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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
CENTRAL REGIONAL LABORATORY
839 BESTGATE ROAD
ANNAPOLIS, MARYLAND 21401
(301) 266-9180

DATE : April 3, 1991

SUBJECT : Region III Data QA Review

FROM : Theresa A. Simpson TAS
Region III ESAT DPO (3ES23)

TO : Nick Dinardo
Regional Project Manager (3HW22)

Attached is the dioxin/furan data review for the Havertown PCP Site (SAS 5742C) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III ESD.

If you have any questions regarding this review, please call me.

Attachment

cc: Dale Swenson, TETRA TECH
Edward Kantor. EMSL-LV
Regional CLP TPO: B. J. Verrett Region: VI Lab Code: Triangle

TID File: 03910220 Task 2297

WESTON
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DATE: April 2, 1991

SUBJECT: Data Validation for SAS 5742C, Dioxin/Furan
Site: Havertown PCP

FROM: Mahboobeh Mecanic MM
Organic Data Reviewer

Don O'Brien DOB
Organic Data Reviewer

TO: Terry Simpson
ESAT Deputy Project Officer

THROUGH: Dan Dresser
ESAT Team Manager

Overview

Thirty-six (36) aqueous samples were analyzed through the Contract Laboratory Program (CLP) as a Special Analytical Service (SAS) for the following target compounds:

total tetra through octa chlorinated dibenzo-p-dioxins and dibenzofurans.

Eight (8) method blank analyses and two (2) native spike/native spike duplicate analyses were also performed.

The Toxicity Equivalents (TEQ) for all samples, based on the 1989 Interim Scheme, are summarized in Table I of Appendix A. All results are equated to 2,3,7,8-TCDD toxicity on the basis of a single column determination, and include estimated maximum possible concentrations (EMPC) to provide a worst case scenario. The laboratory reported 2378-chlorine substituted isomers and total dioxins and furans, but Table I separates the 2378-chlorinated isomers from the total and reports the results as 2378-chlorine substituted and other dioxins/furans. Table I summarizes all sample results in units of parts per trillion (pptr).

All samples were successfully analyzed, however, the OCDD and/or OCDF in the method blanks run on 1/30/91 and 2/2/91, and samples DC0457-10, -12, DC0462-10, -13, -21, and -24, are estimated values due to Internal Standard (IS) 13C12-OCDD ion ratios outside the window, or IS recoveries greater than 120%.

Analytical Methodology Comments

- All samples were analyzed according to RCRA Method 8280 analytical protocol. Cleanup options employed were acid column and alumina column, for all samples. Some samples received additional cleanup using carbon/silica column procedures.

- Three (3) ions were monitored for the identification of each tetra through octa dioxin and furan. The appropriate diphenylether ion was also monitored for possible interference with the furan identifications.

- The laboratory used "L" and "H" qualifiers on the Form Is to indicate reported concentrations that were below or above the calibration range.

- The laboratory used a total of five (5) internal standards for quantitation of native dioxins and furans. Two (2) recovery standards were used to determine method efficiencies (percent recoveries of internal standards).

- The SAS request specifies that the average of the before and after response factors are to be used for quantitation, but these samples were quantitated for tetra through octa dioxins and furans using the relative response factors (RRF) from the continuing calibration run before each sample analysis.

QA/QC Comments

- The laboratory calculated toxicity equivalents (TEQ) using toxicity factors (TF) that differ from those specified in Table VI of the SAS request, or differ from those used in Table I of this report. Using the TFs specified in the SAS request would produce a TEQ greater than 50 pptr for sample DC0462-10, thereby requiring a second column confirmation. The TEQ calculated by the laboratory did not result in a TEQ > 50 pptr, therefore, no confirmation was performed. (See TEQ result in Table I and Appendix E.)

- Several method blanks contained positive results and/or estimated maximum possible concentrations (EMPC) for several analytes. These were all measured well below the contract required detection limits specified in Method 8280. No 2378-TCDD was determined in the blanks. The laboratory flagged sample concentrations of these analytes "B" on the Form Is. Table I reports the blank concentrations, but does not qualify sample data based on blank concentrations. (See Form Is in Appendix C.)

- The percent recoveries of the native spike/native spike duplicate analyses of samples DC0457-03 and DC0462-04 are summarized in Table II of Appendix B. The range of recoveries was 82.6-104.8% and 79.2-127.8%, respectively. All recoveries were within the 60-140% range. (Also see Table II of Appendix A.)

- The continuing calibrations contained several compounds with response factors that varied by more than 20% from the previously obtained average response factors. Any impact on the data was minimal, therefore, no data were qualified. (See continuing calibration summary forms in Appendix E.)

- The SAS Request requires internal standard recoveries to be within 40-120%. Samples with method efficiencies outside these limits, but which met the internal standard signal to noise (S/N) ratio criteria of 10:1, are listed in Table III of Appendix B. Since the IS S/N ratio met the criteria, low recoveries had no impact on the data. However, several samples had high recoveries of internal standards, indicating unresolved interferences. This precludes accurate quantitation of native dioxins/furans for the affected congener groups. Positive results were qualified "J" for estimated for these congener groups in the affected samples. (Also see support documentation in Appendix E.)

- The ion ratio was outside the QC limits for the internal standard 13C12-OCDD in sample DC0462-10. Native dioxins/furans quantitated using that IS are qualified "J" for estimated. (See Table I and Appendix E.)

<u>Sample Specific Comments</u>

- All samples and blanks contained EMPCs for non-2378-TCDDs and -TCDFs. These resulted from interferences produced by fragments of the 13C12-labeled internal standards. The ion ratios were outside the ± 15% windows for both congeners groups. In addition, the confirmation ion was missing or had a S/N ratio less than 2.5 for the TCDDs in most samples. As a result, the other-TCDDs which had both ion ratios and confirmation ions outside the QC limits were considered non-detects, and were not reported on Table I. The EMPCs for other-TCDFs did have acceptable confirmation ions, and, therefore, were reported on Table I, but are probably due to the above mentioned interference. These two congener group problems are not included in the following sample specific problem table. (See case narrative in Appendix E.)

- The concentrations reported on the Form Is as EMPCs include the total confirmed (non-EMPC) concentrations. During data validation, the confirmed concentrations have been subtracted from the total-EMPCs, and the Form Is in Appendix E have been changed accordingly.

- The laboratory reported several estimated maximum possible concentrations (EMPC) on the Form Is, but did not indicate why these concentrations were so designated. All EMPCs resulted from Ion Ratios outside the QC windows. The affected samples and compounds, except as noted above, and any errors that were identified and corrected during data validation are listed in the following table. (See Appendix E for support documentation.)

Sample	Compound	Concentration (pptr) Reported	Concentration (pptr) Corrected	Reason
Method Blank 1/22/91	23478-PeCDD	0.16 *	ND	IR,CI
	other-PeCDD	0.91 *	ND	IR,CI
	other-PeCDF	0.16 *	ND	IR,CI
Method Blank 1/22/91	234678-HxCDF	0.11 *	ND	IR,CI
	other-HxCDF	0.13 *	ND	IR,CI
Method Blank 2/2/91	other-PeCDD	30.01 *		IR
	23478-PeCDF	4.19 *		IR
	other PeCDF	4.45		IR
Method Blank 2/2/91	other-TCDF	5.05 *	3.04 *	IR,CI
	other-PeCDF	0.66 *		IR
DC0457-03NS	other-PeCDF	0.48 *		IR
DC0457-08	other-HpCDF	0.27 *		IR
DC0457-10	23478-PeCDF	0.97 *		IR
DC0457-11	other-PeCDD	0.52 *		IR
	other-HxCDD	1.26 *		IR
	other-PeCDF	0.77 *		IR
	other-HxCDF	0.59 *		IR
	other-HpCDF	0.80 *		IR
DC0457-12	other-TCDD	5.06 *		IR
	other-PeCDD	1.10 *	ND	IR,CI
	other-HxCDD	1.70 *		IR
	other-PeCDF	12.08 *	1.78 *	IR
	other-HxCDF	304.19 *	0.55 *	IR
	other-HpCDF	1961.5 *		IR
DC0462-04NS	other-PeCDD	0.76 *		IR
	other-PeCDF	1.50 *		IR

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Sample	Compound	Concentration (pptr) Reported	Corrected	Reason
DC0462-04NSD	other-TCDD	0.06 *		IR
	other-PeCDD	0.83 *		IR
	other-HxCDD	0.28 *		IR
	other-PeCDF	1.70 *		IR
	other-HxCDF	0.13 *		IR
DC0462-08	other-HpCDD	0.57 *	0.21 *	IR
DC0462-09	other-HxCDD	8.51 *	0.12 *	IR
	other-PeCDF	0.39 *	ND	IR,CI
DC0462-10	other-TCDD	13.00 *	11.10 *	IR
	other-PeCDD	10.41 *	4.01 *	IR
	other-HxCDD	504.78 *	5.78 *	IR
	other-TCDF	69.65 *	67.95 *	IR
	12378-PeCDF	63.60 *		IR
	other-PeCDF	222.18 *	192.28 *	IR
	123678-HxCDF	2.00 *		IR
	other-HxCDF	1885.53 *	625.53 *	IR
	other-HpCDF	10645.78 *	12.80 *	IR
DC0462-11	other-TCDD	9.51 *		IR
	other-TCDF	1.02 *	0.30 *	IR
	other-PeCDF	0.16 *		IR
DC0462-12	other-TCDD	8.76 *	2.10 *	IR,CI
	other-HxCDD	2.79 *	0.16 *	IR
	other-TCDF	1.16 *	0.36 *	IR
	other-HxCDF	0.25 *	0.05 *	IR
	other-HpCDF	3.83 *	0.50 *	IR
DC0462-13	other-TCDD	11.52 *	6.74 *	IR,CI
	123678-HxCDD	0.37 *		IR
	other-TCDF	1.19 *	0.80 *	IR
	other-PeCDF	0.60 *		IR
	other-HxCDF	2.75 *	0.05 *	IR
	1234789-HpCDF	0.19 *		IR
	other-HpCDF	37.60 *	0.19 *	IR
DC0462-15	other-HxCDD	0.07 *		IR
DC0462-22	1234678-HpCDD	0.03 *		IR
	OCDF	0.55 *		IR
DC0462-24	other-PeCDF	0.26 *		IR
	other-HxCDF	31.94 *	0.07 *	IR

* = Estimated Maximum Possible Concentration
NS = Native Spike
NSD = Native Spike Duplicate
IR = Ion Ratio outside window
CI = Confirmation Ion missing, or S/N <2.5

SUMMARY

All samples were successfully analyzed. Identifications and reported concentrations were verified during data validation. The results are listed in Table I of Appendix A. Spike results and internal standard outliers are contained in Appendix B. The unvalidated data, as reported by the laboratory, is contained in Appendix C. The Organic Regional Data Assessment Summary is contained in Appendix D. Support documentation is contained in Appendix E.

Attachments

1) Appendix A - Table I. Toxicity Equivalent (TEQ)
2) Appendix B - Recovery Data
3) Appendix C - Laboratory Data Sheets
4) Appendix D - Organic Regional Data Assessment Summary
5) Appendix E - Support Documentation

DCN: DO104A01.HVT

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APPENDIX A

Table I. Toxicity Equivalents (TEQ)

TABLE 1: SUMMARY OF SAS 5742C HAVERTOWN PCP

AQUEOUS SAMPLES

WORKSHEET TO CALCULATE TOXICITY EQUIVALENT (TEQ). TEQ's BASED ON I-TEF/89 SCHEME.

Results for each sample given on two lines: TOP LINE: Concentration of homolog in PPTr. BOTTOM LINE equates that concentration to the toxicity equivalent of 2,3,7,8-TCDD.

SAMPLE ID#	TOTAL TE	TCDD 0.0000	2378-TCDD 1.0000	PCDD 0.0000	2378-PCDD 0.5000	HxCDD 0.0000	2378-HxCDD 0.1000	HpCDD 0.0000	2378-HpCDD 0.0100	OCDD 0.0010	TCDF 0.0000	2378-TCDF 0.1000	PCDF 0.0000	12378-PCDF 0.0500	23478-PCDF 0.5000	HxCDF 0.0000	2378-HxCDF 0.1000	HpCDF 0.0000	2378-HpCDF 0.0100	OCDF 0.0010
						ISOMER, HOMOLOG (TE FACTOR)														
METHOD BLANK										0.35	0.17*				0.16*					
01/22/91	0.080	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0800	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK										0.36	0.25*									
01/22/91	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK											0.17*									
01/23/91	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK										0.39	0.39*									
01/24/91	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK		0.23								0.60J	0.24*									
01/30/91	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK				30.01*						2.40J	2.05*				4.19*					
02/02/91	2.097	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024	0.0000	0.0000	0.0000	0.0000	2.0950	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK										2.60	3.04*		0.66*							
02/02/91	0.003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
METHOD BLANK										0.18	0.22*									
02/04/91	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-01									0.22	1.90	0.41*						0.24		0.30	0.40
	0.032	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0022	0.0019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0240	0.0000	0.0030	0.0004
DC0457-02										0.23	0.55*									
FB	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-03										0.50	0.63*									
FB	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-03			48.20		53.60		354.00		123.00	227.00	1.04*	49.10	3.78*	51.90	49.80		470.00		232.00	217.00
NS	193.799	0.0000	48.2000	0.0000	26.8000	0.0000	35.4000	0.0000	1.2300	0.2270	0.0000	4.9100	0.0000	2.5950	24.9000	0.0000	47.0000	0.0000	2.3200	0.2170
DC0457-03			46.80		54.30		354.00		107.00	226.00	0.87*	48.80	2.80	51.00	50.20	0.18	523.00	0.30	240.00	214.00
NSD	198.090	0.0000	46.8000	0.0000	27.1500	0.0000	35.4000	0.0000	1.0700	0.2260	0.0000	4.8800	0.0000	2.5500	25.1000	0.0000	52.3000	0.0000	2.4000	0.2140
DC0457-04										0.27	0.52*									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-05										0.40	0.43*									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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TABLE I: SUMMARY OF SAS 5742C HAVERTOWN PCP

AQUEOUS SAMPLES

WORKSHEET TO CALCULATE TOXICITY EQUIVALENT (TEQ). TEQ's BASED ON I-TEF/89 SCHEME.
Results for each sample given on two lines: TOP LINE: Concentration of homolog in PPTr. BOTTOM LINE equates that concentration to the toxicity equivalent of 2,3,7,8-TCDD.

ISOMER, HOMOLOG
(TE FACTOR)

SAMPLE ID#	TOTAL TE	TCDD 0.0000	2378-TCDD 1.0000	PCDD 0.0000	2378-PCDD 0.5000	HxCDD 0.0000	2378-HxCDD 0.1000	HpCDD 0.0000	2378-HpCDD 0.0100	OCDD 0.0010	TCDF 0.0000	2378-TCDF 0.1000	PCDF 0.0000	12378-PCDF 0.0500	23478-PCDF 0.5000	HxCDF 0.0000	2378-HxCDF 0.1000	HpCDF 0.0000	2378-HpCDF 0.0100	OCDF 0.0010
DC0457-06										0.32	0.58x									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-07		0.23								0.34	0.51x									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0457-08								0.14	0.31	3.70	0.57x					0.19		0.27x	0.08	0.46
	0.008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0005
DC0457-09									0.23	3.50	0.24x							0.30	0.07	0.58
	0.007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0023	0.0035	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0006
DC0457-10			0.54	6.90x				13.00	28.10	340.00J	1.58x				0.97x	4.30		38.80	7.90	82.00J
RINSATE	1.807	0.0000	0.5400	0.0000	0.0000	0.0000	0.0000	0.0000	0.2810	0.3400	0.0000	0.0000	0.0000	0.0000	0.4850	0.0000	0.0000	0.0000	0.0790	0.0820
DC0457-11				0.52x		30.06x	25.50	472.00	998.00	6440.00	0.26x	0.09x	4.77x	0.71x	0.39	137.66x	4.93	995.50x	195.30	1480.00
	23.136	0.0000	0.0000	0.0000	0.0000	0.0000	2.5500	0.0000	9.9800	6.4400	0.0000	0.0090	0.0000	0.0355	0.1950	0.0000	0.4930	0.0000	1.9530	1.4800
DC0457-12		5.06x		0.23		52.10x	43.10	800.00	1730.00	9410.00J	0.77x	0.13	11.37x	0.73	0.74x	290.70x	14.80	2004.50x	333.00	2550.00J
	29.390	0.0000	0.0000	0.0000	0.0000	0.0000	4.3100	0.0000	17.3000	0.0008	0.0000	0.0130	0.0000	0.0365	0.3700	0.0000	1.4800	0.0000	3.3300	2.5500
DC0462-01								4.20	7.30	107.00	0.19x					1.20		9.00	1.70	15.10
	0.212	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0730	0.1070	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0170	0.0151
DC046-02								0.60	1.40	30.70	0.21x					0.24		1.40	0.32	3.70
	0.052	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0140	0.0307	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0032	0.0037
DC0462-03										0.28	0.21x									
FB	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0622-04										0.15	0.10x									
FB	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-04			50.70	0.76x	62.60	4.00	382.00	2.00	138.00	245.00	2.10x	51.70	3.60x	65.80	60.10	7.00	466.00	6.00	261.00	232.00
NS	353.234	0.0000	50.7000	0.0000	31.3000	0.0000	0.2000	0.0000	2.4500	0.0022	0.0000	6.5800	0.0000	0.3500	233.0000	0.0000	26.1000	0.0000	2.3200	0.2320
DC0462-04		0.06	48.50	0.03	62.50	0.28x	354.00	5.00	128.00	329.00	1.60x	48.90	2.60x	65.90	60.20	1.13x	440.00	6.00	238.00	212.00
NSD	201.536	0.0000	48.5000	0.0000	31.2500	0.0000	35.4000	0.0000	1.2800	0.2290	0.0000	4.0900	0.0000	3.2950	30.1000	0.0000	44.0000	0.0000	2.3800	0.2120
DC0462-05						2.10	3.00	74.00	146.00	1536.00	5.28x					31.20		186.30	39.70	301.00
RINSATE	3.994	0.0000	0.0000	0.0000	0.0000	0.0000	0.3000	0.0000	1.4600	1.5360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3970	0.3010
DC0462-06									0.57	9.50	0.15x					0.20		1.11	0.29	1.50
	0.020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0057	0.0095	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0029	0.0015

AR300299

TABLE I: SUMMARY OF SAS 5742C HAVERTOWN PCP

AQUEOUS SAMPLES

WORKSHEET TO CALCULATE TOXICITY EQUIVALENT (TEQ). TEQ's BASED ON I-TEF/89 SCHEME.

Results for each sample given on two lines: TOP LINE: Concentration of homolog in PPTr. BOTTOM LINE equates that concentration to the toxicity equivalent of 2,3,7,8-TCDD.

SAMPLE ID#	TOTAL TE	ISOMER, HOMOLOG (TE FACTOR) TCDD 0.0000	2378-TCDD 1.0000	PCDD 0.0000	2378-PCDD 0.5000	HxCDD 0.0000	2378-HxCDD 0.1000	HpCDD 0.0000	2378-HpCDD 0.0100	OCDD 0.0010	TCDF 0.0000	2378-TCDF 0.1000	PCDF 0.0000	12378-PCDF 0.0500	23478-PCDF 0.5000	HxCDF 0.0000	2378-HxCDF 0.1000	HpCDF 0.0000	2378-HpCDF 0.0100	OCDF 0.0010
DC0462-07								1.30	3.40	36.30	0.27×					0.41		3.65	0.65	6.80
	0.084	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0340	0.0363	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0065	0.0068
DC0462-08								0.21×	0.36	6.70	0.24×					0.04		0.51	0.08	1.10
	0.012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0036	0.0067	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0011
DC0462-09		0.41				4.92×	3.60	72.00	149.00	1080.00	0.26×		0.27			29.53	0.47	180.80	42.20	260.00
	3.599	0.0000	0.0000	0.0000	0.0000	0.0000	0.3600	0.0000	1.4300	1.0800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0470	0.0000	0.4220	0.2600
DC0462-10		12.86×	0.14	10.41×		272.68×	232.10	3620.00	7110.00	42850.00J	69.00×	0.65	222.20×	63.60×		1857.10×	30.40×	8909.40×	1763.40	12520.00J
	173.739	0.0000	0.1400	0.0000	0.0000	0.0000	23.2100	0.0000	71.1000	42.8500	0.0000	0.0650	0.0000	3.1800	0.0000	0.0000	3.0400	0.0000	17.6340	12.5200
DC0462-11		9.51×						2.20	3.90	27.90	1.02×		0.16×			0.60		4.33	0.97	7.00
	0.084	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0390	0.0279	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0097	0.0070
DC0462-12		2.25×				0.57×	1.19	22.50	19.30	115.00	1.16×					0.26×		3.06×	0.74	4.60
	0.439	0.0000	0.0000	0.0000	0.0000	0.0000	0.1190	0.0000	0.1930	0.1150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0074	0.0046
DC0462-13		6.74×				0.49	0.37×	18.40	34.70	267.00J	1.19×		0.60×			2.75×		29.00×	8.79×	37.00J
	0.776	0.0000	0.0000	0.0000	0.0000	0.0000	0.0370	0.0000	0.3470	0.2670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0879	0.0370
DC0462-14									0.09	1.10	0.23×						0.09		0.08	0.16
	0.012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0090	0.0000	0.0008	0.0002
DC0462-15						0.07×				0.24	0.29×									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-16										0.33	0.16×									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-17										0.57	0.19×									
	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-18										0.37	0.21×									
	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-19										0.65	0.24×									
	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-20										0.75	0.18×									
	0.001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DC0462-21						7.68	8.02	205.00	450.00	2650.00J	0.16×		0.15			49.23	0.27	604.30	99.70	1000.00J
	9.970	0.0000	0.0000	0.0000	0.0000	0.0000	0.8020	0.0000	4.5000	2.6500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0270	0.0000	0.9970	1.0000

AR300300

TABLE I: SUMMARY OF SAS 5742C HAVERTOWN PCP

AQUEOUS SAMPLES

WORKSHEET TO CALCULATE TOXICITY EQUIVALENT (TEQ). TEQ's BASED ON I-TEF/89 SCHEME.
Results for each sample given on two lines: TOP LINE: Concentration of homolog in PPTr. BOTTOM LINE equates that concentration to the toxicity equivalent of 2,3,7,8-TCDD.

SAMPLE ID#	TOTAL TE	TCDD 0.0000	2378-TCDD 1.0000	PCDD 0.0000	2378-PCDD 0.5000	HxCDD 0.0000	2378-HxCDD 0.1000	HpCDD 0.0000	2378-HpCDD 0.0100	OCDD 0.0010	TCDF 0.0000	2378-TCDF 0.1000	PCDF 0.0000	12378-PCDF 0.0500	23478-PCDF 0.5000	HxCDF 0.0000	2378-HxCDF 0.1000	HpCDF 0.0000	2378-HpCDF 0.0100	OCDF 0.0010
		ISOMER, HOMOLOG (TE FACTOR)																		
DC0462-22									0.03*	3.50	0.04*							0.10		0.55*
	0.004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003	0.0035	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006
DC0462-23										3.70	0.04*							0.11	0.02	0.35
	0.004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0004
DC0462-24						5.64	5.16	91.00	190.00	1080.00J	0.15*		0.26*			31.84*	0.53	250.40	55.60	359.00J
	4.464	0.0000	0.0000	0.0000	0.0000	0.0000	0.5160	0.0000	1.9000	1.0800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0530	0.0000	0.5560	0.3590

* = Estimated Maximum Possible Concentration
NS = Native Spike
NSD = Native Spike Duplicate
FB = Field Blank
J = Estimated

AR300301

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APPENDIX B

Table II. Native spike recoveries
Table III. Internal Standard Recovery Outliers

Table II

QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TLH PROJECT #: TLH-0198
DATE: 2-11-91
METHOD: IFB DRAFT 4/89
MATRIX: WATER
SAMPLE ID: DC046204

SAMPLE ID:DC046204 MS
VOLUME: 0.9 L

SAMPLE ID:DC046204 MSD
VOLUME: 0.97 L

COMPOUND	SAMPLE CONC. (ppt)	MS SPIKE ADDED (ppt)	MS CONC. OBSERVED (ppt)	MS %REC %	MSD SPIKE ADDED (ppt)	MSD CONC. OBSERVED (ppt)	MSD %REC %	%RPD %
2378-TCDD	ND	55.6	50.7	91.3	51.5	48.5	94.1	4.4
12378-PeCDD	ND	55.6	62.6	112.7	51.5	62.5	121.3	0.2
123478-HxCDD	ND	138.9	124.0	89.3	128.9	122.0	94.7	1.6
123678-HxCDD	ND	138.9	128.0	92.2	128.9	115.0	89.2	10.7
123789-HxCDD	ND	138.9	130.0	93.6	128.9	117.0	90.8	10.5
1234678-HpCDD	ND	138.9	138.0	99.4	128.9	128.0	99.3	7.5
OCDD	0.15	277.8	245.0	88.2	257.7	229.0	88.9	6.8
2378-TCDF	ND	55.6	51.7	93.1	51.5	48.9	94.9	5.6
12378-PeCDF	ND	55.6	65.8	118.4	51.5	65.9	127.8	0.2
23478-PeCDF	ND	55.6	60.1	108.2	51.5	60.2	116.8	0.2
123478-HxCDF	ND	138.9	121.0	87.1	128.9	115.0	89.2	5.1
123678-HxCDF	ND	138.9	119.0	85.7	128.9	113.0	87.7	5.2
234678-HxCDF	ND	138.9	116.0	83.5	128.9	108.0	83.8	7.1
123789-HxCDF	ND	138.9	110.0	79.2	128.9	104.0	80.7	5.6
1234678-HpCDF	ND	138.9	132.0	95.0	128.9	123.0	95.4	7.1
1234789-HpCDF	ND	138.9	129.0	92.9	128.9	115.0	89.2	11.5
OCDF	ND	277.8	232.0	83.5	257.7	212.0	82.3	9.0

Table II

QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TLH PROJECT #: TLH-198
DATE: 2-11-91
METHOD: IFB DRAFT 4/89
MATRIX: WATER
SAMPLE ID: DC045703

SAMPLE ID:DC045703 MS
VOLUME: 0.97 L

SAMPLE ID:DC045703 MSD
VOLUME: 0.965 L

COMPOUND	SAMPLE CONC. (ppt)		MS SPIKE ADDED (ppt)	MS CONC. OBSERVED (ppt)	MS %REC %	MSD SPIKE ADDED (ppt)	MSD CONC. OBSERVED (ppt)	MSD %REC %	%RPD %
2378-TCDD	ND		51.5	48.2	93.5	51.8	46.8	90.3	2.9
12378-PeCDD	ND		51.5	53.6	104.0	51.8	54.3	104.8	1.3
123478-HxCDD	ND		128.9	118.0	91.6	129.5	114.0	88.0	3.4
123678-HxCDD	ND		128.9	117.0	90.8	129.5	120.0	92.6	2.5
123789-HxCDD	ND		128.9	119.0	92.3	129.5	120.0	92.6	0.8
1234678-HpCDD	ND		128.9	123.0	95.4	129.5	107.0	82.6	13.9
OCDD		0.50	257.7	227.0	88.1	259.1	226.0	87.2	0.4
2378-TCDF	ND		51.5	49.1	95.3	51.8	48.8	94.2	0.6
12378-PeCDF	ND		51.5	51.9	100.7	51.8	51.0	98.4	1.7
23478-PeCDF	ND		51.5	49.8	96.6	51.8	50.2	96.9	0.8
123478-HxCDF	ND		128.9	121.0	93.9	129.5	132.0	101.9	8.7
123678-HxCDF	ND		128.9	117.0	90.8	129.5	132.0	101.9	12.0
234678-HxCDF	ND		128.9	118.0	91.6	129.5	133.0	102.7	12.0
123789-HxCDF	ND		128.9	114.0	88.5	129.5	126.0	97.3	10.0
1234678-HpCDF	ND		128.9	118.0	91.6	129.5	119.0	91.9	0.8
1234789-HpCDF	ND		128.9	114.0	88.5	129.5	121.0	93.4	6.0
OCDF	ND		257.7	217.0	84.2	259.1	214.0	82.6	1.4

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Table III

Samples with Internal Standard Recoveries outside the 40-120% range, but which met the Internal Standard S/N criteria.

