	Project:	NPDES
	SDG No.:	IOD2047
DATA VALIDATION REPORT	Analysis:	VOC

2.4 BLANKS

One water method blank (P5E0214-BLK1) was associated with this SDG. Target compound 1,4dioxane was not detected above the MDL in the method blank. The method blank raw data showed no evidence of a false negative. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed a blank spike/blank spike duplicate pair (P5E0214-BS1/BS1D) with this SDG; however, P5E0214-BS1 was reported as the CCV (see section 2.3); therefore, P5E0214-BS1D was evaluated as a single blank spike. The recovery for 1,4-dioxane was within the QC limits of 70-130%. The recovery was recalculated from the raw data and no calculation or transcription errors were found. No qualifications were required.

2.6 SURROGATE RECOVERY

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FIELD QC SAMPLES

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

2.8.1 Trip Blanks

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

2.8.1.1 Field Blanks and Equipment Rinsates

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

2.8.2 Field Duplicates

There were no field duplicate samples associated with this SDG.

T711VO107

	Project:	NPDES
DATA VALIDATION REPORT	SDG No.:	IOD2047
	Analysis:	VOC

2.9 INTERNAL STANDARDS PERFORMANCE

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

2.10 COMPOUND IDENTIFICATION

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

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

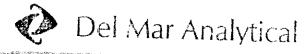
Compound quantification is verified at a Level IV data validation. The reporting limit was supported by the lowest concentration of the initial calibration standards and by the undated MDL supplied by the laboratory. Compound quantitation was verified by recalculating blank spike and surrogate recoveries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

2.12 TENTATIVELY IDENTIFIED COMPOUNDS

TICs are not typically reported for SIM methods.

2.13 SYSTEM PERFORMANCE

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



1745° Deslan Avr., Suite 100, Indine, CA 93604, (575) 267-1022, FAN (349, 267-129) 1014 E. Cooley Dr. Suite A, Colton, CA 52024 (968) 370-4667 FAX 949(376-464) 9484 Chesapeako Dr., Suite 805, San Diego, CA 92123 [358] 503-8546 FAX (858) Di5 96% 1880 South 51st St., Suite 8-120, Phoenix, AZ 85044, (480/780-0043, FAX (480/78548) 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-4621 an in her mit de methode an ander and a

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly n Selecter and the selecter of the second s

Project ID: Alfa Outfall 012 - During Test

Report Number: IOD2047

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

DRAFT: 1,4-DIOXANE BY GC/MS (EPA 5030B/8260B) MDI Basastan C.

Analyte	Method	Batch	Limit	Limit			n Date Extracted	Date Analyz	Data ed Qualifie	rs
Sample ID: IOD2047-01 (DRAFT:) Reporting Units: ug/l	Outfail 012 - W	vater) - con	t.							EUN I,
l,4-Dioxane Surrogate: Dibromojluoromethane (8	EPA 8260B 0-125%)	P5E0214	0.49	1.0	ND 97 %]	05/02/05	05/02/05	U	CCDé



LEVEL T

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. IOD2047 <Page 8 of P3>

AMEC Earth & Environme 550 South Wadsworth Bou	OMPLIANCE SCREENING ental levard	Package ID	T711WC151
Suite 500	levare	Task Order	313150010
		SDG No.	
Lakewood, CO 80226		NT. CA	IOD2047, IOD2049
Laboratory Del 1	Mar Analytical	No. of Analyses	4
Reviewer L. Ja	rusewic	Date: 06/03/0	5
Analysis/Method Gene	ral Minerals	Reviewer's Si	gnature
		- LA fui	Bewer
ACTION ITEMS*			
1. Case Narrative			
Deficiencies			
2. Out of Scope			
Analyses 3. Analyses Not			
3. Analyses Not Conducted			
4. Missing Hardcopy			
Deliverables			***************************************
5. Incorrect Hardcopy			
Deliverables			
6. Deviations from	Qualifications were applied for		*****
Analysis Protocol, e.g.,	1) Detects below the reporting		·····
Holding Times	etter are reporting		
GC/MS Tune/Inst.			
Performance			
Calibrations			
Blanks			
Surrogates Matrix Spike/Dup LCS			****
Field QC			
Internal Standard			
Performance			
Compound Identification			
and Quantitation - System Performance -		*****	
,			
		****	****
			······

AMENTS ^b			
······	**************************************		
	meeting contract and/or method requireme		

Qualifie	r Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quanti-tation 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 approx- imate 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 evi- dence 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 repre- sents its approximate concentration.	Not applicable.
J] _	The analyte was not deemed above the re- ported sample quantitation limit. However, the reported quantitation limit is approx- imate 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.
	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards use for the calibration was incorrect
С	Calibration %RSD or %D were noncom- pliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within contra- limits.
В	Presumed contamination from preparation (method) blank.	Presumed contamination from preparatic (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.
E	Not applicable.	Duplicates showed poor agreement.
L	Internal standard performance was unsatis- factory.	ICP ICS results were unsatisfactory.
4	Not applicable.	ICP Serial Dilution %D were not within control limits.
м _	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
ſ	Presumed contamination from trip blank.	Not applicable.
	False positive – reported compound was not present. Not applicable.	
	False negative – compound was present but not reported.	Not applicable.
	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
	Reported result or other information was incorrect.	Reported result or other information was incorrect.
	TIC identity or reported retention time has been changed.	Not applicable.
	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
NQ	The compound was detected between the MDL and the RL and, by definition, is considered an estimated value.	The compound was detected between the MDI, 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).

Qualification Code Reference Table



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUPS: IOD2043, IOD2044, IOD2047, IOD2049

Prepared by

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

1. INTRODUCTION

Task Order Title: Contract Task Order #: Sample Delivery Group #: Project Manager: Matrix: Analysis: QC Level: No. of Samples: Reviewer: Date of Pariows	NPDES Monitoring 313150010 IOD2043, IOD2044, IOD2047, IOD2049 B. McIlvaine Water General Minerals Level IV 4 L. Jarusewic
Date of Review:	June 3, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 350.2, 180.1, 120.1, 405.1, 413.1, 160.2, 160.5, 418.1, 300.0, 425.1, 160.1, and 335.2, Standard Methods for the Examination of Water and Wastewater Method SM2540C, and validation guidelines outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

	Project:	NPDES
DATA VALIDATION REPORT	SDG No.:	Multiple
	Analysis:	General Minerals

	1		
EPA ID	Laboratory ID	Matrix	COC Method
Outfall 001	IOD2043-01	Water	General Minerals
Outfall 002	IOD2044-01	Water	General Minerals
Outfall 012	IOD2047-01	Water	General Minerals
Outfall 018	IOD2049-01	Water	General Minerals
	Outfall 001 Outfall 002 Outfall 012	Outfall 001IOD2043-01Outfall 002IOD2044-01Outfall 012IOD2047-01	ControlCaboratory IDMatrixOutfall 001IOD2043-01WaterOutfall 002IOD2044-01WaterOutfall 012IOD2047-01Water

Table 1. Sample identification

Г

i

Bigger Lind (1997) 110 (2007) 100 (2007)

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

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

2.1.3 Holding Times

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

2.2 CALIBRATION

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

2.3 BLANKS

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

T711WC151

The CONTRACTOR STOCKS STOCKSTOCKS STOCKS STOCKS STOCKS STOCKS STOCKS STOCKS STOCKS STOCKS STO

	Project:	NPDES
DATA VALIDATION REPORT	SDG No.:	Multiple
DATA VALIDATION REPORT	Analysis:	General Minerals

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

2.5 SURROGATES RECOVERY

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

2.6 LABORATORY DUPLICATES

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

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the samples in this data package. Calculations were verified, and the sample results reported on the Form Is were verified against the raw data. No transcription errors or calculation errors were noted. Surfactant detected below the reporting limit was qualified as estimated, "J," in sample Outfall 018. No further qualifications were required.

T711WC151

	Project:	NPDES
DATA VALIDATION REPORT	SDG No.:	Multiple
	Analysis:	General Minerals

2.11 FIELD QC SAMPLES

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

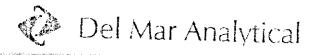
2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.

T711WC151



174617/07467 Ave., Some 100, Pvinc, CA 90/674, 1939; 207, 1012, 1AX, 1949; 200-61 1014 F. Cooley Dr., Suite A. Colton, CA 92324 (50% 370-4667) FAX 5549 370-3044 9484 Chesapeake Dr., Suite 805, Son Diego, CA 92125 (818) 505-8556 FAX (818) 505-664 38.32 South 51st St., Suite 3-120. Phoenix, AZ 85044 ... 389 705-0043 (AX 11-6) 281-65-2520 E. Stanset Rd. #3, Las Vegas, NV 89120 (202) 298-3020 FAX (202) 298-3021

and the second second second states and the second s

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

Project ID: Routine Outfall (0)1

Report Number: IOD2043

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

DRAFT: INORGANICS									
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		Date Extracted	Date Analyzed (Data
Sample ID: IOD2043-01 (DRAFT Reporting Units: mg/l	: Outfall 001 - V	Vater) - con	t.					RE	In aith
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	0.84	1	05/02/05	05/02/05	
Sample ID: IOD2043-01 (DRAFT) Reporting Units: NTU	: Outfall 001 - V	Vater)			-101	4	05/02.05	05/02/05	
Turbidity	EPA 180.1	5D29110	0.040	1.0	7.6	Ť	01/20/05	04/29/05	ľ
Sample ID: 10D2043-01 (DRAFT: Reporting Units: umhos/cm	Outfall 001 - W	Vater)				ž	0,67,402	04/29/05	
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	620	1	04/29/05	04/29/05	

AMEC VALIDATED

LEVEL IV

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. $\frac{9}{10D2043} < Page 4 of 13>$



17461Derium Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 [FAX .949] 266 55 10) 4 5. Conley Dr., Suite A, Colton, CA 92.524 (000) 370-4667 14X (94) - 370-56 9484 Chesapeake Dr., Suite 805, San Diego, CA 92423 (858) 505-8506 (FAX /848) 505-94 9830 South 91st St., Suite 8-120, Phoesix, AZ 85041 (480) 783-0043 FAX (480) 783-00 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-36 ころをあっていているとなっていた。そうなななないであるないないないです。 ふうしん アント・アン・パン

MWH-Pasadena-Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 9)101 Attention: Bronwyn Kelly State of the second second second No. 1926 - Carlo Calendar, Marine Marine and Antonio and

Report Number: JOD2044

Project ID: Routine Outfall 002

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

		DRAF	F: INC	ORGANI	CS			anan new seconders where the left of the sources	in the second
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result		n Date Extracted		ata
Sample ID: IOD2044-01 (DRAFT Reporting Units: mg/l	': Outfall 002 - V	Vater)						REV	
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	0.84	7	05/02/05	05/02/05	
Sample ID: IOD2044-01 (DRAFT Reporting Units: NTU	: Outfall 002 - V	Vater)				-	00,020,05	00/02/02	
Turbidity	EPA 180.1	5D29110	0.080	2.0	79	2	04/29/05	04/70/05	
Sample ID: IOD2044-01 (DRAFT: Reporting Units: umhos/cm	: Outfall 002 - W	(ater)			.,	2	00000000	04(29/03	
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	590	1	04/29/05	04/29/05	

AMEC VALIDATED LEVEL IV

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, IOD2044 < Page 3 of 11> IOD2044 < Page 3 of 11>



17461(Derian Avo., Soite 100, Invine, CA 90, 11, (949) 263-2022, FAX, 9 (97,250-379) 107 F. Cooley Dr., Suite A, Colton, CA 92324 (90%) 175-4567 FA (1949-376-0.4) 9484 Chesapaake Dr., Suite 303, San Diego, CA 92123 (856) 505-1596 FAX (738-705-94) 9830 South S1st St., Suite B-120, Phoenix, AZ 85044 (480) 285-0363 FAX (480) 785-0371 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3020 F. N. 702: 798-3031

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

nin mina ana kana ing ang kanananin na kanana ang kanana na kanana na kanana na kanana na sa sa sa sa sa sa sa Project ID: Alfa Outfall 012 - During Test

CONTRACTORS FROM CONTRACTORS

Report Number: JOD2047

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

		DRAF	T: IN(DRGANI	<u>^S</u>	anan mun tiktipakin hiritt	1999 (1997) - 1997 (1997) 1997 - 1997 (1997) - 1997 (1997) - 1997 (1997) 1997 - 1997 (1997) - 1977 (1997) - 1977 (1997) - 1977 (1997) - 1977 (1977) - 1977	ele la seconda destruita	$e^{-i\theta^2} \propto e^{-i\theta^2}$
Analyte	Method	Batch	MDL Limit			Dilution Da FactorExtra		Date D rałyzed Qua	ata
Sample ID: IOD2047-01 (DRAF Reporting Units: mg/l	T: Outfall 012 - \	Water) - con	t.					REV QUAL	Qute
Ammonia-N (Distilled) Biochemical Oxygen Demand Oil & Grease Total Dissolved Solids Total Suspended Solids Sample ID: 10D2047 01 (DD + 100)	EPA 350.2 EPA 405.1 EPA 413.1 SM2540C EPA 160.2	5E02067 5D29091 5E04036 5D29129 5E04071	0.30 0.59 0.94 10 10	0.50 2.0 5.0 10 10	ND 3.2 ND 250 21	1 04/29		2/05 U 4/05 4/05 U 9/05	
Sample ID: IOD2047-01 (DRAFT Reporting Units: ml/l/hr Total Settleable Solids Sample ID: IOD2047-01 (DRAFT Reporting Units, NTU)	EPA 160.5	5D29094	0.10	C.10	0.10	1 04/29	/05 04/29	V/05	
Reporting Units: NTU Turbidity Sample ID: IOD2047-01 (DRAFT Reporting Units: ug/l	EPA 180.1	5D29110	0.040	1.0	23	1 04/29,	05 04/29	/05	
Perchlorate	EPA 314.0	5D29065	0.80	4.0	ND	1 04/29/	05 04/30/	(05 米	

AMEC VALIDATED

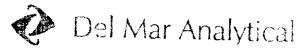
LEVEL IV

*Anelycic Not Vales

1998 - Electro Alexandro III - 1992 (1997) 1999 (1997) 1999 (1997) 1997 (1997) 1997 (1997) 1997 (1997) 1997 (19

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 20 > IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 24 > IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 22 > IOD2047 < Puge 7 of 24 > IOD2047 < Puge 7 > IOD2047 > IOD2047 < P



17461 Cerlan Ave., Suite 100, Evine, CA 9267 1 (949) 261-1022 EAN (940) 260-00 av 16. 4 E. Cooley Del, Suile A. Collon, CA 92014, 509, 370-4667 (AV 1 Pr. 370-1046 9404 Chossiwake Dr., Suite 805, San Diego, CA 92+23 (958) 505-8596 FAX (958) 505-97204 98.,0 South 51st St., Suite B-120, Phoenin, AZ 05044 (180) 785-0053 FAX (480) 785-0851 2520 E. Sunsen Rd. #3, Las Vegas, NV 89120 (202) 798-3620 FAX (202) 798-3621

and the contract of the contract

MWH-Pasadena/Boeing 300 North Lake Avenue, Suite 1200 Pasadena, CA 91 [0] Attention: Bronwyn Kelly

Project ID: Alfa Outfull 012 - During Test

Report Number: IOD2047

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

an shakka ku kara sa ayayaya

DRAFT: TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit		Dilution Factor E		Date Analyze	Data d. Qualifiers
Sample ID: IOD2047-01 (DRAFT:) Reporting Units: mg/l	Outfall 012 - W	ater)						·	d Qualifiers REV QUAL QUAL COOF
Total Recoverable Hydrocarbons	EPA 418.1	5D30026	0.31	1.0	5.6	1	04/30/05	04/30/05	

AMEC VALIDATED LEVEL IV

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. IOD2047 <Page 2 of 71>



12463756613 Ave., Suite 100, Invide, CA 92114 (9409-2019-1922) FAX (6-19) (1995) 6 1511 E. Cooley Lin, Stille A. Colton, CA 92324 (308) 17:54617 (AA 8949) 3 (5-1)-6 9214 Chesaphake Sm., Suite 805. San Diego, CA 92123 (858) 300-8306 (FAX (838) 300-8306) 9850 South 51st Sc, Suite B-120, Phoenix, AZ 85044 (480) 78540343 FAX (460) 785401. 2520 E. Surbot Rd. #2, Las Vegas, NV 89120 (102) 798-3620 FAN (702) 198-362

and an antipe the set of the stand strength of the stand of the

MWE-Pasadena/Boeing

Project (D: Quarterly Jutfall 018

300 North Lake Avenue, Suite 1200 Pasadena, CA 91101

Report Number: IOD2049

Marchanana Assort

Sampled: 04/28.05 Received: 04/28/05

Attention: Bronwyn Kelly assessment and the second second GRAFTER STATE AND A STATE OF A

