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)



SENDING LABORATORY:

Del Mar Analytical, Irvine

17461 Derian Ave. Suite 100, Irvine, CA 92614

9830 South 51st Street, Suite 8-120, Phoenix, AZ 85044

SUBCONTRACT ORDER - PROJECT #IOD2055

Alta Analytical

17461 Derian Avenue. S Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michel		1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106	17 1°C
Standard TAT is reque	sted unless specific due date is request Expiration	red => Due Date:Comments	Initials:
Sample ID: IOD2055-01 1613-Dioxin-HR EDD + Level 4	Water Sampled: 04/28/05 11:10 05/05/05 11:10 05/26/05 11:10	Instant Nofication J flags, 17 congeners, no TEQ, sub=Alta, DP to Excel EDD email to pm, Include Std logs for I	
Containers Supplied: 1 L Amber (IOD2055-01) 1 L Amber (IOD2055-01)			

			 		· SA	MPLE	INT	EGRI	TY:	·		
All containers intact: Custody Seals Present:		Yes Yes		•	ple labels/COC	-		Yes Yes	□ № □ №	Samples Received On Ice:: Samples Received at (temp):	O Yes	□ No
1				• 4.8	29-05	17:0	W		M. Fa	ellant 4/30	105	0915
Releaser By	_			Date	Time		Recei	ved B	у	Date /	,	Time
Palaccar Ru			 	Date	Time		Q ecei	ved B	v	Date	 ;	l'ime

Project 26114

Page 10off111

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

/	SAMPLE LOG-IN CHECKLIST
2/11/	
ALTA Project No.: <u>26//4</u>	

1.	Date Samples Arrived: 4/30/05 09/5 Initials: 11.01 Locatio			
2.	Time / Date logged in: 0435 5/2/85 Initials: BUB Location	n: (UK-	-2
3.	Samples Arrived By: (circle) FedEx UPS World Courier Other:			
4.	Shipping Preservation: (circle) Ice Blue Ice Dry Ice None Temp °C / /			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	YES	NO	NA
6.	Shipping Container(s) Custody Seals Present?		V	
	Intact? If not intact, describe condition in comment section.			v
7.	Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number 79 (6 (353 \$ 260		•	
8.	Sample Custody Seal(s) Present? No. of Seals or Seal No. Intact? If not intact, describe condition in comment section.		/	V
9.	Sample Container Intact? If no, indicate sample condition in comment section.	V		
10.	. Chain of Custody (COC) or other Sample Documentation Present?	V		
11	. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	V		
12	. Shipping Container (circle): ALTA Client Retain or Return or Di	sposed		
13	. Container(s) and/or Bottle(s) Requested?		V	1
14	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			

comments: Sampleis initials found on sample labels

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

AM	EC Earth & Environmental		Package ID	T711DF47
550	South Wadsworth Boulevard		Task Order	313150012
Suite	e 500		SDG No.	IOD2051, 2054, 2055
Lake	ewood, CO 80226		No. of Analyses	3
	Laboratory Alta		Date: May 31	. 2005
	Reviewer H. Chang		Reviewer's S	
	Analysis/Method Dioxin&I			
			- LOXIM	
ACT	ION ITEMS		a na tala 1/3	
1.	Case Narrative			
1.	Deficiencies			
	Denciences			
2.	Out of Scope			
4	<u>-</u>	·		
: 	Analyses		·····	
				<u> </u>
3.	Analyses Not Conducted			
*	NAT - NA			
4.	Missing Hardcopy			
	Deliverables			
5.	Incompact Mandages			
	Incorrect Hardcopy Deliverables			
	Deliverables			
		***************************************		······································
6.	Deviations from Analysis	Detects below the calibration	n range were qualifie	d "T"
	•	EMPCs were qualified "UJ."		4 7.
	Protocol, e.g.,	ENIT CS WEIG Quantica CJ.	***************************************	
	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			
COM	IMENTS ^b			
	contracted analytical laboratory is not magnificated in protocol have been adopted by			

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
ບນ	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 us 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 control limits.
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 n within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
Е	Not applicable.	Duplicates showed poor agreement.
Ī	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not with control limits.
M	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 sour analysis is available.
>	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was no within control limits.
ONQ	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, considered an estimated value.

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

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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

SAMPLE DELIVERY GROUPS: IOD2051, IOD2054, & IOD2055

Prepared by

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

SDG No.: Analysis:

NPDES Multiple D/F

1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

Sample Delivery Group #:

IOD2051, IOD2054, & IOD2055

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Dioxins/Furans

QC Level:

Level IV

No. of Samples:

3

No. of Reanalyses/Dilutions:

0

Reviewer:

H. Chang

Date of Review:

May 31, 2005

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

DATA VALIDATION REPORT

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 003	IOD2051-01	26119-001	water	1613
Outfall 005	IOD2054-01	26113-001	water	1613
Outfall 006	IOD2055-01	26114-001	water	1613

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

Revision 0

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 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 05/19/05. 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. Detects above the low point of the calibration curve but below the EPA Method 1613 minimum level were denoted by the laboratory with an "A," flag and were qualified as estimated, "J." Any detects below the lower method calibration level (MCL) 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 ug/L for samples Outfall 003 and Outfall 005 and in ng/L for sample Outfall 006. No further qualifications were required.



		Sample ID: IOD2051-01	ii-01 Cutfall	ر 203	AND THE PROPERTY OF THE PROPER			EPA Method 1613	1 1613
		Data	Westernam state statement was a series of the series of th	74	Sample Data	- Harris Marie Control of the Contro	Laboratory Data		
		Project IOD205	Del Mar Analytical, Irvine 10D2051		Matrix.:	Aqueous	Lab Sample: 26119-001	Date Received:	30-Apr-05
	•	Date Collected: Time Collected:	\$43 - CT	√1	Sample Size;	0.961 L	QC Batch No.: 6789	Date Extracted	17-May-05
<u> </u>	Sup.	A TO DESCRIPTION OF THE PROPERTY OF THE PROPER	Ì	-		Complete Control of Comments and Page 25 to 18 t	Date Alialyzed DB-5: 19-May-05	o Date Analyzed DB-225; NA	
ight.	Coak		e e	DI "	EMPC	Qualifiers	Labeled Standard	%R LCL-UCL ^d Oualifiers	ers
<u>ط</u> کے		7.3,7,8-TCDD	S	0.00000118			<u>IS</u> 13C-2,3,7,8-TCDD	61.5 25 - 164	
page and Military		1,2,3,7,8-PeCDD	2	0.00000210			13C-1.2.3.7.8-PeCDD		
, 	*********	1,2,3,4,7,8-HxCDD	ON ON	0.00000331			13C-1,2,3,4,7,8-HxCDD		
		1,2,3,6,7,8-HxCDD	2	0.00000325			13C-1,2,3,6,7,8-HxCDD		·····
→	···	1,2,3,7,8,9-HxCDD	ND	0.00000335			13C-1,2,3,4,6,7.8-HpCDD		***********
h	d d	1,2,3,4,6,7,8-HpCDD	0.0000247			∢	13C-OCDD		
	·/	OCDD	0.000242				13C-2,3,7.8-TCDF		
<u>ವ</u> -		2,3,7,8-TCDF	R	0.00000141			13C-12378-PeCDF		
- ···		1,2,3,7,8-PeCDF	SN CN	0.00000196			13C-2.3.4.7.8-PeCDF		***************************************
		2,3,4,7,8-PeCDF	S	0.00000167		•	13C-1.2.3.4.7.8-HxCDF		
ومعرس ساعدا	~~~	1,2,3,4,7,8-HxCDF	ON.	0.000000587			13C-1.2.3.6.7.8-H×CDF		
		1,2,3,6,7,8-HxCDF	S	0.000000571	post.		13C-2,3,4,6,7,8-HxCDF		
		2,3,4,6,7,8-HxCDF	S	0.000000600	0		13C-1,2,3,7,8,9-HxCDF		
Kamperyke		1,2,3,7,8,9-HxCDF	S	0.00000117			13C-1.2.3.4.6.7.8-HnCDF		*****
		1,2,3,4,6,7,8-HpCDF	Q	0.00000000	ó		13C-1.2.3.4.7.8.9-HnCDF		
<u>~</u>		1,2,3,4,7,8,9-HpCDF	N	0.00000182			13C-OCDF		<u></u>
b	* C)	OCDI.	QN		0.00000663	63	CRS 37CI-2,3,7,8-TCDD		
		Totals					Footnotes		
<u> </u>		Total TCDD	QN	0.00000118			a. Sample specific estimated detection limit.	Andri Appriled and manufacturated desired of special manufacture and second special desired manufactures on special second secon	- Company of the Comp
		lotal PeCDD	S	0.00000210			b. Estimated maximum possible concentration.	ś	
>	·	Total HxCDD	9	0.00000330			c. Method desection limit.	;	- raya sapanasa
tj	<u>کے</u> ۵	Total HpCDD	0.0000494				d. Lower control limit - noner control limit		
ス		Total TCDF	S	0.00000141					
ᅺ		Total PeCDF	<u>Q</u>	0.00000181					····
	07	Total HxCDF	0.00000136				A S I	ことに くそこうとうこう	
h	ONO	Total HpCDF	0.00000504			-	LEVEL	7 7	
ndprofo		Analyst RAS					Approved By William F F		

Approved By:

William J. Luksemburg 20-May-2005 11:12

Sample ID:	10D2054-01 Outfall	500	**************************************	AND TO LOCATE IN THE PARTY OF T	
Client Data	att formmårksing myret men men myret i frant i reggi samenga å jork men avvors sår påre men e galmmyreten med i				EFA Method 1613
Name:	Del Mar Analytical, Irvine	Sample Data	ceji	Laboratory Data	
Project	IOD2054	Matrix		Lab Sample: 26113-001	Date Received: 30. Anr. 05
Date Collected:	28-Apr-05	Sample Size:	0.943 L	QC Batch No.: 6789	Date Extracted: 17-May-05
				Date Analyzed DB-5; 19-May-05	Date Analyzed DB-225: NA
Code Analyte	Conc. (ng/L.)	DL a EMPC ^b	Qualifiers	Labeled Standard	% I CI IICI d
2,3,7,8-TCDD	ON	0.00000162		S 120 2 2 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	
1,2,3,7,8-PeCDD	ON ON	0.00000196			
1,2,3,4,7,8-HxCDD	CDD QQC	0.0000007		13C-1,2,3,7,8-FeCDD	
1,2,3,6,7,8-HxCDD		0.000000286		13C-1,2,3,4,7,8-HxCDD	
1,2,3,7,8,9-HxCDD		0.000000		13C-1,2,3,6,7,8-HxCDD	64.2 28 - 130
1.2.3.4.6.7.8-HnCDD		0.00000427		13C-1,2,3,4,6,7,8-HpCDD	55.8 23 - 140
OCDD		0.00000421		13C-OCDD	36.4 17 - 157
237 & TCDE	CT.	0,0000161		13C-2,3,7,8-TCDF	67.8 24 - 169
1001 of 100E		0.00000194		13C-1,2,3,7,8-PeCDF	
1,2,3,7,8-PeCDF		0.00000278		13C-2,3,4,7,8-PeCDF	
4,5,4,7,8-recut	i	0.00000232		13C-1.2.3.4.7.8-HxCDF	
1,2,3,4,7,8-HXCDF		0.000000933		13C-1.2.3.6.7.8-HxCDF	
1,2,3,5,7,8-HxCDF		0.000000917		13C-2.3.4.6.7.8-HyCDE	
2,3,4,6,7,8-HxCDF		0.000000091		13C-1 2 3 7 8 9-HyCDE	
1,2,3,7,8,9-HxCDF	DF ND	0.00000193		130 1 2 2 4 6 2 0 11 0 0 11	
1,2,3,4,6,7,8-HpCDF	CDF ND	0.00000135		100dE-0'/'0'+'0'7'1-00'	
1,2,3,4,7,8,9-HpCDF	CDF ND	0.0000063		15C-1,2,5,4,7,8,9-HpCDF	
OCDF	QN	0.00000485	-	CDS 322	34.7 17-157
Totals	ON THE CONTRACTOR OF			3/Cl-2,3,/,8-1CDD	87.2 35 - 197
				Footnotes	
Total ICDD	S	0.00000162		a. Samble specific estimated detection limit	
Total PeCDD	QN	0.00000196		b Estimated maximum accepts	
Total HxCDD	2	0.00000293		Nathod downstanting possible concentration.	
Total HpCDD	ON	0.00000421		c. meutod detection timit.	
Total TCDF	S	0.00000194		c. Lawel control limit - upper control limit.	
Total PeCDF	ND	0.00000254		CUTAN	
Total HxCDF	S	0.00000112	***************************************		ときにつ くろしころこれ
Total HnCDF	CIA CIA	***************************************		-	