Sample	Compound	%Recovery
DC0457-01	13C12-TCDD	39.1
DC0457-02	13C12-TCDD	36.6
	13C12-TCDF	39.2
	13C12-HpCDF	38.9
DC0457-03	13C12-TCDD	37.0
	13C12-TCDF	36.2
DC0457-04	13C12-TCDD	39.5
DC0457-07	13C12-TCDD	38.0
	13C12-HpCDF	38.8
DC0457-10	13C12-OCDD	125.0
DC0457-12	13C12-OCDD	124.0
DC0462-13	13C12-OCDD	130.0
DC0462-21	13C12-OCDD	142.0
DC0462-24	13C12-OCDD	124.0

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APPENDIX C

Laboratory Data Forms

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002092 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002091 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W4
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SPS2805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				
12378-PeCDD	ND		0.1				
123478-HxCDD	ND		0.1				
123678-HxCDD	ND		0.10				
123789-HxCDD	ND		0.10				
1234678-HpCDD	ND		0.1				
OCDD	0.35				1.02	47:49	L
2378-TCDF	ND		0.05				
12378-PeCDF	ND		0.07				
23478-PeCDF	EMPC			0.16			
123478-HxCDF	ND		0.06				
123678-HxCDF	ND		0.06				
234678-HxCDF	ND		0.05				
123789-HxCDF	ND		0.07				
1234678-HpCDF	ND		0.07				
1234789-HpCDF	ND		0.10				
OCDF	ND		0.1				
TOTAL TCDD	EMPC			5.3			
TOTAL PeCDD	EMPC			0.91			
TOTAL HxCDD	ND		0.10				
TOTAL HpCDD	ND		0.1				
TOTAL TCDF	EMPC			0.17			
TOTAL PeCDF	EMPC			0.16			
TOTAL HxCDF	ND		0.06				
TOTAL HpCDF	ND		0.08				

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.0	83.9	0.80	22:10	
13C12-2378-TCDD	40.4	80.8	0.80	22:58	
13C12-HxCDD 678	44.7	89.3	1.26	35:04	
13C12-HpCDF 678	81.3	81.3	1.06	39:25	
13C12-OCDD	63.1	63.1	0.90	47:48	

8280_RPT rev:3.02

L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002096 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002091 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.06				
12378-PeCDD	ND		0.1				
123478-HxCDD	ND		0.08				
123678-HxCDD	ND		0.07				
123789-HxCDD	ND		0.07				
1234678-HpCDD	ND		0.1				
OCDD	0.36				0.79	48:19	L
2378-TCDF	ND		0.04				
12378-PeCDF	ND		0.06				
23478-PeCDF	ND		0.06				
123478-HxCDF	ND		0.05				
123678-HxCDF	ND		0.05				
234678-HxCDF	EMPC			0.11			
123789-HxCDF	ND		0.06				
1234678-HpCDF	ND		0.06				
1234789-HpCDF	ND		0.08				
OCDF	ND		0.07				
TOTAL TCDD	EMPC			4.55			
TOTAL PeCDD	ND		0.1				
TOTAL HxCDD	ND		0.07				
TOTAL HpCDD	ND		0.1				
TOTAL TCDF	EMPC			0.25			
TOTAL PeCDF	ND		0.06				
TOTAL HxCDF	EMPC			0.13			
TOTAL HpCDF	ND		0.07				

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	32.4	64.8	0.79	22:39	
13C12-2378-TCDD	31.6	63.2	0.79	23:26	
13C12-HxCDD 678	41.2	82.4	1.27	35:33	
13C12-HpCDF 678	69.6	69.6	1.06	39:55	
13C12-OCDD	73.2	73.2	0.91	48:18	

:_____ __/__/__: 8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

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Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002110 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002101 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.10				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.09				—
1234678-HpCDD	ND		0.2				—
OCDD	ND		0.2				—
2378-TCDF	ND		0.04				—
12378-PeCDF	ND		0.07				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.05				—
123678-HxCDF	ND		0.05				—
234678-HxCDF	ND		0.04				—
123789-HxCDF	ND		0.06				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.10				—
OCDF	ND		0.1				—
TOTAL TCDD	EMPC			3.94			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.10				—
TOTAL HpCDD	ND		0.2				—
TOTAL TCDF	EMPC			0.17			—
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.05				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.7	81.3	0.78	22:38	—
13C12-2378-TCDD	40.7	81.3	0.79	23:26	—
13C12-HxCDD 678	47.4	94.8	1.26	35:34	—
13C12-HpCDF 678	96.2	96.2	1.05	39:55	—
13C12-OCDD	80.7	80.7	0.89	48:19	—

8280_RPT rev.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002123 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002115 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 138-W3
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				___
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.1				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	ND		0.2				___
OCDD	0.39				0.80	48:19	_L_
2378-TCDF	ND		0.06				___
12378-PeCDF	ND		0.09				___
23478-PeCDF	ND		0.08				___
123478-HxCDF	ND		0.06				___
123678-HxCDF	ND		0.05				___
234678-HxCDF	ND		0.05				___
123789-HxCDF	ND		0.07				___
1234678-HpCDF	ND		0.08				___
1234789-HpCDF	ND		0.10				___
OCDF	ND		0.10				___
TOTAL TCDD	EMPC			5.4			___
TOTAL PeCDD	ND		0.2				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	ND		0.2				___
TOTAL TCDF	EMPC			0.39			___
TOTAL PeCDF	ND		0.09				___
TOTAL HxCDF	ND		0.06				___
TOTAL HpCDF	ND		0.09				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	23.6	47.1	0.80	22:38	___
13C12-2378-TCDD	23.3	46.6	0.78	23:25	___
13C12-HxCDD 678	27.1	54.2	1.26	35:33	___
13C12-HpCDF 678	54.2	54.2	1.06	39:55	___
13C12-OCDD	49.9	49.9	0.90	48:18	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

AR300310

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002179 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002175 SAMPLE ID....: METHOD BLANK
ANALYST.....: OR ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				
12378-PeCDD	ND		0.1				
123478-HxCDD	ND		0.07				
123678-HxCDD	ND		0.07				
123789-HxCDD	ND		0.07				
1234678-HpCDD	ND		0.1				
OCDD	0.60				1.01	47:10	L
2378-TCDF	ND		0.05				
12378-PeCDF	ND		0.07				
23478-PeCDF	ND		0.06				
123478-HxCDF	ND		0.04				
123678-HxCDF	ND		0.04				
234678-HxCDF	ND		0.03				
123789-HxCDF	ND		0.04				
1234678-HpCDF	ND		0.05				
1234789-HpCDF	ND		0.07				
OCDF	ND		0.06				
TOTAL TCDD	0.23	1		7.43	0.88		
TOTAL PeCDD	ND		0.1				
TOTAL HxCDD	ND		0.07				
TOTAL HpCDD	ND		0.1				
TOTAL TCDF	EMPC			0.24			
TOTAL PeCDF	ND		0.07				
TOTAL HxCDF	ND		0.04				
TOTAL HpCDF	ND		0.06				

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	45.0	90.1	0.81	21:53	
13C12-2378-TCDD	43.8	87.6	0.80	22:39	
13C12-HxCDD 678	46.5	93.0	1.28	34:35	
13C12-HpCDF 678	102	102	1.06	38:53	
13C12-OCDD	136	136	0.92	47:08	X

8280_RPT rev:3.02

AR300311

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
X = RECOVERY ABOVE QC ADVISORY LIMIT

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002221 CLIENT ID....: SAS 5742C TLI NUMBER....: M. BLANK
CONCAL.....: E002219 SAMPLE ID....: M. BLANK
ANALYST.....: XL ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R2
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: n/a DATE COLLECTED: / /
SPIKE FILE...: SP82305W SHIPMENT NO...: n/a

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				___
12378-PeCDD	ND		0.4				___
123478-HxCDD	ND		0.4				___
123678-HxCDD	ND		0.3				___
123789-HxCDD	ND		0.3				___
1234678-HpCDD	ND		0.5				___
OCDD	2.4				0.99	47:00	_L_
2378-TCDF	ND		0.1				___
12378-PeCDF	ND		0.2				___
23478-PeCDF	EMPC			4.19			___
123478-HxCDF	ND		0.2				___
123678-HxCDF	ND		0.2				___
234678-HxCDF	ND		0.1				___
123789-HxCDF	ND		0.2				___
1234678-HpCDF	ND		0.2				___
1234789-HpCDF	ND		0.3				___
OCDF	ND		0.3				___
TOTAL TCDD	EMPC			62.66			___
TOTAL PeCDD	EMPC			30.01			___
TOTAL HxCDD	ND		0.3				___
TOTAL HpCDD	ND		0.5				___
TOTAL TCDF	EMPC			2.05			___
TOTAL PeCDF	EMPC			4.45			___
TOTAL HxCDF	ND		0.2				___
TOTAL HpCDF	ND		0.3				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	471	94.1	0.80	21:44	___
13C12-2378-TCDD	465	93.0	0.81	22:31	___
13C12-HxCDD 678	456	91.3	1.31	34:26	___
13C12-HpCDF 678	947	94.7	1.06	38:44	___
13C12-OCDD	1250	125	0.91	46:59	_X_

:_____ __/__/__: 8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
X = RECOVERY BELOW QC ADVISORY LIMIT

AR300312

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002226 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002224 SAMPLE ID....: METHOD BLANK
ANALYST.....: MV ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 196-R
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.6				___
12378-PeCDD	ND		1.0				___
123478-HxCDD	ND		0.9				___
123678-HxCDD	ND		0.9				___
123789-HxCDD	ND		0.9				___
1234678-HpCDD	ND		1.4				___
OCDD	2.6				0.97	47:07	_L_
2378-TCDF	ND		0.3				___
12378-PeCDF	ND		0.5				___
23478-PeCDF	ND		0.5				___
123478-HxCDF	ND		0.6				___
123678-HxCDF	ND		0.6				___
234678-HxCDF	ND		0.5				___
123789-HxCDF	ND		0.7				___
1234678-HpCDF	ND		0.8				___
1234789-HpCDF	ND		1.1				___
OCDF	ND		1.1				___
TOTAL TCDD	EMPC			59.69			___
TOTAL PeCDD	ND		1.0				___
TOTAL HxCDD	ND		0.9				___
TOTAL HpCDD	ND		1.4				___
TOTAL TCDF	EMPC			5.05			___
TOTAL PeCDF	EMPC			0.66			___
TOTAL HxCDF	ND		0.6				___
TOTAL HpCDF	ND		0.9				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	276	55.1	0.80	21:52	___
13C12-2378-TCDD	267	53.3	0.78	22:38	___
13C12-HxCDD 678	337	67.3	1.26	34:34	___
13C12-HpCDF 678	561	56.1	1.06	38:50	___
13C12-OCDD	522	52.2	0.90	47:07	___

8280_RPT rev. 8.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002238 CLIENT ID....: SAS 5742C TLI NUMBER....: M. BLANK
CONCAL.....: E002230 SAMPLE ID....: METHOD BLANK
ANALYST.....: OR ANALYSIS DATE: 02/04/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP8280SW SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				___
12378-PeCDD	ND		0.08				___
123478-HxCDD	ND		0.06				___
123678-HxCDD	ND		0.06				___
123789-HxCDD	ND		0.06				___
1234678-HpCDD	ND		0.09				___
OCDD	0.18				0.96	47:06	_L_
2378-TCDF	ND		0.03				___
12378-PeCDF	ND		0.04				___
23478-PeCDF	ND		0.04				___
123478-HxCDF	ND		0.03				___
123678-HxCDF	ND		0.03				___
234678-HxCDF	ND		0.03				___
123789-HxCDF	ND		0.04				___
1234678-HpCDF	ND		0.05				___
1234789-HpCDF	ND		0.06				___
OCDF	ND		0.06				___
TOTAL TCDD	EMPC			5.21			___
TOTAL PeCDD	ND		0.08				___
TOTAL HxCDD	ND		0.06				___
TOTAL HpCDD	ND		0.09				___
TOTAL TCDF	EMPC			0.22			___
TOTAL PeCDF	ND		0.04				___
TOTAL HxCDF	ND		0.03				___
TOTAL HpCDF	ND		0.05				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	31.4	62.7	0.80	21:49	___
13C12-2378-TCDD	30.4	60.8	0.79	22:35	___
13C12-HxCDD 678	34.4	68.8	1.28	34:30	___
13C12-HpCDF 678	66.7	66.7	1.06	38:49	___
13C12-OCDD	64.1	64.1	0.91	47:04	___

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

AR300314

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002131 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-1A
CONCAL.....: E002130 SAMPLE ID....: DC045701
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 1022.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.10				___
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.1				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	0.22				1.20	41:01	_L_
OCDD	1.9				0.89	47:11	L,BL
2378-TCDF	ND		0.06				___
12378-PeCDF	ND		0.08				___
23478-PeCDF	ND		0.07				___
123478-HxCDF	ND		0.07				___
123678-HxCDF	ND		0.07				___
234678-HxCDF	0.12				1.19	34:09	_L_
123789-HxCDF	0.12				1.26	35:38	_L_
1234678-HpCDF	0.13				1.20	38:55	_L_
1234789-HpCDF	0.17				1.14	41:46	_L_
OCDF	0.40				0.89	47:24	_L_
TOTAL TCDD	EMPC			6.09			___
TOTAL PeCDD	ND		0.2				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	0.22	1			1.20		___
TOTAL TCDF	EMPC			0.41			___
TOTAL PeCDF	ND		0.08				___
TOTAL HxCDF	0.24	2			1.23		___
TOTAL HpCDF	0.29	2			1.17		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	20.4	41.7	0.81	21:52	___
13C12-2378-TCDD	19.1	39.1	0.81	22:39	_V_
13C12-HxCDD 678	23.5	48.1	1.28	34:36	___
13C12-HpCDF 678	43.5	44.5	1.06	38:54	___
13C12-OCDD	46.0	47.1	0.90	47:10	___

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANG
BL = FOUND IN BLANK AT CONCENTRATION < 2%
V = RECOVERY BELOW QC ADVISORY LIMIT;DATA VALID..

8280_RPT rev:3.02

AR300315

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002132 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-2B
CONCAL.....: E002130 SAMPLE ID....: DC045702
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 950.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP62805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.09				___
123678-HxCDD	ND		0.09				___
123789-HxCDD	ND		0.08				___
1234678-HpCDD	ND		0.1				___
OCDD	0.23				0.96	47:10	L,BL
2378-TCDF	ND		0.04				___
12378-PeCDF	ND		0.06				___
23478-PeCDF	ND		0.05				___
123478-HxCDF	ND		0.06				___
123678-HxCDF	ND		0.06				___
234678-HxCDF	ND		0.05				___
123789-HxCDF	ND		0.07				___
1234678-HpCDF	ND		0.06				___
1234789-HpCDF	ND		0.08				___
OCDF	ND		0.07				___
TOTAL TCDD	EMPC			6.24			___
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	ND		0.09				___
TOTAL HpCDD	ND		0.1				___
TOTAL TCDF	EMPC			0.55			___
TOTAL PeCDF	ND		0.06				___
TOTAL HxCDF	ND		0.06				___
TOTAL HpCDF	ND		0.07				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	20.6	39.2	0.80	21:53	_V_
13C12-2378-TCDD	19.3	36.6	0.77	22:40	_V_
13C12-HxCDD 678	24.0	45.6	1.27	34:36	___
13C12-HpCDF 678	41.0	38.9	1.06	38:55	_V_
13C12-OCDD	44.6	42.4	0.90	47:10	___

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN BLANK AT CONCENTRATION < 2%
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

8280_RPT rev 1.0

AR300316

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002125 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-3A
CONCAL.....: E002115 SAMPLE ID....: DC045703
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 196-W3
SAMPLE SIZE..: 975.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				___
12378-PeCDD	ND		0.4				___
123478-HxCDD	ND		0.3				___
123678-HxCDD	ND		0.3				___
123789-HxCDD	ND		0.3				___
1234678-HpCDD	ND		0.4				___
OCDD	0.50				0.97	48:19	L,BL
2378-TCDF	ND		0.2				___
12378-PeCDF	ND		0.2				___
23478-PeCDF	ND		0.2				___
123478-HxCDF	ND		0.2				___
123678-HxCDF	ND		0.1				___
234678-HxCDF	ND		0.1				___
123789-HxCDF	ND		0.2				___
1234678-HpCDF	ND		0.2				___
1234789-HpCDF	ND		0.3				___
OCDF	ND		0.3				___
TOTAL TCDD	EMPC			6.8			___
TOTAL PeCDD	ND		0.4				___
TOTAL HxCDD	ND		0.3				___
TOTAL HpCDD	ND		0.4				___
TOTAL TCDF	EMPC			0.63			___
TOTAL PeCDF	ND		0.2				___
TOTAL HxCDF	ND		0.1				___
TOTAL HpCDF	ND		0.2				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	18.6	36.2	0.81	22:40	_V_
13C12-2378-TCDD	19.0	37.0	0.79	23:27	_V_
13C12-HxCDD 678	22.6	44.0	1.26	35:33	___
13C12-HpCDF 678	46.9	45.7	1.06	39:55	___
13C12-OCDD	41.8	40.7	0.90	48:18	___

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

8280_RPT rev:3.02

AR300317

Triangle Laboratories of Houston, Inc.

PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002126
CONCAL.....: E002115
ANALYST.....: XL
SAMPLE SIZE..: 970.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82805W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC045703MS
ANALYSIS DATE: 01/24/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-35-3BMS
PROJECT NUMBER: 198-W3
DATE RECEIVED.: 11/14/90
DATE COLLECTED: 11/13/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	48.2				0.79	23:02	___
12378-PeCDD	53.6				1.56	29:02	___
123478-HxCDD	118				1.23	34:58	___
123678-HxCDD	117				1.24	35:08	___
123789-HxCDD	119				1.24	35:45	___
1234678-HpCDD	123				1.05	41:34	___
OCDD	227				0.89	47:52	BL
2378-TCDF	49.1				0.77	22:14	___
12378-PeCDF	51.9				1.58	27:20	___
23478-PeCDF	49.8				1.57	28:28	___
123478-HxCDF	121				1.23	33:29	___
123678-HxCDF	117				1.24	33:41	___
234678-HxCDF	118				1.22	34:42	___
123789-HxCDF	114				1.24	36:10	___
1234678-HpCDF	118				1.04	39:29	___
1234789-HpCDF	114				1.04	42:22	___
OCDF	217				0.88	48:05	___
TOTAL TCDD	48.2	1		53.24	0.79		___
TOTAL PeCDD	53.6	1			1.56		___
TOTAL HxCDD	355	3			1.24		___
TOTAL HpCDD	123	1			1.05		___
TOTAL TCDF	49.7	2		50.15	0.75		___
TOTAL PeCDF	105	6		106	1.54		___
TOTAL HxCDF	470	4			1.23		___
TOTAL HpCDF	232	2			1.04		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.4	43.4	0.79	22:13	___
13C12-2378-TCDD	22.2	43.1	0.79	23:02	___
13C12-HxCDD 678	25.6	49.7	1.27	35:07	___
13C12-HpCDF 678	49.9	48.4	1.06	39:28	___
13C12-OCDD	42.3	41.0	0.90	47:51	___

8280_RPT rev:3.02

FLAG: = FOUND IN BLANK AT CONCENTRATION < 2%.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002127 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-3CMSD
CONCAL.....: E002115 SAMPLE ID....: DC0 45703 MSD
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 965.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	46.8				0.79	23:26	—
12378-PeCDD	54.3				1.55	29:25	—
123478-HxCDD	114				1.23	35:22	—
123678-HxCDD	120				1.22	35:32	—
123789-HxCDD	120				1.22	36:09	—
1234678-HpCDD	107				1.05	41:58	—
OCDD	226				0.89	48:17	BL
2378-TCDF	48.8				0.76	22:39	—
12378-PeCDF	51.0				1.56	27:45	—
23478-PeCDF	50.2				1.56	28:51	—
123478-HxCDF	132				1.21	33:53	—
123678-HxCDF	132				1.21	34:05	—
234678-HxCDF	133				1.21	35:06	—
123789-HxCDF	125				1.22	36:34	—
1234678-HpCDF	119				1.04	39:53	—
1234789-HpCDF	121				1.05	42:46	—
OCDF	214				0.87	48:31	—
TOTAL TCDD	46.8	1		51.0	0.79		—
TOTAL PeCDD	54.3	1			1.55		—
TOTAL HxCDD	354	3			1.22		—
TOTAL HpCDD	107	1			1.05		—
TOTAL TCDF	49.3	3		49.69	0.78		—
TOTAL PeCDF	104	8			1.53		—
TOTAL HxCDF	524	5			1.21		—
TOTAL HpCDF	239	3			1.03		—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	21.0	40.6	0.79	22:38	—
13C12-2378-TCDD	21.2	40.8	0.78	23:25	—
13C12-HxCDD 678	24.9	48.0	1.28	35:31	—
13C12-HpCDF 678	42.2	40.7	1.05	39:52	—
13C12-OCDD	43.9	42.4	0.89	48:16	—

FLAG: BL = FOUND IN BLANK AT CONCENTRATION < 2%.
8280_RPT rev:3.02

AR300319

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/09/91

FILE NAME....: E002133 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-4A
CONCAL.....: E002130 SAMPLE ID....: DC045704
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 940.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.08				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.09				___
123678-HxCDD	ND		0.09				___
123789-HxCDD	ND		0.08				___
1234678-HpCDD	ND		0.1				___
OCDD	0.27				0.90	47:14	L,BL
2378-TCDF	ND		0.05				___
12378-PeCDF	ND		0.06				___
23478-PeCDF	ND		0.06				___
123478-HxCDF	ND		0.06				___
123678-HxCDF	ND		0.06				___
234678-HxCDF	ND		0.05				___
123789-HxCDF	ND		0.07				___
1234678-HpCDF	ND		0.06				___
1234789-HpCDF	ND		0.08				___
OCDF	ND		0.07				___
TOTAL TCDD	EMPC			6.22			___
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	ND		0.09				___
TOTAL HpCDD	ND		0.1				___
TOTAL TCDF	EMPC			0.52			___
TOTAL PeCDF	ND		0.06				___
TOTAL HxCDF	ND		0.06				___
TOTAL HpCDF	ND		0.07				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.6	42.6	0.80	21:53	___
13C12-2378-TCDD	21.0	39.5	0.81	22:40	_V_
13C12-HxCDD 678	25.5	48.0	1.27	34:37	___
13C12-HpCDF 678	44.2	41.5	1.05	38:57	___
13C12-OCDD	50.2	47.2	0.90	47:13	___

FLAG: L = CONCENTRATION BELOW CALIBRATION RANGE. 8280_RPT rev:3.02
BL = FOUND IN BLANK AT CONCENTRATION < 2%.
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/09/91

FILE NAME....: E002134 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-5C
CONCAL.....: E002130 SAMPLE ID....: DC045705
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 930.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.1				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	ND		0.1				—
OCDD	0.40				0.80	47:07	L,BL
2378-TCDF	ND		0.06				—
12378-PeCDF	ND		0.08				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.08				—
123678-HxCDF	ND		0.07				—
234678-HxCDF	ND		0.06				—
123789-HxCDF	ND		0.09				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.1				—
OCDF	ND		0.10				—
TOTAL TCDD	EMPC			6.09			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.43			—
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.07				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	23.9	44.4	0.80	21:47	—
13C12-2378-TCDD	22.2	41.3	0.79	22:34	—
13C12-HxCDD 678	26.9	50.1	1.27	34:32	—
13C12-HpCDF 678	47.0	43.7	1.06	38:50	—
13C12-OCDD	51.1	47.5	0.90	47:06	—

8280_RPT Rev.2.02

AR300321

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/09/91

FILE NAME....: E002136
CONCAL.....: E002130
ANALYST.....: XL
SAMPLE SIZE..: 860.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82805W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC045706
ANALYSIS DATE: 01/25/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-36-2C
PROJECT NUMBER: 198-W3
DATE RECEIVED.: 11/14/90
DATE COLLECTED: 11/13/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.08				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.32				0.97	47:07	L,BL
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.06				—
123678-HxCDF	ND		0.05				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.06				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.07				—
TOTAL TCDD	EMPC			6.88			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.58			—
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	25.6	44.0	0.80	21:49	—
13C12-2378-TCDD	23.8	40.9	0.78	22:36	—
13C12-HxCDD 678	28.3	48.8	1.27	34:33	—
13C12-HpCDF 678	49.6	42.7	1.05	38:51	—
13C12-OCDD	55.5	47.7	0.91	47:07	—

FLAG: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

AR300322

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002135 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-36-1A
CONCAL.....: E002130 SAMPLE ID....: DC045707
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 905.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.1				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	ND		0.1				—
OCDD	0.34				0.82	47:10	BL,L
2378-TCDF	ND		0.06				—
12378-PeCDF	ND		0.08				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.07				—
123678-HxCDF	ND		0.07				—
234678-HxCDF	ND		0.06				—
123789-HxCDF	ND		0.08				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.1				—
OCDF	ND		0.09				—
TOTAL TCDD	0.23	1		6.4	0.78		—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.51			—
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.07				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.5	40.8	0.80	21:50	—
13C12-2378-TCDD	21.0	38.0	0.79	22:36	V
13C12-HxCDD 678	25.5	46.1	1.27	34:34	—
13C12-HpCDF 678	42.9	38.8	1.05	38:52	V
13C12-OCDD	46.7	42.2	0.90	47:08	—

8280_RPT

AR300323

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA CONSIDERED VALID

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002137 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-36-3A
CONCAL.....: E002130 SAMPLE ID....: DC045708
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 865.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				___
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.2				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	0.31				1.20	40:55	_L_
OCDD	3.7				0.91	47:07	BL,L
2378-TCDF	ND		0.08				___
12378-PeCDF	ND		0.1				___
23478-PeCDF	ND		0.09				___
123478-HxCDF	ND		0.09				___
123678-HxCDF	ND		0.09				___
234678-HxCDF	ND		0.08				___
123789-HxCDF	ND		0.1				___
1234678-HpCDF	0.08				1.15	38:50	_L_
1234789-HpCDF	ND		0.1				___
OCDF	0.46				0.86	47:19	_L_
TOTAL TCDD	EMPC			6.13			___
TOTAL PeCDD	ND		0.2				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	0.45	2			1.10		___
TOTAL TCDF	EMPC			0.57			___
TOTAL PeCDF	ND		0.10				___
TOTAL HxCDF	0.19	1			1.26		___
TOTAL HpCDF	0.09	1		0.37	1.15		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	25.4	44.0	0.79	21:46	___
13C12-2378-TCDD	23.6	40.8	0.78	22:33	___
13C12-HxCDD 678	28.1	48.7	1.27	34:30	___
13C12-HpCDF 678	48.3	41.8	1.06	38:49	___
13C12-OCDD	51.8	44.8	0.91	47:05	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300324

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002119 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-1A
CONCAL.....: E002115 SAMPLE ID....: DC045709
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 900.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82905W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				___
12378-PeCDD	ND		0.09				___
123478-HxCDD	ND		0.07				___
123678-HxCDD	ND		0.07				___
123789-HxCDD	ND		0.07				___
1234678-HpCDD	0.23				1.12	42:00	_L_
OCDD	3.5				0.86	48:19	_L_
2378-TCDF	ND		0.03				___
12378-PeCDF	ND		0.05				___
23478-PeCDF	ND		0.05				___
123478-HxCDF	ND		0.03				___
123678-HxCDF	ND		0.03				___
234678-HxCDF	ND		0.03				___
123789-HxCDF	ND		0.04				___
1234678-HpCDF	0.07				1.01	39:56	_L_
1234789-HpCDF	ND		0.06				___
OCDF	0.58				0.98	48:33	_L_
TOTAL TCDD	EMPC			5.87			___
TOTAL PeCDD	ND		0.09				___
TOTAL HxCDD	ND		0.07				___
TOTAL HpCDD	0.23	1			1.12		___
TOTAL TCDF	EMPC			0.24			___
TOTAL PeCDF	ND		0.05				___
TOTAL HxCDF	ND		0.03				___
TOTAL HpCDF	0.37	2			1.07		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.1	72.2	0.79	22:39	___
13C12-2378-TCDD	40.2	72.4	0.79	23:27	___
13C12-HxCDD 678	40.8	73.4	1.28	35:33	___
13C12-HpCDF 678	94.2	84.8	1.06	39:55	___
13C12-OCDD	65.3	58.8	0.92	48:18	___

8280_RPT rev.5.02

AR300325

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002222 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-2
CONCAL.....: E002219 SAMPLE ID....: DC045710
ANALYST.....: XL ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R2
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82305W SHIPMENT NO...: 5745C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	0.54				0.75	22:33	_L_
12378-PeCDD	ND		0.6				___
123478-HxCDD	ND		0.6				___
123678-HxCDD	ND		0.5				___
123789-HxCDD	ND		0.5				___
1234678-HpCDD	28.1				1.03	40:49	_L_
OCDD	340				0.89	46:58	BL,L
2378-TCDF	ND		0.2				___
12378-PeCDF	ND		0.3				___
23478-PeCDF	EMPC			0.97			___
123478-HxCDF	ND		0.3				___
123678-HxCDF	ND		0.3				___
234678-HxCDF	ND		0.3				___
123789-HxCDF	ND		0.4				___
1234678-HpCDF	7.9				1.08	38:45	_L_
1234789-HpCDF	ND		0.6				___
OCDF	82.0				0.85	47:11	_L_
TOTAL TCDD	0.54	1		51.66	0.75		___
TOTAL PeCDD	EMPC			6.9			___
TOTAL HxCDD	ND		0.6				___
TOTAL HpCDD	41.1	2			1.04		___
TOTAL TCDF	EMPC			1.59			___
TOTAL PeCDF	EMPC			1.03			___
TOTAL HxCDF	4.3	1			1.29		___
TOTAL HpCDF	46.7	2			1.09		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	487	97.5	0.80	21:44	___
13C12-2378-TCDD	466	93.2	0.80	22:31	___
13C12-HxCDD 678	472	94.4	1.27	34:26	___
13C12-HpCDF 678	937	93.7	1.06	38:44	___
13C12-OCDD	1250	125	0.91	46:58	_X_

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
X = RECOVERY ABOVE QC ADVISORY LIMIT.

