CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA arth & Environmental Package ID T711DF48

AMEC Earth & Environmental		Package ID	T711DF48
550 South Wadsworth Boulevard		-	313150010
Suite 500		SDG No.	Multiple
Lakewood, CO 80226	No	. of Analyses	6
Laboratory Alta		Date: June 1,	2005
Reviewer H. Chang		Reviewer's S	gnature
Analysis/Method Dioxin&Fur	ans/1613	W. Of	/
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ACTION ITEMS*		- 	
1. Case Narrative			
Deficiencies			
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2. Out of Scope			
Analyses			
			
3. Analyses Not Conducted			
4. Missing Hardcopy			**************************************
Deliverables			
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5. Incorrect Hardcopy			
Deliverables			
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******	Detects below the calibration ran	ige were qualifie	ed "J."
, Q,	EMPCs were qualified "UJ."		
Holding Times		······································	
GC/MS Tune/Inst. Perform			
Calibrations			
Blanks			
Surrogates			
Matrix Spike/Dup LCS			
Field QC			
Internal Standard Performance			
Compound Identification and			
Quantitation			
System Performance COMMENTS ^b			
COMMENTS			
Subcontracted analytical laboratory is not meet	ting contract and/or method requirement	ts.	
Differences in protocol have been adopted by t			d



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

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

Prepared by

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

Project: SDG No.: Analysis:

NPDES Multiple D/F

1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

Sample Delivery Group #:

IOD2043, IOD2044, IOD2049, IOD2053, IOD2056 & IOD2058

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Dioxins/Furans

QC Level:

Level IV

No. of Samples:

6

No. of Reanalyses/Dilutions:

0 H. Chang

Reviewer: Date of Review:

June 1, 2005

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

Project: SDG No.: Analysis:

NPDES Multiple D/F

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 001	IOD2043-01	26117-001	water	1613
Outfall 002	IOD2044-01	26112-001	water	1613
Outfall 018	IOD2049-01	26118-001	water	1613
Outfall 004	IOD2053-01	26120-001	water	1613
Outfall 010	IOD2056-01	26116-001	water	1613
Outfall 009	IOD2058-01	26115-001	water	1613

Project: SDG No.: Analysis: NPDES Multiple D/F

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The samples in these SDGs were received at Del Mar Analytical within the temperature limits of 4° C $\pm 2^{\circ}$ C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4° C $\pm 2^{\circ}$ C at 0° C and 1.1° C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

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

2.2.2 Mass Spectrometer Performance

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

Project: SDG No.: **NPDES**

DATA VALIDATION REPORT

Multiple Analysis: D/F

2.3 CALIBRATION

2.3.1 Initial Calibration

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

2.3.2 Continuing Calibration

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

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

2.4 BLANKS

One method blank (6789-MB001) was extracted and analyzed with the samples in these SDGs. There were no target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6789-OPR001) was extracted and analyzed with the samples in these SDGs. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/MSD analyses were not performed in these SDGs. Evaluation of method accuracy was based on the OPR results. No qualifications were required.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

SDG No.: Analysis:

NPDES Multiple D/F

2.7.1 Field Blanks and Equipment Rinsates

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

2.7.2 Field Duplicates

No field duplicate samples were identified for these SDGs.

2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. In five of the six SDGs, the laboratory noted that detects above the low point of the calibration curve but below the EPA Method 1613 minimum level were denoted by an "A" laboratory qualifier. However, all results with "A" qualifier were actually below the low point of the calibration curve and should have been flagged as "J." Also, one of the detects which should have been flagged as "A" was incorrectly flagged as "J" by the laboratory. Any detects below the method minimum level were qualified as estimated, "J." If the concentration of any component of the total was below the lower method calibration level (MCL), the total detect was qualified as estimated, "J." Any reported EMPC was qualified as an estimated nondetect, "UJ." The results and reporting limits were reported in µg/L except for the results in sample Outfall 010 which were reported in ng/L. No further qualifications were required.

4 P		d 1613		30-Apr-05	17-May-05		iers			······································						——————————————————————————————————————	····	·						***************************************				······································	The state of the s	
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		Abreston. D. c.		QC Batch No.: 6789	Date Analyzed DB-5: 19-May-05	Labeled Standard	IS 13C-2378-TCDD	13C-1.2.3.7.8-Pernn	13C-1,2,3,4,7,8-HvCDD	13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,7.8-HnCDD	13C-OCDD	13C-23.7.8.TCDE	13C-1.2.3.7 & Portie	13C-23478 ps.Cpr	13C-1 2 2 4 7 8 11. Cm	13C-12.3.6.78-tu-CDF	13C-2,3,4,6,7,8-HxCDE	13C-1.2.3.7.8 9-HyCDE	13C-1,2,3,4,6,7,8-HnCTDE	13C-1,2,3,4,7,8,9-HpCDF		CRS 37Cl-2,3,7,8-TCDD	Footnotes	a. Sample specific estimated detection limit	b. Estimated maximum possible concentration	c. Method detection limit.	d. Lower control limit - upper control limit.	AMEC VALIDATED	Level IV
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Approved By:

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

ALIA	EPA Method 1613		Date Received: 30-Apr-05	Date Extracted: 17-May-05	⋖	%R LCL-UCL,d Qualifiers	61.2 25 - 164	65.5 25 - 181	63.8 32 - 141					63.6 24 - 185	66.3 21 - 178	65.2 26 - 152	69.0 26 - 123	70.5 28 - 136	62.6 29 - 147	58.0 28 - 143	49.7 26-138		78.7 35-197		And the second s						
	The state of the s	Laboratory Data	Lab Sample: 26112-001	Oate Analyzed DB.5: 19-May 05			LS 13C-2,3,7,8-TCDD	13C-1,2,3,7,8-PeCDD	13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	13C-OCDD	13C 23 4 0 HONY	13C-1 2 2 7 0 p.c.p.r.	120 22 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	13C-2,3,4,7,8-PeCDF	13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,7,8,9-HxCDF	15C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	SC-OCDF CRS 37(12) 3.7 8 TCDD	Factuates	r. CVIROSES	 Sample specific estimated detection limit. 	 Estimated maximum possible concentration. 	c Method detection limit.	d. Lower control limit - upper control limit.	1	AMEC VALIDATED	LEVEL TA
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William J. Luksemburg 20-May-2005 10:57

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Total Harring	2	0.00000180	***************************************	h Fetimated and in the control of th	
	0.00000896			 Estimated maximum possible concentration. 	
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Approved By:

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

	Sample ID:	1002053-01 Outfall 064	A C L	C SHARE TO THE REAL PROPERTY OF THE PROPERTY O		ALIA
	Client Data					RPA Mathod 1613
	Name:	Del Mat Analytical Incine	Sample Data	Data	Laboratory Data	CIOI nomark water
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मुन्तु लुस		1940	Sample Size:	лже: 0.968 Г	OC Batch No.: 6789	Date Extracted: 17-May-05
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3 3 1	1,2,3,4,6,7,8-HpCDF	DF 0.00000258			13C-1,2,3,4,6,7,8-HpCDF	62.5 28 - 143
국 :	1,2,3,4,7,8,9-HpCDF		0.00000180	₹.	13C-1,2,3,4,7,8,9-HpCDF	53.9 26 - 138
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<b>.</b>	Total TCDD	And the state of t		***************************************	Footnotes	
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b h	Total HxCDD	0 (2000)	0.000001/1		<ol> <li>Estimated maximum possible concentration.</li> </ol>	
ダA り	Total HpCDD	0.0000189	4	Manager Control	c. Method detection limit.	
ತ .	Total TCDF	2000	0.000	0.0000352	d. Lower control limit - upper control limit.	
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ora h h h	Total HxCDF Total HpCDF	0.00000229			という。	AMEC VALIDATED
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Approved By:

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

Amount amin'ny fivondronany amin'ny amin'ny amin'ny ananana ananana	EPA Method 1613	30-Apr-05	17-May-05 5: NA	Oualifiere	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7											······································		***************************************	The state of the s	The second section of the second section section sections sections section sections section sections section s		***************************************	······································	***************************************	
Мен транова од настанија на пред настана од него пред настана од настана од настана од настана од настана од н	EPA M	Date Received:	Date Analyzed DB-225; NA	rcr-ucit ^d (	25 - 164		32 - 141		17-157	24 - 169	24 - 185	21 - 178	26 - 132	28 - 136	29 - 147	28 - 143	26 - 138	17-157	35 - 197	A SALATA TANAH KATANI MARKATAN KATANAN ANALAM KATANI ANALAM KATANI KATANI ANALAM KATANI KATANI KATANI KATANI K				CUL	
THE PARTY AND PA		Date R	Date /	%R	9.99	70.0	71.1	63.5	36.0	70.2	71.7	1.57	75.9	78.8	74.7	63.6	6.99	45.5	80.5					MO	נו ו
A THE CONTRACT OF THE PROPERTY		Laboratory Data         26115-001           QC Batch No.:         6789	Date Analyzed DB-5: 19-May-05	Labeled Standard	13C-2,3,7,8-TCDD	13C-1,2,3,7,8-PeCDD	13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,7,8-HpCDD	ISC-OCDD	13C-2,3,7,8-TCDF	13C-7,2,3,7,8-PeCDF 13C-2,3,4,7,8-PeCDF	13C-1,2,3,4,7,8-HxCDF	13C-1,2,3,6,7,8-HxCDF	13C-2,3,4,6,7,8-HxCDF	13C-1,2,3,7,8,9-HxCDF	13C-1,2,3,4,6,7,8-HpCDF	13C-1,2,3,4,7,8,9-HpCDF	ISC-OCDF CRS 37CI-2.3.7 & TCDD	Footnotes	a. Sample specific estimated detection limit	b. Estimated maximum possible concentration,	c. Method detection limit.	d. Lower control limit - upper control limit.	AMEC VALIDATE	
	The second secon	Aqueous 0.960 L		Cualifiers		ter the standard of	Andrew Consideration and Consi	·	<	H-M-mpy A garay		Maria program di di dala maga	O Naddyna 19 cyn	•		<del></del>		<u> </u>	-	3.	<u></u>	<i></i>	-ci		
	Sample Data	Matrix: Sample Size:	quana	EINTL	) <del>/</del>		_			C		·	<b>~</b> 5. €	√ <b>∀</b>											
600	Andrew St.		8 10	000000	0.00000144	0.00000241	0.00000237	0.00000244		0.000000942	0.00000149	0.00000125	0.0000000643	0.000000654	0.00000115	0.00000154	0.00000136	0.00000672		0.00000140	0.00000144 0.00000340	D#200000	0.000000942	0.00000136	
1 Outfall	A CONTRACTOR OF THE PROPERTY O	Del Mar Analytical, Irvine 1002056 28:Apr-05	(ug/L)	QN	ND	ND	<u> </u>	0.0000129	0.000119	2	2 2	g g	2	Q	â	ND	S	ND	TATAL TITLE TO THE PARTY THE STREET OF THE STREET OF THE STREET, T	Q		0.0000303			u.uanaaa890
T-9507(T)	Walter Control of the	Del Mar Ana 1002056 28-Apr-05 1213	CORC.	edelver in the second s	~	00	₹₽					سنند	Œ,	- The state of the	14.	DF	OF	Application of the second seco	невенциямальная выправает стату держина статуры принценерого						
	Client Data	Project: Date Collected: Time Collected:	Analyte	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	',2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	ocoo	4,3,7,8-1CDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	OCUF Totals	Total Torus	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total HxCDF	
			Code					S S	<u>.</u>	√ <b>†</b> :	• (1		yangah Makembanyan	<u>~</u>		·- ·		<u> </u>		, <u>e</u>			<u>ှ</u>		
		, X		ጟ -				<del></del> H	<u>ਤ</u>	- contractor					~~~~			<del></del>	ヹ-	**************************************	> I	9 K 1 =	۲ ۲	MA H	

Analysi: RAS

Approved By:

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

Sample 1D: 10D2058-01	Outhul	010	A THE REAL PROPERTY OF THE PRO	many characteristic management of the desirence of the control of		ARTHURANI (PROPRIA ANTANA) (PROPRIA ANTANA) (PROPRIA ANTANA)		
Cient Data		-	- C	THE CALL STATE OF THE CALL STA			7	era Method 1613
	Del Mar Analytical, Irvine		Sample Data		Laboratory Data	Annual Company of the	- Andreas and the same of the	**************************************
			Matnx	Aqueous	Lab Sample: 26116-001		Date Received:	30. A min. A.
Time Collected: 1205		A TORY AND	Sample Size:	0.957 L			Dare Extracted:	30-Apt-03 17-May-05
Analyte Conc.	(Ba/L)		cand		Date Analyzed DB-5; 19-May-05		Date Analyzed DB-225: NA	B-225: NA
2,3,7,8-TCDD		00100		Quaimers	Labeled Standard	%B	LCL-UCL ^d	L ^d Oualifiers
1,2,3,7,8-PeCDD	2	0.00158			18 13C-2,3,7,8-TCDD	53.3	3 25 164	
1,2,3,4,7,8-HxCDD	2	0.00100			13C-1,2,3,7,8-PeCDD	53.1		
1,2,3,6,7,8-HxCDD	ŝ	100000			13C-1,2,3,4,7,8-HxCDD	62.6	32 - 141	
1,2,3,7,8,9-HxCDD	2	0.00209			13C-1,2,3,6,7,8-HxCDD	63.9	28 - 130	
1,2,3,4,6,7,8-HpCDD	Ş	0.200.0			13C-1,2,3,4,6,7,8-HpCDD	52.7	23 - 140	
OCDD	0.0584	+//00.0			13C-OCDD	29.8		
2,3,7,8-TCDF	Ç Ç	221000		Newny	13C-2,3,7,8-TCDF	57.5		
1,2,3,7,8-PeCDF	Ž	0.00100			13C-1,2,3,7,8-PeCDF	53.6		
2,3,4,7,8-PeCDF	2	0.00202		.——	13C-2,3,4,7,8-PeCDF	55.9		
1,2,3,4.7,8-HxCDF	2	0.00210			13C-1,2,3,4,7,8-HxCDF	6'99	26 - 152	
1,2,3,6,7,8-HxCDF	- Q	0.000738			13C-1,2,3,6,7,8-HxCDF	67.2	26 - 123	
2,3,4,6,7,8-HxCDF	S	0.00070			13C-2,3,4,6,7,8-HxCDF	67.3	28 - 136	
1,2,3,7,8,9-HxCDF	Ŝ	0.00007			13C-1,2,3,7,8,9-HxCDF	59.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	2	0.00231			13C-1,2,3,4,6,7,8-HpCDF	51.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	S	0.00224			13C-1,2,3,4,7,8,9-HpCDF	52.1	26 - 138	
OCDF	S	0.00980			SCOCDF	36.1	17 - 157	
Totals	The state of the s				210-2,3,7,8-TCDD	76.1	35 - 197	
Total TCDD	111	A 60 5 5 5	يووود سيدولودفقو واسيدفودها ويندوسون المتناق ووروبيتها وللمحمد	The second secon	Footnotes	-		
Total PeCDD	į	0.00139			a. Sample specific estimated detection limit.			The state of the s
Total HxCDD		0.00100		<del></del>	b. Estimated maximum possible concentration.	on.		
Total HpCDD	2 5	0.00293			c. Method detection limit.			
Total TCDF	2	0.0137		- Arconant	d. Lower control limit - upper control limit,			
Total PeCDF	2 £	0.00166						
Total HxCDF	Z	0.0023			AMEC VALIDATED	ען ועא או	LATE	ŗ
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Approved By:

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

Project 26116

Analyst, RAS

### CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Farth & Environmental

550 C. A. W. J. S.	Package ID _T711VO105
550 South Wadsworth Boulevan	Task Order 313150010
Suite 500	SDG No. IOD2043, 2045, 2047, 2049
Lakewood, CO 80226	No. of Analyses 8
Laboratory Del Mar	Date: June 13_2005
Reviewer M. Poko	rny Reviewer's Signature
Analysis/Method Volatiles	MA. Ym
ACTION ITEMS ⁴	
1. Case Narrative	
Deficiencies	
2 0 4 50	
2. Out of Scope	
Analyses	
3. Analyses Not Conducted	
5. Analyses Not Conducted	
4. Missing Hardcopy	
Deliverables	
5. Incorrect Hardcopy	
Deliverables	
6. Deviations from Analysis	Qualifications were required for calibration outliers.
Protocol, e.g.,	
Holding Times	
GC/MS Tune/Inst. Perform	
Calibrations	
Blanks	
Surrogates	
Matrix Spike/Dup LCS	
Field QC	
Internal Standard Performance	
Compound Identification and	
Quantitation	
System Performance	
OMMENTS ^b	
Surgarity and applying the town	
Subcontracted analytical laboratory is not me Differences in protocol have been adopted by	eting contract and/or method requirements.  the laboratory but no action against the laboratory is required.