Approved By:

William J. Luksemburg 20-May-2005 10:59



	**************************************	and the count of the summer concentration of the supposition to the country of and an expectation and an expectation	***************************************	THE PARTY OF THE P	***************************************			
	Sample ID:	IOD2055-01	Outhall oob	900			delakangan dikanonanan papakan pangan kanan kanan dan dan dan dan dan dan dan dan dan	EPA Wethod 1613
	Client Data	* * * *			Sample Data	- C. T.	Laboratory Data	
	Project	Dei Mar Analytical, fryine IOD2055	al, irvine	***************************************	Matrix:	Aqueous	Lab Sample. 26114-001	Date Received: 30Apr-05
	Date Collected	28-Apr-05		esservice v	Sample Size:	0.930 L	QC Batch No.: 6789	Date Extracted: 17-May-05
		1110				A THE STATE OF THE	Date Analyzed DB-5: 19-May-05	Date Analyzed DB-225; NA
May Gode		Conc. (ng/L)	7)	DI a	EMPC	Qualifiers	Labeled Standard	%R LCL-UCL ^d Qualifiers
≾	2,3,7,8-TCDD		QN	0.00159			IS 13C-23.78-TCDD	1
	1,2,3,7,8-PeCDD		S	0.00212				
·	1,2,3,4,7,8-HxCDD		NO	0.00247			13C-12-14-CDD	
er e	1,2,3,6,7,8-HxCDD		9	0.00236			13C-1.2.3.6.7.8-HxCDD	68.7 28 130
	1,2,3,7,8,9-HxCDD		Q	0.00246			13C-1,2,3,4,6,7,8-HpCDD	
 >	1,2,3,4,6,7,8-HpCDD		Ê	0.00323			13C-0CDD	
DNO 7		0	0.0294			وسم	13C-2,3,7,8-TCDF	
ל ≁	2,3,7,8-TCDF		2	0.00144			13C-1.2.3.7.8-PeCDF	
	1,2,3,7,8-PeCDF		QN	0.00282			13C-2.3.4.7.8-PeCDF	
	2,3,4,7,8-PeCDF		S	0.00224			13C-1.2.3.4.7.8-HxCDF	
	1,2,3,4,7,8-HxCDF		QN	0.000746			13C-1.2.3.6.7.8-HxCDF	
tide to a few to a few to a	1,2,3,6,7,8-HxCDF		S	0.000691		-	13C-2.3.4.6.7.8-HxCDF	
	2,3,4,6,7,8-HxCDF	,	- Qu	0.000794			13C-1.2.3.7.8.9-HxCDF	
	1,2,3,7,8,9-HxCDF		NO	0.00142		-	13C-1.2.3.4.6.7.8-HnCDF	
e e e e e e e e e e e e e e e e e e e	1,2,3,4,6,7,8-HpCDF		ON O	0.00103			13C-1 2.3 4 7 8 9-HnCDE	
	1,2,3,4,7,8,9-HpCDF		S	0.00205			13C-OCDF	
>	OCDF	The second secon	QN	0.00715			CRS 37CI-2,3,7,8-TCDD	
	Totals	A PARTICIPATION AND AN ANALYSIS OF THE PARTICIPATION AND ANALYSIS OF THE P					Footnotes	
ゴ -	Total TCDD	ON	D	0.00159			a. Sample specific estimated detection fimit	The state of the s
· · · · ·	Total PeCDD	S	Ω	0.00212			b. Estimated maximum possible concentration	
dente, espe	Total HxCDD	S	D	0.00243		***************************************	c. Method detection limit.	
	Total HpCDD	S	O	0.00542			d. Lower control limit - upper control limit.	
	Total TCDF	2	Q	0.00144			***************************************	**************************************
	Total PeCDF	ON	۵	0.00251		***************************************		
· ************************************	Total HxCDF	<u>Q</u>	Q	0.000864			A DIEN A	AMEC VALIDAIRU
>	Total HpCDF	ON	0	0.00143			<u>u</u>	EVE I
ndilleder od god	Answer. DAG						A THE THE PARTY OF	1

Analyst: RAS

Approved By:

William J. Luksemburg 20-May-2005 11:00

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID <u>T711MT89</u> 355 South Teller Street Task Order <u>313150010</u>, 313150012 Suite 300 SDG No. <u>IOD2031, 2053, 2055</u> Lakewood, CO 80226 No. of Analyses 3 Laboratory Del Mar Analytical Date: 06/27/05 Reviewer P. Meeks Reviewer's Signature Analysis/Method Metals **ACTION ITEMS*** 1. Case Narrative **Deficiencies** 2. Out of Scope Analyses 3. Analyses Not Canducted

<u> </u>	Conducted	
4.	Missing Hardcopy Deliverables	
5.	Incorrect Hardcopy Deliverables	
6.	Deviations from Analysis Protocol, e.g.,	Detects below the reporting limit.
	, one I totalou, 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	
	•	
COM	MENTS ^b	
* Subc	ontracted analytical laboratory is n	ot meeting contract and/or method requirements.
" Diffe	rences in protocol have been adop	ted by the laboratory but no action against the laboratory is required

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards us 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 cont limits.
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparati (method) or calibration blank.
L	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.	MS recovery was poor.
3	Not applicable.	Duplicates showed poor agreement.
	Internal standard performance was unsatis- factory.	ICP ICS results were unsatisfactory.
4	Not applicable.	ICP Serial Dilution %D were not with control limits.
М	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
	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 w incorrect.
	TIC identity or reported retention time has been changed.	Not applicable.
i.	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 use because another more technically sour analysis is available.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not with 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 th MDL and the RL and, by definition, i considered an estimated value.

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

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



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOD2051, IOD2053, IOD2055

Prepared by

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

SDG No.: Analysis:

NPDES IOD2051, 3, 5 MET

1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010, 313150012

SDG#:

IOD205, IOD2053, IOD2055

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Metals

QC Level:

Level IV

No. of Samples:

3 0

No. of Reanalyses/Dilutions:

Reviewer:

P. Meeks

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

NPDES IOD2051, 3, 5

SDG No.: Analysis:

MET

DATA VALIDATION REPORT

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 003	Outfall 003	IOD2051-01	water	ILM04
Outfall 004	Outfall 004	IOD2053-01	water	ILM04
Outfall 006	Outfall 006	IOD2055-01	water	П_М04

NPDES

SDG No.: Analysis:

IOD2051, 3, 5 MET

DATA VALIDATION REPORT

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel. A duplicate sample was listed on the COCs for all samples; however, duplicate analyses were not necessary. As the samples were delivered to the laboratory by courier, custody seals were not required. No sample qualifications were required.

2.1.3 Holding Times

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

2.2 ICP-MS TUNING

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

2.3 CALIBRATION

The ICV and CCV results showed acceptable recoveries, 90-110% for the ICP/MS metals. The reporting limit check standards were recovered within the AMEC control limits of 70-130%. No sample qualifications were required.

NPDES

SDG No.: Analysis: IOD2051, 3, 5 _____ MET

DATA VALIDATION REPORT

2.4 BLANKS

Lead was not detected in any of the blank analyses associated with the samples in these SDGs. No qualifications were required.

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

ICSA and ICSAB analyses were included in the raw data for the ICP-MS analyses. Results were not provided for spiked interferents sulfur, phosphorus, carbon, and chloride. Lead was not spiked into the ICSAB solution. Potassium in both the ICSA and ICSAB and sodium in the ICSA were recovered above the linear range of the calibration. The validator reviewed the raw data for the site sample ICP/MS analyses for the level of reported interferents, Al, Ca, Fe, and Mg, and determined that the levels of reported interferents were not high enough to cause matrix effects. No assessment could be made with respect to possible interference from sulfur, phosphorus, carbon, and chloride. No further qualifications were required.

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The ICP/MS LCS sample was identified as 5D29095-BS1. The LCS result on the summary form and in the raw data were within the laboratory-established ICP/MS control limits of 85-115%. No qualifications were required.

2.7 LABORATORY DUPLICATES

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

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

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

NPDES SDG No.: IOD2051, 3, 5

Analysis:

MET

DATA VALIDATION REPORT

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

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

2.12 SAMPLE RESULT VERIFICATION

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

2.13 FIELD QC SAMPLES

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

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



17161 Derian Ave., Suite 100, irvine, CA 92614 (949) 261-1623 FAX 949, 260 350-5 1014 E. Cookry Dr., Svite A. Colton CA 92324 (909) 170-466 1 raic 9492 210-466. 948.4 Chesapeake Dr., Suite 805, San Diego, CA 92123, (858), 303-8596, FAX, 850(-00), [more 9830 South \$150 St., Suite 8-100, Phoenix, AZ 83044, (480), 760-0043, FAX, 480(-185-085). 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3633

MWH-Pasadena/Boeing

Project ID: Routine Outfall 003

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: 10D2051

Sampled: 04/28/05

Received: 04/28/05

Attention: Bronwyn Kelly

DRAFT: METALS

Analyte Sample ID: IOD2051-01 (DRAFT:	Method Outfall 003 - V	Batch Vater)	MDL Limit	Reporting Limit	-		Date Extracted	Date Analyzed	Data Qualifiers Rev Qual	الارم) ألم لد
Reporting Units: ug/l	EPA 200.8	5D29095	0.15	1.0	3.5	1	04/29/05	05/03/05		