AR300326

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002120 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-3A
CONCAL.....: E002115 SAMPLE ID....: DC045711
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82905W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				___
12378-PeCDD	ND		0.06				___
123478-HxCDD	ND		0.05				___
123678-HxCDD	23.6				1.24	35:35	_L_
123789-HxCDD	1.9				1.30	36:11	_L_
1234678-HpCDD	998				1.05	42:03	_H_
OCDD	6440				0.88	48:35	_H_
2378-TCDF	EMPC			0.09			___
12378-PeCDF	EMPC			0.71			___
23478-PeCDF	0.39				1.42	28:53	_L_
123478-HxCDF	4.1				1.24	33:58	_L_
123678-HxCDF	0.74				1.30	34:08	_L_
234678-HxCDF	ND		0.02				___
123789-HxCDF	0.09				1.32	36:36	_L_
1234678-HpCDF	186				1.05	39:57	___
1234789-HpCDF	9.3				1.04	42:49	_L_
OCDF	1480				0.86	48:44	_H_
TOTAL TCDD	EMPC			4.57			___
TOTAL PeCDD	EMPC			0.52			___
TOTAL HxCDD	54.3	5		54.66	1.29		___
TOTAL HpCDD	1470	2			1.05		___
TOTAL TCDF	0.07	2		0.28	0.68		___
TOTAL PeCDF	5.1	5		5.87	1.45		___
TOTAL HxCDF	142	10		140.96	1.27		___
TOTAL HpCDF	1190	3		1190	1.05		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.2	80.4	0.79	22:39	___
13C12-2378-TCDD	41.9	83.9	0.79	23:26	___
13C12-HxCDD 678	46.8	93.5	1.27	35:34	___
13C12-HpCDF 678	98.0	98.0	1.06	39:56	___
13C12-OCDD	117	117	0.99	48:33	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002093 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-4B
CONCAL.....: E002091 SAMPLE ID....: DC045712
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W4
SAMPLE SIZE..: 820.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				___
12378-PeCDD	ND		0.09				___
123478-HxCDD	ND		0.08				___
123678-HxCDD	39.1				1.24	35:34	___
123789-HxCDD	4.0				1.28	36:10	_L_
1234678-HpCDD	1730				1.04	42:03	_H_
OCDD	10600				0.89	48:34	BL,H
2378-TCDF	0.13				0.67	22:40	_L_
12378-PeCDF	0.73				1.42	27:46	_L_
23478-PeCDF	EMPC			0.74			___
123478-HxCDF	10.5				1.26	33:54	_L_
123678-HxCDF	1.7				1.28	34:07	_L_
234678-HxCDF	2.6				1.28	35:02	_L_
123789-HxCDF	ND		0.06				___
1234678-HpCDF	316				1.04	39:57	___
1234789-HpCDF	17.0				1.06	42:49	_L_
OCDF	2550				0.86	48:43	_H_
TOTAL TCDD	0.06	1		5.06	0.79		___
TOTAL PeCDD	0.23	1		1.33	1.74		___
TOTAL HxCDD	93.5	5		88.69	1.27		___
TOTAL HpCDD	2530	2			1.05		___
TOTAL TCDF	0.35	4		0.55	0.75		___
TOTAL PeCDF	10.3	5		12.08	1.48		___
TOTAL HxCDF	305	8		304.19	1.27		___
TOTAL HpCDF	376	3		2337.5	1.02		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	52.7	86.4	0.79	22:39	___
13C12-2378-TCDD	59.5	97.6	0.79	23:27	___
13C12-HxCDD 678	55.6	91.2	1.31	35:33	___
13C12-HpCDF 678	105	85.7	1.06	39:55	___
13C12-OCDD	152	124	1.01	48:31	_X_

8280_RPT rev:3.02

AB300328

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
X = RECOVERY ABOVE QC ADVISORY LIMIT

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002162 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-1A
CONCAL.....: E002160 SAMPLE ID....: DC046201
ANALYST.....: XL ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 995.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				---
12378-PeCDD	ND		0.3				---
123478-HxCDD	ND		0.3				---
123678-HxCDD	ND		0.3				---
123789-HxCDD	ND		0.3				---
1234678-HpCDD	7.3				1.06	41:01	_L_
OCDD	107				0.89	47:13	_BL
2378-TCDF	ND		0.09				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.1				---
123478-HxCDF	ND		0.1				---
123678-HxCDF	ND		0.1				---
234678-HxCDF	ND		0.1				---
123789-HxCDF	ND		0.2				---
1234678-HpCDF	1.7				1.13	38:57	_L_
1234789-HpCDF	ND		0.3				---
OCDF	15.1				0.88	47:25	_L_
TOTAL TCDD	EMPC			5.8			---
TOTAL PeCDD	ND		0.3				---
TOTAL HxCDD	ND		0.3				---
TOTAL HpCDD	11.5	2			1.11		---
TOTAL TCDF	EMPC			0.19			---
TOTAL PeCDF	ND		0.1				---
TOTAL HxCDF	1.2	2			1.36		---
TOTAL HpCDF	10.7	2			1.09		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	32.6	64.9	0.81	21:54	---
13C12-2378-TCDD	30.5	60.8	0.80	22:42	---
13C12-HxCDD 678	39.2	78.1	1.29	34:37	---
13C12-HpCDF 678	79.5	79.1	1.06	38:56	---
13C12-OCDD	77.2	76.8	0.91	47:11	---

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002097 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-3A
CONCAL.....: E002091 SAMPLE ID....: DC046203
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 945.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				__
12378-PeCDD	ND		0.2				__
123478-HxCDD	ND		0.1				__
123678-HxCDD	ND		0.1				__
123789-HxCDD	ND		0.1				__
1234678-HpCDD	ND		0.2				__
OCDD	0.28				0.90	48:20	BL,L
2378-TCDF	ND		0.05				__
12378-PeCDF	ND		0.08				__
23478-PeCDF	ND		0.08				__
123478-HxCDF	ND		0.07				__
123678-HxCDF	ND		0.06				__
234678-HxCDF	ND		0.05				__
123789-HxCDF	ND		0.08				__
1234678-HpCDF	ND		0.08				__
1234789-HpCDF	ND		0.1				__
OCDF	ND		0.1				__
TOTAL TCDD	EMPC			5.07			__
TOTAL PeCDD	ND		0.2				__
TOTAL HxCDD	ND		0.1				__
TOTAL HpCDD	ND		0.2				__
TOTAL TCDF	EMPC			0.21			__
TOTAL PeCDF	ND		0.08				__
TOTAL HxCDF	ND		0.06				__
TOTAL HpCDF	ND		0.09				__

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.0	79.3	0.80	22:39	__
13C12-2378-TCDD	40.0	75.6	0.79	23:27	__
13C12-HxCDD 678	48.8	92.2	1.27	35:34	__
13C12-HpCDF 678	91.9	86.9	1.06	39:56	__
13C12-OCDD	94.8	89.5	0.91	48:19	__

:_____ __/__/__: 8280_RPT Rev.3.01

AR300330

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002169
CONCAL.....: E002160
ANALYST.....: XL
SAMPLE SIZE..: 950.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046202
ANALYSIS DATE: 01/29/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N\A

TLI NUMBER....: 3-24-2A
PROJECT NUMBER: 201-WF
DATE RECEIVED.: 11/08/90
DATE COLLECTED: 11/07/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.08				---
12378-PeCDD	ND		0.1				---
123478-HxCDD	ND		0.1				---
123678-HxCDD	ND		0.1				---
123789-HxCDD	ND		0.1				---
1234678-HpCDD	1.4				1.02	40:59	_L_
OCDD	30.7				0.89	47:10	L,BL
2378-TCDF	ND		0.05				---
12378-PeCDF	ND		0.08				---
23478-PeCDF	ND		0.07				---
123478-HxCDF	ND		0.07				---
123678-HxCDF	ND		0.06				---
234678-HxCDF	ND		0.06				---
123789-HxCDF	ND		0.08				---
1234678-HpCDF	0.32				1.03	38:55	_L_
1234789-HpCDF	ND		0.1				---
OCDF	3.7				0.86	47:22	_L_
TOTAL TCDD	EMPC			7.07			---
TOTAL PeCDD	ND		0.1				---
TOTAL HxCDD	ND		0.1				---
TOTAL HpCDD	2.0	2			1.03		---
TOTAL TCDF	EMPC			0.21			---
TOTAL PeCDF	ND		0.08				---
TOTAL HxCDF	0.24	1			1.28		---
TOTAL HpCDF	1.8	2			1.07		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.8	77.6	0.81	21:52	---
13C12-2378-TCDD	40.8	77.6	0.80	22:39	---
13C12-HxCDD 678	44.2	83.9	1.29	34:35	---
13C12-HpCDF 678	90.7	86.2	1.08	38:53	---
13C12-OCDD	94.1	89.4	0.91	47:09	---

AR300331

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002098 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4A
CONCAL.....: E002091 SAMPLE ID....: DC046204
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 965.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				—
12378-PeCDD	ND		0.08				—
123478-HxCDD	ND		0.05				—
123678-HxCDD	ND		0.05				—
123789-HxCDD	ND		0.05				—
1234678-HpCDD	ND		0.06				—
OCDD	0.15				0.79	48:21	BL,L
2378-TCDF	ND		0.03				—
12378-PeCDF	ND		0.04				—
23478-PeCDF	ND		0.04				—
123478-HxCDF	ND		0.04				—
123678-HxCDF	ND		0.03				—
234678-HxCDF	ND		0.03				—
123789-HxCDF	ND		0.04				—
1234678-HpCDF	ND		0.04				—
1234789-HpCDF	ND		0.05				—
OCDF	ND		0.05				—
TOTAL TCDD	EMPC			4.13			—
TOTAL PeCDD	ND		0.08				—
TOTAL HxCDD	ND		0.05				—
TOTAL HpCDD	ND		0.06				—
TOTAL TCDF	EMPC			0.18			—
TOTAL PeCDF	ND		0.04				—
TOTAL HxCDF	ND		0.03				—
TOTAL HpCDF	ND		0.05				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	38.6	74.6	0.78	22:40	—
13C12-2378-TCDD	36.6	70.7	0.79	23:27	—
13C12-HxCDD 678	48.0	92.6	1.28	35:34	—
13C12-HpCDF 678	73.7	71.1	1.06	39:56	—
13C12-OCDD	79.0	76.3	0.90	48:19	—

AR300332

:_____ __/__/__: 8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002102 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4B MS
CONCAL.....: E002101 SAMPLE ID....: DCO 46204 MS
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 900.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	50.7				0.78	23:15	___
12378-PeCDD	62.6				1.57	29:14	___
123478-HxCDD	124				1.24	35:11	___
123678-HxCDD	128				1.24	35:21	___
123789-HxCDD	130				1.23	35:58	___
1234678-HpCDD	138				1.05	41:47	___
OCDD	245				0.89	48:07	BL_
2378-TCDF	51.7				0.76	22:27	___
12378-PeCDF	65.8				1.56	27:34	___
23478-PeCDF	60.1				1.56	28:40	___
123478-HxCDF	121				1.23	33:42	___
123678-HxCDF	119				1.23	33:54	___
234678-HxCDF	116				1.23	34:55	___
123789-HxCDF	110				1.24	36:23	___
1234678-HpCDF	132				1.05	39:43	___
1234789-HpCDF	129				1.04	42:35	___
OCDF	232				0.88	48:21	___
TOTAL TCDD	50.7	1		55.8	0.78		___
TOTAL PeCDD	62.6	1		63.26	1.57		___
TOTAL HxCDD	386	4			1.26		___
TOTAL HpCDD	140	2			1.08		___
TOTAL TCDF	53.6	3		52.7	0.72		___
TOTAL PeCDF	128	6		131.98	1.49		___
TOTAL HxCDF	473	6			1.27		___
TOTAL HpCDF	267	3			1.09		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	41.0	73.9	0.79	22:26	___
13C12-2378-TCDD	40.1	72.2	0.78	23:14	___
13C12-HxCDD 678	46.1	83.1	1.27	35:20	___
13C12-HpCDF 678	97.5	87.7	1.06	39:41	___
13C12-OCDD	94.9	85.4	0.91	48:06	___

!_____ __/__/__! 8280_RFT rev3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002103 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4CMSD
CONCAL.....: E002101 SAMPLE ID....: DCO 46204 MSD
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 970.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	46.5				0.78	23:26	___
12378-PeCDD	62.5				1.56	29:25	___
123478-HxCDD	122				1.23	35:23	___
123678-HxCDD	115				1.23	35:33	___
123789-HxCDD	117				1.23	36:10	___
1234678-HpCDD	128				1.05	42:00	___
OCDD	229				0.89	48:20	BL_
2378-TCDF	46.9				0.77	22:38	___
12378-PeCDF	65.9				1.57	27:45	___
23478-PeCDF	60.2				1.56	28:51	___
123478-HxCDF	115				1.23	33:54	___
123678-HxCDF	113				1.23	34:06	___
234678-HxCDF	108				1.23	35:07	___
123789-HxCDF	104				1.24	36:35	___
1234678-HpCDF	123				1.05	39:55	___
1234789-HpCDF	115				1.05	42:48	___
OCDF	212				0.89	48:33	___
TOTAL TCDD	46.9	2		53.5	0.84		___
TOTAL PeCDD	62.5	1		63.05	1.56		___
TOTAL HxCDD	355	3		355.36	1.23		___
TOTAL HpCDD	133	2			1.13		___
TOTAL TCDF	50.2	3		50.5	0.75		___
TOTAL PeCDF	127	6		131.86	1.47		___
TOTAL HxCDF	441	5		442	1.23		___
TOTAL HpCDF	244	4			1.09		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	36.2	70.2	0.79	22:37	___
13C12-2378-TCDD	36.2	70.1	0.79	23:25	___
13C12-HxCDD 678	46.5	90.3	1.27	35:32	___
13C12-HpCDF 678	97.3	94.3	1.06	39:54	___
13C12-OCDD	89.6	86.9	0.91	48:19	___

:_____ __/__/__: 8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300334

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002227 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-5
CONCAL.....: E002224 SAMPLE ID....: DC046205
ANALYST.....: MV ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.9				___
12378-PeCDD	ND		1.6				___
123478-HxCDD	ND		1.3				___
123678-HxCDD	3.0				1.25	34:34	_L_
123789-HxCDD	ND		1.2				___
1234678-HpCDD	146				1.05	40:55	_L_
OCDD	1536				0.88	47:07	BL_
2378-TCDF	ND		0.5				___
12378-PeCDF	ND		0.8				___
23478-PeCDF	ND		0.7				___
123478-HxCDF	ND		0.8				___
123678-HxCDF	ND		0.8				___
234678-HxCDF	ND		0.6				___
123789-HxCDF	ND		0.9				___
1234678-HpCDF	38.6				1.07	38:51	_L_
1234789-HpCDF	1.1				1.00	41:42	_L_
OCDF	301				0.86	47:19	_L_
TOTAL TCDD	EMPC			78.19			___
TOTAL PeCDD	ND		1.6				___
TOTAL HxCDD	5.1	2			1.26		___
TOTAL HpCDD	220	2			1.05		___
TOTAL TCDF	EMPC			5.28			___
TOTAL PeCDF	ND		0.7				___
TOTAL HxCDF	31.2	3			1.31		___
TOTAL HpCDF	226	3			1.04		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	234	46.9	0.80	21:51	___
13C12-2378-TCDD	218	43.5	0.80	22:38	___
13C12-HxCDD 678	282	56.4	1.28	34:33	___
13C12-HpCDF 678	490	49.0	1.06	38:49	___
13C12-OCDD	523	52.3	0.90	47:06	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....:	E002170	CLIENT ID....:	SAS 5742C	TLI NUMBER....:	3-25-1A
CONCAL.....:	E002160	SAMPLE ID....:	DC046206		
ANALYST.....:	CR	ANALYSIS DATE:	01/29/91	PROJECT NUMBER:	201-WF
SAMPLE SIZE..:	950.00 ml	SAMPLE MATRIX:	WATER	DATE RECEIVED.:	11/08/90
ICAL DATE....:	01/02/91	SAMPLE ORIGIN:	n/a	DATE COLLECTED:	11/07/90
SPIKE FILE...:	SP82805W			SHIPMENT NO...:	5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				---
12378-PeCDD	ND		0.3				---
123478-HxCDD	ND		0.2				---
123678-HxCDD	ND		0.2				---
123789-HxCDD	ND		0.2				---
1234678-HpCDD	0.57				0.88	40:54	_L_
OCDD	9.5				0.91	47:06	L,BL
2378-TCDF	ND		0.09				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.1				---
123478-HxCDF	ND		0.1				---
1[illegible]78-HxCDF	ND		0.1				---
23[illegible]678-HxCDF	ND		0.09				---
123789-HxCDF	ND		0.1				---
1234678-HpCDF	0.29				1.06	38:49	---
1234789-HpCDF	ND		0.2				---
OCDF	1.5				0.89	47:19	---
TOTAL TCDD	EMPC			6.19			---
TOTAL PeCDD	ND		0.3				---
TOTAL HxCDD	ND		0.2				---
TOTAL HpCDD	0.57	1			0.88		---
TOTAL TCDF	EMPC			0.15			---
TOTAL PeCDF	ND		0.1				---
TOTAL HxCDF	0.20	1			1.08		---
TOTAL HpCDF	1.4	2			1.10		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.3	80.4	0.80	21:47	---
13C12-2378-TCDD	40.3	76.6	0.79	22:34	---
13C12-HxCDD 678	37.4	71.1	1.28	34:30	
1[illegible]2-HpCDF 678	80.8	76.7	1.06	38:48	
13[illegible]12-OCDD	76.1	72.3	0.90	47:05	---

AR300336

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8290 ANALYSIS (a)

02/11/91

FILE NAME....: E002171 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-25-2A
CONCAL.....: E002160 SAMPLE ID....: DC046207
ANALYST.....: OR ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 930.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				---
12378-PeCDD	ND		0.4				---
123478-HxCDD	ND		0.3				---
123678-HxCDD	ND		0.3				---
123789-HxCDD	ND		0.3				---
1234678-HpCDD	3.4				1.05	40:59	_L_
OCDD	36.3				0.89	47:10	L,BL
2378-TCDF	ND		0.1				---
12378-PeCDF	ND		0.2				---
23478-PeCDF	ND		0.2				---
123478-HxCDF	ND		0.1				---
123678-HxCDF	ND		0.1				---
234678-HxCDF	ND		0.1				---
123789-HxCDF	ND		0.1				---
1234678-HpCDF	0.65				0.95	38:56	_L_
1234789-HpCDF	ND		0.2				---
OCDF	6.8				0.84	47:23	_L_
TOTAL TCDD	EMPC			6.0			---
TOTAL PeCDD	ND		0.4				---
TOTAL HxCDD	ND		0.3				---
TOTAL HpCDD	4.7	2			1.08		---
TOTAL TCDF	EMPC			0.27			---
TOTAL PeCDF	ND		0.2				---
TOTAL HxCDF	0.41	1			1.06		---
TOTAL HpCDF	4.3	2			1.02		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	30.2	56.1	0.81	21:53	---
13C12-2378-TCDD	30.0	55.8	0.82	22:40	---
13C12-HxCDD 678	38.3	71.2	1.28	34:36	---
13C12-HpCDF 678	89.8	83.5	1.07	38:54	---
13C12-OCDD	88.3	82.1	0.91	47:09	---

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

AR300337

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....: E002121 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-25-3B
CONCAL.....: E002115 SAMPLE ID....: DC046208
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 790.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				
12378-PeCDD	ND		0.09				
123478-HxCDD	ND		0.06				
123678-HxCDD	ND		0.06				
123789-HxCDD	ND		0.06				
1234678-HpCDD	0.36				1.11	41:58	L
OCDD	6.7				0.86	48:17	L
2378-TCDF	ND		0.03				
12378-PeCDF	ND		0.05				
23478-PeCDF	ND		0.05				
123478-HxCDF	ND		0.03				
123678-HxCDF	ND		0.03				
234678-HxCDF	ND		0.03				
123789-HxCDF	ND		0.04				
1234678-HpCDF	0.08				1.14	39:54	L
1234789-HpCDF	ND		0.06				
OCDF	1.1				0.88	48:30	L
TOTAL TCDD	EMPC			5.68			
TOTAL PeCDD	ND		0.09				
TOTAL HxCDD	ND		0.06				
TOTAL HpCDD	0.36	1		0.57	1.11		
TOTAL TCDF	EMPC			0.24			
TOTAL PeCDF	ND		0.05				
TOTAL HxCDF	0.04	1			1.31		
TOTAL HpCDF	0.59	2			1.12		

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)		% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	44.4		70.2	0.79	22:36	
13C12-2378-TCDD	44.9		70.9	0.79	23:23	
13C12-HxCDD 678	54.6	-	86.2	1.29	35:30	
13C12-HpCDF 678	109		86.4	1.06	39:52	
13C12-OCDD	93.3		73.7	0.91	48:16	

AR300338

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002172 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-1B
CONCAL.....: E002160 SAMPLE ID....: DC046209
ANALYST.....: XL ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 880.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
CAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				---
2378-PeCDD	ND		0.08				---
23478-HxCDD	ND		0.07				---
23678-HxCDD	3.6				1.28	34:36	_L_
23789-HxCDD	ND		0.07				---
234678-HpCDD	143				1.05	40:59	_H_
OCDD	1080				0.89	47:13	H,BL
2378-TCDF	ND		0.03				---
2378-PeCDF	ND		0.04				---
23478-PeCDF	ND		0.04				---
23478-HxCDF	0.47				1.41	32:57	_L_
23678-HxCDF	ND		0.03				---
234678-HxCDF	ND		0.03				---
23789-HxCDF	ND		0.04				---
234678-HpCDF	40.8				1.06	38:55	---
234789-HpCDF	1.4				1.03	41:46	_L_
OCDF	260				0.87	47:24	_H_
TOTAL TCDD	0.41	1		7.79	0.66		---
TOTAL PeCDD	ND		0.08				---
TOTAL HxCDD	8.4	3		8.51	1.30		---
TOTAL HpCDD	215	2			1.05		---
TOTAL TCDF	EMPC			0.26			---
TOTAL PeCDF	0.27	1		0.39	1.59		---
TOTAL HxCDF	30.0	5			1.28		---
TOTAL HpCDF	223	3			1.04		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	45.9	80.8	0.80	21:49	---
13C12-2378-TCDD	43.0	75.7	0.80	22:36	---
13C12-HxCDD 678	46.6	82.1	1.28	34:35	---
13C12-HpCDF 678	93.1	81.9	1.06	38:54	---
13C12-OCDD	118	104	0.91	47:11	---

AR300339

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
H = CONCENTRATION ABOVE CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002180 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-2C
CONCAL.....: E002175 SAMPLE ID....: DC046210
ANALYST.....: OR ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-W2
SAMPLE SIZE..: 850.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82305W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	0.14				0.75	22:49	_L_
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	203				1.31	34:43	___
123789-HxCDD	29.1				1.38	35:21	_L_
1234678-HpCDD	7110				1.04	41:05	_H_
OCDD	42850				0.90	47:29	BL,H
2378-TCDF	0.65				0.69	22:04	_L_
12378-PeCDF	EMPC			63.6			___
23478-PeCDF	ND		0.07				___
123478-HxCDF	19.2				1.11	33:06	_L_
123678-HxCDF	EMPC			2.0			___
234678-HxCDF	9.2				1.13	34:10	_L_
123789-HxCDF	ND		0.09				___
1234678-HpCDF	1670				1.05	39:02	_H_
1234789-HpCDF	93.4				1.05	41:49	___
OCDF	12520				0.89	47:38	_H_
TOTAL TCDD	1.9	7		13.00	0.78		___
TOTAL PeCDD	6.4	6		10.41	1.53		___
TOTAL HxCDD	499	5		504.78	1.29		___
TOTAL HpCDD	10730	2			1.04		___
TOTAL TCDF	1.7	5		69.65	0.73		___
TOTAL PeCDF	29.9	3		222.18	1.56		___
TOTAL HxCDF	1260	6		1885.53	1.21		___
TOTAL HpCDF	10660	3		10645.78	1.05		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	48.0	81.7	0.81	22:03	___
13C12-2378-TCDD	40.7	69.1	0.77	22:49	___
13C12-HxCDD 678	58.3	99.0	1.27	34:42	___
13C12-HpCDF 678	105	89.6	1.09	39:01	___
13C12-OCDD	98.0	83.3	1.26	47:24	_RO

8280_RPT rev.3.02

AR300340

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
RO = RATIO OUT FOR INTERNAL STANDARD (POSSIBLE INTERFERENCE)

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....: E002176 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-3A
CONCAL.....: E002175 SAMPLE ID....: DC046211
ANALYST.....: XL ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 920.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				---
12378-PeCDD	ND		0.08				---
123478-HxCDD	ND		0.06				---
123678-HxCDD	ND		0.06				---
123789-HxCDD	ND		0.06				---
1234678-HpCDD	3.9				1.03	40:59	_L__
OCDD	27.9				0.90	47:10	L,BL
2378-TCDF	ND		0.03				---
12378-PeCDF	ND		0.04				---
23478-PeCDF	ND		0.04				---
123478-HxCDF	ND		0.03				---
123678-HxCDF	ND		0.03				---
234678-HxCDF	ND		0.03				---
123789-HxCDF	ND		0.04				---
1234678-HpCDF	0.97				1.07	38:55	_L_
1234789-HpCDF	ND		0.06				---
OCDF	7.8				0.94	47:22	_L_
TOTAL TCDD	EMPC			9.51			---
TOTAL PeCDD	ND		0.08				---
TOTAL HxCDD	ND		0.06				---
TOTAL HpCDD	6.1	2			1.06		---
TOTAL TCDF	0.72	1		1.02	0.76		---
TOTAL PeCDF	EMPC			0.16			---
TOTAL HxCDF	0.60	2			1.27		---
TOTAL HpCDF	5.3	2			1.06		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.5	78.2	0.81	21:53	---
13C12-2378-TCDD	40.6	74.7	0.80	22:39	---
13C12-HxCDD 678	48.1	88.5	1.29	34:37	---
13C12-HpCDF 678	101	93.1	1.07	38:54	---
13C12-OCDD	110	101	0.91	47:08	---

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002177
CONCAL.....: E002175
ANALYST.....: XL
SAMPLE SIZE..: 1040.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046212
ANALYSIS DATE: 01/30/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-29-4A
PROJECT NUMBER: 201-WF
DATE RECEIVED.: 11/09/90
DATE COLLECTED: 11/08/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				---
12378-PeCDD	ND		0.2				---
123478-HxCDD	0.18				1.24	34:19	_L_
123678-HxCDD	0.51				1.37	34:29	_L_
123789-HxCDD	0.50				1.34	35:04	_L_
1234678-HpCDD	19.3				1.04	40:51	_L_
OCDD	115				0.91	47:03	_BL
2378-TCDF	ND		0.06				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.09				---
123478-HxCDF	ND		0.06				---
1[illegible]78-HxCDF	ND		0.05				---
23[illegible]678-HxCDF	ND		0.05				---
123789-HxCDF	ND		0.07				---
1234678-HpCDF	0.74				1.08	38:47	_L_
1234789-HpCDF	ND		0.1				---
OCDF	4.6				0.88	47:15	_L_
TOTAL TCDD	0.15	1		8.76	0.86		---
TOTAL PeCDD	ND		0.2				---
TOTAL HxCDD	1.6	4		2.79	1.29		---
TOTAL HpCDD	41.8	2			1.04		---
TOTAL TCDF	0.80	1		1.16	0.76		---
TOTAL PeCDF	ND		0.09				---
TOTAL HxCDF	0.21	1		0.25	1.37		---
TOTAL HpCDF	3.3	2		3.83	1.06		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	24.1	50.0	0.82	21:45	---
13C12-2378-TCDD	23.7	49.3	0.82	22:31	---
13C12-HxCDD 678	33.4	69.6	1.32	34:27	---
13[illegible]2-HpCDF 678	78.2	81.3	1.06	38:46	---
13[illegible]12-OCDD	82.8	86.2	0.93	47:02	---

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOND IN BLANK AT CONCENTRATION < 2%.