### DATA VALIDATION REPORT

### **NPDES Monitoring**

**ANALYSIS: VOLATILES** 

SAMPLE DELIVERY GROUPs: IOD2043, IOD2044, IOD2047, IOD2049

Prepared by

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

Analysis:

**NPDES** Multiple VOC

#### 1. INTRODUCTION

Task Order Title:

**NPDES Monitoring** 

Contract Task Order #:

313150010

SDG#:

IOD2043, IOD2044, IOD2047, IOD2049

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Volatiles

Level IV

QC Level: No. of Samples:

No. of Reanalyses/Dilutions:

0

Reviewer:

M. Pokorny

Date of Review:

June 13, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Levels C and D Volatile Organics (DVP-2, Rev. 2), EPA Method 624, SW846 Method 8260B, and the National Functional Guidelines For Organic Data Review (2/94). Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the summary forms as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project: SDG: Analysis:

NPDES Multiple VOC

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 001	Outfall 001	IOD2043-01	water	624
Trip Blank	Trip Blank	IOD2043-02	water	624
Outfall 002	Outfall 002	IOD2044-01	water	624
Trip Blank	Trip Blank	IOD2044-02	water	624
Outfall 012	Outfall 012	IOD2047-01	water	624
Trip Blank	Trip Blank	IOD2047-02	water	624
Outfall 018	Outfall 018	IOD2049-01	water	624
Trip Blank	Trip Blank	IOD2049-02	water	624

**NPDES** Multiple VOC

#### 2. DATA VALIDATION FINDINGS

#### 2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

### 2.1.1 Sample Preservation, Handling, and Transport

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

#### 2.1.2 Chain of Custody

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

#### 2.1.3 Holding Times

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

#### 2.2 GC/MS TUNING

The ion abundance windows shown on the quantitation reports were consistent with those specified in 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

Four initial calibrations dated 03/31/05, 04/20/05, 04/29/05, and 04/30/05 were associated with these SDGs. The average RRFs were  $\geq 0.05$  for the target compounds listed on the sample result The %RSDs were ≤35% for all applicable target compounds. Five continuing summaries. calibrations were associated with the sample analyses in these SDGs. trichlorofluoromethane exceeded 20% in the continuing calibration associated with samples Outfall 001 and Outfall 002; therefore, the nondetect results for trichlorofluoromethane were qualified as estimated, "UJ," in samples Outfall 001 and Outfall 002. No qualifications were required for the Trip Blanks. All remaining %Ds were ≤20%. 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.

**NPDES** Multiple Analysis:

#### 2.4 BLANKS

Three water method blanks (5E04019-BLK1, 5E05024-BLK1, and 5E10003-BLK1) were associated with the sample analyses. There were no detects above the MDLs for the target compounds listed on the sample result summaries. The method blank raw data showed no evidence of false negatives. No qualifications were required.

### 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Three water blank spikes (5E04019-BS1, 5E05024-BS1, and 5E10003-BS1) were associated with the sample analyses. All recoveries were within the laboratory-established QC limits. A representative number of recoveries were recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

#### 2.6 SURROGATE RECOVERY

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

#### 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Sample Outfall 001 was the MS/MSD analyses performed with these SDGs. All percent recoveries and RPDs were within the QC limits. No qualifications were required.

#### 2.8 FIELD QC SAMPLES

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

#### 2.8.1 Trip Blanks

Samples Trip Blank (IOD2043-02), Trip Blank (IOD2044-02), Trip Blank (IOD2047-02), and Trip Blank (IOD2049-02) were the trip blanks associated with these SDGs. There were no target compounds detected above the MDLs in the trip blanks. No qualifications were required.

#### 2.8.2 Field Blanks and Equipment Rinsates

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

#### 2.8.3 Field Duplicates

There were no field duplicate samples associated with these SDGs.

Multiple Analysis:

#### 2.9 INTERNAL STANDARDS PERFORMANCE

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

#### 2.10 COMPOUND IDENTIFICATION

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

### 2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

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

#### 2.12 TENTATIVELY IDENTIFIED COMPOUNDS

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

#### 2.13 SYSTEM PERFORMANCE

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

17461 Denan Ave., Suite 150, Mine, CA 93614 (919-261-1932-141, 939-266-156-1034 E. Cooley Us., Suite A. Colton, CA 92323, 1909; 370-4567, FAX, 1449; 873-374 9484 Chestpeake Dr., Suite 805, San Diego, CA 92123 (658) 503-8596 FAX 858 303-459-9630 Sanah 51st St., Saite 8-120, Phaema, AZ 85044 (460) 785-4643 FAX 480 783-462 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena Boeing

Project ID: Routine Outfall 001

300 North Lake Avenue, Suite 1200

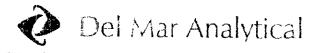
Pasadena, CA 91101 Attention: Bronwyn Kelly Report Number: IOD2043

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

#### DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit			on Date orExtracted	Date Analyz		lata llifiers
Sample ID: IOD2043-01 (D Reporting Units: ug/l	RAFT: Outfall 001 -	Water)						<u>(</u>	CAL.	143
Benzene	EPA 624	51:04019	0.28	2.0	ND	1	05/04/05	05/05/05	U	
Carbon tetrachloride	EPA 624	5E04019	0.28	5.0	ND	1		05/05/05	Ī	
Chloroform	EPA 624	5E04019	0.33	2.0	ND	1		05/05/05		
1.1-Dichloroethane	EPA 624	5E04019	0.27	2.0	ND	1		05/05/05	l	1
1,2-Dichloroethane	EPA 624	5E04019	0.28	2.0	ND	ì		05/05/05	1	
1.1-Dichloroethene	EPA 624	5E04019	0.32	3.0	ND	1		05/05/05	l	
Ethylbenzene	EPA 624	5E04019	0.25	2.0	ND	ì		05/05/05		and the state of t
Tetrachloroethene	EPA 624	51504019	0.32	2.0	ND	1		05/05/05		
Toluene	EPA 624	5E04019	0.36	2.0	ND	1		05/05/05		
1.1,1-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	*		05/05/05	]	
1,1,2-Trichloroethane	EPA 624	SE04019	0.30	2.0	ND	)	05/04/05		l	!
Trichloroethene	EPA 624	5E04019	0.26	5.0	ND	1	05/04/05		1	
Trichlorofluoromethane	EPA 624	5E04019	0.34	5.0	ND	1	05/04/05		UJ.	ے!
Vinyl chloride	EPA 624	5E04019	0.26	5.0	ND	1	05/04/05		U	
Xylenes, Total	EPA 624	5E04019	0.52	4,0	ND	1	05/04/05		Ü	[
Surrogate: Dibromofluorome	·- ·	. 13071077	O.A.F.C.	4.0	107%		0.0/04/03	03/03/03		
Surrogate: Toluene-48 (80-12					107 % 109 %					
Surrogute: 4-Bromofluoroben					99 %					
Sample ID: IOD2043-02 (DI		Maria			99 70					
Reporting Units: ug/l	Cat I. Hip mank - v	vaterj								
Benzene	EPA 624	5E04019	0.28	2.0	ND	İ	05/04/05	05/04/05	U	
Carbon tetrachloride	EPA 624	5E04019	0.28	5.0	ND	1	05/04/05		)	
Chloroform	EPA 624	5E04019	0.33	2.0	ND	1	05/04/05			
1,1-Dichloroethane	EPA 624	5E04019	0.27	2.0	ND	ì	05/04/05			
1,2-Dichloroethane	EPA 624	5E04019	0.28	2.0	ND	1	05/04/05			
1,1-Dichloroethene	EPA 624	5E04019	0.32	3.0	ND	1	05/04/05			
Ethylbenzene	EPA 624	5E04019	0.25	2.0	ND	1	05/04/05			
Tetrachloroethene	EPA 624	5E04019	0.32	2.0	ND	1	05/04/05			
Toluene	EPA 624	5E04019	0.36	2.0	ND	ì	05/04/05			
1,1,1-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1	05/04/05			
1,1,2-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1	05/04/05			
Trichloroethene	EPA 624	5E04019	0.26	5.0	ND	1	05/04/05			
Trichlorofluoromethane	EPA 624	5E04019	0.34	5.0	ND	,	05/04/05			
Vinyl chloride	EPA 624	5E04019	0.26	5.0	ND	¥	05/04/05		i	
Xylenes, Total	EPA 624	5E04019	0.52	4.0	ND	1.	05/04/05		1	
Surrogate: Dibromofluorometi		ar alleger 7 ft à 15	NO enclose	-7.V	101.95	Á	<i>₩310<del>4</del>/</i> <b>₩</b> 3	UJ:U#/UJ	4	
Surrogate: Toluene-d8 (80-12)					108 %					
Surrogate: 4-Bromofluoroben:					98 %					
	cin (00-120/a)				20.20					

### AMEC VALIDATED



17461 Derium Ave., Suite 100, Itvine, CA 92614 (949/261-1022/FAX 949/2606.gg) 1014 E. Choley Dr., Suite A. Colton, CA 92324 (909/370-4667/FAX (949/370-4066) 9484 Cresapenke Dr., Suite 805, Sun Diego, CA 92123 (858/505-8596/FAX)(858/505-4066) 9830 South 5181 St., Suite, 8-120, Phoenix, AZ 85044 (480) 785-4043/FAX (480/785-985-2330 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 758-3620/FAX (702/788-362)

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: 10D2044

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

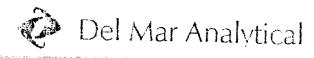
DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit			on Date rExtracted	Date Analyze		Data alifiers
Sample ID: IOD2044-01 (DRAF	FT: Outfall 002 -	Water)							200	1600
Reporting Units: ug/l									المركب أيحار	1 5
Benzene	EPA 624	5E04019	0.28	2.0	ND	1	05/04/05	05/05/05	ひ	
Carbon tetrachloride	EPA 624	5E04019	0.28	5.0	ND	1	05/04/05	05/05/05	1	
Chloroform	EPA 624	5E04019	0.33	2.0	ND	1	05/04/05	05/05/05		
1,1-Dichloroethane	EPA 624	5E04019	0.27	2.0	ND	1	05/04/05	05/05/05	1	
1,2-Dichloroethane	EPA 624	5E04019	0.28	2.0	ND	1		05/05/05	•	
1,1-Dichloroethene	EPA 624	5E04019	0.32	3.0	ND	1		05/05/05		
Ethylbenzene	EPA 624	5E04019	0.25	2.0	ND	1		05/05/05		1
Tetrachloroethene	EPA 624	5E04019	0.32	2.0	ND	1		05/05/05		į
Toluene	EPA 624	5E04019	0.36	2.0	ND	1		05/05/05		
1,1,1-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1		05/05/05		
1,1,2-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1		05/05/05	1	
Trichloroethene	EPA 624	5E04019	0.26	5.0	0.27	1		05/05/05	J	1 DN
Trichlorofluoromethane	EPA 624	5E04019	0.34	5.0	ND	ĺ	05/04/05		UJ	C
Vinyl chloride	EPA 624	5E04019	0.26	5.0	ND	1		05/05/05	Ū	
Xylenes, Total	EPA 624	5E04019	0.52	4.0	ND	1		05/05/05	$\tilde{\mathcal{O}}$	**
Surrogate: Dibromofluoromethan	e (80-120%)				106 %	•	03/04/03	05/05/05	****	
Surrogate: Toluene-d8 (80-120%)					106 %					
Surrogate: 4-Bromofluorobenzene					100 %					
					100 /0					
Sample ID: IOD2044-02 (DRAF Reporting Units: ug/l	I: Irip Blank - \	Water)								mints of the many space.
Benzene	EPA 624	5E04019	0.28	2.0	ND	1	05/04/05	05/05/05	U	
Carbon tetrachloride	EPA 624	5E04019	0.28	5.0	ND	1	05/04/05		<u> </u>	
Chloroform	EPA 624	5E04019	0.33	2.0	ND	1	05/04/05			
1,1-Dichloroethane	EPA 624	SE04019	0.27	2.0	ND	1	05/04/05			
1,2-Dichloroethane	EPA 624	5E04019	0.28	2.0	ND	1	05/04/05			
1,1-Dichloroethene	EPA 624	5E04019	0.32	3.0	ND	1	05/04/05			
Ethylbenzene	EPA 624	5E04019	0.25	2.0	ND	1	05/04/05			
Tetrachloroethene	EPA 624	5E04019	0.32	2.0	ND	1	05/04/05			
Toluene	EPA 624	5E04019	0.36	2.0	ND	1	05/04/05			
1,1,1-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1	05/04/05		1	
1,1,2-Trichloroethane	EPA 624	5E04019	0.30	2.0	ND	1				
Trichloroethene	EPA 624	5E04019	0.26	5.0	ND	1	05/04/05			
Trichlorofluoromethane	EPA 624	5E04019	0.34	5.0	ND ND	1	05/04/05			
Vinyl chloride	EPA 624	5E04019	0.26	5.0	ND		05/04/05		diam'r.	
Xylenes, Total	EPA 624	5E04019	0.52	4.0	ND	4	05/04/05			
Surrogate: Dibromofluoromethane		J.557017	V.JZ	₩.0	101 %	1	05/04/05	UD/UD/UD	Ψ	
Surrogate: Toluene-d8 (80-120%)	(00-120/9)									
Surrogate: 4-Bromofluorobenzene	/R0 1209/3				108 %					
	(00-12076)				95 %					

AMEC VALIDATED

DRAFT REPORT
DRAFT REPORT
DATA SUBJECT TO CHANGE

LEVEL IV



174c1 Derich Ave., State 100, Irvine, CA 92614, (949) 261-1 172, FAX (949), Etc., 12c., 12

MWH-Pasadena/Boeing

Froject ID: Alfa Outrall 012 - During Test

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOD2047

Sampled: 04/28/05

Attention: Bronwyn Kelly

Received: 04/28.05

### DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor E	Date Extracted	Date Analyz	Da ed Quali	
Sample ID: IOD2047-01 (DRAFT Reporting Units: ug/l 1,2-Dibromoethane (EDB)	: Outfall 012 - ' EPA 624	<b>Water)</b> 5E05024	0.32	2.0	ND	1	05/05/05	05105105	REV QUAL	CODE
Methyl-tert-butyl Ether (MTBE) 1,2,3-Trichloropropane Di-isopropyl Ether (DIPE) tert-Butanol (TBA) Surrogate: Dibromofluoromethane (Surrogate: Toluene-d8 (80-120%) Surrogate: 4-Bromofluorobenzene (CSample ID: IOD2047-02 (DRAFT: Reporting Units: ug/l	EPA 624 EPA 624 EPA 624 EPA 624 (80-120%)	5E05024 5E05024 5E05024 5E05024	0.32 0.85 0.25 3.1	5.0 10 5.0 25	ND ND ND ND 114 % 112 % 110 %	breed breed breed	05/05/05	05/05/05 05/05/05	Ī	
1,2-Dibromoethane (EDB) Methyl-tert-butyl Ether (MTBE) 1,2,3-Trichloropropane Di-isopropyl Ether (DIPE) tert-Butanol (TBA) Surrogate: Dibromofluoromethane (Surrogate: Toluene-d8 (80-120%) Surrogate: 4-Bromofluorobenzene (8	EPA 624 EPA 624 EPA 624 EPA 624	5E05024 5E05024 5E05024 5E05024 5E05024	0.32 0.32 0.85 0.25 3.1	2.0 5.0 10 5.0 25	ND ND ND ND ND 111 % 112 % 107 %	1 ( 1 (	05/05/05 05/05/05 05/05/05	05/05/05 05/05/05 05/05/05 05/05/05 05/05/05	U	



