANR	ANR	ANR
Copper	ug/L	-/-	ANR	ANR	ANR	ANR
Lead	ug/L	-/-	ANR	ANR	ANR	ANR
Mercury	mg/L	-/-	ANR	ANR	ANR	ANR
Nickel	ug/L	-/-	ANR	ANR	ANR	ANR
Selenium	ug/L	-/-	ANR	ANR	ANR	ANR
Silver	ug/L	-/-	ANR	ANR	ANR	ANR
Thallium	ug/L	-/-	ANR	ANR	ANR	ANR
Zinc	ug/L	-/-	ANR	ANR	ANR	ANR
ORGANICS						
Benzene	ug/L	-/-	ANR	ANR	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	ANR	ANR	ANR	ANR
Chloroform	ug/L	-/-	ANR	ANR	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	ANR	ANR	ANR	ANR
1,4-Dioxane	ug/L	-/-	ND < 0.49	U	ND < 0.49	U
Ethylbenzene	ug/L	-/-	ANR	ANR	ANR	ANR
Tetrachloroethene	ug/L	-/-	ANR	ANR	ANR	ANR
Toluene	ug/L	-/-	ANR	ANR	ANR	ANR
1,1,1-Trichloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
Trichloroethene	ug/L	-/-	ANR	ANR	ANR	ANR
Vinyl chloride	ug/L	-/-	ANR	ANR	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

August 1 through August 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	8/16/2005		8/19/2005	
			RESULT	VALIDATION QUALIFIER	RESULT	VALIDATION QUALIFIER
TPH						
EFH (C13 - C22)	mg/L	-/-	0.88	--	0.47	J (DNQ)
GRO (C4 - C12)	mg/L	-/-	0.30	--	0.18	--
TRPH	mg/L	-/-	3.6	--	1.6	--
ADDITIONAL ANALYTES						
1,1,2,2-Tetrachloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
1,2,3-Trichloropropane	ug/L	-/-	ND < 0.85	U	ND < 0.85	U
1,2-Dibromoethane (EDB)	ug/L	-/-	ND < 0.32	U	ND < 0.32	U
1,2-Dichlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	ANR	ANR	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	ANR	ANR	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	ANR	ANR	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	ANR	ANR	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	ANR	ANR	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	ANR	ANR	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	ANR	ANR	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	ANR	ANR	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	ANR	ANR	ANR	ANR
2-Chlorophenol	ug/L	-/-	ANR	ANR	ANR	ANR
2-Methyl-4,6-dinitrophenol	ug/L	-/-	ANR	ANR	ANR	ANR
2-Nitrophenol	ug/L	-/-	ANR	ANR	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	ANR	ANR	ANR	ANR
4,4'-DDD	ug/L	-/-	ANR	ANR	ANR	ANR
4,4'-DDE	ug/L	-/-	ANR	ANR	ANR	ANR
4,4'-DDT	ug/L	-/-	ANR	ANR	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	ANR	ANR	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	ANR	ANR	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	ANR	ANR	ANR	ANR
4-Nitrophenol	ug/L	-/-	ANR	ANR	ANR	ANR
Acenaphthene	ug/L	-/-	ANR	ANR	ANR	ANR
Acrolein	ug/L	-/-	ANR	ANR	ANR	ANR
Acrylonitrile	ug/L	-/-	ANR	ANR	ANR	ANR
Aldrin	ug/L	-/-	ANR	ANR	ANR	ANR
alpha-BHC	ug/L	-/-	ANR	ANR	ANR	ANR
Anthracene	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1016	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1221	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1232	ug/L	-/-	ANR	ANR	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

August 1 through August 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	8/16/2005		8/19/2005	
			RESULT	VALIDATION QUALIFIER	RESULT	VALIDATION QUALIFIER
Aroclor-1242	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1248	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1254	ug/L	-/-	ANR	ANR	ANR	ANR
Aroclor-1260	ug/L	-/-	ANR	ANR	ANR	ANR
Benzidine	ug/L	-/-	ANR	ANR	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	ANR	ANR	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	ANR	ANR	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	ANR	ANR	ANR	ANR
Benzo(g,h,i)perylene	ug/L	-/-	ANR	ANR	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	ANR	ANR	ANR	ANR
beta-BHC	ug/L	-/-	ANR	ANR	ANR	ANR
bis (2-Chloroethyl) ether	ug/L	-/-	ANR	ANR	ANR	ANR
bis (2-ethylhexyl) Phthalate	ug/L	-/-	ANR	ANR	ANR	ANR
bis(2-Chloroethoxy) methane	ug/L	-/-	ANR	ANR	ANR	ANR
bis(2-Chloroisopropyl) ether	ug/L	-/-	ANR	ANR	ANR	ANR
Bromodichloromethane	ug/L	-/-	ANR	ANR	ANR	ANR
Bromoform	ug/L	-/-	ANR	ANR	ANR	ANR
Bromomethane	ug/L	-/-	ANR	ANR	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	ANR	ANR	ANR	ANR
Chlordane	ug/L	-/-	ANR	ANR	ANR	ANR
Chlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
Chloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
Chloromethane	ug/L	-/-	ANR	ANR	ANR	ANR
Chrysene	ug/L	-/-	ANR	ANR	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	ANR	ANR	ANR	ANR
delta-BHC	ug/L	-/-	ANR	ANR	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	ANR	ANR	ANR	ANR
Dibromochloromethane	ug/L	-/-	ANR	ANR	ANR	ANR
Dieldrin	ug/L	-/-	ANR	ANR	ANR	ANR
Diethylphthalate	ug/L	-/-	ANR	ANR	ANR	ANR
Diisopropyl ether	ug/L	-/-	ND < 0.25	U	ND < 0.25	U
Dimethylphthalate	ug/L	-/-	ANR	ANR	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	ANR	ANR	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	ANR	ANR	ANR	ANR
Endosulfan I	ug/L	-/-	ANR	ANR	ANR	ANR
Endosulfan II	ug/L	-/-	ANR	ANR	ANR	ANR
Endosulfan sulfate	ug/L	-/-	ANR	ANR	ANR	ANR
Endrin	ug/L	-/-	ANR	ANR	ANR	ANR
Endrin aldehyde	ug/L	-/-	ANR	ANR	ANR	ANR
Fluoranthene	ug/L	-/-	ANR	ANR	ANR	ANR
Fluorene	ug/L	-/-	ANR	ANR	ANR	ANR
Heptachlor	ug/L	-/-	ANR	ANR	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

August 1 through August 31, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	8/16/2005		8/19/2005	
			RESULT	VALIDATION QUALIFIER	RESULT	VALIDATION QUALIFIER
Heptachlor epoxide	ug/L	-/-	ANR	ANR	ANR	ANR
Hexachlorobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	ANR	ANR	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	ANR	ANR	ANR	ANR
Hexachloroethane	ug/L	-/-	ANR	ANR	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	ANR	ANR	ANR	ANR
Isophorone	ug/L	-/-	ANR	ANR	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	ANR	ANR	ANR	ANR
Methylene Chloride	ug/L	-/-	ANR	ANR	ANR	ANR
Methyl-tert-butyl ether	ug/L	-/-	ND < 0.32	U	ND < 0.32	U
Monomethyl Hydrazine	ug/L	-/-	ANR	ANR	ANR	ANR
Naphthalene	ug/L	-/-	27	--	30	--
Nitrobenzene	ug/L	-/-	ANR	ANR	ANR	ANR
n-Nitrosodimethylamine	ug/L	-/-	ND < 3.7	U	ND < 3.7	U
n-Nitroso-di-n-propylamine	ug/L	-/-	ANR	ANR	ANR	ANR
n-Nitrosodiphenylamine	ug/L	-/-	ANR	ANR	ANR	ANR
Pentachlorophenol	ug/L	-/-	ANR	ANR	ANR	ANR
Phenanthrene	ug/L	-/-	ANR	ANR	ANR	ANR
Phenol	ug/L	-/-	ANR	ANR	ANR	ANR
Pyrene	ug/L	-/-	ANR	ANR	ANR	ANR
tertiary Butyl Alcohol	ug/L	-/-	ND < 3.1	U	ND < 3.1	U
Toxaphene	ug/L	-/-	ANR	ANR	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	ANR	ANR	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	ANR	ANR	ANR	ANR

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

September 1 through September 30, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	9/26/2005	
			RESULT	VALIDATION QUALIFIER
Ammonia as Nitrogen (N)	mg/L	-/-	ND < 0.30	U
Biochemical Oxygen Demand (BOD 5 day)	mg/L	-/-	2.3	--
Oil & Grease	mg/L	-/-	ND < 0.94	U
Perchlorate	ug/L	-/-	ND < 0.80	U
pH (Field)	pH units	6.5-8.5/-	7.83	*
Total Settleable Solids	ml/L	-/-	ND < 0.10	U
Temperature	deg. F	86/-	77.7	*
Total Cyanide	ug/L	-/-	ANR	ANR
Total Dissolved Solids	mg/L	-/-	340	--
Total Suspended Solids	mg/L	-/-	24	--
Turbidity	NTU	-/-	24	--
Volume Discharged	MGD	-/-	0.055	*
METALS				
Antimony	ug/L	-/-	ANR	ANR
Arsenic	ug/L	-/-	ANR	ANR
Beryllium	ug/L	-/-	ANR	ANR
Cadmium	ug/L	-/-	ANR	ANR
Chromium	ug/L	-/-	ANR	ANR
Copper	ug/L	-/-	ANR	ANR
Lead	ug/L	-/-	ANR	ANR
Mercury	mg/L	-/-	ANR	ANR
Nickel	ug/L	-/-	ANR	ANR
Selenium	ug/L	-/-	ANR	ANR
Silver	ug/L	-/-	ANR	ANR
Thallium	ug/L	-/-	ANR	ANR
Zinc	ug/L	-/-	ANR	ANR
ORGANICS				
Benzene	ug/L	-/-	ANR	ANR
Carbon Tetrachloride	ug/L	-/-	ANR	ANR
Chloroform	ug/L	-/-	ANR	ANR
1,1-Dichloroethane	ug/L	-/-	ANR	ANR
1,2-Dichloroethane	ug/L	-/-	ANR	ANR
1,1-Dichloroethene	ug/L	-/-	ANR	ANR
1,4-Dioxane	ug/L	-/-	ND < 0.49	U
Ethylbenzene	ug/L	-/-	ANR	ANR
Tetrachloroethene	ug/L	-/-	ANR	ANR
Toluene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

September 1 through September 30, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	9/26/2005	
			RESULT	VALIDATION QUALIFIER
1,1,1-Trichloroethane	ug/L	-/-	ANR	ANR
1,1,2-Trichloroethane	ug/L	-/-	ANR	ANR
Trichloroethene	ug/L	-/-	ANR	ANR
Vinyl chloride	ug/L	-/-	ANR	ANR
TPH				
EFH (C13 - C22)	mg/L	-/-	1.0	--
GRO (C4 - C12)	mg/L	-/-	2.3	--
TRPH	mg/L	-/-	6.3	--
ADDITIONAL ANALYTES				
1,1,2,2-Tetrachloroethane	ug/L	-/-	ANR	ANR
1,2,4-Trichlorobenzene	ug/L	-/-	ANR	ANR
1,2,3-Trichloropropane	ug/L	-/-	ND < 0.85	U
1,2-Dibromoethane (EDB)	ug/L	-/-	ND < 0.32	UJ (C)
1,2-Dichlorobenzene	ug/L	-/-	ANR	ANR
1,2-Dichloropropane	ug/L	-/-	ANR	ANR
1,2-Diphenylhydrazine/Azobenzene	ug/L	-/-	ANR	ANR
1,3-Dichlorobenzene	ug/L	-/-	ANR	ANR
1,4-Dichlorobenzene	ug/L	-/-	ANR	ANR
2,4,6-Trichlorophenol	ug/L	-/-	ANR	ANR
2,4-Dichlorophenol	ug/L	-/-	ANR	ANR
2,4-Dimethylphenol	ug/L	-/-	ANR	ANR
2,4-Dinitrophenol	ug/L	-/-	ANR	ANR
2,4-Dinitrotoluene	ug/L	-/-	ANR	ANR
2,6-Dinitrotoluene	ug/L	-/-	ANR	ANR
2-Chloroethylvinylether	ug/L	-/-	ANR	ANR
2-Chloronaphthalene	ug/L	-/-	ANR	ANR
2-Chlorophenol	ug/L	-/-	ANR	ANR
2-Methyl-4,6-dinitrophenol	ug/L	-/-	ANR	ANR
2-Nitrophenol	ug/L	-/-	ANR	ANR
3,3'-Dichlorobenzidine	ug/L	-/-	ANR	ANR
4,4'-DDD	ug/L	-/-	ANR	ANR
4,4'-DDE	ug/L	-/-	ANR	ANR
4,4'-DDT	ug/L	-/-	ANR	ANR
4-Bromophenylphenylether	ug/L	-/-	ANR	ANR
4-Chloro-3-methylphenol	ug/L	-/-	ANR	ANR
4-Chlorophenylphenylether	ug/L	-/-	ANR	ANR
4-Nitrophenol	ug/L	-/-	ANR	ANR
Acenaphthene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

September 1 through September 30, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	9/26/2005	
			RESULT	VALIDATION QUALIFIER
Acrolein	ug/L	-/-	ANR	ANR
Acrylonitrile	ug/L	-/-	ANR	ANR
Aldrin	ug/L	-/-	ANR	ANR
alpha-BHC	ug/L	-/-	ANR	ANR
Anthracene	ug/L	-/-	ANR	ANR
Aroclor-1016	ug/L	-/-	ANR	ANR
Aroclor-1221	ug/L	-/-	ANR	ANR
Aroclor-1232	ug/L	-/-	ANR	ANR
Aroclor-1242	ug/L	-/-	ANR	ANR
Aroclor-1248	ug/L	-/-	ANR	ANR
Aroclor-1254	ug/L	-/-	ANR	ANR
Aroclor-1260	ug/L	-/-	ANR	ANR
Benzidine	ug/L	-/-	ANR	ANR
Benzo(a)anthracene	ug/L	-/-	ANR	ANR
Benzo(a)pyrene	ug/L	-/-	ANR	ANR
Benzo(b)fluoranthene	ug/L	-/-	ANR	ANR
Benzo(g,h,I)perylene	ug/L	-/-	ANR	ANR
Benzo(k)fluoranthene	ug/L	-/-	ANR	ANR
beta-BHC	ug/L	-/-	ANR	ANR
bis (2-Chloroethyl) ether	ug/L	-/-	ANR	ANR
bis (2-ethylhexyl) Phthalate	ug/L	-/-	ANR	ANR
bis(2-Chloroethoxy) methane	ug/L	-/-	ANR	ANR
bis(2-Chloroisopropyl) ether	ug/L	-/-	ANR	ANR
Bromodichloromethane	ug/L	-/-	ANR	ANR
Bromoform	ug/L	-/-	ANR	ANR
Bromomethane	ug/L	-/-	ANR	ANR
Butylbenzylphthalate	ug/L	-/-	ANR	ANR
Chlordane	ug/L	-/-	ANR	ANR
Chlorobenzene	ug/L	-/-	ANR	ANR
Chloroethane	ug/L	-/-	ANR	ANR
Chloromethane	ug/L	-/-	ANR	ANR
Chrysene	ug/L	-/-	ANR	ANR
cis-1,3-Dichloropropene	ug/L	-/-	ANR	ANR
delta-BHC	ug/L	-/-	ANR	ANR
Dibenzo(a,h)anthracene	ug/L	-/-	ANR	ANR
Dibromochloromethane	ug/L	-/-	ANR	ANR
Dieldrin	ug/L	-/-	ANR	ANR
Diethylphthalate	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

OUTFALL 012 (Alfa Test Stand)

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

September 1 through September 30, 2005

ANALYTE	UNITS	Permit Limit Daily Max/Monthly Avg	9/26/2005	
			RESULT	VALIDATION QUALIFIER
Diisopropyl ether	ug/L	-/-	ND < 0.25	U
Dimethylphthalate	ug/L	-/-	ANR	ANR
Di-n-butylphthalate	ug/L	-/-	ANR	ANR
Di-n-octylphthalate	ug/L	-/-	ANR	ANR
Endosulfan I	ug/L	-/-	ANR	ANR
Endosulfan II	ug/L	-/-	ANR	ANR
Endosulfan sulfate	ug/L	-/-	ANR	ANR
Endrin	ug/L	-/-	ANR	ANR
Endrin aldehyde	ug/L	-/-	ANR	ANR
Fluoranthene	ug/L	-/-	ANR	ANR
Fluorene	ug/L	-/-	ANR	ANR
Heptachlor	ug/L	-/-	ANR	ANR
Heptachlor epoxide	ug/L	-/-	ANR	ANR
Hexachlorobenzene	ug/L	-/-	ANR	ANR
Hexachlorobutadiene	ug/L	-/-	ANR	ANR
Hexachlorocyclopentadiene	ug/L	-/-	ANR	ANR
Hexachloroethane	ug/L	-/-	ANR	ANR
Indeno(1,2,3-cd)pyrene	ug/L	-/-	ANR	ANR
Isophorone	ug/L	-/-	ANR	ANR
Lindane (gamma-BHC)	ug/L	-/-	ANR	ANR
Methylene Chloride	ug/L	-/-	ANR	ANR
Methyl-tert-butyl ether	ug/L	-/-	ND < 0.32	U
Monomethyl Hydrazine	ug/L	-/-	ANR	ANR
Naphthalene	ug/L	-/-	39	--
Nitrobenzene	ug/L	-/-	ANR	ANR
n-Nitrosodimethylamine	ug/L	-/-	ND < 3.7	U
n-Nitroso-di-n-propylamine	ug/L	-/-	ANR	ANR
n-Nitrosodiphenylamine	ug/L	-/-	ANR	ANR
Pentachlorophenol	ug/L	-/-	ANR	ANR
Phenanthrene	ug/L	-/-	ANR	ANR
Phenol	ug/L	-/-	ANR	ANR
Pyrene	ug/L	-/-	ANR	ANR
tertiary Butyl Alcohol	ug/L	-/-	ND < 3.1	U
Toxaphene	ug/L	-/-	ANR	ANR
trans-1,2-Dichloroethene	ug/L	-/-	ANR	ANR
trans-1,3-Dichloropropene	ug/L	-/-	ANR	ANR

See attached notes for abbreviations, definitions,
and other explanations for the data presented.

APPENDIX E

SUMMARY OF PERMIT LIMIT EXCEEDENCES

SUMMARY OF PERMIT LIMIT EXCEEDENCES

**THIRD QUARTER 2005 REPORTING SUMMARY
THE BOEING COMPANY-ROCKETDYNE
SANTA SUSANA FIELD LABORATORY
NPDES PERMIT CA0001309**

July 1 through September 31, 2005

OUTFALL	LOCATIONS	SAMPLE DATE	ANALYTE	<u>PERMIT LIMIT</u> Daily Max	<u>RESULT</u>	UNITS	VALIDATION QUALIFIER
Outfall 012	Alfa Test Stand	19-Aug-05	Temperature	86	93.4	F	*

APPENDIX F

ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

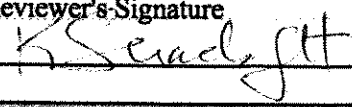
Package ID T711SV64
 Task Order 313150010
 SDG No. I0G0535

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer K. Shadowlight

Analysis/Method Semivolatiles by Method 625

Date August 12, 2005
 Reviewer's Signature


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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: August 12, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOG0535-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C \pm 2°C at 5°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample was received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

The initial calibration associated with this SDG was dated 07/11/05. The average RRFs were \geq 0.05 and the %RSDs were \leq 35% for both target compounds listed on the sample summary form. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted. The continuing calibration associated with the sample analysis was analyzed 07/14/05. The RRFs for both target compounds were \geq 0.05, and the %Ds were \leq 20%. A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5G10018-BLK1) was extracted and analyzed with this SDG. No target compounds were reported in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5G10018-BS1/BSD1) was extracted and analyzed with this SDG. The percent recoveries for target compounds n-nitrosodimethylamine and naphthalene were within the respective laboratory QC limits and the RPDs were $\leq 20\%$. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

Surrogate compound 2,4,6-tribromophenol was recovered below the laboratory QC limits but $\geq 10\%$; however, as only the base-neutral surrogate compounds affect both target compounds, no qualifications were required. The remaining sample surrogate recoveries were within the laboratory QC limits. A representative number of recoveries were calculated from the raw data, and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

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

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

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

2.13 SYSTEM PERFORMANCE

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



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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: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l					Rev. 1/01 Qual. Code				
Naphthalene	EPA 625	5G10018	4.5	10	ND	0.962	07/10/05	07/15/05	U
N-Nitrosodimethylamine	EPA 625	5G10018	3.7	20	ND	0.962	07/10/05	07/15/05	U
Surrogate: 2-Fluorophenol (30-120%)					62 %				
Surrogate: Phenol-d6 (35-120%)					69 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					78 %				
Surrogate: Nitrobenzene-d5 (45-120%)					69 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					71 %				
Surrogate: Terphenyl-d14 (45-120%)					94 %				

AMEC VALIDATED
LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

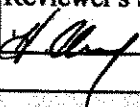
The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID T711TF82
 Task Order 313150010
 SDG No. I0G0535
 No. of Analyses 1

Laboratory Del Mar
 Reviewer H. Chang
 Analysis/Method TPH/8015M

Date: August 10, 2005
 Reviewer's Signature


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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Extractable

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: August 10, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOG0535-01	water	8015B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 07/08/05. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.3 METHOD BLANKS

One method blank (5G11072-BLK1) was extracted and analyzed with the sample in this SDG. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the chromatograms showed no false negatives. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5G11072-BS1/BSD1) was extracted and analyzed with the sample in this SDG. The laboratory reported recoveries of alkane range C13-C40 from spiked diesel. The recoveries were within the laboratory-established QC limits of 40-120%, and the RPD was within the QC limit of $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.5 SURROGATE RECOVERY

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

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the sample of this SDG. Evaluation of method accuracy and precision was based on the blank spike/blank spike duplicate. No qualifications were required.