AR300342

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002178
CONCAL.....: E002175
ANALYST.....: OR
SAMPLE SIZE..: 935.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046213
ANALYSIS DATE: 01/30/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-29-SA
PROJECT NUMBER: 201-WF
DATE RECEIVED.: 11/09/90
DATE COLLECTED: 11/08/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				---
12378-PeCDD	ND		0.2				---
123478-HxCDD	ND		0.2				---
123678-HxCDD	EMPC			0.37			---
123789-HxCDD	ND		0.1				---
1234678-HpCDD	34.7				1.05	40:56	---
OCDD	267				0.90	47:07	H,BL
2378-TCDF	ND		0.07				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.09				---
123478-HxCDF	ND		0.07				---
123678-HxCDF	ND		0.07				---
234678-HxCDF	ND		0.06				---
123789-HxCDF	ND		0.08				---
1234678-HpCDF	8.6				1.10	38:52	_L_
1234789-HpCDF	EMPC			0.19			---
OCDF	37.0				0.90	47:19	_L_
TOTAL TCDD	EMPC			11.52			---
TOTAL PeCDD	ND		0.2				---
TOTAL HxCDD	0.43	1		0.81	1.05		---
TOTAL HpCDD	53.1	2			1.05		---
TOTAL TCDF	0.39	1		1.19	0.75		---
TOTAL PeCDF	EMPC			0.60			---
TOTAL HxCDF	2.7	2		2.75	1.30		---
TOTAL HpCDF	37.6	2		37.6	1.08		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	37.9	70.9	0.81	21:50	---
13C12-2378-TCDD	34.0	63.6	0.79	22:37	---
13C12-HxCDD 678	41.2	77.0	1.27	34:33	---
13C12-HpCDF 678	96.4	90.1	1.06	38:51	---
13C12-OCDD	139	130	0.91	47:06	---

AR300343

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
H = CONCENTRATION ABOVE CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002104 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-30-1A
CONCAL.....: E002101 SAMPLE ID....: DC046214
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 1035.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.06				___
123678-HxCDD	ND		0.06				___
123789-HxCDD	ND		0.05				___
1234678-HpCDD	0.09				0.91	42:03	_L_
OCDD	1.1				0.91	48:22	BL,L
2378-TCDF	ND		0.03				___
12378-PeCDF	ND		0.05				___
23478-PeCDF	ND		0.05				___
123478-HxCDF	0.03				1.24	33:58	_L_
123678-HxCDF	0.03				1.25	34:08	_L_
234678-HxCDF	0.03				1.20	35:09	_L_
123789-HxCDF	ND		0.03				___
1234678-HpCDF	0.08				0.98	39:58	_L_
1234789-HpCDF	ND		0.05				___
OCDF	0.16				1.02	48:36	_L_
TOTAL TCDD	EMPC			4.51			___
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	ND		0.06				___
TOTAL HpCDD	0.09	1			0.91		___
TOTAL TCDF	EMPC			0.23			___
TOTAL PeCDF	ND		0.05				___
TOTAL HxCDF	0.09	3			1.23		___
TOTAL HpCDF	0.09	1			0.98		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	30.4	63.0	0.80	22:40	___
13C12-2378-TCDD	29.7	61.5	0.79	23:27	___
13C12-HxCDD 678	43.9	90.9	1.27	35:35	___
13C12-HpCDF 678	98.0	101	1.05	39:57	
13C12-OCDD	96.9	100	0.91	48:21	

AR300344

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002105 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-30-2A
CONCAL.....: E002101 SAMPLE ID....: DC046215
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 138-W1
SAMPLE SIZE..: 880.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.07				—
123678-HxCDD	ND		0.07				—
123789-HxCDD	ND		0.07				—
1234678-HpCDD	ND		0.1				—
OCDD	0.24				0.83	48:18	BL,L
2378-TCDF	ND		0.04				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.06				—
123478-HxCDF	ND		0.04				—
123678-HxCDF	ND		0.04				—
234678-HxCDF	ND		0.03				—
123789-HxCDF	ND		0.05				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.07				—
OCDF	ND		0.07				—
TOTAL TCDD	EMPC			6.41			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	EMPC			0.067			—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.29			—
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.04				—
TOTAL HpCDF	ND		0.06				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	37.5	66.1	0.80	22:36	—
13C12-2378-TCDD	34.8	61.2	0.80	23:24	—
13C12-HxCDD 678	52.2	91.9	1.31	35:31	—
13C12-HpCDF 678	107	94.4	1.05	39:53	—
13C12-OCDD	104	91.1	0.91	48:18	—

!_____ __/__/__! 8280_RPT rev:3.01

AR300345

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002106
CONCAL.....: E002101
ANALYST.....: XL
SAMPLE SIZE..: 900.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046216
ANALYSIS DATE: 01/23/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-30-3A
PROJECT NUMBER: 198-W1
DATE RECEIVED.: 11/10/90
DATE COLLECTED: 11/08/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				—
12378-PeCDD	ND		0.2				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.1				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	ND		0.2				—
OCDD	0.33				0.92	48:24	BL,L
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.09				—
23478-PeCDF	ND		0.09				—
123478-HxCDF	ND		0.07				—
123678-HxCDF	ND		0.06				—
234678-HxCDF	ND		0.06				—
123789-HxCDF	ND		0.08				—
1234678-HpCDF	ND		0.1				—
1234789-HpCDF	ND		0.1				—
OCDF	ND		0.1				—
TOTAL TCDD	EMPC			5.96			—
TOTAL PeCDD	ND		0.2				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	ND		0.2				—
TOTAL TCDF	EMPC			0.16			—
TOTAL PeCDF	ND		0.09				—
TOTAL HxCDF	ND		0.07				—
TOTAL HpCDF	ND		0.1				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	44.7	80.4	0.80	22:43	—
13C12-2378-TCDD	37.2	67.0	0.78	23:30	—
13C12-HxCDD 678	53.3	95.9	1.28	35:38	—
13C12-HpCDF 678	108	97.5	1.05	39:59	—
13C12-OCDD	101	91.2	0.90	48:23	—

!_____ __/__/__!

8280_RPT rev:3.01

AR300346

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002107 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-30-4A
CONCAL.....: E002101 SAMPLE ID....: DC046217
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 945.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				—
12378-PeCDD	ND		0.09				—
123478-HxCDD	ND		0.05				—
123678-HxCDD	ND		0.05				—
123789-HxCDD	ND		0.05				—
1234678-HpCDD	ND		0.08				—
OCDD	0.57				0.96	48:19	BL,L
2378-TCDF	ND		0.03				—
12378-PeCDF	ND		0.05				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.03				—
123678-HxCDF	ND		0.02				—
234678-HxCDF	ND		0.02				—
123789-HxCDF	ND		0.03				—
1234678-HpCDF	ND		0.04				—
1234789-HpCDF	ND		0.05				—
OCDF	ND		0.05				—
TOTAL TCDD	EMPC			4.79			—
TOTAL PeCDD	ND		0.09				—
TOTAL HxCDD	ND		0.05				—
TOTAL HpCDD	ND		0.08				—
TOTAL TCDF	EMPC			0.19			—
TOTAL PeCDF	ND		0.05				—
TOTAL HxCDF	ND		0.02				—
TOTAL HpCDF	ND		0.04				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	37.9	71.7	0.79	22:37	—
13C12-2378-TCDD	36.5	69.1	0.78	23:25	—
13C12-HxCDD 678	45.8	86.5	1.32	35:32	—
13C12-HpCDF 678	103	97.3	1.06	39:54	—
13C12-OCDD	87.1	82.3	0.91	48:19	—

!_____ __/__/__! 8280_RPT rev:3.01

AR300347

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002108
CONCAL.....: E002101
ANALYST.....: XL
SAMPLE SIZE..: 930.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82S05W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046218
ANALYSIS DATE: 01/23/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-30-5A
PROJECT NUMBER: 198-W1
DATE RECEIVED.: 11/10/90
DATE COLLECTED: 11/08/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.09				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.37				0.83	48:22	BL,L
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.07				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.04				—
123678-HxCDF	ND		0.04				—
234678-HxCDF	ND		0.04				—
123789-HxCDF	ND		0.05				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.09				—
TOTAL TCDD	EMPC			4.28			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.21			—
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.04				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	35.2	65.4	0.78	22:40	—
13C12-2378-TCDD	34.7	64.6	0.77	23:28	—
13C12-HxCDD 678	45.7	85.0	1.25	35:35	—
13C12-HpCDF 678	98.7	91.8	1.06	39:56	—
13C12-OCDD	87.1	81.0	0.90	48:20	—

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8280_RPT rev:3.01

AR300348

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002109 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-31-1A
CONCAL.....: E002101 SAMPLE ID....: DC046219
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 825.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.09				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.09				—
1234678-HpCDD	ND		0.2				—
OCDD	0.65				0.91	48:21	BL,L
2378-TCDF	ND		0.04				—
12378-PeCDF	ND		0.07				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.05				—
123678-HxCDF	ND		0.05				—
234678-HxCDF	ND		0.04				—
123789-HxCDF	ND		0.06				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.10				—
OCDF	ND		0.08				—
TOTAL TCDD	EMPC			5.3			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.2				—
TOTAL TCDF	EMPC			0.24			—
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.05				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	46.4	76.5	0.79	22:39	—
13C12-2378-TCDD	42.9	70.8	0.79	23:26	—
13C12-HxCDD 678	55.2	91.0	1.25	35:34	—
13C12-HpCDF 678	106	87.2	1.05	39:56	—
13C12-OCDD	113	93.2	0.90	48:20	—

!_____ __/__/__! 8280_RPT rev:3.01

AR300349

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002111 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-31-2A
CONCAL.....: E002101 SAMPLE ID....: DC046220
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 920.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/09/90
SPIKE FILE...: SP8230SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.06				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.08				—
123678-HxCDD	ND		0.08				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.75				0.93	48:13	L
2378-TCDF	ND		0.04				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.06				—
123478-HxCDF	ND		0.04				—
123678-HxCDF	ND		0.04				—
234678-HxCDF	ND		0.04				—
123789-HxCDF	ND		0.05				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.08				—
TOTAL TCDD	EMPC			4.91			—
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.08				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.18			—
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.04				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	43.7	80.5	0.79	22:31	—
13C12-2378-TCDD	42.7	78.6	0.79	23:19	—
13C12-HxCDD 678	49.0	90.1	1.25	35:26	—
13C12-HpCDF 678	102	94.2	1.05	39:48	—
13C12-OCDD	92.3	84.9	0.90	48:11	—

8280_RPT Rev.3.02

AR300350

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002112
CONCAL.....: E002101
ANALYST.....: XL
SAMPLE SIZE..: 950.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82805W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046221
ANALYSIS DATE: 01/23/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-33-1A
PROJECT NUMBER: 198-W2
DATE RECEIVED.: 11/13/90
DATE COLLECTED: 11/12/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.06				
12378-PeCDD	ND		0.1				
123478-HxCDD	ND		0.10				
123678-HxCDD	7.8				1.25	35:36	L
123789-HxCDD	0.22				1.29	36:11	L
1234678-HpCDD	450				1.05	42:03	
OCDD	2630				0.88	48:28	H
2378-TCDF	ND		0.04				
12378-PeCDF	ND		0.06				
23478-PeCDF	ND		0.06				
123478-HxCDF	0.22				1.36	33:55	L
123678-HxCDF	ND		0.04				
234678-HxCDF	0.05				1.34	35:03	L
123789-HxCDF	ND		0.05				
1234678-HpCDF	98.2				1.05	39:58	
1234789-HpCDF	1.5				1.07	42:50	L
OCDF	1000				0.86	48:40	
TOTAL TCDD	EMPC			5.22			
TOTAL PeCDD	ND		0.1				
TOTAL HxCDD	15.7	4			1.28		
TOTAL HpCDD	655	2			1.05		
TOTAL TCDF	EMPC			0.16			
TOTAL PeCDF	0.15	1			1.37		
TOTAL HxCDF	49.5	7			1.31		
TOTAL HpCDF	704	3			1.06		

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	47.1	89.5	0.79	22:39	
13C12-2378-TCDD	47.2	89.7	0.78	23:26	
13C12-HxCDD 678	45.7	86.8	1.27	35:34	
13C12-HpCDF 678	114	108	1.06	39:56	
13C12-OCDD	150	142	0.94	48:27	X

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
X = RECOVERY ABOVE QC ADVISORY LIMIT

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002116	CLIENT ID....: SAS 5742C	TLI NUMBER....: 3-33-2A
CONCAL.....: E002115	SAMPLE ID....: DC046222	
ANALYST.....: XL	ANALYSIS DATE: 01/24/91	PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 840.00 ml	SAMPLE MATRIX: WATER	DATE RECEIVED.: 11/13/90
ICAL DATE....: 01/02/91	SAMPLE ORIGIN: N/A	DATE COLLECTED: 11/12/90
SPIKE FILE...: SP82805W		SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.005				
12378-PeCDD	ND		0.01				
123478-HxCDD	ND		0.01				
123678-HxCDD	ND		0.01				
123789-HxCDD	ND		0.01				
1234678-HpCDD	EMPC			0.03			
OCDD	3.5				0.80	48:18	L
2378-TCDF	ND		0.003				
12378-PeCDF	ND		0.005				
23478-PeCDF	ND		0.005				
123478-HxCDF	ND		0.005				
123678-HxCDF	ND		0.005				
234678-HxCDF	ND		0.005				
123789-HxCDF	ND		0.005				
1234678-HpCDF	ND		0.008				
1234789-HpCDF	ND		0.01				
OCDF	EMPC			0.55			
TOTAL TCDD	EMPC			4.54			
TOTAL PeCDD	ND		0.01				
TOTAL HxCDD	ND		0.01				
TOTAL HpCDD	EMPC			0.03			
TOTAL TCDF	EMPC			0.037			
TOTAL PeCDF	ND		0.005				
TOTAL HxCDF	ND		0.005				
TOTAL HpCDF	0.10	1			1.19		

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	38.4	64.5	0.79	22:38	
13C12-2378-TCDD	37.3	62.6	0.80	23:26	
13C12-HxCDD 678	40.9	68.6	1.29	35:32	
13C12-HpCDF 678	86.2	72.4	1.06	39:53	
13C12-OCDD	65.1	54.7	0.89	48:16	

AR300352

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002117 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-33-3A
CONCAL.....: E002115 SAMPLE ID....: DC046223
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 940.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/13/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/12/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.008				—
12378-PeCDD	ND		0.01				—
123478-HxCDD	ND		0.01				—
123678-HxCDD	ND		0.008				—
123789-HxCDD	ND		0.008				—
1234678-HpCDD	ND		0.01				—
OCDD	3.7				0.84	48:16	L
2378-TCDF	ND		0.005				—
12378-PeCDF	ND		0.005				—
23478-PeCDF	ND		0.005				—
123478-HxCDF	ND		0.005				—
123678-HxCDF	ND		0.003				—
234678-HxCDF	ND		0.003				—
123789-HxCDF	ND		0.005				—
1234678-HpCDF	0.02				0.96	39:52	L
1234789-HpCDF	ND		0.008				—
OCDF	0.35				0.78	48:30	L
TOTAL TCDD	EMPC			3.55			—
TOTAL PeCDD	ND		0.01				—
TOTAL HxCDD	ND		0.008				—
TOTAL HpCDD	ND		0.01				—
TOTAL TCDF	EMPC			0.036			—
TOTAL PeCDF	ND		0.005				—
TOTAL HxCDF	ND		0.003				—
TOTAL HpCDF	0.13	2			1.07		—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	39.4	74.1	0.79	22:37	—
13C12-2378-TCDD	38.5	72.4	0.80	23:24	—
13C12-HxCDD 678	47.6	89.6	1.28	35:30	—
13C12-HpCDF 678	120	113	1.05	39:51	—
13C12-OCDD	111	104	0.90	48:15	—

AR300353

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....: E002118
CONCAL.....: E002115
ANALYST.....: XL
SAMPLE SIZE..: 920.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC046224
ANALYSIS DATE: 01/24/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-33-4A
PROJECT NUMBER: 198-W2
DATE RECEIVED.: 11/13/90
DATE COLLECTED: 11/12/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.08				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	4.8				1.29	35:38	_L_
123789-HxCDD	0.36				1.24	36:14	_L_
1234678-HpCDD	190				1.05	42:04	___
OCDD	1080				0.88	48:25	_H_
2378-TCDF	ND		0.05				___
12378-PeCDF	ND		0.07				___
23478-PeCDF	ND		0.07				___
123478-HxCDF	0.35				1.36	33:59	_L_
123678-HxCDF	0.05				1.12	34:10	_L_
234678-HxCDF	0.13				1.21	35:05	_L_
123789-HxCDF	ND		0.06				___
1234678-HpCDF	53.7				1.05	39:59	___
1234789-HpCDF	1.9				1.10	42:52	_L_
OCDF	359				0.86	48:38	___
TOTAL TCDD	EMPC			4.79			___
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	10.8	4			1.30		___
TOTAL HpCDD	281	2			1.05		___
TOTAL TCDF	EMPC			0.15			___
TOTAL PeCDF	EMPC			0.26			___
TOTAL HxCDF	32.3	6		31.94	1.26		___
TOTAL HpCDF	306	3			1.07		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	41.0	75.5	0.79	22:44	___
13C12-2378-TCDD	39.3	72.4	0.79	23:31	___
13C12-HxCDD 678	51.5	94.8	1.26	35:37	___
13C12-HpCDF 678	120	111	1.05	39:58	___
13C12-OCDD	135	124	0.91	48:23	_X_

AR300354

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
X = RECOVERY ABOVE QC ADVISORY LIMIT

WESTON

APPENDIX D

Organic Regional Data Assessment Summary

WESTON

TPO: [X] ACTION [ ] FYI Region III

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO: SAS 5742C
SDG NO: DC0457-01
SOW: Method 8280
NO. OF SAMPLES: 36

LABORATORY: Triangle Labs
DATA USER: B. J. Verrett
REVIEW COMPLETION DATE: 03/13/91
MATRIX: Aqueous

REVIEWER: ESAT

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES				O
2. GC-MS TUNE/GC PERFORMANCE				O
3. INITIAL CALIBRATIONS				O
4. CONTINUING CALIBRATION				O
5. FIELD BLANKS (F=NOT APPLICABLE)				O
6. LABORATORY BLANKS				O
7. SURROGATES				O
8. MATRIX SPIKE/DUPLICATES				O
9. REGIONAL QC (F=NOT APPLICABLE)				F
10. INTERNAL STANDARDS				X
11. COMPOUND IDENTIFICATION				O
12. COMPOUND QUANTITATION				O
13. SYSTEM PERFORMANCE				O
14. OVERALL ASSESSMENT				XA

O = No problems or minor problems that do not affect data usability
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as estimated.
Z = More than about 5% of the data points are qualified as unusable.
A = TPO action requested; use in conjunction with one of the above codes.

TPO ACTION ITEMS: (See Item 14, following page)

AR300356

AREAS OF CONCERN: (See following comments)

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY NOTES
SAS 5742C SDG:DC0457-01 Aqueous Samples

Item 4 The continuing calibrations contained several compounds with response factors that varied by more than 20% from the previously obtained average response factors. Any impact on the data was minimal, therefore, no data were qualified. (See continuing calibration summary forms in Appendix E.)

Item 8 The percent recoveries of the native spike/native spike duplicate analyses of sample DC0457-03 and DC0462-04 are summarized in Table II of Appendix B. The range of recoveries was 82.6-104.8% and 79.2-127.8%, respectively. (Also see Table I of Appendix A and Matrix Spike Recoveries in Appendix B.)

Item 10 Several samples had 13C12-OCDD IS recoveries greater than 120%. The same IS had an ion ratio outside the QC window for sample DC0462-10. (See Appendix E.)

Item 14 The laboratory calculated toxicity equivalents (TEQ) using toxic factors (TF) that differ from those specified in Table VI of the SAS request, or differ from those used in Table I of this report. Using the TFs specified in the SAS request would produce a TEQ greater than 50 pptr for sample DC0462-10, thereby requiring a second column confirmation. The TEQ calculated by the laboratory did not result in a TEQ > 50 pptr, therefore, no confirmation was performed. (See TEQ result in Table I and Appendix E.)

WESTON

APPENDIX E

Support Documentation

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002092 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002091 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W4
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SPS2805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.10				—
123789-HxCDD	ND		0.10				—
1234678-HpCDD	ND		0.1				—
OCDD	0.35				1.02	47:49	L
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.07				—
23478-PeCDF	EMPC			0.16	IR, CI(S/N)		— MM 3/6/91
123478-HxCDF	ND		0.06				—
123678-HxCDF	ND		0.06				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.07				—
1234678-HpCDF	ND		0.07				—
1234789-HpCDF	ND		0.10				—
OCDF	ND		0.1				—
TOTAL TCDD	EMPC			~~5.3~~	IR, CI		— MM 3/6/91
TOTAL PeCDD	EMPC			~~0.91~~	IR, CI(S/N)		—
TOTAL HxCDD	ND		0.10				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.17	IR		— MM 3/6/91
TOTAL PeCDF	EMPC			0.16	IR, CI (S/N)		—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.08				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.0	83.9	0.80	22:10	—
13C12-2378-TCDD	40.4	80.8	0.80	22:58	—
13C12-HxCDD 678	44.7	89.3	1.26	35:04	—
13C12-HpCDF 678	81.3	81.3	1.06	39:25	—
13C12-OCDD	63.1	63.1	0.90	47:48	—

8280_RPT rev:3.02

L = CONCENTRATION BELOW CALIBRATION RANGE

AR300359

Page No. 1 Listing of E002092B.dbf

02/01/91

Method BLK 1/22

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.44	22:45	54.07	F	F	1.026	
304		*** Total ***		54.07	# of Peaks:		1	
316		0.80	22:10	6883.22	T	T	1.000	
316		*** Total ***		6883.22	# of Peaks:		1	
320		5.01	22:10	1788.27	F	F	0.965	
320		*** Total ***		1788.27	# of Peaks:		1	
328		0.00	22:59	4585.20	T	T	1.001	
	D	0.00	23:52	243.55	T	F	1.039	AN 2-2-91 O/W
328		*** Total ***		4828.75	# of Peaks:		2	
332		0.80	22:45	4417.74	T	T	0.991	
		0.80	22:58	4312.60	T	T	1.000	
332		*** Total ***		8730.34	# of Peaks:		2	
340	D	0.05	23:52	239.58	F	F	1.077	AN 2-2-91 O/W
		0.06	28:17	184.51	F	T	1.276	
340		*** Total ***		424.09	# of Peaks:		2	
356		5.84	28:17	173.10	F	F	1.231	
356		*** Total ***		173.10	# of Peaks:		1	
390	D	5.45	39:25	118.06	F	F	1.125	AN 2-2-91 O/W
390		*** Total ***		118.06	# of Peaks:		1	
402	D	5.92	32:51	305.86	F	F	0.937	AN 2-2-91 O/W
		1.26	35:04	3308.21	T	T	1.000	
		1.35	35:40	4203.66	T	T	1.017	
	D	6.04	37:23	365.85	F	F	1.068	AN 2-2-91 O/W
402		*** Total ***		8183.58	# of Peaks:		4	
408	D	1.38	37:44	20.29	F	F	0.957	AN 2-2-91 O/W
408		*** Total ***		20.29	# of Peaks:		1	
420		1.06	39:25	8991.50	T	T	1.000	
420		*** Total ***		8991.50	# of Peaks:		1	
424	D	3.30	39:25	2676.03	F	F	1.124	AN 2-2-91 O/W
424		*** Total ***		2676.03	# of Peaks:		1	
470		0.90	47:48	3240.46	T	T	1.000	
470		*** Total ***		3240.46	# of Peaks:		1	

*** End of Report ***

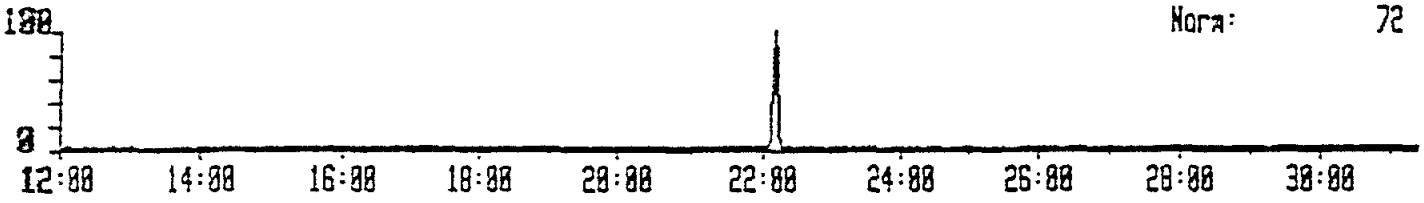
FLAG
D: Delete
O/W: outside of retention time of window.
MI: Manual Integration

Add Rb 45C 1.033 47:49 15.70 T T 1.000 AR300236D-2-91

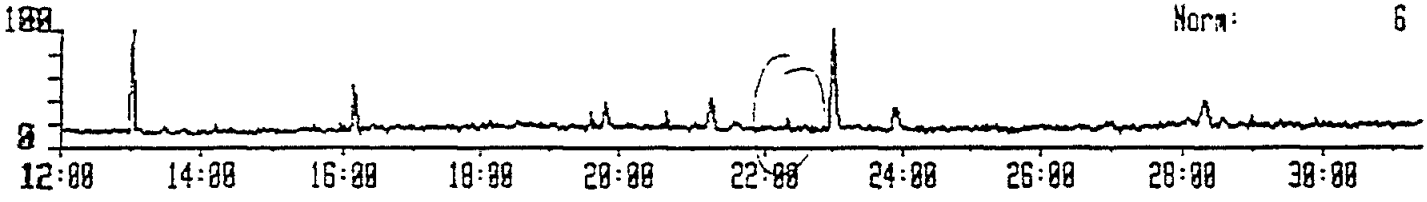
AR300236D-2-91

E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#198-W4 METHOD BLANK

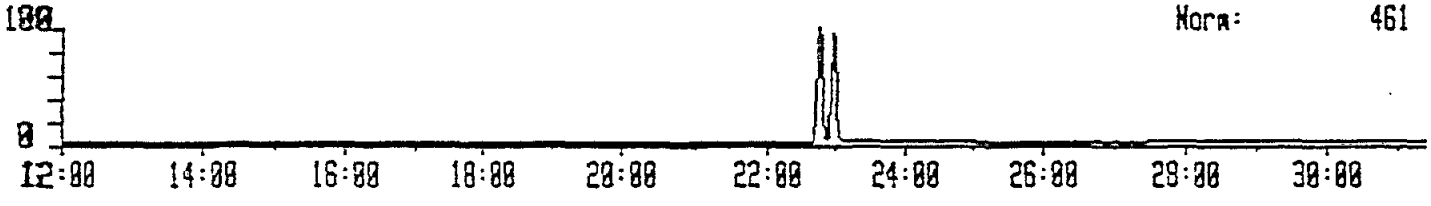
E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-W4 METHOD BLANK



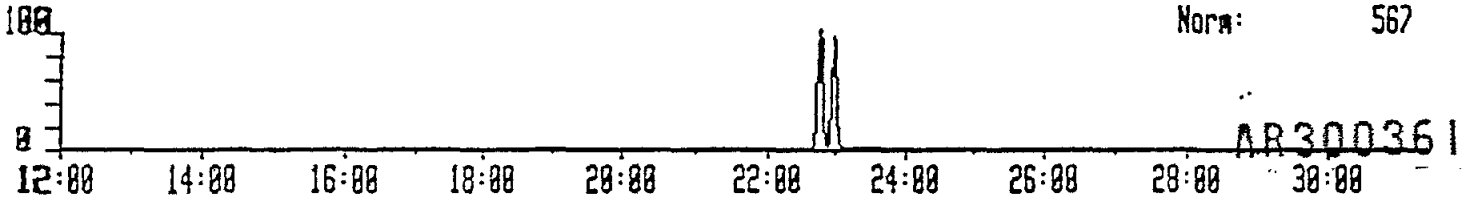
E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-W4 METHOD BLANK



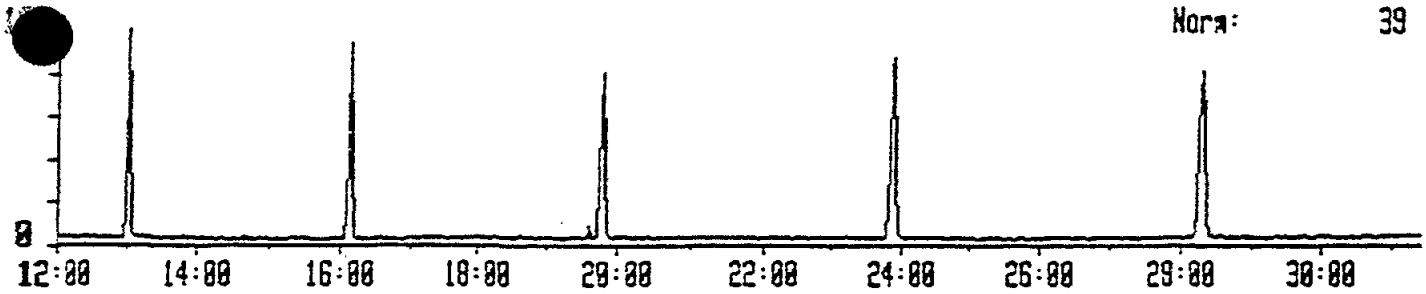
E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-W4 METHOD BLANK