AMEC VALIDATED

DRAFT REPORT DRAFT REPORT

DATA SUBJECT TO CHANGE



1746 (Derian Ave., Suite 100, Irvine, CA 92814 (949) 261-1022 F.AX (949) 2603/27 (1824 8. Cooley Dr., Suite A., Colton, CA 92324 (969) 170-4567 FAX (918 31 (1914) 9484 (Thesapeake Dr., Suite 805, San Diego, CA 92183 (858) 365-8976 FAX (838) 560-9780 9830 South 31st St., Suite 8-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 265-9881 2520 E. Sunset Rd. #3, Las Vegas, NV 89129 (702) 728-3620 FAX (792) 778-3621

MWH-Pasadena/Boeing

Project ID: Routine Outfall 004

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly

Report Number: IOD2053

Sampled: 04/28/05

Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit			Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOD2053-01 (DRAF Reporting Units: ug/1	T: Outfall 004 - V	vater)							Rei Qui	1 Code
Lead	EPA 200.8	5D29095	0.13	1.0	0.68	1	04/29:05	05/03/05	J 7	DNG



DRAFT REPORT
DATA SUBJECT TO CHANGE



1745 T Derian Ave., Suite 100, Inzine, CA 92614 (049) 267-1032 FAX (049) 260-107-1034 E. Cooley Dr., Suite A, Colton, CA 92321 (049, 170 -467 FAX (949) 770-1032 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (958) 703-4964 FAX (858) 503-4613 9330 South 51st St., Suite 8-120, Phoenix, AZ 85644 (480) 783-4603 FAX (480) 783-6533 (258) 783-6633 FAX (480) 783-6533 (258) 783-6533 2528 E. Sunset Rd. #3 Las Vegas, NV 89120 (702) 798-3620 TAX (702) 798-3621

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routice Outfall 006

Report Number: IOD2055

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

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit			Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IOD2055-01 (DRA Reporting Units: ug/l	FT: Outfall 006 - W	ater)							Rev Qual	Qual Code
Lead	EPA 200.8	5D29095	0.13	1.0	0.44	The state of the s	04/29/05	05/03/05	J J	pna

AMEC VALIDATED

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

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APPENDIX G

Section 7

Outfall 009

Del Mar Analytical Laboratory Reports

AMEC Data Validation Reports



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing

Project: Routine Outfall 009 300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Sampled: 04/28/05 Received: 04/28/05 Issued: 06/20/05 17:01

NELAP #01108CA California ELAP#1197 CSDLAC #10117

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

This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

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

LABORATORY ID

CLIENT ID

MATRIX

IOD2056-01

Outfall 009

Water

Reviewed By:

Del Mar Analytical, Irvine

Michell Harper

Michele Harper Project Manager



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689 9830 South 51st St., Suite 8-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOD2056

Sampled: 04/28/05

Received: 04/28/05

META	LS
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		*******	. M.M.J.					
Method	Batch	MDL Limit	Reporting Limit	Sample Result			Date Analyzed	Data Qualifiers
9 - Water)								
·								
EPA 200.8	5D29095	0.18	2.0	ND	1	04/29/05	05/03/05	
EPA 200.8	5D29095	0.015	1.0	0.024	1	04/29/05		¥
EPA 200.8	5D29095	0.49	2.0	3.2	1	04/29/05	05/03/05	•
EPA 200.8	5D29095	0.13	1.0	1.1	1	04/29/05	05/03/05	
EPA 245.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	
	9 - Water) EPA 200.8 EPA 200.8 EPA 200.8 EPA 200.8	9 - Water) EPA 200.8 5D29095 EPA 200.8 5D29095 EPA 200.8 5D29095 EPA 200.8 5D29095	Method Batch Limit 9 - Water) EPA 200.8 5D29095 0.18 EPA 200.8 5D29095 0.015 EPA 200.8 5D29095 0.49 EPA 200.8 5D29095 0.13	Method Batch Limit Limit 9 - Water) EPA 200.8 5D29095 0.18 2.0 EPA 200.8 5D29095 0.015 1.0 EPA 200.8 5D29095 0.49 2.0 EPA 200.8 5D29095 0.13 1.0	Method Batch MDL Limit Reporting Limit Sample Result 9 - Water) EPA 200.8 5D29095 0.18 2.0 ND EPA 200.8 5D29095 0.015 1.0 0.024 EPA 200.8 5D29095 0.49 2.0 3.2 EPA 200.8 5D29095 0.13 1.0 1.1	Method Batch MDL Limit Reporting Limit Sample Result Dilution Factor 9 - Water) EPA 200.8 5D29095 0.18 2.0 ND 1 EPA 200.8 5D29095 0.015 1.0 0.024 1 EPA 200.8 5D29095 0.49 2.0 3.2 1 EPA 200.8 5D29095 0.13 1.0 1.1 1	Method Batch MDL Limit Reporting Limit Sample Result Dilution Factor Date Extracted 9 - Water) EPA 200.8 5D29095 0.18 2.0 ND 1 04/29/05 EPA 200.8 5D29095 0.015 1.0 0.024 1 04/29/05 EPA 200.8 5D29095 0.49 2.0 3.2 1 04/29/05 EPA 200.8 5D29095 0.13 1.0 1.1 1 04/29/05	Method Batch MDL Limit Reporting Limit Sample Result Dilution Factor Date Extracted Date Analyzed 9 - Water) EPA 200.8 5D29095 0.18 2.0 ND 1 04/29/05 05/03/05 EPA 200.8 5D29095 0.015 1.0 0.024 1 04/29/05 05/03/05 EPA 200.8 5D29095 0.49 2.0 3.2 1 04/29/05 05/03/05 EPA 200.8 5D29095 0.13 1.0 1.1 1 04/29/05 05/03/05 EPA 246.1 5D29095 0.23 1.0 1.1 1 04/29/05 05/03/05



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MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IOD2056

Sampled: 04/28/05

Received: 04/28/05

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2056-01 (Outfall 009 -	Water) - cont.								
Reporting Units: mg/l									
Chloride	EPA 300.0	5D28116	0.15	0.50	10	I	04/28/05	04/29/05	
Nitrate/Nitrite-N	EPA 300.0	5D28116	0.075	0.15	0.53	1	04/28/05	04/29/05	
Oil & Grease	EPA 413.1	5D29041	0.94	5.0	ND	1	04/29/05	04/29/05	
Sulfate	EPA 300.0	5D28116	0.45	0.50	36	1	04/28/05	04/29/05	
Total Dissolved Solids	SM2540C	5D29129	10	10	160	1	04/29/05	04/29/05	
Total Suspended Solids	EPA 160.2	5E04071	10	10	ND	1	05/04/05	05/04/05	

Del Mar Analytical, Irvine Michele Harper Project Manager



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689 9830 South 51st St., Suite 8-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 009

Report Number: IOD2056

Sampled: 04/28/05

Received: 04/28/05

SHORT HOLD TIME DETAIL REPORT

Hold Time Date/Time Date/Time Date/Time Date/Time (in days) Sampled Received Extracted Analyzed Sample ID: Outfall 009 (IOD2056-01) - Water EPA 300.0 2 04/28/2005 12:13 04/28/2005 18:15 04/28/2005 21:30 04/29/2005 02:43

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 009

Report Number: IOD2056

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

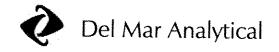
METHOD BLANK/QC DATA

METALS

Analyte Result Limit MDL Units Level Result %REC Limits RPD Limit Batch: 5D29061 Extracted: 04/29/05	Qualifier
Batch, 3D25001 Extracted: 04/29/05	
Blank Analyzed: 04/29/2005 (5D29061-BLK1)	
Mercury ND 0.20 0.063 ug/l	
LCS Analyzed: 04/29/2005 (5D29061-BS1)	
Mercury 8.06 0.20 0.063 ug/l 8.00 101 85-115	
Marketin C-11, Aug. 1, A strangerous empages	
Mercury 7.76 0.20 0.063 ug/l 8.00 ND 97 70-130	
Makin Cuth, D. A. L. J. O. (20 2002 (Theory of the Country))	
Matrix Spike Dup Analyzed: 04/29/2005 (5D29061-MSD1) Source: IOD2033-03	
Mercury 7.82 0.20 0.063 ug/l 8.00 ND 98 70-130 1 20	
Batch: 5D29095 Extracted: 04/29/05	
Blank Analyzed: 05/03/2005 (5D29095-BLK1)	
Antimony ND 2.0 0.18 ug/1	
Cadmium ND 1.0 0.015 ug/I	
Copper ND 2.0 0.49 ug/I	
Lead ND 1.0 0.13 ug/l	
LCS Analyzed: 05/03/2005 (5D29095-BS1)	
Antimony 87.8 2.0 0.18 ug/l 80.0 110 85-115	
Cadmium 87.8 1.0 0.015 ug/l 80.0 110 85-115	
Copper 78.5 2.0 0.49 ug/l 80.0 98 85-115	
Lead 81.9 1.0 0.13 ug/l 80.0 102 85-115	
Matrix Spike Analyzed: 05/03/2005 (5D29095-MS1) Source: IOD2054-01	
Antimony	
Cadmium 86.7 1.0 0.015 ug/l 80.0 0.31 123 70-130 1.0 0.015 ug/l 80.0 0.058 108 70-130	
Copper 79.4 2.0 0.49 ug/l 80.0 2.0 97 70-130	
Lead 80.9 1.0 0.13 ug/l 80.0 0.24 101 70-130	

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 009

Report Number: IOD2056

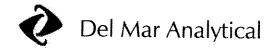
Sampled: 04/28/05 Received: 04/28/05

METHOD BLANK/QC DATA

METALS

Analyte Batch: 5D29095 Extracted: 04/29/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Matrix Spike Analyzed: 05/03/2005 (5D2	9095-MS2)				Sou	rce: IOD	2149-03				
Antimony	100	10	0.90	ug/l	80.0	ND	125	70-130			
Cadmium	76.0	5.0	0.075	ug/l	80.0	0.45	94	70-130			
Copper	90.1	10	2.4	ug/l	80.0	17	91	70-130			
Lead	73.5	5.0	0.65	ug/l	80.0	1.1	90	70-130			
Matrix Spike Dup Analyzed: 05/03/2005	(5D29095-M	SDI)			Sour	rce: IOD2	2054-01				
Antimony	99.6	2.0	0.18	ug/l	80.0	0.31	124	70-130	1	20	
Cadmium	87.7	1.0	0.015	ug/i	80.0	0.058	110	70-130	1	20	
Copper	81.3	2.0	0.49	ug/l	80.0	2.0	99	70-130	2	20	
Lead	81.0	1.0	0.13	ug/l	80.0	0.24	101	70-130	0	20	

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 009

Report Number: IOD2056

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

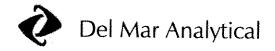
METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D28116 Extracted: 04/28/05	5_										
Blank Analyzed: 04/28/2005 (5D28116-B	LK1)										
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 04/28/2005 (5D28116-BS	1)										
Chloride	4.82	0.50	0.26	mg/l	5.00		96	90-110			M-3
Sulfate	9.63	0.50	0.18	mg/l	10.0		96	90-110			M-3
Batch: 5D29041 Extracted: 04/29/05	.										
Blank Analyzed: 04/29/2005 (5D29041-Bl	LK1)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 04/29/2005 (5D29041-BS1	l)										
Oil & Grease	18.3	5.0	0.94	mg/l	20.0		92	65-120			M-NRI
LCS Dup Analyzed: 04/29/2005 (5D29041	-BSD1)										
Oil & Grease	18.9	5.0	0.94	mg/l	20.0		94	65-120	3	20	
Batch: 5D29129 Extracted: 04/29/05											
Blank Analyzed: 04/29/2005 (5D29129-BI	.K1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 04/29/2005 (5D29129-BS1)								:		
Total Dissolved Solids	930	10	10	mg/l	1000		93	90-110			