		DRAF	Γ: IN(ORGANI	CS					
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	n Date Extracted	Date Analyz	e D ted Qua)ata Ilifiers
Sample ID: 10D2049-01 (DRAF Reporting Units: mg/l	T: Outfall 018 - `	Water) - con	t.					•	BÈX	CODE
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	ND	1	05:00:05	0 * (0 0 /0 *		
Biochemical Oxygen Demand	EPA 405.1	5D29091	0.59	2.0	9.7	1		05/02/05		
Chloride	EPA 300.0	5D28116	0.26	0.50	30	1		05/04/05		
Nitrate/Nitrite-N	EPA 300.0	5D28116	0.075	0.15	0.17	1		04/29/05		
Oil & Grease	EPA 413.1	5E04036	0.94	5.0	ND	1		04/29/05		
Sulfate	EPA 300.0	5D28116	0.90	2.5	85	1 5		05/04/05	n	
Surfactants (MBAS)	EPA 425.1	5D28122	0.044	0.10	0.059	1		04/29/05		
Total Dissolved Solids	EPA 160.1	5D29129	10	10	320	1		04/28/05	J	DNQ
Total Suspended Solids	EPA 160.2	51204071	10	10	48	1		04/29/05		
Sample ID: 10D2049-01 (DRAFT Reporting Units: mi/l/hr Total Settleable Solids	: Outfall 018 - V EPA 160.5	Vater) SID29094	0.10	0.10	ND			04/29/05	11	
Sample ID: 10D2049-01 (DRAFT Reporting Units: NTU	: Outfall 018 - V	vater)				ž	04/29/05	04/29/05	u	
Turbidity	EPA 180.1	SD29110	0.080	2.0	42	2	04/29/05	04/20/05		
Sample ID: 10D2049-01 (DRAFT Reporting Units: ug/1	: Outfall 018 - W	(ater)					0 +	04/23/03		
Total Cyanide	EPA 335.2	5D29078	2.2	5.0	ND	1	OMOD/OC	A. 4 (A. A. 10 -		
Perchlorate	EPA 314.0	5D29065	0.80	4.0	ND			04/29/05	.1	
Sample ID: IOD2049-01 (DRAFT: Reporting Units: umhos/cm	Outfall 018 - W	ater)		1.0	NU	a.	04/29/05	04/30/05	*	
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	450	1 1	04/29/05	04/29/05		

AMEC VALIDATED

EVELIV

*Analysis Not Validated

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

CONTRACT COMPLIANCE SCREENING FORM FOR HARDCOPY DATA

A WALLICY DISTANCE B. WY	
AMEC Earth & Environmental	Package ID T711WC153
550 South Wadsworth Boulevard	Task Order 313150010
Suite 500	SDG No. IOD2047, IOD2049
Lakewood, CO 80226	No. of Analyses 2
Laboratory Del Mar Analytical	Date: 06/03/05
Reviewer L. Jarusewic	Reviewer's Signature
Analysis/Method Perchlorate	Laure

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

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quanti- tation 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 approx- imate 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.
IJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value repre- sents its approximate concentration.	Not applicable.
- Į	The analyte was not deemed above the re- ported sample quantitation limit. However, the reported quantitation limit is approx- imate 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.
	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Data Qualifier 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.
6	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 within control limits.
4 <u> </u>	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 was incorrect.
	TIC identity or reported retention time has been changed.	Not applicable.
	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
٩Q	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).

Qualification Code Reference Table

.



DATA VALIDATION REPORT

NPDES Monitoring

ANALYSIS: PERCHLORATE SAMPLE DELIVERY GROUPS: IOD2047 & IOD2049

Prepared by

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

1999 States and the second s

1. INTRODUCTION

Task Order Title:	NPDES Monitoring
Contract Task Order #:	313150010
Sample Delivery Group #:	IOD2047, IOD2049
Project Manager:	B. McIlvaine
Matrix:	Water
Analysis:	Perchlorate
QC Level:	Level IV
No. of Samples:	2
Reviewer:	L. Jarusewic
Date of Review:	June 3, 2005

The samples listed in Table 1 was validated based on the guidelines outlined in the AMEC Data Validation Procedures SOP DVP-6, Rev. 2, USEPA Methods for Chemical Analysis of Water and Wastes Method 314.0, and validation guidelines outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94). Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form 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.

		I		1
Client ID	EPA ID	Laboratory ID	Matrix	COC Method
Outfall 012	Outfall 012	IOD2047-01	Water	Perchlorate
Outfall 018	Outfall 018	IOD2049-01	Water	Perchlorate

Table 1. Sample identification

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

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

2.1.2 Chain of Custody

The COCs were signed and dated by field and laboratory personnel, and accounted for the samples and analysis presented in these SDGs. No qualifications were required.

2.1.3 Holding Times

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

2.2 CALIBRATION

The initial calibration correlation coefficient associated with these SDGs was ≥ 0.995 . The IPC-MA recovery was within the control limits of 80-120%. The ICV and IPC recoveries were within the control limits of 90-110%. The ICCS and a bracketing CCV were recovered above the control limits at 119% and 113.8%, respectively; however, as perchlorate was not detected in either site sample, no qualifications were required.

2.3 BLANKS

The method blank result reported on the summary form and in the raw data for the blank analysis associated with the samples was a nondetect at the reporting limit. No qualifications were required.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

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

2.5 SURROGATES RECOVERY

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

	Project:	NPDES
	SDG No.:	IOD2047, IOD2049
DATA VALIDATION REPORT	Analysis:	Perchlorate

2.6 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.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD 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.

2.8 FURNACE ATOMIC ABSORPTION QC

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

2.9 ICP SERIAL DILUTION

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

2.10 SAMPLE RESULT VERIFICATION

A Level IV review was performed for the 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. No qualifications were required.

2.11 FIELD QC SAMPLES

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

2.11.1 Field Blanks and Equipment Rinsates

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

2.11.2 Field Duplicates

There were no field duplicate pairs associated with these SDGs.

T711WC153

.....



17461Derian Avo., Suite 100, Invine, CA 90,113 (949) 30453022 (FAY 3600 240, 500 1014 E. Cooley Dr., Suite A. Colton, CA 92024 (909) 5104-007 EAC 9499 370-3646 9484 Chesapcake Dr., Suite 805, San Diego, CA 92123 (850) 505/5396 FAX 058/ 105/9614 98.0 South 51st St., Suite B-120, Phoenix, AZ 83044 (480) 265-(b)/3 FAX (480) 785-(b)/3 2520 E. Sunset Rd. #1, Las Vegas, NV 89120 (702) 798-3620 F.W (702) 798-3623

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

a en strade de la presentación en en a la presentación de la constructura de la presentación e a constructura e Project ID: Alfa Outfall 012 - During Test

Report Number: 10D2047

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

		DRAF	T+ INI	ORGANI	~ ¢		······	a a su construction a p	n ser fældas av er er er	
Analyte	Method	Batch	MDL Limit			Dilution Factor I	Date Extracted	Date Analyz	Data ed Qualifier	rs .
Sample ID: IOD2047-01 (DRAF Reporting Units: mg/l	T: Outfall 012 - \	Water) - con	t.						REV 10	QUAL CODE
Ammonia-N (Distilled) Biochemical Oxygen Demand Oil & Grease Total Dissolved Solids Total Suspended Solids Sample ID: 10D2047-01 (DRAF)	EPA 350.2 EPA 405.1 EPA 413.1 SM2540C EPA 160.2 F: Outfall 012 - y	5E02067 5D29091 5E04036 5D29129 5E04071 Váter)	0.30 0.59 0.94 10 10	0.50 2.0 5.0 10 10	ND 3.2 ND 250 21	and here	04/29/05 05/04/05 04/29/05	05/02/05 05/04/05 05/04/05 04/29/05 05/04/05	*	
Total Settleable Solids	EPA 160.5	5D29094	0.10	C.10	0.10	1	04/29/05	04/29/05		
Sample ID: IOD2047-01 (DRAFT Reporting Units: NTU Turbidity	EPA 180.1	5D29110	0.040	1.0	23			04/29/05		
Sample ID: IOD2047-01 (DRAFT Reporting Units: ug/l Perchlorate	C: Outfall 012 - W EPA 314.0	⁷ ater) 5D29065	0.80	4.0	ND)4/29/05		u l	

AMEC VALIDATED LEVEL I

*Analysis Not Validated

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE



17493 Predat Ave., Soite 100, invite, CA 92611 (940) 262-1422 (14X (149) 156-150 1974 E. Cooley, Un., Some A. Collion, CA 92324 (1986) 377 -4067 (CAN 1970) 5770 Aug 9414 Chesaphake Lin, Suite 805 San Diego, CA 92125 (858) 305-8396 TAX 38381 305-936 9810 South STRI N., Suite B-120, Phoenix, AZ 85024, (480) 785-0043, FAX, Anth (88-00) 1 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 709-3620

"你们的你们就能让你说,你就是你们的你的你的你,你就能说了?""你你们,你们的你,你们的你们,你不会不是你?""你不是你,你们不知道。"

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

Project (D: Quarterly Outfall 018

Report Number: 10D2049

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

DRAFT: INORGANICS											
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyz	D: ed Qual	ata lifiers	
Sample ID: 10D2049-01 (DRAFT Reporting Units: mg/l	: Outfall 018 - \	Water) - con	t.						2EV QUAL	CODE	
Ammonia-N (Distilled)	EPA 350.2	5E02067	0.30	0.50	ND	*	0000	0.11/0.00	V.		
Biochemical Oxygen Demand	EPA 405.1	5D29091	0.50	2.6	9.7	1		05/02/05	不		
Chloride	EPA 300.0	5D28116	0.26	0.50	9,7 30	1		05/04/05			
Nitrate/Nitrite-N	EPA 300.0	5D28116		0.30		1		04/29/05			
Oil & Grease	EPA 413.1	5E04036	0.075	5.0	0.17 ND	4		04/29/05			
Sulfate	EPA 300.0	5D28116	0.94		ND	1		05/04/05			
Surfactants (MBAS)	EPA 425.1	5D28122	0.90	2.5	85	5		04/29/05			
Total Dissolved Solids	EPA 160.1	5D29122	10	0.10	0.059	1		04/28/05		Í	
Total Suspended Solids	EPA 160.2	5E04071		10	320	1		04/29/05			
			10	10	48	1	05/04/05	05/04/05			
Sample ID: 10D2049-01 (DRAFT. Reporting Units: ml/l/hr	: Outfall 018 - V	Vater)						-			
Total Settleable Solids	EPA 160.5	5D29094	0.10	0.10	ND	1	04/29/05	04/29/05			
Sample ID: TOD2049-01 (DRAFT: Reporting Units: NTU	: Outfall 018 - W	ater)									
Turbidity	EPA 180.1		0.080	2.0	42	2	04/29/05	04/29/05			
Sample ID: 10D2049-01 (DRAFT: Reporting Units: ug/l	Outfall 018 - W	ater)									
Total Cyanide	EPA 335.2	5D29078	2.2	5.0	ND	1	04 00 000	04/00/07			
Perchlorate	EPA 314.0	5D29065	0.80	5.0 4.0			04/29/05		¥		
Sample ID. FODdate of com			0.00	'1 .U	ND	1	04/29/05	04/30/05	U		
Sample ID: IOD2049-01 (DRAFT: Reporting Units: umhos/cm	Outfall 018 - W	ater)									
Specific Conductance	EPA 120.1	5D29130	1.0	1.0	450	1 ()4/29/05	04/29/05 ·	*		

AMEC VALIDATED

LEVEL IV

*Analysis Not Validated

DRAFT REPORT DRAFT REPORT DATA SUBJECT TO CHANGE

•

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. The results pertain only to the samples tested in the laboratory. This report shall not be reproduced. $10D2049 < Page 6 of 2^{2>}$

APPENDIX G - VOLUME 4 (Part 3 of 3) TABLE OF CONTENTS

Section No.

- 9 Outfall 012 Continued Del Mar Analytical Laboratory Reports, AMEC Data
 Validation Reports.
- Outfall 018 Del Mar Analytical Laboratory Reports, AMEC Data Validation Reports.

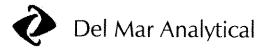
· · · ·

APPENDIX G

Section 9 Continued

Outfall 012

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) 505-86596 FAX (858) 505-9689 9830 South 51st SL, 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 300 North Lake Avenue, Suite 1200 Pasadena, CA 91101 Attention: Bronwyn Kelly

Project: Alfa Outfall 012 - During Test

Sampled: 05/03/05 Received: 05/04/05 Issued: 06/27/05 16:57

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
IOE0230-01	Outfall 012	Water
IOE0230-02	Trip Blank	Water

Reviewed By:

Michele Harper

Del Mar Analytical, Irvine Michele Harper Project Manager



17461 Derian Ave., Suite 100, Itvine, 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) 503-8596 FAX (858) 503-9689 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: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012 -	Water)				Samp	led: 05/03	3/05		
Reporting Units: mg/l									
Total Recoverable Hydrocarbons	EPA 418.1	5E12040	0.34	1.1	5.2	1	05/12/05	05/12/05	

Del Mar Analytical, Irvine Michele Harper Project Manager



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

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

Project ID: Alfa Outfall 012 - During Test

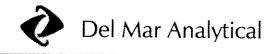
Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012 - 1	Water) - cont.				Samp	led: 05/03	3/05		
Reporting Units: mg/l EFH (C13 - C22) Surrogate: n-Octacosane (40-125%)	EPA 8015B	5E06055	0.082	0.50	0.71 73 %	0.971	05/06/05	05/06/05	

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 (838) 505-9689 9630 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851 2520 E. Sunset Rd. #3, tas Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

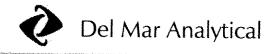
Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012 Reporting Units: mg/l	- Water) - cont.				Samp	led: 05/0.	3/05		
GRO (C4 - C12) Surrogate: 4-BFB (FID) (65-140%)	EPA 8015 Mod.	5E12047	0.50	1.0	1.7 114 %	10	05/12/05	05/12/05	
Sample ID: IOE0230-02 (Trip Blank Reporting Units: mg/l	- Water)				Samp	led: 05/03	3/05		
GRO (C4 - C12) Surrogate: 4-BFB (F1D) (65-140%)	EPA 8015 Mod.	5E11043	0.050	0.10	ND 102 %	1	05/11/05	05/11/05	



17461 Denian 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, Phoeníx, AZ 85044 (480) 785-0043 FAX (480) 785-0851 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

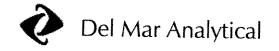
Sampled: 05/03/05 Received: 05/04/05

report number, rozowoo

PURGEABLES BY GC/MS (EPA 624)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012	- Water)				Samn	led: 05/03	1/05	-	-
Reporting Units: ug/l					Յգաթ	a. 0.90.	903		
1,2-Dibromoethane (EDB)	EPA 624	5E09023	0.32	2.0	ND	1	05/09/05	05/10/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5E09023	0.32	5.0	ND	1	05/09/05	05/10/05	
1,2,3-Trichloropropane	EPA 624	5E09023	0.85	10	ND	1	05/09/05	05/10/05	
Di-isopropyl Ether (DIPE)	EPA 624	5E09023	0.25	5.0	ND	1	05/09/05	05/10/05	
tert-Butanol (TBA)	EPA 624	5E09023	3.1	25	ND	1	05/09/05	05/10/05	
Surrogate: Dibromofluoromethane (80-	120%)				112 %	-	00.03700	00.10/00	
Surrogate: Toluene-d8 (80-120%)					107 %				
Surrogate: 4-Bromofluorobenzene (80-)	120%)				105 %				
Sample ID: IOE0230-02 (Trip Blank -	Water)				Come		10.5		
Reporting Units: ug/l	,				Samp	led: 05/03	/03		
1,2-Dibromoethane (EDB)	EPA 624	5E12005	0.32	2.0	ND	1	05/12/05	05/12/05	
Methyl-tert-butyl Ether (MTBE)	EPA 624	5E12005	0.32	5.0	ND	1	05/12/05	05/12/05	
1,2,3-Trichloropropane	EPA 624	5E12005	0.19	10	ND	1	05/12/05	05/12/05	
Di-isopropyl Ether (DIPE)	EPA 624	5E12005	0.25	5.0	ND	1	05/12/05	05/12/05	
tert-Butanol (TBA)	EPA 624	5E12005	3.1	25	ND	1	05/12/05	05/12/05	
Surrogate: Dibromofluoromethane (80	120%)				97 %	-		00,11,00	
Surrogate: Toluene-d8 (80-120%)					98 %				
Surrogate: 4-Bromofluorobenzene (80-1	20%)				90 %				

Del Mar Analytical, Irvine Michele Harper Project Manager



17461 Detian 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: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012 -	Water)				Samp	led: 05/0.	3/05		
Reporting Units: ug/l Naphthalene N-Nitrosodimethylamine Surrogate: 2-Fluorophenol (30-120%) Surrogate: Phenol-d6 (35-120%) Surrogate: 2,4,6-Tribromophenol (45-12 Surrogate: Nitrobenzene-d5 (45-120%) Surrogate: 2-Fluorobiphenyl (45-120%) Surrogate: Terphenyl-d14 (45-120%)	<i>.</i>	5E05051 5E05051	4.5 3.7	10 20	23 ND 58 % 66 % 83 % 77 % 77 % 76 %	0.962 0.962	05/05/05 05/05/05	05/10/05 05/10/05	