LEVEL TU

MWH-Pasadena/Boeing

300 North Lake Avenue. Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Keliy

Project ID: Quarterly Outfall 018

Repor. Number: 10D2049

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

### DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Barch	MDL Limit	Reporting Limit	Sample Result		on Date orExtracted	Date Analyz	Dated Qualit	
Sample ID: IOD2049-01 (DRAFT Reporting Units: ug/l	: Outfall 018 -	Water)							RD QUAL	QUAL
Benzene	EPA 624	5E10003	0.28	2.0	3 17	•	5 W : 4 5 : 2 -	_		CODI
Trichlorotrifluoroethane (Freon 113)	EPA 624	5E10003		5.0	ND	1		05/10/05		
Carbon tetrachloride	EPA 624	5E10003	0.28		ND	1		05/10/05	1	
Chloroform	EPA 624	5E10003	0.33	5.0	ND	1		05/10/05	1	
I.1-Dichloroethane	EPA 624	5F10003	0.33	2.0	ND	1		05/10/05		
1,2-Dichloroethane	EPA 624	51:10:003 51:10:003	0.27	2.0	ND	1		05/10/05	1	]
1,1-Dichloroethene	EPA 624	5E10003	0.42	2.0	ND	1		05/10/05	The state of the s	
Ethylbenzene	EPA 624	5E10003		3.0	ND	1	05/10/05		1	
Tetrachloroethene	EPA 624		0.25	2.0	ND	1	05/10/05			
Toluene	EPA 624	5E10003	0.32	2.0	ND	1	05/10/05		}	
1,1,1-Trichloroethane	EPA 624	5E10003	0.36	2.0	ND	1	05/10/05		1	
1,1,2-Trichloroethane	EPA 624	SE10003	0.30	2.0	ND	1	05/10/05			
Trichloroethene	EPA 624	5E10003	0.30	2.0	ND	I	05/10/05		1 1	
Trichlorofluoromethane	EPA 624	5E10003	0.26	5,0	1.0		05/10/05		<u> </u>	DRIC
Vinyl chloride	EPA 624	5E10003	0.34	5.0	ND	-	05/10/05			
Xylenes, Total		SE10003	0.26	5.0	ND	1	05/10/05	05/10/05	t. ·	
Surrogate: Dibromofluoromethane (	EPA 624	5E10003	0.52	4.()	ND	1	05/10/05	05/10/05		
Surrogate: Toluene-d8 (80-120%)	ov-130%)				108 %				ŀ	
Surrogate: 4-Bromofluorobenzene (&	RO-120%)				104 %					
					104 %					
Sample ID: IOD2049-02 (DRAFT: Reporting Units: ug/l	1 rip Blank - \	Vater)								
Benzene	EPA 624	5E10003	0.28	3.6	X tres		a <b>.</b>		T-COT -	
Trichlorotrifluoroethane (Freon 113)	EPA 624	5E10003	1.2	2.0 5.0	ND	1	05/10/05		(:	
Carbon tetrachloride	EPA 624	5E10003	0.28		ND	1	05/10/05			
Chloroform	EPA 624	5E10003	0.23	5.0	ND	1	05/10/05			
1,1-Dichloroethane	EPA 624	5E10003	0.27	2.0	ND	1	05/10/05 (			
1,2-Dichloroethane	EPA 624	5E10003	0.27	2.0	ND	1	05/10/05 (			
1,1-Dichloroethene	EPA 624	5E10003	0.42	2.0	ND	1	05/10/05 (			
Ethylbenzene	EPA 624	5E10003		3.0	ND	1	05/10/05 (			
Tetrachloroethene	EPA 624	5.E10003	0.25	2.0	ND	1	05/10/05 (		**************************************	
Toluene	EPA 624	5E10003	0.32	2.0	ND	1	05/10/05 (			
1,1,1-Trichloroethane	EPA 624	5E10003	0.36	2.0	ND	1	05/10/05 0			
1,1,2-Trichloroethane	EPA 624		0.30	2.0	ND	1	05/10/05 0			
Trichloroethene	EPA 624	5E10003	0.30	2.0	ND	1	05/10/05 0			
Trichlorofluoromethane	EPA 624	5E10003	0.26	5.0	ND		05/10/05 0			
Vinyl chloride	EPA 624		0.34	5.0	ND		05/10/05 0			
Xylenes, Total	EPA 624		0.26	5.0	ND		05/10/05 0			
Surrogate: Dibromofluoromethane (8)	12.71.024 0.7300/1	5E10003	0.52	4.0	ND	1	05/10/05 0	5/10/05		
Surrogate: Toluene-d8 (80-120%)	J*14U70J				105 %					
Surrogate: 4-Bromofluorobenzene (80	-120%)				102%					
BB AET DEBORE	· / · · /				103 %					

DRAFT REPORT DRAFT REPORT

DATA SUBJECT TO CHANGE

AMEC VALIDATED

#### CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711WC151 550 South Wadsworth Boulevard Task Order 313150010 Suite 500 SDG No. IOD2043, IOD2044, IOD2047, IOD2049 Lakewood, CO 80226 No. of Analyses Laboratory Del Mar Analytical Date: 06/03/05 Reviewer L. Jarusewic Reviewer's Signature Analysis/Method General Minerals Luseille **ACTION ITEMS**^a Case Narrative Deficiencies Out of Scope Analyses **Analyses Not** Conducted 4. Missing Hardcopy **Deliverables**

### Data Qualifier Reference Table

Qualifier	Organics	Inorganies
Ū	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
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards u for the calibration was incorrect
С	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within contlimits.
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparati (method) or calibration blank.
I.	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was r within control limits.
Q	MS/MSD recovery was poor or RPD high.	
2	Not applicable.	MS recovery was poor.
	Internal standard performance was unsatisfactory.	Duplicates showed poor agreement. ICP ICS results were unsatisfactory.
1	Not applicable.	ICP Serial Dilution %D were not with control limits.
1 -	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
•	Presumed contamination from trip blank.	Not applicable.
	False positive – reported compound was not present. Not applicable.	The approach.
	False negative – compound was present but not reported.	Not applicable.
	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
	Reported result or other information was incorrect.	Reported result or other information wa incorrect.
	TIC identity or reported retention time has been changed.	Not applicable.
	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.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
1Q	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. *I 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 GROUPS: IOD2043, IOD2044, IOD2047,

IOD2049

Prepared by

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

Project: SDG No.: NPDES

Analysis:

Multiple General Minerals

#### 1. INTRODUCTION

Task Order Title: NPDES Monitoring

Contract Task Order #: 313150010

DATA VALIDATION REPORT

Sample Delivery Group #: IOD2043, IOD2044, IOD2047, IOD2049

Project Manager: B. McIlvaine

Matrix: Water

Analysis: General Minerals

OC Level: Level IV

No. of Samples: 4

Reviewer: L. Jarusewic Date of Review: June 3, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 180.1, 120.1, 405.1, 413.1, 160.2, 160.5, 418.1, 300.0, 425.1, 160.1, and 335.2, 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.

Project:

SDG No.:

**NPDES** Multiple

Analysis:

General Minerals

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	Outfall 001	IOD2043-01	Water	General Minerals
Outfall 002	Outfall 002	IOD2044-01	Water	General Minerals
Outfall 012	Outfall 012	IOD2047-01	Water	General Minerals
Outfall 018	Outfall 018	IOD2049-01	Water	General Minerals

DATA VALIDATION REPORT

Project: SDG No.:

NPDES Multiple

Analysis:

General Minerals

### 2. DATA VALIDATION FINDINGS

#### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

### 2.1.1 Sample Preservation, Handling, and Transport

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

#### 2.1.2 Chain of Custody

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

#### 2.1.3 Holding Times

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

#### 2.2 CALIBRATION

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

#### 2.3 BLANKS

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

Project: SDG No.: NPDES Multiple

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General Minerals

DATA VALIDATION REPORT

SDG No.:
Analysis:

### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

#### 2.5 SURROGATES RECOVERY

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

#### 2.6 LABORATORY DUPLICATES

MS/MSD analyses were not performed in association with the samples in these SDGs; therefore, no assessment was made with respect to this criterion.

### 2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

### 2.8 FURNACE ATOMIC ABSORPTION QC

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

#### 2.9 ICP SERIAL DILUTION

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

#### 2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in 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. Surfactant detected below the reporting limit was qualified as estimated, "J," in sample Outfall 018. No further qualifications were required.

Project:

NPDES

SDG No.: Analysis:

Multiple General Minerals

DATA VALIDATION REPORT

#### 2.11 FIELD QC SAMPLES

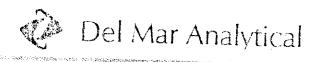
Field QC samples are evaluated, and if necessary, qualified based only on laboratory blanks. Any remaining detects are used to evaluate the associated samples. The following are findings associated with field QC samples:

### 2.11.1 Field Blanks and Equipment Rinsates

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

#### 2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.



174617 Crian Avo., Spice 106, Evine, CA 92614 (409, 261, 10, 2, 743, 949, 266, 7, 1614 F. Cooley, Dr., Suite A, Colton, CA 92324 (906, 370-4667 FAX (948) 376-103, 9484 Chesapterse Dr., Suite 865, San Diego, CA 92725 (838, 506, 8356) FAX (956, 507) and 9850 South 51st St., Soile 8-120, Phoenix, AZ 85:44 - 48th 7554043 (AX, Carl 785400) 21.20 £, Stinset Rd. #2, Las Vegas, NV 89120 (702) 798-34.20 FAX (702) 798-34.2

MWH-Pasadena/Boeing

Project ID: Routine Outfell 001

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Attention: Bronwyn Kelly

Report Number: IOD2043

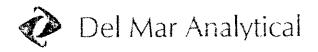
Sampled: 04/28/05 Received: 04/28/05

**DRAFT: INORGANICS** 

		DWAL	1.1146	MOANI	US				
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted		ata iifi
Sample ID: IOD2043-01 (DRAF) Reporting Units: mg/l	T: Outfall 001 -	Water) - con	t.					REV	18
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	0.84	ų.	05/07/05	05/02/05	
Sample ID: IOD2043-01 (DRAFT Reporting Units: NTU	: Outfall 001 - V	Vater)			<i>510</i> (	ŗ	03/02/03	00/02/05	
Turbidity	EPA 180.1	5D29110	0.040	1.0	7,6	1	ΛΔ/20/0¢	04/29/05	
Sample ID: IOD2043-01 (DRAFT Reporting Units: umhos/cm	: Outfall 001 - V	Vater)			.,,,	*	04727703	04/29:05	
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	620	1 (	04/29/05	04/29/05	

AMEC VALIDATED

LEVEL IV



17461 Derkin Ave., Suite 100, Irvine, CA 92614 (949) 2: 1-1022 FAX (649-26) 3-95 (1945-1014 E. Ceoley Dr., Suite A. Colton, CA 92324 (209) 37044667 FAX (945-370-1046-9284 Chesapenke Or., Suite 895, San Diego, CA 92123 (858) 503-8596 FAX (850) 365 (666-9830 South 51st St., Suite 8-120, Phoenix, AZ 85044 (460) 785-0943 FAX (460) 785-4634 FAX (460) 785-463

MWH-Pasadena Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Report Number: IOD2044

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

DRAFT: INORGANICS

	Digit I. L. OKOM III									
Analyte	Method	Batch	MDL Limit	Reporting Limit	•	Dilution Factor E		Date Analyze	Data d Qualifie	rs
Sample ID: IOD2044-01 (DRAFT: Reporting Units: mg/l	Outfall 002 - V	Vater)						<u> </u>	SUL C	O
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	0.84	- Grein-	05/02/05	05/02/05		
Sample ID: IOD2044-01 (DRAFT: Reporting Units: NTU	Outfall 002 - V	Vater)							Trick the state of	
Turbidity	EPA 180.1	5D29110	0.080	2.0	79	2	04/29/05	04/29/05		
Sample ID: IOD2044-01 (DRAFT: Reporting Units: umhos/cm	Outfall 002 - V	Vater)								
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	590	1	04/29/05	04/29/05		
						•			1	

### **AMEC VALIDATED**



17461 Derian Ave., Sidie 100, Ivdine, CA 92.11, 3640, 264-7222 FAX 3400-264, 3017 1014 E. Cuoley Dr., Sidie A., Culton, CA 92324 (900) 373-4607 FAX 340-373-373-373. 9484 Chesapitake Dr., Suite 805, San Diego, CA 92123, (858), 505-1596. FAX (758), 505-903-1 9830 Sorah 51st St., Suite 8-120, Phoenix, AZ 83034 (409) 285-0343 FAX (400) 788-0003 2520 E. Sunser Rd. #3, Las Vegas, NV 8-120 (*02) 798-3620 F.W. (702) 798-3621

MWH-Pasadena Boeing

Project ID: Alfa Outfall 012 - During Test

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Report Number: IOD2047

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

			* * * : * *	71/CI/X1411	CO .					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted	Date Analyz	D: ed Qual	ata lifiero
Sample ID: IOD2047-01 (DRAF Reporting Units: mg/l	T: Outfall 012 -	Water) - con	t.					i	REV QUAL	Ca
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	እ Tም>					
Biochemical Oxygen Demand	EPA 405.1	5D29091		0.50	ND		05/02/05		u	1
Oil & Grease	EPA 413.1		0.59	2.0	3.2	Ī	04/29/05	05/04/05		
Total Dissolved Solids		5E04036	0.94	5.0	ND	}	05/04/05	05/04/05	u	ŀ
Total Suspended Solids	SM2540C	5D29129	10	10	250			04/29/05		
Total Suspended Solids	EPA 160.2	5E04071	10	10	21			05/04/05		
Sample ID: IOD2047-01 (DRAF) Reporting Units: ml/l/hr Total Settleable Solids	T: Outfall 012 - V EPA 160.5	Vater) 5D29094	0.10	C.10	0.10			04/29/05		
Sample ID: IOD2047-01 (DRAFT Reporting Units: NTU	Γ: Outfall 012 - V	Vater)			3710	1	74142103	04/49/05		
Turbidity	EPA 180.1		0.040	1.0	23	1 6	14/29/05	04/29/05		
Sample ID: IOD2047-01 (DRAFT Reporting Units: ug/l	f: Outfall 012 - W	l'ater)					, i, a ), 6 )	U4:209/UJ		
Perchlorate	EPA 314.0	5D29065	0.80	4.0	ND	1 0	4/29/05	04/30/05	*	
									·	

### AMEC VALIDATED

# LEVEL IV

* Annalytic Not Vellan



17461 Craken Ave., Suite 100, Evine, CA 9281 1-2949; 261-1022. FAX (948) 260-32 21 10 4 E. Cooley Dr., Suite A, Coltina, CA 92314. (509, 370-404) 143 1949. 370-1046. 9409 Chestovake Dr., Suite 605, San Pilogo, CA 97120. (858) 505-8596. FAX (958) 505-8620. 9830 Suith 5181 St., Suite 8-120, Phoenix, AZ 83044. (480) 780-0043. FAX (488) 780-8834. 2520 E. Nimert Rd. #3, Las Vegas, NV 89120. (702) 798-3620. FAX (702) 798-3624.

MWH-Pasadena/Boeing

Project ID: Alfa Outfall 012 - During Test

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOD2047

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

Attention: Bronwyn Kelly

## DRAFT: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

MDL Reporting Sample Dilution Date Analyte Method Batch Limit Result Factor Extracted Limit Analyzed_Qualifiers Sample ID: IOD2047-01 (DRAFT: Outfall 012 - Water) Reporting Units: mg/l Total Recoverable Hydrocarbons EPA 418.1 5D30026 0.31 1.0 5.6 04/30/05 04/30/05

## **AMEC VALIDATED**



DRAFT REPORT
DATA SUBJECT TO CHANGE

52463 Perilab Avol., Suite 100, Invine, CA 92614 (949) 265-3022 FAX (64) (2562) 2313 E. Cooley En., Soite A. Collon, CA 92524 (988) 375-4667 [A Vistor State) 9414 Chesiphake Sr., Suite 805 San Diego, CA 92123 (858) 305-8396 FAX (818-500.00) 99:30 South, \$78:51. Stille B-120, Phoenix, AZ 87024, (480) 785-4513, 1-AX (450) 785-65. 2620 E. Sinset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAV (702) 756-31. era obra e bilgo e superio de se entra esperio porta e entra obra , se en el ser entre en la colo de como de l

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project (D: Quarterly Outfall 018

Report Number: IOD2049

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

## **DRAFT: INORGANICS**

Chloride		
Sample ID: IOD2049-01 (DRAFT: Outfall 018 - Water) - cont.  Reporting Units: mg/l  Ammonia-N (Distilled)		e Data zed Qualifiers
Ammonia-N (Distilled)	· · · · · · · · · · · · · · · · · · ·	REX PU
Sample ID: IOD2049-01 (DRAFT: Outfall 018 - Water)   Reporting Units: mi/l/hr     Total Settleable Solids   EPA 160.5   SID29094   0.10   0.10   ND   1   04/29/05     Sample ID: IOD2049-01 (DRAFT: Outfall 018 - Water)     Reporting Units: NTU   EPA 180.1   SID29110   0.080   2.0   42   2   04/29/05     Reporting Units: ug/l   Contail 018 - Water)   Contail 018 - Water)	05/02/05 05/04/05 05/04/05 05/04/05 05/04/05 05/04/05 05/04/05 05/04/28/05 05/04/29/05	u
Sample ID: 1OD2049-01 (DRAFT: Outfall 018 - Water)  Reporting Units: NTU  Turbidity EPA 180.1 5D29110 0.080 2.0 42 2 04/29/05  Reporting Units: ug/l  Reporting Units: ug/l		
Sample ID: 1OD2049-01 (DRAFT: Outfall 018 - Water)  Reporting Units: ug/l	5 04/29/05	u
Fand County: ug/	5 04/29/05	the Tribition of the Control of the
31747003 U.80 411 ND 1 04/20/05	04/29/05	, ,
Sample ID: IOD2049-01 (DRAFT: Outfall 018 - Water) Reporting Units: umhos/em	04/30/05 .	*
Specific Conductance EPA 120.1 5D29130 1.0 1.0 450 1 04/29/05	04/29/05	