2.7 FIELD QC SAMPLES

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

2.7.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples associated with the site sample in this SDG. No qualifications were required.

2.7.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.8 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW-846 Method 8015B. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for this SDG. No qualifications were required.

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. An EFH detect was reported in sample Outfall 012 below the reporting limit and was qualified as estimated, "J," by the laboratory. Results were reported in mg/L (ppm). No further qualifications were required.



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

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test	Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qms Qual
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05						
Reporting Units: mg/l											
EFH (C13 - C22)	EPA 8015B	SG11072	0.082	0.50	0.16	0.98	07/11/05	07/12/05	J I		DNK
Surrogate: n-Octacosane (40-125%)											
					80 %						

**AMEC VALIDATED
LEVEL IV**

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

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

Package ID T711TF83
 Task Order 313150010
 SDG No. IOG0535
 No. of Analyses 2

Laboratory Del Mar

Date: August 10, 2005

Reviewer H. Chang

Reviewer's Signature


Analysis/Method TPH/8015M

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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Purgeable

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOG0535
Project Manager: P Costa
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: August 10, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOG0535-01	water	8015M/GRO
Trip Blank	Trip Blank	IOG0535-02	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the samples were received intact, and the COC indicated the samples were properly preserved. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

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

2.3 METHOD BLANKS

One water method blank (5G14031-BLK1) was associated with the sample analyses. GRO (C4-C12) was not detected above the MDL in the method blank. Review of the raw data indicated no false negative result. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water method blank spike (5G14031-BS1) was associated with the sample analyses. GRO (C4-C12) was recovered within the laboratory-established QC limits of 70-140%. The recovery was checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.5 SURROGATE RECOVERY

The samples were fortified with the surrogate compound 4-bromofluorobenzene (BFB). Surrogate recoveries were within the laboratory-established QC limits of 65-140%. Recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.7 FIELD QC SAMPLES

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

2.7.1 Trip Blanks, Field Blanks, and Equipment Rinsates

Sample Trip Blank was the trip blank associated with site sample Outfall 012. GRO (C4-C12) was not detected above the MDL in the trip blank. Review of the raw data indicated no false negative results. There were no field blank or equipment rinsate samples associated with this SDG. No qualifications were required.

2.7.2 Field Duplicates

There was no field duplicate identified for the sample in this SDG.

2.8 COMPOUND IDENTIFICATION

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

2.9 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detects, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The results were reported in mg/L (ppm). No qualifications were required.

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

 Sampled: 07/08/05
 Received: 07/08/05

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	Rev Qual	Qual Code
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l										Sampled: 07/08/05	
GRO (C4 - C12)	EPA 8015 Mod.	5G14031	0.050	0.10	ND	1	07/14/05	07/14/05	u		
<i>Surrogate: 4-BFB (FID) (65-140%)</i>											
Sample ID: IOG0535-02 (Trip Blank - Water) Reporting Units: mg/l										Sampled: 07/08/05	
GRO (C4 - C12)	EPA 8015 Mod.	5G14031	0.050	0.10	ND	1	07/14/05	07/14/05	u		
<i>Surrogate: 4-BFB (FID) (65-140%)</i>											

**AMEC VALIDATED
LEVEL IV**

 Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711VO121
 Task Order 313150010
 SDG No. I0G0535
 No. of Analyses 2

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

Date August 15, 2005
 Reviewer's Signature
K. Shadowlight

ACTION ITEMS*	
1. Case Narrative	
Deficiencies	_____
2. Out of Scope	
Analyses	_____ _____ _____
3. Analyses Not Conducted	_____ _____
4. Missing Hardcopy Deliverables	_____ _____ _____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis	<u>Qualifications were assigned for a continuing %D calibration outlier</u>
GC/MS Tune/Inst. Perform	_____
Calibrations	_____
Blanks	_____
Surrogates	_____
Matrix Spike/Dup LCS	_____
Field QC	_____
Internal Standard Performance	_____
Compound Identification and Quantitation	_____
System Performance	_____
COMMENTS ^b	
* Subcontracted analytical laboratory is not meeting contract and/or method requirements. b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.	

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles by 624
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: August 12, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOG0535-01	water	624
Trip Blank	Trip Blank	IOG0535-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of 4°C \pm 2°C, at 5°C. The samples were properly preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

One initial calibration dated 05/26/05 was associated with this SDG. The average RRFs were \geq 0.05 for the target compounds listed on the sample result summaries. The %RSDs were \leq 35% for all applicable target compounds. Two continuing calibration dated 07/13/05 (8:11 a.m. and 4:07 p.m.) were associated with the sample analyses in this SDG. The %D for di-isopropyl ether (DIPE) exceeded 20% in the calibration analyzed at 4:07 p.m.; therefore, the nondetect result for DIPE was qualified as estimated, "UJ," in associated sample Oufall 012. The remaining %Ds were \leq 20% and the RRFs were \geq 0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

Two water method blanks (5G13007-BLK1 and 5G13015-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water blank spikes (5G13007-BS1 and 5G13015-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed for sample Outfall 012. The recoveries and RPDs were within the respective laboratory-established QC limits. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDLs in the trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for five volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 585-8596 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: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5G13015	0.32	2.0	ND	1	07/13/05	07/13/05	u
Methyl-tert-butyl Ether (MTBE)	EPA 624	5G13015	0.32	5.0	ND	1	07/13/05	07/13/05	↓
1,2,3-Trichloropropane	EPA 624	5G13015	0.85	10	ND	1	07/13/05	07/13/05	↓
Di-isopropyl Ether (DIPE)	EPA 624	5G13015	0.25	5.0	ND	1	07/13/05	07/13/05	↓
tert-Butanol (TBA)	EPA 624	5G13015	3.1	25	ND	1	07/13/05	07/13/05	↓
Surrogate: Dibromofluoromethane (80-120%)					112 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					109 %				
Sample ID: IOG0535-02 (Trip Blank - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5G13007	0.32	2.0	ND	1	07/13/05	07/13/05	u
Methyl-tert-butyl Ether (MTBE)	EPA 624	5G13007	0.32	5.0	ND	1	07/13/05	07/13/05	↓
1,2,3-Trichloropropane	EPA 624	5G13007	0.85	10	ND	1	07/13/05	07/13/05	↓
Di-isopropyl Ether (DIPE)	EPA 624	5G13007	0.25	5.0	ND	1	07/13/05	07/13/05	↓
tert-Butanol (TBA)	EPA 624	5G13007	3.1	25	ND	1	07/13/05	07/13/05	↓
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					98 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Rev. Date: [Handwritten] | Qual. Code: [Handwritten]

Rev. Date: [Handwritten] | Qual. Code: [Handwritten]

5/2/05

ANES VALIDATED

LEVEL IV

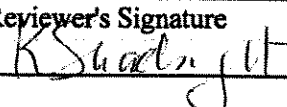
Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711VO122
 Task Order 313150010
 SDG No. I0G0535
 No. of Analyses 1

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method 1,4-Dioxane by Method 8260

Date August 15, 2005
 Reviewer's Signature


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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles (1,4-dioxane)
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: August 15, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method SW-846 8260B* and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No. Del Mar, CA	Matrix	Method
Outfall 012	Outfall 012	IOG0535-01	water	8260B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the Del Mar Analytical within the temperature limits of 4°C \pm 2°C, at 5°C. The COC noted that the sample was received intact and properly preserved; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

The ion abundance windows were consistent with those specified in EPA Method 8260B. All ion abundances were within the established windows, and the sample was analyzed within 12 hours of the BFB injection time. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 06/06/05, was associated with this SDG. The average RRF for 1,4-dioxane was ≥ 0.05 and the %RSD was $\leq 15\%$. One continuing calibration dated 07/12/05 was analyzed with this SDG. The RRF for 1,4-dioxane was ≥ 0.05 and the %D was $\leq 20\%$. The %RSD and average RRF for 1,4-dioxane in the initial calibration, and the %D and RRF for 1,4-dioxane in the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (5G12007-BLK1) was associated with this SDG. Target compound 1,4-dioxane was not detected above the MDL in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike (5G12007-BS1) with this SDG. The recovery for 1,4-dioxane was within the QC limits of 70-130%. The recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and QC were fortified with dibromofluoromethane. The surrogate was recovered within the laboratory QC limits of 80-125%. The surrogate recovery for the sample was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 012 was analyzed as the MS/MSD for this SDG. The recoveries and RPD for 1,4-dioxane were within the laboratory QC limits. The recoveries and RPD were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

The sample in this SDG had no associated trip blank. No qualifications were required.

2.8.1.1 Field Blanks and Equipment Rinsates

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

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 1,4-dioxane by Method 8260B/SIM. Chromatograms, retention times, and spectra for the sample and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the undated MDL supplied by the laboratory. As there were no sample detects, compound quantitation was verified by recalculating blank spike and surrogate recoveries from the raw data. No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

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



Del Mar Analytical

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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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: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	5G12007	1.0	2.0	ND	1	07/12/05	07/12/05	u
Surrogate: Dibromofluoromethane (80-120%)					112 %				

Rev Qual
Final

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#** Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS
SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: August 12, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 418.1, 350.2, 405.1, 413.1, 160.2, 160.5, and 180.1, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOG0535-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for total recoverable petroleum hydrocarbons, ammonia, and oil and grease, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for BOD, total settleable solids, and turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to the total dissolved solid, oil and grease, total suspended solids, and total settleable solids analyses. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5G09041-BLK1 at 0.06 NTU; however, the turbidity method blank result was insufficient to qualify Outfall 012. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

A laboratory duplicate analysis was performed on Outfall 012 for turbidity. The RPD was within the control limit of $\leq 20\%$ and no qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed for Outfall 012; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

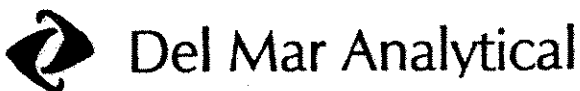
Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated sample. The following are findings associated with field QC samples:

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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 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: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5G12075	0.31	1.0	5.3	1	07/12/05	07/12/05	REV Qual Code

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 Michele Harper
 Project Manager

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05					Rev Qual code
Reporting Units: mg/l										
Ammonia-N (Distilled)	EPA 350.2	5G12072	0.30	0.50	ND	1	07/12/05	07/12/05	U	
Biochemical Oxygen Demand	EPA 405.1	5G08111	0.59	2.0	ND	1	07/08/05	07/13/05	↓	
Oil & Grease	EPA 413.1	5G13079	0.94	5.0	ND	1	07/13/05	07/13/05	↓	
Total Dissolved Solids	SM2540C	5G13109	10	10	300	1	07/13/05	07/13/05		
Total Suspended Solids	EPA 160.2	5G13095	10	10	ND	1	07/13/05	07/13/05	U	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05					
Reporting Units: ml/hr										
Total Settleable Solids	EPA 160.5	5G09040	0.10	0.10	ND	1	07/09/05	07/09/05	U	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05					
Reporting Units: NTU										
Turbidity	EPA 180.1	5G09041	0.080	2.0	40	2	07/09/05	07/09/05		
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05					
Reporting Units: ug/l										
Perchlorate	EPA 314.0	5G15056	0.80	4.0	ND	1	07/15/05	07/15/05	*	

* analysis not validated

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Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOG0535

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOG0535
Project Manager: P. Costa
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: August 15, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOG0535-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel, and accounted for the sample and analysis presented in this SDG. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration correlation coefficient was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV, CCV, and IPC recoveries were within the control limits of 90-110%. The ICCS was recovered below the control limits at 82.0%; therefore, nondetected perchlorate in Outfall 012 was qualified as estimated, "UJ." No further qualifications were required.

2.3 BLANKS

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

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample associated with this SDG was recovered within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5G12072	0.30	0.50	ND	1	07/12/05	07/12/05	* Qual
Biochemical Oxygen Demand	EPA 405.1	5G08111	0.59	2.0	ND	1	07/08/05	07/13/05	Qual
Oil & Grease	EPA 413.1	5G13079	0.94	5.0	ND	1	07/13/05	07/13/05	
Total Dissolved Solids	SM2540C	5G13109	10	10	300	1	07/13/05	07/13/05	
Total Suspended Solids	EPA 160.2	5G13095	10	10	ND	1	07/13/05	07/13/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5G09040	0.10	0.10	ND	1	07/09/05	07/09/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5G09041	0.080	2.0	40	2	07/09/05	07/09/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5G15056	0.80	4.0	ND	1	07/15/05	07/15/05	UT R

* analysis not validated

AMEC VALIDATED

LEVEL IV

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 Michele Harper
 Project Manager

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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: 07/08/05
Received: 07/08/05
Issued: 07/20/05 15:16

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
IOG0535-01	Outfall 012	Water
IOG0535-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5G12075	0.31	1.0	5.3	1	07/12/05	07/12/05	

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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: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

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: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5G11072	0.082	0.50	0.16	0.98	07/11/05	07/12/05	J
Surrogate: n-Octacosane (40-125%)					80 %				

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

Sampled: 07/08/05
Received: 07/08/05

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: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5G14031	0.050	0.10	ND	1	07/14/05	07/14/05	
<i>Surrogate: 4-BFB (FID) (65-140%)</i>					85 %				
Sample ID: IOG0535-02 (Trip Blank - Water)					Sampled: 07/08/05				
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5G14031	0.050	0.10	ND	1	07/14/05	07/14/05	
<i>Surrogate: 4-BFB (FID) (65-140%)</i>					76 %				

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Michele Harper
Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

Sampled: 07/08/05
Received: 07/08/05

VOLATILE ORGANICS by GCMS SIM

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	5G12007	1.0	2.0	ND	1	07/12/05	07/12/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					112 %				

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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: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5G13015	0.32	2.0	ND	1	07/13/05	07/13/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5G13015	0.32	5.0	ND	1	07/13/05	07/13/05	
1,2,3-Trichloropropane	EPA 624	5G13015	0.85	10	ND	1	07/13/05	07/13/05	
Di-isopropyl Ether (DIPE)	EPA 624	5G13015	0.25	5.0	ND	1	07/13/05	07/13/05	
tert-Butanol (TBA)	EPA 624	5G13015	3.1	25	ND	1	07/13/05	07/13/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					112 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					106 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					109 %				
Sample ID: IOG0535-02 (Trip Blank - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5G13007	0.32	2.0	ND	1	07/13/05	07/13/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5G13007	0.32	5.0	ND	1	07/13/05	07/13/05	
1,2,3-Trichloropropane	EPA 624	5G13007	0.85	10	ND	1	07/13/05	07/13/05	
Di-isopropyl Ether (DIPE)	EPA 624	5G13007	0.25	5.0	ND	1	07/13/05	07/13/05	
tert-Butanol (TBA)	EPA 624	5G13007	3.1	25	ND	1	07/13/05	07/13/05	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>					100 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>					98 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>					98 %				

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Michele Harper
Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

Sampled: 07/08/05

Received: 07/08/05

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: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
Naphthalene	EPA 625	5G10018	4.5	10	ND	0.962	07/10/05	07/15/05	
N-Nitrosodimethylamine	EPA 625	5G10018	3.7	20	ND	0.962	07/10/05	07/15/05	
Surrogate: 2-Fluorophenol (30-120%)					62 %				
Surrogate: Phenol-d6 (35-120%)					69 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					78 %				
Surrogate: Nitrobenzene-d5 (45-120%)					69 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					71 %				
Surrogate: Terphenyl-d14 (45-120%)					94 %				

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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: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOG0535-01 (Outfall 012 - Water) - cont.					Sampled: 07/08/05				
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5G12072	0.30	0.50	ND	1	07/12/05	07/12/05	
Biochemical Oxygen Demand	EPA 405.1	5G08111	0.59	2.0	ND	1	07/08/05	07/13/05	
Oil & Grease	EPA 413.1	5G13079	0.94	5.0	ND	1	07/13/05	07/13/05	
Total Dissolved Solids	SM2540C	5G13109	10	10	300	1	07/13/05	07/13/05	
Total Suspended Solids	EPA 160.2	5G13095	10	10	ND	1	07/13/05	07/13/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5G09040	0.10	0.10	ND	1	07/09/05	07/09/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: NTU									
Turbidity	EPA 180.1	5G09041	0.080	2.0	40	2	07/09/05	07/09/05	
Sample ID: IOG0535-01 (Outfall 012 - Water)					Sampled: 07/08/05				
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5G15056	0.80	4.0	ND	1	07/15/05	07/15/05	

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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: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOG0535-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	07/08/2005 13:31	07/08/2005 17:50	07/09/2005 13:00	07/09/2005 14:00
EPA 180.1	2	07/08/2005 13:31	07/08/2005 17:50	07/09/2005 13:00	07/09/2005 14:30
EPA 405.1	2	07/08/2005 13:31	07/08/2005 17:50	07/08/2005 20:00	07/13/2005 17:00

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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: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5G12075 Extracted: 07/12/05											
Blank Analyzed: 07/12/2005 (5G12075-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 07/12/2005 (5G12075-BS1)											
Total Recoverable Hydrocarbons	4.63	1.0	0.31	mg/l	5.00		93	65-120			M-NR1
LCS Dup Analyzed: 07/12/2005 (5G12075-BSD1)											
Total Recoverable Hydrocarbons	4.87	1.0	0.31	mg/l	5.00		97	65-120	5	20	

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METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5G11072 Extracted: 07/11/05										
Blank Analyzed: 07/12/2005 (5G11072-BLK1)										
EFH (C13 - C22)	ND	0.50	0.082	mg/l						
EFH (C13 - C40)	ND	0.50	0.082	mg/l						
Surrogate: n-Octacosane	0.161			mg/l	0.200		80 40-125			
LCS Analyzed: 07/12/2005 (5G11072-BS1)										
EFH (C13 - C40)	0.598	0.50	0.082	mg/l	0.775		77 40-120			M-NR1
Surrogate: n-Octacosane	0.154			mg/l	0.200		77 40-125			
LCS Dup Analyzed: 07/12/2005 (5G11072-BSD1)										
EFH (C13 - C40)	0.552	0.50	0.082	mg/l	0.775		71 40-120	8	25	
Surrogate: n-Octacosane	0.140			mg/l	0.200		70 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	RPD Limit	Data Qualifiers
Batch: 5G14031 Extracted: 07/14/05											
Blank Analyzed: 07/14/2005 (5G14031-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.00889			mg/l	0.0100		89	65-140			
LCS Analyzed: 07/14/2005 (5G14031-BS1)											
GRO (C4 - C12)	0.837	0.10	0.050	mg/l	0.800		105	65-140			
Surrogate: 4-BFB (FID)	0.0288			mg/l	0.0300		96	65-140			
Matrix Spike Analyzed: 07/14/2005 (5G14031-MS1) Source: IOG0505-05											
GRO (C4 - C12)	0.227	0.10	0.050	mg/l	0.220	ND	103	60-145			
Surrogate: 4-BFB (FID)	0.0125			mg/l	0.0100		125	65-140			
Matrix Spike Dup Analyzed: 07/14/2005 (5G14031-MSD1) Source: IOG0505-05											
GRO (C4 - C12)	0.230	0.10	0.050	mg/l	0.220	ND	105	60-145	1	20	
Surrogate: 4-BFB (FID)	0.0128			mg/l	0.0100		128	65-140			

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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: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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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	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5G12007 Extracted: 07/12/05											
Blank Analyzed: 07/12/2005 (5G12007-BLK1)											
1,4-Dioxane	ND	2.0	1.0	ug/l							
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	80-120			
LCS Analyzed: 07/12/2005 (5G12007-BS1)											
1,4-Dioxane	10.7	2.0	1.0	ug/l	10.0		107	70-130			
Surrogate: Dibromofluoromethane	1.10			ug/l	1.00		110	80-120			
Matrix Spike Analyzed: 07/12/2005 (5G12007-MS1) Source: IOG0535-01											
1,4-Dioxane	11.3	2.0	1.0	ug/l	10.0	ND	113	70-130			
Surrogate: Dibromofluoromethane	1.04			ug/l	1.00		104	80-120			
Matrix Spike Dup Analyzed: 07/12/2005 (5G12007-MSD1) Source: IOG0535-01											
1,4-Dioxane	10.8	2.0	1.0	ug/l	10.0	ND	108	70-130	5	30	
Surrogate: Dibromofluoromethane	1.03			ug/l	1.00		103	80-120			

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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
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Batch: 5G13007 Extracted: 07/13/05

Blank Analyzed: 07/13/2005 (5G13007-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	24.8			ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	24.5			ug/l	25.0		98	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			

LCS Analyzed: 07/13/2005 (5G13007-BS1)

1,2-Dibromoethane (EDB)	25.7	2.0	0.32	ug/l	25.0		103	70-125			
Methyl-tert-butyl Ether (MTBE)	28.2	5.0	0.32	ug/l	25.0		113	55-140			
1,2,3-Trichloropropane	23.7	10	0.85	ug/l	25.0		95	55-130			
Di-isopropyl Ether (DIPE)	26.7	5.0	0.25	ug/l	25.0		107	60-135			
tert-Butanol (TBA)	135	25	3.1	ug/l	125		108	65-135			
Surrogate: Dibromofluoromethane	24.9			ug/l	25.0		100	80-120			
Surrogate: Toluene-d8	24.8			ug/l	25.0		99	80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120			

Matrix Spike Analyzed: 07/13/2005 (5G13007-MS1)