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 009

Report Number: IOD2056

Sampled: 04/28/05

Received: 04/28/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29129 Extracted: 04/29/05	-										
Duplicate Analyzed: 04/29/2005 (5D2912) Total Dissolved Solids	-	4.0		_	Soui	rce: IOD2	2033-01				
Batch: 5E04071 Extracted: 05/04/05	334	10	10	mg/l		360			7	10	
Blank Analyzed: 05/04/2005 (5E04071-BI	•										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/04/2005 (5E04071-BS1)										
Total Suspended Solids	1000	10	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 05/04/2005 (5E04071	-DUP1)				Sour	ce: IOD2	054-01				
Total Suspended Solids	ND	10	10	mg/l		ND				10	

Del Mar Analytical, Irvine Michele Harper Project Manager



MWH-Pasadena/Boeing

Project ID: Routine Outfall 009

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOD2056

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

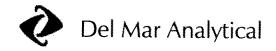
Attention: Bronwyn Kelly

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
IOD2056-01	413.1 Oil and Grease	Oil & Grease	mg/l	-1	5.0	15
IOD2056-01	Chloride - 300.0	Chloride	mg/l	10.00	= :=	
IOD2056-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N			0.50	150
IOD2056-01	Sulfate-300.0	Sulfate	mg/l	0.53	0.15	10.00
IOD2056-01	TDS - SM 2540C		mg/l	36	0.50	250
10121000-01	1 DO ~ 31VI 234UC	Total Dissolved Solids	mg/l	160	10	850

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 009

Report Number: IOD2056

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

DATA QUALIFIERS AND DEFINITIONS

J Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M-3 Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

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

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 009

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly

Report Number: IOD2056

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

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	X	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

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

Subcontracted Laboratories

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

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOD2056-01

Analysis Performed: EDD + Level 4

Samples: IOD2056-01

Del Mar Analytical, Irvine Michele Harper Project Manager 704 10025C **CHAIN OF CUSTODY FORM**

Del Mar Analytical version 02/17/05

Page 1 of 0 0 Comments Temp = 59.4 Field readings: 10 Days Sample Integrity, (Check) Intact On Ice Turn around Time: (check) 24 Hours 5 Days Perchlorate Only 72 Hours Metals Only 72 Hours 48 Hours 72 Hours ANALYSIS REQUIRED SST, SQT × CF' 204' NO3+NO5-N Date/Time Oil & Grease (EPA 413.1) × TCDD (and all congeners) × ググ Total Recoverable Metals: Sb, Cd, Cu, Pb, Hg × 5A, 5B 2A, 2B 3A 3B 4A,4B Bottle . ₹ ₽ Preservative Received By Received By Received By Boeing-SSFL NPDES Routine Outfall 009 Stormwater at WS-13 HN03 HN03 None None None 오 (626) 568-6515 Phone Number (626) 568-6691 Fax Number: Sampling Date/Time 7.28.05 Voste/Jime: 7 Project Cont Sampler. Rick Danas A MWH-Pasadena 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Project Manager. Bronwyn Kelly ۲. Glass-Amber Glass-Amber Poly-500 ml Sample | Container Type Poly-1L Poly-1L Client Name/Address: Matrix ≥ ₹ ₹ ≥ ₹ Relinquished By Relinguished By Sample Description Outfall 009-Outfall 009 Outfall 009 Outfall 009 Outfall 009 Outfall 009 å



June 20, 2005

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

Attention:

Bronwyn Kelly

Project:

Routine Outfall 009 Sampled: 04/28/05

Del Mar Analytical Number: IOD2056

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 009	IOD2056-01	26115-001

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

Sincerely yours,

DEL MAR ANALYTICAL

Michele Harper Project Manager

Enclosure



May 20, 2005

Alta Project I.D.: 26115

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on April 30, 2005 under your Project Name "IOD2056". 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

Musho Moier



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Section I: Sample Inventory Report

Date Received:

4/30/2005

Alta Lab. ID

Client Sample ID

26115-001

IOD2056-01



SECTION II

Project 26115



Method Blank	- version and the second secon				EP	EPA Method 1613
Matrix: Aqueous		QC Batch No.: 67	6789	Lab Sample: 0-MB001		
Sample Size: 1.000 L		Date Extracted: 17	17-May-05	Date Analyzed DB-5: 19-May-05	Date Analyzed DB-225:	B-225: NA
Analyte Conc. (ug/L)	(L)	DL a EMPC b	Qualifiers	Labeled Standard	%R LCL-UCL ^d	JCL ^d Qualifiers
2,3,7,8-TCDD N	Q.	0.00000124		IS 13C-2,3,7,8-TCDD	69.9	25 - 164
1,2,3,7,8-PeCDD N	N ON	0.00000166		13C-1,2,3,7,8-PeCDD	84.1 25	25 - 181
1,2,3,4,7,8-HxCDD N	NO	0.00000186		13C-1,2,3,4,7,8-HxCDD	72.5 32	32 - 141
	9	0.00000179		13C-1,2,3,6,7,8-HxCDD	75.3 28	28 - 130
1,2,3,7,8,9-HxCDD	N Q	0.00000186		13C-1,2,3,4,6,7,8-HpCDD	65.8 23	23 - 140
1,2,3,4,6,7,8-HpCDD N	R	0.00000303		13C-0CDD	58.4	17 - 157
OCDD	ND	0.00000677		13C-2,3,7,8-TCDF	81.1 24	24 - 169
2,3,7,8-TCDF	S	0.000000924		13C-1,2,3,7,8-PeCDF	79.5 24	24 - 185
1,2,3,7,8-PeCDF	N N	0.00000226		13C-2,3,4,7,8-PeCDF	82.4	21 - 178
	S	0.00000193		13C-1,2,3,4,7,8-HxCDF	72.6 26	26 - 152
1,2,3,4,7,8-HxCDF	S	0.000000785		13C-1,2,3,6,7,8-HxCDF	75.4 26	26 - 123
1,2,3,6,7,8-HxCDF N	R	0.000000731		13C-2,3,4,6,7,8-HxCDF	92.3 28	28 - 136
2,3,4,6,7,8-HxCDF N	ON ON	0.000000672		13C-1,2,3,7,8,9-HxCDF	68.4 29	29 - 147
	N N	0.00000158		13C-1,2,3,4,6,7,8-HpCDF	63.5 28	28 - 143
1,2,3,4,6,7,8-HpCDF N	N	0.000000069		13C-1,2,3,4,7,8,9-HpCDF	52.9 26	26 - 138
7,8,9-HpCDF	S	0.00000192		13C-OCDF	49.2	17 - 157
OCDE	Q.	0.00000476		CRS 37Cl-2,3,7,8-TCDD	89.9 35	- 197
Totals		,		Footnotes		
Total TCDD	NO.	0.00000124		a. Sample specific estimated detection limit.		
Total PeCDD N	S S	0.00000166		b. Estimated maximum possible concentration.		
Total HxCDD N	NO	0.00000183		c. Method detection limit.		
Total HpCDD N	S	0.00000303		d. Lower control limit - upper control limit.		
Total TCDF N	R	0.000000924				
Total PeCDF N	NO	0.00000209				
Total HxCDF N	S	0.000000872				
Total HpCDF	S	0.00000132				
Commando and Comma		AND THE RESERVENCE OF THE PROPERTY OF THE PROP			Western was and about tree would have been about the second secon	

Analyst: RAS

Approved By:

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

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Matrix: Aqueous Sample Size: 1.000 L Analyte Spike Cone. 2,3,7,8-TCDD 10.0 1,2,3,7,8-PeCDD 50.0 1,2,3,4,7,8-HxCDD 50.0	QC Batch No.: Date Extracted: Spike Conc. Conc. (ng/mL) 10.0 10.3 50.0 51.8 50.0 50.1 50.0 52.2	6789 17-May-05 OPR Limits 6.7 - 15.8 35 - 71 35 - 82	Lab Sample: 0-OPR001 Date Analyzed DB-5: 19-May-05 Labeled Standard IS 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD	Date Analyzed DB-225: %R LCL-U	1 DB-225: NA
1.000 L	Date Extracted: . Conc. (ng/mL) 10.3 51.8 50.1	17-May-05 OPR Limits 6.7 - 15.8 35 - 71 35 - 82	Date Analyzed DB-5: 19-May-05 Labeled Standard IS 13C-2,3,7,8-TCDD 13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD	Date Analyzee	
OD	Conc. (ng/mL) 10.3 51.8 50.1 52.2	OPR Limits 6.7 - 15.8 35 - 71 35 - 82 38 - 67) mad	%R	
on CDD	10.3 51.8 50.1 52.2	6.7 - 15.8 35 - 71 35 - 82 38 - 67		6 3	TCI-nci
Q	51.8 50.1 52.2	35 - 71 35 - 82 38 - 67	13C-1,2,3,7,8-PeCDD 13C-1,2,3,4,7,8-HxCDD	3.52	25 - 164
	50.1	35 - 82 38 - 67	13C-1,2,3,4,7,8-HxCDD	82.1	25 - 181
	52.2	38 - 67		69.4	32 - 141
1,2,3,6,7,8-HxCDD 50.0			13C-1,2,3,6,7,8-HxCDD	74.5	28 - 130
1,2,3,7,8,9-HxCDD 50.0	54.3	32 - 81	13C-1,2,3,4,6,7,8-HpCDD	64.6	23 - 140
1,2,3,4,6,7,8-HpCDD 50.0	49.7	35 - 70	13C-OCDD	40.2	17 - 157
OCDD 100	99.1	78 - 144	13C-2,3,7,8-TCDF	71.3	24 - 169
2,3,7,8-TCDF 10.0	10.1	7.5 - 15.8	13C-1,2,3,7,8-PeCDF	78.8	24 - 185
1,2,3,7,8-PeCDF 50.0	49.0	40 - 67	13C-2,3,4,7,8-PeCDF	85.0	21 - 178
2,3,4,7,8-PeCDF 50.0	49.2	34 - 80	13C-1,2,3,4,7,8-HxCDF	72.8	26 - 152
1,2,3,4,7,8-HxCDF 50.0	48.2	36 - 67	13C-1,2,3,6,7,8-HxCDF	78.4	26 - 123
1,2,3,6,7,8-HxCDF 50.0	48.8	42 - 65	13C-2,3,4,6,7,8-HxCDF	82.5	28 - 136
2,3,4,6,7,8-HxCDF 50.0	48.4	35 - 78	13C-1,2,3,7,8,9-HxCDF	69.8	29 - 147
1,2,3,7,8,9-HxCDF 50.0	49.7	39 - 65	13C-1,2,3,4,6,7,8-HpCDF	58.1	28 - 143
1,2,3,4,6,7,8-HpCDF 50.0	49.7	41 - 61	13C-1,2,3,4,7,8,9-HpCDF	45.9	26 - 138
1,2,3,4,7,8,9-HpCDF 50.0	9.05	39-69	13C-OCDF	36.3	17 - 157
OCDF . 100	93.6	63 - 170	CRS 37CI-2,3,7,8-TCDD	85.6	35 - 197