# AMEC VALIDAILU



*Analysis Not Validated

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE



#### LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project: Routine Outfall 002

Sampled: 05/05/05

Received: 05/05/05

Issued: 07/01/05 16:21

#### 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, I 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.

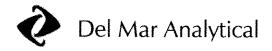
LABORATORY ID	CLIENT ID	MATRIX
IOE0358-01	Outfall 002	Water
IOE0358-02	Trip Blank	Water

Reviewed By:

Del Mar Analytical, Irvine

Michele Harper

Michele Harper Project Manager



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Pasadena, CA 91101

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Report Number: IOE0358

Sampled: 05/05/05

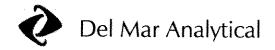
Received: 05/05/05

#### **PURGEABLES BY GC/MS (EPA 624)**

				`		,			
Analysa	Notal and	D i. l.	MDL	Reporting	_	Dilution		Date	Data
Analyte	Method	Batch	Limit	Limit	Result	Factor	Extracted	Analyzed	Qualifiers
Sample ID: IOE0358-01 (Outfall 002 - V	Vater)				Samp	led: 05/05	5/05		
Reporting Units: ug/l									
Benzene	EPA 624	5E10014	0.28	2.0	ND	1	05/10/05	05/10/05	
Carbon tetrachloride	EPA 624	5E10014	0.28	5.0	ND	1	05/10/05	05/10/05	
Chloroform	EPA 624	5E10014	0.33	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethane	EPA 624	5E10014	0.27	2.0	ND	1	05/10/05	05/10/05	
1,2-Dichloroethane	EPA 624	5E10014	0.28	2.0	ND	1	05/10/05	05/10/05	
1,1-Dichloroethene	EPA 624	5E10014	0.32	3.0	ND	1	05/10/05	05/10/05	
Ethylbenzene	EPA 624	5E10014	0.25	2.0	ND	1	05/10/05	05/10/05	
Tetrachloroethene	EPA 624	5E10014	0.32	2.0	ND	1	05/10/05	05/10/05	
Toluene	EPA 624	5E10014	0.36	2.0	ND	1	05/10/05	05/10/05	
1,1,1-Trichloroethane	EPA 624	5E10014	0.30	2.0	ND	1	05/10/05	05/10/05	
1,1,2-Trichloroethane	EPA 624	5E10014	0.30	2.0	ND	1	05/10/05	05/10/05	
Trichloroethene	EPA 624	5E10014	0.26	5.0	ND	1	05/10/05	05/10/05	
Trichlorofluoromethane	EPA 624	5E10014	0.34	5.0	ND	1	05/10/05	05/10/05	
Vinyl chloride	EPA 624	5E10014	0.26	5.0	ND	1	05/10/05	05/10/05	
Xylenes, Total	EPA 624	5E10014	0.52	4.0	ND	1	05/10/05	05/10/05	
Surrogate: Dibromofluoromethane (80-12	0%)				114%				
Surrogate: Toluene-d8 (80-120%)					103 %				
Surrogate: 4-Bromofluorobenzene (80-120	<i>1%)</i>				103 %				
Sample ID: IOE0358-02 (Trip Blank - W	ater)				Samp	led: 05/05	5/05		
Reporting Units: ug/l									
Benzene	EPA 624	5E11004	0.28	2.0	ND	1	05/11/05	05/11/05	
Carbon tetrachloride	EPA 624	5E11004	0.28	5.0	ND	1	05/11/05	05/11/05	
Chloroform	EPA 624	5E11004	0.33	2.0	ND	1	05/11/05	05/11/05	
1,1-Dichloroethane	EPA 624	5E11004	0.27	2.0	ND	1	05/11/05	05/11/05	
1,2-Dichloroethane	EPA 624	5E11004	0.28	2.0	ND	1	05/11/05	05/11/05	
1,1-Dichloroethene	EPA 624	5E11004	0.32	3.0	ND	1	05/11/05	05/11/05	
Ethylbenzene	EPA 624	5E11004	0.25	2.0	ND	1	05/11/05	05/11/05	
Tetrachloroethene	EPA 624	5E11004	0.32	2.0	ND	1	05/11/05	05/11/05	
Toluene	EPA 624	5E11004	0.36	2.0	ND	1	05/11/05	05/11/05	
1,1,1-Trichloroethane	EPA 624	5E11004	0.30	2.0	ND	1	05/11/05	05/11/05	
1,1,2-Trichloroethane	EPA 624	5E11004	0.30	2.0	ND	1	05/11/05	05/11/05	
Trichloroethene	EPA 624	5E11004	0.26	5.0	ND	I	05/11/05	05/11/05	
Trichlorofluoromethane	EPA 624	5E11004	0.34	5.0	ND	1	05/11/05	05/11/05	
Vinyl chloride	EPA 624	5E11004	0.26	5.0	ND	1	05/11/05	05/11/05	
Xylenes, Total	EPA 624	5E11004	0.52	4.0	ND	I	05/11/05	05/11/05	
Surrogate: Dibromofluoromethane (80-120	0%)				100 %				
Surrogate: Toluene-d8 (80-120%)					104 %				
Surrogate: 4-Bromofluorobenzene (80-120	%)				98 %				

Del Mar Analytical, Irvine

Michele Harper Project Manager



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0358-01 (Outfall 002 - V	(ater)				Samo	led: 05/0	5/05		
Reporting Units: ug/l					*				
Bis(2-ethylhexyl)phthalate	EPA 625	5E09040	1.1	5.0	ND	0.957	05/09/05	05/12/05	
2,4-Dinitrotoluene	EPA 625	5E09040	0.23	9.0	ND	0.957	05/09/05	05/12/05	
N-Nitrosodimethylamine	EPA 625	5E09040	0.22	8.0	ND	0.957	05/09/05	05/12/05	
Pentachlorophenol	EPA 625	5E09040	0.78	8.0	ND	0.957	05/09/05	05/12/05	
2,4,6-Trichlorophenol	EPA 625	5E09040	0.10	6.0	ND	0.957	05/09/05	05/12/05	
Surrogate: 2-Fluorophenol (30-120%)					64 %				
Surrogate: Phenol-d6 (35-120%)					64 %				
Surrogate: 2,4,6-Tribromophenol (45-120	%)				81 %				
Surrogate: Nitrobenzene-d5 (45-120%)					68 %				
Surrogate: 2-Fluorobiphenyl (45-120%)					71%				
Surrogate: Terphenyl-d14 (45-120%)					76 %				



MWH-Pasadena/Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOE0358

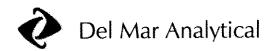
Sampled: 05/05/05

Attention: Bronwyn Kelly

Received: 05/05/05

### **ORGANOCHLORINE PESTICIDES (EPA 608)**

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0358-01 (Outfall 002 - Wa Reporting Units: ug/l	ter) - cont.				Samp	led: 05/05	5/05		
alpha-BHC Surrogate: Decachlorobiphenyl (45-120%) Surrogate: Tetrachloro-m-xylene (35-115%)	EPA 608	5E06083	0.0010	0.010	ND 71 % 48 %	0.98	05/06/05	05/10/05	



MWH-Pasadena/Boeing

Pasadena, CA 91101

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

| Sampled: 05/05/05 | Report Number: 10E0358 | Received: 05/05/05

Attention: Bronwyn Kelly

ZALIKASI DI PENDENGAN PANDAN PANDAN PENDENGAN 
			META	ALS					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0358-01 (Outfall Reporting Units: ug/l	002 - Water) - cont.				Samp	led: 05/05	5/05		
Copper Lead Mercury	EPA 200.8 EPA 200.8 EPA 245.1	5E05129 5E05129 5E06058	0.49 0.13 0.063	2.0 1.0 0.20	2.0 0.54 ND	1 1 1	05/05/05 05/05/05 05/06/05	05/06/05 05/06/05 05/06/05	B, L, J



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

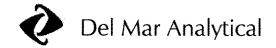
Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### **INORGANICS**

		***	·OXCO	TAL VACCO					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0358-01 (Outfall (	002 - Water) - cont.				Samn	led: 05/0	5/05		
Reporting Units: mg/l					•				
Ammonia-N (Distilled)	EPA 350.2	5E10082	0.30	0.50	ND	1	05/10/05	05/10/05	
Biochemical Oxygen Demand	EPA 405.1	5E05069	0.59	2.0	1.0	1	05/05/05	05/10/05	J
Chloride	EPA 300.0	5E05126	2.6	5.0	39	10	05/05/05	05/06/05	
Nitrate/Nitrite-N	EPA 300.0	5E05126	0.072	0.26	ND	1	05/05/05	05/06/05	
Oil & Grease	EPA 413.1	5E06041	0.94	5.0	ND	1	05/06/05	05/06/05	
Sulfate	EPA 300.0	5E05126	1.8	5.0	230	10	05/05/05	05/06/05	
Surfactants (MBAS)	SM5540-C	5E05131	0.044	0.10	ND	1	05/05/05	05/05/05	
Total Dissolved Solids	SM2540C	5E05110	10	10	640	1	05/05/05	05/05/05	
Total Suspended Solids	EPA 160.2	5E11092	10	10	ND	1	05/11/05	05/11/05	
Sample ID: IOE0358-01 (Outfall 0 Reporting Units: ml/l/hr	02 - Water)				Sampl	led: 05/05	5/05		
Total Settleable Solids	EPA 160.5	5E06104	0.10	0.10	ND	I	05/06/05	05/06/05	
Sample ID: IOE0358-01 (Outfall 0 Reporting Units: NTU	02 - Water)				Sampl	ed: 05/05	5/05		
Turbidity	EPA 180.1	5E06087	0.040	1.0	1.7	1	05/06/05	05/06/05	
Sample ID: IOE0358-01 (Outfall 00 Reporting Units: ug/l	02 - Water)				Sampl	ed: 05/05	5/05		
Total Cyanide	EPA 335.2	5E06064	2.2	5.0	ND	1	05/06/05	05/06/05	
Perchlorate	EPA 314.0	5E10060	0.80	4.0	ND	1	05/10/05	05/10/05	C
Sample ID: IOE0358-01 (Outfall 00 Reporting Units: umhos/cm	02 - Water)				Sample	ed: 05/05	/05		
Specific Conductance	EPA 120.1	5E09096	1.0	1.0	960	1	05/09/05	05/09/05	



MWH-Pasadena/Boeing

Pasadena, CA 91101

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

Attention: Bronwyn Kelly

#### SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 002 (IOE0358-01) - Wate	Hold Time (in days)	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 160.5	2	05/05/2005 13:05	05/05/2005 18:15	05/06/2005 20:05	05/06/2005 21:05
EPA 180.1	2	05/05/2005 13:05	05/05/2005 18:15	05/06/2005 13:00	05/06/2005 14:00
EPA 300.0	2	05/05/2005 13:05	05/05/2005 18:15	05/05/2005 23:30	05/06/2005 02:32
EPA 405.1	2	05/05/2005 13:05	05/05/2005 18:15	05/05/2005 20:00	05/10/2005 14:40
SM5540-C	2	05/05/2005 13:05	05/05/2005 18:15	05/05/2005 22:00	05/05/2005 23:18

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **PURGEABLES BY GC/MS (EPA 624)**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source	%DFC	%REC	RPD	RPD	Data
Batch: 5E10014 Extracted: 05/10/05		***************************************		CHILL	Leves	Kesuit	POREA	Lunus	KPD	Limit	Qualifiers
Daten: 3E10014 Extracted: 05/10/05	•										
Blank Analyzed: 05/10/2005 (5E10014-Bl	LK1)										
Benzene	ND	2.0	0.28	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chloroform	ND	2.0	0.33	ug/l							
1,1-Dichloroethane	ND	2.0	0.27	ug/l							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	3.0	0.32	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/I							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	5.0	0.26	ug/i							
Trichlorofluoromethane	ND	5.0	0:34	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Surrogate: Dibromofluoromethane	26.2			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.3			ug/l	25.0		101	80-120			
LCS Analyzed: 05/10/2005 (5E10014-BS1)				_							
Benzene	23.8	2.0	0.28	ug/l	25.0		95	70-120			
Carbon tetrachloride	28.7	5.0	0.28	ug/l	25.0		115	70-140			
Chloroform	24.6	2.0	0.33	ug/l	25.0		98	75-130			
1,1-Dichloroethane	23.8	2.0	0.27	ug/l	25.0		95	70-135			
1,2-Dichloroethane	25.4	2.0	0.28	ug/l	25.0		102	60-150			
1,1-Dichloroethene	23.3	3.0	0.32	ug/l	25.0		93	75-135			
Ethylbenzene	22.3	2.0	0.25	ug/l	25.0		89	80-120			
Tetrachloroethene	22.0	2.0	0.32	ug/l	25.0		88	75-125			
Toluene	23.4	2.0	0.36	ug/l	25.0		94	75-120			
1,1,1-Trichloroethane	25.4	2.0	0.30	ug/l	25.0		102	75-120 75-140			
1,1,2-Trichloroethane	24.4	2.0	0.30	ug/l	25.0		98	70-125			
Trichloroethene	23.1	5.0	0.26	ug/l	25.0			80-120			
Trichlorofluoromethane	24.4		0.34	ug/l	25.0			65-145			
Vinyl chloride	20.0		0.26	ug/l	25.0			50-130			
Surrogate: Dibromofluoromethane	27.8			ug/l	25.0			30-130 8 <i>0-120</i>			
Del Mar Analytical, Irvine				&- *	m=.U		111	30~14U			

#### Del Mar Analytical, Irvine

Michele Harper Project Manager

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

> Data Qualifiers

#### METHOD BLANK/QC DATA

## PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source	%REC	%REC	RPD	RPD Limit
Batch: 5E10014 Extracted: 05/10/05						*******	/VICE	Limits	NI D	T-HHIIL
LCS Analyzed: 05/10/2005 (5E10014-BS1	`									
Surrogate: Toluene-d8										
Surrogate: 4-Bromofluorobenzene	26.4			ug/l	25.0		106	80-120		
•	26.2			ug/l	25.0		105	80-120		
Matrix Spike Analyzed: 05/10/2005 (5E10	014-MS1)				Sour	rce: IOE0	452-02			
Benzene	23.7	2.0	0.28	ug/l	25.0	ND	95	70-120		
Carbon tetrachloride	28.4	5.0	0.28	ug/l	25.0	ND	114	70-145		
Chloroform	24.6	2.0	0.33	ug/l	25.0	ND	98	70-135		
I, I-Dichloroethane	24.0	2.0	0.27	ug/l	25.0	0.41	94	65-135		
1,2-Dichloroethane	24.9	2.0	0.28	ug/l	25,0	ND	100	60-150		
1,1-Dichloroethene	22.9	3.0	0.32	ug/l	25.0	ND	92	65-140		
Ethylbenzene	21.7	2.0	0.25	ug/l	25.0	ND	87	70-130		
Tetrachloroethene	21.8	2.0	0.32	ug/I	25.0	ND	87	70-130		
Toluene	23.3	2.0	0.36	ug/l	25.0	ND	93	70-120		
1,1,1-Trichloroethane	25.4	2.0	0.30	ug/l	25.0	ND	102	75-140		
1,1,2-Trichloroethane	24.0	2.0	0.30	ug/i	25.0	ND	96	60-135		
Trichloroethene	22.7	5.0	0.26	ug/l	25.0	ND	91	70-125		
Trichlorofluoromethane	25.0	5.0	0.34	ug/l	25.0	ND	100	55-145		
Vinyl chloride	24.0	5.0	0.26	ug/l	25.0	4.5	78	40-135		
Surrogate: Dibromofluoromethane	28.2			ug/l	25.0	112	113	80-120		
Surrogate: Toluene-d8	26.7			ug/l	25.0		107	80-120		
Surrogate: 4-Bromofluorobenzene	26.2			ug/I	25.0		105	80-120		
Matrix Spike Dup Analyzed: 05/10/2005 (5	E10014-MSD	1)			Sour	e: IOE04	E2 82			
Benzene	23.5	2.0	0.28	ug/l	25.0	ND	94	70.170	•	2.0
Carbon tetrachloride	28.3	5.0	0.28	ug/l	25.0	ND ND	113	70-120	1	20
Chloroform	24.2	2.0	0.33	ug/l	25.0	ND ND	97	70-145	0	25
1,1-Dichloroethane	23.8	2.0	0.27	ug/l	25.0	0.41	94	70-135	2	20
1,2-Dichloroethane	24.3	2.0	0.28	ug/l	25.0	0.41 ND	94	65-135	1	20
1,1-Dichloroethene	22.5	3.0	0.32	ug/l	25.0	ND ND		60-150 65-140	2	20
Ethylbenzene	21.7	2.0	0.25	ug/l	25.0	ND			2	20
Tetrachloroethene	21.3	2.0	0.32	ug/l	25.0	ND ND		70-130	0	20
Toluene	23.0	2.0	0.36	ug/l	25.0	ND ND		70-130	2	20
1,1,1-Trichloroethane	25.2	2.0	0.30	ug/l	25.0	ND ND		70-120 75-140	1	20
1,1,2-Trichloroethane	23.5	2.0	0.30	ug/l	25.0	ND ND		75-140	1	20
Trichloroethene	22.3	5.0	0.26	ug/l	25.0	-		60-135	2	25
Trichlorofluoromethane	24.9	5.0	0.34	ug/l	25.0	ND ND		70-125 55-145	2	20
			- Per I		22.0	ND	100	JJ~14)	U	25