Source: IOG0413-02

1,2-Dibromoethane (EDB)	24.7	2.0	0.32	ug/l	25.0	ND	99	65-130			
Methyl-tert-butyl Ether (MTBE)	26.4	5.0	0.32	ug/l	25.0	ND	106	50-150			
1,2,3-Trichloropropane	22.4	10	0.85	ug/l	25.0	ND	90	50-135			
Di-isopropyl Ether (DIPE)	26.1	5.0	0.25	ug/l	25.0	ND	104	60-140			
tert-Butanol (TBA)	155	25	3.1	ug/l	125	ND	124	60-145			
Surrogate: Dibromofluoromethane	25.5			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	25.0			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	25.2			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: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5G13007 Extracted: 07/13/05

Matrix Spike Dup Analyzed: 07/13/2005 (5G13007-MSD1)

Source: IOG0413-02

1,2-Dibromoethane (EDB)	26.5	2.0	0.32	ug/l	25.0	ND	106	65-130	7	25	
Methyl-tert-butyl Ether (MTBE)	29.1	5.0	0.32	ug/l	25.0	ND	116	50-150	10	25	
1,2,3-Trichloropropane	25.6	10	0.85	ug/l	25.0	ND	102	50-135	13	30	
Di-isopropyl Ether (DIPE)	26.4	5.0	0.25	ug/l	25.0	ND	106	60-140	1	25	
tert-Butanol (TBA)	130	25	3.1	ug/l	125	ND	104	60-145	18	25	
Surrogate: Dibromofluoromethane	25.5			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	25.4			ug/l	25.0		102	80-120			

Batch: 5G13015 Extracted: 07/13/05

Blank Analyzed: 07/13/2005 (5G13015-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	24.1			ug/l	25.0		96	80-120			
Surrogate: Toluene-d8	26.5			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	24.8			ug/l	25.0		99	80-120			

LCS Analyzed: 07/13/2005 (5G13015-BS1)

1,2-Dibromoethane (EDB)	27.0	2.0	0.32	ug/l	25.0		108	70-125			
Methyl-tert-butyl Ether (MTBE)	26.2	5.0	0.32	ug/l	25.0		105	55-140			
1,2,3-Trichloropropane	25.6	10	0.85	ug/l	25.0		102	55-130			
Di-isopropyl Ether (DIPE)	19.4	5.0	0.25	ug/l	25.0		78	60-135			
tert-Butanol (TBA)	140	25	3.1	ug/l	125		112	65-135			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	27.0			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	27.5			ug/l	25.0		110	80-120			

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Attention: Bronwyn Kelly

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Report Number: IOG0535

Sampled: 07/08/05
Received: 07/08/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5G13015 Extracted: 07/13/05

Matrix Spike Analyzed: 07/13/2005 (5G13015-MS1)

Source: IOG0535-01

1,2-Dibromoethane (EDB)	28.2	2.0	0.32	ug/l	25.0	ND	113	65-130			
Methyl-tert-butyl Ether (MTBE)	27.2	5.0	0.32	ug/l	25.0	ND	109	50-150			
1,2,3-Trichloropropane	25.5	10	0.85	ug/l	25.0	ND	102	50-135			
Di-isopropyl Ether (DIPE)	20.2	5.0	0.25	ug/l	25.0	ND	81	60-140			
tert-Butanol (TBA)	169	25	3.1	ug/l	125	ND	135	60-145			
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106	80-120			
Surrogate: Toluene-d8	26.9			ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	28.7			ug/l	25.0		115	80-120			

Matrix Spike Dup Analyzed: 07/13/2005 (5G13015-MSD1)

Source: IOG0535-01

1,2-Dibromoethane (EDB)	25.6	2.0	0.32	ug/l	25.0	ND	102	65-130	10	25	
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	0.32	ug/l	25.0	ND	95	50-150	13	25	
1,2,3-Trichloropropane	22.4	10	0.85	ug/l	25.0	ND	90	50-135	13	30	
Di-isopropyl Ether (DIPE)	18.7	5.0	0.25	ug/l	25.0	ND	75	60-140	8	25	
tert-Butanol (TBA)	160	25	3.1	ug/l	125	ND	128	60-145	5	25	
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	27.4			ug/l	25.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	29.2			ug/l	25.0		117	80-120			

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Report Number: IOG0535

Sampled: 07/08/05
Received: 07/08/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	Limit	Data Qualifiers
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Batch: 5G10018 Extracted: 07/10/05

Blank Analyzed: 07/14/2005 (5G10018-BLK1)

Naphthalene	ND	10	4.5	ug/l						
N-Nitrosodimethylamine	ND	20	3.7	ug/l						
Surrogate: 2-Fluorophenol	113			ug/l	200		56	30-120		
Surrogate: Phenol-d6	117			ug/l	200		58	35-120		
Surrogate: 2,4,6-Tribromophenol	138			ug/l	200		69	45-120		
Surrogate: Nitrobenzene-d5	66.8			ug/l	100		67	45-120		
Surrogate: 2-Fluorobiphenyl	74.2			ug/l	100		74	45-120		
Surrogate: Terphenyl-d14	88.7			ug/l	100		89	45-120		

LCS Analyzed: 07/14/2005 (5G10018-BS1)

Naphthalene	77.2	10	4.5	ug/l	100		77	50-120		
N-Nitrosodimethylamine	66.0	20	3.7	ug/l	100		66	40-120		
Surrogate: 2-Fluorophenol	126			ug/l	200		63	30-120		
Surrogate: Phenol-d6	136			ug/l	200		68	35-120		
Surrogate: 2,4,6-Tribromophenol	148			ug/l	200		74	45-120		
Surrogate: Nitrobenzene-d5	74.9			ug/l	100		75	45-120		
Surrogate: 2-Fluorobiphenyl	79.0			ug/l	100		79	45-120		
Surrogate: Terphenyl-d14	88.5			ug/l	100		88	45-120		

M-NR1

LCS Dup Analyzed: 07/14/2005 (5G10018-BSD1)

Naphthalene	83.6	10	4.5	ug/l	100		84	50-120	8	20
N-Nitrosodimethylamine	69.4	20	3.7	ug/l	100		69	40-120	5	20
Surrogate: 2-Fluorophenol	129			ug/l	200		64	30-120		
Surrogate: Phenol-d6	142			ug/l	200		71	35-120		
Surrogate: 2,4,6-Tribromophenol	157			ug/l	200		78	45-120		
Surrogate: Nitrobenzene-d5	80.3			ug/l	100		80	45-120		
Surrogate: 2-Fluorobiphenyl	82.2			ug/l	100		82	45-120		
Surrogate: Terphenyl-d14	87.7			ug/l	100		88	45-120		

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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: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD RPD	Limit	Data Qualifiers
Batch: 5G08111 Extracted: 07/08/05											
Blank Analyzed: 07/13/2005 (5G08111-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 07/13/2005 (5G08111-BS1)											
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115			
LCS Dup Analyzed: 07/13/2005 (5G08111-BSD1)											
Biochemical Oxygen Demand	197	100	30	mg/l	198		99	85-115	2	20	
Batch: 5G09041 Extracted: 07/09/05											
Blank Analyzed: 07/09/2005 (5G09041-BLK1)											
Turbidity	0.0600	1.0	0.040	NTU							J
Duplicate Analyzed: 07/09/2005 (5G09041-DUP1)											
Turbidity	40.4	2.0	0.080	NTU		Source: IOG0535-01 40			1	20	
Batch: 5G12072 Extracted: 07/12/05											
Blank Analyzed: 07/12/2005 (5G12072-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 07/12/2005 (5G12072-BS1)											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0		109	80-115			
Matrix Spike Analyzed: 07/12/2005 (5G12072-MS1)											
Ammonia-N (Distilled)	10.9	0.50	0.30	mg/l	10.0	Source: IOG0413-01 ND	109	70-120			

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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: IOG0535	Sampled: 07/08/05 Received: 07/08/05
--	--	---

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5G12072 Extracted: 07/12/05											
Matrix Spike Dup Analyzed: 07/12/2005 (5G12072-MSD1)						Source: IOG0413-01					
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0	ND	106	70-120	3	15	
Batch: 5G13079 Extracted: 07/13/05											
Blank Analyzed: 07/13/2005 (5G13079-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 07/13/2005 (5G13079-BS1)											
Oil & Grease	16.0	5.0	0.94	mg/l	20.0		80	65-120			M-NR1
LCS Dup Analyzed: 07/13/2005 (5G13079-BSD1)											
Oil & Grease	16.4	5.0	0.94	mg/l	20.0		82	65-120	2	20	
Batch: 5G13095 Extracted: 07/13/05											
Blank Analyzed: 07/13/2005 (5G13095-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 07/13/2005 (5G13095-BS1)											
Total Suspended Solids	985	10	10	mg/l	1000		98	85-115			
Duplicate Analyzed: 07/13/2005 (5G13095-DUP1)											
Total Suspended Solids	ND	10	10	mg/l						10	
Batch: 5G13109 Extracted: 07/13/05											
Blank Analyzed: 07/13/2005 (5G13109-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							

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MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOG0535	Sampled: 07/08/05 Received: 07/08/05
--	--	---

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5G13109 Extracted: 07/13/05											
LCS Analyzed: 07/13/2005 (5G13109-BS1)											
Total Dissolved Solids	996	10	10	mg/l	1000		100	90-110			
Duplicate Analyzed: 07/13/2005 (5G13109-DUP1)											
Total Dissolved Solids	1550	10	10	mg/l		Source: IOG0314-01 1500			3	10	
Batch: 5G15056 Extracted: 07/15/05											
Blank Analyzed: 07/15/2005 (5G15056-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 07/15/2005 (5G15056-BS1)											
Perchlorate	45.8	4.0	0.80	ug/l	50.0		92	85-115			
Matrix Spike Analyzed: 07/15/2005 (5G15056-MS1)											
Perchlorate	51.6	4.0	0.80	ug/l	50.0	Source: IOG0356-05 6.4	90	80-120			
Matrix Spike Dup Analyzed: 07/15/2005 (5G15056-MSD1)											
Perchlorate	51.3	4.0	0.80	ug/l	50.0	Source: IOG0356-05 6.4	90	80-120	1	20	

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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: IOG0535

Sampled: 07/08/05
Received: 07/08/05

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-NRI** 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.

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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 Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOG0535

Sampled: 07/08/05
 Received: 07/08/05

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.dmalabs.com.

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 Project Manager

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CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:						
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES During Test -- Outfall 012 Alfa Test Stand		Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH, =Total Rec. Petroleum Hydrocarbons (EPA 418.1)	624 (EDB, 1,2,3-TCF, MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +DMA analysis	Ammonia-N, Titr. (350.2) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Temp = 81.5 °C pH = 7.14				
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Sampling Date/Time	Bottle #	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH, =Total Rec. Petroleum Hydrocarbons (EPA 418.1)	624 (EDB, 1,2,3-TCF, MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +DMA analysis	Ammonia-N, Titr. (350.2) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Comments		
Outfall 012	W	1L Amber	1	HCl	7-8-05 13:31	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	7-8-05 13:31	11A										X				
Trip Blank	W	VOAs	6	HCl		12A, 12B, 12C, 12D, 12E, 12F	X													
Relinquished By	Date/Time: 7-8-05 1415		Received By		Date/Time: 7/8/05 1415		Turn around Time: (check) 5 Days		24 Hours		48 Hours		72 Hours		Perchlorate Only 72 Hours		Metals Only 72 Hours		Sample Integrity: (Check) Intact	
Relinquished By	Date/Time: 7/8/05 1750		Received By		Date/Time: 7/8/05 1750		Turn around Time: (check) 5 Days		24 Hours		48 Hours		72 Hours		Perchlorate Only 72 Hours		Metals Only 72 Hours		Sample Integrity: (Check) Intact	
Relinquished By	Date/Time: 7/8/05 1750		Received By		Date/Time: 7/8/05 1750		Turn around Time: (check) 5 Days		24 Hours		48 Hours		72 Hours		Perchlorate Only 72 Hours		Metals Only 72 Hours		Sample Integrity: (Check) Intact	

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Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: September 20, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1394-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C at 2°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample was received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

The initial calibration associated with this sample was dated 08/18/05. The average RRFs were ≥0.05 and the %RSDs were ≤35% for both target compounds listed on the sample summary form. The continuing calibration associated with the sample analysis was analyzed 08/23/05. The RRFs for both target compounds were ≥0.05, and the %Ds were ≤20%. A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5H21017-BLK1) was extracted and analyzed with this SDG. No target compounds were reported in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5H21017-BS1/BSD1) was extracted and analyzed with this SDG. The percent recoveries for target compounds n-nitrosodimethylamine and

naphthalene were within the respective laboratory QC limits and the RPDs were $\leq 20\%$. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

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

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. Compound quantitation was verified by recalculating a representative number of sample detects, blank spike, and surrogate recoveries. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

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

2.13 SYSTEM PERFORMANCE

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



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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: IOH1394	Sampled: 08/16/05 Received: 08/17/05
--	--	---

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: IOH1394-01 (Outfall 012 - Water) Reporting Units: ug/l									
Naphthalene	EPA 625	5H21017	4.5	10	27	0.952	08/21/05	08/24/05	REV QUAL
N-Nitrosodimethylamine	EPA 625	5H21017	3.7	20	ND	0.952	08/21/05	08/24/05	QUAL CODE
Surrogate: 2-Fluorophenol (30-120%)					66 %				
Surrogate: Phenol-d6 (35-120%)					72 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					86 %				
Surrogate: Nitrobenzene-d5 (45-120%)					83 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					75 %				
Surrogate: Terphenyl-d14 (45-120%)					88 %				

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

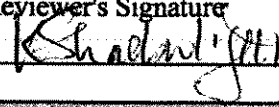
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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711TF86
 Task Order 313150010
 SDG No. IOH1394
 No. of Analyses 1

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method TPH-Extractable

Date September 21, 2005
 Reviewer's Signature


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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#** Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Extractable

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 21, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1394-01	water	8015B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 08/08/05. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One method blank (5H19053-BLK1) was extracted and analyzed with the sample in this SDG. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5H19053-BS1/BSD1) was extracted and analyzed with the sample in this SDG. The laboratory reported recoveries of alkane range C13-C28 from spiked diesel. The recoveries were within the laboratory-established QC limits of 40-120%, and the RPD was within the QC limit of $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the sample of this SDG. Evaluation of method accuracy was based on the blank spike. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.8.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples associated with the site sample in this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW-846 Method 8015B. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for this SDG. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. Results were reported in mg/L (ppm). No qualifications were required.



Del Mar Analytical

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

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1394	Sampled: 08/16/05 Received: 08/17/05
--	--	---

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: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5H19053	0.085	0.50	0.88	0.952	08/19/05	08/19/05	Qual
Surrogate: n-Octacosane (40-125%)					74 %				Qual code

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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


IOH1394 <Page 3 of 23>

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711TF87
 Task Order 313150010
 SDG No. IOH1394
 No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method TPH-Purgeable

Date September 21, 2005
 Reviewer's Signature


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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Purgeable

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1394
Project Manager: P Costa
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 21, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1394-01	water	8015M/GRO
Trip Blank	Trip Blank	IOH1394-02	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the samples were received intact, and the COC indicated the samples were properly preserved. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

Two gasoline standard initial calibrations dated 03/28/05 and 07/22/05 were associated with the sample analyses. The %RSDs for GRO (C4-C12) were within the QC limit of $\leq 20\%$. An initial calibration verification (ICV) was analyzed for the initial calibration dated 03/28/05; however, an ICV was not provided by the laboratory for the initial calibration dated 07/22/05. The %Ds for the ICV and all CCVs bracketing the sample analyses were within the Method QC limit of $\leq 15\%$. The %RSDs and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

Two water method blanks (5H22032-BLK1 and 5H23031-BLK1) were associated with the sample analyses. GRO (C4-C12) was not detected above the MDL in either of the method blanks. Review of the raw data indicated no false negative results. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water method blank spikes (5H22032-BS1 and 5H23031-BS1) were associated with the sample analyses. GRO (C4-C12) was recovered within the laboratory-established QC limits of 65-140%. The recoveries were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples were fortified with the surrogate compound 4-bromofluorobenzene (BFB). Surrogate recoveries were within the laboratory-established QC limits of 65-140%. Recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FIELD QC SAMPLES

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

2.8.1 Trip Blanks, Field Blanks, and Equipment Rinsates

Sample Trip Blank was the trip blank associated with site sample Outfall 012. GRO (C4-C12) was not detected above the MDL in the trip blank. Review of the raw data indicated no false negative result. There were no field blank or equipment rinse samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples in this SDG.

2.9 COMPOUND IDENTIFICATION

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

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detects, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The results were reported in mg/L (ppm). No qualifications were required.



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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: Alfa Outfall 012 - During Test Report Number: IOH1394	Sampled: 08/16/05 Received: 08/17/05
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VOLATILE FUEL HYDROCARBONS (EPA 5030/CADHS Mod. 8015)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
									Real Qual	Qual Code
Sample ID: IOH1394-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l										
GRO (C4 - C12)	EPA 8015 Mod.	5H23031	0.050	0.10	0.30	1	08/23/05	08/24/05		
Surrogate: 4-BFB (FID) (65-140%)					100 %					
Sample ID: IOH1394-02 (Trip Blank - Water) Reporting Units: mg/l										
GRO (C4 - C12)	EPA 8015 Mod.	5H22032	0.050	0.10	ND	1	08/22/05	08/22/05	u	
Surrogate: 4-BFB (FID) (65-140%)					112 %					

AMEC VALIDATED
LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. IOH1394 <Page 4 of 33>

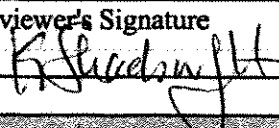
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711VO125
 Task Order 313150010
 SDG No. IOH1394

No. of Analyses 1

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method Volatiles (1,4-dioxane)

Date September 19, 2005
 Reviewer's Signature


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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles (1,4-dioxane)
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 19, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method SW-846 8260B* and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No. Del Mar, CA	Lab No. Del Mar, AZ	Matrix	Method
Outfall 012	Outfall 012	IOH1394-01	POH0570-01	water	8260B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the Del Mar Analytical within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, at 2°C . The sample was subcontracted to Del Mar (Phoenix) for 1,4-dioxane analysis, and the sample was received within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The COC and transfer COC noted that the sample was received intact and properly preserved; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed by the appropriate field and laboratory personnel. As the sample was couriered directly to the laboratory from the field, custody seals were not required. According to the transfer COC, custody seals were present on the cooler received by Del Mar Analytical in Arizona. No qualifications were required.

2.1.3 Holding Times

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

2.2 GC/MS TUNING

The ion abundance windows were consistent with those specified in EPA Method 8260B. All ion abundances were within the established windows, and the sample was analyzed within 12 hours of the BFB injection time. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 08/22/05, was associated with this SDG. The average RRF for 1,4-dioxane was ≥ 0.05 and the r^2 value was ≥ 0.995 . The laboratory reported the continuing calibration and the blank spike (P5H2528-BS1) from the same analysis. As the analysis cannot be reported as both a CCV and a blank spike, the reviewer evaluated P5H2528-BS1 as the continuing calibration. The RRF for 1,4-dioxane was ≥ 0.05 ; and, the %D was $\leq 20\%$. The r^2 value and average RRF for 1,4-dioxane in the initial calibration, and the %D and RRF for 1,4-dioxane in the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (P5H2528-BLK1) was associated with this SDG. Target compound 1,4-dioxane was not detected above the MDL in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike/blank spike duplicate pair (P5H2528-BS1/BS1D) with this SDG; however, P5H2528-BS1 was reported as the CCV (see section 2.3); therefore, P5H2528-BS1D was evaluated as a single blank spike. The recovery for 1,4-dioxane was within the QC limits of 70-130%. The recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and QC were fortified with dibromofluoromethane. The surrogate was recovered within the laboratory QC limits of 70-130%. The surrogate recovery for the sample was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed for this SDG. Evaluation of method accuracy was based on the blank spike result. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

The sample in this SDG had no associated trip blank. No qualifications were required.