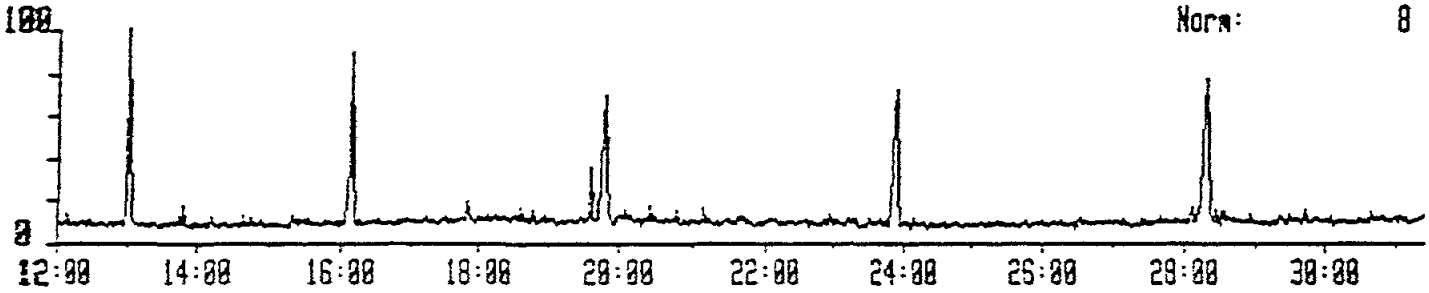
E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-W4 METHOD BLANK



E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 355.8546
Text:TLH#198-W4 METHOD BLANK



E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 357.8516
Text:TLH#198-W4 METHOD BLANK



E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 292.8908
Text:TLH#198-W4 METHOD BLANK

E002092 22-JAN-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 489.7974
Text:TLH#198-W4 METHOD BLANK

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002096 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002091 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP8280SW SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	ND		0.06					
12378-PeCDD	ND		0.1					
123478-HxCDD	ND		0.08					
123678-HxCDD	ND		0.07					
123789-HxCDD	ND		0.07					
1234678-HpCDD	ND		0.1					
OCDD	0.36				0.79	48:19	L	
2378-TCDF	ND		0.04					
12378-PeCDF	ND		0.06					
23478-PeCDF	ND		0.06					
123478-HxCDF	ND		0.05					
123678-HxCDF	ND		0.05					
234678-HxCDF	EMPC			~~0.11~~	IR, CI			MM 3/6/91
123789-HxCDF	ND		0.06					
1234678-HpCDF	ND		0.06					
1234789-HpCDF	ND		0.08					
OCDF	ND		0.07					
TOTAL TCDD	EMPC			~~4.55~~	IR, CI			MM 3/6/91
TOTAL PeCDD	ND		0.1					
TOTAL HxCDD	ND		0.07					
TOTAL HpCDD	ND		0.1					
TOTAL TCDF	EMPC			0.25	IR			MM 3/6/91
TOTAL PeCDF	ND		0.06					
TOTAL HxCDF	EMPC			~~0.13~~	IR, CI			MM 3/6/91
TOTAL HpCDF	ND		0.07					

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	32.4	64.8	0.79	22:39	
13C12-2378-TCDD	31.6	63.2	0.79	23:26	
13C12-HxCDD 678	41.2	82.4	1.27	35:33	
13C12-HpCDF 678	69.6	69.6	1.06	39:55	
13C12-OCDD	73.2	73.2	0.91	48:18	

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

Page No. 1 Listing of E0020968.dbf Method 3UK 1/22/91
01/30/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.18	23:14	76.44	F	F	1.026	
304		*** Total ***		76.44	# of Peaks:		1	
316		0.79	22:39	8051.07	T	T	1.000	
316		*** Total ***		8051.07	# of Peaks:		1	
320		4.98	22:39	1821.82	F	F	0.967	
320		*** Total ***		1821.82	# of Peaks:		1	
332		0.79	23:14	6689.98	T	T	0.991	
		0.79	23:26	5104.97	T	T	1.000	
332		*** Total ***		11794.95	# of Peaks:		2	
390		D 5.86	39:55	144.28	F	F	1.123	AN 1-31-91 O/W
390		*** Total ***		144.28	# of Peaks:		1	
402		1.27	35:33	4448.61	T	T	1.000	
		1.28	36:10	5921.12	T	T	1.017	
402		*** Total ***		10369.73	# of Peaks:		2	
420		1.06	39:55	11185.15	T	T	1.000	
420		*** Total ***		11185.15	# of Peaks:		1	
424		D 3.27	39:54	3529.60	F	F	1.122	AN 1-31-91 O/W
424		*** Total ***		3529.60	# of Peaks:		1	
458		0.795 ~~0.75~~	48:19	24.16 ~~RW23.10~~	T~~F~~	T	1.000	RW 2-1-91 MI
458		*** Total ***		23.10	# of Peaks:		1	
470		0.91	48:18	5488.24	T	T	1.000	
470		*** Total ***		5488.24	# of Peaks:		1	

*** End of Report ***

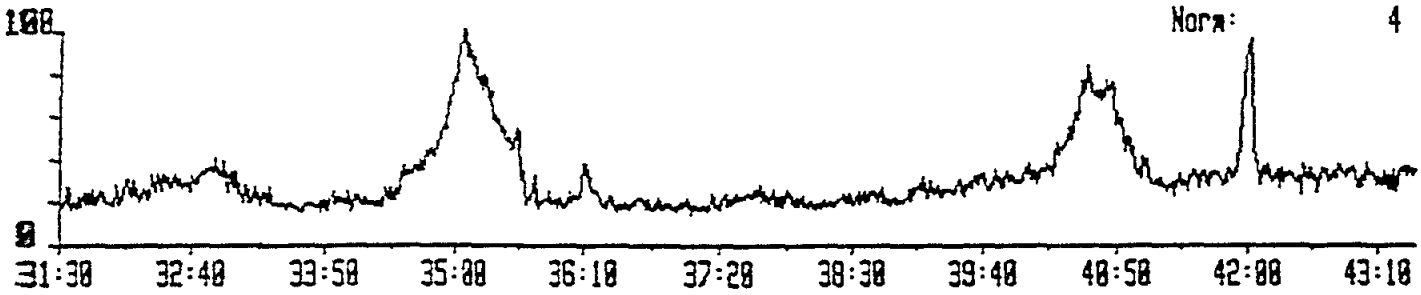
FLAG
D=delete
O/W=outside of retention time of window.
MI= Manual Integration

Add
~~304 0.946 22:06 4.75 F F 0.976 RW 2-1-91 MI~~
RW 2-1-91

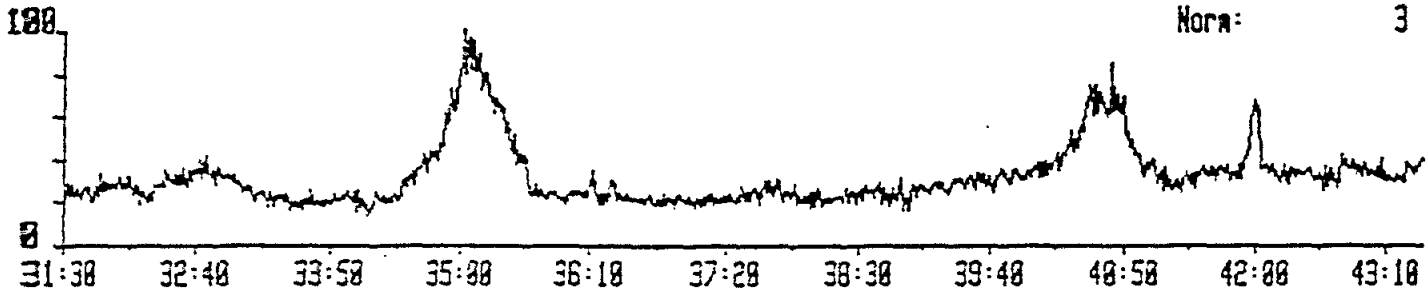
304	2.628	23:27	10.64	F	F	1.035 RW 2-1-91 M
374	0.784	35:02	27.12	F	T	0.878 RW 2-1-91 I-f

AR300364

E082896 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 2 Mass 373.8200
Text:TLH#198-W1 METHOD BLANK

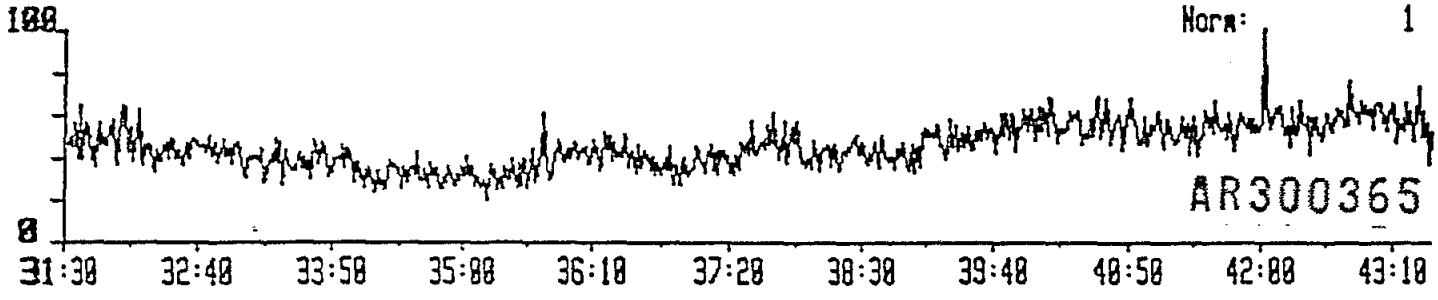


E082896 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 2 Mass 375.8170
Text:TLH#198-W1 METHOD BLANK

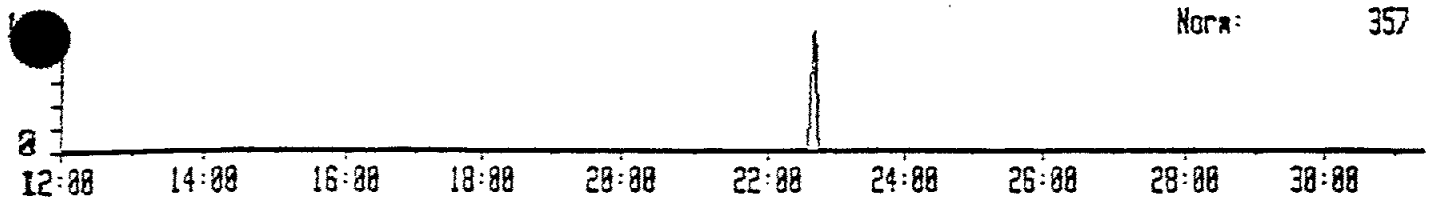


E082896 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 2 Mass 310.8570
Text:TLH#198-W1 METHOD BLANK

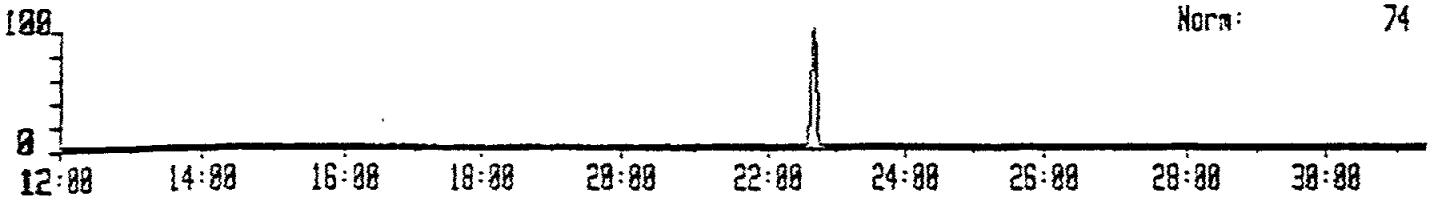
E082896 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 2 Mass 445.7555
Text:TLH#198-W1 METHOD BLANK



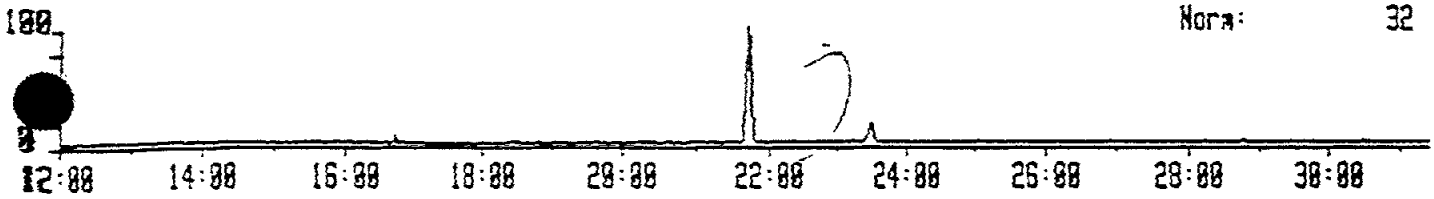
E002896 22-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#198-W1 METHOD BLANK



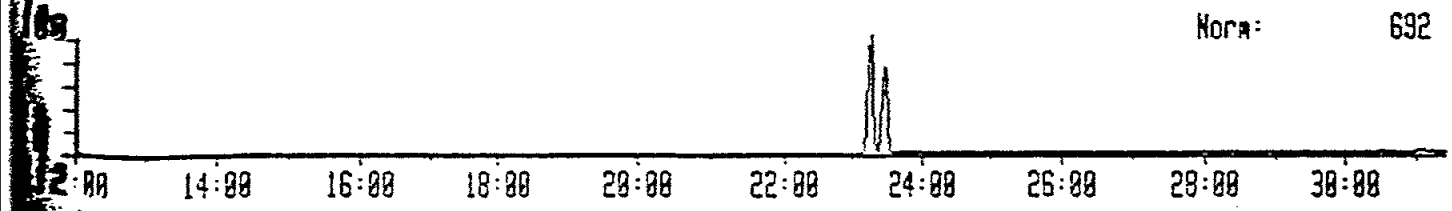
E002896 22-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-W1 METHOD BLANK



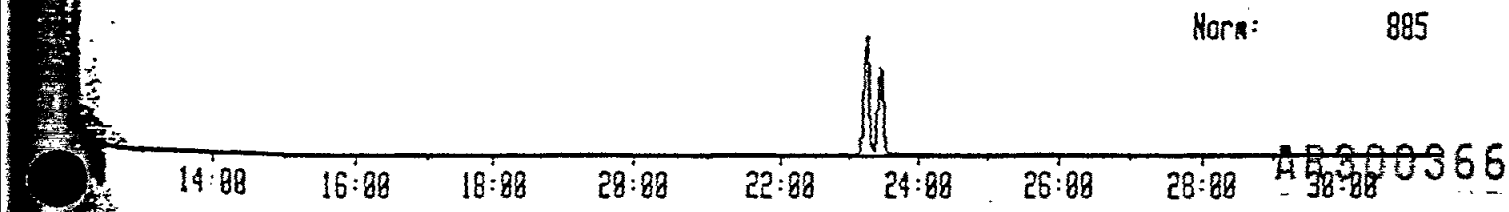
E002896 22-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-W1 METHOD BLANK



E002896 22-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-W1 METHOD BLANK



E002896 22-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-W1 METHOD BLANK



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002110 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002101 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP8280SW SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	ND		0.07				—	
12378-PeCDD	ND		0.1				—	
123478-HxCDD	ND		0.10				—	
123678-HxCDD	ND		0.09				—	
123789-HxCDD	ND		0.09				—	
1234678-HpCDD	ND		0.2				—	
OCDD	ND		0.2				—	
2378-TCDF	ND		0.04				—	
12378-PeCDF	ND		0.07				—	
23478-PeCDF	ND		0.07				—	
123478-HxCDF	ND		0.05				—	
123678-HxCDF	ND		0.05				—	
234678-HxCDF	ND		0.04				—	
123789-HxCDF	ND		0.06				—	
1234678-HpCDF	ND		0.08				—	
1234789-HpCDF	ND		0.10				—	
OCDF	ND		0.1				—	
TOTAL TCDD	EMPC			~~3.94~~	IR, CI		—	MM 3/6/91
TOTAL PeCDD	ND		0.1				—	
TOTAL HxCDD	ND		0.10				—	
TOTAL HpCDD	ND		0.2				—	
TOTAL TCDF	EMPC			0.17	IR		—	MM 3/6/91
TOTAL PeCDF	ND		0.07				—	
TOTAL HxCDF	ND		0.05				—	
TOTAL HpCDF	ND		0.09				—	

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.7	81.3	0.78	22:38	—
13C12-2378-TCDD	40.7	81.3	0.79	23:26	—
13C12-HxCDD 678	47.4	94.8	1.26	35:34	—
13C12-HpCDF 678	96.2	96.2	1.05	39:55	—
13C12-OCDD	80.7	80.7	0.89	48:19	—

8280_RPT rev:3.02

AR300367

Method BLK 1/23

02/08/91

Listing of E002110B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.42	23:14	44.12	F	F	1.027	
304		*** Total ***		44.12	# of Peaks:		1	
316		0.78	22:38	6840.03	T	T	1.000	
316		*** Total ***		6840.03	# of Peaks:		1	
320		5.06	22:38	1380.64	F	F	0.966	
320		*** Total ***		1380.64	# of Peaks:		1	
332		0.79	23:14	4568.28	T	T	0.991	
		0.79	23:26	4460.97	T	T	1.000	
332		*** Total ***		9029.25	# of Peaks:		2	
390	DC	6.99	39:56	61.07	F	F	1.123	] ea 2.8.91 o/r
390		*** Total ***		61.07	# of Peaks:		1	
402		1.26	35:34	3155.89	T	T	1.000	
		1.25	36:10	3671.61	T	T	1.017	
402		*** Total ***		6827.50	# of Peaks:		2	
420		1.05	39:55	7757.66	T	T	1.000	
420		*** Total ***		7757.66	# of Peaks:		1	
424	DC	3.29	39:55	1835.59	F	F	1.122	] ea 2.8.91 o/r
424		*** Total ***		1835.59	# of Peaks:		1	
470		0.89	48:19	3373.70	T	T	1.000	
470		*** Total ***		3373.70	# of Peaks:		1	

*** End of Report ***

FLAGS:

D = Delete

o/r = outside of retention window

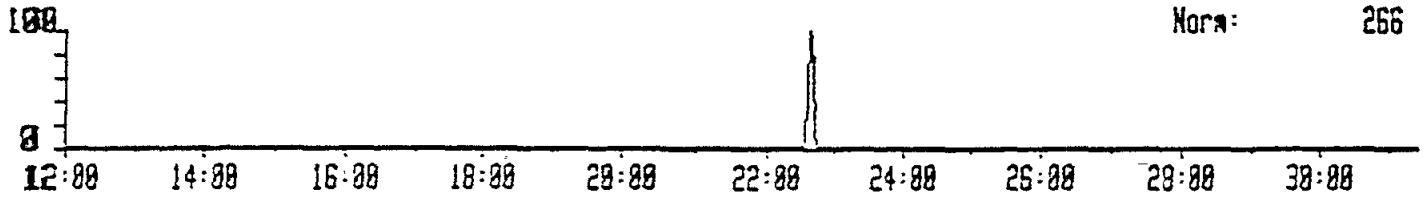
MI = Manual Integrations

Add:

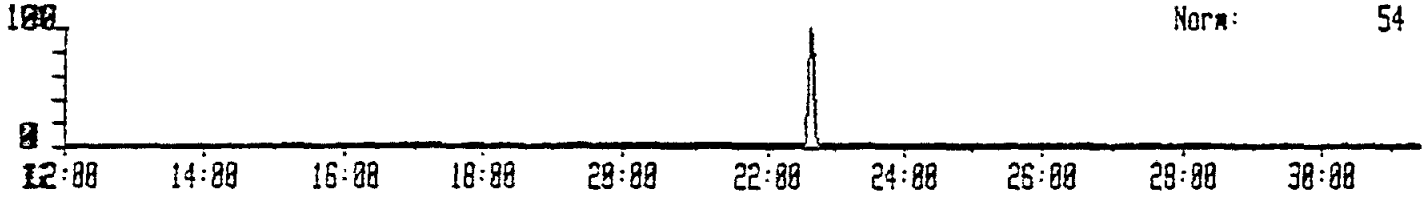
304 (2.119) 23:27 8.05 F F 1.036 ea 2.8.91 r

AR300368

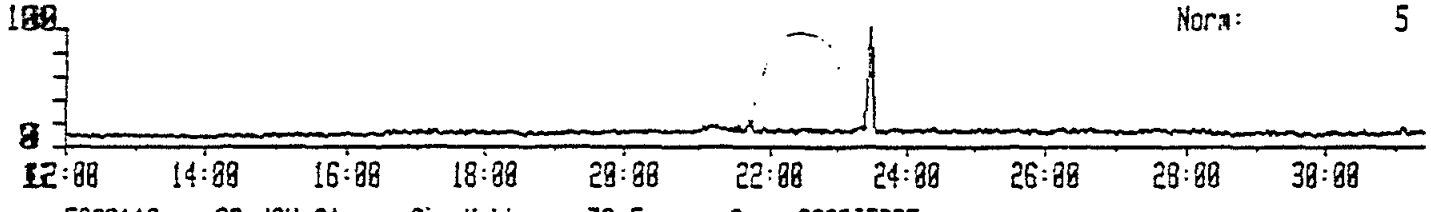
E002110 23-JAN-91 Str:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 319.9965
Text:TLH#198-W2 METHOD BLANK



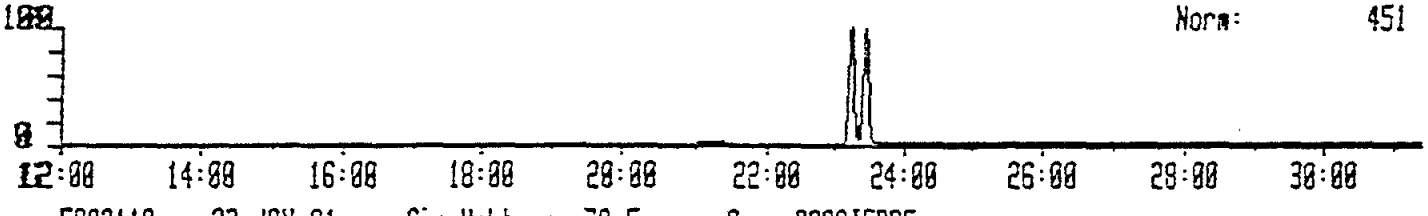
E002110 23-JAN-91 Str:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-W2 METHOD BLANK



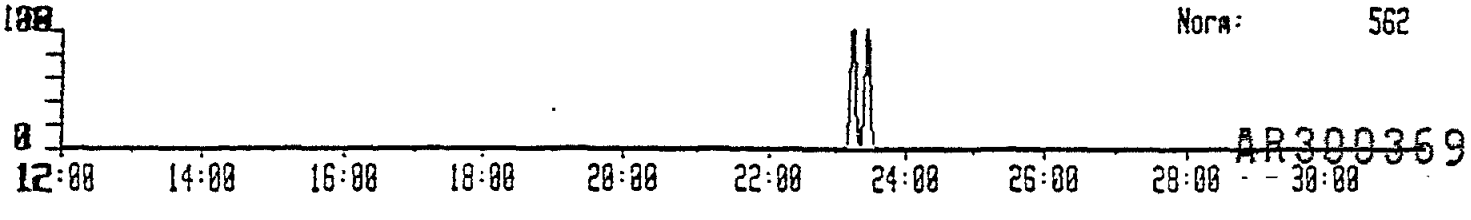
E002110 23-JAN-91 Str:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-W2 METHOD BLANK



E002110 23-JAN-91 Str:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-W2 METHOD BLANK



E002110 23-JAN-91 Str:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-W2 METHOD BLANK



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002123 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
ICAL.....: E002115 SAMPLE ID....: METHOD BLANK
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 138-W3
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				___
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.1				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	ND		0.2				___
OCDD	0.39				0.80	48:19	L
2378-TCDF	ND		0.06				___
12378-PeCDF	ND		0.09				___
23478-PeCDF	ND		0.08				___
123478-HxCDF	ND		0.06				___
123678-HxCDF	ND		0.05				___
234678-HxCDF	ND		0.05				___
123789-HxCDF	ND		0.07				___
1234678-HpCDF	ND		0.08				___
1234789-HpCDF	ND		0.10				___
OCDF	ND		0.10				___
TOTAL TCDD	EMPC			~~5.4~~	IR, CI		___ MM 3/6/91
TOTAL PeCDD	ND		0.2				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	ND		0.2				___
TOTAL TCDF	EMPC			0.39	IR,		___ MM 3/6/91
TOTAL PeCDF	ND		0.09				___
TOTAL HxCDF	ND		0.06				___
TOTAL HpCDF	ND		0.09				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	23.6	47.1	0.80	22:38	___
13C12-2378-TCDD	23.3	46.6	0.78	23:25	___
13C12-HxCDD 678	27.1	54.2	1.26	35:33	___
13C12-HpCDF 678	54.2	54.2	1.06	39:55	___
13C12-OCDD	49.9	49.9	0.90	48:18	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

AR300370

Page No. 1 Listing of E002123B.dbf
02/01/91

Method Blk 1/24

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.22	23:13	116.55	F	F	1.025	
304		*** Total ***		116.55	# of Peaks:		1	
316		0.80	22:38	7675.47	T	T	1.000	
316		*** Total ***		7675.47	# of Peaks:		1	
320		4.87	22:38	2011.08	F	F	0.967	
320		*** Total ***		2011.08	# of Peaks:		1	
332		0.79	23:13	8834.73	T	T	0.991	
		0.78	23:25	4910.16	T	T	1.000	
332		*** Total ***		13744.89	# of Peaks:		2	
390	D	6.19	39:55	129.42	F	F	1.123	AH 2-2-91 O/W
390		*** Total ***		129.42	# of Peaks:		1	
402		1.26	35:33	4370.76	T	T	1.000	
		1.26	36:09	8902.31	T	T	1.017	
402		*** Total ***		13273.07	# of Peaks:		2	
408	D	2.14	38:10	219.61	F	F	0.958	SP 2-7-91 O/W
408		*** Total ***		219.61	# of Peaks:		1	
420		1.06	39:55	11081.77	T	T	1.000	
420		*** Total ***		11081.77	# of Peaks:		1	
424	D	3.27	39:54	3570.54	F	F	1.122	AH 2-2-91 O/W
424		*** Total ***		3570.54	# of Peaks:		1	
458		0.80	48:19	28.13	T	T	1.000	
458		*** Total ***		28.13	# of Peaks:		1	
470		0.90	48:18	5716.82	T	T	1.000	
470		*** Total ***		5716.82	# of Peaks:		1	

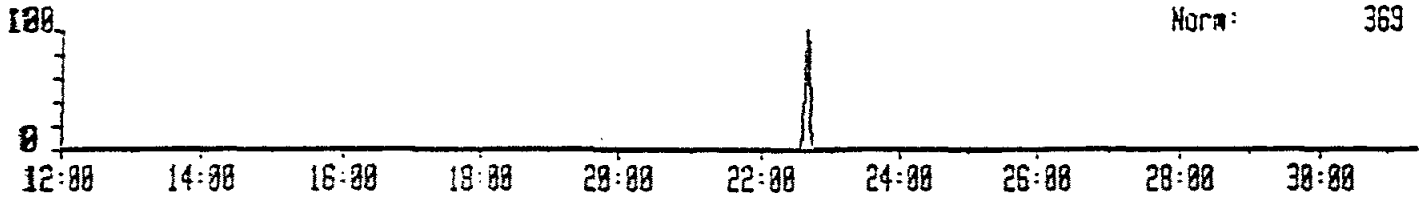
*** End of Report ***

FLAG
D=Delete
O/W=outside of retention time or window
M=Manual integrations

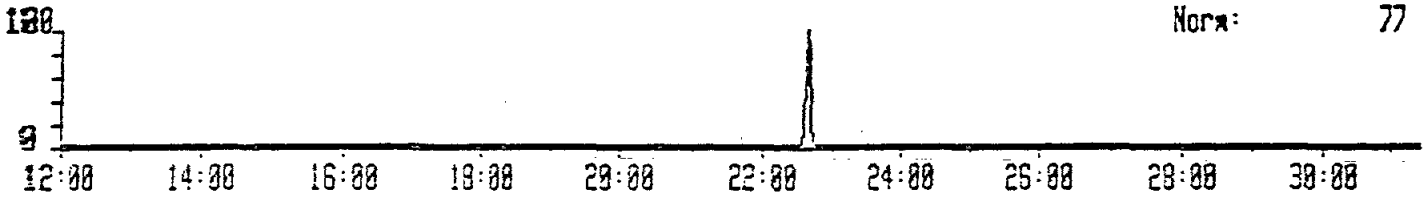
Add
304 2.153 23:25 11.72 F F 1.035 RW 2-4-91 M