Del Mar Analytical, Irvine

Michele Harper Project Manager

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

300 North Lake Avenue, Suite 1200

Project ID: Routine Outfall 002

Pasadena, CA 91101

A 91101

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **PURGEABLES BY GC/MS (EPA 624)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E10014 Extracted: 05/10/05											
Matrix Spike Dup Analyzed: 05/10/2005	(5E10014-M	SD1)			Sou	rce: IOE	0452-02				
Vinyl chloride	24.6	5.0	0.26	ug/l	25.0	4.5	80	40-135	2	30	
Surrogate: Dibromofluoromethane	27.9			ug/l	25.0		112	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	26.5			ug/l	25.0		106	80-120			
Batch: 5E11004 Extracted: 05/11/05	<del>-</del>										
Blank Analyzed: 05/11/2005 (5E11004-B)	LK1)										
Benzene	ND	2.0	0.28	ug/l							
Trichlorotrifluoroethane (Freon 113)	ND	5.0	1.2	ug/l							
Carbon tetrachloride	ND	5.0	0.28	ug/l							
Chloroform	ND	2.0	0.33	ug/i							
1,1-Dîchloroethane	ND	2.0	0.27	ug/i							
1,2-Dichloroethane	ND	2.0	0.28	ug/l							
1,1-Dichloroethene	ND	3.0	0.32	ug/l							
Ethylbenzene	ND	2.0	0.25	ug/l							
Tetrachloroethene	ND	2.0	0.32	ug/l							
Toluene	ND	2.0	0.36	ug/l							
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l							
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l							
Trichloroethene	ND	5.0	0.26	ug/l							
Trichlorofluoromethane	ND	5.0	0.34	ug/l							
Vinyl chloride	ND	5.0	0.26	ug/l							
Xylenes, Total	ND	4.0	0.52	ug/l							
Surrogate: Dibromofluoromethane	24.7			ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	26.0			ug/l	25.0		104	80-120	-		
Surrogate: 4-Bromofluorobenzene	24.6			ug/l	25.0		98	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: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **PURGEABLES BY GC/MS (EPA 624)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E11004 Extracted: 05/11/05											
	**										
LCS Analyzed: 05/11/2005 (5E11004-BS)	)										
Benzene	23.4	2.0	0.28	ug/l	25.0		94	70-120			
Carbon tetrachloride	20.6	5.0	0.28	ug/l	25.0		82	70-140			
Chloroform	22.1	2.0	0.33	ug/l	25.0		88	75-130			
I,1-Dichloroethane	22.3	2.0	0.27	ug/l	25.0		89	70-135			
1,2-Dichloroethane	20.2	2.0	0.28	ug/l	25.0		81	60-150			
1,1-Dichloroethene	23.3	3.0	0.32	ug/l	25.0		93	75-135			
Ethylbenzene	22.7	2.0	0.25	ug/l	25.0		91	80-120			
Tetrachloroethene	21.9	2.0	0.32	ug/l	25.0		88	75-125			
Toluene	22,4	2.0	0.36	ug/l	25.0		90	75-120			
1,1,1-Trichloroethane	20.4	2.0	0.30	ug/I	25.0		82	75-140			
1,1,2-Trichloroethane	23.0	2.0	0.30	ug/l	25.0		92	70-125			
Trichloroethene	22.3	5.0	0.26	ug/l	25.0		89	80-120			
Trichlorofluoromethane	18.0	5.0	0.34	ug/l	25.0		72	65-145			
Vinyl chloride	13.8	5.0	0.26	ug/l	25.0		55	50-130			
Surrogate: Dibromofluoromethane	24.8			ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	25.9			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	24.5			ug/l	25.0		98	80-120			
Matrix Spike Analyzed: 05/11/2005 (5E11	004-MS1)				Sour	ce: IOE0	121-07				
Benzene	22.1	2.0	0.28	ug/l	25.0	ND	88	70-120			
Carbon tetrachloride	21.6	5.0	0.28	ug/l	25.0	ND	86	70-145			
Chloroform	22,4	2.0	0.33	ug/l	25.0	ND	90	70-135			
1,1-Dichloroethane	21.9	2.0	0.27	ug/l	25.0	ND	88	65-135			
1.2-Dichloroethane	20.8	2.0	0.28	ug/l	25.0	ND	83	60-150			
1,1-Dichloroethene	21.9	3.0	0.32	ug/l	25.0	ND	88	65-140			
Ethylbenzene	22.4	2.0	0.25	ug/l	25.0	ND	90	70-130			
Tetrachloroethene	21.7	2.0	0.32	ug/l	25.0	ND	87	70-130			
Toluene	21.5	2.0	0.36	ug/l	25.0	ND	86	70-120			
1,1,1-Trichloroethane	21.1	2.0	0.30	ug/l	25.0	ND	84	75-140			
1,1,2-Trichloroethane	21.6	2.0	0.30	ug/l	25.0	ND	86	60-135			
Trichloroethene	22,4	5.0	0.26	ug/l	25.0	0.88	86	70-125			
Trichlorofluoromethane	19.7	5.0	0.34	ug/l	25.0	ND	79	55-145			
Vinyl chloride	15.9	5.0	0.26	ug/l	25.0	ND	64	40-135			
Surrogate: Dibromofluoromethane	25.6	~	<del></del>	ug/l	25.0	1417		80-120			
Surrogate: Toluene-d8	25.8			ug/l	25.0			80-120 80-120			
Surrogate: 4-Bromofluorobenzene	25.1			ug/l	25.0			80-120 80-120			
The Edition Annual attention to				"8" ·	**************************************		100	UU*14U			

#### Del Mar Analytical, Irvine

Michele Harper Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

#### METHOD BLANK/QC DATA

## PURGEABLES BY GC/MS (EPA 624)

Analyte  Batch: 5E11004 Extracted: 05/11/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Matrix Spike Dup Analyzed: 05/11/2005	(5E11004-M	SD1)			Sou	rce: IOE(	121.07				
Benzene	20.2	2.0	0.28	ug/l	25.0	ND	81	70-120	0	20	
Carbon tetrachloride	19.4	5.0	0.28	ug/l	25.0	ND ND	78	70-120	9 11	20	
Chloroform	19.5	2.0	0.33	ug/l	25.0	ND ND	78	70-145	14	25	
1,1-Dichloroethane	19.3	2.0	0.27	ug/l	25.0	ND ND	77	65-135		20	
1,2-Dichloroethane	19.0	2.0	0.28	ug/l	25.0	ND ND	76	60-150	13	20	
1,1-Dichloroethene	19.6	3.0	0.32	ug/l	25.0	ND ND	78	65-140	9	20	
Ethylbenzene	19.8	2.0	0.25	ug/l	25.0	ND ND	79	70-130	11	20	
Tetrachloroethene	19.2	2.0	0.32	ug/l	25.0	ND ND	79 77	70-130 70-130	12	20	
Toluene	19.6	2.0	0.36	ug/l	25.0	ND ND	78	70-130	12	20	
1,1,1-Trichloroethane	19.0	2.0	0.30	ug/l	25.0	ND	76	75-140	9	20	
1,1,2-Trichloroethane	20.4	2.0	0.30	ug/l	25.0	ND ND	82	60-135	10	20	
Trichloroethene	20.0	5.0	0.26	ug/I	25.0		o∡ 76		6	25	
Trichlorofluoromethane	17.1	5.0	0.34	-		0.88	-	70-125	11	20	
Vinyl chloride	13.2	5.0		ug/l	25.0	ND	68	55-145	14	25	
Surrogate: Dibromofluoromethane	25,3	3.0	0.26	ug/l	25.0	ND	53	40-135	19	30	
Surrogate: Toluene-d8				ug/l	25.0			80-120			
10	26.0			ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.3			ug/l	25.0		101	80-120			

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Report Number: IOE0358

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Sampled: 05/05/05 Received: 05/05/05

#### METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Data Qualifiers
Batch: 5E09040 Extracted: 05/09/0	5										
Blank Analyzed: 05/12/2005 (5E09040-l	BLK1)										
Bis(2-ethylhexyl)phthalate	ND	5.0	1.1	ug/l							
2,4-Dinitrotoluene	ND	9.0	0.23	ug/l							
N-Nitrosodimethylamine	ND	8.0	0.22	ug/l							
Pentachlorophenol	ND	8.0	0.78	ug/l							
2,4,6-Trichlorophenol	ND	6.0	0.10	ug/l							
Surrogate: 2-Fluorophenol	12.9			ug/l	20.0		64	30-120			
Surrogate: Phenol-d6	12.6			ug/l	20.0		63	35-120			
Surrogate: 2,4,6~Tribromophenol	15.1			ug/l	20.0		76	45-120			
Surrogate: Nitrobenzene-d5	6.48			ug/l	10.0		65	45-120			
Surrogate: 2-Fluorobiphenyl	7.14			ug/l	10.0		71	45-120			
Surrogate: Terphenyl-d14	8.12			ug/l	10.0		81	45-120			
LCS Analyzed: 05/12/2005 (5E09040-BS	S1)										M-NR1
Bis(2-ethylhexyl)phthalate	8.04	5.0	1.1	ug/l	10.0		80	60-130			
2,4-Dinitrotoluene	7.38	9.0	0.23	ug/l	10.0		74	60-120			J
N-Nitrosodimethylamine	6.86	8.0	0.22	ug/l	10.0		69	40-120			J
Pentachlorophenol	8.06	8.0	0.78	ug/l	10.0		81	50-120			
2,4,6-Trichlorophenol	8.18	6.0	0.10	ug/l	10.0		82	60-120			
Surrogate: 2-Fluorophenol	12.0			ug/l	20.0		60	30-120			
Surrogate: Phenol-d6	12.4			ug/l	20.0		62	35-120			
Surrogate: 2,4,6-Tribromophenol	15.7			ug/l	20.0		78	45-120			
Surrogate: Nitrobenzene-d5	6.46			ug/l	10.0		65	45-120			
Surrogate: 2-Fluorobiphenyl	7.20			ug/l	10.0		72	45-120			
Surrogate: Terphenyl-d14	7.42			ug/l	10.0		74	45-120			
LCS Dup Analyzed: 05/12/2005 (5E090-	(0-BSD1)										
Bis(2-ethylhexyl)phthalate	8.90	5.0	1.1	ug/l	10.0		89	60-130	10	20	
2,4-Dinitrotoluene	8.04	9.0	0.23	ug/l	10.0		80	60-120	9	20	J
N-Nitrosodimethylamine	7.42	8.0	0.22	ug/l	10.0		74	40-120	8	20	J
Pentachlorophenol	8.54	8.0	0.78	ug/l	10.0		85	50-120	6	25	
2,4,6-Trichlorophenol	8.98	6.0	0.10	ug/l	10.0		90	60-120	9	20	
Surrogate: 2-Fluorophenol	13.9			ug/l	20.0		70	30-120			
Surrogate: Phenol-d6	14.1			ug/l	20.0		70	35-120			
Surrogate: 2,4,6-Tribromophenol	17.0			ug/l	20.0		85	45-120			
Surrogate: Nitrobenzene-d5	7.26			ug/l	10.0		73	45-120			
Surrogate: 2-Fluorobiphenyl	8.18			ug/l	10.0		82	45-120			

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: Routine Outfall 002

Report Number: IOE0358

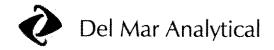
Sampled: 05/05/05 Received: 05/05/05

#### METHOD BLANK/QC DATA

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

Analyte	Result	Limit	MDL	Units	Spike Level	Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E09040 Extracted: 05/09/05											
LCS Dup Analyzed: 05/12/2005 (5E0904	0-BSD1)										
Surrogate: Terphenyl-d14	7.86			ug/l	10.0		79	45-120			

**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: Routine Outfall 002

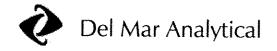
Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **ORGANOCHLORINE PESTICIDES (EPA 608)**

		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E06083 Extracted: 05/06/05	-										
Blank Analyzed: 05/10/2005 (5E06083-B)	LK1)										
alpha-BHC	ND	0.010	0.0010	ug/l							
Surrogate: Decachlorobiphenyl	0.378			ug/l	0.500		76	45-120			
Surrogate: Tetrachloro-m-xylene	0.294			ug/l	0.500		59	35-115			
LCS Analyzed: 05/10/2005 (5E06083-BS)	l)										
alpha-BHC	0.302	0.010	0.0010	ug/l	0.500		60	45-115			
Surrogate: Decachlorobìphenyl	0.356			ug/l	0.500		71	45-120			
Surrogate: Tetrachloro-m-xylene	0.291			ug/l	0.500		58	35-115			
LCS Dup Analyzed: 05/10/2005 (5E06083	3-BSD1)										
alpha-BHC	0.343	0.010	0.0010	ug/l	0.500		69	45-115	13	30	
Surrogate: Decachlorobiphenyl	0.394			ug/l	0.500		79	45-120			
Surrogate: Tetrachloro-m-xylene	0.301			ug/l	0.500		60	35-115			



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

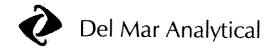
METHOD BLANK/QC DATA

#### **METALS**

Analyte	Result	Reporting Limit	MDL	W7-24-	Spike	Source	A	%REC	***	RPD	Data
•		Limit	MIDE	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E05129 Extracted: 05/05/05	•										
Blank Analyzed: 05/06/2005 (5E05129-BI	LK1)										
Copper	ND	2.0	0.49	ug/l							
Lead	0.306	0.1	0.13	ug/l							J
LCS Analyzed: 05/06/2005 (5E05129-BS1	)										
Copper	86.9	2.0	0.49	ug/l	80.0		109	85-115			
Lead	92.5	1.0	0.13	ug/l	80.0		116	85-115			L
Matrix Spike Analyzed: 05/06/2005 (5E05	3129-MS1)				Som	rce: IOE(	358-01				
Copper	76.0	2.0	0.49	ug/l	80.0	2.0	92	70-130			
Lead	83.0	1.0	0.13	ug/l	80.0	0.54	103	70-130			
Matrix Spike Dup Analyzed: 05/06/2005 (	5E05129-MS	D1)			Sour	ce: IOE0	358-01				
Copper	75.6	2.0	0.49	ug/l	80.0	2.0	92	70-130	1	20	
Lead	80.9	1.0	0.13	ug/l	80.0	0.54	100	70-130	3	20	
Batch: 5E06058 Extracted: 05/06/05											
Blank Analyzed: 05/06/2005 (5E06058-BL	KI)										
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 05/06/2005 (5E06058-BS1)	)										
Mercury	7.99	0.20	0.063	ug/l	8.00		100	85-115			
Matrix Spike Analyzed: 05/06/2005 (5E06	058-MS1)				Sour	ce: IOE0	336-01				
Mercury	7.74	0.20	0.063	ug/l	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 05/06/2005 (	5E06058-MS	D1)			Sour	ce: IOE0	336-01				
Mercury	7.67	0.20	0.063	ug/l	8.00	ND	96	70-130	1	20	