2.8.1.1 Field Blanks and Equipment Rinsates

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

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 1,4-dioxane by Method 8260B/SIM. Chromatograms, retention times, and spectra for the sample and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the undated MDL supplied by the laboratory. As there were no sample detects, compound quantitation was verified by recalculating blank spike and surrogate recoveries from the raw data. No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

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



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 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

Del Mar Analytical - Irvine
 17461 Derian Ave. Suite 100
 Irvine, CA 92614
 Attention: Michele Harper

Project ID: IOH1394

Report Number: POH0570

Sampled: 08/16/05
 Received: 08/19/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
Sample ID: POH0570-01 (IOH1394-01 - Water)										
Reporting Units: ug/l										
1,4-Dioxane	EPA 8260B	P5H2528	0.49	2.0	ND	1	08/26/05	08/26/05	u	
Surrogate: Dibromofluoromethane (70-130%)					85 %					

AMEC VALIDATED

LEVEL IV

Del Mar Analytical - Phoenix
 Karen Maxwell
 Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711VO126
 Task Order 313150010
 SDG No. IOH1394

No. of Analyses 2

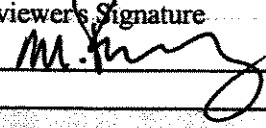
Laboratory Del Mar Analytical

Date: September 20, 2005

Reviewer M. Pokorny

Reviewer's Signature

Analysis/Method Volatiles



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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles by 624
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: September 20, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1394-01	water	624
Trip Blank	Trip Blank	IOH1394-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of 4°C ±2°C, at 2°C. The site sample was properly preserved. The trip blank was not preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

Two initial calibrations dated 08/17/05 and 08/18/05 were associated with this SDG. The average RRFs were ≥ 0.05 for the target compounds listed on the sample result summaries. The %RSDs were $\leq 35\%$ for all applicable target compounds. Two continuing calibrations dated 08/22/05 (08:06 and 16:49) were associated with the sample analyses in this SDG. The %Ds were $\leq 20\%$ and the RRFs were ≥ 0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

Two water method blanks (5H22002-BLK1 and 5H22013-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water blank spikes (5H22002-BS1 and 5H22013-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDLs in the trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for five volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05

Received: 08/17/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data	
									REV QUAL	QUAL CODE
Sample ID: IOH1394-01 (Outfall 012 - Water)										
Reporting Units: ug/l										
1,2-Dibromoethane (EDB)	EPA 624	5H22013	0.32	2.0	ND	1	08/22/05	08/23/05	U	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H22013	0.32	5.0	ND	1	08/22/05	08/23/05	↓	
1,2,3-Trichloropropane	EPA 624	5H22013	0.85	10	ND	1	08/22/05	08/23/05		
Di-isopropyl Ether (DIPE)	EPA 624	5H22013	0.25	5.0	ND	1	08/22/05	08/23/05		
tert-Butanol (TBA)	EPA 624	5H22013	3.1	25	ND	1	08/22/05	08/23/05		
Surrogate: Dibromofluoromethane (80-120%)					109 %					
Surrogate: Toluene-d8 (80-120%)					103 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %					
Sample ID: IOH1394-02 (Trip Blank - Water)										
Reporting Units: ug/l										
1,2-Dibromoethane (EDB)	EPA 624	5H22002	0.32	2.0	ND	1	08/22/05	08/22/05	U	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H22002	0.32	5.0	ND	1	08/22/05	08/22/05	↓	
1,2,3-Trichloropropane	EPA 624	5H22002	0.85	10	ND	1	08/22/05	08/22/05		
Di-isopropyl Ether (DIPE)	EPA 624	5H22002	0.25	5.0	ND	1	08/22/05	08/22/05		
tert-Butanol (TBA)	EPA 624	5H22002	3.1	25	ND	1	08/22/05	08/22/05		
Surrogate: Dibromofluoromethane (80-120%)					98 %					
Surrogate: Toluene-d8 (80-120%)					105 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %					

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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IOH1394 <Page 5 of 23>

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: September 29, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 418.1, 350.2, 405.1, 413.1, 160.2, 160.5, and 180.1, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOH1394-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for total recoverable petroleum hydrocarbons, ammonia, and oil and grease, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for BOD, total settleable solids, and turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided. The ammonia LCS recovery exceeded the CCV control limits of 90-100% at 112%; however, as ammonia was not detected in Outfall 012, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to the total dissolved solid, oil and grease, total suspended solids, and total settleable solids analyses. No qualifications were required.

2.3 BLANKS

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

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD, total recoverable petroleum hydrocarbons, and oil and grease only) recoveries were within the laboratory-established control

limits. The ammonia LCS recovery was within the control limits of 80-115%. The LCS is not applicable to turbidity or total settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed for Outfall 012; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed for Outfall 012; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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 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: Alfa Outfall 012 - During Test Report Number: IOH1394	Sampled: 08/16/05 Received: 08/17/05
--	--	---

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: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	SH22070	0.31	1.0	3.6	1	08/22/05	08/22/05	Red Qual Code

AMEC VALIDATED

LEVEL III

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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Del Mar Analytical

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H18088	0.30	0.50	ND	1	08/18/05	08/18/05	U
Biochemical Oxygen Demand	EPA 405.1	5H18070	0.59	2.0	3.0	1	08/18/05	08/23/05	
Oil & Grease	EPA 413.1	5H23069	0.94	5.0	ND	1	08/23/05	08/23/05	U
Total Dissolved Solids	SM2540C	5H19001	10	10	310	1	08/18/05	08/18/05	
Total Suspended Solids	EPA 160.2	5H22073	10	10	17	1	08/22/05	08/22/05	
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5H18003	0.10	0.10	ND	1	08/17/05	08/17/05	U
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5H18110	0.080	2.0	49	2	08/18/05	08/18/05	
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H19051	0.80	4.0	ND	1	08/19/05	08/19/05	*

Rev Qual
 Qual

*analysis not validated

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LEVEL IV

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IOH1394 <Page 7 of 33>

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOH1394

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1394
Project Manager: P. Costa
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: September 29, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOH1394-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel, and accounted for the sample and analysis presented in this SDG. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

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

2.3 BLANKS

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

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample associated with this SDG was recovered within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1394	Sampled: 08/16/05 Received: 08/17/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1394-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H18088	0.30	0.50	ND	1	08/18/05	08/18/05	*
Biochemical Oxygen Demand	EPA 405.1	5H18070	0.59	2.0	3.0	1	08/18/05	08/23/05	
Oil & Grease	EPA 413.1	5H23069	0.94	5.0	ND	1	08/23/05	08/23/05	
Total Dissolved Solids	SM2540C	5H19001	10	10	310	1	08/18/05	08/18/05	
Total Suspended Solids	EPA 160.2	5H22073	10	10	17	1	08/22/05	08/22/05	
Sample ID: IOH1394-01 (Outfall 012 - Water) Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5H18003	0.10	0.10	ND	1	08/17/05	08/17/05	
Sample ID: IOH1394-01 (Outfall 012 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5H18110	0.080	2.0	49	2	08/18/05	08/18/05	
Sample ID: IOH1394-01 (Outfall 012 - Water) Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H19051	0.80	4.0	ND	1	08/19/05	08/19/05	u

Rev Qual
Qual code

* analysis not validated

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LEVEL III

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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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: 08/16/05
Received: 08/17/05
Issued: 08/26/05 15:58

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
IOH1394-01	Outfall 012	Water
IOH1394-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

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: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5H22070	0.31	1.0	3.6	1	08/22/05	08/22/05	

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 Project Manager

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

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: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5H19053	0.085	0.50	0.88	0.952	08/19/05	08/19/05	
Surrogate: n-Octacosane (40-125%)					74 %				

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Michele Harper
Project Manager



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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

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: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H23031	0.050	0.10	0.30	1	08/23/05	08/24/05	
Surrogate: 4-BFB (FID) (65-140%)					100 %				
Sample ID: IOH1394-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H22032	0.050	0.10	ND	1	08/22/05	08/22/05	
Surrogate: 4-BFB (FID) (65-140%)					112 %				

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 Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

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: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H22013	0.32	2.0	ND	1	08/22/05	08/23/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H22013	0.32	5.0	ND	1	08/22/05	08/23/05	
1,2,3-Trichloropropane	EPA 624	5H22013	0.85	10	ND	1	08/22/05	08/23/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H22013	0.25	5.0	ND	1	08/22/05	08/23/05	
tert-Butanol (TBA)	EPA 624	5H22013	3.1	25	ND	1	08/22/05	08/23/05	
Surrogate: Dibromofluoromethane (80-120%)					109 %				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					97 %				
Sample ID: IOH1394-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H22002	0.32	2.0	ND	1	08/22/05	08/22/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H22002	0.32	5.0	ND	1	08/22/05	08/22/05	
1,2,3-Trichloropropane	EPA 624	5H22002	0.85	10	ND	1	08/22/05	08/22/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H22002	0.25	5.0	ND	1	08/22/05	08/22/05	
tert-Butanol (TBA)	EPA 624	5H22002	3.1	25	ND	1	08/22/05	08/22/05	
Surrogate: Dibromofluoromethane (80-120%)					98 %				
Surrogate: Toluene-d8 (80-120%)					105 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					96 %				

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

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: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5H21017	4.5	10	27	0.952	08/21/05	08/24/05	
N-Nitrosodimethylamine	EPA 625	5H21017	3.7	20	ND	0.952	08/21/05	08/24/05	
Surrogate: 2-Fluorophenol (30-120%)					66 %				
Surrogate: Phenol-d6 (35-120%)					72 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					86 %				
Surrogate: Nitrobenzene-d5 (45-120%)					83 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					75 %				
Surrogate: Terphenyl-d14 (45-120%)					88 %				

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H18088	0.30	0.50	ND	1	08/18/05	08/18/05	
Biochemical Oxygen Demand	EPA 405.1	5H18070	0.59	2.0	3.0	1	08/18/05	08/23/05	
Oil & Grease	EPA 413.1	5H23069	0.94	5.0	ND	1	08/23/05	08/23/05	
Total Dissolved Solids	SM2540C	5H19001	10	10	310	1	08/18/05	08/18/05	
Total Suspended Solids	EPA 160.2	5H22073	10	10	17	1	08/22/05	08/22/05	
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5H18003	0.10	0.10	ND	1	08/17/05	08/17/05	
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5H18110	0.080	2.0	49	2	08/18/05	08/18/05	
Sample ID: IOH1394-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H19051	0.80	4.0	ND	1	08/19/05	08/19/05	

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 Michele Harper
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MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOH1394
Pasadena, CA 91101 Sampled: 08/16/05
Attention: Bronwyn Kelly Received: 08/17/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1394-01 (Outfall 012 - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5H2528	0.49	2.0	ND	1	08/26/05	08/26/05	
Surrogate: Dibromofluoromethane (70-130%)					85 %				

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Michele Harper
Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOH1394-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	08/16/2005 11:42	08/17/2005 15:15	08/17/2005 21:20	08/17/2005 22:20
EPA 180.1	2	08/16/2005 11:42	08/17/2005 15:15	08/18/2005 08:15	08/18/2005 09:15
EPA 405.1	2	08/16/2005 11:42	08/17/2005 15:15	08/18/2005 11:30	08/23/2005 09:30

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Michele Harper
Project Manager



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1394	Sampled: 08/16/05 Received: 08/17/05
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METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H22070 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22070-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 08/22/2005 (5H22070-BS1)											
Total Recoverable Hydrocarbons	4.89	1.0	0.31	mg/l	5.00		98	65-120			M-NR1
LCS Dup Analyzed: 08/22/2005 (5H22070-BSD1)											
Total Recoverable Hydrocarbons	5.35	1.0	0.31	mg/l	5.00		107	65-120	9	20	

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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: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

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: 5H19053 Extracted: 08/19/05											
Blank Analyzed: 08/19/2005 (5H19053-BLK1)											
EFH (C13 - C22)	ND	0.50	0.085	mg/l							
Surrogate: n-Octacosane	0.160			mg/l	0.200		80	40-125			
LCS Analyzed: 08/19/2005 (5H19053-BS1)											
EFH (C13 - C40)	0.546	0.50	0.085	mg/l	0.775		70	40-120			M-NR1
Surrogate: n-Octacosane	0.158			mg/l	0.200		79	40-125			
LCS Dup Analyzed: 08/19/2005 (5H19053-BSD1)											
EFH (C13 - C40)	0.532	0.50	0.085	mg/l	0.775		69	40-120	3	25	
Surrogate: n-Octacosane	0.150			mg/l	0.200		75	40-125			

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 Michele Harper
 Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05

Received: 08/17/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H22032 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22032-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.0112			mg/l	0.0100		112	65-140			
LCS Analyzed: 08/22/2005 (5H22032-BS1)											
GRO (C4 - C12)	0.903	0.10	0.050	mg/l	0.800		113	65-140			
Surrogate: 4-BFB (FID)	0.0309			mg/l	0.0300		103	65-140			
Matrix Spike Analyzed: 08/22/2005 (5H22032-MS1) Source: IOH1055-01											
GRO (C4 - C12)	0.246	0.10	0.050	mg/l	0.220	ND	112	60-145			
Surrogate: 4-BFB (FID)	0.0119			mg/l	0.0100		119	65-140			
Matrix Spike Dup Analyzed: 08/22/2005 (5H22032-MSD1) Source: IOH1055-01											
GRO (C4 - C12)	0.259	0.10	0.050	mg/l	0.220	ND	118	60-145	5	20	
Surrogate: 4-BFB (FID)	0.0119			mg/l	0.0100		119	65-140			
Batch: 5H23031 Extracted: 08/23/05											
Blank Analyzed: 08/23/2005 (5H23031-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.00989			mg/l	0.0100		99	65-140			
LCS Analyzed: 08/23/2005 (5H23031-BS1)											
GRO (C4 - C12)	0.826	0.10	0.050	mg/l	0.800		103	65-140			
Surrogate: 4-BFB (FID)	0.0328			mg/l	0.0300		109	65-140			
Matrix Spike Analyzed: 08/23/2005 (5H23031-MS1) Source: IOH1303-29											
GRO (C4 - C12)	0.223	0.10	0.050	mg/l	0.220	ND	101	60-145			
Surrogate: 4-BFB (FID)	0.00955			mg/l	0.0100		96	65-140			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H23031 Extracted: 08/23/05											
Matrix Spike Dup Analyzed: 08/23/2005 (5H23031-MSD1)						Source: IOH1303-29					
GRO (C4 - C12)	0.217	0.10	0.050	mg/l	0.220	ND	99	60-145	3	20	
Surrogate: 4-BFB (FID)	0.00968			mg/l	0.0100		97	65-140			

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5H22002 Extracted: 08/22/05

Blank Analyzed: 08/22/2005 (5H22002-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	23.8			ug/l	25.0		95	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120			

LCS Analyzed: 08/22/2005 (5H22002-BS1)

1,2-Dibromoethane (EDB)	23.6	2.0	0.32	ug/l	25.0		94	70-125			
Methyl-tert-butyl Ether (MTBE)	22.4	5.0	0.32	ug/l	25.0		90	55-140			
1,2,3-Trichloropropane	21.5	10	0.85	ug/l	25.0		86	55-130			
Di-isopropyl Ether (DIPE)	22.3	5.0	0.25	ug/l	25.0		89	60-135			
tert-Butanol (TBA)	117	25	3.1	ug/l	125		94	65-135			
Surrogate: Dibromofluoromethane	24.2			ug/l	25.0		97	80-120			
Surrogate: Toluene-d8	25.8			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	26.5			ug/l	25.0		106	80-120			

Matrix Spike Analyzed: 08/22/2005 (5H22002-MS1)

Source: IOH1532-03

1,2-Dibromoethane (EDB)	25.2	2.0	0.32	ug/l	25.0	ND	101	65-130			
Methyl-tert-butyl Ether (MTBE)	25.2	5.0	0.32	ug/l	25.0	ND	101	50-150			
1,2,3-Trichloropropane	22.4	10	0.85	ug/l	25.0	ND	90	50-135			
Di-isopropyl Ether (DIPE)	26.4	5.0	0.25	ug/l	25.0	ND	106	60-140			
tert-Butanol (TBA)	148	25	3.1	ug/l	125	ND	118	60-145			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	27.9			ug/l	25.0		112	80-120			

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Report Number: IOH1394

Sampled: 08/16/05
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METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5H22002 Extracted: 08/22/05

Matrix Spike Dup Analyzed: 08/22/2005 (5H22002-MSD1)

Source: IOH1532-03

1,2-Dibromoethane (EDB)	26.7	2.0	0.32	ug/l	25.0	ND	107	65-130	6	25	
Methyl-tert-butyl Ether (MTBE)	26.9	5.0	0.32	ug/l	25.0	ND	108	50-150	7	25	
1,2,3-Trichloropropane	24.1	10	0.85	ug/l	25.0	ND	96	50-135	7	30	
Di-isopropyl Ether (DIPE)	27.0	5.0	0.25	ug/l	25.0	ND	108	60-140	2	25	
tert-Butanol (TBA)	143	25	3.1	ug/l	125	ND	114	60-145	3	25	
Surrogate: Dibromofluoromethane	25.8			ug/l	25.0		103	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	28.0			ug/l	25.0		112	80-120			

Batch: 5H22013 Extracted: 08/22/05

Blank Analyzed: 08/22/2005 (5H22013-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	25.8			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	24.5			ug/l	25.0		98	80-120			

LCS Analyzed: 08/22/2005 (5H22013-BS1)

1,2-Dibromoethane (EDB)	25.5	2.0	0.32	ug/l	25.0		102	70-125			
Methyl-tert-butyl Ether (MTBE)	26.6	5.0	0.32	ug/l	25.0		106	55-140			
1,2,3-Trichloropropane	24.3	10	0.85	ug/l	25.0		97	55-130			
Di-isopropyl Ether (DIPE)	29.0	5.0	0.25	ug/l	25.0		116	60-135			
tert-Butanol (TBA)	137	25	3.1	ug/l	125		110	65-135			
Surrogate: Dibromofluoromethane	25.2			ug/l	25.0		101	80-120			
Surrogate: Toluene-d8	26.1			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.6			ug/l	25.0		102	80-120			

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Report Number: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

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: 5H22013 Extracted: 08/22/05											
Matrix Spike Analyzed: 08/22/2005 (5H22013-MS1)						Source: IOH1236-03					
1,2-Dibromoethane (EDB)	32.3	2.0	0.32	ug/l	25.0	ND	129	65-130			
Methyl-tert-butyl Ether (MTBE)	35.1	5.0	0.32	ug/l	25.0	ND	140	50-150			
1,2,3-Trichloropropane	33.9	10	0.85	ug/l	25.0	ND	136	50-135			MI
Di-isopropyl Ether (DIPE)	32.2	5.0	0.25	ug/l	25.0	ND	129	60-140			
tert-Butanol (TBA)	129	25	3.1	ug/l	125	ND	103	60-145			
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	25.7			ug/l	25.0		103	80-120			
Matrix Spike Dup Analyzed: 08/22/2005 (5H22013-MSD1)						Source: IOH1236-03					
1,2-Dibromoethane (EDB)	26.2	2.0	0.32	ug/l	25.0	ND	105	65-130	21	25	
Methyl-tert-butyl Ether (MTBE)	27.0	5.0	0.32	ug/l	25.0	ND	108	50-150	26	25	R
1,2,3-Trichloropropane	24.6	10	0.85	ug/l	25.0	ND	98	50-135	32	30	R-3
Di-isopropyl Ether (DIPE)	28.9	5.0	0.25	ug/l	25.0	ND	116	60-140	11	25	
tert-Butanol (TBA)	139	25	3.1	ug/l	125	ND	111	60-145	7	25	
Surrogate: Dibromofluoromethane	25.4			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	25.6			ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	25.1			ug/l	25.0		100	80-120			

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Limit	Qualifiers
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Batch: 5H21017 Extracted: 08/21/05

Blank Analyzed: 08/23/2005 (5H21017-BLK1)

Naphthalene	ND	10	4.5	ug/l							
N-Nitrosodimethylamine	ND	20	3.7	ug/l							
Surrogate: 2-Fluorophenol	108			ug/l	200		54	30-120			
Surrogate: Phenol-d6	117			ug/l	200		58	35-120			
Surrogate: 2,4,6-Tribromophenol	127			ug/l	200		64	45-120			
Surrogate: Nitrobenzene-d5	57.4			ug/l	100		57	45-120			
Surrogate: 2-Fluorobiphenyl	54.3			ug/l	100		54	45-120			
Surrogate: Terphenyl-d14	63.5			ug/l	100		64	45-120			

LCS Analyzed: 08/23/2005 (5H21017-BS1)

Naphthalene	68.3	10	4.5	ug/l	100		68	50-120			
N-Nitrosodimethylamine	77.9	20	3.7	ug/l	100		78	40-120			
Surrogate: 2-Fluorophenol	131			ug/l	200		66	30-120			
Surrogate: Phenol-d6	143			ug/l	200		72	35-120			
Surrogate: 2,4,6-Tribromophenol	167			ug/l	200		84	45-120			
Surrogate: Nitrobenzene-d5	78.0			ug/l	100		78	45-120			
Surrogate: 2-Fluorobiphenyl	71.1			ug/l	100		71	45-120			
Surrogate: Terphenyl-d14	80.5			ug/l	100		80	45-120			

M-NRI

LCS Dup Analyzed: 08/23/2005 (5H21017-BSD1)

Naphthalene	70.0	10	4.5	ug/l	100		70	50-120	2	20	
N-Nitrosodimethylamine	74.6	20	3.7	ug/l	100		75	40-120	4	20	
Surrogate: 2-Fluorophenol	123			ug/l	200		62	30-120			
Surrogate: Phenol-d6	144			ug/l	200		72	35-120			
Surrogate: 2,4,6-Tribromophenol	163			ug/l	200		82	45-120			
Surrogate: Nitrobenzene-d5	76.9			ug/l	100		77	45-120			
Surrogate: 2-Fluorobiphenyl	71.0			ug/l	100		71	45-120			
Surrogate: Terphenyl-d14	81.5			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	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5H18070 Extracted: 08/18/05											
Blank Analyzed: 08/23/2005 (5H18070-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 08/23/2005 (5H18070-BS1)											
Biochemical Oxygen Demand	191	100	30	mg/l	198		96	85-115			
LCS Dup Analyzed: 08/23/2005 (5H18070-BSD1)											
Biochemical Oxygen Demand	193	100	30	mg/l	198		97	85-115	1	20	
Batch: 5H18088 Extracted: 08/18/05											
Blank Analyzed: 08/18/2005 (5H18088-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 08/18/2005 (5H18088-BS1)											
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0		112	80-115			
Matrix Spike Analyzed: 08/18/2005 (5H18088-MS1)											
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.56	109	70-120			
Matrix Spike Dup Analyzed: 08/18/2005 (5H18088-MSD1)											
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	0.56	106	70-120	3	15	
Batch: 5H18110 Extracted: 08/18/05											
Blank Analyzed: 08/18/2005 (5H18110-BLK1)											
Turbidity	ND	1.0	0.040	NTU							

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5H18110 Extracted: 08/18/05										
Duplicate Analyzed: 08/18/2005 (5H18110-DUP1)					Source: IOH1305-01					
Turbidity	1.84	1.0	0.040	NTU		1.8		2	20	
Batch: 5H19001 Extracted: 08/18/05										
Blank Analyzed: 08/18/2005 (5H19001-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
LCS Analyzed: 08/18/2005 (5H19001-BS1)										
Total Dissolved Solids	932	10	10	mg/l	1000		93		90-110	
Duplicate Analyzed: 08/18/2005 (5H19001-DUP1)					Source: IOH1166-01					
Total Dissolved Solids	900	10	10	mg/l		910		1	10	
Batch: 5H19051 Extracted: 08/19/05										
Blank Analyzed: 08/19/2005 (5H19051-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 08/19/2005 (5H19051-BS1)										
Perchlorate	46.6	4.0	0.80	ug/l	50.0		93		85-115	
Matrix Spike Analyzed: 08/19/2005 (5H19051-MS1)					Source: IOH1513-01					
Perchlorate	52.6	4.0	0.80	ug/l	50.0	3.4	98		80-120	
Matrix Spike Dup Analyzed: 08/19/2005 (5H19051-MSD1)					Source: IOH1513-01					
Perchlorate	53.1	4.0	0.80	ug/l	50.0	3.4	99		80-120	1 20