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

		II	NORG.	ANICS					n oli la la castana selata serenari a posteriore estas
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 01) Reporting Units: mg/l	2 - Water) - cont.				Samp	led: 05/03	3/05	-	
Ammonia-N (Distilled) Biochemical Oxygen Demand Oil & Grease Total Dissolved Solids Total Suspended Solids Sample ID: IOE0230-01 (Outfall 012 Reporting Units: ml/lbr	EPA 350.2 EPA 405.1 EPA 413.1 SM2540C EPA 160.2 C - Water)	5E05091 5E04069 5E06041 5E04104 5E08025	0.30 0.59 0.94 10 10	0.50 2.0 5.0 10 10	ND 1.5 ND 250 11 Sampl	1 1 1 1 1 1 1	05/05/05 05/04/05 05/06/05 05/04/05 05/08/05 /05	05/05/05 05/09/05 05/18/05 05/04/05 05/08/05	J
Total Settleable Solids	EPA 160.5	5E05078	0.10	0.10	0.10	1	05/05/05	05/05/05	
Sample ID: IOE0230-01 (Outfall 012 Reporting Units: NTU Turbidity	- Water) EPA 180.1	5E05095	0.040	1.0	Sampi 30	ed: 05/03	/ 05 05/05/05	05/05/05	
Sample ID: IOE0230-01 (Outfall 012 Reporting Units: ug/l	ŕ				Sampl	ed: 05/03/		05/05/05	
Perchlorate	EPA 314.0	5E10060	0.80	4.0	ND	1	05/10/05	05/10/05	С

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

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

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IOE0230-01 (Outfall 012 Reporting Units: ug/l	- Water) - cont.				Samp	led: 05/03	3/05		RL-1
1,4-Dioxane Surrogate: Dibromofluoromethane (80	EPA 8260B - <i>125%)</i>	P5E1128	4.9	10	ND 101 %	10	05/11/05	05/11/05	

Del Mar Analytical, Irvine Michele Harper Project Manager



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

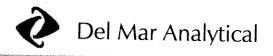
Sampled: 05/03/05 Received: 05/04/05

SHORT HOLD TIME DETAIL REPORT

Sample ID: Outfall 012 (IOE0230-01) - Water	Hold Time	Date/Time	Date/Time	Date/Time	Date/Time
	(in days)	Sampled	Received	Extracted	Analyzed
EPA 160.5	2	05/03/2005 16:16	05/04/2005 15:15	05/05/2005 09:01	05/05/2005 11:00
EPA 180.1	2	05/03/2005 16:16	05/04/2005 15:15	05/05/2005 13:00	05/05/2005 14:00
EPA 405.1	2	05/03/2005 16:16	05/04/2005 15:15	05/04/2005 20:00	05/09/2005 18:00

Del Mar Analytical, Irvine Michele Harper Project Manager ومنازع والمحافظ والمعافرة والمحافظة ومحافظة والمحافية والمحافظة والمحافظة والمحافظ والمحافظ والمحافظ والمحافظة والمحاف

COCONSTRUCTOR ACCORDANCE CONSTRUCTION CONTRACTOR ACCOUNTS AND ACC ACCOUNTS AND A



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05



TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (EPA 418.1)

Analyte <u>Batch: 5E12040_Extracted: 05/12/05</u>	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Blank Analyzed: 05/12/2005 (5E12040-B Total Recoverable Hydrocarbons	LK1) ND	1.0	0.31	mg/l							
LCS Analyzed: 05/12/2005 (5E12040-BS) Total Recoverable Hydrocarbons	l) 5.21	1.0	0.31	mg/l	5.00		104	65-120			M-NR1
LCS Dup Analyzed: 05/12/2005 (5E12040 Total Recoverable Hydrocarbons)-BSD1) 4.96	1.0	0.31	mg/l	5.00		99	65-120	5	20	

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

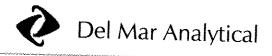
METHOD BLANK/QC DATA

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E06055 Extracted: 05/06/05	<u>.</u>										
Blank Analyzed: 05/06/2005 (5E06055-B	LK1)										
EFH (C13 - C22)	ND	0.50	0.082	mg/l							
EFH (C13 - C40)	ND	0.50	0.082	mg/l							
Surrogate: n-Octacosane	0.138			mg/l	0.200		69	40-125			
LCS Analyzed: 05/06/2005 (5E06055-BS	1)										M-NR1
EFH (C13 - C40)	0.438	0.50	0.082	mg/l	0.775		57	40-120			J
Surrogate: n-Octacosane	0.138			mg/l	0.200		69	40-125			J
LCS Dup Analyzed: 05/06/2005 (5E0605	5-BSD1)										
EFH (C13 - C40)	0.434	0.50	0.082	mg/l	0.775		56	40-120	1	25	J
Surrogate: n-Octacosane	0.142			mg/l	0.200		71	40-125		20	0

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

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

Analyte <u>Batch: 5E11043_Extracted: 05/11/0</u>	Result	Reporting Limit	s MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Blank Analyzed: 05/11/2005 (5E11043-I	BLK1)										
GRO (C4 - C12)	ND	0.10	0.050	mg/l							
Surrogate: 4-BFB (F1D)	0.0119	0.10	0.050	mg/1 mg/1	0.0100		110	(5.1.0)			
LCS Analyzed: 05/11/2005 (5E11043-BS	(1)			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0.0100		119	65-140			
GRO (C4 - C12)	0.875	0.10	0.050		0.000						
Surrogate: 4-BFB (FID)	0.0387	0.10	0.030	mg/l <i>mg/l</i>	0.800		109	70-140			
Matrix Spike Analyzed: 05/11/2005 (5E1	1042 3404			mg/1	0.0300		129	65-140			
GRO (C4 - C12)	0.252				Sou	rce: IOE0	220-32				
Surrogate: 4-BFB (FID)	0.252 0.0119	0.10	0.050	mg/l	0.220	ND	115	60-140			
				mg/l	0.0100		119	65-140			
Matrix Spike Dup Analyzed: 05/11/2005	(5E11043-MS	SD1)			Sour	rce: IOE02	220-32				
GRO (C4 - C12) Surrogate: 4-BFB (FID)	0.250	0.10	0.050	mg/l	0.220	ND	114	60-140	I	20	
	0.0117			mg/l	0.0100	_	117	65-140	1	20	
Batch: 5E12047 Extracted: 05/12/05	•										
Blank Analyzed: 05/12/2005 (5E12047-BI	1/1)										
GRO (C4 - C12)	ND	0.10	0.050								
Surrogate: 4-BFB (FID)	0.0123	0.10	0.050	mg/l							
LCS Analyzade 05/12/2005 (PELCO (F THE				mg/l	0.0100		123	65-140			
LCS Analyzed: 05/12/2005 (5E12047-BS1) GRO (C4 - C12)											
Surrogate: 4-BFB (FID)	0.621	0.10	0.050	mg/l	0.800		78	70-140			
	0.0384			mg/l	0.0300		128	65-140			
Matrix Spike Analyzed: 05/12/2005 (5E12)	047-MS1)				Sourc	e: IOE029	12 03				
GRO (C4 - C12)	0.223	0.10	0.050	mg/l	0.220	ND		60.140			
Surrogate: 4-BFB (FID)	0.00997				0.0100	1917		60-140 55-140			
							(55-140			

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

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

Analyte <u>Batch: 5E12047_Extracted: 05/12/05</u>	Result	Reporting Limit	MDL	Units	Spike Levet	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Matrix Spike Dup Analyzed: 05/12/2005 GRO (C4 - C12) Surrogate: 4-BFB (FID)	(5E12047-M 0.263 0.0124	SD1) 0.10	0.050	mg/1 mg/1	Sour 0.220 0.0100	rce: IOE0 ND)293-02 120 <i>124</i>	60-140 65-140	16	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: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

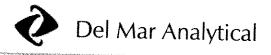
METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte Batch: 5E09023 Extracted: 05/09/05	Result	Reporting Limit	, MDL	Units	Spike Level	Source Result		%REC Limits	RPD	RPD Limit	Data Qualifiers
Blank Analyzed: 05/09/2005 (5E09023-B	LK1)										
1,2-Dibromoethane (EDB)	ND	2.0	0.32								
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l							
1,2,3-Trichloropropane	ND	10	0.32	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	0.85	ug/l							
tert-Butanol (TBA)	ND	25	3.1	ug/l							
Surrogate: Dibromofluoromethane	26.6	20	5.1	ug/I							
Surrogate: Toluene-d8	27.0			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	25.2			ug/l	25.0		108	80-120			
ICS Analyzed 05/00/2002 (manual				ug/l	25.0		101	80-120			
LCS Analyzed: 05/09/2005 (5E09023-BS1)										
1,2-Dibromoethane (EDB)	26.2	2.0	0.32	ug/l	25.0		105	70-125			
Methyl-tert-butyl Ether (MTBE)	23.4	5.0	0.32	ug/l	25.0		94	55-140			
1,2,3-Trichloropropane	23.1	10	0.85	ug/l	25.0		92	55-130			
Di-isopropyl Ether (DIPE) tert-Butanol (TBA)	25.9	5.0	0.25	ug/l	25.0		104	60-135			
	127	25	3.1	ug/l	125		102	65-135			
Surrogate: Dibromofluoromethane	26.9			ug/l	25.0		102	80-120			
Surrogate: Toluene-d8	27.5			ug/l	25.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	26.7			ug/l	25.0		107	80-120 80-120			
Matrix Spike Analyzed: 05/09/2005 (5E09	122.MSD			U.				00~120			
1,2-Dibromoethane (EDB)	31.6	•				ce: IOE04	141-01				
Methyl-tert-butyl Ether (MTBE)	29.7	2.0	0.32	ug/l	25.0	ND	126	65-130			
1,2,3-Trichloropropane	28.8	5.0	0.32	ug/l	25.0	ND	119	50-150			
Di-isopropyl Ether (DIPE)	29.9	10	0.85	ug/l	25.0	ND	115	50-135			
tert-Butanol (TBA)	129	5.0	0.25	ug/l	25.0	ND	120	60-140			
Surrogate: Dibromofluoromethane	27.8	25	3.1	ug/l	125	ND	103	60-145			
Surrogate: Toluene-d8	27.8			ug/l	25.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	27.0			ug/l	25.0		108 .	80-120			
<i>w</i>	20.7			ug/l	25.0		108 a	80-120			

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

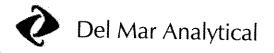
PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	s MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data
Batch: 5E09023 Extracted: 05/0	9/05						/ UILLO	********	NI D	L'AMIA	Qualifiers
Matrix Spike Dup Analyzed: 05/09/2	2005 (5E09023-N	ISDA			0	***					
1,2-Dibromoethane (EDB)	29.5	2.0	0.32			rce: IOE(
Methyl-tert-butyl Ether (MTBE)	27.9	5.0	0.32	ug/l	25.0	ND	118	65-130	7	25	
1,2,3-Trichloropropane	26.8	10	0.32	ug/l	25.0	ND	112	50-150	6	25	
Di-isopropyl Ether (DIPE)	29.4	5.0	0.85	ug/l	25.0	ND	107	50-135	7	30	
tert-Butanol (TBA)	156	25	3.1	ug/l	25.0	ND	118	60-140	2	25	
Surrogate: Dibromofluoromethane	27.4	ل به	3.1	ug/l	125	ND	125	60-145	19	25	
Surrogate: Toluene-d8	27.1			ug/l	25.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	26.5			ug/l	25.0		108	80-120			
				ug/l	25.0		106	80-120			
Batch: 5E12005 Extracted: 05/12	2/05										
Blank Analyzed: 05/12/2005 (5E1200	5-BLK1)										
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l							
1,2,3-Trichloropropane	ND	10	0.19	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l							
tert-Butanol (TBA)	ND	25	3.1	ug/l							
Surrogate: Dibromofluoromethane	24.9		5.1	ug/l	25.0		***				
Surrogate: Toluene-d8	25.0			ug/i ug/l	25.0 25.0		100	80-120			
Surrogate: 4-Bromofluorobenzene	22.8			ug/l ug/l	25.0 25.0			80-120			
LCS Analyzed: 05/12/2005 (5E12005-)				uga	23.0		91	80-120			
1,2-Dibromoethane (EDB)	25.6	* •									
Methyl-tert-butyl Ether (MTBE)		2.0	0.32	ug/l	25.0		102	70-125			
1,2,3-Trichloropropane	24.5	5.0	0.32	ug/l	25.0		98	55-140			
Di-isopropyl Ether (DIPE)	23.1	10	0.19	ug/l	25.0		92	55-130			
ert-Butanol (TBA)	26.5	5.0	0.25	ug/l	25.0		106	60-135			
urrogate: Díbromofluoromethane	136	25	3.1	ug/l	125		109	65-135			
urrogate: Toluene-d8	25.3			ug/l	25.0		101 - 8	80-120			
urrogate: 4-Bromofluorobenzene	25.4			ug/l	25.0		102 8	80-120			
	25.5			ug/l	25.0		102 8	80-120			

Del Mar Analytical, Irvine Michele Harper Project Manager

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

IOE0230 <Page 15 of 23>



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

PURGEABLES BY GC/MS (EPA 624)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E12005 Extracted: 05/12/	<u>05</u>								IG D	£./11211¢	Quaimers
Matrix Spike Analyzed: 05/12/2005 (5F	E12005-MS1)				Sou	rce: IOE(1460-A6				
1,2-Dibromoethane (EDB)	24.2	2.0	0.32	ug/l	25.0	ND	97	65-130			
Methyl-tert-butyl Ether (MTBE)	23.0	5.0	0.32	ug/l	25.0	ND	92	50-150			
1,2,3-Trichloropropane	20.6	10	0.19	ug/l	25.0	ND	92 82	50-130 50-135			
Di-isopropyl Ether (DIPE)	24.9	5.0	0.25	ug/l	25.0	ND	100				
tert-Butanol (TBA)	132	25	3.1	ug/l	125	ND	100	60-140			
Surrogate: Dibromofluoromethane	25.5		2	ug/l	25.0	ND	100	60-145			
Surrogate: Toluene-d8	24.8			ug/l	25.0		99	80-120			
Surrogate: 4-Bromofluorobenzene	25.7			ug/l	25.0		103	80-120 80-120			
Matrix Spike Dup Analyzed: 05/12/200	5 (5E12005-M)	SD1)		0		IOF6		00-120			
1,2-Dibromoethane (EDB)	25.6	2.0	0.32			ce: IOE0					
Methyl-tert-butyl Ether (MTBE)	25.5	5.0	0.32	ug/l	25.0	ND	102	65-130	6	25	
1,2,3-Trichloropropane	23.2	10	0.19	ug/l	25.0	ND	102	50-150	10	25	
Di-isopropyl Ether (DIPE)	26.3	5.0		ug/l	25.0	ND	93	50-135	12	30	
tert-Butanol (TBA)	132	25	0.25	ug/l	25.0	ND	105	60-140	5	25	
Surrogate: Dibromofluoromethane	26.1	23	3.1	ug/l	125	ND	106	60-145	0	25	
Surrogate: Toluene-d8	25.1			ug/l	25.0			80-120			
Surrogate: 4-Bromofluorobenzene				ug/l	25.0		100	80-120			
	25.3			ug/l	25.0		101	80-120			

Del Mar Analytical, Irvine Michele Harper Project Manager

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

New York and and



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Junits	Spike Level	Source	8/ B.C.	%REC Limits		RPD	Data
Batch: 5E05051 Extracted: 05/05/05	-				20701	INCSUIT	70 KEA	. Limits	RPD	Limit	Qualifiers
Blank Analyzed: 05/09/2005 (5E05051-B	E12/15										
Naphthalene	ND										
N-Nitrosodimethylamine	ND	10	4.5	ug/l							
Surrogate: 2-Fluorophenol	110	20	3.7	ug/l							
Surrogate: Phenol-d6	125			ug/l	200		55	30-120			
Surrogate: 2,4,6-Tribromophenol	125			ug/l	200		62	35-120			
Surrogate: Nitrobenzene-d5	67.4			ug/l	200		73	45-120			
Surrogate: 2-Fluorobiphenyl	71.6			ug/l	100		67	45-120			
Surrogate: Terphenyl-d14	76.3			ug/l	100		72	45-120			
LCS Analysis a gran and				ug/l	100		76	45-120			
LCS Analyzed: 05/09/2005 (5E05051-BS1)	ŧ										
Naphthalene	67.9	10	4.5	ug/l	100						M-NR1
N-Nitrosodimethylamine	54.6	20	3.7	ug/l	100		68	50-120			
Surrogate: 2-Fluorophenol	105			ug/l	200		55	40-120			
Surrogate: Phenol-d6	121			ug/I	200		52	30-120			
Surrogate: 2,4,6-Tribromophenol	150			ug/l	200		60 7 c	35-120			
Surrogale: Nitrobenzene-d5	62.9			ug/l	100 100		75	45-120			
Surrogate: 2-Fluorobiphenyl	67.3			ug/l	100		63 (7	45-120			
Surrogate: Terphenyl-d14	65.6			ug/l ug/l	100		67	45-120			
LCS Dup Analyzed: 05/09/2005 (5E05051-I	00000			** <i>5</i> /1	100		66	45-120			
Nanhthalana											
N-Nitrocodimethy terring	70.5		4.5	ug/l	100		70	50-120	4	20	
Surrogate: 2-Fluorophenol	55.0 107	20	3.7	ug/I	100			40-120	1	20	
Surrogata: Phonel J	106			ug/l	200			30-120	÷	20	
Surrogata 7 4 6 Parte 1	125			ug/l	200			35-120			
Surrogata: Mitrakana in	153			ug/l	200			45-120			
Supporting 7 El. 1 . 1	53.9 70.1			ug/l	100			45-120			
Surrogata: Tamban 1 11 4	70.1 K o			ug/l	100			15-120			
	56.0			ug/l	100			15-120			