Analyst: RAS

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



Sample ID:	IOD2056-01					EPA Mei	EPA Method 1613
Client Data			Sample Data		Laboratory Data		
Project:	Dei Mar Analytical, Irvine IOD2056		Matrix:	Aqueous	Lab Sample: 26115-001	Date Received:	30-Anr-05
Hected:	28-Apr-05		Sample Size:	0.960 L	-	Date Extracted:	17-May-05
	17.13		7		Date Analyzed DB-5: 19-May-05	Date Analyzed DB-225: NA	Y'A
Analyte	Conc. (ug/L.)	DF a	EMPC	Qualifiers	Labeled Standard	%R LCL-UCL ^d Qu	Oualifiers
2,3,7,8-TCDD	R	0.00000140	40		IS 13C-2,3,7,8-TCDD	66.6 25 - 164	
1,2,3,7,8-PeCDD	QN	0.00000144	14		13C-12378-PeCND		
1,2,3,4,7,8-HxCDD	DN	0.00000241			13C-1.2.3.4.7.8-HxCDD		
1,2,3,6,7,8-HxCDD	QN	0.00000237	37		13C-1,2,3,6,7,8-HxCDD		
1,2,3,7,8,9-HxCDD		0.00000244	14		13C-1,2,3,4,6,7,8-HpCDD		
1,2,3,4,6,7,8-HpCDD				V	13C-0CDD		
OCDD	0.000119				13C-2.3.7.8-TCDF	•	
2,3,7,8-TCDF	ON ON	0.000000942	342		13C-1,2,3,7,8-PeCDF		
1,2,3,7,8-PeCDF	ON	0.00000149	6	laks vuuv	13C-2,3,4,7,8-PeCDF		
2,3,4,7,8-PeCDF	ON.	0.00000125	53	-	13C-1,2,3,4,7,8-HxCDF		
1,2,3,4,7,8-HxCDF	J. ND	0.000000643	43		13C-1,2,3,6,7,8-HxCDF		
1,2,3,6,7,8-HxCDF	QN .	0.000000572	772		13C-2,3,4,6,7,8-HxCDF		
2,3,4,6,7,8-HxCDF	QN	0.000000654	54	•	13C-1,2,3,7,8,9-HxCDF		
1,2,3,7,8,9-HxCDF	8	0.00000115	5		13C-1,2,3,4,6,7,8-HpCDF		
1,2,3,4,6,7,8-HpCDF	OF ND	0.00000154	4		13C-1.2.3.4.7.8.9-HnCDF		· · · · · · ·
1,2,3,4,7,8,9-HpCDF	JF ND	0.00000136	9		13C-OCDF		
OCDF	QN	0.00000672	.2	<u> </u>	CRS 37CI-2,3,7,8-TCDD		
Totals		-			Footnotes		
Total TCDD	GN.	0.00000140	0		a. Sample specific estimated detection limit	AVOLUMENTAL TO THE STATE OF THE	
Total PeCDD	QN	0.00000144	4		b. Estimated maximum possible concentration		
Total HxCDD	S	0.00000240	0		c. Method detection limit		
Total HpCDD	0.0000303				d. Lower control limit - unner control limit		
Total TCDF	QX.	0.000000942	42		The course will		*****
Total PeCDF	£	0.00000136	9				
Total HxCDF	0.000000890						
Total HpCDF	ND	0.00000194	4				
6 to 12 to 15 to 1						AND THE REPORT OF THE PARTY OF	

Analyst: RAS

Approved By:

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



APPENDIX



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.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit - concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

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

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

CURRENT CERTIFICATIONS



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

Department of the Navy

U.S. Army Corps of Engineers

U.S. EPA Region 5

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

Commonwealth of Kentucky — (Certificate No. 90063)

Commonwealth of Virginia — (Certificate No. 00013)

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

State of Arizona — (Certificate No. AZ0639)

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

State of Arkansas, Department of Environmental Quality

State of California — (Certificate No. 1640)

State of Colorado

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

State of Florida — (Certificate No. 87456)

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

State of Louisiana, Department of Environmental Quality

State of Maine

State of Michigan (Certificate No. 81178087)

State of Mississippi — (Approval granted through CA certification)

State of Nevada — (Certificate No. CA413)

State of New Jersey — (Certificate No. CA003)

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

State of North Carolina — (Certification No. 06700)

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

State of New Mexico

State of Oklahoma – (D9919)

State of Oregon - (Certificate No. CA413)

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

State of South Carolina — (Certificate No. 87002001)

State of Tennessee — (Certificate No. 02996)

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

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

State of Washington - (Certification No. C091)

State of Wisconsin — (Certificate No. 998036160)

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



17461 Derian Ave. Sulte 106, Irvine, CA 92614

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

d., Suite #3, Las Vegna, NV 89120 P

9) 261-1022 Fax (949) 261-12 9) 370-4667 Fax (909) 370-10

Ph (619) 505-9596 Fax (619) 605-9

Fax (702) 798-3821

SUBCONTRACT ORDER - PROJECT # IOD2056

Del Mar Analytical, Ir 17461 Derian Avenue. Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Mich	Suite 100	RECEIVING LABORATORY: Alta Analytical 1104 Windfield Way El Dorado Hills, CA 95762 Phone: (916) 933-1640 Fax: (916) 673-0106
Standard TAT is requ Analysis	nested unless specific due date is request Expiration	ed => Due Date: Initials:
Sample ID: IOD2056-01 1613-Dioxin-HR EDD + Level 4	Water Sampled: 04/28/05 12:13 05/05/05 12:13 05/26/05 12:13	Instant Notication J flags,17 congeners,no TEQ,sub=Alta, DP to AMEC Excel EDD email to pm,Include Std logs for Lvl IV
Containers Supplied: 1 L Amber (IOD2056-0 1 L Amber (IOD2056-0		

				SAMPLE	INTE	GRI	ΓY:				*****	
All containers intact: Custody Seals Present:	Yes Yes	 No No		nple labels/COC agree: nples Preserved Properly:	Ö 0	Yes Yes			Samples Received On Ice:: Samples Received at (temp):		Yes	П №
Released By		 	4.29	703 12:00	<i>)</i> ,	M	Ja	tllent	4/30/05	 >		915
					Receiv				/ Date		Tir	ne
Released By			Date	Time	Receiv	ed By	,		Date	***************************************	Tir	ne

STANDARD OPERATING PROCEDURE

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

AL.	TA Project No.:			•
1.	Date Samples Arrived: 4/30/05 09/5 Initials: MU Location Time / Date logged in: 0950 55/05 Initials: Location	n: W	1.7	
2.	Time / Date logged in: 0950 55/05 Initials: Bulb Location	n: 4)K-2	~
3.	Samples Arrived By: (circle) FedEx UPS World Courier Other:	٠		
4.	Shipping Preservation: (circle) (ce Blue Ice / Dry Ice / None Temp °C //			
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.		V	u
7.	Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number 79 (6 (353 \$ 260			
8.	Sample Custody Seal(s) Present? No. of Seals or Seal No. Intact? If not intact, describe condition in comment section.		/	V
9.	Sample Container Intact? If no, indicate sample condition in comment section.			
10.	Chain of Custody (COC) or other Sample Documentation Present?	V		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.			
12.	Shipping Container (circle): ALTA Client Retain or Return or Di	sposed		
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			V

comments: samplero initials found on sample labels

ALTA Analytical Laboratory El Dorado Hills, CA 95762

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711DF48 550 South Wadsworth Boulevard Task Order 313150010 Suite 500 SDG No. Multiple Lakewood, CO 80226 No. of Analyses 6 Laboratory Alta Date: June 1, 2005 Reviewer H. Chang Reviewer's Signature Analysis/Method Dioxin&Furans/1613 **ACTION ITEMS*** Case Narrative **Deficiencies** 2. Out of Scope Analyses 3. Analyses Not Conducted 4. Missing Hardcopy **Deliverables Incorrect Hardcopy Deliverables** 6. Deviations from Analysis Detects below the calibration range were qualified "J." Protocol, e.g., EMPCs were qualified "UJ." Holding Times GC/MS Tune/Inst. Perform Calibrations Blanks Surrogates Matrix Spike/Dup LCS Field QC Internal Standard Performance Compound Identification and Quantitation System Performance COMMENTS^b

^a Subcontracted analytical laboratory is not meeting contract and/or method requirements.

b Differences in protocol have been adopted by the laboratory but no action against the laboratory is required.



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: DIOXINS/FURANS

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

Prepared by

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

DATA VALIDATION REPORT

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

OC Level:

Level IV

No. of Samples:

6

0

No. of Reanalyses/Dilutions: Reviewer:

H. Chang

Date of Review:

June 1, 2005

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 1), EPA Method 1613, and the National 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 ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits of 4°C ±2°C at 0°C and 1.1°C; however, as the samples were not noted to have been frozen or damaged, no qualifications were required. According to the laboratory login sheets, the samples were received intact and in good condition at both laboratories. No qualifications were required.

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

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

2.2.2 Mass Spectrometer Performance

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

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Project: SDG No.: NPDES

Analysis:

Multiple D/F

DATA VALIDATION REPORT 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.

ALTA		LFA Method 1613	30-Apr-05	17-May-05		Oualifiers					**************************************		······································		***************************************	***************************************	**************************************											The state of the s		eray
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endere en		Laboratory Data	Lab Sample: 26117-001 QC Batch No.: 6789	Date Analyzed DB-5: 19-May-05	Labeled Standard		13C-12.3.7.8-Perm	13C-1,2,3,4,7,8-HxCDD	13C-1,2,3,6,7,8-HxCDD	13C-1,2,3,4,6,7,8-HpCDD	13C-0CDD	13C-2,3,7,8-TCDF	13C-1,2,3,7,8-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	لمقبر		13C-OCDF	37Cl-2,3,7,8-TCDD	A CONTRACTOR AND	a. Sample specific estimated detection limit	b. Estimated maximum possible concentration	c. Method detection limit.	d. Lower control limit - upper control limit.	AMEC VAL		X THE TOTAL TOTAL
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Analyst: RAS