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5H22073 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22073-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 08/22/2005 (5H22073-BS1)											
Total Suspended Solids	1020	10	10	mg/l	1000		102	85-115			
Duplicate Analyzed: 08/22/2005 (5H22073-DUP1)											
						Source: IOH1246-01					
Total Suspended Solids	206	10	10	mg/l		220			7	10	
Batch: 5H23069 Extracted: 08/23/05											
Blank Analyzed: 08/23/2005 (5H23069-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 08/23/2005 (5H23069-BS1)											
Oil & Grease	16.7	5.0	0.94	mg/l	20.0		84	65-120			M-NRI
LCS Dup Analyzed: 08/23/2005 (5H23069-BSD1)											
Oil & Grease	18.3	5.0	0.94	mg/l	20.0		92	65-120	9	20	

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METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: P5H2528 Extracted: 08/26/05											
Blank Analyzed: 08/26/2005 (P5H2528-BLK1)											
1,4-Dioxane	ND	2.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	0.910			ug/l	1.00		91	70-130			
LCS Analyzed: 08/26/2005 (P5H2528-BS1)											
1,4-Dioxane	9.87	2.0	0.49	ug/l	10.0		99	70-130			
Surrogate: Dibromofluoromethane	0.860			ug/l	1.00		86	70-130			
LCS Dup Analyzed: 08/26/2005 (P5H2528-BSD1)											
1,4-Dioxane	9.39	2.0	0.49	ug/l	10.0		94	70-130	5	20	
Surrogate: Dibromofluoromethane	0.890			ug/l	1.00		89	70-130			
Matrix Spike Analyzed: 08/26/2005 (P5H2528-MS1) Source: POH0476-04											
1,4-Dioxane	47.8	2.0	0.49	ug/l	10.0	39	88	65-125			
Surrogate: Dibromofluoromethane	0.870			ug/l	1.00		87	70-130			
Matrix Spike Dup Analyzed: 08/26/2005 (P5H2528-MSD1) Source: POH0476-04											
1,4-Dioxane	46.1	2.0	0.49	ug/l	10.0	39	71	65-125	4	20	
Surrogate: Dibromofluoromethane	0.860			ug/l	1.00		86	70-130			

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Report Number: IOH1394

Sampled: 08/16/05
Received: 08/17/05

DATA QUALIFIERS AND DEFINITIONS

- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- R** The RPD exceeded the method control limit due to sample matrix effects. The individual analyte QA/QC recoveries, however, were within acceptance limits.
- R-3** The RPD exceeded the method control limit due to sample matrix effects.
- ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD** Relative Percent Difference

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: IOH1394

Sampled: 08/16/05
 Received: 08/17/05

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-SIM	Water		
Level 4	Water		
SM2540C	Water	X	X

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

Subcontracted Laboratories

Del Mar Analytical - Phoenix NELAC Cert #01109CA, California Cert #2446, Arizona Cert #AZ0426, Nevada Cert #AZ-907

9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044

Method Performed: EPA 8260B

Samples: IOH1394-01

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager



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) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOH1394

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Del Mar Analytical - Phoenix
 9830 S. 51st Street, Suite B-120
 Phoenix, AZ 85044
 Phone : (480) 785-0043
 Fax: (480) 785-0851

Analysis	Expiration	Due	Comments
Sample ID: IOH1394-01 Water	Sampled: 08/16/05 11:42		
8260B-SIM 1,4-Dioxane	08/30/05 11:42	08/24/05 12:00	Boeing-permit, J flags
Level 4 Data Package - Out	09/13/05 11:42	08/24/05 12:00	Boeing
Containers Supplied:			
40 ml VOA w/HCL (IOH1394-01M)			
40 ml VOA w/HCL (IOH1394-01N)			
40 ml VOA w/HCL (IOH1394-01O)			

POH0570-01

SAMPLE INTEGRITY:

All containers intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly: <input type="checkbox"/> Yes <input type="checkbox"/> No	Samples Received at (temp): <u>2.0°C</u>

Released By		Date	Time	Received By		Date	Time
		8/18/05	1700			8/19/05	
Released By		Date	Time	Received By		Date	Time
						8/19/05	09:55

451

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:				Project:				ANALYSIS REQUIRED										Field readings:		Comments	
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101				Boeing-SSFL NPDES During Test - Outfall 012 Alfa Test Stand				Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH = Total Rec. Petroleum Hydrocarbons (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 = 77.0 pH = 6.8
Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH = Total Rec. Petroleum Hydrocarbons (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 = 77.0 pH = 6.8	Comments	
Outfall 012	W	1L Amber	1	8/16/05	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															
Trip Blank	W	VOAs	6		HCl	12A, 12B, 12C, 12D, 12E, 12F		X				X									

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

Relinquished By: *[Signature]* Date/Time: 8-16-05 10:23
 Relinquished By: *[Signature]* Date/Time: 8/17/05 8:17:05 1020
 Relinquished By: *[Signature]* Date/Time: 8/17/05 1515
 Relinquished By: *[Signature]* Date/Time: 8/17/05 1515

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

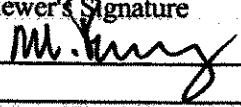
Package ID T711SV65
 Task Order 313150010
 SDG No. IOH1713

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer M. Pokorny

Analysis/Method Semivolatiles

Date: September 19, 2005
 Reviewer's Signature


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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: September 19, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1713-01	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C \pm 2°C at 3°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample was received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

The initial calibration associated with this sample was dated 08/22/05. The average RRFs were ≥ 0.05 and the %RSDs were $\leq 35\%$ for both target compounds listed on the sample summary form. The continuing calibration associated with the sample analysis was analyzed 08/26/05. The RRFs for both target compounds were ≥ 0.05 , and the %Ds were $\leq 20\%$. A representative number of average RRFs and %RSDs in the initial calibration and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5H24052-BLK1) was extracted and analyzed with this SDG. No target compounds were reported in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (5H24052-BS1/BSD1) was extracted and analyzed with this SDG. The percent recoveries for target compounds n-nitrosodimethylamine and

naphthalene were within the respective laboratory QC limits and the RPDs were $\leq 20\%$. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

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

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. Compound quantitation was verified by recalculating a representative number of sample detects, blank spike, and surrogate recoveries. No calculation or transcription errors were found. The reporting limits were supported by the low point of the initial calibration and the laboratory MDL. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

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

2.13 SYSTEM PERFORMANCE

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

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1713	Sampled: 08/19/05 Received: 08/19/05
--	--	---

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5H24052	4.5	10	30	0.952	08/24/05	08/27/05	REV QUAL QUAL CODE
N-Nitrosodimethylamine	EPA 625	5H24052	3.7	20	ND	0.952	08/24/05	08/27/05	U
Surrogate: 2-Fluorophenol (30-120%)					55 %				
Surrogate: Phenol-d6 (35-120%)					62 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					66 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					108 %				

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

IOH1713 <Page 6 of 22>

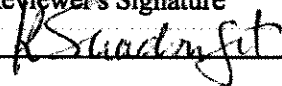
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711TF84
 Task Order 313150010
 SDG No. IOH1713

No. of Analyses 2

Laboratory Del Mar Analytical
 Reviewer K. Shadowlight
 Analysis/Method TPH-Purgeable

Date September 21, 2005
 Reviewer's Signature


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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#**

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Purgeable

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1713
Project Manager: P Costa
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 21, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1713-01	water	8015M/GRO
Trip Blank	Trip Blank	IOH1713-02	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the samples were received intact, and the COC indicated the samples were properly preserved. No qualifications were required.

2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel. The EFH analysis (rather than the GRO analysis) was requested in error on the COC for the Trip Blank sample. The sample was analyzed correctly. As the samples were couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

One gasoline standard initial calibration dated 03/28/05 was associated with the sample analyses. The %RSD for GRO (C4-C12) was within the QC limit of $\leq 20\%$. An initial calibration verification (ICV) was analyzed after the initial calibration but prior to the analysis of samples. The %Ds for the ICV and all CCVs bracketing the sample analyses were within the Method QC limit of $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One water method blank (5H28016-BLK1) was associated with the sample analyses. GRO (C4-C12) was not detected above the MDL in the method blank. Review of the raw data indicated no false negative result. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water method blank spike (5H28016-BS1) was associated with the sample analyses. GRO (C4-C12) was recovered within the laboratory-established QC limits of 65-140%. The recovery was checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples were fortified with the surrogate compound 4-bromofluorobenzene (BFB). Surrogate recoveries were within the laboratory-established QC limits of 65-140%. Recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FIELD QC SAMPLES

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

2.8.1 Trip Blanks, Field Blanks, and Equipment Rinsates

Sample Trip Blank was the trip blank associated with site sample Outfall 012. GRO (C4-C12) was not detected above the MDL in the trip blank. Review of the raw data indicated no false negative result. There were no field blank or equipment rinse samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples in this SDG.

2.9 COMPOUND IDENTIFICATION

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

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detects, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The results were reported in mg/L (ppm). No qualifications were required.



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05

Received: 08/19/05

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: IOH1713-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H28016	0.050	0.10	0.18	1	08/28/05	08/29/05	Rel Qual
Surrogate: 4-BFB (FID) (65-140%)					94 %				
Sample ID: IOH1713-02 (Trip Blank - Water) Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H28016	0.050	0.10	ND	1	08/28/05	08/29/05	u P1
Surrogate: 4-BFB (FID) (65-140%)					95 %	P1			

**AMEC VALIDATED
LEVEL IV**

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711TF85
 Task Order 313150010
 SDG No. IOH1713

No. of Analyses 1

Laboratory Del Mar Analytical

Date September 21, 2005

Reviewer K. Shadowlight

Reviewer's Signature

Analysis/Method TPH-Extractable

K. Shadowlight

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

Data 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 detected 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 EK.
\$	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: TPH/Extractable

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 21, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1713-01	water	8015B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by both field and laboratory personnel, and accounted for the analysis presented in this SDG. The EFH analysis (rather than the GRO analysis) was requested in error on the COC for the Trip Blank sample. The sample was analyzed correctly. As the site sample was couriered directly to the laboratory, custody seals were not required. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 07/11/05. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One method blank (5H23040-BLK1) was extracted and analyzed with the sample in this SDG. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5H23040-BS1/BSD1) was extracted and analyzed with the sample in this SDG. The laboratory reported recoveries of alkane range C13-C28 from spiked diesel. The recoveries were within the laboratory-established QC limits of 40-120%,

and the RPD was within the QC limit of $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the sample of this SDG. Evaluation of method accuracy was based on the blank spike. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.8.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinse samples associated with the site sample in this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW-846 Method 8015B. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for this SDG. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. Results were reported in mg/L (ppm). Any detect reported between the MDL and the reporting limit was qualified as estimated, "J," by the laboratory. No further qualifications were required.



MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOH1713
Pasadena, CA 91101 Sampled: 08/19/05
Attention: Bronwyn Kelly Received: 08/19/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Analyzed	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5H23040	0.085	0.50	0.47	0.962	08/23/05	08/24/05	J
Surrogate: n-Octacosane (40-125%)					69 %				J DNQ

ANEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles (1,4-dioxane)
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: September 19, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in *the AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method SW-846 8260B* and the *National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab No. Del Mar, CA	Lab No. Del Mar, AZ	Matrix	Method
Outfall 012	Outfall 012	IOH1713-01	POH0629-01	water	8260B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the Del Mar Analytical within the temperature limits of 4°C ±2°C, at 3°C. The sample was subcontracted to Del Mar (Phoenix) for 1,4-dioxane analysis, and the sample was received within the temperature limits of 4°C ±2°C. The COC and transfer COC noted that the sample was received intact and properly preserved; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed by the appropriate field and laboratory personnel. As the sample was couriered directly to the laboratory from the field, custody seals were not required. According to the transfer COC, custody seals were present on the cooler received by Del Mar Analytical in Arizona. No qualifications were required.

2.1.3 Holding Times

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

2.2 GC/MS TUNING

The ion abundance windows were consistent with those specified in EPA Method 8260B. All ion abundances were within the established windows, and the sample was analyzed within 12 hours of the BFB injection time. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 08/29/05, was associated with this SDG. The average RRF for 1,4-dioxane was ≥ 0.05 and the %RSD was $\leq 15\%$. The laboratory reported the continuing calibration and the blank spike (P5H3004-BS1) from the same analysis. As the analysis cannot be reported as both a CCV and a blank spike, the reviewer evaluated P5H3004-BS1 as the continuing calibration. The RRF for 1,4-dioxane was ≥ 0.05 ; and, the %D was $\leq 20\%$. The %RSD and average RRF for 1,4-dioxane in the initial calibration, and the %D and RRF for 1,4-dioxane in the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (P5H3004-BLK1) was associated with this SDG. Target compound 1,4-dioxane was not detected above the MDL in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike/blank spike duplicate pair (P5H3004-BS1/BS1D) with this SDG; however, P5H3004-BS1 was reported as the CCV (see section 2.3); therefore, P5H3004-BS1D was evaluated as a single blank spike. The recovery for 1,4-dioxane was within the QC limits of 70-130%. The recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and QC were fortified with dibromofluoromethane. The surrogate was recovered within the laboratory QC limits of 70-130%. The surrogate recovery for the sample was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed for this SDG. Evaluation of method accuracy was based on the blank spike result. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

The sample in this SDG had no associated trip blank. No qualifications were required.

2.8.1.1 Field Blanks and Equipment Rinsates

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

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 1,4-dioxane by Method 8260B/SIM. Chromatograms, retention times, and spectra for the sample and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the undated MDL supplied by the laboratory. As there were no sample detects, compound quantitation was verified by recalculating blank spike and surrogate recoveries from the raw data. No calculation or transcription errors were noted. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

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



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 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8586 FAX (858) 505-8689
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Del Mar Analytical - Irvine
 17461 Derian Ave. Suite 100
 Irvine, CA 92614
 Attention: Michele Harper

Project ID: IOH1713
 Report Number: POH0629

Sampled: 08/19/05
 Received: 08/23/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Qual Code
Sample ID: POH0629-01 (IOH1713-01 - Water)										
Reporting Units: ug/l										
1,4-Dioxane	EPA 8260B	P5H3004	0.49	1.0	ND	1	08/30/05	08/30/05	u	
Surrogate: Dibromofluoromethane (70-130%)					120 %					

ATEC VALIDATED
LEVEL IV

Del Mar Analytical - Phoenix
 Karen Maxwell
 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.

POH0629 <Page 2 of 5> **5**

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DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles by 624
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: M. Pokorny
Date of Review: September 20, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOH1713-01	water	624
Trip Blank	Trip Blank	IOH1713-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory above the temperature limits of 4°C ±2°C, at 3°C. The site sample was properly preserved. The trip blank was not preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace was not provided. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

Two initial calibrations dated 08/20/05 and 08/22/05 were associated with this SDG. The average RRFs were ≥0.05 for the target compounds listed on the sample result summaries. The %RSDs were ≤35% for all applicable target compounds. Two continuing calibrations dated 08/28/05 and 08/29/05 were associated with the sample analyses in this SDG. The %Ds were ≤20% and the RRFs were ≥0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

Two water method blanks (5H28008-BLK1 and 5H29003-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two water blank spikes (5H28008-BS1 and 5H29003-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDLs in the trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for five volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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



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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: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H29003	0.32	2.0	ND	1	08/29/05	08/29/05	U
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H29003	0.32	5.0	ND	1	08/29/05	08/29/05	↓
1,2,3-Trichloropropane	EPA 624	5H29003	0.85	10	ND	1	08/29/05	08/29/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H29003	0.25	5.0	ND	1	08/29/05	08/29/05	
tert-Butanol (TBA)	EPA 624	5H29003	3.1	25	ND	1	08/29/05	08/29/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					101 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				
Sample ID: IOH1713-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H28008	0.32	2.0	ND	1	08/28/05	08/28/05	U
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H28008	0.32	5.0	ND	1	08/28/05	08/28/05	↓
1,2,3-Trichloropropane	EPA 624	5H28008	0.85	10	ND	1	08/28/05	08/28/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H28008	0.25	5.0	ND	1	08/28/05	08/28/05	
tert-Butanol (TBA)	EPA 624	5H28008	3.1	25	ND	1	08/28/05	08/28/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

REF QUAL
 QUAL CODE

P1

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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IOH1713 <Page 5 of 22>

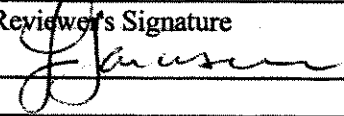
CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711WC170
 Task Order 313150010
 SDG No. IOH1713

No. of Analyses 1

Laboratory Del Mar Analytical
 Reviewer L. Jarusewic
 Analysis/Method General Minerals

Date: 09/29/05
 Reviewer's Signature


ACTION ITEMS^a

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

COMMENTS^b Acceptable as reviewed.

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: September 29, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 418.1, 350.2, 405.1, 413.1, 160.2, 160.5, and 180.1, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOH1713-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for total recoverable petroleum hydrocarbons, ammonia, and oil and grease, the seven-day holding time for total suspended solids and total dissolved solids, and the 48-hour holding time for BOD, total settleable solids, and turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided. The ammonia LCS recovery exceeded the CCV control limits of 90-100% at 115%; however, as ammonia was not detected in Outfall 012, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to the total dissolved solid, oil and grease, total suspended solids, and total settleable solids analyses. No qualifications were required.

2.3 BLANKS

Turbidity was detected in a bracketing CCB at 0.040 NTU; however, the turbidity CCB result was insufficient to qualify the turbidity result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample and laboratory control sample duplicate (BOD, total recoverable petroleum hydrocarbons, and oil and grease only) recoveries were within the laboratory-established control limits. The ammonia LCS recovery was within the control limits of 80-115%. The LCS is not applicable to turbidity or total settleable solids. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

No MS/MSD or duplicate analyses were performed for Outfall 012; therefore, no assessment was made with respect to this criterion.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed for Outfall 012; therefore, no assessment was made with respect to this criterion. Method accuracy was based on LCS results. No qualifications were required.

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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 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: Alfa Outfall 012 - During Test Report Number: IOH1713	Sampled: 08/19/05 Received: 08/19/05
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5H22070	0.31	1.0	1.6	0.962	08/22/05	08/22/05	See Qualifier

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LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1713	Sampled: 08/19/05 Received: 08/19/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H22061	0.30	0.50	ND	1	08/22/05	08/22/05	U
Biochemical Oxygen Demand	EPA 405.1	5H20031	0.59	2.0	2.3	1	08/20/05	08/25/05	U
Oil & Grease	EPA 413.1	5H25051	0.94	5.0	ND	1	08/25/05	08/25/05	U
Total Dissolved Solids	SM2540C	5H24138	10	10	310	1	08/24/05	08/24/05	
Total Suspended Solids	EPA 160.2	5H24106	10	10	10	1	08/24/05	08/24/05	
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5H19083	0.10	0.10	ND	1	08/19/05	08/19/05	U
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5H20051	0.040	1.0	18	1	08/20/05	08/20/05	
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H22047	0.80	4.0	ND	1	08/22/05	08/22/05	*

Handwritten notes:
 Qualifiers: U, *
 Data: CC, CC

** analysis not validated*

AMEC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IOH1713

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOH1713
Project Manager: P. Costa
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: September 29, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOH1713-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel, and accounted for the sample and analysis presented in this SDG. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

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

2.3 BLANKS

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

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample associated with this SDG was recovered within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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 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: Alfa Outfall 012 - During Test Report Number: IOH1713	Sampled: 08/19/05 Received: 08/19/05
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INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H22061	0.30	0.50	ND	1	08/22/05	08/22/05	* <i>See Col</i>
Biochemical Oxygen Demand	EPA 405.1	5H20031	0.59	2.0	2.3	1	08/20/05	08/25/05	
Oil & Grease	EPA 413.1	5H25051	0.94	5.0	ND	1	08/25/05	08/25/05	
Total Dissolved Solids	SM2540C	5H24138	10	10	310	1	08/24/05	08/24/05	
Total Suspended Solids	EPA 160.2	5H24106	10	10	10	1	08/24/05	08/24/05	
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5H19083	0.10	0.10	ND	1	08/19/05	08/19/05	
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: NTU									
Turbidity	EPA 180.1	5H20051	0.040	1.0	18	1	08/20/05	08/20/05	
Sample ID: IOH1713-01 (Outfall 012 - Water) Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H22047	0.80	4.0	ND	1	08/22/05	08/22/05	u

* Analysis not validated

AMEC VALIDATED LEVEL 1

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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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: 08/19/05
Received: 08/19/05
Issued: 09/14/05 18:50

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOH1713-01	Outfall 012	Water
IOH1713-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine
Michele Harper
Project Manager



Del Mar Analytical

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

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: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5H22070	0.31	1.0	1.6	0.962	08/22/05	08/22/05	

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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: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

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: IOH1713-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5H23040	0.085	0.50	0.47	0.962	08/23/05	08/24/05	J
Surrogate: n-Octacosane (40-125%)					69 %				

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

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: IOH1713-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H28016	0.050	0.10	0.18	1	08/28/05	08/29/05	
Surrogate: 4-BFB (FID) (65-140%)					94 %				
Sample ID: IOH1713-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5H28016	0.050	0.10	ND	1	08/28/05	08/29/05	P1
Surrogate: 4-BFB (FID) (65-140%)					95 %	P1			

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Pasadena, CA 91101
Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
Received: 08/19/05