Del Mar Analytical, Irvine Michele Harper **'roject Manager**

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

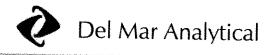
INORGANICS

Analyte <u>Batch: 5E04069_Extracted: 05/04/05</u>	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPÐ	RPD Limit	Data Qualifiers
Datch: 3204009 Extracted: 05/04/05											
Blank Analyzed: 05/09/2005 (5E04069-BI	_K1)										
Biochemical Oxygen Demand	ND	2.0	0.59	mg/l							
LCS Analyzed: 05/09/2005 (5E04069-BS1)										
Biochemical Oxygen Demand	224	100	30	mg/l	198		113	85-115			
LCS Dup Analyzed: 05/09/2005 (5E04069	-BSD1)			Ũ				00 110			
Biochemical Oxygen Demand	222	100	30	mg/l	198		112	85-115	1	20	
Batch: 5E04104 Extracted: 05/04/05				.0.			1 1 20	65-115	I	20	
Blank Analyzed: 05/04/2005 (5E04104-BL	K1)										
Total Dissolved Solids	ND	10	10	mg/l							
LCS Analyzed: 05/04/2005 (5E04104-BS1)	1										
Total Dissolved Solids	926	10	10	mg/l	1000		93	90-110			
Duplicate Analyzed: 05/04/2005 (5E04104-	DUP1)				Sour	e: 10E01	40.01				
Total Dissolved Solids	911	10	10	mg/l	5001	910	47-VI		0	10	
Batch: 5E05091 Extracted: 05/05/05				5		210			v	10	
Blank Analyzed: 05/05/2005 (5E05091-BL)	K1)										
Ammonia-N (Distilled)	ND	0.50	0.30	mg/l							
LCS Analyzed: 05/05/2005 (5E05091-BS1)											
Ammonia-N (Distilled)	10.1	0.50	0.30	mg/l	10.0		101	80-115			

Del Mar Analytical, Irvine Michele Harper Project Manager

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

IOE0230 <Page 18 of 23>



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 5E05091 Extracted: 05/05/0	5_										Quanners
Matrix Spike Analyzed: 05/05/2005 (5E))5091-MS1)				Sou	rce: IOE(226-01				
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120			
Matrix Spike Dup Analyzed: 05/05/2005	(5E05091-M	SD1)			Sou	rce: IOE(226-01				
Ammonia-N (Distilled)	9.52	0.50	0.30	mg/l	10.0	ND	95	70-120	0	15	
Batch: 5E05095 Extracted: 05/05/05	<u>i -</u>										
Blank Analyzed: 05/05/2005 (5E05095-B											
Turbidity	0.0400	1.0	0.040	NTU							J
Duplicate Analyzed: 05/05/2005 (5E0509	5-DUP1)				Sour	rce: IOE0	230.01				
Turbidity	30.9	1.0	0.040	NTU		30	20-01		3	20	
Batch: 5E06041 Extracted: 05/06/05									5	20	
· · · · · · · · · · · · · · · · · · ·	-										
Blank Analyzed: 05/06/2005 (5E06041-B)	LK1)										
Oil & Grease	1.10	5.0	0.94	mg/l							J
LCS Analyzed: 05/06/2005 (5E06041-BS1)										
Oil & Grease	22.0	5.0	0.94	mg/l	20.0		110	65-120			M-NR1
LCS Dup Analyzed: 05/06/2005 (5E06041	-RSD1)			Ū			•••	05-120			
Oil & Grease	18.3	5.0	0.94	mg/l	20.0		92	65-120	10	20	
Batch: 5E08025 Extracted: 05/08/05					20.0		72	03-120	18	20	
2211201 0200023 EXHACLEU, 03/08/03											
Blank Analyzed: 05/08/2005 (5E08025-BL	KI)										
Total Suspended Solids	ND	10	10	mg/l							

Del Mar Analytical, Irvine Michele Harper Project Manager

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

IOE0230 <Page 19 of 23>



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

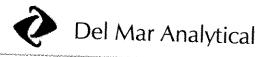
METHOD BLANK/QC DATA

INORGANICS

Analyte Batch: 5E08025 Extracted: 05/08/05	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
LCS Analyzed: 05/08/2005 (5E08025-BS1 Total Suspended Solids) 984	10	10	mg/l	1000		00				
Duplicate Analyzed: 05/08/2005 (5E08025 Total Suspended Solids	-DUP1) ND	10	10	mg/l		ce: IOE0 ND	98 224-06	85-115			
Batch: 5E10060 Extracted: 05/10/05				5		ND				10	
Blank Analyzed: 05/10/2005 (5E10060-BL Perchlorate	ND	4.0	0.80	ug/l							
LCS Analyzed: 05/10/2005 (5E10060-BS1) Perchlorate	48.9	4.0	0.80	ug/l	50.0		98	85-115			
Matrix Spike Analyzed: 05/10/2005 (5E100 Perchlorate	60-MS1) 52.9	4.0	0.80	ug/l	Source	e: IOE05 ND		80-120			
Matrix Spike Dup Analyzed: 05/10/2005 (5 Perchlorate				-	Source	e: IOE05:		80-120			
	51.3	4.0	0.80	ug/l	50.0	ND	103 1	80-120	3	20	

Del Mar Analytical, Irvine Michele Harper Project Manager

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

METHOD BLANK/QC DATA

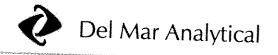
1,4-DIOXANE BY GC/MS (EPA 5030B/8260B)

Analyte <u>Batch: P5E1128_Extracted: 05/11/0</u>	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Blank Analyzed: 05/11/2005 (P5E1128-E	LK1)										
1,4-Dioxane	ND	1,0	0,49	11 m A							
Surrogate: Dibromofluoromethane	0.970	1.0	0.49	ug/l ug/l	1.00		0.7				
LCS Analyzed: 05/11/2005 (P5E1128-BS	1)				1.00		97	80-125			
1,4-Dioxane	10.7										
Surrogate: Dibromofluoromethane	0.970	1.0	0.49	ug/l	10.0		107	70-130			
				ug/l	1.00		97	80-125			
LCS Dup Analyzed: 05/11/2005 (P5E112	B-BSD1)										
1,4-Dioxane	9.63	1.0	0.49	u a /l	10.0						
Surrogate: Dibromofluoromethane	0.960		0.47	ug/l	10.0		96 7	70-130	11	20	
Matrix Snike Analyzada 05/11/2005 men-				ug/l	1.00		96	80-125			
Matrix Spike Analyzed: 05/11/2005 (P5E) 1,4-Dioxane	-				Sour	ce: POE0	059-02				
	10.4	1.0	0.49	ug/l	10.0	0.85	95	70-150			
Surrogate: Dibromofluoromethane	0.980			ug/l	1.00	0.05		80-125			
Matrix Spike Dup Analyzed: 05/11/2005 (P5E1128-MS	D1)						00-125			
1,4-Dioxane	10.0				Sourc	e: POE0)59-02				
Surrogate: Dibromofluoromethane	10.0	1.0	0.49	ug/l	10.0	0.85	92	70-150	4	25	
	1.04			ug/l	1.00		102 8	80-125			

Del Mar Analytical, Irvine Michele Harper Project Manager

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

....



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

DATA QUALIFIERS AND DEFINITIONS

 \boldsymbol{C} Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not 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-NR1 There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike **RL-1** Reporting limit raised due to sample matrix effects. Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified. ND RPD Relative Percent Difference

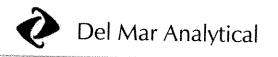
ADDITIONAL COMMENTS

For GRO (C4-C12):

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

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

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



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

Project ID: Alfa Outfall 012 - During Test

Report Number: IOE0230

Sampled: 05/03/05 Received: 05/04/05

Certification Summary

Del Mar Analytical, Irvine

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

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

Subcontracted Laboratories

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

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

Method Performed: EPA 8260B Samples: IOE0230-01

bel Mar Analytical, Irvine 4 dichele Harper roject Manager



17461 Derian Ave. Suite 100, Irvine, CA 92614 1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689 9830 South 51st Street, Suite 5-120, Phoenix, AZ 85044 2520 E. Sunset Rd., Suite #3, Las Vegas, NV 80120

Ph (949) 261-1022 Fax (949) 261-1228 Fax (909) 370-1046 Ph (480) 785-0043 Fax (480) 785-0851 Ph (702) 796-3820 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOE0230

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine	Del Mar Analytical - Phoenix
17461 Derian Avenue. Suite 100	9830 S. 51st Street, Suite B-120
Irvine, CA 92614	Phoenix, AZ 85044
Phone: (949) 261-1022	Phone :(480) 785-0043
Fax: (949) 261-1228	Fax: (480) 785-0851
Project Manager: Michele Harper	
Analysis Expiration Due	Comments

Sample ID: IOE0230-01 Wa	ter Sampled	: 05/03/05 16:16	
Dioxane-8260B-out	05/17/05 16:16	05/13/05 12:00	Boeing-permit, sub DMAP, J flags, ID=DMA+Outfall 012
Level 4 Data Package - Out	05/31/05 16:16	05/13/05 12:00	Boeing
Containers Supplied:			A COLOR X
40 ml VOA w/HCL (IOE023)	0-01H)		POEDISI-01
40 ml VOA w/HCL (IOE023)	0-01I)		19
40 ml VOA w/HCL (IOE023)	0-01Л)		

/	SAMPLE INTEGRITY:	
All containers intact: Custody Seals Present: Yes No	Sample labels/COC agree: Yes No Samples Preserved Property: Yes No	Samples Received On Ice:: Yes No Samples Received at (temp):
- Aunt	5.5.05 17:00 stisters	
Released By	Date Time Received By	5/10/5 9:45
Released By	Date Time Received By	Date Time Page 1 of 1

ge 1 of 1		Field readings:	=69.3	7.0		Comments																			Ł	BO()	10 Davs	Normal		Metals Only 72 Hours
Page		Field	Temp =	H H H		-		-						•_=												0		ž	Perchiorate Only 72 Hours,	tours
			S	pilos	əldsəlt	Set																		×		IN TIM			tte Only	nly 72 H
$\left\{ \right\}$	Δ		SST	SO.	T, yjibid	Tur																	×			Tum around Time:	48 Hours	72 Hours	srchiore	Metals Only 72 Hours
ļ.	ANALYSIS REQUIRED			ə	chlorat	Per																	×			1	1 4		đ	ž
	SEQ.	(7:00		36 I ¹ N	-einom Jsib																	×				-			\mathbb{N}	
,	SIS I		S	isyler	IB AMC	IN+														×	×								D	-
-	IALY	(:			D5(20 <														×								00		Š	-
	Ā		(\4	ЭС, ТЕ	BE' Dh	TM											×	×							×		<u>ر</u>		\lor	
		<u>'d</u>	IOT-I		,803) (-		-	10/H	Ł
		suoq		Hydr	oT=,Hq muəlot	Ъet									×	×													T	5
N					nexoiQ-								×	×													۱			Ţ
FORM			lenj	r Jeive	əsəip-ç	108					×	×													×	Pate/Time	ر م	Sate/Time		nate/Time
Ľ					se6-g	E14 108			×	×																-Dat	2	Dat		
Z			∀d	3) 98	S Grea	10	×	×																			5	\uparrow	{	N
CUSTODY						Bottle #	1A	18	2A	2B, 2C	3A	38	4A	4B, 4C	5A	58	6A	6B, 6C	7A	8A	88	9A	10A	11A	12A, 12B, 12C, 12D, 72E, 12F		E.		Å	
CHAIN OF		Boeing-SSFL NPDES During Test Outfall 012	D		- ю	Preservative	HCI	Ÿ	HCI	Ţ	None	None	HCI	Ę	HCI	HCI	HCI	HCI	None	None	None	H2S04	None	None	<u>2</u>	Received By	X	Received By	~	Received By
CH		Boeing-SSFL NPDES During Test - Outfal	Alfa lest stand	Phone Number (626) 568-6691	(626) 568-6515	Sampling Date/Time	78-95																	-056		L				
55	Project.	oeing uning		hone	20) E	Sam Date																	Ð	m.		0	0	ini	171	ài
n 02/17/0	a.		<			¥of Cont.	+ 5	•	•	2		**	-	2	-		-	2	-	+	**	+-	-	<u>አ</u> -	ç	Date/Tyme:	0 1 - 2	Date/Time:	N U	Date/Time:
al versio	NAME OF A DESCRIPTION OF A		e 1200	ronwyn Kelly 63 a wrai 6 ar		Container (nber			nber	nber			nber	nber			AV V	nber	nber	500mi Poly	- Alo	oly		-1-1	1		14/2	
lytic	S:		Je, Suit	Bronwyn Kelly	Poli	ļ	ĴĹ,	1L Amber	VOAs	VOAS	1L Amber	1L Amber	VOAs	VOAs	1L Amber	1L Amber	VOAs	VOAs	1L Poly	1L Amber	1L Amber	500n	1L Poly	1L Poly	VOAs				5	$\sum_{i=1}^{n}$
Ana	/Addres	adena	(e Aveni V 91101		647	Sample Matrix	M	8	w	M	N	8	M	3	M	8	3	3	M	3	M	3	3	3	3	7	23	2	read	
Del Mar Analytical Version 02/17/05	Client Name/Address	MWH-Pasadena	300 North Lake Avenue, Suite 1200 Pasadena, CA 91101	Project Manager	Sampler:	Sample Description	Outfall 012	Outfall 012 duplicate	Outfall 012	Outfall 012	Outfail 012 duplicate	Outfall 012	Outfall 012	Outfall 012	Trip Blank	Reipquiched By	dir 1	Relinquished By	All a	Kelinquished By										

يتريقونها لمارتها والمراقبة المراقبة المراقبة والمراقبة والمراقبة والمراقبة والمراقبة والمراقبة والمراقبة والمراقبة



QA/QC DATA PACKAGE: LEVEL IV

المراجع والمراجعة المراجع المراجع المراجع والمراجع



QA/QC DATA PACKAGE LEVEL IV

TABLE SUMMARY

Page Number

CASE NARRATIVE	1
CHAIN OF CUSTODY	2-3
ANALYTICAL REPORTS	4-5
QUALITY CONTROL SUMMARIES	6-9
EPA 8260B RAW DATA	10-83



LABORATORY REPORT

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

Project: IOE0230

Sampled: 05/03/05 Received: 05/06/05 Issued: 05/16/05 15:12

NELAP #01109CA California ELAP#2446

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.

CASE NARRATIVE

	E0151-01	CLIENT ID IOE0230-01	MATRIX Water				
SAMPLE RECEIPT:	Samples were received intact, at 2°C	on ice and with chain of custody documentation.					
HOLDING TIMES:	All samples were analyzed within pro Analytical Sample Acceptance Policy	n prescribed holding times and/or in accordance with the Del Mar olicy unless otherwise noted in the report.					
PRESERVATION:	Samples requiring preservation were	-					
QA/QC CRITERIA:	All analyses met method criteria, exc	ept as noted in the report with data qualifiers.					
COMMENTS: Results that fall between the MDL and RL are 'J' flagged.							
SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.							