AR300371

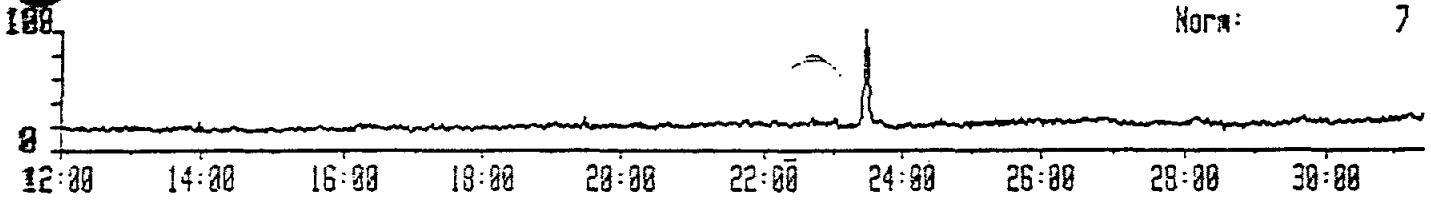
E002123 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#198-W3 METHOD BLANK



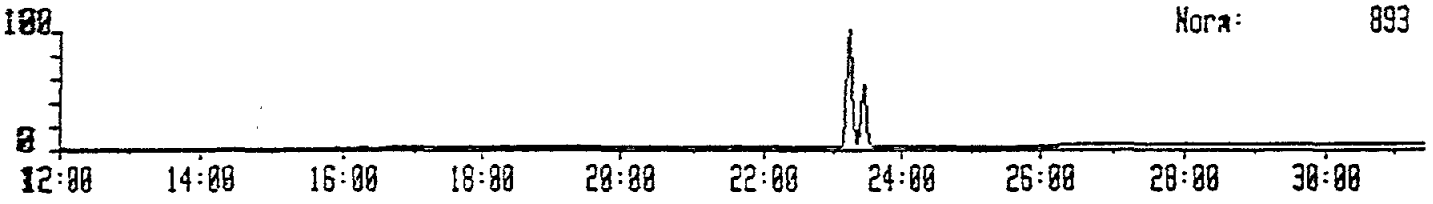
E002123 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-W3 METHOD BLANK



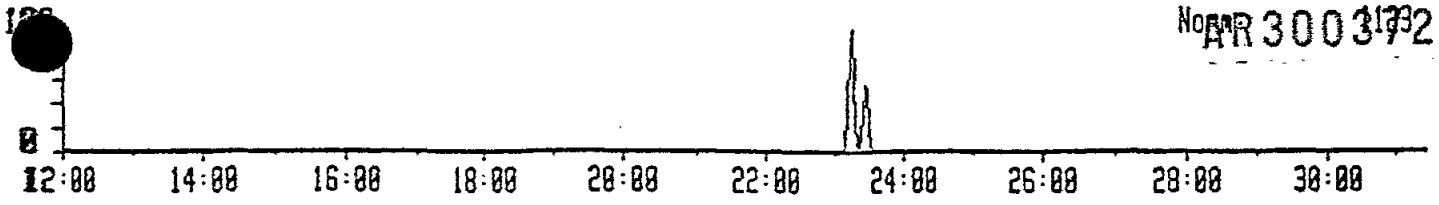
E002123 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-W3 METHOD BLANK



E002123 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-W3 METHOD BLANK



E002123 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-W3 METHOD BLANK



Method Blk 1/30

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002179 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002175 SAMPLE ID....: METHOD BLANK
ANALYST.....: OR ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	ND		0.07				—	
12378-PeCDD	ND		0.1				—	
123478-HxCDD	ND		0.07				—	
123678-HxCDD	ND		0.07				—	
123789-HxCDD	ND		0.07				—	
1234678-HpCDD	ND		0.1				—	
OCDD	0.60 J				1.01	47:10	L	
2378-TCDF	ND		0.05				—	
12378-PeCDF	ND		0.07				—	
23478-PeCDF	ND		0.06				—	
123478-HxCDF	ND		0.04				—	
123678-HxCDF	ND		0.04				—	
234678-HxCDF	ND		0.03				—	
123789-HxCDF	ND		0.04				—	
1234678-HpCDF	ND		0.05				—	
1234789-HpCDF	ND		0.07				—	
OCDF	ND		0.06				—	
TOTAL TCDD	0.23	1		~~7.43~~	0.88	[illegible]	—	MM 3/6/91
TOTAL PeCDD	ND		0.1				—	
TOTAL HxCDD	ND		0.07				—	
TOTAL HpCDD	ND		0.1				—	
TOTAL TCDF	EMPC			0.24	IR		—	MM 3/6/91
TOTAL PeCDF	ND		0.07				—	
TOTAL HxCDF	ND		0.04				—	
TOTAL HpCDF	ND		0.06				—	

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	45.0	90.1	0.81	21:53	—
13C12-2378-TCDD	43.8	87.6	0.80	22:39	—
13C12-HxCDD 678	46.5	93.0	1.28	34:35	—
13C12-HpCDF 678	102	102	1.06	38:53	—
13C12-OCDD	136	136	0.92	47:08	X

AR300373

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
X = RECOVERY ABOVE QC ADVISORY LIMIT

Listing of E002179B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.38	22:27	72.79	F	F	1.026	
304		*** Total ***		72.79	# of Peaks:		1	
316		0.81	21:53	8136.27	T	T	1.000	
316		*** Total ***		8136.27	# of Peaks:		1	
320		4.93	21:53	2917.07	F	F	0.966	
		0.88	23:46	30.01	T	F	1.049	
320		*** Total ***		2947.08	# of Peaks:		2	
332		0.81	22:27	4857.26	T	T	0.991	
		0.80	22:39	5295.02	T	T	1.000	
332		*** Total ***		10152.28	# of Peaks:		2	
340	D	1.63	23:45	37.88	T	F	1.085	RW 2-3-91 O/W
340		*** Total ***		37.88	# of Peaks:		1	
390	D	4.49	38:53	205.45	F	F	1.124	RW 2-3-91 O/W
390		*** Total ***		205.45	# of Peaks:		1	
402		1.28	34:35	5238.18	T	T	1.000	
		1.36	35:11	6298.34	T	T	1.017	
402		*** Total ***		11536.52	# of Peaks:		2	
420		1.06	38:53	15113.62	T	T	1.000	
420		*** Total ***		15113.62	# of Peaks:		1	
424	D	3.23	38:53	5424.73	F	F	1.124	RW 2-3-91 O/W
424		*** Total ***		5424.73	# of Peaks:		1	
442	D	0.52	48:00	371.30	F	F	1.018	RW 2-6-91 O/W
442		*** Total ***		371.30	# of Peaks:		1	
458		1.01	47:10	66.44	T	T	1.001	
458		*** Total ***		66.44	# of Peaks:		1	
470		0.92	47:08	8088.97	T	T	1.000	
470		*** Total ***		8088.97	# of Peaks:		1	

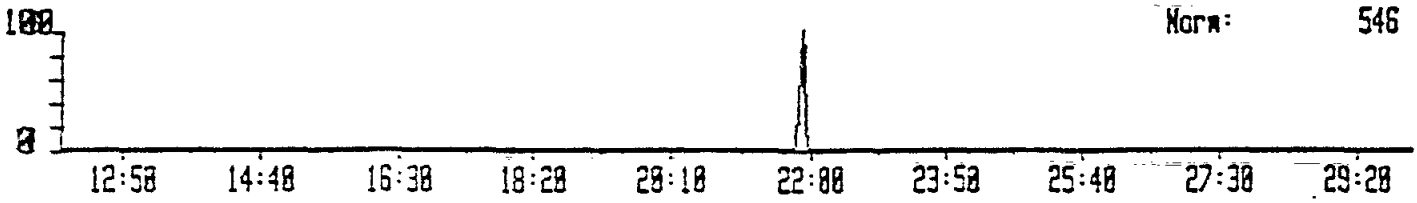
*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time or window
MI = Manual Integration

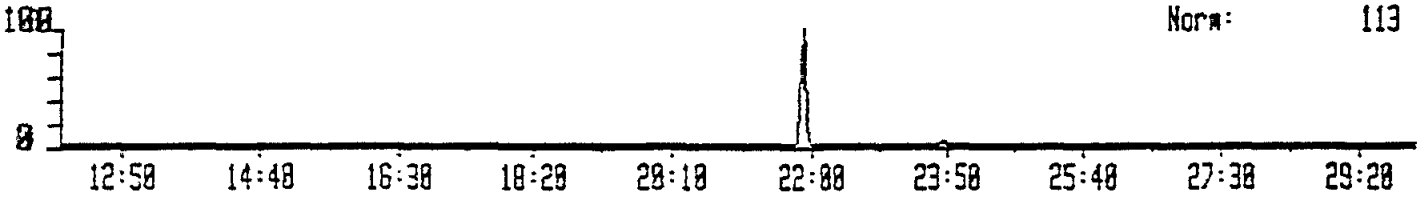
Add
304 2.197 22:40 14.86 F I 1.036 RW 2-6-91 MI

AR300374

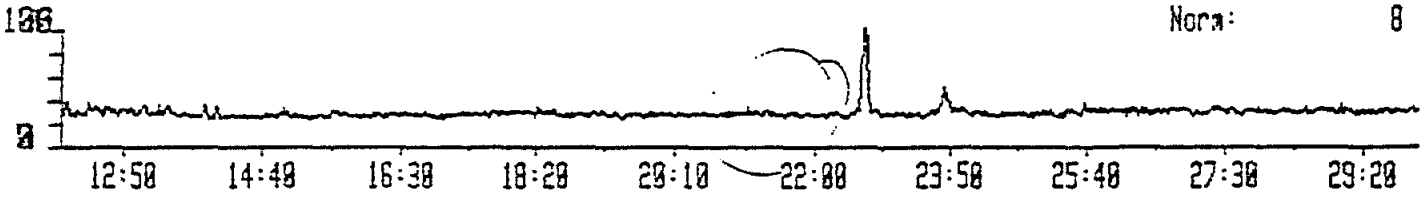
E002179 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#281-W2 METHOD BLANK



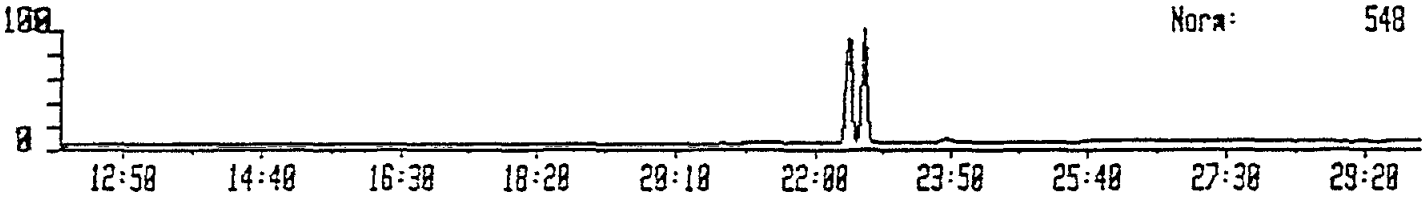
E002179 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#281-W2 METHOD BLANK



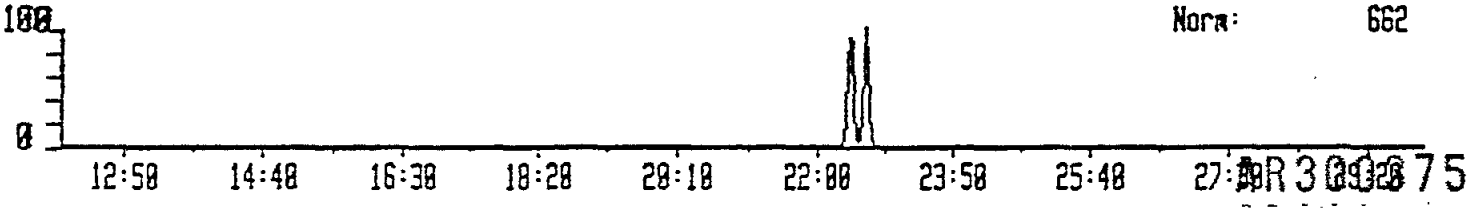
E002179 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#281-W2 METHOD BLANK



E002179 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#281-W2 METHOD BLANK



E002179 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#281-W2 METHOD BLANK



Triangle Laboratories of Houston, Inc.
PCDD/PCDF S280 ANALYSIS (a)

02/11/91

FILE NAME....: E002221 CLIENT ID....: SAS 5742C TLI NUMBER....: M. BLANK
CONCAL.....: E002219 SAMPLE ID....: M. BLANK
ANALYST.....: XL ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R2
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: n/a DATE COLLECTED: / /
SPIKE FILE...: SPS2805W SHIPMENT NO...: n/a

NAME	CONC(ppt) NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	ND	0.2					
12378-PeCDD	ND	0.4					
123478-HxCDD	ND	0.4					
123678-HxCDD	ND	0.3					
123789-HxCDD	ND	0.3					
1234678-HpCDD	ND	0.5					
OCDD	2.4 J			0.99	47:00	L	
2378-TCDF	ND	0.1					
12378-PeCDF	ND	0.2					
23478-PeCDF	EMPC		4.19	IR,			MM 3/6/91
123478-HxCDF	ND	0.2					
123678-HxCDF	ND	0.2					
234678-HxCDF	ND	0.1					
123789-HxCDF	ND	0.2					
1234678-HpCDF	ND	0.2					
1234789-HpCDF	ND	0.3					
OCDF	ND	0.3					
TOTAL TCDD	EMPC		~~62.66~~	IR, CI			MM 3/6/91
TOTAL PeCDD	EMPC		30.01	IR			MM 3/6/91
TOTAL HxCDD	ND	0.3					
TOTAL HpCDD	ND	0.5					
TOTAL TCDF	EMPC		2.05	IR			MM 3/6/91
TOTAL PeCDF	EMPC		4.45	IR			
TOTAL HxCDF	ND	0.2					
TOTAL HpCDF	ND	0.3					

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	471	94.1	0.80	21:44	
13C12-2378-TCDD	465	93.0	0.81	22:31	
13C12-HxCDD 678	456	91.3	1.31	34:26	
13C12-HpCDF 678	947	94.7	1.06	38:44	
13C12-OCDD	1250	125	0.91	46:59	X

_____ __/__/__!

8280_RPT Rev 3.00 AR300376

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
X = RECOVERY BELOW QC ADVISORY LIMIT

Method BLK 2/2/91

Page No. 1 Listing of E002221B.dbf
02/02/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.44	22:19	108.24	F	F	1.027	
		2.56	22:31	22.30	F	F	1.036	
304		*** Total ***		130.54	# of Peaks:		2	
316		0.80	21:44	13507.62	T	T	1.000	
316		*** Total ***		13507.62	# of Peaks:		1	
320		4.89	21:44	4185.66	F	F	0.965	
320		*** Total ***		4185.66	# of Peaks:		1	
332		0.80	22:19	7447.49	T	T	0.991	
		0.81	22:31	8773.57	T	T	1.000	
332		*** Total ***		16221.06	# of Peaks:		2	
340		D 0.07	23:30	763.98	F	F	1.081	AK 2-4-91 O/W
		0.08	27:52	732.23	F	T	1.282	
340		*** Total ***		1496.21	# of Peaks:		2	
356		6.04	27:52	853.59	F	F	1.238	
356		*** Total ***		853.59	# of Peaks:		1	
390		D 4.97	38:45	263.96	F	F	1.125	AK 2-4-91 O/W
390		*** Total ***		263.96	# of Peaks:		1	
402		D 5.39	32:22	926.31	F	F	0.940	AK 2-4-91
		1.31	34:26	5771.53	T	T	1.000	
		1.28	35:02	7061.88	T	T	1.017	
		D 5.38	36:53	840.16	F	F	1.071	AK 2-4-91 O/W
402		*** Total ***		14599.88	# of Peaks:		4	
420		1.06	38:44	16951.29	T	T	1.000	
420		*** Total ***		16951.29	# of Peaks:		1	
424		D 3.24	38:44	5802.26	F	F	1.125	AK 2-4-91 O/W
424		*** Total ***		5802.26	# of Peaks:		1	
458		0.99	47:00	26.50	T	T	1.000	
458		*** Total ***		26.50	# of Peaks:		1	
470		0.91	46:59	8101.52	T	T	1.000	
470		*** Total ***		8101.52	# of Peaks:		1	

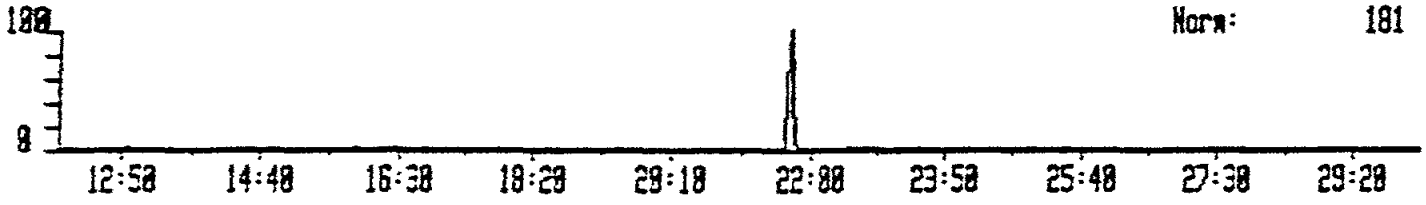
*** End of Report ***

FLAG
D=Delete
O/W=outside of retention time or window

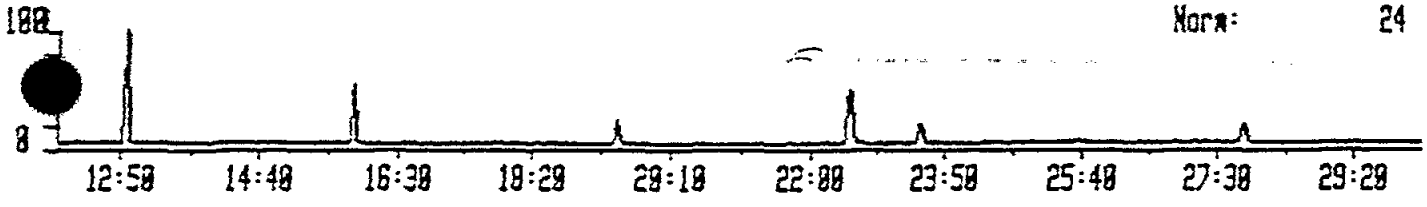
AR300377

E082221 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#198-R2 METHOD BLANK

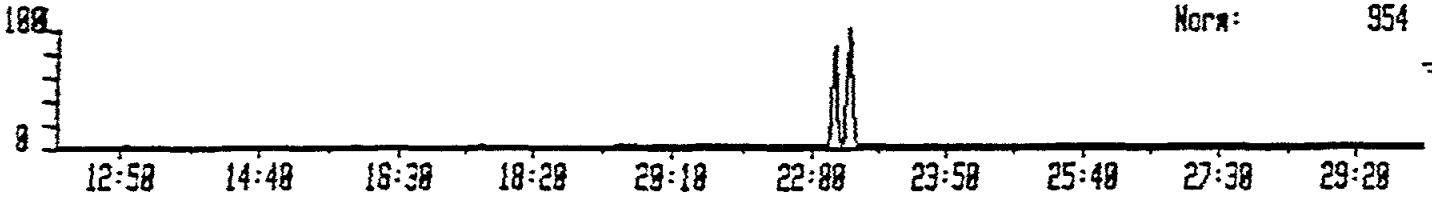
E082221 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-R2 METHOD BLANK



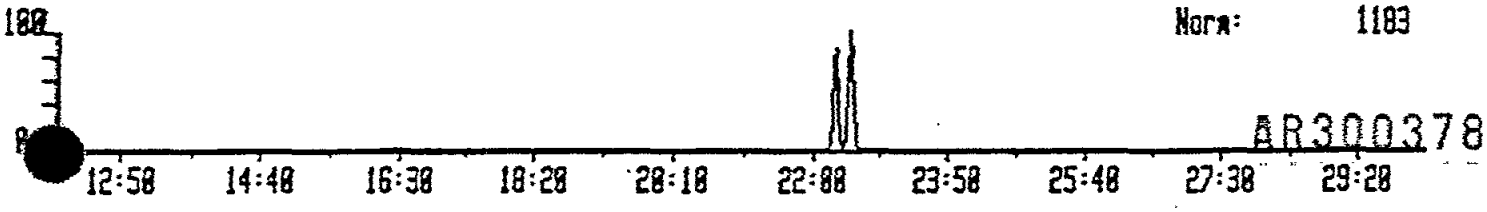
E082221 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-R2 METHOD BLANK



E082221 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-R2 METHOD BLANK



E082221 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-R2 METHOD BLANK



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002226 CLIENT ID....: SAS 5742C TLI NUMBER....: M.BLANK
CONCAL.....: E002224 SAMPLE ID....: METHOD BLANK
ANALYST.....: MV ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 196-R
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.6				
12378-PeCDD	ND		1.0				
123478-HxCDD	ND		0.9				
123678-HxCDD	ND		0.9				
123789-HxCDD	ND		0.9				
1234678-HpCDD	ND		1.4				
OCDD	2.6				0.97	47:07	L
2378-TCDF	ND		0.3				
12378-PeCDF	ND		0.5				
23478-PeCDF	ND		0.5				
123478-HxCDF	ND		0.6				
123678-HxCDF	ND		0.6				
234678-HxCDF	ND		0.5				
123789-HxCDF	ND		0.7				
1234678-HpCDF	ND		0.8				
1234789-HpCDF	ND		1.1				
OCDF	ND		1.1				
TOTAL TCDD	EMPC			~~59.63~~	IR, CI		NM 3/6/91
TOTAL PeCDD	ND		1.0				
TOTAL HxCDD	ND		0.9				
TOTAL HpCDD	ND		1.4				
TOTAL TCDF	EMPC			~~5.05~~ 3.04	IR, CI		NM 3/6/91
TOTAL PeCDF	EMPC			0.66	IR		
TOTAL HxCDF	ND		0.6				
TOTAL HpCDF	ND		0.9				

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	276	55.1	0.80	21:52	
13C12-2378-TCDD	267	53.3	0.78	22:38	
13C12-HxCDD 678	337	67.3	1.26	34:34	
13C12-HpCDF 678	561	56.1	1.06	38:50	
13C12-OCDD	522	52.2	0.90	47:07	

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.

AR300379

Page No. 1 Listing of E002226B.dbf Method BLK 2/2
02/04/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.00	22:27	129.57	F	F	1.027	
		0.40	23:48	97.93	F	F	1.088	
304		*** Total ***		227.50	# of Peaks:		2	
316		0.80	21:52	12424.58	T	T	1.000	
316		*** Total ***		12424.58	# of Peaks:		1	
320		4.87	21:52	2774.28	F	F	0.966	
		0.53	23:48	320.18	F	F	1.052	
	D	0.49	25:24	18.68	F	F	1.122	AV 2-4-91 O/W
320		*** Total ***		3113.14	# of Peaks:		3	
332		0.78	22:26	11451.80	T	T	0.991	
		0.78	22:38	7855.88	T	T	1.000	
332		*** Total ***		19307.68	# of Peaks:		2	
340	D	3.62	23:47	570.35	F	F	1.088	AV 2-4-91 O/W
		0.04	25:38	200.37	F	F	1.172	
340		*** Total ***		770.72	# of Peaks:		2	
390	D	5.69	38:50	80.65	F	F	1.123	AV 2-4-91 O/W
390		*** Total ***		80.65	# of Peaks:		1	
402		1.26	34:34	4947.76	T	T	1.000	
		1.22	35:10	7907.98	T	T	1.017	
402		*** Total ***		12855.74	# of Peaks:		2	
420		1.06	38:50	11212.57	T	T	1.000	
420		*** Total ***		11212.57	# of Peaks:		1	
424	D	3.26	38:49	2650.52	F	F	1.123	AV 2-4-91 O/W
424		*** Total ***		2650.52	# of Peaks:		1	
470		0.90	47:07	5137.14	T	T	1.000	
470		*** Total ***		5137.14	# of Peaks:		1	

*** End of Report ***

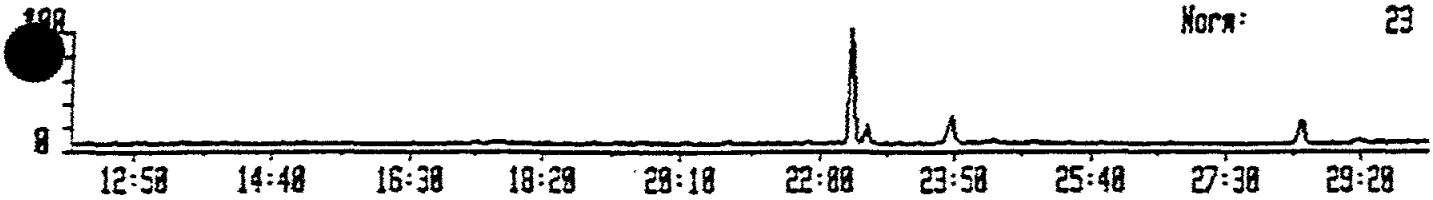
FLAG
D = Delete
O/W = outside of retention time of window
MI = Manual Integration

Add=

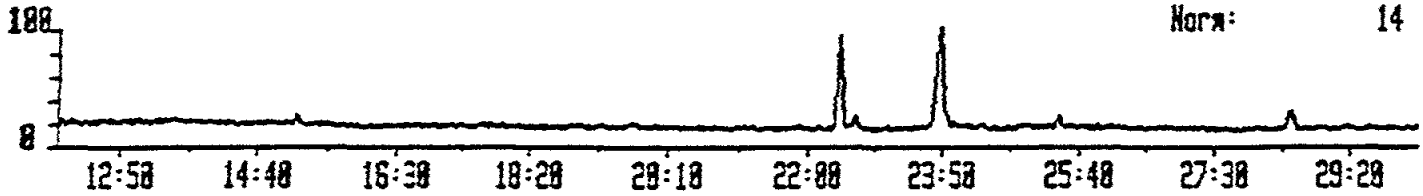
304	1.719	22:38	18.63	F	F	1.035	RW 2-6-91 MI
458	0.971	47.07	18.27	T	T	1.000	RW 2-6-91

AR300380

E002226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBOF
Sample 1 Injection 1 Group 1 Mass 303.9016
Text:TLH#198-R METHOD BLANK

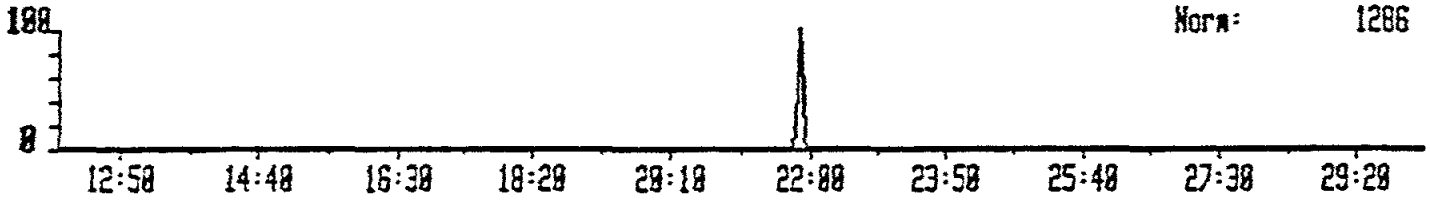


E002226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBOF
Sample 1 Injection 1 Group 1 Mass 305.8987
Text:TLH#198-R METHOD BLANK

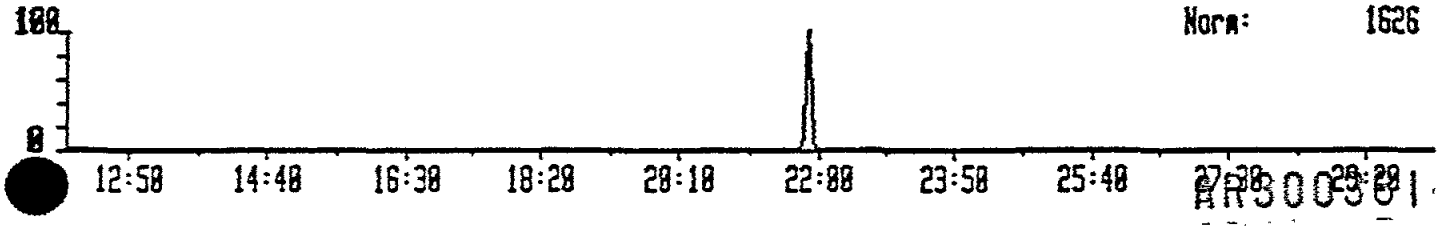


E002226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBOF
Sample 1 Injection 1 Group 1 Mass 242.9349
Text:TLH#198-R METHOD BLANK