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H29003	0.32	2.0	ND	1	08/29/05	08/29/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H29003	0.32	5.0	ND	1	08/29/05	08/29/05	
1,2,3-Trichloropropane	EPA 624	5H29003	0.85	10	ND	1	08/29/05	08/29/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H29003	0.25	5.0	ND	1	08/29/05	08/29/05	
tert-Butanol (TBA)	EPA 624	5H29003	3.1	25	ND	1	08/29/05	08/29/05	
Surrogate: Dibromofluoromethane (80-120%)					106 %				
Surrogate: Toluene-d8 (80-120%)					101 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				
Sample ID: IOH1713-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5H28008	0.32	2.0	ND	1	08/28/05	08/28/05	P1
Methyl-tert-butyl Ether (MTBE)	EPA 624	5H28008	0.32	5.0	ND	1	08/28/05	08/28/05	
1,2,3-Trichloropropane	EPA 624	5H28008	0.85	10	ND	1	08/28/05	08/28/05	
Di-isopropyl Ether (DIPE)	EPA 624	5H28008	0.25	5.0	ND	1	08/28/05	08/28/05	
tert-Butanol (TBA)	EPA 624	5H28008	3.1	25	ND	1	08/28/05	08/28/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					100 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

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 Pasadena, CA 91101
 Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5H24052	4.5	10	30	0.952	08/24/05	08/27/05	
N-Nitrosodimethylamine	EPA 625	5H24052	3.7	20	ND	0.952	08/24/05	08/27/05	
Surrogate: 2-Fluorophenol (30-120%)					55 %				
Surrogate: Phenol-d6 (35-120%)					62 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					66 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					73 %				
Surrogate: Terphenyl-d14 (45-120%)					108 %				

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5H22061	0.30	0.50	ND	1	08/22/05	08/22/05	
Biochemical Oxygen Demand	EPA 405.1	5H20031	0.59	2.0	2.3	1	08/20/05	08/25/05	
Oil & Grease	EPA 413.1	5H25051	0.94	5.0	ND	1	08/25/05	08/25/05	
Total Dissolved Solids	SM2540C	5H24138	10	10	310	1	08/24/05	08/24/05	
Total Suspended Solids	EPA 160.2	5H24106	10	10	10	1	08/24/05	08/24/05	
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ml/l/hr									
Total Settleable Solids	EPA 160.5	5H19083	0.10	0.10	ND	1	08/19/05	08/19/05	
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5H20051	0.040	1.0	18	1	08/20/05	08/20/05	
Sample ID: IOH1713-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5H22047	0.80	4.0	ND	1	08/22/05	08/22/05	

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05

Received: 08/19/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOH1713-01 (Outfall 012 - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5H3004	0.49	1.0	ND	1	08/30/05	08/30/05	
<i>Surrogate: Dibromofluoromethane (70-130%)</i>					120 %				

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 Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOH1713-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	08/19/2005 14:18	08/19/2005 20:20	08/19/2005 21:30	08/19/2005 22:30
EPA 180.1	2	08/19/2005 14:18	08/19/2005 20:20	08/20/2005 17:00	08/20/2005 18:00
EPA 405.1	2	08/19/2005 14:18	08/19/2005 20:20	08/20/2005 09:28	08/25/2005 10:00

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Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
Received: 08/19/05

METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	RPD Limit	Data Qualifiers
Batch: 5H22070 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22070-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 08/22/2005 (5H22070-BS1)											
Total Recoverable Hydrocarbons	4.89	1.0	0.31	mg/l	5.00		98	65-120			M-NR1
LCS Dup Analyzed: 08/22/2005 (5H22070-BSD1)											
Total Recoverable Hydrocarbons	5.35	1.0	0.31	mg/l	5.00		107	65-120	9	20	

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METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 5H23040 Extracted: 08/23/05											
Blank Analyzed: 08/23/2005 (5H23040-BLK1)											
EFH (C13 - C22)	ND	0.50	0.085	mg/l							
EFH (C13 - C40)	ND	0.50	0.085	mg/l							
Surrogate: n-Octacosane	0.172			mg/l	0.200		86	40-125			
LCS Analyzed: 08/23/2005 (5H23040-BS1)											
EFH (C13 - C40)	0.669	0.50	0.085	mg/l	0.776		86	40-120			M-NR1
Surrogate: n-Octacosane	0.176			mg/l	0.200		88	40-125			
LCS Dup Analyzed: 08/23/2005 (5H23040-BSD1)											
EFH (C13 - C40)	0.674	0.50	0.085	mg/l	0.776		87	40-120	1	25	
Surrogate: n-Octacosane	0.177			mg/l	0.200		88	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	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H28016 Extracted: 08/28/05											
Blank Analyzed: 08/28/2005 (5H28016-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.00908			mg/l	0.0100		91	65-140			
LCS Analyzed: 08/28/2005 (5H28016-BS1)											
GRO (C4 - C12)	0.826	0.10	0.050	mg/l	0.800		103	65-140			
Surrogate: 4-BFB (FID)	0.0333			mg/l	0.0300		111	65-140			
Matrix Spike Analyzed: 08/29/2005 (5H28016-MS1) Source: IOH1699-03											
GRO (C4 - C12)	0.239	0.10	0.050	mg/l	0.220	ND	109	60-145			
Surrogate: 4-BFB (FID)	0.00861			mg/l	0.0100		86	65-140			
Matrix Spike Dup Analyzed: 08/29/2005 (5H28016-MSD1) Source: IOH1699-03											
GRO (C4 - C12)	0.234	0.10	0.050	mg/l	0.220	ND	106	60-145	2	20	
Surrogate: 4-BFB (FID)	0.0100			mg/l	0.0100		100	65-140			

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
Received: 08/19/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD RPD	Limit	Data Qualifiers
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Batch: 5H28008 Extracted: 08/28/05

Blank Analyzed: 08/28/2005 (5H28008-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	25.0			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	23.9			ug/l	25.0		96	80-120			

LCS Analyzed: 08/28/2005 (5H28008-BS1)

1,2-Dibromoethane (EDB)	22.7	2.0	0.32	ug/l	25.0		91	70-125			
Methyl-tert-butyl Ether (MTBE)	23.3	5.0	0.32	ug/l	25.0		93	55-140			
1,2,3-Trichloropropane	21.2	10	0.85	ug/l	25.0		85	55-130			
Di-isopropyl Ether (DIPE)	25.4	5.0	0.25	ug/l	25.0		102	60-135			
tert-Butanol (TBA)	134	25	3.1	ug/l	125		107	65-135			
Surrogate: Dibromofluoromethane	24.6			ug/l	25.0		98	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	24.3			ug/l	25.0		97	80-120			

Matrix Spike Analyzed: 08/28/2005 (5H28008-MS1)

Source: IOH1526-07

1,2-Dibromoethane (EDB)	28.9	2.0	0.32	ug/l	25.0	ND	116	65-130			
Methyl-tert-butyl Ether (MTBE)	29.2	5.0	0.32	ug/l	25.0	ND	117	50-150			
1,2,3-Trichloropropane	29.8	10	0.85	ug/l	25.0	ND	119	50-135			
Di-isopropyl Ether (DIPE)	27.4	5.0	0.25	ug/l	25.0	ND	110	60-140			
tert-Butanol (TBA)	133	25	3.1	ug/l	125	ND	106	60-145			
Surrogate: Dibromofluoromethane	25.4			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120			

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Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
Received: 08/19/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
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Batch: 5H28008 Extracted: 08/28/05

Matrix Spike Dup Analyzed: 08/28/2005 (5H28008-MSD1)

Source: IOH1526-07

1,2-Dibromoethane (EDB)	27.9	2.0	0.32	ug/l	25.0	ND	112	65-130	4	25	
Methyl-tert-butyl Ether (MTBE)	28.6	5.0	0.32	ug/l	25.0	ND	114	50-150	2	25	
1,2,3-Trichloropropane	28.0	10	0.85	ug/l	25.0	ND	112	50-135	6	30	
Di-isopropyl Ether (DIPE)	27.0	5.0	0.25	ug/l	25.0	ND	108	60-140	1	25	
tert-Butanol (TBA)	132	25	3.1	ug/l	125	ND	106	60-145	1	25	
Surrogate: Dibromofluoromethane	25.7			ug/l	25.0		103	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	24.5			ug/l	25.0		98	80-120			

Batch: 5H29003 Extracted: 08/29/05

Blank Analyzed: 08/29/2005 (5H29003-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	26.1			ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	25.1			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	24.9			ug/l	25.0		100	80-120			

LCS Analyzed: 08/29/2005 (5H29003-BS1)

1,2-Dibromoethane (EDB)	28.6	2.0	0.32	ug/l	25.0		114	70-125			
Methyl-tert-butyl Ether (MTBE)	28.1	5.0	0.32	ug/l	25.0		112	55-140			
1,2,3-Trichloropropane	31.7	10	0.85	ug/l	25.0		127	55-130			
Di-isopropyl Ether (DIPE)	29.4	5.0	0.25	ug/l	25.0		118	60-135			
tert-Butanol (TBA)	114	25	3.1	ug/l	125		91	65-135			
Surrogate: Dibromofluoromethane	27.1			ug/l	25.0		108	80-120			
Surrogate: Toluene-d8	24.9			ug/l	25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	26.1			ug/l	25.0		104	80-120			

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: IOH1713

Sampled: 08/19/05
Received: 08/19/05

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: 5H29003 Extracted: 08/29/05										
Matrix Spike Analyzed: 08/29/2005 (5H29003-MS1)					Source: IOH1716-05					
1,2-Dibromoethane (EDB)	22.7	2.0	0.32	ug/l	25.0	ND	91	65-130		
Methyl-tert-butyl Ether (MTBE)	21.1	5.0	0.32	ug/l	25.0	ND	84	50-150		
1,2,3-Trichloropropane	23.8	10	0.85	ug/l	25.0	ND	95	50-135		
Di-isopropyl Ether (DIPE)	26.4	5.0	0.25	ug/l	25.0	ND	106	60-140		
tert-Butanol (TBA)	205	25	3.1	ug/l	125	95	88	60-145		
Surrogate: Dibromofluoromethane	24.8			ug/l	25.0		99	80-120		
Surrogate: Toluene-d8	25.2			ug/l	25.0		101	80-120		
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		101	80-120		
Matrix Spike Dup Analyzed: 08/29/2005 (5H29003-MSD1)					Source: IOH1716-05					
1,2-Dibromoethane (EDB)	25.1	2.0	0.32	ug/l	25.0	ND	100	65-130	10	25
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	0.32	ug/l	25.0	ND	95	50-150	12	25
1,2,3-Trichloropropane	27.8	10	0.85	ug/l	25.0	ND	111	50-135	16	30
Di-isopropyl Ether (DIPE)	27.1	5.0	0.25	ug/l	25.0	ND	108	60-140	3	25
tert-Butanol (TBA)	220	25	3.1	ug/l	125	95	100	60-145	7	25
Surrogate: Dibromofluoromethane	24.2			ug/l	25.0		97	80-120		
Surrogate: Toluene-d8	25.0			ug/l	25.0		100	80-120		
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	80-120		

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05

Received: 08/19/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H24052 Extracted: 08/24/05										
Blank Analyzed: 08/29/2005 (5H24052-BLK1)										
Naphthalene	ND	10	4.5	ug/l						
N-Nitrosodimethylamine	ND	20	3.7	ug/l						
Surrogate: 2-Fluorophenol	137			ug/l	200		68 30-120			
Surrogate: Phenol-d6	151			ug/l	200		76 35-120			
Surrogate: 2,4,6-Tribromophenol	182			ug/l	200		91 45-120			
Surrogate: Nitrobenzene-d5	86.3			ug/l	100		86 45-120			
Surrogate: 2-Fluorobiphenyl	84.1			ug/l	100		84 45-120			
Surrogate: Terphenyl-d14	89.0			ug/l	100		89 45-120			
LCS Analyzed: 08/29/2005 (5H24052-BS1)										
Naphthalene	68.0	10	4.5	ug/l	100		68 50-120			M-NR1
N-Nitrosodimethylamine	71.2	20	3.7	ug/l	100		71 40-120			
Surrogate: 2-Fluorophenol	125			ug/l	200		62 30-120			
Surrogate: Phenol-d6	145			ug/l	200		72 35-120			
Surrogate: 2,4,6-Tribromophenol	170			ug/l	200		85 45-120			
Surrogate: Nitrobenzene-d5	77.6			ug/l	100		78 45-120			
Surrogate: 2-Fluorobiphenyl	67.1			ug/l	100		67 45-120			
Surrogate: Terphenyl-d14	74.5			ug/l	100		74 45-120			
LCS Dup Analyzed: 08/29/2005 (5H24052-BSD1)										
Naphthalene	83.3	10	4.5	ug/l	100		83 50-120	20	20	
N-Nitrosodimethylamine	80.4	20	3.7	ug/l	100		80 40-120	12	20	
Surrogate: 2-Fluorophenol	149			ug/l	200		74 30-120			
Surrogate: Phenol-d6	166			ug/l	200		83 35-120			
Surrogate: 2,4,6-Tribromophenol	194			ug/l	200		97 45-120			
Surrogate: Nitrobenzene-d5	90.3			ug/l	100		90 45-120			
Surrogate: 2-Fluorobiphenyl	90.0			ug/l	100		90 45-120			
Surrogate: Terphenyl-d14	83.9			ug/l	100		84 45-120			

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 Project Manager

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H20031 Extracted: 08/20/05											
Blank Analyzed: 08/25/2005 (5H20031-BLK1)											
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 08/25/2005 (5H20031-BS1)											
Biochemical Oxygen Demand	181	100	30	mg/l	198		91	85-115			
LCS Dup Analyzed: 08/25/2005 (5H20031-BSD1)											
Biochemical Oxygen Demand	178	100	30	mg/l	198		90	85-115	2	20	
Batch: 5H20051 Extracted: 08/20/05											
Blank Analyzed: 08/20/2005 (5H20051-BLK1)											
Turbidity	ND	1.0	0.040	NTU							
Duplicate Analyzed: 08/20/2005 (5H20051-DUP1)											
Turbidity	37.6	1.0	0.040	NTU		Source: IOH1658-01			2	20	
Batch: 5H22047 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22047-BLK1)											
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 08/22/2005 (5H22047-BS1)											
Perchlorate	51.9	4.0	0.80	ug/l	50.0		104	85-115			
Matrix Spike Analyzed: 08/22/2005 (5H22047-MS1)											
Perchlorate	52.4	4.0	0.80	ug/l	50.0	Source: IOH1770-01	ND	105	80-120		

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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: IOH1713	Sampled: 08/19/05 Received: 08/19/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H22047 Extracted: 08/22/05											
Matrix Spike Dup Analyzed: 08/22/2005 (5H22047-MSD1)						Source: IOH1770-01					
Perchlorate	52.1	4.0	0.80	ug/l	50.0	ND	104	80-120	1	20	
Batch: 5H22061 Extracted: 08/22/05											
Blank Analyzed: 08/22/2005 (5H22061-BLK1)											
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 08/22/2005 (5H22061-BS1)											
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0		115	80-115			
Matrix Spike Analyzed: 08/22/2005 (5H22061-MS1)						Source: IOH1701-01					
Ammonia-N (Distilled)	11.2	0.50	0.30	mg/l	10.0	ND	112	70-120			
Matrix Spike Dup Analyzed: 08/22/2005 (5H22061-MSD1)						Source: IOH1701-01					
Ammonia-N (Distilled)	10.6	0.50	0.30	mg/l	10.0	ND	106	70-120	6	15	
Batch: 5H24106 Extracted: 08/24/05											
Blank Analyzed: 08/24/2005 (5H24106-BLK1)											
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 08/24/2005 (5H24106-BS1)											
Total Suspended Solids	955	10	10	mg/l	1000		96	85-115			
Duplicate Analyzed: 08/24/2005 (5H24106-DUP1)						Source: IOH1647-01					
Total Suspended Solids	71.0	10	10	mg/l		75			5	10	

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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: IOH1713

Sampled: 08/19/05
 Received: 08/19/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5H24138 Extracted: 08/24/05											
Blank Analyzed: 08/24/2005 (5H24138-BLK1)											
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 08/24/2005 (5H24138-BS1)											
Total Dissolved Solids	970	10	10	mg/l	1000		97	90-110			
Duplicate Analyzed: 08/24/2005 (5H24138-DUP1)											
						Source: IOH1568-04					
Total Dissolved Solids	471	10	10	mg/l		470			0	10	
Batch: 5H25051 Extracted: 08/25/05											
Blank Analyzed: 08/25/2005 (5H25051-BLK1)											
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 08/25/2005 (5H25051-BS1)											
Oil & Grease	15.5	5.0	0.94	mg/l	20.0		78	65-120			M-NRI
LCS Dup Analyzed: 08/25/2005 (5H25051-BSD1)											
Oil & Grease	13.2	5.0	0.94	mg/l	20.0		66	65-120	16	20	

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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: IOH1713

Sampled: 08/19/05
Received: 08/19/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: P5H3004 Extracted: 08/30/05											
Blank Analyzed: 08/30/2005 (P5H3004-BLK1)											
1,4-Dioxane	ND	1.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	1.03			ug/l	1.00		103	70-130			
LCS Analyzed: 08/30/2005 (P5H3004-BS1)											
1,4-Dioxane	9.95	1.0	0.49	ug/l	10.0		100	70-130			
Surrogate: Dibromofluoromethane	1.02			ug/l	1.00		102	70-130			
LCS Dup Analyzed: 08/30/2005 (P5H3004-BSD1)											
1,4-Dioxane	9.76	1.0	0.49	ug/l	10.0		98	70-130	2	20	
Surrogate: Dibromofluoromethane	1.06			ug/l	1.00		106	70-130			
Matrix Spike Analyzed: 08/30/2005 (P5H3004-MS1) Source: POH0615-02											
1,4-Dioxane	10.3	1.0	0.49	ug/l	10.0	0.79	95	65-125			
Surrogate: Dibromofluoromethane	1.08			ug/l	1.00		108	70-130			
Matrix Spike Dup Analyzed: 08/30/2005 (P5H3004-MSD1) Source: POH0615-02											
1,4-Dioxane	10.2	1.0	0.49	ug/l	10.0	0.79	94	65-125	1	20	
Surrogate: Dibromofluoromethane	1.14			ug/l	1.00		114	70-130			

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: IOH1713

Sampled: 08/19/05
Received: 08/19/05

DATA QUALIFIERS AND DEFINITIONS

- J** Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
- M-NRI** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- PI** Sample received and analyzed without chemical preservation.
- 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.



MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly	Project ID: Alfa Outfall 012 - During Test Report Number: IOH1713	Sampled: 08/19/05 Received: 08/19/05
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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
Level 4	Water		
SM2540C	Water	X	X

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

Subcontracted Laboratories

Del Mar Analytical - Phoenix NELAC Cert #01109CA, California Cert #2446, Arizona Cert #AZ0426, Nevada Cert #AZ-907

9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044

Method Performed: EPA 8260B

Samples: IOH1713-01

Del Mar Analytical, Irvine
Michele Harper
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SUBCONTRACT ORDER - PROJECT # IOH1713

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	Del Mar Analytical - Phoenix 9830 S. 51st Street, Suite B-120 Phoenix, AZ 85044 Phone : (480) 785-0043 Fax: (480) 785-0851

Analysis	Expiration	Due	Comments
Sample ID: IOH1713-01 Water Sampled: 08/19/05 14:18			
Dioxane-8260B-out	09/02/05 14:18	08/31/05 12:00	Boeing-permit, sub DMAP, J flags, ID=DMA+Outfall 012
Level 4 Data Package - Out	09/16/05 14:18	08/31/05 12:00	Boeing

Containers Supplied:

- 40 ml VOA w/HCL (IOH1713-01M)
- 40 ml VOA w/HCL (IOH1713-01N)
- 40 ml VOA w/HCL (IOH1713-01O)

POH0629-01

SAMPLE INTEGRITY:			
All containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sample labels/COC agree:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Custody Seals Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Samples Preserved Properly:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Samples Received On Ice::	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Samples Received at (temp):	4.0°C

Released By	Date	Time	Received By	Date	Time
FEDEX	8/22/05	1700	[Signature]	8/23/05	09:35
Released By	Date	Time	Received By	Date	Time
FEDEX	8/23/05		[Signature]	8/23/05	09:35

10H1713

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED										Field readings:								
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES During Test - Outfall 012 Alfa Test Stand		Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH=Total Rec.	Petroleum Hydrocarbons (EPA 418.1)	624 (EDB, 1,2,3-TCP, 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 = 93.4 pH = 7.06	Comments				
Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Sampling Date/Time	Oil & Grease (EPA 413.1)	8015-gas	8015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH=Total Rec.	Petroleum Hydrocarbons (EPA 418.1)	624 (EDB, 1,2,3-TCP, MTBE, DPE, TBA)	BOD5(20 degrees C)	625 Naphthalene +NDMA analysis	Ammonia-N, Titr. (350.2) w/ dist	Perchlorate	Turbidity, TDS, TSS	Settleable Solids	Field readings:	Comments	
Outfall 012	W	1L Amber	1	HCl	1A	8-19-05 15:00	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																	
Outfall 012 duplicate	W	1L Amber	1	None	8B																	
Outfall 012	W	500ml Poly	1	H2SO4	9A										X							
Outfall 012	W	1L Poly	1	None	10A																	
Outfall 012	W	1L Poly	1	None	11A																	
Trip Blank	W	VOAs	6	HCl	12A, 12B, 12C, 12D, 12E, 12F			X														

Relinquished By: *[Signature]* Date/Time: 8-19-05 15:00 Received By: *[Signature]* Date/Time: 8-19-05 15:00

Relinquished By: *[Signature]* Date/Time: 8-19-05 15:48 Received By: *[Signature]* Date/Time: 8-19-05 15:48

Relinquished By: *[Signature]* Date/Time: 8/19/05 2020 Received By: *[Signature]* Date/Time: 8/19/05 2020

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:
 Intact
 K 30

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CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226


Package ID T711SV67
 Task Order 313150010
 SDG No. IOI1901

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Semivolatiles by Method 625

Date: October 17, 2005
 Reviewer's Signature


ACTION ITEMS ^a	
1. Case Narrative Deficiencies	_____
2. Out of Scope Analyses	_____
3. Analyses Not Conducted	_____
4. Missing Hardcopy Deliverables	_____
5. Incorrect Hardcopy Deliverables	_____
6. Deviations from Analysis Protocol, e.g., Holding Times GC/MS Tune/Inst. Performance Calibration Method blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification Quantitation System Performance	_____
COMMENTS ^b	Acceptable as reviewed.