Reviewed By:

Jaren Maxwell

Del Mar Analytical - Phoenix Karen Maxwell Project Manager



QA/QC DATA PACKAGE: LEVEL IV

CHAIN OF CUSTODY FORMS

the second s



17461 Derian Ave. Suite 100, Irvine, CA 92614 1014 E. Cooley Dr., Suite A, Cotton, CA 92324 9484 Chesspeake Drive, Suite 805, San Diago, CA 92123 9830 South 51st Street, Suite 8-120, Phoenix, AZ 85044 2520 E. Surset Rd., Suite #3, Las Vegas, NV 80120
 Ph (949) 261-1022
 Fax (949) 261-1228

 Ph (909) 370-4667
 Fax (909) 370-1046

 Ph (619) 505-9556
 Fax (619) 505-9689

 Ph (480) 785-0043
 Fax (480) 785-0851

 Ph (702) 798-3620
 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IOE0230

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical, Irvine	Del Mar Analytical - Phoenix
17461 Derian Avenue. Suite 100	9830 S. 51st Street, Suite B-120
Irvine, CA 92614	Phoenix, AZ 85044
Phone: (949) 261-1022	Phone :(480) 785-0043
Fax: (949) 261-1228	Fax: (480) 785-0851
Project Manager: Michele Harper	

Analysis	Expiration	Due	Comments
Sample ID: IOE0230-01 Wat	ter Sampled	: 05/03/05 16:16	
Dioxane-8260B-out	05/17/05 16:16	05/13/05 12:00	Boeing-permit, sub DMAP, J flags, ID=DMA+Outfall 012
Level 4 Data Package - Out	05/31/05 16:16	05/13/05 12:00	Boeing
Containers Supplied:			A color x
40 ml VOA w/HCL (IOE0230)-01H)		POEGISI-01
40 ml VOA w/HCL (10E0230	0-01I)		
40 ml VOA w/HCL (IOE0230)-01J)		

/	SAMPLE INTEGRITY:	
All containers intact: 🖸 Yes 🗆 No	Sample labels/COC agree: 🖸 Yes 🗖 No	Samples Received On Ice:: Yes No
Custody Seals Present: Yes 🖸 No	Samples Preserved Property: 🗹 Yes 🔲 No	Samples Received at (temp):
	10-11-15	
- Autor	5.5.05 /7:00 200100	
Released By	Date Time Received By 1/	Date Time
	hattle	5/65 9:45
Released By	Date Time Received By	Date Time
		Page 1 c
		3



QC DATA PACKAGE: LEVEL IV

ANALYTICAL REPORTS



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

Project ID: IOE0230

Report Number: POE0151

Sampled: 05/03/05 Received: 05/06/05

	1,4-DIO	XANE BY	(GC/N	AS (EPA 5	030B/82	60B)			
Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: POE0151-01 (IOE023	0-01 - Water)								RL-1
Reporting Units: ug/l 1,4-Dioxane	EPA 8260B	D6721100							
Surrogate: Dibromofluoromethane		P5E1128	4,9	10	ND 101 %	10	05/11/05	05/11/05	

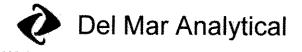
Del Mar Analytical - Phoenix Karen Maxwell Project Manager

والمتحدثين المحالية و



QC DATA PACKAGE: LEVEL IV

ANALYTICAL REPORTS



Del Mar Analytical - Irvine 17461 Derian Ave. Suite 100 Irvine, CA 92614 Attention: Michele Harper Project ID: IOE0230

Report Number: POE0151

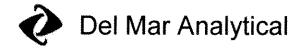
Sampled: 05/03/05 Received: 05/06/05

L

METHOD BLANK/QC DATA

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

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: P5E1128 Extracted: 05/11/05											
Blank Analyzed: 05/11/2005 (P5E1128-B	LK1)										
1,4-Dioxane	ND	1.0	0,49	ug/l							
Surrogate: Dibromofluoromethane	0.970			ug/l	1.00		97	80-125			
LCS Analyzed: 05/11/2005 (P5E1128-BS	1)										
1,4-Dioxane	10.7	1.0	0.49	ug/l	10.0		107	70-130			
Surrogate: Dibromofluoromethane	0.970			ug/l	1.00		97	80-125			
LCS Dup Analyzed: 05/11/2005 (P5E112	8-BSD1)										
1,4-Dioxane	9.63	1.0	0.49	ug/l	10.0		96	70-130	11	20	
Surrogate: Dibromofluoromethane	0.960			ug/l	1.00		96	80-125			
Matrix Spike Analyzed: 05/11/2005 (P5E	1128-MS1)				Sou	rce: POE	0059-02				
1,4-Dioxane	10.4	1.0	0.49	ug/l	10.0	0.85	95	70-150			
Surrogate: Dibromofluoromethane	0.980			ug/l	1.00		98	80-125			
Matrix Spike Dup Analyzed: 05/11/2005	(P5E1128-M	SD1)			Sou	rce: POE	0059-02				
1,4-Dioxane	10.0	1.0	0.49	ug/l	10.0	0.85	92	70-150	4	25	
Surrogate: Dibromofluoromethane	1.02			ug/l	1.00		102	80-125			



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

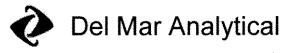
Project ID: IOE0230

Report Number: POE0151

Sampled: 05/03/05 Received: 05/06/05

DATA QUALIFIERS AND DEFINITIONS

- RL-1 Reporting limit raised due to sample matrix effects.
- ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
- RPD Relative Percent Difference



-					,	ŝ.
	Del Mar Analytical - Irvine	Project ID:	IOE0230			*******
	17461 Derian Ave. Suite 100			Sampled:	05/03/05	100000
	Irvine, CA 92614	Report Number:	POE0151	Received:	05/06/05	0.49200
	Attention: Michele Harper	*				
			na, na tao na kao manjara na manjari na manjari na mini na panjara da kao na kao manjari kao manjari kao manjar		ىرىمىيە مەرىپىدىنى بىرىمىيەن بىرىمىيەن بىرىمىيەن بىلىيەت بىلىيەت بىلىيەت بىلىيەت بىلىيەت بىرىمىيەت بىرىمىيەت ب مەرىپىدىن بىلىيەت بىلىيە	NN NO

Certification Summary

Del Mar Analytical - Phoenix

Method	Matrix	Nelac	California
EPA 8260B	Water	х	Х

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.



QA/QC DATA PACKAGE: LEVEL IV

EPA METHOD 8260B LABORATORY RAW DATA

GCMS TUNING INITIAL/DAILY CALIBRATION RUNLOG CONTINUTING CALBRATION QUANTITATION REPORTS CHROMATOGRAMS EXTRACTION LOG STANDARD LOG

CMS #:	Date Analyzed: 3/19/05	
ANALYST		1
	METHOD CRITERIA	
·····>×	1. Sequence File is printed and in the file folder?	
~~~ /	Standard IDs and analyst's initials are present?	
	.a. Print calibration as Average Response Factor	
	$(024: RSD \le 35\%)$	
	(8260B: ≤ 30% for CCCs, ≤ 15% for all other compounds, SPCCs met Criteria)	
	$(024.2, 100) \leq 20\%$	
	b. If non CCC RSD > 15%, print out the curve as Linear Regression $r \ge 0.995$ or $r^2 \ge 0.99$ (do not force through zero for 8260B)	
	c. In hon CCC RSD > 15%, print out the curve as Quadratic	
/	$1 \ge 0.995$ or $r \ge 0.99$ (do not force through zero for 8260B)	
	a. Choose option (b or c) with the least negative intercept	
	e. Requant the low (RL) standard against the curve must be ± 30%, file with the calibration for reference	
	f. If samples contain negative values then:	
	compare the area counts with the low standard on file	
	if <, then report as N.D. with no flag	
	if >, then report from RSD curve and flag that curve is out	
	or report at an elevated RL as compared to a curve standard	
	3. Initial Midpoint / LCS / BFB Tune	
,	(624: use Table 5) (524.2: ±30%) (8260B: see control chart) SPCCs met criteria? CCCs met criteria (±20%)?	
	4. Checked integration of all peaks in Midpoint?	
	5. Method Blank < Report Limit, if not is data flagged?	
_	(624: every 20 samples) (524.2: every 12 hours) (8260B: every 12 hours)	
-NA	6. MS/MSD (every 20 samples)	
	(624: use Table 5) (524.2: N/A) (8260B: see Control Chart)	
4	7. All samples met holding time? (Soil 72hr ext, 7/14days water)	
	<ol><li>All water samples checked to be pH &lt; 2? (Note this on the sequence file)</li></ol>	
<u> </u>	9. LCS every 20 samples	
/	(624: See Table 5) (524.2: ±30%) (8260B: See Control Chart)	
	10. Cont. Midpoint / LCS / BFB Tune done every 12 hours	
	(624: use Table 5) (524.2: ±30%) (8260B: see control chart) SPCCs met criteria? CCCs met criteria (±20%)2	
/		
	11. Surrogates within acceptance limits (624 / 524.2 / 8260B: See Control Chart)	
	12. Internal Standards within acceptance limits	
	(624 / 524.2 / 8260B: response must be -50 to +100%).	
	13. Manual re-integration(s) performed?	
	yes:no;	
	14. Corrective Action Report required?	
	yes:(Altached) no:	
	15. Reports impacted by the Corrective Action Report	
Jahren J. MAN,	assi 3/21/05 Reviewer / Data: 15/ 3/11/5	
alyse Ju Juck	Reviewer / Date: 42 3/22 4	

### DMAP GC/MS 1 DAILY LOG SUMMARY

CAL CUENE

DATE: 3/19/05

## QC BATCH # (s): -2501902 J6 3/21/05

ANALYST: gy/MS

SEQUENCE FILE: C:\GCMS1\DATA\

CALIBRATION METHOD(S): ____ DX021605. M/W072903. M

POS				SA	SAMPLE		E	PA				
#	FILI	ENAME	SAMPLE ID.CLIENT	VOL.		pН	ME	THOD	MATRIX		COMMENTS	
	P03	19001	TUNE	-	Jul		82	100	ŀ	(20	,	
	1	2	COV	X	IONL					1		
2		3	LCSDUP		<u> </u>	1					-DNU ISLOW	1
3		4	LCSDUP		<u> </u>	<b></b>				-	-DUVESLOW-> PER	luce
		5	TUNE		<u> </u>						4	~p
1		d	CCV	ļ				ļ	 		-DNU, IS'S Still low will re-call	5 mdo
2		7	CW								d witte-caub	
3		8	BIMMK				 		 	ļ	~ (1:18)(	ባድ'
4		9	Lippb Cal			<b> </b>	 	ļ	<u> </u>	ļ	DNUS Grubbillettier	Re'n
_ <u>_</u>		U)	2.2'	┣┣								
4		L	5.0	_⊥	·.							
		/1 /}	(0)	┣┫_	,							
- <u>Ś</u>			20.0		• • • • • • • • • • • • • • • • •	<b> </b>						
5		(1	50.0	ļ			<b></b>					
()		<u>(</u> ]	100.0	<b>  </b>								
(1	<u> </u>	()	Clemath lank /Time	ļ. 								
17		171	NGET/Blank	$\left  \right $								
(3	1	18'	Toppb Cal	-				/	$ \rightarrow $			
14	-V	(9	MCCV						$\mathcal{Y}$			
				<b> </b>								
			······································	~	1 4	10	F					
	N		HAT		FP		2					
		$\sim$							·····		<b>.</b>	
<b>L</b>			~~				L					
H ₂ 0 L	CCV .CS / H	7 20 SPIKE:	5030018			*		al Std:		50	353. 130359 X: 3/21/05	
(*A1.)	RUAT	ION STD:	50 20 348 90 30 349		***			/ 13 1213-		5	030321	
		-	<u></u>		13 /	Surre	gate	/ BFB:	]			
REVI	$\frac{1}{10000000000000000000000000000000000$											

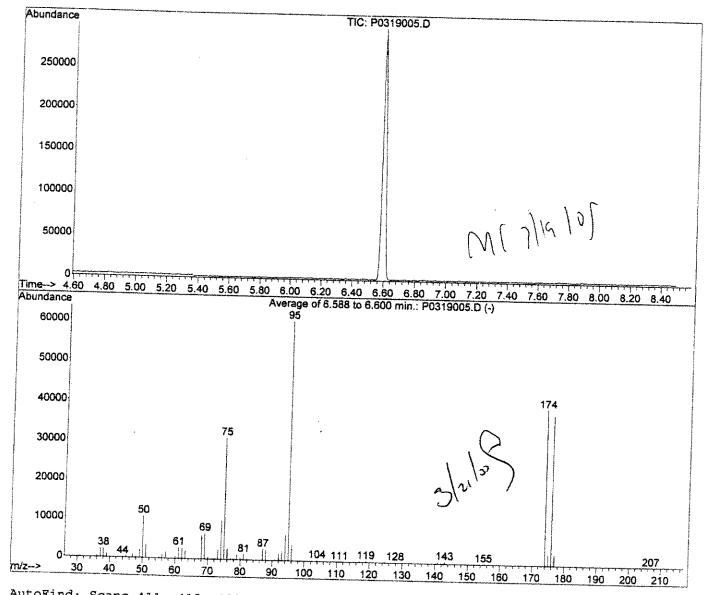
Line	Via	l FileName	Multiplier	SampleName	Misc Info	Injected
1 2 3 4 5 6 7 8 9	1 2 3 4 5 6 7 8 9	P0319001.D P0319002.D P0319003.D P0319004.D P0319005.D P0319006.D P0319007.D P0319008.D P0319009.D	1. 1. 1. 1. 1. 1. 1.	TUNE/BLANK CCV LCS DUP L <del>CS DUP</del> DNU TUNE COV CGV DNU BLANK	1X 10ML 1X 10ML 1X 10ML 1X 10ML 1X 10ML 1X 10ML 1X 10ML 1X 10ML 1X 10ML	19 Mar 2005 06:19 19 Mar 2005 06:32 19 Mar 2005 07:08 19 Mar 2005 07:44 19 Mar 2005 08:39 19 Mar 2005 09:07 19 Mar 2005 09:39 19 Mar 2005 10:12
10 11 12 13 14 15 16 17 18 19	10 11 12 13 14 15 16 17 18 19	P0319009.D P0319010.D P0319011.D P0319012.D P0319013.D P0319014.D P0319015.D P0319016.D P0319016.D P0319017.D P0319018.D P0319019.D	1. 1. 1. 1. 1. 1. 1. 1. 1.	1.0 PPB CAL DNU 2.0 PPB CAL 5.0 PPB CAL 20.0 PPB CAL 20.0 PPB CAL 50.0 PPB CAL 100.0 PPB CAL GLEAN OUT BLANK/TUNE DNU BLANK 1.0 PPB CAL SS/CCV	1X 10ML 1X 10ML	19 Mar 2005 10:54 19 Mar 2005 11:26 19 Mar 2005 11:59 19 Mar 2005 12:32 19 Mar 2005 13:05 19 Mar 2005 13:38 19 Mar 2005 14:11 19 Mar 2005 14:44 19 Mar 2005 15:21 19 Mar 2005 15:54 19 Mar 2005 16:27

3/21/05

A A BARRA AND AND AND AND AND

minter

Sample		Vial: Operator: Inst :	JG/MS/CLS
	: 1X 10ML		
MS Integra	tion Params: DIOXANE.P	Multiplr:	1.00
Method :	D:\HPCHEM\1\METHODS\DX021605.M (RTE Integ		
Title :	ACCO THE INCUS (DAU21005.M (RTE Integ	rator)	
a a lua C	8260 1,4-Dioxane Ini. Cal. (05/02/02)	-	



## AutoFind: Scans 411, 412, 413; Background Corrected with Scan 395

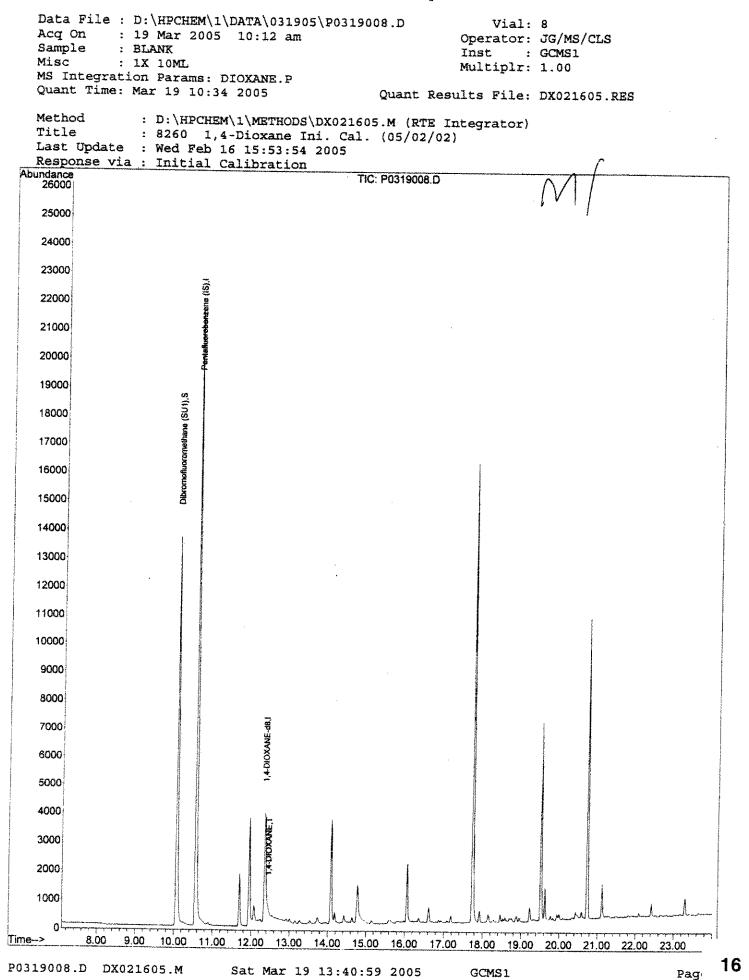
Target   Mass	Rel. to Mass	Lower Limit [®]	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50 75 95 96 173 174 175	95 95 95 174 95 174	15 30 100 5 0.00 50 5	40 60 100 9 2 100 9	17.5 51.3 100.0 6.6 0.6 65.5 6.9	10615 31037 60549 3996 226 39648 2752	PASS PASS PASS PASS PASS PASS PASS
176 177	174 176	95 5	101 9	96.0 6.9	38059 2638	PASS PASS PASS

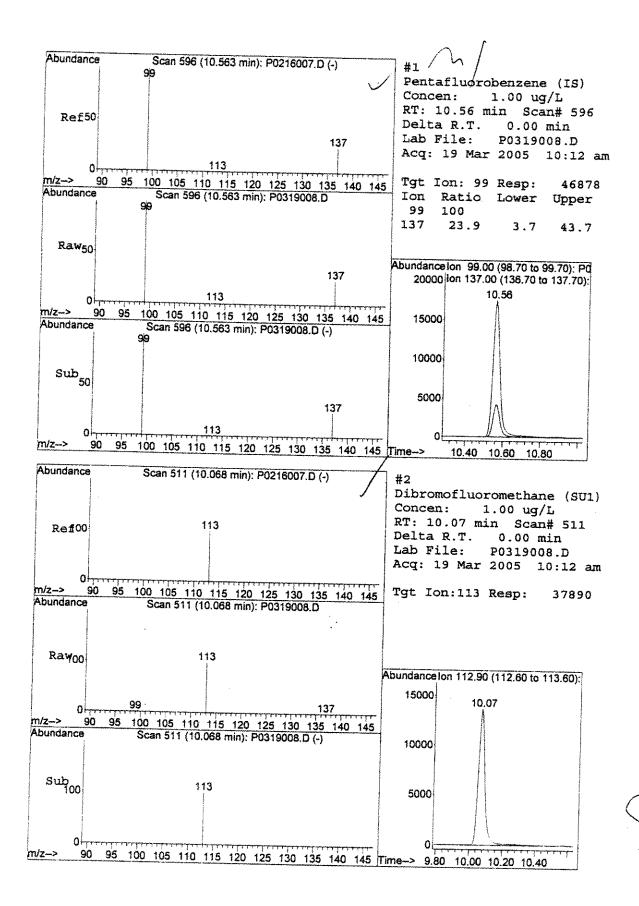
Data File : D:\HPCHEM\1\DATA\03: Acq On : 19 Mar 2005 10:12 a Sample : BLANK Misc : 1X 10ML MS Integration Params: DIOXANE.F Quant Time: Mar 19 10:34 2005	am		.D Vial: 8 Operator: JG/MS/CLS Inst : GCMS1 Multiplr: 1.00 Quant Results File: DX021605.RES
Quant Method : D:\HPCHEM\1\METHO Title : 8260 1,4-Dioxane Last Update : Wed Feb 16 15:53: Response via : Initial Calibrati DataAcq Meth : DX021605 Internal Standards	M [RTE Integrator)  (S/02/02)  M [ ] ] [ ] ] ] ] ] ] ] ] ] ] ] ] ] ] ]		
	R.T.	QIon	Response Conc Units Dev(Min)
5) 1,2,3-Trichloropropane-d5	10.56 12.35 0.00	99 64 79	46878 1.00 ug/L 0.00 6171 25.00 ug/L 0.00 0 N 0.00 ug/L -15.08
System Monitoring Compounds 2) Dibromofluoromethane (SU1) Spiked Amount 1.000 Rar	10.07 1ge 80	113 - 120	37890 1.05 ug/L 0.00 Recovery = 105.00%
Target Compounds 4) 1,4-DIOXANE	12.45	88	278 0.23 ug/L $N$ $22$

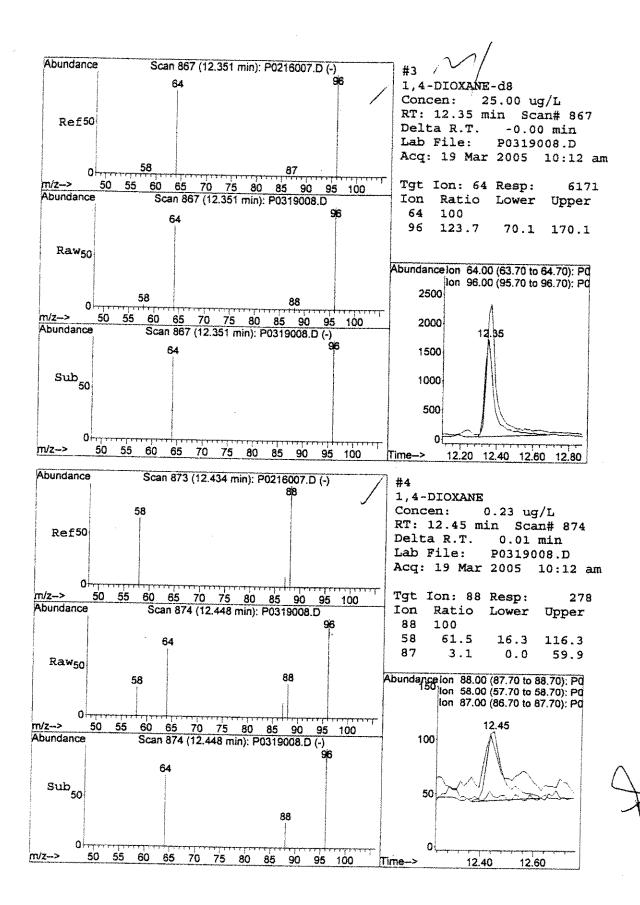


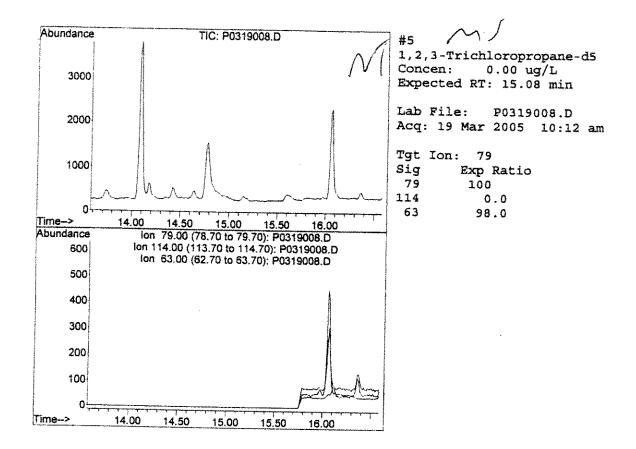
(#) = qualifier out of range (m) = manual integration P0319008.D DX021605.M Sat Mar 19 13:40:59 2005 GCMS1

15









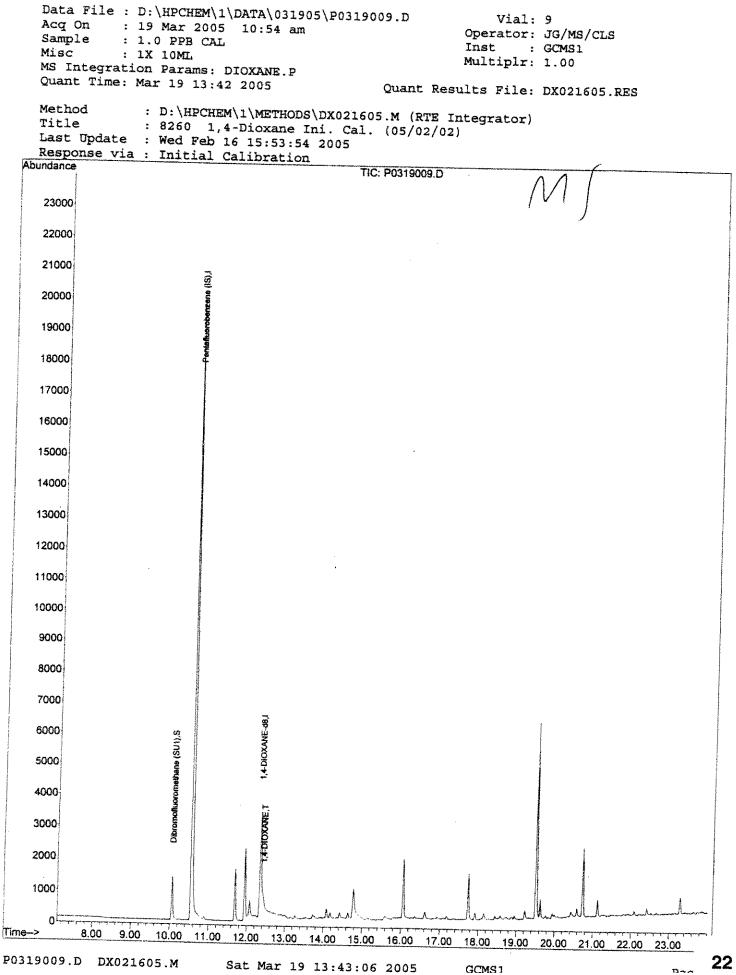
Grubbs Test for curve		
Response factors Grubbs value	1.0ppb 2.0ppb 5.0ppb 10ppb 20ppb 100ppb 2.0ppb 2.478 2.101 1.905 1.995 1.822 1.905 3.099 2.478 2.101 1.905 1.995 1.822 1.905 1.99698 0.63805 0.186944 0.615851 0.418904 0.797481 0.615851	MEAN STDEV 2.186429 0.456975
5pts Grubbs values < 6pts Grubbs values < 7pts Grubbs values < 8pts Grubbs values < 9pts Grubbs values < 10pts Grubbs values <		
	a miss	

20

والمتعادية والمتعادية والمعادية

,

Quantitation Report (QT Reviewed) Data File : D:\HPCHEM\1\DATA\031905\P0319009.D Vial: 9 Acq On : 19 Mar 2005 10:54 am Operator: JG/MS/CLS : 1.0 PPB CAL : 1X 10ML Sample Inst : GCMS1 Misc Multiplr: 1.00 MS Integration Params: DIOXANE.P Quant Time: Mar 19 13:42 2005 Quant Results File: DX021605.RES Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator) : 8260 1,4-Dioxane Ini. Cal. (05/02/02) Title Last Update : Wed Feb 16 15:53:54 2005 Lee Grubbia Jee Taat 343 312115 Response via : Initial Calibration MI 3/14/05 DataAcq Meth : DX021605 Internal Standards R.T. QION Response Conc Units Dev(Min) ****************** 1) Pentafluorobenzene (IS) 10.56 99 42761 1.00 ug/L 0.00 3) 1,4-DIOXANE-d8 64 12.35 4961 25.00 ug/L 5) 1,2,3-Trichloropropane-d5 0.00 0.00 79 0.00 ug/L -15.08 System Monitoring Compounds 2) Dibromofluoromethane (SU1) 10.07 113 3531 0.11 ug/L 0.00 Spiked Amount 1.000 Range 80 - 120 Recovery = 11.00%# Target Compounds 4) 1,4-DIOXANE Qvalue 12.43 88 615 1.50 ug/L 97



22

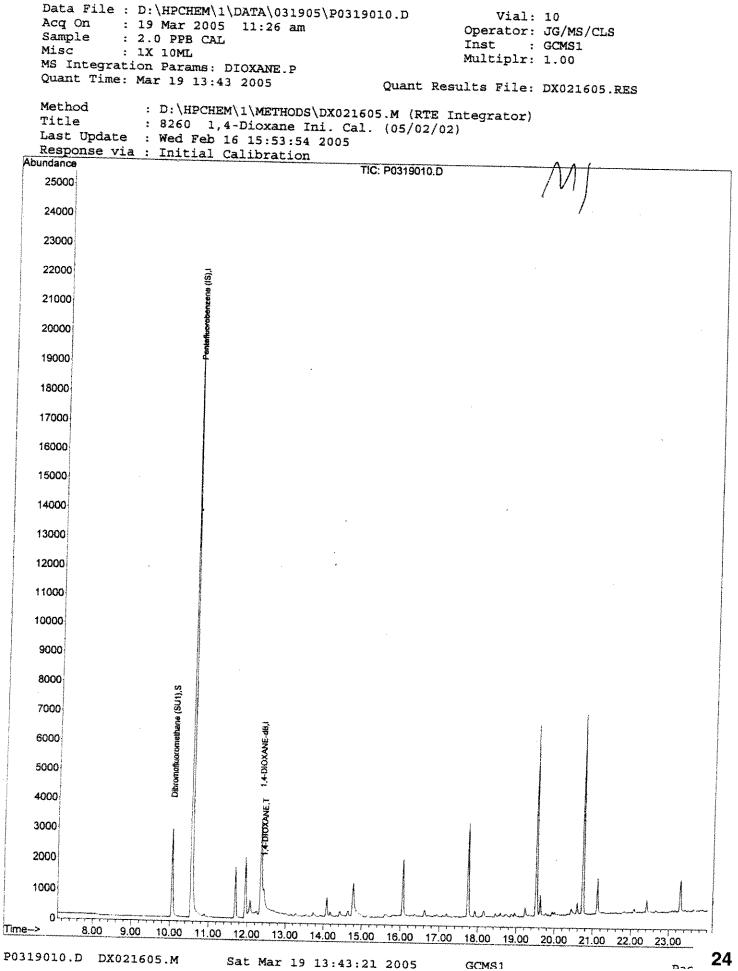
		~		
Data File : D:\HPCHEM\1\DATA\031 Acq On : 19 Mar 2005 11:26 a Sample : 2.0 PPB CAL Misc : 1X 10ML MS Integration Params: DIOXANE.P Quant Time: Mar 19 13:43 2005	m		D Vial: 10 Operator: JG/MS/CLS Inst : GCMS1 Multiplr: 1.00 Quant Results File: DX021605.	RES
Quant Method : D:\HPCHEM\1\METHON Title : 8260 1,4-Dioxane Last Update : Wed Feb 16 15:53:5 Response via : Initial Calibratic DataAcq Meth : DX021605 Internal Standards	54 2005 57 2005	⊥. (O)	M S 3/14/2	
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	R.Τ. ζ	lon	Response Conc Units Dev(Mi	n)
<ol> <li>Pentafluorobenzene (IS)</li> <li>1,4-DIOXANE-d8</li> <li>1,2,3-Trichloropropane-d5</li> </ol>				-
System Monitoring Compounds 2) Dibromofluoromethane (SU1) Spiked Amount 1.000 Ran	10.07			
Target Compounds 4) 1,4-DIOXANE	12.43		Qvalue 1028 2.69 ug/L 9	

1212