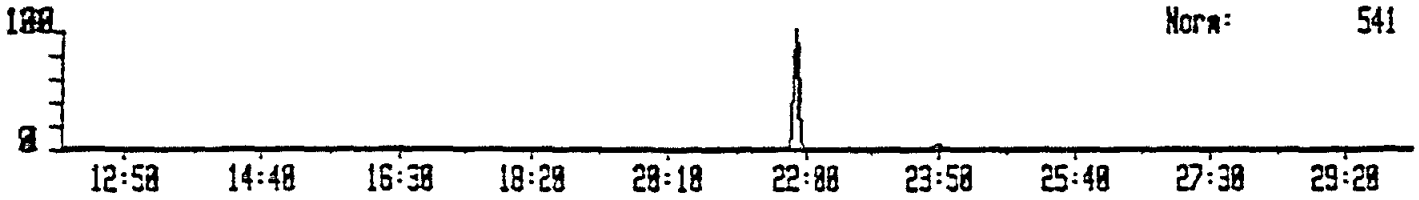
E002226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBOF
Sample 1 Injection 1 Group 1 Mass 315.9419
Text:TLH#198-R METHOD BLANK



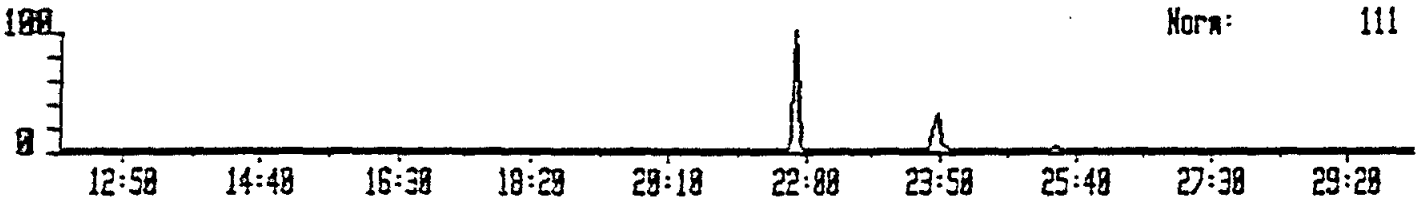
E002226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IFBOF
Sample 1 Injection 1 Group 1 Mass 317.9389
Text:TLH#198-R METHOD BLANK



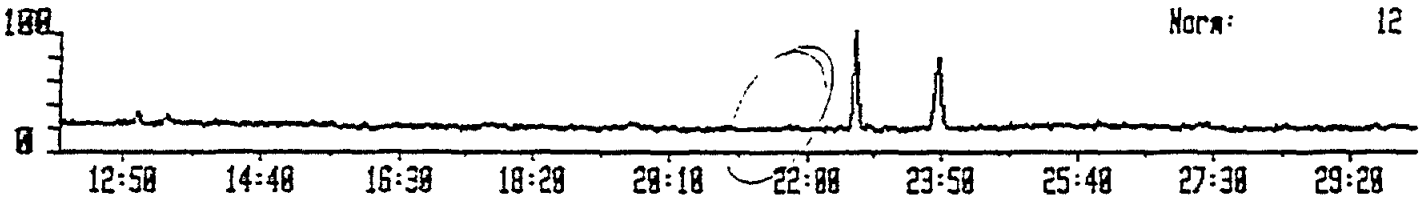
E802226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#198-R METHOD BLANK



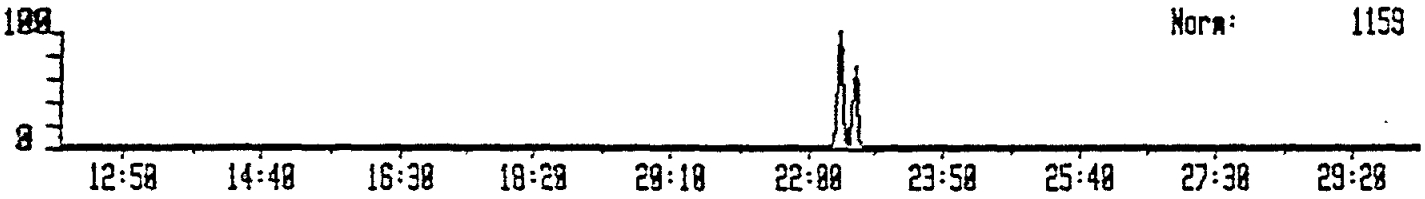
E802226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#198-R METHOD BLANK



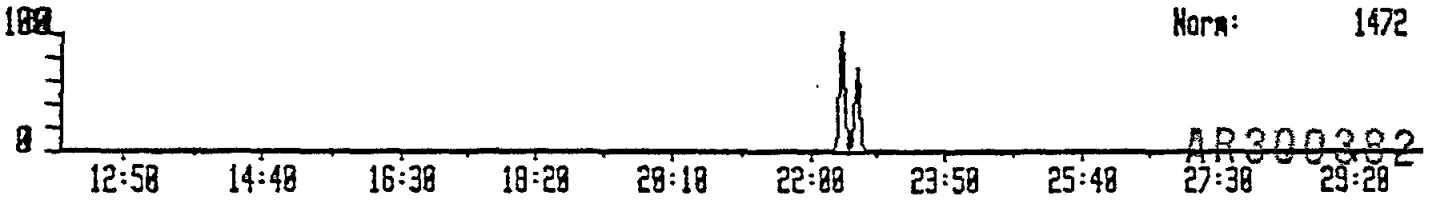
E802226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#198-R METHOD BLANK



E802226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#198-R METHOD BLANK



E802226 2-FEB-91 Sir:Voltage 70-E Sys: 8290IF80F
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#198-R METHOD BLANK



Method BLK 2/4

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002238 CLIENT ID....: SAS 5742C TLI NUMBER....: M. BLANK
CONCAL.....: E002230 SAMPLE ID....: METHOD BLANK
ANALYST.....: DR ANALYSIS DATE: 02/04/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: / /
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: / /
SPIKE FILE...: SP82805W SHIPMENT NO...: N/A

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				
12378-PeCDD	ND		0.08				
123478-HxCDD	ND		0.06				
123678-HxCDD	ND		0.06				
123789-HxCDD	ND		0.06				
1234678-HpCDD	ND		0.09				
OCDD	0.18				0.96	47:06	L
2378-TCDF	ND		0.03				
12378-PeCDF	ND		0.04				
23478-PeCDF	ND		0.04				
123478-HxCDF	ND		0.03				
123678-HxCDF	ND		0.03				
234678-HxCDF	ND		0.03				
123789-HxCDF	ND		0.04				
1234678-HpCDF	ND		0.05				
1234789-HpCDF	ND		0.06				
OCDF	ND		0.06				
TOTAL TCDD	EMPC			~~5.21~~	IR, CI		MM 3/6/91
TOTAL PeCDD	ND		0.08				
TOTAL HxCDD	ND		0.06				
TOTAL HpCDD	ND		0.09				
TOTAL TCDF	EMPC			0.22	IR		MM 3/6/91
TOTAL PeCDF	ND		0.04				
TOTAL HxCDF	ND		0.03				
TOTAL HpCDF	ND		0.05				

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	31.4	62.7	0.80	21:49	
13C12-2378-TCDD	30.4	60.8	0.79	22:35	
13C12-HxCDD 678	34.4	68.8	1.28	34:30	
13C12-HpCDF 678	66.7	66.7	1.06	38:49	
13C12-OCDD	64.1	64.1	0.91	47:04	

_____ __/__/__!

8280_RPT rev:3.01

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

AR300383

Page No. 1 Listing of E002238B.dbf
02/05/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.48	22:24	74.78	F	F	1.027	
304		*** Total ***		74.78	# of Peaks:		1	
316		0.80	21:49	8081.31	T	T	1.000	
316		*** Total ***		8081.31	# of Peaks:		1	
320		5.04	21:49	2073.19	F	F	0.966	
320		*** Total ***		2073.19	# of Peaks:		1	
332		0.79	22:23	6518.47	T	T	0.991	
		0.79	22:35	5024.22	T	T	1.000	
332		*** Total ***		11542.69	# of Peaks:		2	
390	D	7.82	38:49	100.99	F	F	1.125	RW 2-7-91 O/V
390		*** Total ***		100.99	# of Peaks:		1	
402		1.28	34:30	3602.47	T	T	1.000	
		1.27	35:06	5657.03	T	T	1.017	
402		*** Total ***		9259.50	# of Peaks:		2	
420		1.06	38:49	9153.27	T	T	1.000	
420		*** Total ***		9153.27	# of Peaks:		1	
424	D	5.32	38:49	2930.59	F	F	1.125	RW 2-7-91 O/V
424		*** Total ***		2930.59	# of Peaks:		1	
470		0.91	47:04	4329.49	T	T	1.000	
470		*** Total ***		4329.49	# of Peaks:		1	

*** End of Report ***

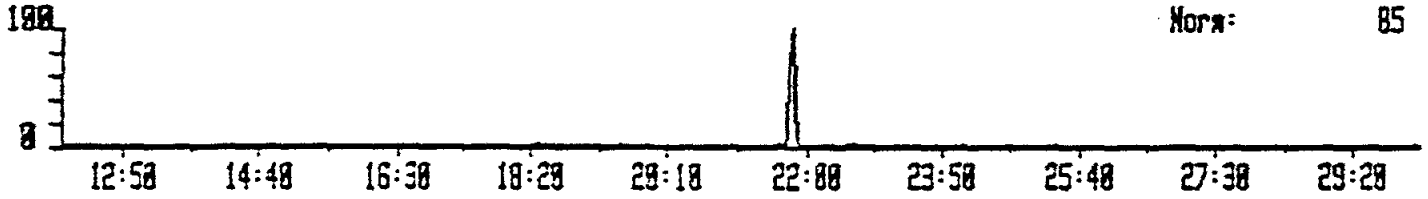
Flags:
D= Delete
O/W= Outside Retention time window
MI= Manual Integration

Add: 304 2.387 22:36 9.05 F F 1.036 RW 2-7-91 I
~~RW 1.994 RW 22:35 RW 7.24~~
458 0.961 47:06 10.51 T T 1.001 RW 2-7-91 I

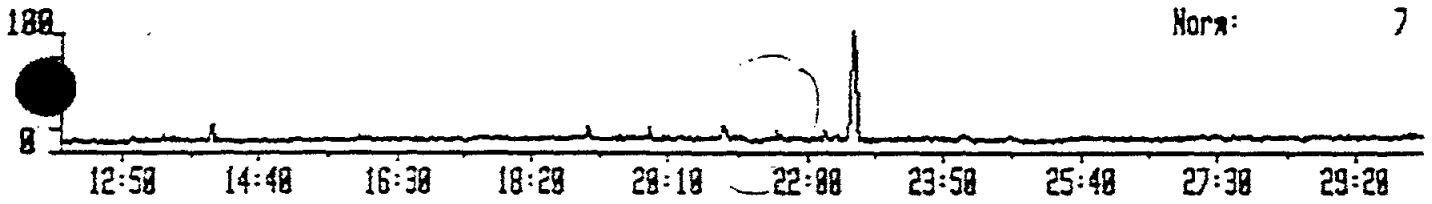
AR300384

E802238 4-FEB-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:TLH#281-WF METHOD BLANK

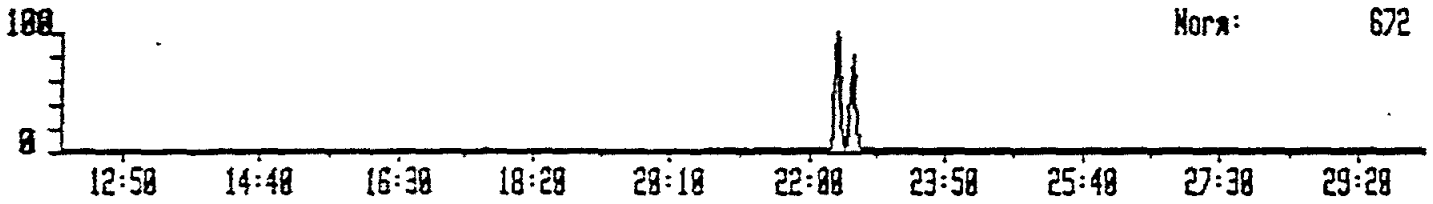
E802238 4-FEB-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:TLH#281-WF METHOD BLANK



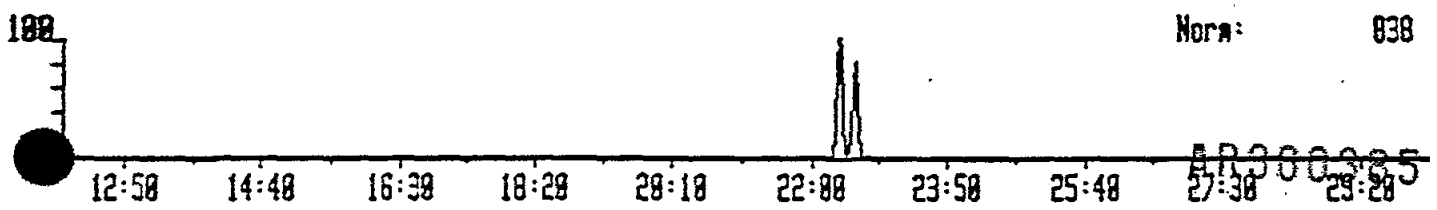
E802238 4-FEB-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:TLH#281-WF METHOD BLANK



E802238 4-FEB-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:TLH#281-WF METHOD BLANK



E802238 4-FEB-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:TLH#281-WF METHOD BLANK



AR300085

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/08/91

FILE NAME....: E002131	CLIENT ID....: SAS 5742C	TLI NUMBER....: 3-35-1A
CONCAL.....: E002130	SAMPLE ID....: DC045701	
ANALYST.....: XL	ANALYSIS DATE: 01/25/91	PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 1022.00 ml	SAMPLE MATRIX: WATER	DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91	SAMPLE ORIGIN: N/A	DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W		SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.10				___
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.1				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	0.22				1.20	41:01	_L_
OCDD	1.9				0.89	47:11	L,BL
2378-TCDF	ND		0.06				___
12378-PeCDF	ND		0.08				___
23478-PeCDF	ND		0.07				___
123478-HxCDF	ND		0.07				___
123678-HxCDF	ND		0.07				___
234678-HxCDF	0.12				1.19	34:09	_L_
123789-HxCDF	0.12				1.26	35:38	_L_
1234678-HpCDF	0.13				1.20	38:55	_L_
1234789-HpCDF	0.17				1.14	41:46	_L_
OCDF	0.40				0.89	47:24	_L_
TOTAL TCDD	EMPC			~~0.09~~ ND			IR, CI MM 3/[illegible]
TOTAL PeCDD	ND		0.2				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	0.22	1			1.20		___
TOTAL TCDF	EMPC			0.41			IR MM 3/7/91
TOTAL PeCDF	ND		0.08				___
TOTAL HxCDF	0.24	2			1.23		___
TOTAL HpCDF	0.29	2			1.17		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	20.4	41.7	0.81	21:52	___
13C12-2378-TCDD	19.1	39.1	0.81	22:39	_V_
13C12-HxCDD 678	23.5	48.1	1.28	34:36	___
13C12-HpCDF 678	43.5	44.5	1.06	38:54	___
13C12-OCDD	46.0	47.1	0.90	47:10	___

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANG
BL = FOUND IN BLANK AT CONCENTRATION < 2%
V = RECOVERY BELOW QC ADVISORY LIMIT;DATA VALID..

8280_RPT Rev 3.02

AR300386

DC045701

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.39	22:27	88.98	F	F	1.027	
304		*** Total ***		88.98	# of Peaks:		1	
316		0.81	21:52	4856.37	T	T	1.000	
316		*** Total ***		4856.37	# of Peaks:		1	
320		5.07	21:52	1482.24	F	F	0.965	
320		*** Total ***		1482.24	# of Peaks:		1	
332		0.80	22:27	6580.66	T	T	0.991	
		0.81	22:39	3157.00	T	T	1.000	
332		*** Total ***		9737.66	# of Peaks:		2	
390	D	7.78	38:55	83.06	F	F	1.125	AR 2-2-91 O/W
390		*** Total ***		83.06	# of Peaks:		1	
402	D	7.24	31:52	271.23	F	F	0.921	AR 2-2-91 O/W
		1.28	34:36	2497.95	T	T	1.000	
		1.27	35:12	5742.53	T	T	1.017	
402		*** Total ***		8511.71	# of Peaks:		3	
420		1.06	38:54	7086.24	T	T	1.000	
420		*** Total ***		7086.24	# of Peaks:		1	
424	D	3.29	38:54	2384.92	F	F	1.124	AR 2-2-91 O/W
424		*** Total ***		2384.92	# of Peaks:		1	
442	RW	~~[illegible]~~ 0.889	47:24	RW ~~[illegible]~~ 30.14	T	T	1.005	RW 2-4-91 MI
442		*** Total ***		29.06	# of Peaks:		1	
458		0.89	47:11	89.78	T	T	1.000	
458		*** Total ***		89.78	# of Peaks:		1	
470		0.90	47:10	3704.38	T	T	1.000	
470		*** End of Report ***		3704.38	# of Peaks:		1	

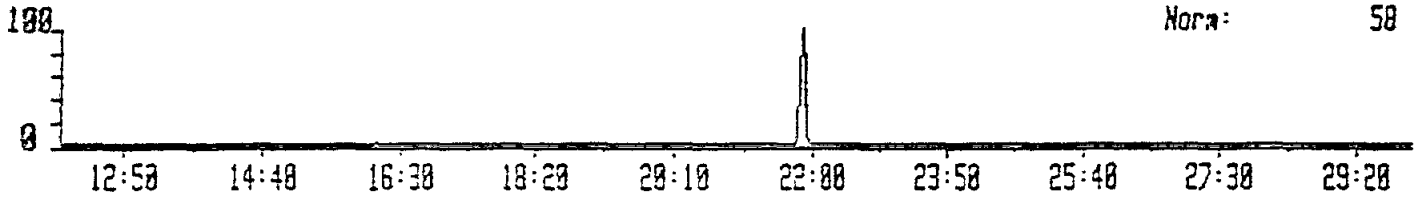
Flag:
D = delete
O/W = outside retention time or window
MI = Manual Integration

374 RW ~~304~~ Add	1.190	34:09	13.53	T	T	0.878	RW 2-4-91 MI
374	1.264	35:38	10.08	T	T	0.916	RW 2-4-91 MI
408	1.202	38:55	11.09	T	T	1.000	RW 2-4-91 MI
408	1.143	41:46	11.47	T	T	1.074	RW 2-4-91 MI
424	1.199	41:01	10.84	T	T	1.185	RW 2-4-91 MI
RW ~~44~~							

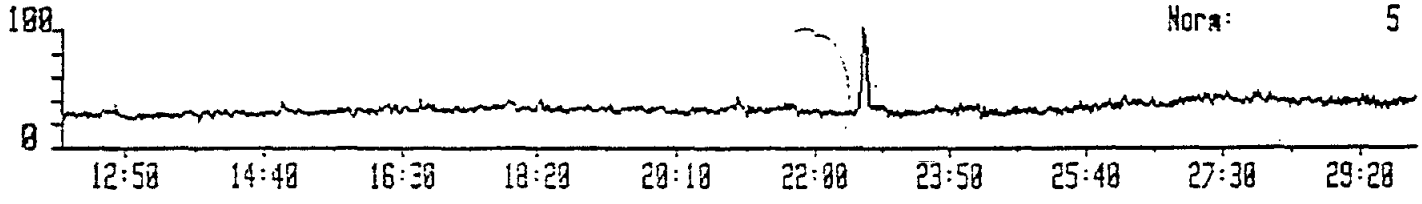
AR300387

E002131 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-1A TLH#198-W3 DC045701

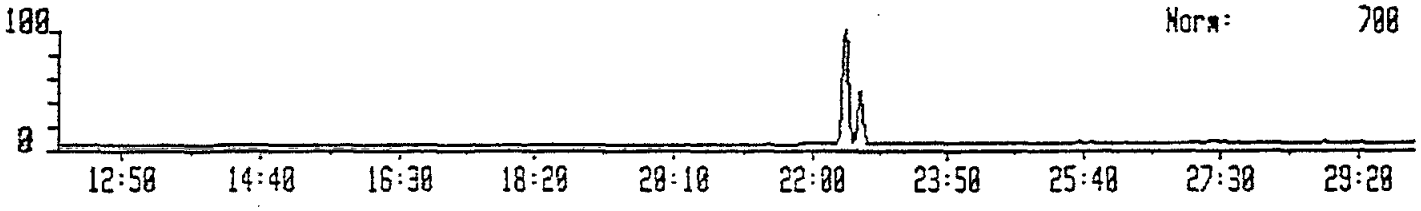
E002131 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-1A TLH#198-W3 DC045701



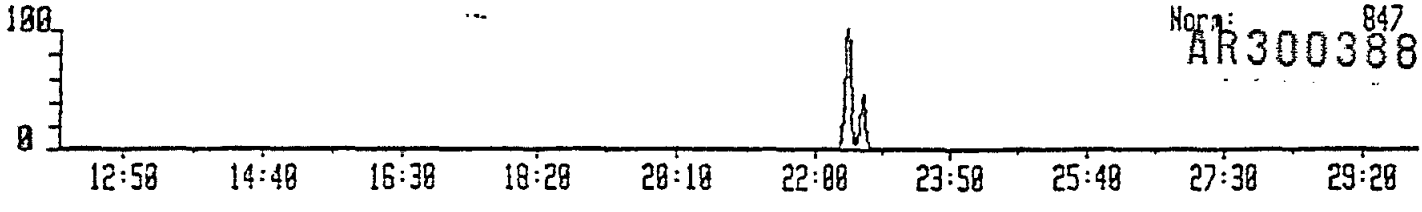
E002131 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-1A TLH#198-W3 DC045701



E002131 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-1A TLH#198-W3 DC045701



E002131 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-1A TLH#198-W3 DC045701



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/08/91

FILE NAME....: E002132 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-2B
CONCAL.....: E002130 SAMPLE ID....: DC045702
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 950.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82305W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.09				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.23				0.96	47:10	L,BL
2378-TCDF	ND		0.04				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.06				—
123678-HxCDF	ND		0.06				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.07				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.07				—
TOTAL TCDD	EMPC			~~6.24~~			IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.55			IR MM 3/7/91
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	20.6	39.2	0.80	21:53	V
13C12-2378-TCDD	19.3	36.6	0.77	22:40	V
13C12-HxCDD 678	24.0	45.6	1.27	34:36	—
13C12-HpCDF 678	41.0	38.9	1.06	38:55	V
13C12-OCDD	44.6	42.4	0.90	47:10	—

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN BLANK AT CONCENTRATION < 2%
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

8280_RP AR300389

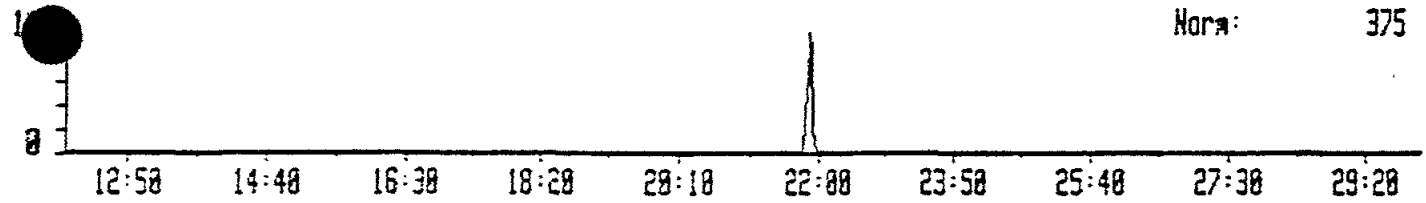
Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.19	22:27	131.95	F	F	1.026	
304		*** Total ***		131.95	# of Peaks:		1	
316		0.80	21:53	6587.13	T	T	1.000	
316		*** Total ***		6587.13	# of Peaks:		1	
320		4.97	21:53	1883.72	F	F	0.965	
320		*** Total ***		1883.72	# of Peaks:		1	
332		0.78	22:27	9440.93	T	T	0.990	
		0.77	22:40	4190.27	T	T	1.000	
332		*** Total ***		13631.20	# of Peaks:		2	
390		D 6.39	38:55	102.85	F	F	1.125	AV 2-2-91 C/W
390		*** Total ***		102.85	# of Peaks:		1	
402		1.27	34:36	3393.88	T	T	1.000	
		1.26	35:12	8226.86	T	T	1.017	
402		*** Total ***		11620.74	# of Peaks:		2	
420		1.06	38:55	8929.57	T	T	1.000	
420		*** Total ***		8929.57	# of Peaks:		1	
424		D 3.29	38:55	2910.75	F	F	1.125	AV 2-2-91 C/W
424		*** Total ***		2910.75	# of Peaks:		1	
470		0.90	47:10	4802.94	T	T	1.000	
470		*** End of Report ***		4802.94	# of Peaks:		1	

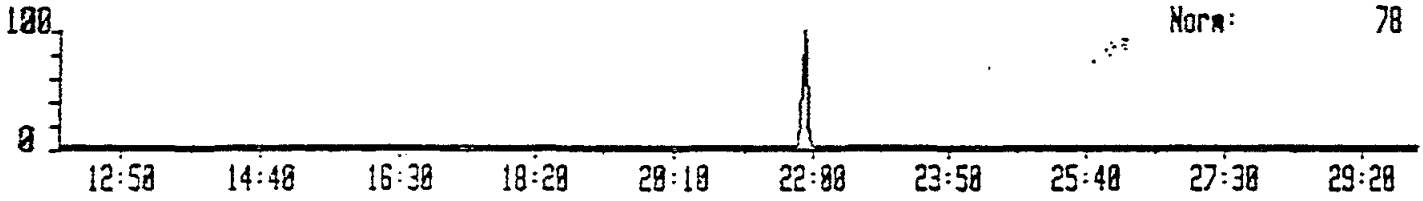
FLAG
D = DELETE
C/W = outside of retention time of window
MI = Manual Integrations

Add 304	2.296	22:40	9.49	F	F	1.036	RW 2-4-91 M
458	0.964	47:10	13.83	T	T	1.000	RW 2-4-91 M

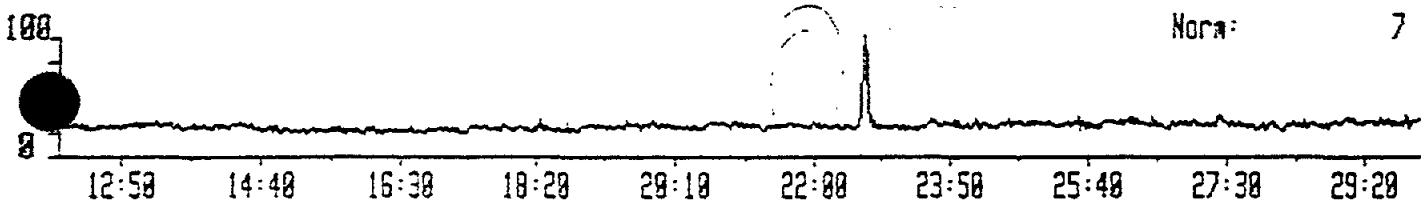
E002132 25-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-28 TLH#198-W3 DC045702



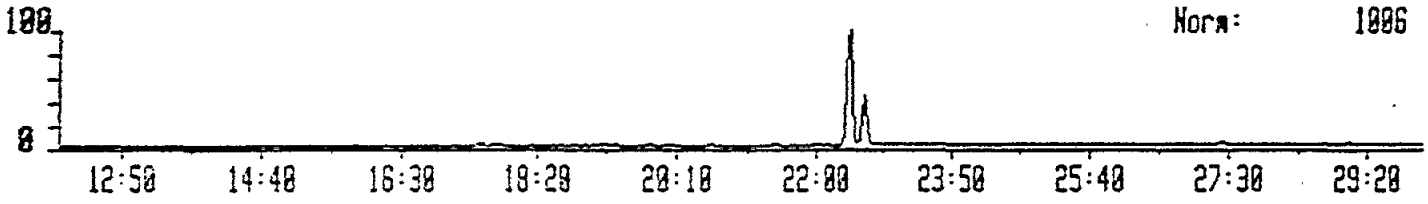
E002132 25-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-28 TLH#198-W3 DC045702



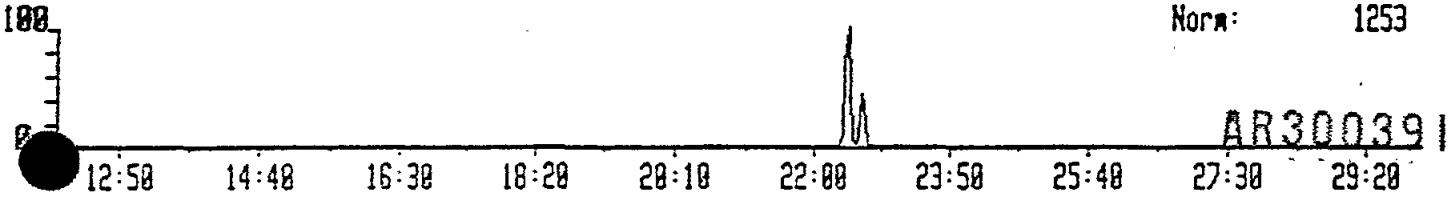
E002132 25-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-28 TLH#198-W3 DC045702