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

***#**

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

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DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: SEMIVOLATILES

SAMPLE DELIVERY GROUP: IOI1901

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: Semivolatiles
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: October 17, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOI1901	water	625

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C at 5°C. The analysis did not require preservation, and no preservation was noted in the field. The COC noted that the sample was received intact. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

The initial calibrations associated with this SDG were dated 09/14/05 and 10/03/05. The average RRFs were ≥0.05 and the %RSDs were ≤35% for both target compounds listed on the sample summary form. A representative number of average RRFs and %RSDs were checked from the raw data, and no calculation or transcription errors were noted. The continuing calibration associated with the sample analysis was analyzed 10/04/05. The RRFs for both target compounds were ≥0.05, and the %Ds were ≤20%. A representative number of average RRFs and %RSDs in the initial calibrations and RRFs and %Ds in the continuing calibration were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.4 BLANKS

One method blank (5I28052-BLK1) was extracted and analyzed with this SDG. No target compounds were reported in the method blank. Review of the raw data indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike/blank spike duplicate pair (SI28052-BS1/BSD1) was extracted and analyzed with this SDG. The percent recoveries for target compounds n-nitrosodimethylamine and naphthalene were within the respective laboratory QC limits and the RPDs were $\leq 20\%$. A representative number of recoveries and RPDs were calculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy and precision was based on blank spike/blank spike duplicate results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

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

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

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

2.13 SYSTEM PERFORMANCE

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
 Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5I28052	4.5	10	39	0.952	09/28/05	10/05/05	vet qual
N-Nitrosodimethylamine	EPA 625	5I28052	3.7	20	ND	0.952	09/28/05	10/05/05	qual code
Surrogate: 2-Fluorophenol (30-120%)					63 %				
Surrogate: Phenol-d6 (35-120%)					70 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					76 %				
Surrogate: Nitrobenzene-d5 (45-120%)					79 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					81 %				
Surrogate: Terphenyl-d14 (45-120%)					79 %				

AMEC VALIDATED LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

IOI1901 <Page 6 of 11>

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711TF88
 Task Order 313150010
 SDG No. IOI1901

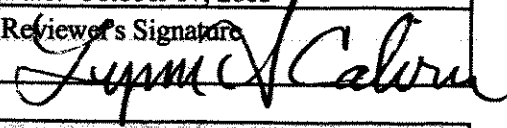
No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Extractable TFH by Method 8015B

Date: October 17, 2005

Reviewer's Signature


ACTION ITEMS^a

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

COMMENTS^b Acceptable as reviewed.

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data 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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Extractable

SAMPLE DELIVERY GROUP: IOI1901

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: TPH-Extractable
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: October 17, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOI1901-01	water	8015B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration associated with the sample analysis was analyzed on 09/20/05. The %RSD was within the QC limit of $\leq 20\%$. The %Ds for the initial calibration verification (ICV) and continuing calibrations associated with the sample analysis were $\leq 15\%$. The %RSD and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One method blank (5I28087-BLK1) was extracted and analyzed with the sample in this SDG. EFH (C13-C22) was not present above the MDL in the method blank or in the instrument blank analyzed at the beginning of the analytical sequence. Review of the method blank and instrument blank chromatograms showed no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One method blank spike/blank spike duplicate pair (5I28087-BS1/BSD1) was extracted and analyzed with the sample in this SDG. The laboratory reported recoveries of alkane range C13-C28 from spiked diesel. The recoveries were within the laboratory-established QC limits of 40-120%, and the RPD was within the QC limit of $\leq 25\%$. The recoveries and RPD were checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses associated with the sample of this SDG. Evaluation of method accuracy was based on the blank spike. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.8.1 Field Blanks and Equipment Rinsates

There were no field blank or equipment rinsate samples associated with the site sample in this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for EFH n-alkane range C13-C22 by EPA SW-846 Method 8015B. Compound identification is verified at a Level IV validation. Review of chromatograms and retention times indicated no problems with compound identification for this SDG. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detect, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. Results were reported in mg/L (ppm). No qualifications were required.



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 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: Alfa Outfall 012 - During Test Report Number: IOI1901	Sampled: 09/26/05 Received: 09/27/05
--	--	---

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifier
Sample ID: IOI1901-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5I28087	0.045	0.50	1.0	0.943	09/28/05	09/29/05	run qual code
Surrogate: n-Octacosane (40-125%)					76 %				

**MEC VALIDATED
LEVEL IV**

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226


Package ID T711TF89
 Task Order 313150010
 SDG No. IOI1901

No. of Analyses 2

Laboratory Del Mar Analytical

Reviewer L. Calvin

Analysis/Method Purgeable TFH by Method 8015M

Date: October 17, 2005
 Reviewer's Signature


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

Qualification Code Reference Table

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Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
#	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Data Qualifier Reference Table

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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.
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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).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: TPH/Purgeable

SAMPLE DELIVERY GROUP: IOI1901

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOI1901
Project Manager: P Costa
Matrix: Water
Analysis: TPH-Purgeable
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: L. Calvin
Date of Review: October 19, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOI1901-01	water	8015M/GRO
Trip Blank	Trip Blank	IOI1901-02	water	8015M/GRO

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at Del Mar Analytical on ice within the temperature limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. The Del Mar Analytical case narrative noted that the samples were received intact, and the COC indicated the samples were properly preserved. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

One gasoline standard initial calibrations dated 09/03/05 was associated with the sample analyses. The %RSD for GRO (C4-C12) was within the QC limit of $\leq 20\%$. An ICV was not provided by the laboratory for the initial calibration. The %Ds for the CCVs bracketing the sample analyses were within the Method QC limit of $\leq 15\%$. The %RSDs and %Ds were recalculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.4 METHOD BLANKS

One water method blank (5J05041-BLK1) was associated with the sample analyses. GRO (C4-C12) was not detected above the MDL in the method blank. Review of the raw data indicated no false negative result. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water method blank spike (5J05041-BS1) was associated with the sample analyses. GRO (C4-C12) was recovered within the laboratory-established QC limits of 65-140%. The recovery was checked from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

2.6 SURROGATE RECOVERY

The samples were fortified with the surrogate compound 4-bromofluorobenzene (BFB). Surrogate recoveries were within the laboratory-established QC limits of 65-140%. Recoveries were calculated from the raw data and no transcription or calculation errors were noted. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were performed site sample Outfall 012 in this SDG; however, as the GRO concentration in the unspiked parent sample exceeded four times the spike amount, MS/MSD recoveries were not evaluated. Evaluation of method accuracy was based on the blank spike result. No qualifications were required.

2.8 FIELD QC SAMPLES

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

2.8.1 Trip Blanks, Field Blanks, and Equipment Rinsates

Sample Trip Blank was the trip blank associated with site sample Outfall 012. GRO (C4-C12) was not detected above the MDL in the trip blank. Review of the raw data indicated no false negative result. There were no field blank or equipment rinsate samples associated with this SDG. No qualifications were required.

2.8.2 Field Duplicates

There were no field duplicate samples in this SDG.

2.9 COMPOUND IDENTIFICATION

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

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification was verified for this SDG by recalculating any sample detects, blank spike recoveries, and a representative number of surrogate recoveries. Reporting limits were supported by the low level standard of the initial calibration and by the laboratory MDL. The results were reported in mg/L (ppm). Sample Outfall 012 was analyzed at a 5× dilution due to a high concentration of GRO. The reporting limit was adjusted accordingly. No qualifications were required.



Del Mar Analytical

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
 Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water) - cont. Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	SJ05041	0.25	0.50	2.3 114 %	5	10/05/05	10/05/05	M1
Surrogate: 4-BFB (FID) (65-140%)									
Sample ID: IOI1901-02 (Trip Blank - Water) Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	SJ05041	0.050	0.10	ND 106 %	1	10/05/05	10/05/05 U	
Surrogate: 4-BFB (FID) (65-140%)									

vel qual code

AMEC VALIDATED LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

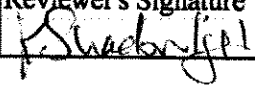
AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

Package ID T711VO127
 Task Order 313150010
 SDG No. IOI1901
 No. of Analyses 1

Laboratory Del Mar Analytical Laboratories

Date October 14, 2005

Reviewer K. Shadowlight

Reviewer's Signature


Analysis/Method 1,4-Dioxane by 8260

ACTION ITEMS*

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

COMMENTS*

Acceptable as reviewed.

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOI1901

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles (1,4-dioxane)
QC Level: Level IV
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: October 14, 2005

The sample listed in Table 1 were validated based on the guidelines outlined in the *AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2)*, *EPA Method SW-846 8260B* and the *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	Lab No. Del Mar, CA	Lab No. Del Mar, AZ	Matrix	Method
Outfall 012	IOI1901-01	POI0799-01	water	8260B

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at the Del Mar Analytical within the temperature limits of 4°C ±2°C. The sample was subcontracted to Del Mar Analytical-Phoenix for 1,4-dioxane analysis, and the sample was received within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the COC, and the transfer COC, the sample was received intact and properly preserved at both laboratories. Information regarding the absence of headspace in the VOA vials was not provided for either laboratory. No qualifications were required.

2.1.2 Chain of Custody

The COC and transfer COC were signed by field and laboratory personnel. As the sample was couriered directly to the laboratory from the field, custody seals were not required. According to the transfer COC, there were custody seals present on the cooler received by Del Mar Analytical in Arizona. The EPA IDs were added to the summary report by the reviewer. No qualifications were required.

2.1.3 Holding Times

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

2.2 GC/MS TUNING

The ion abundance windows were consistent with those specified in EPA Method 8260B. All ion abundances were within the established windows, and the sample was analyzed within 12 hours of the BFB injection time. No qualifications were required.

2.3 CALIBRATION

One initial calibration, dated 09/20/05, was associated with this SDG. The average RRF for 1,4-dioxane was ≥0.05 and the correlation coefficient (r^2) was ≥0.995. The laboratory reported the continuing calibration and the blank spike (P5J0510-BS1) from the same analysis. As the analysis cannot be reported as both a CCV and a blank spike, the reviewer evaluated P5J0510-BS1 as the continuing calibration. The RRF for 1,4-dioxane was ≥0.05 and the %D was ≤20% in the continuing calibration dated 10/05/05. The r^2 and average RRF for 1,4-dioxane in the initial calibration, and the %D and RRF for 1,4-dioxane in the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No qualifications were required.

2.4 BLANKS

One water method blank (P5J0510-BLK1) was associated with this SDG. Target compound 1,4-dioxane was not detected above the MDL in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike/blank spike duplicate pair (P5J0510-BS1/BSD1) with this SDG; however, P5J0510-BS1 was reported as the CCV (see section 2.3); therefore, P5J0510-BSD1 was evaluated as a single blank spike. The recovery for 1,4-dioxane was within the QC limits of 70-130%. The recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

The sample and QC were fortified with dibromofluoromethane. The surrogate was recovered within the QC limits of 70-130%. The surrogate recovery for the sample was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were associated with this SDG. Evaluation of method accuracy was based on blank spike results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

The sample in this SDG had no associated trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

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

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for 1,4-dioxane by Method 8260B/SIM. Chromatograms, retention times, and spectra for the sample and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantification is verified at a Level IV data validation. As there were no sample detects, compound quantitation was verified by recalculating blank spike and surrogate recoveries from the raw data. No calculation or transcription errors were noted. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the laboratory MDL. No qualifications were required.

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

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



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Del Mar Analytical - Irvine 17461 Derian Ave. Suite 100 Irvine, CA 92614 Attention: Michele Chamberlin	Project ID: IOI1901 Report Number: POI0799	Sampled: 09/26/05 Received: 09/29/05
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1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Data Qual code
Sample ID: POI0799-01 (IOI1901-01 - Water)		Outfall 012							Key Qual	Qual code
Reporting Units: ug/l										
1,4-Dioxane	EPA 8260B	P5J0510	0.49	1.0	ND	1	10/05/05	10/05/05	U	
Surrogate: Dibromofluoromethane (70-130%)					115 %					

U to 10/19/05

AMEC VALIDATED
LEVEL IV

Del Mar Analytical - Phoenix
Karen Maxwell
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. POI0799 <Page 2 of 6

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: VOLATILES

SAMPLE DELIVERY GROUP: IOI1901

Prepared by

AMEC Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
SDG#: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: Volatiles by 624
QC Level: Level IV
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Reviewer: K. Shadowlight
Date of Review: October 17, 2005

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

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 012	Outfall 012	IOI1901-01	water	624
Trip Blank	Trip Blank	IOI1901-02	water	624

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C, at 5°C. The samples were properly preserved. The COC noted that the samples were received intact; however, information regarding absence of headspace in the VOA vials was not provided. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 GC/MS TUNING

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

2.3 CALIBRATION

One initial calibration dated 08/19/05 was associated with this SDG. The average RRFs were ≥0.05 for the target compounds listed on the sample result summaries. The %RSDs were ≤35% for all applicable target compounds. One continuing calibration dated 09/28/05 was associated with the sample analyses in this SDG. The %D for 1,2-dibromoethane (EDB) exceeded 20% in the continuing calibration; therefore, the nondetect result for EDB was qualified as estimated, "UJ," in associated sample Oufall 012. Sample Trip Blank was identified as field QC, and as such was not qualified for the %D calibration outlier. The remaining %Ds were ≤20% and the RRFs were ≥0.05 for the target compounds listed on the sample result summaries. A representative number of %RSDs and average RRFs from the initial calibration, and %Ds and RRFs from the continuing calibration were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

2.4 BLANKS

One water method blank (5I28022-BLK1) was associated with the sample analyses. There were no detects above the MDL for the target compounds listed on the sample result summary. The method blank raw data showed no evidence of false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One water blank spike (5I28022-BS1) was associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

There were no MS/MSD analyses performed for this SDG. Evaluation of method accuracy was based on the blank spike results. No qualifications were required.

2.8 FIELD QC SAMPLES

Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site sample. Following are findings associated with field QC samples:

2.8.1 Trip Blanks

Sample Trip Blank was the trip blank associated with this SDG. There were no target compounds detected above the MDL in the trip blank. No qualifications were required.

2.8.2 Field Blanks and Equipment Rinsates

There were no field QC samples associated with this SDG. No qualifications were required.

2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

Target compound identification was verified at a Level IV data validation. The laboratory analyzed for five volatile target compounds by EPA Method 624. Chromatograms, retention times, and spectra for the samples and QC were examined and no target compound identification problems were noted. No qualifications were required.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

The laboratory did not provide TICs for this SDG. No qualifications were required.

2.13 SYSTEM PERFORMANCE

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

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
 Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water)										
Reporting Units: ug/l										
1,2-Dibromoethane (EDB)	EPA 624	5I28022	0.32	2.0	ND	1	09/28/05	09/28/05	u	C
Methyl-tert-butyl Ether (MTBE)	EPA 624	5I28022	0.32	5.0	ND	1	09/28/05	09/28/05	u	
1,2,3-Trichloropropane	EPA 624	5I28022	0.85	10	ND	1	09/28/05	09/28/05		
Di-isopropyl Ether (DIPE)	EPA 624	5I28022	0.25	5.0	ND	1	09/28/05	09/28/05		
tert-Butanol (TBA)	EPA 624	5I28022	3.1	25	ND	1	09/28/05	09/28/05		
Surrogate: Dibromofluoromethane (80-120%)					101 %					
Surrogate: Toluene-d8 (80-120%)					104 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					103 %					
Sample ID: IOI1901-02 (Trip Blank - Water)										
Reporting Units: ug/l										
1,2-Dibromoethane (EDB)	EPA 624	5I28022	0.32	2.0	ND	1	09/28/05	09/28/05	u	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5I28022	0.32	5.0	ND	1	09/28/05	09/28/05		
1,2,3-Trichloropropane	EPA 624	5I28022	0.85	10	ND	1	09/28/05	09/28/05		
Di-isopropyl Ether (DIPE)	EPA 624	5I28022	0.25	5.0	ND	1	09/28/05	09/28/05		
tert-Butanol (TBA)	EPA 624	5I28022	3.1	25	ND	1	09/28/05	09/28/05		
Surrogate: Dibromofluoromethane (80-120%)					100 %					
Surrogate: Toluene-d8 (80-120%)					103 %					
Surrogate: 4-Bromofluorobenzene (80-120%)					101 %					

REC VALIDATED

LEVEL IV

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

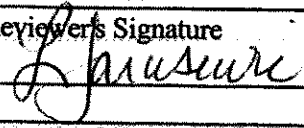
Package ID T711WC176
 Task Order 313150010
 SDG No. IOI1901

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method Perchlorate

Date: 10/14/05
 Reviewer's Signature


ACTION ITEMS^a

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

COMMENTS^b | Acceptable as reviewed.

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: PERCHLORATE

SAMPLE DELIVERY GROUP: IO11901

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: Perchlorate
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: October 14, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2*, USEPA *Methods for Chemical Analysis of Water and Wastes Method 314.0*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOI1901-01	Water	Perchlorate

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel, and accounted for the sample and analysis presented in this SDG. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

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

2.3 BLANKS

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

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample associated with this SDG was recovered within the method control limits of 85-115%. No qualifications were required.

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

 Sampled: 09/26/05
 Received: 09/27/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5I28099	0.30	0.50	ND	1	09/28/05	09/28/05	* <i>Qual</i>
Biochemical Oxygen Demand	EPA 405.1	5I28060	0.59	2.0	2.3	1	09/28/05	10/03/05	* <i>Qual</i>
Oil & Grease	EPA 413.1	5I29068	0.94	5.0	ND	1	09/29/05	09/29/05	* <i>Qual</i>
Total Dissolved Solids	SM2540C	5I29055	10	10	340	1	09/29/05	09/29/05	* <i>Qual</i>
Total Suspended Solids	EPA 160.2	5I28120	10	10	24	1	09/28/05	09/28/05	* <i>Qual</i>
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5I28072	0.10	0.10	ND	1	09/28/05	09/28/05	* <i>Qual</i>
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5I28080	0.040	1.0	24	1	09/28/05	09/28/05	* <i>Qual</i>
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5I28064	0.80	4.0	ND	1	09/28/05	09/28/05	u

* analysis not validated

AMEC VALIDATED
LEVEL IV

 Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

IOI1901 <Page 7 of 12>

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental
 355 South Teller Street
 Suite 300
 Lakewood, CO 80226

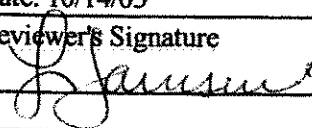
Package ID T711WC177
 Task Order 313150010
 SDG No. IOI1901

No. of Analyses 1

Laboratory Del Mar Analytical

Reviewer L. Jarusewic

Analysis/Method General Minerals

Date: 10/14/05
 Reviewer's Signature


ACTION ITEMS*

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

COMMENTS* Acceptable as reviewed.

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

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.

*#

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).

Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS
SAMPLE DELIVERY GROUP: IO11901

Prepared by

AMEC—Denver Operations
355 South Teller Street, Suite 300
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: NPDES Monitoring
Contract Task Order #: 313150010
Sample Delivery Group #: IOI1901
Project Manager: P. Costa
Matrix: Water
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 1
Reviewer: L. Jarusewic
Date of Review: October 14, 2005

The sample listed in Table 1 was validated based on the guidelines outlined in the AMEC *Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 418.1, 350.2, 405.1, 413.1, 160.2, 160.5, and 180.1, Standard Methods for the Examination of Water and Wastewater Method SM2540C*, and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOI1901-01	Water	General Minerals

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COC was signed and dated by field and laboratory personnel. The COC accounted for the sample and all analyses presented in this SDG. No sample qualifications were required.

2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for total recoverable hydrocarbons, ammonia, and oil and grease, the seven day holding time for total dissolved solids and total suspended solids, and the 48-hour holding time for biological oxygen demand, total settleable solids, and turbidity were met. No qualifications were required.

2.2 CALIBRATION

For the applicable analyses, the initial calibration correlation coefficients were ≥ 0.995 . Initial and continuing calibration information was acceptable with recoveries within the control limits of 90-110%. For ammonia, no information regarding the standardization of the titrant was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. For BOD, no information regarding the calibration of the oxygen meter was provided; however, as the LCS recovery was within the CCV control limits, no qualifications were required. Calibration is not applicable to the total dissolved solid, oil and grease, total suspended solids, and total settleable solids analyses. No qualifications were required.

2.3 BLANKS

Turbidity was detected in method blank 5I28080-BLK1 at 0.060 NTU; however, the method blank result was insufficient to qualify the turbidity result. The remaining method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

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

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with this SDG.



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
 Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5I28075	0.31	1.0	6.3	0.943	09/28/05	09/28/05	Rev Eval Celia Cede

AMEC VALIDATED

LEVEL III

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

 Sampled: 09/26/05
 Received: 09/27/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5I28099	0.30	0.50	ND	1	09/28/05	09/28/05	u
Biochemical Oxygen Demand	EPA 405.1	5I28060	0.59	2.0	2.3	1	09/28/05	10/03/05	u
Oil & Grease	EPA 413.1	5I29068	0.94	5.0	ND	1	09/29/05	09/29/05	u
Total Dissolved Solids	SM2540C	5I29055	10	10	340	1	09/29/05	09/29/05	
Total Suspended Solids	EPA 160.2	5I28120	10	10	24	1	09/28/05	09/28/05	
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5I28072	0.10	0.10	ND	1	09/28/05	09/28/05	u
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5I28080	0.040	1.0	24	1	09/28/05	09/28/05	
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5I28064	0.80	4.0	ND	1	09/28/05	09/28/05	*

*analysis not validated.