**Del Mar Analytical, Irvine** Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **INORGANICS**

Analyte	Result	Reporting	) (I) I	<b>.</b>	Spike	Source		%REC		RPD	Data
*		Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E05069 Extracted: 05/05/05	_										
Blank Analyzed: 05/10/2005 (5E05069-Bl	LK1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 05/10/2005 (5E05069-BS1	<b>)</b>										
Biochemical Oxygen Demand	201	100	30	mg/l	198		102	85-115			
LCS Dup Analyzed: 05/10/2005 (5E05069	-BSD1)										
Biochemical Oxygen Demand	198	100	30	mg/l	198		100	85-115	2	20	
Batch: 5E05110 Extracted: 05/05/05	•										
Blank Analyzed: 05/05/2005 (5E05110-BI	.K1)										
Total Dissolved Solids	ND	10	10	mg/I							
LCS Analyzed: 05/05/2005 (5E05110-BS1	)										
Total Dissolved Solids	962	10	10	mg/l	1000		96	90-110			
Duplicate Analyzed: 05/05/2005 (5E05110	-DUP1)				Sour	ce: IOE02	233-01				
Total Dissolved Solids	1610	10	10	mg/l		1600			*	10	
Batch: 5E05126 Extracted: 05/05/05											
Blank Analyzed: 05/05/2005 (5E05126-BL	K1)										
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							

Del Mar Analytical, Irvine Michele Harper Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

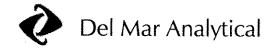
#### METHOD BLANK/QC DATA

#### **INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E05126 Extracted: 05/05/05	_										
LCS Analyzed: 05/05/2005 (5E05126-BS)	l)										
Chloride	4.80	0.50	0.26	mg/l	5.00		96	90-110			
Sulfate	9.64	0.50	0.18	mg/l	10.0		96	90-110			
Matrix Spike Analyzed: 05/06/2005 (5E0)	5126-MS1)				Sou	rce: IOE	0373-01				
Chloride	37.5	1.0	0.52	mg/l	5.00	32	110	80-120			
Sulfate	42.9	1.0	0.36	mg/l	10.0	33	99	80-120			
Matrix Spike Dup Analyzed: 05/06/2005	(5E05126-M	SD1)			Sou	rce: IOE	0373-01				
Chloride	37.9	1.0	0.52	mg/l	5.00	32	118	80-120	1	20	
Sulfate	43.5	1.0	0.36	mg/l	10.0	33	105	80-120	1	20	
Batch: 5E05131 Extracted: 05/05/05	···										
Blank Analyzed: 05/05/2005 (5E05131-B	LK1)										
Surfactants (MBAS)	ND	0.10	0.044	mg/l							
LCS Analyzed: 05/05/2005 (5E05131-BS)	1)										
Surfactants (MBAS)	0.253	0.10	0.044	mg/l	0.250		101	90-110			
Matrix Spike Analyzed: 05/05/2005 (5E0	5131-MS1)				Sou	rce: IOE	0278-01				
Surfactants (MBAS)	0.257	0.10	0.044	mg/l	0.250	0.047	84	50-125			
Matrix Spike Dup Analyzed: 05/05/2005	(5E05131-M	(SD1)			Sou	rce: IOE	0278-01				
Surfactants (MBAS)	0.263	0.10	0.044	mg/l	0.250	0.047	86	50-125	2	20	
Batch: 5E06041 Extracted: 05/06/05	·										
Blank Analyzed: 05/06/2005 (5E06041-B	LK1)										
Oil & Grease	1.10	5.0	0.94	mg/l							J

**Del Mar Analytical, Irvine** Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

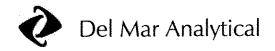
Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **INORGANICS**

A milk d		Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E06041 Extracted: 05/06/05	•										
LCS Analyzed: 05/06/2005 (5E06041-BS1	1										*****
Oil & Grease	22.0	5.0	0.94	mg/l	20.0		110	65-120			M-NR1
		5.0	0.54	mg/i	20.0		110	03-120			
LCS Dup Analyzed: 05/06/2005 (5E06041											
Oil & Grease	18.3	5.0	0.94	mg/l	20.0		92	65-120	18	20	
Batch: 5E06064 Extracted: 05/06/05	•										
Direct Accelerate Afficianos (Process NY	***										
Blank Analyzed: 05/06/2005 (5E06064-BI				~							
Total Cyanide	ND	5.0	2.2	ug/l							
LCS Analyzed: 05/06/2005 (5E06064-BS1	)										
Total Cyanide	183	5.0	2.2	ug/l	200		92	90-110			
Matrix Spike Analyzed: 05/06/2005 (5E06	064-MS1)				Sour	ce: IOE0	287-06				
Total Cyanide	178	5.0	2.2	ug/l	200	ND	89	70-115			
Matrix Spike Dup Analyzed: 05/06/2005 (	SEUKUKATMEL	11)			Sonr	ce: IOE0	287 86				
Total Cyanide	179	5.0	2.2	ug/l	200	ND	90	70-115	1	15	
•		• • • •		4.g/.	-00	: 42.5	,,	70-115	•	13	
Batch: 5E06087 Extracted: 05/06/05											
Blank Analyzed: 05/06/2005 (5E06087-BL	K1)										
Turbidity	0.0400	1.0	0.040	NTU							J
•		***		.,,0	_						J
Duplicate Analyzed: 05/06/2005 (5E06087		• •			Sour	ce: IOE0	336-01				
Turbidity	4.29	1.0	0.040	NTU		4.3			0	20	

**Del Mar Analytical, Irvine** Michele Harper Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

#### METHOD BLANK/QC DATA

#### **INORGANICS**

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E09096 Extracted: 05/09/05	*										
Duplicate Analyzed: 05/09/2005 (5E0909					Sou	rce: IOE(	358-01				
Specific Conductance	953	1.0	1.0	umhos/cm		960			l	5	
Batch: 5E10060 Extracted: 05/10/05	*										
Blank Analyzed: 05/10/2005 (5E10060-B	LK1)										
Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 05/10/2005 (5E10060-BS)											
Perchlorate	48.9	4.0	0.80	ug/l	50.0		98	85-115			
Matrix Spike Analyzed: 05/10/2005 (5E1	0060-MS1)				Sou	rce: IOE(	9554-03				
Perchlorate	52.9	4.0	0.80	ug/l	50.0	ND	106	80-120			
Matrix Spike Dup Analyzed: 05/10/2005	(5E10060-MS	(D1)			Sou	rce: IOE(	)554-03				
Perchlorate	51.3	4.0	0.80	ug/l	50.0	ND	103	80-120	3	20	
Batch: 5E10082 Extracted: 05/10/05	•										
Blank Analyzed: 05/10/2005 (5E10082-B	LK1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 05/10/2005 (5E10082-BS)	l)										
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0		95	80-115			
Matrix Spike Analyzed: 05/10/2005 (5E1)	0082-MS1)				Sou	rce: IOE(	)529-04				
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120			

**Del Mar Analytical, Irvine** Michele Harper Project Manager



MWH-Pasadena/Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOE0358

Sampled: 05/05/05

Received: 05/05/05

Attention: Bronwyn Kelly

#### METHOD BLANK/QC DATA

#### **INORGANICS**

	:	Reporting			Spike	Source		%REC		RPD	Data
Analyte	Result	Limit	MDL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifiers
Batch: 5E10082 Extracted: 05/10/05											
Matrix Spike Dup Analyzed: 05/10/2005	(5E10082-MSI	<b>D1</b> )			Sou	rce: IOE(	)529-04				
Ammonia-N (Distilled)	9.24	0.50	0.30	mg/l	10.0	ND	92	70-120	3	15	
Batch: 5E11092 Extracted: 05/11/05											
Blank Analyzed: 05/11/2005 (5E11092-BI	-K1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/11/2005 (5E11092-BS1	)										
Total Suspended Solids	991	10	10	mg/l	1000		99	85-115			
Duplicate Analyzed: 05/11/2005 (5E11092	2-DUP1)				Sou	rce: IOE(	1441-01				
Total Suspended Solids	ND	10	10	mg/l		ND				10	



MWH-Pasadena/Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Repo

Attention: Bronwyn Kelly

roject its. Rodine Oddan 002

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

#### **Compliance Check**

The results obtained from the analytical testing of this data set were checked against compliance limits received from the client. Any results at or above the compliance limits appear in bold on this page.

LabNumber	Analysis	Analyte	Units	Result	MRL	Compliance Limit
IOE0358-01	413.1 Oil and Grease	Oil & Grease	mg/l	0.67	5.0	10.00
IOE0358-01	608-Pest Boeing 001/002 Q (LL)	alpha-BHC	ug/l	0	0.010	0.0100
IOE0358-01	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3.20
IOE0358-01	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00
IOE0358-01	625-Boeing 001/002 Q-LL	2,4,6-Trichlorophenol	ug/l	0	6.0	6.50
IOE0358-01	625-Boeing 001/002 Q-LL	2,4-Dinitrotoluene	ug/l	0	9.0	9.10
IOE0358-01	625-Boeing 001/002 Q-LL	Bis(2-ethylhexyl)phthalate	ug/l	0.27	5.0	4.00
IOE0358-01	625-Boeing 001/002 Q-LL	N-Nitrosodimethylamine	ug/l	0	8.0	8.10
IOE0358-01	625-Boeing 001/002 Q-LL	Pentachlorophenol	ug/l	0	8.0	8.20
IOE0358-01	BOD	Biochemical Oxygen Demand	mg/l	1.00	2.0	20
IOE0358-01	Chloride - 300.0	Chloride	mg/l	39	5.0	150
IOE0358-01	Copper-200.8	Copper	ug/l	2.00	2.0	7.10
IOE0358-01	Cyanide-335.2 5ppb	Total Cyanide	ug/l	-4	5.0	4.30
IOE0358-01	Lead-200.8	Lead	ug/l	0.54	1.0	2.60
IOE0358-01	MBAS - SM5540-C	Surfactants (MBAS)	mg/l	0.0095	0.10	0.50
IOE0358-01	Mercury - 245.1	Mercury	ug/l	0	0.20	0.20
IOE0358-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.0091	0.26	8.00
IOE0358-01	Perchlorate 314.0	Perchlorate	ug/l	0	4.0	6.00
IOE0358-01	Sulfate-300.0	Sulfate	mg/l	230	5.0	300
IOE0358-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	640	10	950
IOE0358-02	624-Boeing 001/002 Q (Fr113+X)	1,1-Dichloroethene	ug/l	0	3.0	3,20
IOE0358-02	624-Boeing 001/002 Q (Fr113+X)	Trichloroethene	ug/l	0	5.0	5.00



MWH-Pasadena/Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Sampled: 05/05/05

Report Number: 10E0358

Received: 05/05/05

Attention: Bronwyn Kelly

Pasadena, CA 91101

#### DATA QUALIFIERS AND DEFINITIONS

**B** Analyte was detected in the associated Method Blank.

C Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not

impacted.

Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the

Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

L Laboratory Control Sample recovery was above the method control limits. Analyte not detected, data not impacted.

M-NR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike

Duplicate.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference



MWH-Pasadena/Boeing

Project ID: Routine Outfall 002

300 North Lake Avenue, Suite 1200

Sampled: 05/05/05

Report Number: IOE0358

Received: 05/05/05

Attention: Bronwyn Kelly

Pasadena, CA 91101

#### **Certification Summary**

#### Del Mar Analytical, Irvine

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

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

#### **Subcontracted Laboratories**

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

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOE0358-01

Analysis Performed: EDD + Level 4

Samples: IOE0358-01

**Del Mar Analytical, Irvine** Michele Harper Project Manager CHAIN OF CUSTODY FORM

Temp =64.2 Field readings: Comments Page 1 of PH= 7.9 24 TAT 24 TAT 24 TAT 24 TAT 10 Days Sample Integrity: (Check) Intact On ice. pentachlorophenol (EPA 625) Turn around Time: (check) 24 Hours 5 Da Perchlorate Only 72 Hours ethylhexyl)phthalate, NDMA × Metals Only 72 Hours Dinitrotoluene, Bis(2-2,4,6 Trichlorophanol, 2,4 Alpha BHC (608) × 48 Hours 72 Hours M-sinommA × ANALYSIS REQUIRED Conductivity × Turbidity, TDS, TSS, Perchlorate × CI-' 204' NO3+NO5-N' SABM) sinstoshu2 BOD5(20 degrees C) Cyanide (total recoverable) × Oil & Grease (EPA 413.1) × TCDD (and all congeners) × × × VOCs 624 + xylenes Date/Time Settleable Solids × Ca, Pb, Hg, × Total Recoverable Metals: 14A, 14B, 14C 10A, 10B 13A, 13B 12A, 12B 8A, 8B 4A, 4B 5A, 5B 9A, 9B 3A. 3B, 3C S ₹ 0 Bottle φ Preservative Received By Boeing-SSFL NPDES Routine Outfall 002 H2S04 HN03 None None None None None None None None Ş 오 오 (626) 568-6515 (626) 568-6691 Phone Number Fax Number: 5-5-8 13:06 Sampling Date/Time 550 1635 Date/Time: 18 Del Mar Analytical version 02/17/05 Project Date/Time 0 4 0 4 0 4 0 4 Project Manager: Bronwyn Kelly 300 North Lake Avenue, Suite 1200 N C4 ŝ ď Poly-500 mi Poly-500 mi Sample Container Matrix Type 1L Amber Poly-500 11. Amber 1L Amber Poly-1 liter Poly-500 Poly-500 ml Glass-VOAs Poly-1 liter Poly-1 liter Poly-1 VOAs 2 LOUR Sampler: Marine/ Client Name/Address: MWH-Pasadena Pasadena, CA 91101 Relinguished By 3 ₹ ₹ ₹ ₹ ₹ ₹ 3 3 3 3 ≥ Description Outfall 002-Dup Outfall 002 Outfall 002 Ouffall 002 Outfall 002 Outfall 002 Outfall 002 Outfall 002 Outfall 002 Outfall 002 Sample Outfall 002 Outfall 002 Outfall 002 Outfall 002 Trip Blank

June 20, 2005

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

Attention:

Bronwyn Kelly

Project:

Routine Outfall 002

Sampled: 05/05/05

Del Mar Analytical Number: IOE0358

Dear Ms. Kelly:

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

MWH ID	Del Mar ID	Alta ID
Outfall 002	IOE0358-01	26144-001

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

Sincerely yours,

**DEL MAR ANALYTICAL** 

Michele Harper
Project Manager

Enclosure



May 27, 2005

Alta Project I.D.: 26144

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on May 07, 2005 under your Project Name "IOE0358". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

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

The following report consists of a Sample Inventory (Section I), Analytical Results (Section II) and the Appendix, which contains the chain-of-custody, a list of data qualifiers and abbreviations, Alta's current certifications, and copies of the raw data (if requested).

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier

Director of HRMS Services

Marcha More



Also traditional Eathernment excellent that the report lowers moved all the requirements set for the SELAC me those applicable nest methods this report should not be reproduced a very to tall watern the corner approval of ALA.