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	1,2,3,4,7,8-HxCDD	8-HxCDD	S	0.00000269		**************************************	13C-1,2,3,7,8-PeCDD	66.7 25 - 181	
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	2,3,4,6,7,8-HxCDF	-HxCDF	2	0.00000107		•	13C-2,3,4,6,7,8-HxCDF	69.4 28 - 136	
		-HxCDF	ON ON	0.00000207			13C-1,2,3,7,8,9-HxCDF	59.2 29 - 147	
7:		8-HpCDF	0.00000505			-	13C-1,2,3,4,6,7,8-HpCDF	55.7 28 - 143	***************************************
ਤ :	1.2,3,4,7,8,9-HpCDF	9-HpCDF	NO NO	0.00000211		<	13C-1,2,3,4,7,8,9-HpCDF	49.5 26 - 138	***************************************
		A - Hard-Stade Collection of Hard Consequence of Historic State State State States States States States States	ND	0.0000145		_ <u>``</u>	ISC-OCDF	44.8 17 - 157	
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국	Total PeCDD	Q	9 9	0.0000162		cr\$	a. Sample specific estimated detection limit.		
H	Total HxCDD	Q	0.00000896	0.00000180		<u></u>	 b. Estimated maximum possible concentration. 		
		G G	0.0000879			د <u>ن</u> 	c. Method detection limit.		
か り り		٤	0.00000379			rd	d. Lower control limit - upper control limit.		
		نقر		0.00000206		***************************************	AMEC VALIDAGES		
9 8 A h h	Total HxCDF Total HpCDF	T T	0.00000262		0.00000434		LEVEL IV	ווערוני	
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		Sample ID:	10D2053-01 Outfall 004	700	Additional property of the last of the las	***************************************		es music prince construction is a server of the material construction of magnetic states of the server of the serv	
	<u> </u>	Client Data		***************************************	-	***************************************		EPA	EPA Method 1613
	····	Name:	Del Mar Analytical Incine	••••	Sample Data		Laboratory Data	A CANADA TO THE CONTRACT OF THE CANADA THE CONTRACT OF THE CANADA	
—264		Project: Date Collected:	1OD2053 28-Apr-05		Matrix: Sample Size:	Aqueous		Date Received:	30-Apr-05
		cted.	Teatheradaire desse anno ann ann ann ann ann ann ann ann an	The state of the s		7 00 F	Date Analyzed DB.5: 19.May 05	Date Extracted:	17-May-05
-3	30	Analyte	Conc. (ug/L)	DF a	EMPCb	Qualifiers		₹	225: NA
კ	***************************************	2,3,7,8-TCDD	QN	0.00000131			ľ	%R LCL-UCL"	Oualifiers
Territoria de la composição de la compos		1,2,3,7,8-PeCDD	S	0.00000171			13C-2,3,7,8-TCDD	70.3 25 - 164	and the control was the control of t
***************************************		1,2,3,4,7,8-HxCDD	QN Q	0.00000161	t eme		13C-1,2,3,7,8-PeCDD	71.3 25 - 181	
	Area menter e mayerida	1,2,3,6,7,8-HxCDD	_	0.00000164	~ ~		13C-1,2,3,4,7,8-HxCDD	69.9 32 - 141	
		1,2,3,7,8,9-HxCDD	UN OI	0.00000166			13C-1,2,3,6,7,8-HxCDD	75.4 28 - 130	
다. - - - - - - - - - - - - - - - - - - -		1,2,3,4,6,7,8-HpCDD	ON		0.0000163	~	13C-1,2,3,4,6,7,8-HpCDD	66.2 23 - 140	
	the state of the s	OCDD	0.000234		010000	2	13C-OCDD	45.9 17 - 157	
<u></u>	- 4	2,3,7,8-TCDF	Q.	0.00000135			13C-2,3,7,8-TCDF	72.7 24 - 169	
	**********	1,2,3,7,8-PeCDF	S	0.00000133	4 ,		13C-1,2,3,7,8-PeCDF	70.7 24 - 185	
	• 4	2,3,4,7,8-PeCDF	QN	0.0000019		***************************************	13C-2,3,4,7,8-PeCDF	71.8 21-178	
		1,2,3,4,7,8-HxCDF	Q.	0.00000000	<u></u>		13C-1,2,3,4,7,8-HxCDF	73.2 26 - 152	
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		2,3,4,6,7,8-HxCDF	2	0.000000586	, , 0		13C-2,3.4,6,7,8-HxCDF	75.6 28 - 136	· · · · · · · · · · · · · · · · · · ·
		1,2,3,7,8,9-HxCDF	S	0.00000105)		13C-1,2,3,7,8,9-HxCDF	70.0 29 - 147	-
3	A-100-1-7-	1,2,3,4,6,7,8-HpCDF)F 0.00000258			•	13C-1,2,3,4,6,7,8-HpCDF	62.5 28 - 143	
ゴ :		1,2,3,4,7,8,9-HpCDF		0.00000180		<	13C-1,2,3,4,7,8,9-HpCDF	53.9 26 - 138	
<u>ځ</u>	<u> </u>	OCDF	ON.	0.00000877			ISC-OCDF	47.5 17-157	
	[Totals	The control of the co	The second secon		The state of the s	3/Cl-4,3,7,8-TCDD	87.8 35-197	
ವ	F	Total TCDD	A CANAGO SA CANAGO S	0.00000	And the second of the second o		Footnotes		
3		Total PeCDD	3 5	0.00000131			a. Sample specific estimated detection limit.	A STATE OF THE STA	and the same of th
b Park		Total HxCDD	0.00000183	7/1000000			 Estimated maximum possible concentration. 		
y A h		Total HpCDD	0.0000189		0.0000		c. Method detection limit.		
ج ع 	<u>~</u>	Total TCDF	ON	0.00000135	7000000		d. Lower control limit - upper control limit.		
	**************************************	Total PeCDF	QN	0.00000126			AMEN		
ond u		Total HxCDF Total HpCDF	0.00000229			nanapa pendukhanggan		SIEC VALIDATE	A
••••	An	Analyst RAS	Andrew Chromy Carlotter and Ca	And the second s				*	
							Approved By:	The second secon	Andreas de la company de la co

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		Sample ID: 10	10102056-01 Outfact	8		AND THE CONTRACT AND TH		ere de la completa d	
		Client Data						EP	EPA Method 1613
			Dei Mar Analytical Imine	- 4	Sample Data		Laboratory Data	Annual Control of the	CYAY BARRATA
Newson		Project IO	1002056 28. Anglos		Matrix; Sample Sizz:	Aqueous	Lab Sample: 26115-001	Date Received:	30.4 mr 08
	Que	Time Collected:	The state of the s		ornipie Sizz.	T 00% n	OC Batch No.: 6789	Date Extracted	17-May-05
Lomas	a-de	Analyte	Conc. (ug/L)	DI, a	EMPCb	Qualification	Curc Analyzed DB-3: 19-May-05	Date Analyzed DB-225; NA	3-225: NA
ゴ -		2,3,7,8-TCDD		0.00000140		_	1	%R LCL-UCLd	d Oualifiers
		1,2,3,7,8-PeCDD	S	0.00000144		·	13C-2,3,7,8-TCDD	66.6 25 - 164	
		1,2,3,4,7,8-HxCDD	S	0.00000241			13C-1,2,3,7,8-PeCDD	70.0 25 - 181	
		1,2,3,6,7,8-HxCDD	2	0.00000237		a Tanak ng Agartan	13C-1,2,3,4,7,8-HxCDD	71.1 32 - 141	
<u> </u>	S	1,2,3,7,8,9-HxCDD		0.00000244			13C-1,2,3,6,7,8-HxCDD		
	<u> </u>	1,4,3,4,6,7,8-HpCDD				4	130_0CDD		
-		2378 TCDE	0.000119		<i>.</i> *.		13C-2-3-7 & TCDE		
· · · · · · · · · · · · · · · · · · ·	···	1.2, 7.6-11.DF		0.000000942	~1	betain vilangin	13C-1 2 3 7 8 De Opt		
		2.3.4.7.8.PeCDE	2.	0.00000149		en Andrews Community of the	13C-2.3.4.7.8-pecme		
	***************************************	1,2,3,4,7,8-HxCDF	2 2	0.00000125			13C-1,2,3,4,7,8-HxCDF	76.1 26.153	**************************************
·Y -proprietor	***************************************	1,2,3,6,7,8-HxCDF	2 8	0.000000643		***************************************	13C-1,2,3,6,7,8-HxCDF		
	t Volument page of	2,3,4,6,7,8-HxCDF	2	775000000000	. 1		13C-2,3,4,6,7,8-HxCDF		
		1,2,3,7,8,9-HxCDF	ON	0.00000115			13C-1,2,3,7,8,9-HxCDF		
		1,2,3,4,6,7,8-HpCDF	QN	0.00000154		-	13C-1,2,3,4,6,7,8-HpCDF		
Or tendent	***************************************	1,2,3,4,7,8,9-HpCDF	ON N	0.00000136			13C-1,2,3,4,7,8,9-HpCDF	66.9 26 - 138	-
<u>-</u> →	<u>-1</u>	OCDF	QN	0.00000672			I3C-OCDF	45.5 17 - 157	
***************************************		Totals					3/Cl-2,3,7,8-TCDD	80.5 35 - 197	
≺ -		Total TCDD		200000	**************************************		Footnotes		
		Total PeCDI)		0.00000140		:3	a. Sample specific estimated detection limit.		
>		Total HxCDD		0.00000144			 b. Estimated maximum possible concentration. 		***************************************
h :		Total HpCDD	00303	0+700000-0		Ü	c. Method detection limit.		
 ⊰ ≃	<u></u>	Total TCDF		0.000000942		7	d. Lower control limit - upper control limit.		·····
		Total PeCDF	Q.	0.00000136			AMED VAL		
1 국 3 3		l otal HxCDF Total HpCDF	0.000000890 CIN	70700000		***************************************		וסאורט מואלו	
-	¥	A 13.2 [V.CV. T. A. C.		0.00000194					***************************************
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	STEEN'S COMMUNICATION OF THE STEEN		***************************************	THE SAME, SUPPLEMENTED WITH THE PROPERTY OF TH	***************************************			
	Sample 1D;	10D2058-01 Outfall	010				A CONTRACTOR OF THE PARTY OF TH	1
	Client Data			Commission of the Commission o		The state of the s	LFA Method 1613	13
	Name	Del Mar Analytical In in e		Sample Data		Laboratory Data	en er en	
	Project :	1000008		Matrix	Aqueous	Lab Sample: 26116-001	Date Received: 30 Aug 05	y
	Date Collected: Time Collected:	28-Apr-05	American de l'American	Sangole Size:	T /56:0	QC Batch No.: 6789		S G
	_ـــــــــــــــــــــــــــــــــــــ	A A C. V.				Date Analyzed DB-5: 19-May-05	ed DR-225	?
Wal Code		Conc. (ng/L)	oľ, a	EMPC	Qualifiers	Labeled Standard	0/11 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	
<u></u>	2,3,7,8-TCDD	QN	0.00139				on LCL-UCL Unaimers	
***************************************	1.2,3,7,8-PeCDD	Q	0.00165				53.3 25 - 164	Γ
11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	1,2,3,4,7,8-HxCDD		0.00303		***************************************	13C-1,2,3,7,8-PeCDD	53.1 25-181	······
	1,2,3,6,7,8-HxCDD		0.00201	•	·	13C-1,2,3,4,7,8-HxCDD	62.6 32 - 141	·
	1,2,3,7,8,9-HxCDD		0.0000		- 3-9-9-9	13C-1,2,3,6,7,8-HxCDD	63.9 28 - 130	
- >	1,2,3,4,6,7,8-HpCDD		0.00230			13C-1,2,3,4,6,7,8-HpCDD	52.7 23 - 140	***************************************
DING h			\$//O0.0		*** **********************************	13C-0CDD	29.8 17 - 157	
ವ	23.7.8.TCDF	40000 NE	0		Canal	13C-2,3,7,8-TCDF	, ,	- //
<u> </u>	12378-Pecne		0.00166			13C-1,2,3,7,8-PeCDF		
	23.478.peCDE		0.00262			13C-2,3,4,7,8-PeCDF		
*******	100000000000000000000000000000000000000		0.00218		''	13C-1,2,3,4,7,8-HxCDF		
and or secure of the second of	1,2,3,4,7,8-HXCDF		0.000772		- takaya dan	13C-123678.HvCDE		
***************************************	1,2,5,6,7,8-HxCDF	OF NO	0.000738		******	12 0 1 4 7 4 0 11 0 11 0 11 0 11 0 11 0 11		····
	2,3,4,6,7,8-HxCDF	J. N.	0.000842		***************************************	13C-2,3,4,6,7,8-HXCDF	67.3 28 - 136	
and absolute	1,2,3,7,8,9-HxCDF		0.00040			13C-1,2,3,7,8,9-HxCDF	59.7 29 - 147	-
	1,2,3,4,6,7,8-HpCDF	Ţ.	0.00149		anvi sarege	13C-1,2,3,4,6,7,8-HpCDF	51.2 28 - 143	
	1,2,3,4,7,8,9-HpCDF		0.0003			13C-1,2,3,4,7,8,9-HpCDF	52.1 26 - 138	~~~
-	OCDF		0.00000			13C-OCDF	36.1 17-157	
	The state of the s	ANY AND THE CONTRACT OF THE CO	0.00980)	CRS 37CI-2,3,7,8-TCDD	76.1 35 - 197	·····
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5-	Total TCDD	Ŝ	0.00139	Andrew Control of the	The second secon			
	Total Pectod	2	0.00165			a Sample Specific estimated detection limit.		
	Total HxCDD	2	0.00293			v. Estimated maximum possible concentration.		
	Total HpCDD	S	0.0137			c. intentod detection limit.		**************************************
	Total TCDF	£	991000			d. Lower control innt - upper control limit.		
	Total PeCDF	S	0.00239			21. CT11A		
	Total HxCDF	S	0.000911			AMEC VALIDATED		
>	Total HpCDF	2	0.00309		Morrosento, ara	, t . 1 % t		·*····
		THE RESERVE THE PROPERTY OF TH	The state of the s	***************************************				