AMEC VALIDATED
LEVEL IV

 Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

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IOI1901 <Page 7 of 12>

NPDES - 365

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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: 09/26/05
Received: 09/27/05
Issued: 10/06/05 14:06

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

SAMPLE CROSS REFERENCE

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

LABORATORY ID	CLIENT ID	MATRIX
IOI1901-01	Outfall 012	Water
IOI1901-02	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: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5128075	0.31	1.0	6.3	0.943	09/28/05	09/28/05	

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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: IOI1901	Sampled: 09/26/05 Received: 09/27/05
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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: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
EFH (C13 - C22)	EPA 8015B	5I28087	0.045	0.50	1.0	0.943	09/28/05	09/29/05	
Surrogate: n-Octacosane (40-125%)					76 %				

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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: IOI1901

Sampled: 09/26/05
Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5J05041	0.25	0.50	2.3	5	10/05/05	10/05/05	M1
Surrogate: 4-BFB (FID) (65-140%)					114 %				
Sample ID: IOI1901-02 (Trip Blank - Water)									
Reporting Units: mg/l									
GRO (C4 - C12)	EPA 8015 Mod.	5J05041	0.050	0.10	ND	1	10/05/05	10/05/05	
Surrogate: 4-BFB (FID) (65-140%)					106 %				

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MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOI1901
Pasadena, CA 91101
Attention: Bronwyn Kelly Sampled: 09/26/05
Received: 09/27/05

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: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5I28022	0.32	2.0	ND	1	09/28/05	09/28/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5I28022	0.32	5.0	ND	1	09/28/05	09/28/05	
1,2,3-Trichloropropane	EPA 624	5I28022	0.85	10	ND	1	09/28/05	09/28/05	
Di-isopropyl Ether (DIPE)	EPA 624	5I28022	0.25	5.0	ND	1	09/28/05	09/28/05	
tert-Butanol (TBA)	EPA 624	5I28022	3.1	25	ND	1	09/28/05	09/28/05	
Surrogate: Dibromofluoromethane (80-120%)					101 %				
Surrogate: Toluene-d8 (80-120%)					104 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					103 %				
Sample ID: IOI1901-02 (Trip Blank - Water)									
Reporting Units: ug/l									
1,2-Dibromoethane (EDB)	EPA 624	5I28022	0.32	2.0	ND	1	09/28/05	09/28/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5I28022	0.32	5.0	ND	1	09/28/05	09/28/05	
1,2,3-Trichloropropane	EPA 624	5I28022	0.85	10	ND	1	09/28/05	09/28/05	
Di-isopropyl Ether (DIPE)	EPA 624	5I28022	0.25	5.0	ND	1	09/28/05	09/28/05	
tert-Butanol (TBA)	EPA 624	5I28022	3.1	25	ND	1	09/28/05	09/28/05	
Surrogate: Dibromofluoromethane (80-120%)					100 %				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					101 %				

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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: IOI1901	Sampled: 09/26/05 Received: 09/27/05
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ACID & BASE/NEUTRALS BY GC/MS (EPA 625)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Naphthalene	EPA 625	5I28052	4.5	10	39	0.952	09/28/05	10/05/05	
N-Nitrosodimethylamine	EPA 625	5I28052	3.7	20	ND	0.952	09/28/05	10/05/05	
Surrogate: 2-Fluorophenol (30-120%)					63 %				
Surrogate: Phenol-d6 (35-120%)					70 %				
Surrogate: 2,4,6-Tribromophenol (45-120%)					76 %				
Surrogate: Nitrobenzene-d5 (45-120%)					79 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					81 %				
Surrogate: Terphenyl-d14 (45-120%)					79 %				

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MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOI1901
Pasadena, CA 91101
Attention: Bronwyn Kelly
Sampled: 09/26/05
Received: 09/27/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: mg/l									
Ammonia-N (Distilled)	EPA 350.2	5I28099	0.30	0.50	ND	1	09/28/05	09/28/05	
Biochemical Oxygen Demand	EPA 405.1	5I28060	0.59	2.0	2.3	1	09/28/05	10/03/05	
Oil & Grease	EPA 413.1	5I29068	0.94	5.0	ND	1	09/29/05	09/29/05	
Total Dissolved Solids	SM2540C	5I29055	10	10	340	1	09/29/05	09/29/05	
Total Suspended Solids	EPA 160.2	5I28120	10	10	24	1	09/28/05	09/28/05	
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ml/hr									
Total Settleable Solids	EPA 160.5	5I28072	0.10	0.10	ND	1	09/28/05	09/28/05	
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: NTU									
Turbidity	EPA 180.1	5I28080	0.040	1.0	24	1	09/28/05	09/28/05	
Sample ID: IOI1901-01 (Outfall 012 - Water)									
Reporting Units: ug/l									
Perchlorate	EPA 314.0	5I28064	0.80	4.0	ND	1	09/28/05	09/28/05	

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOI1901-01 (Outfall 012 - Water) - cont.									
Reporting Units: ug/l									
1,4-Dioxane	EPA 8260B	P5J0510	0.49	1.0	ND	1	10/05/05	10/05/05	
<i>Surrogate: Dibromofluoromethane (70-130%)</i>					<i>115 %</i>				

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SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOI1901-01) - Water	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	09/26/2005 13:16	09/27/2005 17:30	09/28/2005 09:49	09/28/2005 11:00
EPA 180.1	2	09/26/2005 13:16	09/27/2005 17:30	09/28/2005 10:30	09/28/2005 11:30
EPA 405.1	2	09/26/2005 13:16	09/27/2005 17:30	09/28/2005 12:00	10/03/2005 10:30

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METHOD BLANK/QC DATA

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5I28075 Extracted: 09/28/05											
Blank Analyzed: 09/28/2005 (5I28075-BLK1)											
Total Recoverable Hydrocarbons	ND	1.0	0.31	mg/l							
LCS Analyzed: 09/28/2005 (5I28075-BS1)											
Total Recoverable Hydrocarbons	4.60	1.0	0.31	mg/l	5.00		92	65-120			M-NR1
LCS Dup Analyzed: 09/28/2005 (5I28075-BSD1)											
Total Recoverable Hydrocarbons	4.58	1.0	0.31	mg/l	5.00		92	65-120	0	20	

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METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Limit	Data Qualifiers
Batch: 5I28087 Extracted: 09/28/05											
Blank Analyzed: 09/30/2005 (5I28087-BLK1)											
EFH (C13 - C22)	ND	0.50	0.045	mg/l							
EFH (C13 - C40)	ND	0.50	0.045	mg/l							
Surrogate: n-Octacosane	0.142			mg/l	0.200		71	40-125			
LCS Analyzed: 09/30/2005 (5I28087-BS1)											
EFH (C13 - C40)	0.534	0.50	0.045	mg/l	0.776		69	40-120			M-NRI
Surrogate: n-Octacosane	0.146			mg/l	0.200		73	40-125			
LCS Dup Analyzed: 09/30/2005 (5I28087-BSD1)											
EFH (C13 - C40)	0.477	0.50	0.045	mg/l	0.776		61	40-120	11	25	J
Surrogate: n-Octacosane	0.134			mg/l	0.200		67	40-125			

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Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
Received: 09/27/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5J05041 Extracted: 10/05/05											
Blank Analyzed: 10/05/2005 (5J05041-BLK1)											
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (FID)	0.0112			mg/l	0.0100		112	65-140			
LCS Analyzed: 10/05/2005 (5J05041-BS1)											
GRO (C4 - C12)	0.809	0.10	0.050	mg/l	0.800		101	65-140			
Surrogate: 4-BFB (FID)	0.0390			mg/l	0.0300		130	65-140			
Matrix Spike Analyzed: 10/05/2005 (5J05041-MS1)											
						Source: IOI1901-01					
GRO (C4 - C12)	2.55	0.50	0.25	mg/l	0.220	2.3	114	60-145			
Surrogate: 4-BFB (FID)	0.0108			mg/l	0.0100		108	65-140			
Matrix Spike Dup Analyzed: 10/05/2005 (5J05041-MSD1)											
						Source: IOI1901-01					
GRO (C4 - C12)	2.73	0.50	0.25	mg/l	0.220	2.3	195	60-145	7	20	MI
Surrogate: 4-BFB (FID)	0.0117			mg/l	0.0100		117	65-140			

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Attention: Bronwyn Kelly

Project ID: Alfa Outfall 012 - During Test

Report Number: IOI1901

Sampled: 09/26/05
Received: 09/27/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5I28022 Extracted: 09/28/05										
Blank Analyzed: 09/28/2005 (5I28022-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	24.4			ug/l	25.0		98	80-120		
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120		
Surrogate: 4-Bromofluorobenzene	25.4			ug/l	25.0		102	80-120		
LCS Analyzed: 09/28/2005 (5I28022-BS1)										
1,2-Dibromoethane (EDB)	26.4	2.0	0.32	ug/l	25.0		106	70-125		
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	0.32	ug/l	25.0		95	55-140		
1,2,3-Trichloropropane	23.5	10	0.85	ug/l	25.0		94	55-130		
Di-isopropyl Ether (DIPE)	17.4	5.0	0.25	ug/l	25.0		70	60-135		
tert-Butanol (TBA)	110	25	3.1	ug/l	125		88	65-135		
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101	80-120		
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120		
Surrogate: 4-Bromofluorobenzene	26.0			ug/l	25.0		104	80-120		
Matrix Spike Analyzed: 09/28/2005 (5I28022-MS1)					Source: IOI1878-01					
1,2-Dibromoethane (EDB)	30.7	2.0	0.32	ug/l	25.0	ND	123	65-130		
Methyl-tert-butyl Ether (MTBE)	28.3	5.0	0.32	ug/l	25.0	ND	113	50-150		
1,2,3-Trichloropropane	27.7	10	0.85	ug/l	25.0	ND	111	50-135		
Di-isopropyl Ether (DIPE)	19.3	5.0	0.25	ug/l	25.0	ND	77	60-140		
tert-Butanol (TBA)	107	25	3.1	ug/l	125	ND	86	60-145		
Surrogate: Dibromofluoromethane	26.0			ug/l	25.0		104	80-120		
Surrogate: Toluene-d8	26.2			ug/l	25.0		105	80-120		
Surrogate: 4-Bromofluorobenzene	26.7			ug/l	25.0		107	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: 5I28022 Extracted: 09/28/05											
Matrix Spike Dup Analyzed: 09/28/2005 (5I28022-MSD1)						Source: IOI1878-01					
1,2-Dibromoethane (EDB)	27.3	2.0	0.32	ug/l	25.0	ND	109	65-130	12	25	
Methyl-tert-butyl Ether (MTBE)	23.6	5.0	0.32	ug/l	25.0	ND	94	50-150	18	25	
1,2,3-Trichloropropane	22.2	10	0.85	ug/l	25.0	ND	89	50-135	22	30	
Di-isopropyl Ether (DIPE)	18.9	5.0	0.25	ug/l	25.0	ND	76	60-140	2	25	
tert-Butanol (TBA)	128	25	3.1	ug/l	125	ND	102	60-145	18	25	
Surrogate: Dibromofluoromethane	24.6			ug/l	25.0		98	80-120			
Surrogate: Toluene-d8	25.7			ug/l	25.0		103	80-120			
Surrogate: 4-Bromofluorobenzene	26.2			ug/l	25.0		105	80-120			

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MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOI1901
Pasadena, CA 91101
Attention: Bronwyn Kelly
Sampled: 09/26/05
Received: 09/27/05

METHOD BLANK/QC DATA

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

Analyte Result Reporting Limit MDL Units Spike Level Source Result %REC %REC Limits RPD RPD Limit Data Qualifiers

Batch: 5I28052 Extracted: 09/28/05

Blank Analyzed: 10/03/2005 (5I28052-BLK1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Naphthalene, N-Nitrosodimethylamine, and various surrogate compounds.

LCS Analyzed: 10/03/2005 (5I28052-BS1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Naphthalene, N-Nitrosodimethylamine, and various surrogate compounds.

M-NRI

LCS Dup Analyzed: 10/03/2005 (5I28052-BSD1)

Table with 12 columns: Analyte, Result, Reporting Limit, MDL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Data Qualifiers. Rows include Naphthalene, N-Nitrosodimethylamine, and various surrogate compounds.

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5I28060 Extracted: 09/28/05										
Blank Analyzed: 10/03/2005 (5I28060-BLK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l						
LCS Analyzed: 10/03/2005 (5I28060-BS1)										
Biochemical Oxygen Demand	200	100	30	mg/l	198		101	85-115		
LCS Dup Analyzed: 10/03/2005 (5I28060-BSD1)										
Biochemical Oxygen Demand	202	100	30	mg/l	198		102	85-115	1	20
Batch: 5I28064 Extracted: 09/28/05										
Blank Analyzed: 09/28/2005 (5I28064-BLK1)										
Perchlorate	ND	4.0	0.80	ug/l						
LCS Analyzed: 09/28/2005 (5I28064-BS1)										
Perchlorate	49.3	4.0	0.80	ug/l	50.0		99	85-115		
Matrix Spike Analyzed: 09/28/2005 (5I28064-MS1)										
Perchlorate	54.3	4.0	0.80	ug/l	50.0	3.5	102	80-120		
Matrix Spike Dup Analyzed: 09/28/2005 (5I28064-MSD1)										
Perchlorate	56.0	4.0	0.80	ug/l	50.0	3.5	105	80-120	3	20
Batch: 5I28080 Extracted: 09/28/05										
Blank Analyzed: 09/28/2005 (5I28080-BLK1)										
Turbidity	0.0600	1.0	0.040	NTU						J

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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5I28080 Extracted: 09/28/05										
Duplicate Analyzed: 09/28/2005 (5I28080-DUP1)					Source: IOI1912-01					
Turbidity	ND	1.0	0.040	NTU		ND			20	
Batch: 5I28099 Extracted: 09/28/05										
Blank Analyzed: 09/28/2005 (5I28099-BLK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l						
LCS Analyzed: 09/28/2005 (5I28099-BS1)										
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0		115	80-115		
Matrix Spike Analyzed: 09/28/2005 (5I28099-MS1)					Source: IOI0917-02RE1					
Ammonia-N (Distilled)	11.8	0.50	0.30	mg/l	10.0	0.84	110	70-120		
Matrix Spike Dup Analyzed: 09/28/2005 (5I28099-MSD1)					Source: IOI0917-02RE1					
Ammonia-N (Distilled)	11.5	0.50	0.30	mg/l	10.0	0.84	107	70-120	3	15
Batch: 5I28120 Extracted: 09/28/05										
Blank Analyzed: 09/28/2005 (5I28120-BLK1)										
Total Suspended Solids	ND	10	10	mg/l						
LCS Analyzed: 09/28/2005 (5I28120-BS1)										
Total Suspended Solids	995	10	10	mg/l	1000		100	85-115		
Duplicate Analyzed: 09/28/2005 (5I28120-DUP1)					Source: IOI1833-01					
Total Suspended Solids	ND	10	10	mg/l		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: Alfa Outfall 012 - During Test Report Number: IOI1901	Sampled: 09/26/05 Received: 09/27/05
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METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	RPD Limits	RPD RPD	Data Qualifiers
Batch: 5I29055 Extracted: 09/29/05										
Blank Analyzed: 09/29/2005 (5I29055-BLK1)										
Total Dissolved Solids	ND	10	10	mg/l						
Duplicate Analyzed: 09/29/2005 (5I29055-DUP1)										
Total Dissolved Solids	1660	10	10	mg/l		Source: IOI2017-02 1600		4	10	
Reference Analyzed: 09/29/2005 (5I29055-SRM1)										
Total Dissolved Solids	1020	10	10	mg/l	1000		102	0-200		
Batch: 5I29068 Extracted: 09/29/05										
Blank Analyzed: 09/29/2005 (5I29068-BLK1)										
Oil & Grease	ND	5.0	0.94	mg/l						
LCS Analyzed: 09/29/2005 (5I29068-BS1)										
Oil & Grease	16.7	5.0	0.94	mg/l	20.0		84	65-120		M-NR1
LCS Dup Analyzed: 09/29/2005 (5I29068-BSD1)										
Oil & Grease	15.6	5.0	0.94	mg/l	20.0		78	65-120	7	20

Del Mar Analytical, Irvine
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Project Manager



MWH-Pasadena/Boeing Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOI1901
Pasadena, CA 91101
Attention: Bronwyn Kelly
Sampled: 09/26/05
Received: 09/27/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: P5J0510 Extracted: 10/05/05											
Blank Analyzed: 10/05/2005 (P5J0510-BLK1)											
1,4-Dioxane	ND	1.0	0.49	ug/l							
Surrogate: Dibromofluoromethane	1.11			ug/l	1.00		111	70-130			
LCS Analyzed: 10/05/2005 (P5J0510-BS1)											
1,4-Dioxane	9.63	1.0	0.49	ug/l	10.0		96	70-130			
Surrogate: Dibromofluoromethane	1.14			ug/l	1.00		114	70-130			
LCS Dup Analyzed: 10/05/2005 (P5J0510-BSD1)											
1,4-Dioxane	10.8	1.0	0.49	ug/l	10.0		108	70-130	11	20	
Surrogate: Dibromofluoromethane	1.09			ug/l	1.00		109	70-130			
Matrix Spike Analyzed: 10/05/2005 (P5J0510-MS1)											
						Source: POI0848-01					
1,4-Dioxane	13.3	1.0	0.49	ug/l	10.0	5.5	78	65-125			
Surrogate: Dibromofluoromethane	0.970			ug/l	1.00		97	70-130			
Matrix Spike Dup Analyzed: 10/05/2005 (P5J0510-MSD1)											
						Source: POI0848-01					
1,4-Dioxane	15.2	1.0	0.49	ug/l	10.0	5.5	97	65-125	13	20	
Surrogate: Dibromofluoromethane	0.990			ug/l	1.00		99	70-130			

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: IOI1901

Sampled: 09/26/05
Received: 09/27/05

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.
- M1** The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
- M-NR1** There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
- 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 Project ID: Alfa Outfall 012 - During Test
300 North Lake Avenue, Suite 1200 Report Number: IOI1901
Pasadena, CA 91101
Attention: Bronwyn Kelly Sampled: 09/26/05
Received: 09/27/05

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
Level 4	Water		
SM2540C	Water	X	X

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

Subcontracted Laboratories

Del Mar Analytical - Phoenix NELAC Cert #01109CA, California Cert #2446, Arizona Cert #AZ0426, Nevada Cert #AZ-907
9830 S. 51st Street, Suite B-120 - Phoenix, AZ 85044
Method Performed: EPA 8260B
Samples: IOI1901-01

Del Mar Analytical, Irvine
Michele Harper
Project Manager



17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
 2529 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3820 Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOI1901

SENDING LABORATORY:

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

RECEIVING LABORATORY:

Del Mar Analytical - Phoenix
 9830 S. 51st Street, Suite B-120
 Phoenix, AZ 85044
 Phone : (480) 785-0043
 Fax: (480) 785-0851

Analysis	Expiration	Due	Comments
Sample ID: IOI1901-01 Water	Sampled: 09/26/05 13:16		<i>POI 0799-1</i>
Dioxane-8260B-out	10/10/05 13:16	10/06/05 12:00	Boeing-permit, sub DMAP, J flags, ID=DMA+Outfall 012
Level 4 Data Package - Out	10/24/05 13:16	10/06/05 12:00	Boeing
Containers Supplied:			
40 ml VOA w/HCL (IOI1901-01M)			
40 ml VOA w/HCL (IOI1901-01N)			
40 ml VOA w/HCL (IOI1901-01O)			

SAMPLE INTEGRITY:

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

Released By <i>[Signature]</i>	Date <i>9-28-05</i> Time <i>1700</i>	Received By <i>[Signature]</i>	Date <i>9/29/05</i> Time <i>1000</i>
Released By <i>[Signature]</i>	Date _____ Time _____	Received By <i>[Signature]</i>	Date _____ Time _____

4.5°C

392

101901

CHAIN OF CUSTODY FORM

Del Mar Analytical Version 02/17/05

Client Name/Address:		Project:		ANALYSIS REQUIRED													Field readings:								
MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101		Boeing-SSFL NPDES During Test - Outfall 012 Alfa Test Stand		Sample Description	Sample Matrix	Container Type	# of Cont.	Preservative	Bottle #	Oil & Grease (EPA 413.1)	9015-gas	9015-diesel/jet fuel	1,4-Dioxane-8260B	TRPH=Total Rec. Petroleum Hydrocarbons (EPA 418.1)	624 (E8B, 1,2,3-TCP, 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 = 77.7	pH = 7.83	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																				
Outfall 012 duplicate	W	VOAs	2	HCl	2B, 2C																				
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																				
Outfall 012	W	1L Poly	1	None	11A																				
Trip Blank	W	VOAs	6	HCl	12A, 12B, 12C, 12D, 12E, 12F						X														

Relinquished By: *[Signature]* Date/Time: 9/27/05 0950
 Relinquished By: *[Signature]* Date/Time: 9/27/05 1730
 Relinquished By: *[Signature]* Date/Time: 9/27/05 1730

Received By: *[Signature]* Date/Time: 9/27/05 0950
 Received By: *[Signature]* Date/Time: 9/27/05 1730
 Received By: *[Signature]* Date/Time: 9/27/05 1730

Turn around Time: (check)
 24 Hours _____ 5 Days _____
 48 Hours _____ 10 Days _____
 72 Hours _____ Normal _____
 Perchlorate Only 72 Hours _____
 Metals Only 72 Hours _____
 Sample Integrity: (Check) Intact _____
 On Ice: *5°C*

[Large handwritten signature]