Section I: Sample Inventory Report

Date Received:

5/7/2005

Alta Lab. ID

Client Sample ID

26144-001

IOE0358-01



#### **SECTION II**

Project 26144 Page 3 of 224



Method Blank					Vereniality of the control of the co		EPA Method 1613	(613
Matrix: Aqueous		QC Batch No.:	9629	Lab Sample: 0-MB001	3001			
Size:		Date Extracted:	19-May-05	Date Analyzed DB-5: 20-M	20-May-05	Date Analy	Date Analyzed DB-225: NA	
Analyte Conc. (ug/L)	AD	DL a EMPC b	b Qualifiers	Labeled Standard		%R L	LCL-UCL ^d Qualifiers	iers
	, and	0.00000109	and described the second se	IS 13C-2,3,7,8-TCDD		75.1	25 - 164	
	e S	0.00000115		,		79.1	25 - 181	
1,4,5,7,6-reCUD		0.00000207		13C-1,2,3,4,7,8-HxCDD	_	83.7	32 - 141	
	<u> </u>	0.00000201		13C-1,2,3,6,7,8-HxCDD	_	83.3	28 - 130	
	<u> </u>	0.00000193		13C-1,2,3,4,6,7,8-HpCDD	QC	85.9	23 - 140	
_	<u> </u>	0.00000181		13C-OCDD		9.99	17 - 157	
	£	0.00000550		13C-2,3,7,8-TCDF		76.1	24 - 169	
TODE		0.00000127		13C-1,2,3,7,8-PeCDF		73.9	24 - 185	
ji.	2	0.00000131	:	13C-2,3,4,7,8-PeCDF		75.3	21 - 178	
	1 2	0.00000113		13C-1,2,3,4,7,8-HxCDF	F-7	9.97	26 - 152	
يز	2	0.000000482		13C-1,2,3,6,7,8-HxCDF		6.08	26 - 123	<del></del>
	2	0.000000469		13C-2,3,4,6,7,8-HxCDF	fr.	84.6	28 - 136	
	2	0.000000487		13C-1,2,3,7,8,9-HxCDF	Ez.,	9.62	29 - 147	
	Q.	0.000000733		13C-1,2,3,4,6,7,8-HpCDF	DF	80.9	28 - 143	
<u>u</u>	2	0.00000102		13C-1,2,3,4,7,8,9-HpCDF	DF	83.6	26 - 138	,,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
	R	0.00000117		13C-OCDF		71.4	17-157	
	8	0.00000302		CRS 37CI-2,3,7,8-TCDD		86.5	35 - 197	
Totals				Footnotes		A STATE OF THE PARTY OF THE PAR		
Total TCDD	GN	0.00000109		a. Sample specific estimated detection limit.	ı limit.			
Q	ON	0.00000115		b. Estimated maximum possible concentration.	entration.			
Total HxCDD	8	0.00000200		c. Method detection limit.				
	R	0.00000181		d. Lower control limit - upper control limit.	limit.			
Total TCDF	N Q	0.00000127						
Total PeCDF	S	0.00000122						
Total HxCDF	NO	0.000000532						
Total HpCDF	QN	0.00000109						
Analyst: JMH				Approved By: Will	William J. Luksemburg		27-May-2005 12:10	_



OPR Results						EPA	EPA Method 1613	3
Matrix: Aqueous Sample Size: 1.000 L		QC Batch No.: Date Extracted:	6796 19-May-05	Lab	Lab Sample: 0-OPR001 Date Analyzed DB-5: 20-May-05	Date Analyzed DB-225:		A A
Analyte	Spike Conc.	Spike Conc. Conc. (ng/mL)	OPR Limits		Labeled Standard	%R	TCT-ncT	
2,3,7,8-TCDD	10.0	10,5	6.7 - 15.8	IS	13C-2,3,7,8-TCDD	70.6	25 - 164	
1,2,3,7,8-PeCDD	50.0	50.8	35 - 71		13C-1,2,3,7,8-PeCDD	68.2	25 - 181	
1,2,3,4,7,8-HxCDD	50.0	48.7	35 - 82		13C-1,2,3,4,7,8-HxCDD	82.5	32 - 141	
1,2,3,6,7,8-HxCDD	50.0	50.9	38 - 67		13C-1,2,3,6,7,8-HxCDD	81.4	28 - 130	
1,2,3,7,8,9-HxCDD	50.0	46.2	32 - 81		13C-1,2,3,4,6,7,8-HpCDD	74.7	23 - 140	
1,2,3,4,6,7,8-HpCDD	50.0	48.9	35 - 70		13C-OCDD	54.1	17 - 157	
OCDD	100	100	78 - 144		13C-2,3,7,8-TCDF	72.6	24 - 169	
2,3,7,8-TCDF	10.0		7.5 - 15.8		13C-1,2,3,7,8-PeCDF	0.99	24 - 185	
1,2,3,7,8-PeCDF	50.0	51.3	40 - 67		13C-2,3,4,7,8-PeCDF	0.79	21 - 178	
2,3,4,7,8-PeCDF	50.0	51.7	34 - 80		13C-1,2,3,4,7,8-HxCDF	29.97	26 - 152	
1,2,3,4,7,8-HxCDF	50.0	50.2	36-67		13C-1,2,3,6,7,8-HxCDF	80.1	26 - 123	
1,2,3,6,7,8-HxCDF	50.0	51.2	42 - 65		13C-2,3,4,6,7,8-HxCDF	80.9	28 - 136	
2,3,4,6,7,8-HxCDF	50.0	49.9	35 - 78		13C-1,2,3,7,8,9-HxCDF	76.3	29 - 147	
1,2,3,7,8,9-HxCDF	50.0	51.7	39 - 65		13C-1,2,3,4,6,7,8-HpCDF	72.2	28 - 143	
1,2,3,4,6,7,8-HpCDF	20.0	51.1	41 - 61		13C-1,2,3,4,7,8,9-HpCDF	73.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	50.0	51.0	39 - 66	±	13C-OCDF	58.0	17 - 157	
OCDF	100	99.4	63 - 170	CRS	CRS 37CI-2,3,7,8-TCDD	88:5	35 - 197	•

Analyst: JMH

Approved By: William J. Luksemburg 27-May-2005 12:10



Sample ID: IOE0	IOE0358-01						***************************************	EPA Method 1613	hod 1613
Client Data			Sample Data		Laboratory Data				
	Del Mar Analytical, Irvine		Matrix:	Aqueous	Lab Sample:	26144-001	Date Received:	ived:	7-May-05
	358		Sample Size:	1,006 L	QC Batch No.:	9629	Date Extracted:	icted:	19-May-05
Date Collected: 5-May-05 Time Collected: 1305	y-05				Date Analyzed DB-5:	21-May-05	Date An	Date Analyzed DB-225: NA	NA
	Conc. (ug/L)	DL a	EMPC	Qualifiers	Labeled Standard	rd	%R I	rcr-ncr _q or	Oualifiers
1178 TCDD	<u> </u>	0.00000124	24		IS 13C-2,3,7,8-TCDD	Q	81.1	25 - 164	
1,2,1,6-1CUD	9	0.000000985	385		13C-1,2,3,7,8-PeCDD	CDD	83.5	25 - 181	
1,2,3,7,0-rcc.DD	2	0.00000141	- parent		13C-1,2,3,4,7,8-HxCDD	[xCDD	9.68	32 - 141	
1.2.3.4.7,7,4.CDD	E Z	0.00000138	38		13C-1,2,3,6,7,8-HxCDD	[xCDD	87.1	28 - 130	
1,2,3,0,7,0-11ACDD	Q	0.00000132	32		13C-1,2,3,4,6,7,8-HpCDD	-HpCDD	8.06	23 - 140	<del></del>
1,2,3,7,19,7 11,000 1,2,3,4,6,7 8-HnCDD	0.00000203			A	13C-0CDD		74.6	17 - 157	
OCDD	0.0000115			٧	13C-2,3,7,8-TCDF	Œ,	80.4	24 - 169	
2 2 7 8-TCDF	<del>S</del>	0.00000134	34		13C-1,2,3,7,8-PeCDF	CDF	80.1	24 - 185	
1.2.3.7.8-PeCDF	S	0.00000114	14		13C-2,3,4,7,8-PeCDF	CDF	81.3	21 - 178	
2 3 4 7 8-PeCDF	Q	0.000000978	978		13C-1,2,3,4,7,8-HxCDF	IxCDF	81.1	26 - 152	
123478-HXCDF	g	0.000000464	464		13C-1,2,3,6,7,8-HxCDF	<b>EXCDF</b>	83.7	26 - 123	
123678-HxCDF	N ON	0.000000444	444		13C-2,3,4,6,7,8-HxCDF	<b>t</b> xCDF	9.98	28 - 136	
23.46.78-HxCDF	8	0.000000501	501		13C-1,2,3,7,8,9-HxCDF	<b>L</b> xCDF	84.5	29 - 147	
123789-HxCDF	2	0.000000705	705		13C-1,2,3,4,6,7,8-HpCDF	-HpCDF	85.6	28 - 143	
123467.8-HnCDF	2	0.000000742	742		13C-1,2,3,4,7,8,9-HpCDF	-HpCDF	89.1	26 - 138	
1234789-HpCDF	QN	0.000000789	789		13C-0CDF		80.1	17 - 157	24114
OCDF	QN	0.00000238	38		CRS 37CI-2,3,7,8-TCDD	00 00	9.68	35 - 197	A COLOR DE LA COLO
Totals				•	Footnotes		A STATE OF THE STA	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
Total TCDD	SN	0.00000124	24		a. Sample specific estimated detection limit	detection limit.			
Total PeCDD	QN	0.000000985	985		b. Estimated maximum possible concentration.	ible concentration.			
Total HxCDD	ON	0.00000137	37		c. Method detection limit.				
Total HpCDD	0.00000203				d. Lower control limit - upper control limit.	er control limit.			
Total TCDF	8	0.00000134	34						
Total PeCDF	S	0.00000105	0.5						
Total HxCDF	ND	0.000000519	519						***************************************
Total HpCDF	R	0.000000762	762						· · · · · · · · · · · · · · · · · · ·
Analyst: JMH					Approved By:	William J. Luksemburg	ksemburg	27-May-2005 12:10	12:10

Analyst: JMH



#### APPENDIX

Project 26144 Page 7 of 224



### DATA QUALIFIERS & ABBREVIATIONS

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

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

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

Project 26144 Page 8 of 224

#### CURRENT CERTIFICATIONS



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

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

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

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

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

State of Arizona — (Certificate No. AZ0639)

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

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

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

State of Florida — (Certificate No. 87456)

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

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

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

State of North Carolina — (Certification No. 06700)

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

State of New Mexico

State of Oklahoma – (D9919)

State of Oregon - (Certificate No. CA413)

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

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

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

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

State of Washington - (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

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



17461 Derian Ave. Suite 100, Invine, CA 92614 1014 E. Cooley Dr., Suite A, Colton, CA 92324

9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 9830 South 51st Street, Suite B-120, Phoenix, AZ 85044

2520 E. Sunset Rd., Suite #3, Lax Vegas, NV 89120

Ph (949) 261-1022 Ph (909) 370-4667

Fax (909) 370-1046

Ph (619) 505-9596 Fa

Fax (619) 505-9689 Fax (480) 785-0851 Fax (702) 798-3621

### SUBCONTRACT ORDER - PROJECT # IOE0358

17461 Derian Avenue. Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228	Phone: (949) 261-1022		AG144 2.5°C
		uested => Due Date:  Comments	Initials:
Sample ID: IOE0358-01 1613-Dioxin-HR EDD + Level 4 Containers Supplied:	Water Sampled: 05/05/05 13:00 05/12/05 13:05 06/02/05 13:05	Instant Nofication J flags, 17 congeners, no TEQ, sub- Excel EDD email to pm, Include S	

	SAMPL	E INTEGRITY:		
All containers Intact: Yes No Custody Seas Present: Yes No	Sample labels/COC agree: Samples Preserved Properly		ceived Os lee:	Yes O No 25°C
Released By	56.05 /7:00 Date Time	Chit Theleve	stilos	1100
Released By	Date Time	Received By  Received By	Date Date	Time

1 L Amber (IOE0358-01G) 1 L Amber (IOE0358-01H)

#### STANDARD OPERATING PROCEDURE

Attachment 10.B.1

#### SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 26/44

1. Date Samples Arrived: 5/7/05 1100 Initials: \( \text{Local} \)	ion: $igwidth \mathcal{W}$	R-2	-			
Time / Date logged in: 1420 5/12/05 Initials: WR-Z Location: WR-Z						
3. Samples Arrived By: (circle) FedEx UPS World Courier Other:		,				
4. Shipping Preservation: (circle) lice Blue Ice / Dry Ice / None Temp °C // C	<u>)                                    </u>					
5. Shipping Container(s) Intact*? If not, describe condition in comment section.	YES	/ NO	NA			
6. Shipping Container(s) Custody Seals Present?		/				
Intact? If not intact, describe condition in comment section.						
7. Shipping Documentation Present? (circle) Shipping Label Airbill  Tracking Number 7900 (39   338)						
Sample Custody Seal(s) Present? No. of Seals or Seal No.  Intact? If not intact, describe condition in comment section.		$\frac{1}{2}$				
9. Sample Container Intact? If no, indicate sample condition in comment section.		/				
10. Chain of Custody (COC) or other Sample Documentation Present?	<b>4</b>	,				
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	1					
12. Shipping Container (circle): ALTA Client Retain or Return or	Disposed		/			
13. Container(s) and/or Bottle(s) Requested?			/			
14. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			$\bigvee$			
		,				

Comments:

ALTA Analytical Laboratory El Dorado Hills, CA 95762

·			
,			

### CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental		Package ID	T711DF49
550 South Wadsworth Boulevar	$^{\mathrm{d}}$	-	313150010
Suite 500		SDG No.	IOE0358
Lakewood, CO 80226		No. of Analyses	l
Laboratory Alta		Date: June 20	), 2005
Reviewer H. Chang	g	Reviewer's S	
Analysis/Method Dioxin &	Furans/1613	N. Ohn	1
		/	
ACTION ITEMS*			
1. Case Narrative			······································
Deficiencies			
2. Out of Scope			
Analyses			
	***************************************		
3. Analyses Not Conducted			
4. Missing Hardcopy		<u> </u>	
Deliverables			······································
5. Incorrect Hardcopy			
Deliverables			
6. Deviations from Analysis	Detects below the meth	nod minimum level were q	ualified "J."
Protocol, e.g.,			
Holding Times			
GC/MS Tune/Inst. Perform			
Calibrations	·		
Blanks	4-1		
Surrogates			
Matrix Spike/Dup LCS	And the state of t		
Field QC			
Internal Standard Performance			
Compound Identification and			
Quantitation			
System Performance	<u> </u>	***************************************	
COMMENTS ^b	<u> </u>		
3 C.L			
<ul> <li>Subcontracted analytical laboratory is not r</li> <li>Differences in protocol have been adopted</li> </ul>			



### DATA VALIDATION REPORT

# NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUP: IOE0358

Prepared by

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

Project: SDG No.: Analysis:

**NPDES** IOE0358 D/F

#### 1. INTRODUCTION

Task Order Title:

**NPDES Monitoring** 

Contract Task Order #:

313150010 IOE0358

Sample Delivery Group #:

B. McIlvaine

Project Manager: Matrix:

Water

Analysis:

Dioxins/Furans

QC Level:

Level IV

No. of Samples:

1

No. of Reanalyses/Dilutions:

0 H. Chang

Reviewer: Date of Review:

June 15, 2005

1

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

NPDES IOE0358 D/F

DATA VALIDATION REPORT

Project: SDG No.: Analysis:

Table 1. Sample Identification

Client ID	Laboratory ID (Del Mar)	Laboratory ID (Alta)	Matrix	COC Method
Outfall 002	IOE0358-01	26144-001	water	1613

Project: SDG No.: Analysis: NPDES IOE0358

D/F

#### 2. DATA VALIDATION FINDINGS

#### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The sample in this SDG was received at Del Mar Analytical below the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$  at  $1^{\circ}\text{C}$ ; however, as the sample was not noted to have been damaged, no qualifications were required. The sample was shipped to Alta for dioxin/furan analysis and was received within the temperature limits of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . According to the laboratory login sheets, the samples were received intact and in good condition at both laboratories. No qualifications were required.

#### 2.1.2 Chain of Custody

The COC and transfer COC were legible and signed by the appropriate field and laboratory personnel, and accounted for the analysis presented in this SDG. As the sample was couriered directly to Del Mar Analytical, a custody seal was not required. The cooler received by Alta had custody seals present and intact; however, custody seals were not present on the sample containers. The EPA ID was added to the sample result summary by the reviewer. No qualifications were required.

#### 2.1.3 Holding Times

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

#### 2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

#### 2.2.1 GC Column Performance

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

#### 2.2.2 Mass Spectrometer Performance

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

Project: SDG No.: Analysis: NPDES IOE0358 D/F

#### 2.3 CALIBRATION

#### 2.3.1 Initial Calibration

The initial calibration was analyzed 04/23/05. The calibration consisted of six concentration level standards (CS0 through CS5) analyzed to verify instrument linearity. The initial calibration was acceptable with %RSDs  $\leq$ 20% for the 16 native compounds (calibration by isotope dilution) and  $\leq$ 35% for the one native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the QC limits listed in Method 1613 for all standards. A representative number of %RSDs were verified from the raw data, and no calculation or transcription errors were noted. No qualifications were required.

#### 2.3.2 Continuing Calibration

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

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

#### 2.4 BLANKS

One method blank (6796-MB001) was extracted and analyzed with the sample in this SDG. There were no target compound detects reported in the method blank. A review of the method blank raw data and chromatograms indicated no false negatives. No qualifications were required.

#### 2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One Ongoing Precision Recovery (OPR) sample (6796-OPR001) was extracted and analyzed with the sample in this SDG. All recoveries were within the acceptance criteria listed in Table 6 of Method 1613. No qualifications were required.

#### 2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

#### 2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

SDG No.: Analysis:

**NPDES** IOE0358 D/F

#### 2.7.1 Field Blanks and Equipment Rinsates

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

#### 2.7.2 Field Duplicates

No field duplicate samples were identified for this SDG.

#### 2.8 INTERNAL STANDARDS

The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613. No qualifications were required.

#### 2.9 COMPOUND IDENTIFICATION

The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613. The compound identifications were verified from the raw data and no false negatives or positives were noted. No qualifications were required.

### 2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

Compound quantitation was verified from the raw data. The laboratory calculated and reported compound-specific detection limits. The laboratory noted that detects above the low point of the calibration curve but below the EPA Method 1613 minimum level were denoted by an "A" laboratory qualifier. However, all results with "A" qualifier were actually below the low point of the calibration curve. Any detects below the method minimum level were qualified as estimated, "J." If the concentration of any component of the total was below the lower method calibration level (MCL), the total detect was qualified as estimated, "J." The results and reporting limits were reported in  $\mu g/L$ . No further qualifications were required.