~~~~~~ -----(#) = qualifier out of range (m) = manual integration P0319010.D DX021605.M Sat Mar 19 13:43:20 2005

GCMS1

1.1.1.4<sup>1</sup>41.4.4.4.



24 0--0

| Data File : D:\HPCHEM\1\DATA\031
Acq On : 19 Mar 2005 11:59 a
Sample : 5.0 PPB CAL
Misc : 1X 10ML
MS Integration Params: DIOXANE.P
Quant Time: Mar 19 13:43 2005 | um | | Ope
Ins | t :
tiplr: | JG/MS
GCMS1
1.00 | |
|---|--------|--------|------------------------|---------------|------------------------|-------------|
| Quant Method : D:\HPCHEM\1\METHO
Title : 8260 1,4-Dioxane
Last Update : Wed Feb 16 15:53:
Response via : Initial Calibratio
DataAcq Meth : DX021605 | IN1. C | 1605.M | (RTE Integ
5/02/02) | rator) | | |
| Internal Standards | R.T. | QIon | Response (| τ. | 1 | |
| Pentafluorobenzene (IS) 1,4-DIOXANE-d8 1,2,3-Trichloropropane-d5 | 10.56 | 99 |
17560 | | | |
| System Monitoring Compounds
2) Dibromofluoromethane (SU1)
Spiked Amount 1.000 Rar | 10.00 | | | | | |
| Target Compounds 4) 1,4-DIOXANE | 12.43 | 88 | 2211 | 6.25 | Q
ug/L | value
99 |

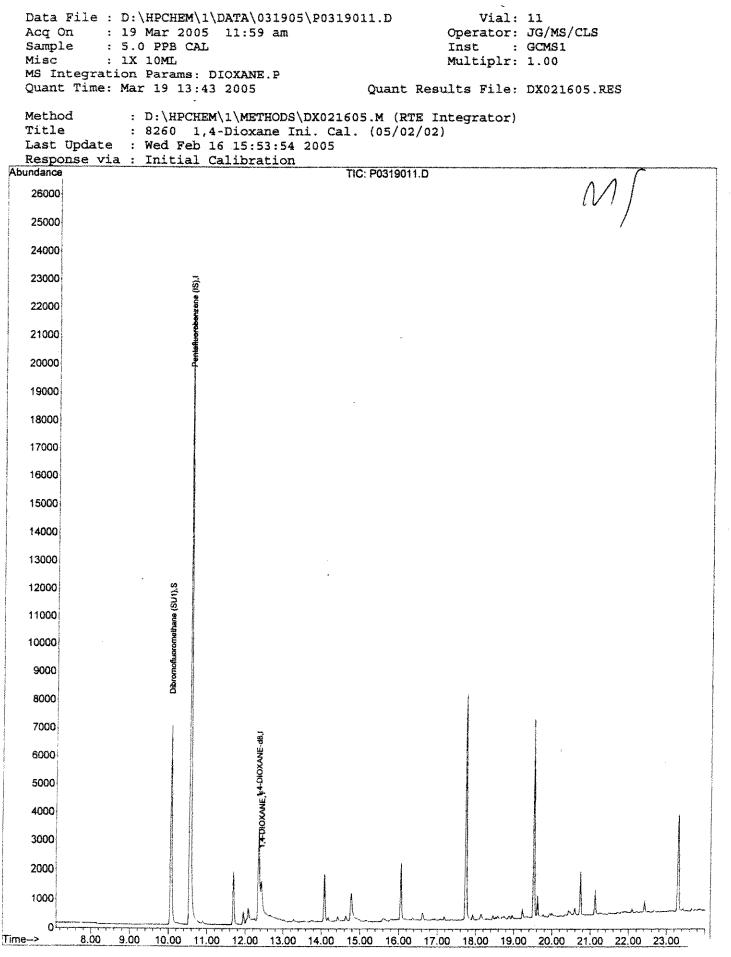


------(#) = qualifier out of range (m) = manual integrationP0319011.D DX021605.M Sat Mar 19 13:43:33 2005