Analyst RAS

Approved By:

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

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA AMEC Earth & Environmental Package ID T711MT88

	IEC Earth & Environment		Package ID	T711MT88
550	South Wadsworth Boule	vard	Task Order	313150010
Suit	te 500		SDG No.	IOD2043, 2049, 2054,
				2056, 2058
Lak	ewood, CO 80226		No. of Analyses	5/2 reanalyses
	Laboratory Del M		Date: 06/06/0	
	Reviewer L. Jaru		Reyiewer's S	gnature
	Analysis/Method Metals		_ みん	Mount
***************************************			U U	
AC	TION ITEMS*			
1.	Case Narrative			
	Deficiencies	***************************************		
2.	Out of Scope			
3.	Analyses			
3.	Analyses Not Conducted			
4.	Missing Hardcopy			
	Deliverables			
5.	Incorrect Hardcopy			
	Deliverables			
6.	Deviations from	Qualifications were applied	for:	
	Analysis Protocol, e.g.,	1) CCB negative results		
	Holding Times	2) Change of MDL by review	ewer	
	GC/MS Tune/Inst.	3) Rejected reanalyses in fa	vor of original analysis	
	Performance	4) Detects below the reporti	ng limit	
	Calibrations			
	Blanks			
	Surrogates Matrix Spike/Dup LCS			
	Field QC			
	Internal Standard			
	Performance			
	Compound Identification			
	and Quantitation System Performance			
	System refrontiance			
COM	MENTS!			***************************************
				
* Subc	contracted analytical laboratory is n	ot meeting contract and/or method req	uirements.	-
ıJilli	acinco ui protocoi nave been adopt	ed by the laboratory but no action ago	unst the laboratory is required	

Data Qualifier Reference Table

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

Qualification Code Reference Table

Qualifier	Organics	Inorganics
Н	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards us 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 contr limits.
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 no within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
3	Not applicable.	Duplicates showed poor agreement.
	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
1	Not applicable.	ICP Serial Dilution %D were not within 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.	•
	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
	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.
ΝQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.
	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).	Unusual problems found with the data that have been described in Section 2.#, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found (eg. *1 would indicate a sample was not within temperature limits).



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: METALS

SAMPLE DELIVERY GROUPS: IOD2043, IOD2049, IOD2054,

IOD2056, IOD2058

Prepared by

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

Project:

DATA VALIDATION REPORT

SDG No.: Analysis:

Multiple METALS

NPDES

1. INTRODUCTION

Task Order Title:

NPDES Monitoring

Contract Task Order #:

313150010

SDG#:

IOD2043, IOD2049, IOD2054, IOD2056, IOD2058

Project Manager:

B. McIlvaine

Matrix:

Water

Analysis:

Metals

OC Level:

Level IV

No. of Samples:

5

No. of Reanalyses/Dilutions:

Reviewer:

L. Jarusewic

Date of Review:

June 6, 2005

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

DATA VALIDATION REPORT

Project: SDG No.:

Analysis:

NPDES Multiple METALS

Table 1. Sample identification

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

Project: SDG No.: Analysis: NPDES Multiple METALS

DATA VALIDATION REPORT

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 ICP-MS TUNING

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

2.3 CALIBRATION

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

Project: SDG No.;

NPDES Multiple Analysis: **METALS**

DATA VALIDATION REPORT

2.4 BLANKS

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

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

2.5 ICP INTERFERENCE CHECK SAMPLE (ICS A/AB)

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

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

2.6 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

2.7 LABORATORY DUPLICATES

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

Project: SDG No.: NPDES Multiple METALS

DATA VALIDATION REPORT

SDG No.:
Analysis:

2.8 MATRIX SPIKE

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

2.9 FURNACE ATOMIC ABSORPTION QC

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

2.10 ICP/MS AND ICP SERIAL DILUTION

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

2.11 INTERNAL STANDARDS PERFORMANCE

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

2.12 SAMPLE RESULT VERIFICATION

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

2.13 FIELD QC SAMPLES

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

2.13.1 Field Blanks and Equipment Rinsates

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

2.13.2 Field Duplicates

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



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: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted		Dai ed Qualit	
Sample ID: IOD2043-01 (DRAF') Reporting Units: mg/l	r: Outfall 001 - V	Vater)							REV	Que
Iron	EPA 200.7 Outfall	5D29098	0.0088	0.040	0.36	1	04/29/05	05/02/05		
Sample ID: IOD2043-01RE1 (DR Reporting Units: mg/l	AFT: Outfall 00	t - Water)								
Iron	EPA 200.7 Outfall	5E17078	0.0088	0.040	0.34	1	04/29/05	05/17/05	R	D
Sample ID: IOD2043-01RE2 (DR Reporting Units: mg/l	AFT: Outfall 00:	1 - Water)								
fron	EPA 200.7	5D29098	0.0088	0.040	0.36	P	04/29/05	05/17/05	R	D

J 06/06/05

AMEC VALIDATED

LEVEL



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MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

roject ID: Quarterly Outfail 018

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOD2049

Sampled: 04/28/05

Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	-		n Date Extracted	Date Analyze	Da d Qyali	
Sample ID: IOD2049-01 (DRAFT: Reporting Units: ug/l	Outfall 018 - V	Vater) - con	t.					Ć	<u>MAL</u>	COOF
Copper Lead Mercury	EPA 200.8 EPA 200.8 EPA 245.1	5D29095 5D29095	0.49	2.0 1.0	3.7 1.9	***	04/29/05	05/03/05 05/03/05		
Wicicuty	EFA 243.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	u	







MWH-Pasadena/Boeing

Project ID: Routine Outfall 005

300 North Lake Avenue, Suite 1200

Sampled: 04/28/05

Pasadena, CA 91101 Attention: Bronwyn Kelly

Report Number: IOD2054

Received: 04/28/05

DRAFT: METALS

MDL Reporting Sample Dilution Date Date Data Analyte Method Limit Result Factor Extracted Analyzed Qualifiers Sample ID: IOD2054-01 (DRAFT: Outfall 005 - Water)

Reporting Units: ug/l

Lead

EPA 200.8

5D29095 0.13

1.0

04/29/05 05/03/05 T

AMEC VALIDATED

LEVEL IV



我们可以上面的时候没有一种,我们就是我们的时候,就是这个人,我们就是我们就是我们的的时候,我们就是这个人的,我们就会会会会会,这个人的时候,他们会会会,也会一点 "

MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Project ID: Routine Outfall 009

Report Number: IOD2056

Sampled: 04/28/05

Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit			Date Extracted	Date Analyz	Da ed_Quali	
Sample ID: 10D2056-01 (DRAFT Reporting Units: ug/l	: Outfall 009 - V	Vater)	0.61						sur .	CORE
Antimony	EPA 200.8	5D29095		2.0	ND	1	04/29/05	05/03/05	uJ	45,\$
Cadmium	EPA 200.8	5D29095	0.015	1.0	0.024	1		05/03/05		B, DNG
Copper	EPA 200.8	5D29095	0.49	2.0	3.2	1	04/29/05	05/03/05		,
Lead	EPA 200.8	5D29095	0.13	1.0	1.1	1	04/29/05	05/03/05		
Mercury	EPA 245.1	5D29061	0.063	0.20	ND	1	04/29/05	04/29/05	u	!

Joulow/05

AMEC VALIDATED

EVEL IV



MWH-Pasadena/Boeing

Attention: Bronwyn Kelly

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Project ID: Routine Outfall 010

Report Number: IOD2058

Sampled: 04/28/05

Received: 04/28/05

DRAFT: METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Date Factor Extracted	Analyzed Qu	Data alifiers
Sample ID: IOD2058-01 (DRA Reporting Units: ug/l	AFT: Outfall 010 - V	Vater)	0.61				REV	1Qut
Antimony Cadmium Copper Lead Mercury	EPA 200.8 EPA 200.8 EPA 200.8 EPA 200.8 EPA 245.1	5D29095 5D29095 5D29095 5D29095 5D29061	-D+18-	2.0 1.0 2.0 1.0 0.20	ND 0.084 6.0 3.0 0.18	1 04/29/05 1 04/29/05 1 04/29/05	05/03/05 UJ 05/03/05 J 05/03/05 05/03/05 04/29/05 J	B, DNG

Jou | 20 | 05

AMEC VALIDATED

LEVEL IV

		·		
			5	

APPENDIX G

Section 8

Outfall 010

Del Mar Analytical Laboratory Reports

AMEC Data Validation Reports



LABORATORY REPORT

Prepared For: MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project: Routine Outfall 010

Sampled: 04/28/05

Received: 04/28/05 Issued: 06/20/05 17:02

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

IOD2058-01 Outfall 010

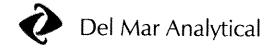
Water

Reviewed By:

Del Mar Analytical, Irvine Michele Harper

Michell Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IOD2058

Sampled: 04/28/05

Received: 04/28/05

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



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IOD2058

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

INORGANICS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOD2058-01 (Outfall 010 -	Water) - cont.								
Reporting Units: mg/l									
Chloride	EPA 300.0	5D28116	0.15	0.50	13	1	04/28/05	04/29/05	
Nitrate/Nitrite-N	EPA 300.0	5D28116	0.075	0.15	0.50	1	04/28/05	04/29/05	
Oil & Grease	EPA 413.1	5D29041	0.94	5.0	ND	1	04/29/05	04/29/05	
Sulfate	EPA 300.0	5D28116	0.45	0.50	12	1	04/28/05	04/29/05	
Total Dissolved Solids	SM2540C	5E01033	10	10	120	1	05/01/05	05/01/05	
Total Suspended Solids	EPA 160.2	5E04071	10	10	28	1	05/04/05	05/04/05	



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 010

Report Number: IOD2058

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

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 010 (IOD2058-01) - Wat-	Hold Time (in days) er	Date/Time Sampled	Date/Time Received	Date/Time Extracted	Date/Time Analyzed
EPA 300.0	2	04/28/2005 12:05	04/28/2005 18:15	04/28/2005 21:30	04/29/2005 02:57



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Attention: Bronwyn Kelly

Project ID: Routine Outfall 010

Report Number: IOD2058

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

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29061 Extracted: 04/29/05											
Blank Analyzed: 04/29/2005 (5D29061-B	LK1)										
Mercury	ND	0.20	0.063	ug/l							
LCS Analyzed: 04/29/2005 (5D29061-BS)	l)										
Mercury	8.06	0.20	0.063	ug/l	8.00		101	85-115			
Matrix Spike Analyzed: 04/29/2005 (5D29	9061-MS1)				Soui	rce: IOD2	2033-03				
Mercury	7.76	0.20	0.063	ug/l	8.00	ND	97	70-130			
Matrix Spike Dup Analyzed: 04/29/2005 (5D29061-MS	SD1)			Sour	ce: IOD2	2033-03				
Mercury	7.82	0.20	0.063	ug/l	8.00	ND	98	70-130	1	20	
Batch: 5D29095 Extracted: 04/29/05											
Dial. A. J. I 05/02/2005 (5D20005 by	****										
Blank Analyzed: 05/03/2005 (5D29095-BI	•										
Antimony	ND	2.0	0.18	ug/l							
Cadmium	ND	1.0	0.015	ug/l							
Copper	ND	2.0	0.49	ug/i							
Lead	ND	1.0	0.13	ug/l							
LCS Analyzed: 05/03/2005 (5D29095-BS1)										
Antimony	87.8	2.0	0.18	ug/l	80.0		110	85-115			
Cadmium	87.8	1.0	0.015	ug/I	80.0		110	85-115			
Copper	78.5	2.0	0.49	ug/I	80.0		98	85-115			
Lead	81.9	1.0	0.13	ug/l	80.0		102	85-115			
Matrix Spike Analyzed: 05/03/2005 (5D29	095-MS1)				Sour	ee: IOD20	054-01				
Antimony	98.9	2.0	0.18	ug/l	80.0	0.31	123	70-130			
Cadmium	86.7	1.0	0.015	ug/l	80.0	0.058	108	70-130			
Copper	79.4	2.0	0.49	ug/l	80.0	2.0	97	70-130			
Lead	80.9	1.0	0.13	ug/I	80.0	0.24		70-130			



MWH-Pasadena/Boeing

Project ID: Routine Outfall 010

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101

Report Number: IOD2058

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

Attention: Bronwyn Kelly

METHOD BLANK/QC DATA

METALS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5D29095 Extracted: 04/29/05											
Matrix Spike Analyzed: 05/03/2005 (5D2	9095-MS2)				Sou	rce: IOD	2149-03				
Antimony	100	10	0.90	ug/l	80.0	ND	125	70-130			
Cadmium	76.0	5.0	0.075	ug/l	80.0	0.45	94	70-130			
Copper	90.1	10	2.4	ug/l	80.0	17	91	70-130			
Lead	73.5	5.0	0.65	ug/l	80.0	1.1	90	70-130			
Matrix Spike Dup Analyzed: 05/03/2005	(5D29095-M	SD1)			Sour	rce: IOD2	2054-01				
Antimony	99.6	2.0	0.18	ug/l	80.0	0.31	124	70-130	1	20	
Cadmium	87.7	1.0	0.015	ug/l	80.0	0.058	110	70-130	1	20	
Copper	81.3	2.0	0.49	ug/l	80.0	2.0	99	70-130	2	20	
Lead	81.0	1.0	0.13	ug/l	80.0	0.24	101	70-130	0	20	



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Project ID: Routine Outfall 010

Report Number: IOD2058

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

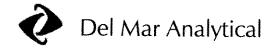
METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source	%REC	%REC	RPD	RPD Limit	Data Oualifiers
Batch: 5D28116 Extracted: 04/28/05	<u> </u>			.,	20,42	1200431	7 016 20	23111143	KI D	Lillin	Quantiers
Blank Analyzed: 04/28/2005 (5D28116-B	LKI)										
Chloride	ND	0.50	0.26	mg/l							
Nitrate/Nitrite-N	ND	0.26	0.072	mg/l							
Sulfate	ND	0.50	0.18	mg/l							
LCS Analyzed: 04/28/2005 (5D28116-BS)	1)										
Chloride	4.82	0.50	0.26	mg/l	5.00		96	90-110			M-3
Sulfate	9.63	0.50	0.18	mg/l	10.0		96	90-110			M-3
Batch: 5D29041 Extracted: 04/29/05	.										
Blank Analyzed: 04/29/2005 (5D29041-Bl	LKI)										
Oil & Grease	ND	5.0	0.94	mg/l							
LCS Analyzed: 04/29/2005 (5D29041-BS1)										
Oil & Grease	18.3	5.0	0.94	mg/l	20.0		92	65-120			M-NRI
LCS Dup Analyzed: 04/29/2005 (5D29041	-BSD1)										
Oil & Grease	18.9	5.0	0.94	mg/l	20.0		94	65-120	3	20	
Batch: 5E01033 Extracted: 05/01/05											
Blank Analyzed: 05/01/2005 (5E01033-BL	.K1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 05/01/2005 (5E01033-BS1))										
Total Dissolved Solids	956	10	10	mg/l	1000		96	90-110			

Del Mar Analytical, Irvine Michele Harper

Project Manager



MWH-Pasadena/Boeing

300 North Lake Avenue, Suite 1200

Attention: Bronwyn Kelly

Pasadena, CA 91101

Report Number: IOD2058

Sampled: 04/28/05

Received: 04/28/05

METHOD BLANK/QC DATA

Project ID: Routine Outfall 010

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E01033 Extracted: 05/01/05	*										
Duplicate Analyzed: 05/01/2005 (5E0103)	3-DUP1)				Sour	rce: IOD2	2237-01				
Total Dissolved Solids	285	10	10	mg/l		290			2	10	
Batch: 5E04071 Extracted: 05/04/05	м										
Blank Analyzed: 05/04/2005 (5E04071-Bl	LK1)										
Total Suspended Solids	ND	10	10	mg/l							
LCS Analyzed: 05/04/2005 (5E04071-BS1)										
Total Suspended Solids	1000	10	10	mg/l	1000		100	85-115			
Duplicate Analyzed: 05/04/2005 (5E04071	-DUP1)				Sour	ce: IOD2	054-01				
Total Suspended Solids	ND	10	10	mg/l		ND				10	



MWH-Pasadena/Boeing

Project ID: Routine Outfall 010

300 North Lake Avenue, Suite 1200

Report Number: IOD2058

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

Attention: Bronwyn Kelly

Pasadena, CA 91101

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
IOD2058-01	413.1 Oil and Grease	Oil & Grease	mg/l	-1	5.0	15
IOD2058-01	Chloride - 300.0	Chloride	mg/l	13	0.50	150
IOD2058-01	Nitrogen, NO3+NO2 -N	Nitrate/Nitrite-N	mg/l	0.50	0.15	10.00
IOD2058-01	Sulfate-300.0	Sulfate	mg/l	12	0.50	250
IOD2058-01	TDS - SM 2540C	Total Dissolved Solids	mg/l	120	10	850



MWH-Pasadena/Boeing

Project ID: Routine Outfall 010

300 North Lake Avenue, Suite 1200

Pasadena, CA 91101 Attention: Bronwyn Kelly Report Number: IOD2058

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

DATA QUALIFIERS AND DEFINITIONS

Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.

M-3 Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was

accepted based on acceptable recovery in the Blank Spike (LCS).

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

Duplicate.

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

RPD Relative Percent Difference



MWH-Pasadena/Boeing

Project ID: Routine Outfall 010

300 North Lake Avenue, Suite 1200

Sampled: 04/28/05
Report Number: IOD2058 Received: 04/28/05

Attention: Bronwyn Kelly

Pasadena, CA 91101

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.2	Water	x	X
EPA 200.8	Water	X	X
EPA 245.1	Water	X	X
EPA 300.0	Water	X	X
EPA 413.1	Water	X	X
SM2540C	Water	X	X

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

Subcontracted Laboratories

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

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR

Samples: IOD2058-01

Analysis Performed: EDD + Level 4

Samples: IOD2058-01

25CMUI 700 **CHAIN OF CUSTODY FORM**

Del Mar Analytical version 5 8/12/04

Page 1 of Comments スシア=dual Field readings: Turn around Time: (check) 24 Hours 5 Days Sample Integaty. (Check) Intact On Ice Perchlorate Only 72 Hours Metals Only 72 Hours. 72 Hours 48 Hours ANAL YSIS REQUIRED SQL × CI-' 204' NO3+NO5-N Date/Time. Oil & Grease (EPA 413.1) ノシスト TCDD (and all congeners) Sp' Cq' Cn' bp' Ha × Total Reoverable Metals: 4A, 4B 5A, 5B 3A, 3B 2A, 2B Bottle ₹ 1 Preservative Received By Stormwater at Building 203 Received By HN03 HNO3 Boeing-SSFL NPDES Routine Outfall 010 None None None Ξ 千%人人人 (626) 568-6515 (626) 568-6691 Phone Number Fax Number: Sampling Date/Time 4-20-05 Date/Time: **Project:** Date/Time. Project Manager: Bronwyn Kelly 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 N Q Sample Container Matrix Type Poly-500 ml Poly-500 Poly-1L Poly-1L Glass-Amber Glass-Amber Sampler: 16000 Client Name/Address: MWH-Pasadena Reindershed by ₹ ≥ ≥ ≥ ≥ > Relinquished By Sample Description Outfall 010-Outfall 010 Outfall 010 Outfall 010 Outfall 010 Outfall 010 and

June 20, 2005

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

Attention:

Bronwyn Kelly

Project:

Routine Outfall 010 Sampled: 04/28/05

Del Mar Analytical Number: IOD2058

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 010	IOD2058-01	26116-001

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

Sincerely yours,

DEL MAR ANALYTICAL

Michele Harper

Project Manager

Enclosure



May 20, 2005

Alta Project I.D.: 26116

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

Dear Ms. Harper,

Enclosed are the results for the one aqueous sample received at Alta Analytical Laboratory on April 30, 2005 under your Project Name "IOD2058". This sample was extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A standard turnaround time was provided for this work.

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

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

Sincerely,

Martha M. Maier

Director of HRMS Services

Maddle Marc



Aith Analytical rabin anny verities that the report heven, meets all the requirements we first to NLTAC for this eapplicable west methods. This report should not be reportanced except to hall without the written approval of ALTA