	ALTA

		Sample ID: IOI	IOE0358-01 Cudfau 002	200			EDAN AUST	****
		Client Data	seminal adjunction (Sp. ) and constitution of the constitution of				EL A MEHOD 1013	100 1013
			Del Mar Analytical Irvina	Sample Data		Laboratory Data		
			IOE0358	Matrix:	Aqueous	Lab Sample: 26144-001	Date Received:	7.May.05
	4	Date Collected: 5-N	5-May-05	Sample Size:	T 900 T	QC Batch No.: 6796		/~!way~u_ 19-Mav-05
	Sup.		() S.	The second statement was a second statement of the sec		Date Analyzed DB-5: 21-May-05	ed DB-225:	AA
Sum :	300		Conc. (ug/L)	DL a EMPCb	Qualifiers	Labeled Standard	%R ICLIENT One	Ougliffore
**********		2,3,7,8-TCDD	GN	0.00000124		S 197 9 9 9 9 9 9	TO TO	SIGN
		1,2,3,7,8-PeCDD	QN	0.000000085				
		1,2,3,4,7,8-HxCDD	QN	0.00000141		13C-1,2,3,7,8-PeCDD	83.5 25 - 181	
		1,2,3,6,7,8-HxCDD	2	0.00000139	- NILOS	13C-1,2,3,4,7,8-HxCDD	89.6 32 - 141	
***		1,2,3,7,8,9-HxCDD	CN N	0.00000130	•	13C-1,2,3,6,7,8-HxCDD	87.1 28 - 130	
	Ø Z	1.2.3.4.6.7.8-HnCDD		0.0000002		13C-1,2,3,4,6,7,8-HpCDD	90.8 23 - 140	
	DECO	OCDD			∢	13C-OCDD	74.6 17-157	
		2378 TCDE	CITOCOCO		∀	13C-2,3,7,8-TCDF	80.4 24 - 169	
		10370 0000	2 5	0.00000134		13C-1,2,3,7,8-PeCDF	80.1 24 - 185	
		1,4,3,7,0-recur		0.00000114		13C-2,3,4,7,8-PeCDF		
		2,3,4,7,8~reCUF	2	0.000000078		13C-1,2,3,4,7,8-HxCDF		
		1,2,3,4,7,8-HxCDF	2	0.000000464	-	13C-123678-HxCDF		
*****	-training.	1,2,3,6,7,8-HxCDF	S	0.000000444		13C-2 3 4 6 7 8-H×CDE		
	*Pinda/alpen	2,3,4,6,7,8-HxCDF	QN.	0.000000501	**************************************	130.10376011		
	-	1,2,3,7,8,9-HxCDF	2	0.000000705		13C-1,2,3,7,6,9-HXCDF		
· · · · · · · · · · · · · · · · · · ·	···	1,2,3,4,6,7,8-HpCDF	Q.	0.000000742	****	13C-1,2,3,4,6,7,8-HpCDF	85.6 28 - 143	
		1,2,3,4,7,8,9-HpCDF	É	0.0000000		13C-1,2,3,4,7,8,9-HpCDF	89.1 26 - 138	
	***********	OCDF	e Q	0.0000078		ISC-OCDF	80.1 17 - 157	
	***************************************	Totals	AND THE REAL PROPERTY AND THE PROPERTY OF THE	OCTOOR		37CI-2,3,7,8-TCDD	89.6 35 - 197	
		AND THE RESERVE AND THE PARTY OF THE PARTY O	THE PERSONNEL PROPERTY OF THE PERSONNEL PROP		·····	Footnotes		
		Total TCDD	2	0.00000124		a. Sample specific estimated detection limit	and were this risk may be a sufficient to the consequent for the consequence of the restrict to the consequence	
		rotal PeCDD	Q	0.000000085		B. Estimated maximim mossible someonessis		
	***************************************	Total HxCDD	S	0.00000137		Mathod decomes I		
h	200	Total HpCDD	0.00000203		Para Para Para Para Para Para Para Para	statuted describer milli.		
		Total TCDF	NO	0.00000134		<ul> <li>a. Lower control timit - upper control limit.</li> </ul>		
	· • • • • • • • • • • • • • • • • • • •	Total PeCDF	N	0.00000105		AMED	AMED VALIDATED	C
	*******	Total HxCDF	NO	0.000000519				2
		Total HpCDF	ND	0.000000762		LEVEL	EL IV	
	•	Analyst: JMH		A THE REAL PROPERTY OF THE PRO	The same of the sa		e de la companya della companya	
						Approved by: William I I mkg-	William J. Luksemburo 27, May 2005 12:10	<

Approved By:

William J. Luksemburg 27-May-2005 12:10

# CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711VO108

AMEC Earth & Environment		Package ID	T711VO108
550 South Wadsworth Boulev	vard	Task Order	313150010
Suite 500		SDG No.	IOE0358
Lakewood, CO 80226		No. of Analyses	2
Laboratory Del Ma		Date: June 29	, 2005
Reviewer M. Pol		Reviewer's S	
Analysis/Method Volati	les	- Micha	Ĭ~
			<del>-/)</del>
ACTION ITEMS*			
1. Case Narrative			
Deficiencies			
2. Out of Scope			
Analyses			***************************************
3. Analyses Not Conducted			
4. Missing Hardcopy			
Deliverables			
C T			
5. Incorrect Hardcopy			
Deliverables			
	**************************************		
6. Deviations from Analysis	Ovalification	C. 141 - 1	
Protocol, e.g.,	Qualification required	for calibration outlier.	
Holding Times	<del></del>		······
GC/MS Tune/Inst. Perform	4,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,444,4		
Calibrations	***************************************		
Blanks			
Surrogates			
Matrix Spike/Dup LCS			
Field QC		·	
Internal Standard Performance			
Compound Identification and			
Quantitation			
System Performance			
COMMENTS ⁶		***************************************	
Subcontracted analytical laboratory is not	meeting contract and/or method	requirements.	
Differences in protocol have been adopted	I by the laboratory but no action	against the laboratory is required	Į



# DATA VALIDATION REPORT

NPDES Monitoring

**ANALYSIS: VOLATILES** 

SAMPLE DELIVERY GROUP: IOE0358

Prepared by

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

**NPDES** IOE0358 Analysis: VOC

#### 1. INTRODUCTION

Task Order Title: **NPDES Monitoring** 

Contract Task Order #: 313150010

> SDG#: IOE0358

Project Manager: B. McIlvaine

> Matrix: Water Analysis: Volatiles

OC Level: Level IV

No. of Samples: 2

No. of Reanalyses/Dilutions: 0

Reviewer: M. Pokorny

Date of Review: June 29, 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.

NPDES IOE0358 VOC

Table 1. Sample identification

Client ID	EPA ID	Lab No.	Matrix	Method
Outfall 002	Outfall 002	IOE0358-01	water	624
Trip Blank	Trip Blank	IOE0358-02	water	624

Analysis:

#### 2. DATA VALIDATION FINDINGS

#### 2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. The 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

Two initial calibrations dated 04/29/05 and 05/04/05 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 05/10/05 and 05/11/05 were associated with the sample analyses in this SDG. For the continuing calibration dated 05/10/05, the %Ds for all target compounds were ≤20% in the continuing calibration except for the %D for carbon tetrachloride. Carbon tetrachloride was qualified as an estimated nondetect, "UJ," in the site sample of this SDG. For the continuing calibration dated 05/11/05, the %Ds for all target compounds were ≤20%. The RRFs were ≥0.05 for the target compounds listed on the sample result summaries in both calibrations. A representative number of %RSDs and average RRFs from the initial calibrations, and %Ds and RRFs from the continuing calibrations were recalculated from the raw data, and no calculation or transcription errors were found. No further qualifications were required.

NPDES IOE0358

#### 2.4 BLANKS

Two water method blank (5E10014-BLK1 and 5E11004-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 (5E10014-BS1 and 5E11004-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

An MS/MSD was not analyzed with this SDG. Method accuracy was evaluated based on blank spike results. No qualifications were required.

#### 2.8 FIELD QC SAMPLES

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

#### 2.8.1 Trip Blanks

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

#### 2.8.2 Field Blanks and Equipment Rinsates

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

#### 2.8.3 Field Duplicates

There were no field duplicate samples associated with this SDG.

IOE0358 Analysis: VOC

#### 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  $\pm 0.50$  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 5 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 µg/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.

1014 E. Cooley Dr., Suite A.D., Irvine, CA 92014 (949; 261-1622 FAX (949) 260-3297 1014 E. Cooley Dr., Suite A. Colion, CA 92324 (909) 370-4667 FAX (949) 370-1646 9830 South 51st St., Suite 8/120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0831 2520 E. Sunset Rd. #3, Las Vogas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 002

Report Number: IOE0358

Sampled: 05/05/05 Received: 05/05/05

DRAFT: PURGEABLES BY GC/MS (EPA 624)

Analyte			MDL	Reporting			,	Date	e Da	
•	Method	Batch	Limit	Limit	Result	Fact	orExtracted		ed Quali	
Sample ID: IOE0358-01 (D)	RAFT: Outfall 002	- Water)						3-	REV	g Qual
reporting Units: ng/i		,,			Sam	piea:	05/05/05		QUAL	l l
Benzene	EPA 624	5E10014	0.28	2.0	ND	3	05/10/06	***********	***************************************	Cape
Carbon tetrachloride	EPA 624	5E10014		5.0	ND ND	1		05/10/05		
Chloroform	EPA 624	5E10014		2.0	ND	···········		05/10/05		<u> </u>
I,1-Dichloroethane	EPA 624	5E10014		2.0		1		05/10/05	Ņ	
1,2-Dichloroethane	EPA 624	5E10014		2.0	ND	1		05/10/05		
1,1-Dichloroethene	EPA 624	5E10014	0.32		ND	1		05/10/05		
Ethylbenzene	EPA 624	5E10014	0.25	3.0	ND	I		05/10/05		out of the second
Tetrachloroethene	EPA 624	5E10014	0.23	2.0	ND	I		05/10/05		
Toluene	EPA 624	5E10014		2.0	ND	1		05/10/05		
I, I, I-Trichloroethane	EPA 624	5E10014	0.36	2.0	ND	1		05/10/05		
1,1,2-Trichloroethar.e	EPA 624	5E10014	0.30	2.0	ND	1	05/10/05			
Trichloroethene	EPA 624		0.30	2.0	ND	i	05/10/05	05/10/05		
Trichlorofluoromethane	EPA 624	5E10014	0.26	5.0	ND	1	05/10/05	05/10/05		
Vinyl chloride		5E10014	0.34	5.0	ND	1	05/10/05	05/10/05	and any	
Xylenes, Total	EPA 624	5E10014	0.26	5.0	ND	1	05/10/05		- Commonweal Commonwea	
Surrogate: Dibromofluorometh	EPA 624	5E10014	0.52	4.0	ND	1	05/10/05		<b>V</b>	
Surrogate: Toluene-48 (80-120	une (80-129%)				114%					
Surrogate: 4-Bromojluorobenza	70)				103 %					
					103 %					
Sample ID: IOE0358-02 (DRA	AFT: Trip Blank - V	Vater)			Sampl	ed: 05	/05/05		de compranda	
Reporting Units: ug/l Benzene					Sampi	cu. vs	703/03			
	EPA 624	5E11004	0.28	2.0	ND	1	05/11/05	05111107	13	
Carbon tetrachloride	EPA 624	5E11004	0.28	5.0	ND	1	05/11/05		Ü	
Chloroform	EPA 624	5E11004	0.33	2.0	ND	1	05/11/05 (		1	
1,1-Dichloroethane	EPA 624	5E11004	0.27	2.0	ND	-	05/11/05 (	J5/J 1/05		
1.2-Dichloroethane	EPA 624		0.28	2.0	ND	1	05/11/05 (	)5/11/05		
1,1-Dichloroethene	EPA 624		0.32	3.0	ND	1	05/11/05 (		1	
Ethylbenzene	EPA 624		0.25	2.0		1	05/11/05 (	)5/11/05		
Tetrachloroethene	EPA 624		0.32	2.0	ND	1	05/11/05 0	)5/11/05		
Toluene	EPA 624		0.36	2.0	ND	1	05/11/05 0	5/11/05		
1,1,1-Trichloroethane	EPA 624		0.30		ND	1	05/11/05 0			
1,1,2-Trichloroethane	EPA 624			2.0	ND	1	05/11/05 0			
Trichloroethene	EPA 624		0.30	2.0	ND	1	05/11/05 0			
Trichlorofluoromethane	EPA 624		0.26	5.0	ND	1	05/11/05 0	5/11/05	1	
Vinyl chloride	EPA 624		0.34	5.0	ND	1	05/11/05 0:	5/11/05	1	
Xylenes, Total	EPA 624		0.26	5.0	ND	1	05/11/05 0:	5/11/05	1	
Surrogaie: Dibromojluoromethar	14 (80 ) 2007)	5E11004 (	).52	4.0	ND	1	05/11/05 0:	5/11/05	4	
Surrogate: Toluene-d8 (80-120%	1 (00-12070)				100 %				- 1	
Surrogate: 4-Bromojluorobenzen	y ~ 1911 1.3001				104 %					
S D. VINGERLINGVENLEN	E (00-130%)				98 %			÷		
						45				

DRAFT REPORT
DRAFT REPORT

DATA SUBJECT TO CHANGE

AMEC VALIDATED

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

IOE0353 < Page 2 of 63>

LEVEL TV

### CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AMEC Earth & Environmental		Package ID	T711WC154
550 South Wadsworth Boulevard			313150010
Suite 500			IOE0358
Lakewood, CO 80226		No. of Analyses	1
Laboratory Del M	lar	Date: 06/15/0	)5
Reviewer P. Me	eks	Reyiewer's S	
Analysis/Method Gener	al Minerals	- P. Mas	7
ACTION ITEMS*			
1. Case Narrative			
Deficiencies			
2. Out of Scope			
Analyses 3. Analyses Not			
Conducted			
4. Missing Hardcopy			
Deliverables			
5. Incorrect Hardcopy			
<u>Deliverables</u>	· · · · · · · · · · · · · · · · · · ·		
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.		
	**************************************		
\$ C.1.		***************************************	
Subcontracted analytical laboratory is n	ot 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	Organies	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.		
បរ	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	
Н	Holding times were exceeded.	Holding times were exceeded.	
S	Surrogate recovery was outside QC limits.	The sequence or number of standards use for the calibration was incorrect	
С	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.	
R	Calibration RRF was <0.05.	%R for calibration is not within controllimits.	
В	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.	
Ą	Not applicable,	ICP Serial Dilution %D were not within control limits.	
М	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.	
Γ	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.	
•	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.	
•	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.	
	Instrument performance for pesticides was poor,	Post Digestion Spike recovery was not within control limits.	
NQ	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. *I 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: IOE0358

Prepared by

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

Project:

**NPDES** 

SDG No.:

IOE0358 General Minerals

Analysis:

#### 1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

DATA VALIDATION REPORT

313150010

Sample Delivery Group #:

IOE0358

Project Manager:

B. McIlvaine

Matrix:

Water General Minerals

Analysis:

QC Level:

Level IV

No. of Samples: Reviewer:

P. Meeks

Date of Review:

June 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 350.2, 120.1, and 180.1, and validation guidelines outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Project:

**NPDES** 

SDG No.:

IOE0358

Analysis:

General Minerals

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 002	Outfall 002	IOE0358-01	Water	General Minerals

DATA VALIDATION REPORT

Project:

NPDES IOE0358

DATA VALIDATION REPORT

SDG No.: Analysis:

General Minerals

#### 2. DATA VALIDATION FINDINGS

#### 2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

#### 2.1.1 Sample Preservation, Handling, and Transport

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

#### 2.1.2 Chain of Custody

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

#### 2.1.3 Holding Times

The holding times were assessed by comparing the date of collection with the dates of analyses. The 28-day analytical holding time for ammonia and conductivity, and the 48-hour holding time for turbidity were met. No qualifications were required.

#### 2.2 CALIBRATION

For turbidity, the initial calibration correlation coefficient was ≥0.995. All 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, the LCS recovery was within the CCV control limits. Calibration is not applicable to conductivity analysis. No qualifications were required.

#### 2.3 BLANKS

Turbidity was detected in method blank 5E06087-BLK1, but not at sufficient concentration to qualify the site sample. The ammonia method blank and CCB results reported on the summary forms and in the raw data for blank analyses associated with the sample were nondetects at the reporting limit. Blank analyses are not applicable to conductivity. No qualifications were required.

#### 2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ammonia laboratory control sample recovery was within the laboratory-established control limits of 80-115%. The LCS is not applicable to turbidity or conductivity. No qualifications were required.