GCMS1

\_\_\_\_ 25

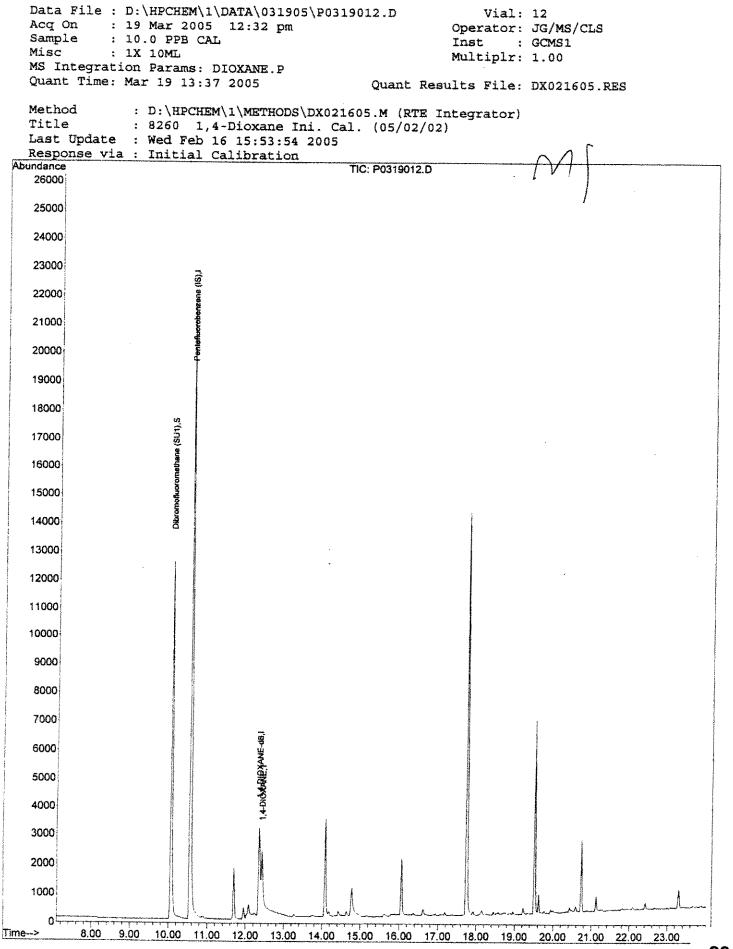
Sec.



| Data File : D:\HPCHEM\1\DATA\031
Acq On : 19 Mar 2005 12:32 p
Sample : 10.0 PPB CAL
Misc : 1X 10ML
MS Integration Params: DIOXANE.P
Quant Time: Mar 19 13:37 2005 | m | | Op
In | Vial:
erator:
st :
ltiplr:
ts File | JG/MS
GCMS1
1.00 | | | | |
|--|-----------------|--------------|------------------|--|------------------------|------------------------|--|--|--|
| Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator)
Title : 8260 1,4-Dioxane Ini. Cal. (05/02/02) | | | | | | | | | |
| Last Update : Wed Feb 16 15:53:
Response via : Initial Calibratic
DataAcq Meth : DX021605 | 54 2005 | ar. (0 | 5/02/02) | M | 3/19 | 12 | | | |
| Internal Standards | R.T. | QIon | Response | Conc U | nits De | ev(Min) | | | |
| 1) Pentafluorobenzene (IS)
3) 1,4-DIOXANE-d8
5) 1,2,3-Trichloropropane-d5 | 12.35 | 64 | 5034 | 25.00 | ug/L | 0.00
0.00
-15.08 | | | |
| System Monitoring Compounds
2) Dibromofluoromethane (SU1)
Spiked Amount 1.000 Rar | 10.07
1ge 80 | 113
- 120 | 34373
Recover | 0.95
cy = | ug/L
95.00 | 0.00 | | | |
| Target Compounds
4) 1,4-DIOXANE | 12.43 | 88 | 3835 | 11.74 | | value
99 | | | |

Ju and the second secon

Dar 27

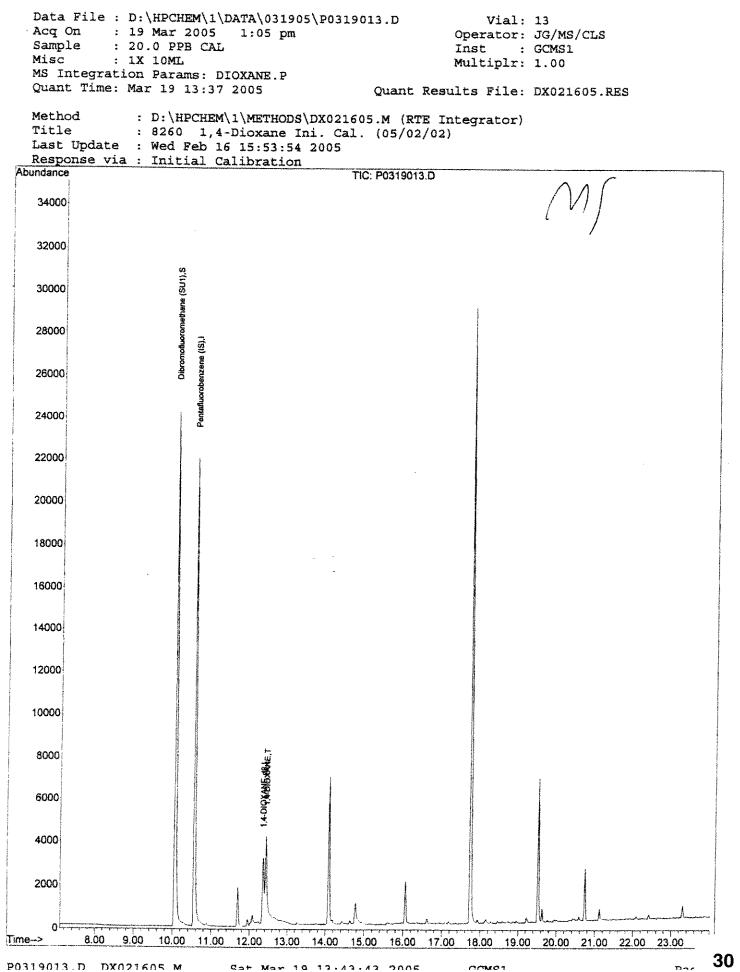


C/MC1

(QT Reviewed)

Data File : D:\HPCHEM\1\DATA\031905\P0319013.D Vial: 13 Acq On : 19 Mar 2005 1:05 pm Operator: JG/MS/CLS Sample : 20.0 PPB CAL Inst : GCMS1 Misc : 1X 10ML Multiplr: 1.00 MS Integration Params: DIOXANE.P Quant Time: Mar 19 13:37 2005 Quant Results File: DX021605.RES Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator) Title : 8260 1,4-Dioxane Ini. Cal. (05/02/02) Last Update : Wed Feb 16 15:53:54 2005 Response via : Initial Calibration 3/14/0/ DataAcq Meth : DX021605 Internal Standards R.T. QIon Response Conc'Units Dev(Min) • • • 1) Pentafluorobenzene (IS) 47635 4790 10.56 99 1.00 ug/L0.00 3) 1,4-DIOXANE-d8 12.35 64 25.00 ug/L 0.00 5) 1,2,3-Trichloropropane-d5 0.00 79 0JT 0.00 ug/L -15.08 System Monitoring Compounds 2) Dibromofluoromethane (SU1) 10.07 113 68573 1.86 ug/L 0.00 Spiked Amount 1.000 Range 80 - 120 Recovery = 186.00%Target Compounds Qvalue 4) 1, 4-DIOXANE 12.43 88 7646 25.14 ug/L 97

1. Cal.



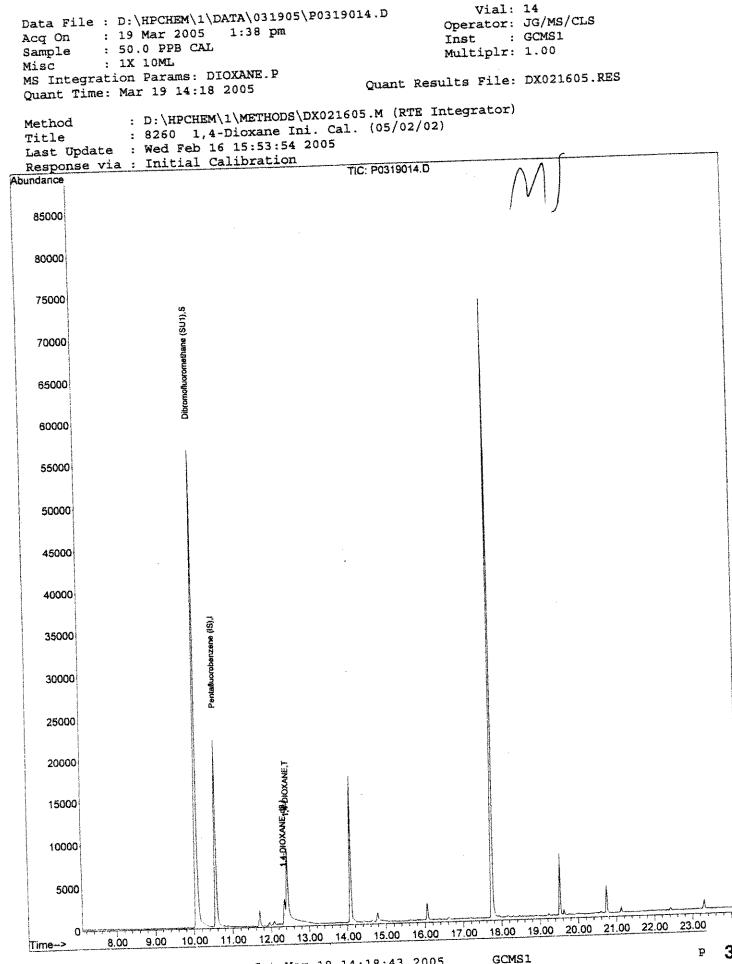
Quantitation Report (QT Reviewed)

| Data File : D:\HPCHEM\1\DATA\031
Acq On : 19 Mar 2005 1:38 p
Sample : 50.0 PPB CAL
Misc : 1X 10ML
MS Integration Params: DIOXANE.P
Quant Time: Mar 19 14:18 2005 | m
P | Q | Op
In
Mu
yuant Resul | st :
ltiplr:
ts File | JG/MS/CLS
GCMS1
1.00
: DX021605.RE | 35 |
|--|-----------------|--------------|-------------------------------|----------------------------|---|----|
| Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator)
Title : 8260 1,4-Dioxane Ini. Cal. (05/02/02)
Last Update : Wed Feb 16 15:53:54 2005
Response via : Initial Calibration
DataAcq Meth : DX021605
M (3/ 9) | | | | | | |
| Internal Standards | R.T. | QIon | | • | nits Dev(Min) | |
| Pentafluorobenzene (IS) 1,4-DIOXANE-d8 1,2,3-Trichloropropane-d5 | | | | | | |
| System Monitoring Compounds
2) Dibromofluoromethane (SU1)
Spiked Amount 1.000 Ram | 10.07
nge 80 | 113
- 120 | 164450
Recover | 4.46
TY = | ug/L 0.00
446.00%# | |
| Target Compounds
4) 1,4-DIOXANE | 12.43 | 88 | 18344 | 58.04 | Qvalue
ug/L 99 | |



The second second second second second

ward a ward and



Data File : D:\HPCHEM\1\DATA\031905\P0319015.D Vial: 15 Acq On : 19 Mar 2005 2:11 pm Operator: JG/MS/CLS Sample : 100.0 PPB CAL Inst : GCMS1 Misc : 1X 10ML Multiplr: 1.00 MS Integration Params: DIOXANE.P Quant Time: Mar 19 14:54 2005 Quant Results File: DX021605.RES Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator) Title : 8260 1,4-Dioxane Ini. Cal. (05/02/02) Last Update : Wed Feb 16 15:53:54 2005 Response via : Initial Calibration 1915 DataAcq Meth : DX021605 Internal Standards R.T. QIon Response Conc Units Dev(Min) -----

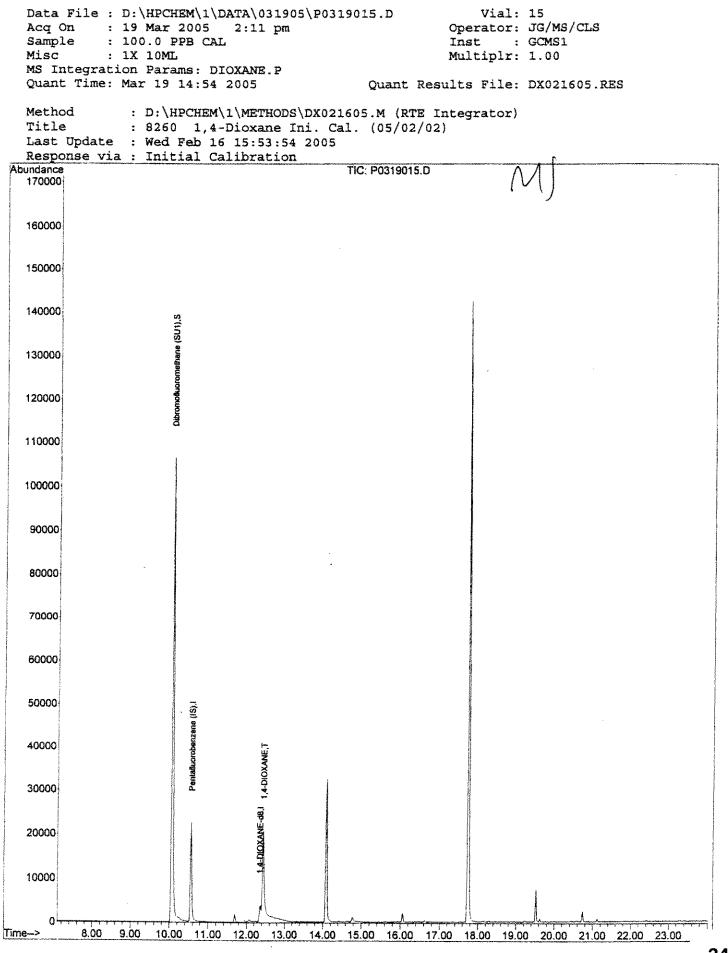
 1) Pentafluorobenzene (IS)
 10.56
 99
 48150
 1.00 ug/L

 3) 1,4-DIOXANE-d8
 12.35
 64
 5834
 25.00 ug/L

 5) 1,2,3-Trichloropropane-d5
 0.00
 79
 0/1
 0.00 ug/L

 0.00 5834 25.00 ug/L 0.00 0√1 0.00 ug/L -15.08 System Monitoring Compounds 2) Dibromofluoromethane (SU1) 10.07 113 307967 8.28 ug/L 0.00 Spiked Amount 1.000 Range 80 - 120 Recovery = 828.00%# Target Compounds Qvalue 4) 1,4-DIOXANE 44445 121.87 ug/L 98 12.43 88

(#) = qualifier out of range (m) = manual integration P0319015 D DY021605 M Cot Mar 10 14 54 44 0005

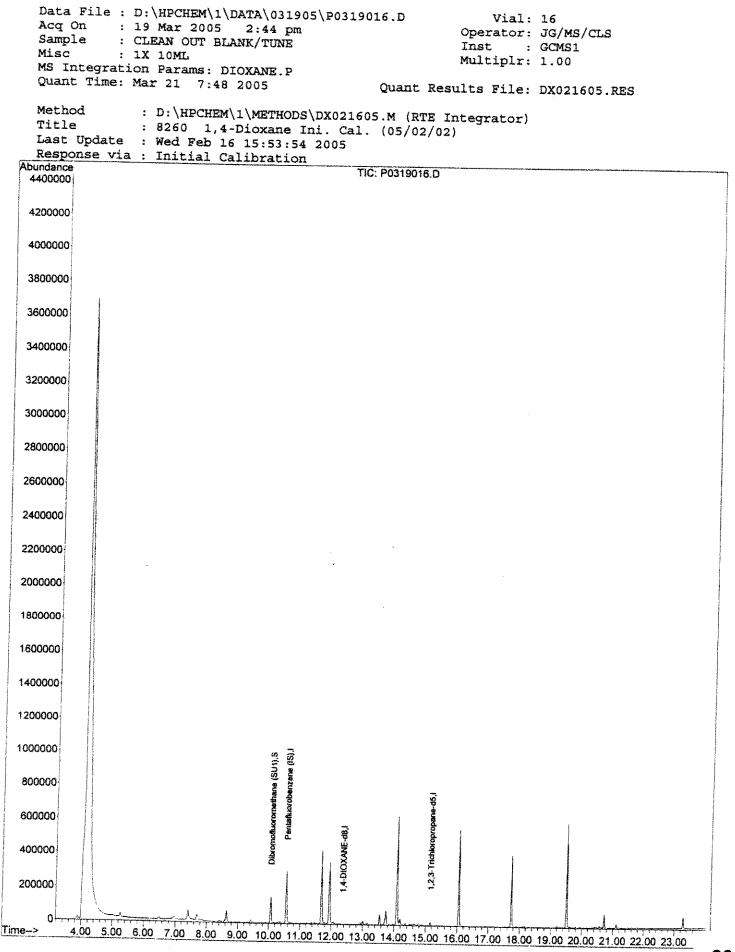


Sat Mar 19 14:54:45 2005

GCMS1

<sub>Pa</sub>, 34

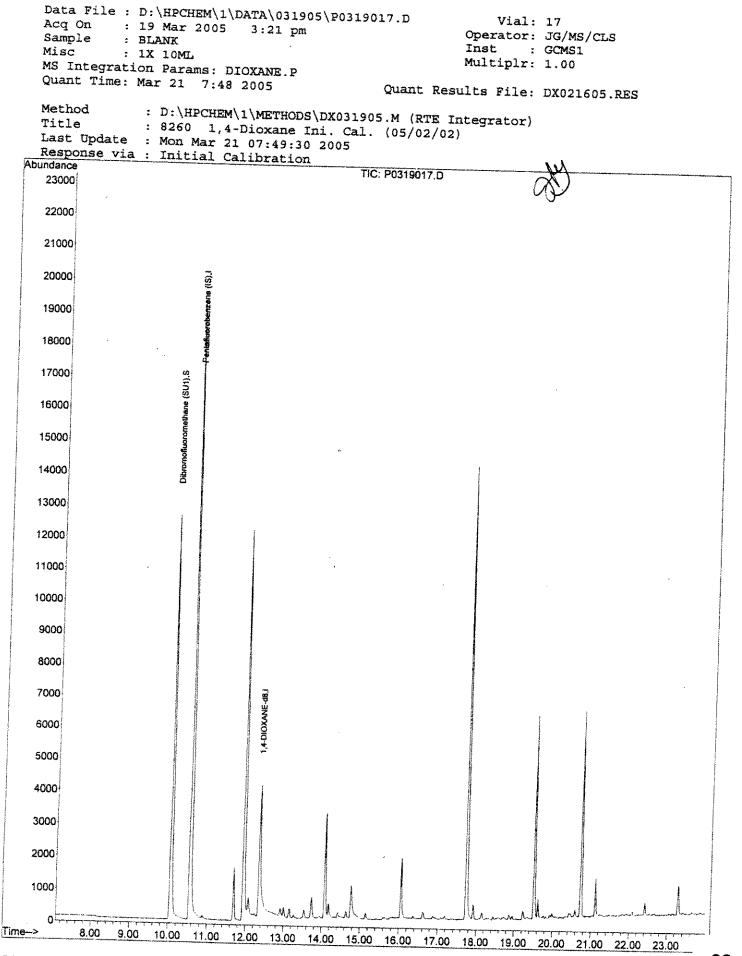
Quantitation Report (QT Reviewed) Data File : D:\HPCHEM\1\DATA\031905\P0319016.D Vial: 16 Acg On : 19 Mar 2005 2:44 pm Operator: JG/MS/CLS Sample : CLEAN OUT BLANK/TUNE Inst : GCMS1 Misc : 1X 10ML Multiplr: 1.00 MS Integration Params: DIOXANE.P Quant Time: Mar 21 7:48 2005 Quant Results File: DX021605.RES Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator) Title : 8260 1,4-Dioxane Ini. Cal. (05/02/02) Last Update : Wed Feb 16 15:53:54 2005 Response via : Initial Calibration DataAcq Meth : W072903 Internal Standards R.T. QIon Response Conc Units Dev(Min) \*\*\*\*\*\* 1) Pentafluorobenzene (IS) 10.56 99 168438 1.00 ug/L 0.00 3) 1,4-DIOXANE-d8 12.36 64 64 25.00 ug/L 0.00 5) 1,2,3-Trichloropropane-d5 15.15 57 79 500.00 ug/L 0.07 System Monitoring Compounds 2) Dibromofluoromethane (SU1) 10.06 113 129670 1.00 / 1g/L 0.00 Spiked Amount 1.000 Range 80 - 120 Recovery 100.00% Target Compounds Qvalue



~~~~~

| Data File : D:\HPCHEM\1\DATA\031<br>Acq On : 19 Mar 2005 3:21 p<br>Sample : BLANK<br>Misc : 1X 10ML<br>MS Integration Params: DIOXANE.P<br>Quant Time: Mar 21 7:48 2005 | m       |        | Op<br>In | erator:<br>st :<br>ltiplr: | JG/MS,<br>GCMS1<br>1.00 |         |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--------|----------|----------------------------|-------------------------|---------|--|--|--|
| Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator)                                                                                                          |         |        |          |                            |                         |         |  |  |  |
| Title : 8260 1,4-Dioxane                                                                                                                                                | Ini C   | al. (n | 5/02/02) | 7                          |                         |         |  |  |  |
| Last Update : Wed Feb 16 15:53:                                                                                                                                         | 54 2005 |        | 12110    | \$2                        |                         |         |  |  |  |
| Response via : Initial Calibration                                                                                                                                      | on      |        | 12       |                            |                         |         |  |  |  |
| DataAcq Meth : DX021605                                                                                                                                                 |         |        | Site     | <b>\</b>                   |                         |         |  |  |  |
| Internal Standards                                                                                                                                                      | R.T.    | QIon   | Response | /<br>Conc ሀነ               | nits De                 | ev(Min) |  |  |  |
| ***************************************                                                                                                                                 |         |        |          | ~~~~~                      |                         |         |  |  |  |
| 1) Pentafluorobenzene (IS)                                                                                                                                              | 10.56   | 99     | 41664    | 1.00                       | ug/L                    | 0.00    |  |  |  |
| 3) 1,4-DIOXANE-d8                                                                                                                                                       | 12.35   | 64     | 6641     | 25.00                      | ug/L                    | 0.00    |  |  |  |
| 5) 1,2,3-Trichloropropane-d5                                                                                                                                            | 0.00    | 79     | 0        | 0.00                       | ug/L                    | -15.08  |  |  |  |
| System Monitoring Compounds                                                                                                                                             |         |        |          |                            |                         |         |  |  |  |
| 2) Dibromofluoromethane (SU1)                                                                                                                                           | 10.07   | 113    | 34219    | 1.06                       | ug/L                    | 0.00    |  |  |  |
| Spiked Amount 1.000 Rai                                                                                                                                                 | nge 80  | - 120  | Recove   | ry =                       | 106.00                  | )8      |  |  |  |
| Target Compounds                                                                                                                                                        |         |        |          |                            | c                       | value   |  |  |  |
| 4) 1,4-DIOXANE                                                                                                                                                          | 12.43   | 88     | 233      | N.D.                       |                         |         |  |  |  |
| 6) 1,2,3-Trichloropropane                                                                                                                                               | 0.00    | 75     | 0        |                            |                         |         |  |  |  |



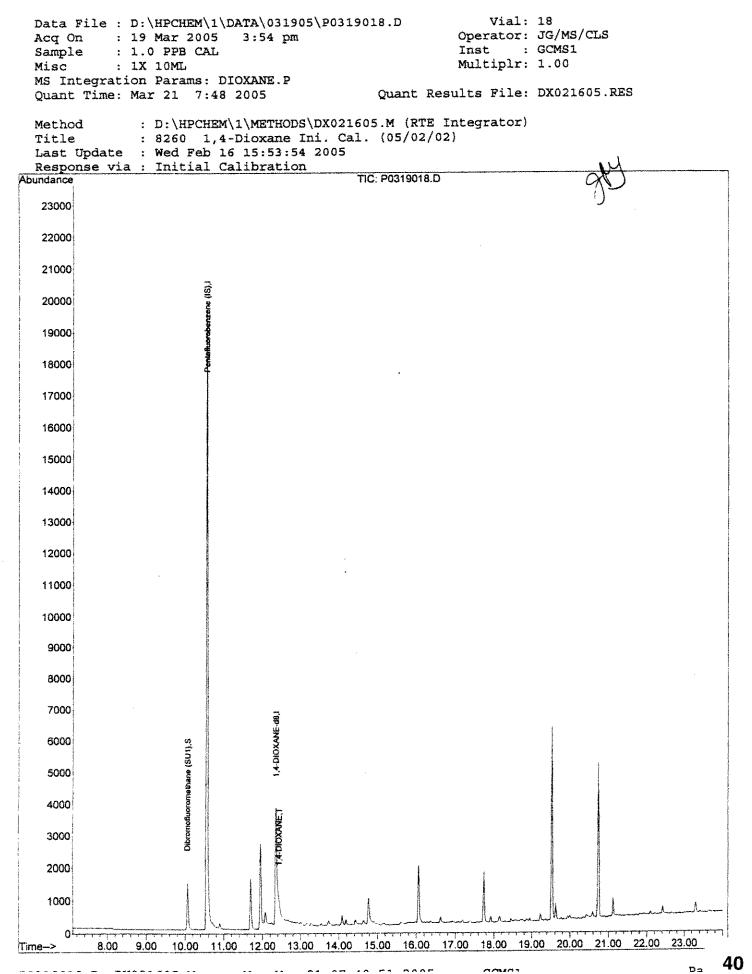


nmon

| Data File : D:\HPCHEM\1\DATA\031<br>Acq On : 19 Mar 2005 3:54 pm<br>Sample : 1.0 PPB CAL<br>Misc : 1X 10ML<br>MS Integration Params: DIOXANE.P<br>Quant Time: Mar 21 7:48 2005 | m       |         | Ope<br>Ins                            | rator:<br>t :<br>tiplr: | JG/MS<br>GCMS1<br>1.00 | •       |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|---------------------------------------|-------------------------|------------------------|---------|--|--|--|
| Quant Method : D:\HPCHEM\1\METHODS\DX021605.M (RTE Integrator)                                                                                                                 |         |         |                                       |                         |                        |         |  |  |  |
| Title : 8260 1,4-Dioxane                                                                                                                                                       | Ini. C  | al. (05 | 5/02/02)                              | 6                       |                        |         |  |  |  |
| Last Update : Wed Feb 16 15:53:                                                                                                                                                | 54 2005 |         | · · · · · · · · · · · · · · · · · · · | O'                      |                        |         |  |  |  |
| Response via : Initial Calibratio                                                                                                                                              | on      |         | 12                                    | `.                      |                        |         |  |  |  |
| DataAcq Meth : DX021605                                                                                                                                                        |         |         | 5                                     | А                       |                        |         |  |  |  |
|                                                                                                                                                                                |         |         | $-\infty$                             | ()                      |                        |         |  |  |  |
| Internal Standards                                                                                                                                                             | R.T.    | QIon    | Response                              | Conc U                  | nits I                 | ev(Min) |  |  |  |
|                                                                                                                                                                                |         |         |                                       |                         |                        |         |  |  |  |
| 1) Pentafluorobenzene (IS)                                                                                                                                                     | 10.56   | 99      | 42387                                 | 1.00                    | uq/L                   | 0.00    |  |  |  |
| 3) 1,4-DIOXANE-d8                                                                                                                                                              | 12.35   | 64      | 6173                                  | 25.00                   | uq/L                   | 0.00    |  |  |  |
| 5) 1,2,3-Trichloropropane-d5                                                                                                                                                   | 0.00    | 79      | 0                                     | 0.00                    | ug/L                   | -15.08  |  |  |  |
|                                                                                                                                                                                |         |         |                                       |                         |                        |         |  |  |  |
| System Monitoring Compounds                                                                                                                                                    |         |         |                                       |                         |                        |         |  |  |  |
| 2) Dibromofluoromethane (SU1)                                                                                                                                                  | 10.07   | 113     | 3733                                  | 0.11                    | ug/L                   | 0.00    |  |  |  |
| Spiked Amount 1.000 Rar                                                                                                                                                        | 1ge 80  | - 120   | Recover                               | у =                     | 11.0                   | 08#     |  |  |  |
| Target Compounds                                                                                                                                                               |         |         |                                       |                         |                        | (mm lun |  |  |  |
|                                                                                                                                                                                | 10 /3   | 00      | 660                                   | 1 0 4                   | · · · · / *            | Qvalue  |  |  |  |
| 6) 1,2,3-Trichloropropane                                                                                                                                                      | 14.43   | 88      | 668                                   |                         |                        | 97      |  |  |  |
| o, 1,2,5-irichtoropropane                                                                                                                                                      | 0.00    | /5      | 0                                     | N.D.                    | •                      |         |  |  |  |

advis -

-------



## Calibration Status Report GCMS1

| T<br>L |     | pdate | : 8260<br>: Mon M | CHEM/1/METHODS/DX031905.M (RTE Integrator)<br>1,4-Dioxane Ini. Cal. (05/02/02)<br>lar 21 12:54:07 2005<br>al Calibration |
|--------|-----|-------|-------------------|--------------------------------------------------------------------------------------------------------------------------|
| #      | ID  | Conc  | ISTD<br>Conc      | Path\File                                                                                                                |
|        |     | **==  |                   | (h')                                                                                                                     |
| 1      | 1   | 0     | 1                 | D:\HPCHEM\1\DATA\031905\P0319018.D                                                                                       |
| 2      | 2   | 0     | 1                 | D:\HPCHEM\1\DATA\031905\P0319010.D                                                                                       |
| 3      | 5   | 1     | 1                 | D:\HPCHEM\1\DATA\031905\P0319011.D                                                                                       |
| 4      | 10  | 1     | 1                 | D:\HPCHEM\1\DATA\031905\P0319012.D                                                                                       |
| 5      | 20  | 2     | 1                 | D:\HPCHEM\1\DATA\031905\P0319013.D                                                                                       |
| 6      | 50  | 5     | 1                 | D:\HPCHEM\1\DATA\031905\P0319014.D                                                                                       |
| 7      | 100 | 10    | 1                 | D:\HPCHEM\1\DATA\031905\P0319015.D                                                                                       |

|                       | ID                            | Update Time                                                                                                                                     | Quant Time                                                                                                                                             | Acquisition Time                                                                                                                          |  |  |  |  |  |
|-----------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 1<br>2<br>3<br>4<br>5 | 1<br>2<br>5<br>10<br>20<br>50 | Mar 21 07:49 2005<br>Mar 19 14:55 2005 | Mar 21 07:48 19105<br>Mar 19 13:43 19105<br>Mar 19 13:43 19105<br>Mar 19 13:37 19105<br>Mar 19 13:37 19105<br>Mar 19 13:37 19105<br>Mar 19 14:18 19105 | 19 Mar 2005 3:54 pm<br>19 Mar 2005 11:26 am<br>19 Mar 2005 11:59 am<br>19 Mar 2005 12:32 pm<br>19 Mar 2005 1:05 pm<br>19 Mar 2005 1:38 pm |  |  |  |  |  |
| 7                     | 100                           | Mar 19 14:55 2005                                                                                                                               | Mar 19 14:54 19105                                                                                                                                     | 19 Mar 2005 1:38 pm<br>19 Mar 2005 2:11 pm                                                                                                |  |  |  |  |  |

DX031905.M

Mon Mar 21 12:55:30 2005 GCMS1

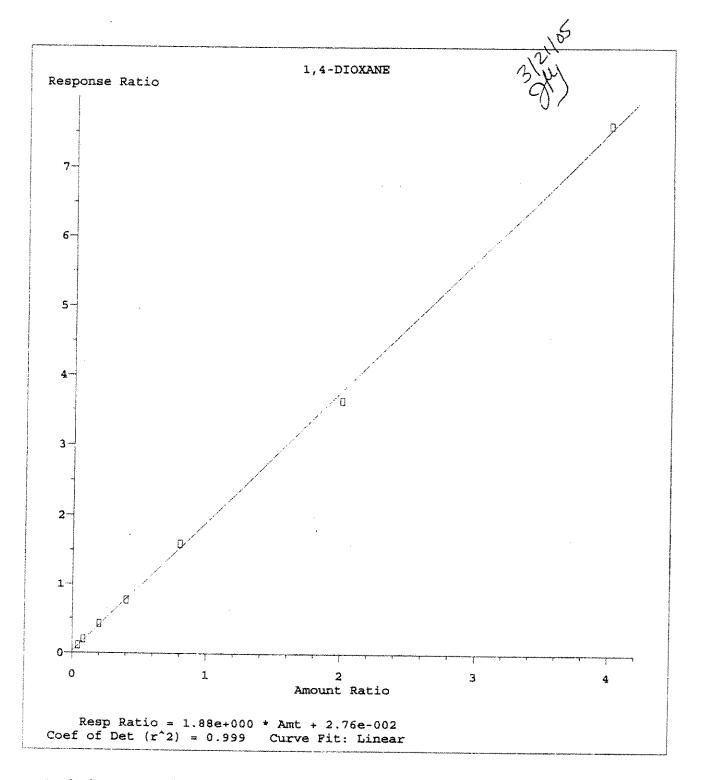
heres

Compound List Report GCMS1

| Method: D:\HPCHEM\1\METHODS\DX031905.M (RTE Integrator)Title: 8260 1,4-Dioxane Ini. Cal. (05/02/02)Last Update: Mon Mar 21 12:54:07 2005Response via: Initial CalibrationTotal Cpnds: 6        |                                                       |           |                |                |        |        |        |        |   |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------|----------------|----------------|--------|--------|--------|--------|---|--|
| PK#                                                                                                                                                                                            | Compound Name                                         | QIon      | Exp_RT         | Rel_RT         | Cal    | #Qual  | A/H    | ID     | 0 |  |
| 1 I<br>2 S                                                                                                                                                                                     | Pentafluorobenzene (IS)<br>Dibromofluoromethane (SU1) | 99<br>113 | 10.57<br>10.07 | 1.000<br>0.953 | A<br>A | 1<br>0 | A<br>A | B<br>B |   |  |
|                                                                                                                                                                                                | 1,4-DIOXANE-d8<br>1,4-DIOXANE                         |           |                | 1.000<br>1.007 |        | 1<br>2 | A<br>A | B<br>B |   |  |
| 5 I<br>6 T                                                                                                                                                                                     | 1,2,3-Trichloropropane-d5<br>1,2,3-Trichloropropane   |           |                | 1.000<br>1.000 | A<br>A | 2<br>2 | A<br>A | B<br>B |   |  |
| Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin<br>#Qual = number of qualifiers<br>A/H = Area or Height<br>ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All |                                                       |           |                |                |        |        |        |        |   |  |
|                                                                                                                                                                                                | DX031905.M Mon Mar 21 1                               | 2:55:     | 24 2005        |                | GCMS   | 31     |        |        |   |  |

fort 7,

.



Method Name: D:\HPCHEM\1\METHODS\DX031905.M Calibration Table Last Updated: Mon Mar 21 12:54:07 2005

3/22/00