E002132 25-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-28 TLH#198-W3 DC045702



E002132 25-JAN-91 Sir:Voltage 70-E Sys: 8290IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-28 TLH#198-W3 DC045702



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002125 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-3A
CONCAL.....: E002115 SAMPLE ID....: DC045703
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 975.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				—
12378-PeCDD	ND		0.4				—
123478-HxCDD	ND		0.3				—
123678-HxCDD	ND		0.3				—
123789-HxCDD	ND		0.3				—
1234678-HpCDD	ND		0.4				—
OCDD	0.50				0.97	48:19	L,BL
2378-TCDF	ND		0.2				—
12378-PeCDF	ND		0.2				—
23478-PeCDF	ND		0.2				—
123478-HxCDF	ND		0.2				—
123678-HxCDF	ND		0.1				—
234678-HxCDF	ND		0.1				—
123789-HxCDF	ND		0.2				—
1234678-HpCDF	ND		0.2				—
1234789-HpCDF	ND		0.3				—
OCDF	ND		0.3				—
TOTAL TCDD	EMPC			~~0.8~~ ND			IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.4				—
TOTAL HxCDD	ND		0.3				—
TOTAL HpCDD	ND		0.4				—
TOTAL TCDF	EMPC			0.63			IR MM 3/7/91
TOTAL PeCDF	ND		0.2				—
TOTAL HxCDF	ND		0.1				—
TOTAL HpCDF	ND		0.2				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	18.6	36.2	0.81	22:40	_V_
13C12-2378-TCDD	19.0	37.0	0.79	23:27	_V_
13C12-HxCDD 678	22.6	44.0	1.26	35:33	—
13C12-HpCDF 678	46.9	45.7	1.06	39:55	—
13C12-OCDD	41.8	40.7	0.90	48:18	—

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

8280_RPT rev:3.02

AR300392

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.12	23:15	109.58	F	F	1.026	
304		*** Total ***		109.58	# of Peaks:		1	
316		0.81	22:40	4287.97	T	T	1.000	
316		*** Total ***		4287.97	# of Peaks:		1	
320		4.84	22:40	1400.37	F	F	0.967	
320		*** Total ***		1400.37	# of Peaks:		1	
332		0.79	23:15	6390.52	T	T	0.991	
		0.79	23:27	2837.59	T	T	1.000	
332		*** Total ***		9228.11	# of Peaks:		2	
390		D 4.28	39:56	91.72	F	F	1.123	AM 2-2-91 O/W
390		*** Total ***		91.72	# of Peaks:		1	
402		1.26	35:33	2338.86	T	T	1.000	
		1.25	38:10	5865.74	T	T	1.017	
402		*** Total ***		8204.60	# of Peaks:		2	
420		1.06	39:55	6157.12	T	T	1.000	
420		*** Total ***		6157.12	# of Peaks:		1	
424		D 3.18	39:55	1905.63	F	F	1.123	AM 2-2-91 O/W
424		*** Total ***		1905.63	# of Peaks:		1	
470		0.90	48:18	3073.27	T	T	1.000	
470		*** Total ***		3073.27	# of Peaks:		1	

*** End of Report ***

FLAG:
D= Delete
O/W = outside of retention time or window.
MI = Manual Integration

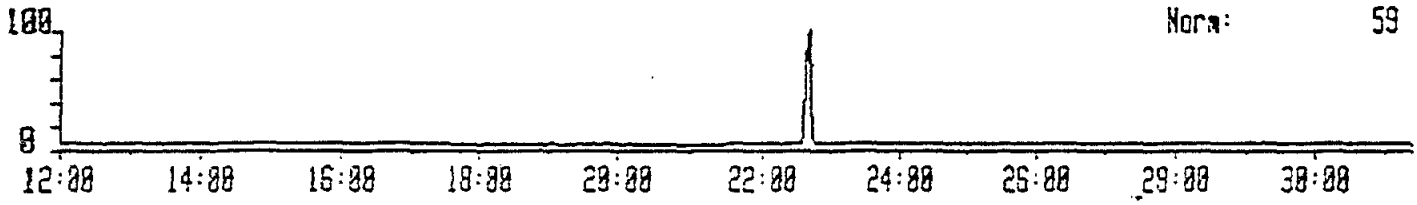
Add ~~304~~ 458 0.972 48:19 20.27 T T 1.000 RW 2-4-91 MI

:P 2791

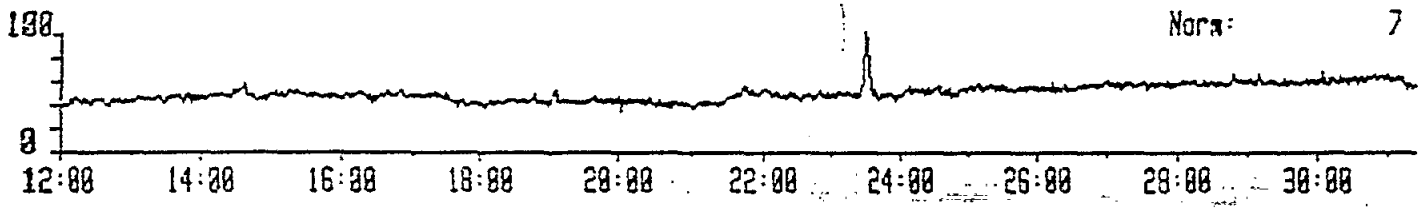
AR300393

E002125 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-3A TLH#198-W3 DC845783

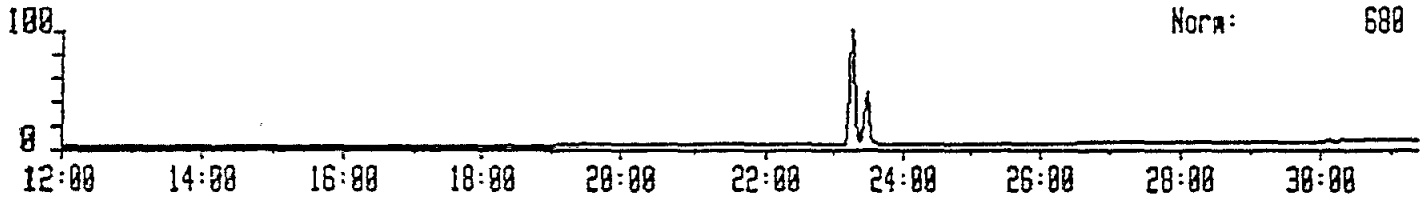
E002125 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-3A TLH#198-W3 DC845783



E002125 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-3A TLH#198-W3 DC845783

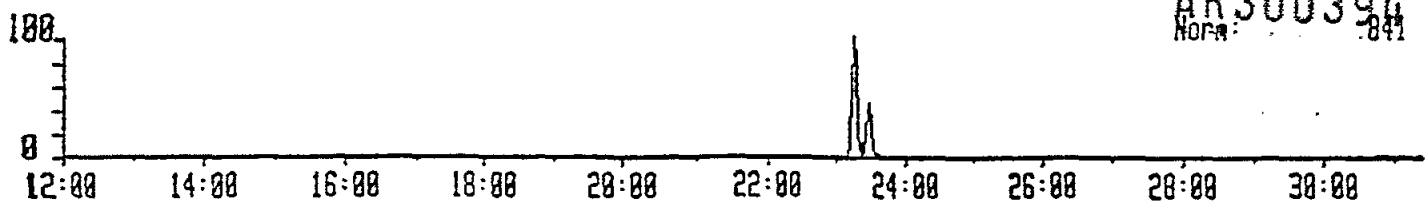


E002125 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-3A TLH#198-W3 DC845783



E002125 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBOF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-3A TLH#198-W3 DC845783

AR300394



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002126
CONCAL.....: E002115
ANALYST.....: XL
SAMPLE SIZE..: 970.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP8280SW

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC045703MS
ANALYSIS DATE: 01/24/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-35-3BMS
PROJECT NUMBER: 198-W3
DATE RECEIVED.: 11/14/90
DATE COLLECTED: 11/13/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	48.2				0.79	23:02	—	
12378-PeCDD	53.6				1.56	29:02	—	
123478-HxCDD	118				1.23	34:58	—	
123678-HxCDD	117				1.24	35:08	—	
123789-HxCDD	119				1.24	35:45	—	
1234678-HpCDD	123				1.05	41:34	—	
OCDD	227				0.89	47:52	BL	
2378-TCDF	49.1				0.77	22:14	—	
12378-PeCDF	51.9				1.58	27:20	—	
23478-PeCDF	49.8				1.57	28:28	—	
123478-HxCDF	121				1.23	33:29	—	
123678-HxCDF	117				1.24	33:41	—	
234678-HxCDF	118				1.22	34:42	—	
123789-HxCDF	114				1.24	36:10	—	
1234678-HpCDF	118				1.04	39:29	—	
1234789-HpCDF	114				1.04	42:22	—	
OCDF	217				0.88	48:05	—	
TOTAL TCDD	48.2	1		~~53.24~~	0.79	IR, CI	—	MM 3/6/91
TOTAL PeCDD	53.6	1			1.56		—	
TOTAL HxCDD	355	3			1.24		—	
TOTAL HpCDD	123	1			1.05		—	
TOTAL TCDF	49.7	2		~~50.15~~ 0.44	0.75	IR	—	MM 3/6/91
TOTAL PeCDF	105	6		~~106~~ 0.48	1.54	IR	—	
TOTAL HxCDF	470	4			1.23		—	
TOTAL HpCDF	232	2			1.04		—	

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.4	43.4	0.79	22:13	—
13C12-2378-TCDD	22.2	43.1	0.79	23:02	—
13C12-HxCDD 678	25.6	49.7	1.27	35:07	—
13C12-HpCDF 678	49.9	48.4	1.06	39:28	—
13C12-OCDD	42.3	41.0	0.90	47:51	—

8280_RPT rev:3.02

FLAG: = FOUND IN BLANK AT CONCENTRATION < 2%.

AR300395

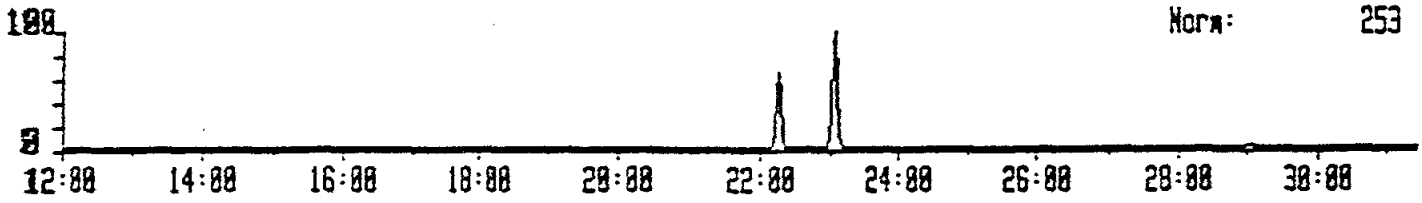
D C045703MS

Matched GC Peaks / Ratio / Ret. Time

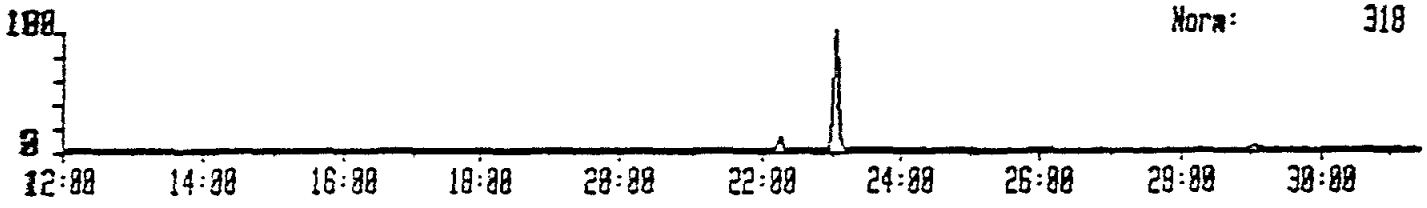
M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.73	21:49	51.95	T	F	0.982	
		0.77	22:14	4133.72	T	T	1.001	
		2.07	22:49	63.84	F	F	1.027	
304		*** Total ***		4249.51	# of Peaks:		3	
316		0.79	22:13	3671.45	T	T	1.000	
316		*** Total ***		3671.45	# of Peaks:		1	
320		4.83	22:13	860.71	F	F	0.965	
		0.79	23:02	2552.58	T	T	1.000	
320		*** Total ***		3413.29	# of Peaks:		2	
332		0.79	22:48	4619.40	T	T	0.990	
		0.79	23:02	2387.07	T	T	1.000	
332		*** Total ***		7006.47	# of Peaks:		2	
340		1.37	26:05	55.47	T	F	1.174	
		1.70	26:47	27.59	T	F	1.206	
		1.58	27:20	2769.50	T	T	1.230	
		2.19	27:36	32.24	F	F	1.242	
		1.57	27:48	63.92	T	F	1.251	
		1.57	28:28	2670.22	T	T	1.281	
		1.43	28:41	51.10	T	F	1.291	
	D	1.27	30:03	27.75	F	F	1.353	AN 2-2-91 O/W
340		*** Total ***		5697.79	# of Peaks:		8	
356		1.56	29:02	1449.12	T	T	1.260	
356		*** Total ***		1449.12	# of Peaks:		1	
374	D	1.50	31:53	16.25	F	F	0.808	SP 2-7-91 S/W
		1.23	33:29	8241.58	T	T	0.848	
		1.24	33:41	8666.68	T	T	0.853	
		1.22	34:42	9709.83	T	T	0.879	
		1.24	36:10	6730.77	T	T	0.916	
	D	1.26	39:30	425.49	T	F	1.001	AN 2-2-91 O/W
374		*** Total ***		33790.60	# of Peaks:		6	
390		1.23	34:58	4492.62	T	T	0.996	
		1.24	35:08	4503.04	T	T	1.000	
		1.24	35:45	4700.79	T	T	1.018	
	D	1.22	41:35	281.74	T	F	1.184	AN 2-2-91 O/W
390		*** Total ***		13978.19	# of Peaks:		4	
402		1.27	35:07	1691.29	T	T	1.000	
		1.25	35:43	3723.38	T	T	1.017	
402		*** Total ***		5414.67	# of Peaks:		2	
408		1.04	39:29	6387.07	T	T	1.000	
		1.04	42:22	4866.41	T	T	1.073	
408		*** Total ***		11253.48	# of Peaks:		2	
420		1.06	39:28	4157.01	T	T	1.000	
420		*** Total ***		4157.01	# of Peaks:		1	

AR300396

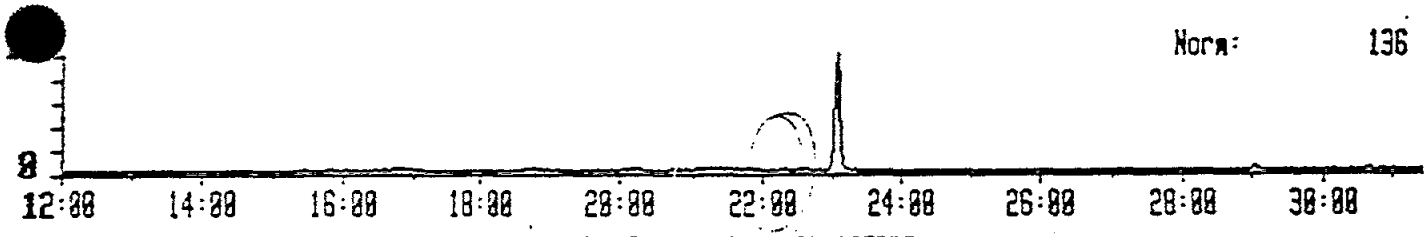
E002126 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-38MS TLH#198-W3 DC045703MS



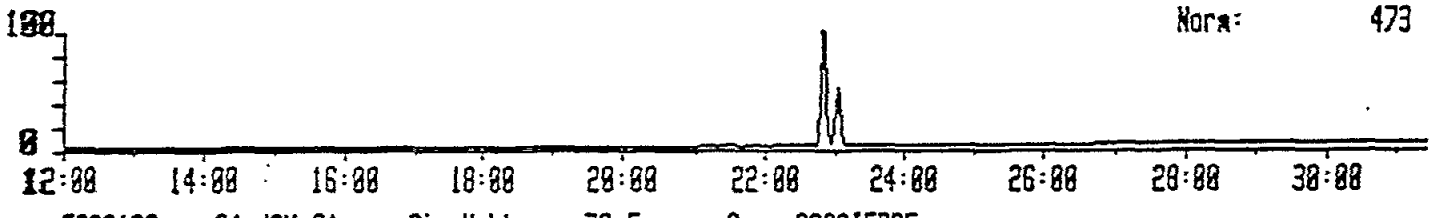
E002126 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-38MS TLH#198-W3 DC045703MS



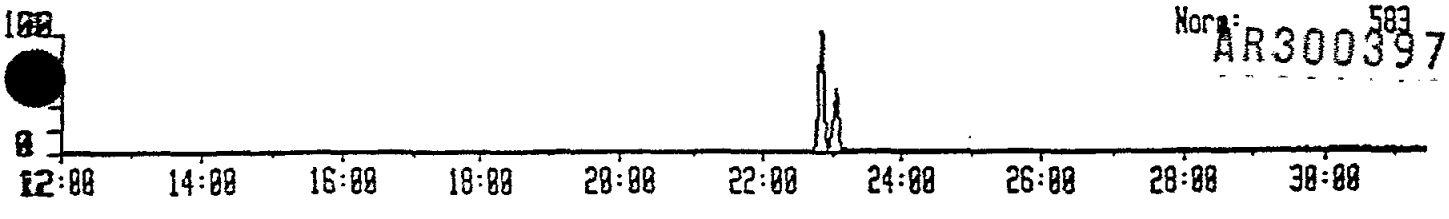
E002126 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-38MS TLH#198-W3 DC045703MS



E002126 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-38MS TLH#198-W3 DC045703MS



E002126 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-38MS TLH#198-W3 DC045703MS



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/08/91

FILE NAME....: E002127 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-3CMSD
CONCAL.....: E002115 SAMPLE ID....: DC0 45703 MSD
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 965.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS	
2378-TCDD	46.8				0.79	23:26		
12378-PeCDD	54.3				1.55	29:25		
123478-HxCDD	114				1.23	35:22		
123678-HxCDD	120				1.22	35:32		
123789-HxCDD	120				1.22	36:09		
1234678-HpCDD	107				1.05	41:58		
OCDD	226				0.89	48:17	BL	
2378-TCDF	48.8				0.76	22:39		
12378-PeCDF	51.0				1.56	27:45		
23478-PeCDF	50.2				1.56	28:51		
123478-HxCDF	132				1.21	33:53		
123678-HxCDF	132				1.21	34:05		
234678-HxCDF	133				1.21	35:06		
123789-HxCDF	126				1.22	36:34		
1234678-HpCDF	119				1.04	39:53		
1234789-HpCDF	121				1.05	42:46		
OCDF	214				0.87	48:31		
TOTAL TCDD	46.8	1		~~51.0~~ ND	0.79	IR, CI		MM 3/6/91
TOTAL PeCDD	54.3	1			1.55			
TOTAL HxCDD	354	3			1.22			
TOTAL HpCDD	107	1			1.05			
TOTAL TCDF	49.3	3		~~43.69~~ 0.37	0.78	IR		MM 3/6/91
TOTAL PeCDF	104	8			1.53			
TOTAL HxCDF	524	5			1.21			
TOTAL HpCDF	239	3			1.03			

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	21.0	40.6	0.79	22:38	
13C12-2378-TCDD	21.2	40.8	0.78	23:25	
13C12-HxCDD 678	24.9	48.0	1.28	35:31	
13C12-HpCDF 678	42.2	40.7	1.05	39:52	
13C12-OCDD	43.9	42.4	0.89	48:16	

FLAG: BL = FOUND IN BLANK AT CONCENTRATION < 2%.
8280_RPT rev:3.02

AR300398

DC 045703 MSD

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.71	22:13	46.59	T	F	0.982	
		0.76	22:39	4401.18	T	T	1.001	
		2.14	23:13	59.61	F	F	1.026	
304		*** Total ***		4507.38	# of Peaks:		3	
316		0.79	22:38	3957.68	T	T	1.000	
316		*** Total ***		3957.68	# of Peaks:		1	
320		4.35	22:38	799.04	F	F	0.967	
		0.79	23:26	2688.16	T	T	1.001	
320		*** Total ***		3487.20	# of Peaks:		2	
332		0.78	23:13	5285.76	T	T	0.991	
		0.78	23:25	2590.41	T	T	1.000	
332		*** Total ***		7876.17	# of Peaks:		2	
340		1.55	26:28	41.47	T	F	1.169	
		1.54	27:11	24.52	T	F	1.201	
		1.56	27:45	2934.77	T	T	1.226	
		1.49	27:59	28.79	T	F	1.236	
		1.62	28:11	51.31	T	F	1.245	
		1.56	28:51	2894.45	T	T	1.275	
		1.56	29:04	40.62	T	F	1.284	
		1.33	30:27	26.59	T	F	1.345	
340		*** Total ***		6042.52	# of Peaks:		8	
356		1.55	29:25	1598.29	T	T	1.256	
356		*** Total ***		1598.29	# of Peaks:		1	
374		1.22	32:16	14.80	T	F	0.809	
		1.21	33:53	10357.52	T	T	0.850	
		1.21	34:05	11295.19	T	T	0.855	
		1.21	35:06	12569.86	T	T	0.880	
		1.22	36:34	8624.93	T	T	0.917	
	D	1.28	39:54	462.75	T	F	1.001	AN 2-2-91 o/w
374		*** Total ***		43325.05	# of Peaks:		6	
390		1.23	35:22	5684.39	T	T	0.996	
		1.22	35:32	6091.56	T	T	1.000	
		1.22	36:09	6274.97	T	T	1.018	
	D	1.26	41:59	308.60	T	F	1.182	AN 2-2-91 o/w
390		*** Total ***		18359.52	# of Peaks:		4	
402		1.28	35:31	2242.38	T	T	1.000	
		1.27	36:07	5133.02	T	T	1.017	
402		*** Total ***		7375.40	# of Peaks:		2	
408		1.04	39:53	7393.97	T	T	1.000	
		1.05	42:46	5904.32	T	T	1.073	
408		*** Total ***		13298.29	# of Peaks:		2	
420		1.05	39:52	4801.37	T	T	1.000	
420		*** Total ***		4801.37	# of Peaks:		1	

AR300399

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
424		D 3.29	39:52	1122.23	F	F	1.122	AT 2-2-91 O/W
		1.05	41:58	3904.86	T	T	1.182	
424		*** Total ***		5027.09	# of Peaks:		2	
442		0.87	48:31	11430.80	T	T	1.005	
442		*** Total ***		11430.80	# of Peaks:		1	
458		0.89	48:17	7968.49	T	T	1.000	
458		*** Total ***		7968.49	# of Peaks:		1	
470		0.89	48:16	2770.23	T	T	1.000	
470		*** Total ***		2770.23	# of Peaks:		1	

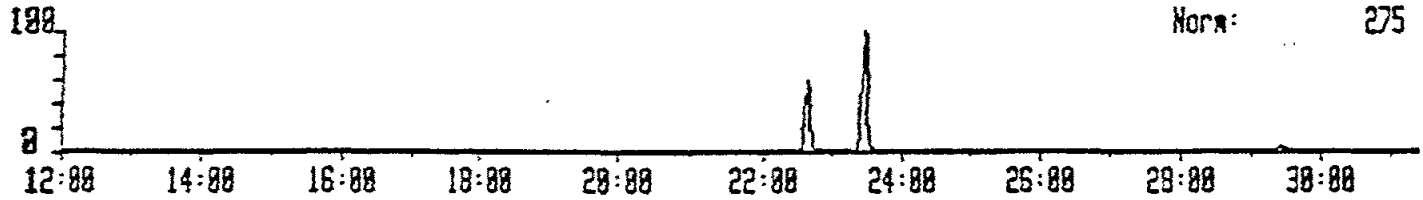
*** End of Report ***

FL46
D=Delete
O/W = outside of retention time of window.
MI = Manual Integrations

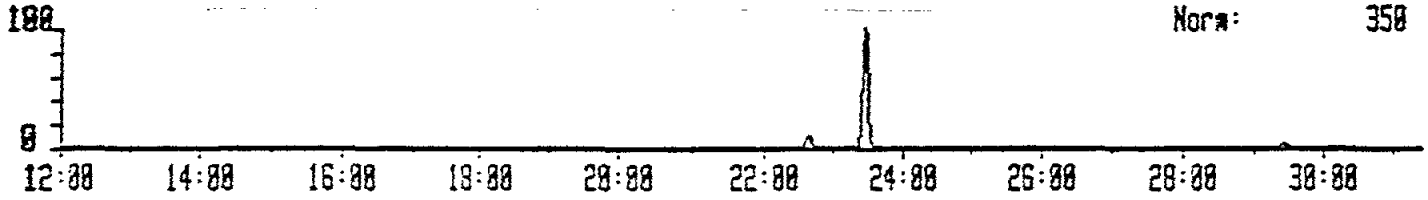
Add 304		0.876	21:35	8.63	T	F	0.954	RW 2-4-91 M
408		1.004	40:40	17.40	T	F	1.020	RW 2-8-[illegible] M

AR300400

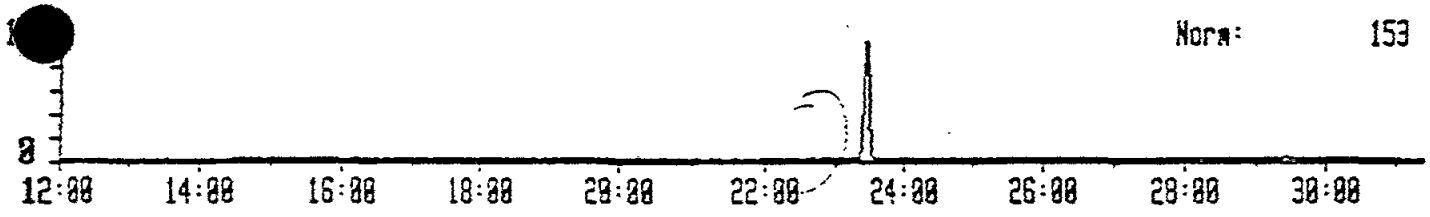
E002127 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-3CMSD TLH#198-W3 DC045703MSD



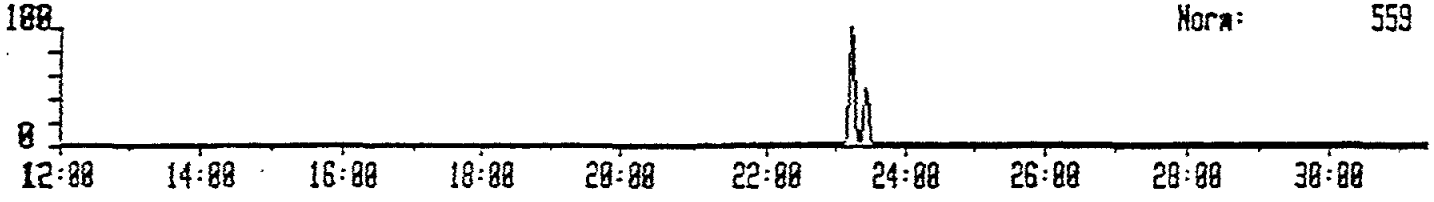
E002127 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-3CMSD TLH#198-W3 DC045703MSD



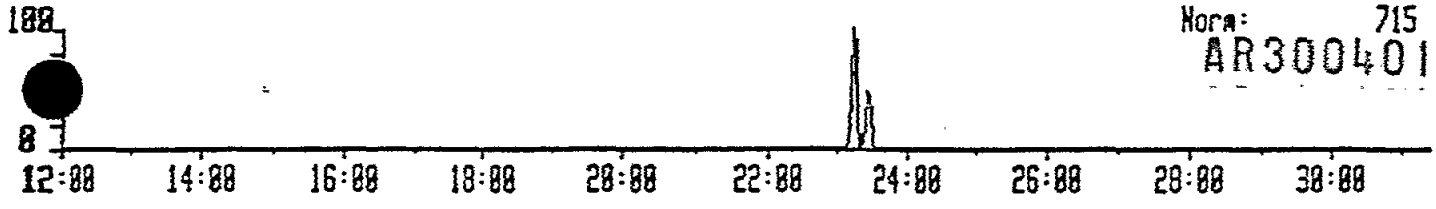
E002127 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-3CMSD TLH#198-W3 DC045703MSD



E002127 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-3CMSD TLH#198-W3 DC045703MSD



E002127 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-3CMSD TLH#198-W3 DC045703MSD



AR300401

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/09/91

FILE NAME....: E002133 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-35-4A
CONCAL.....: E002130 SAMPLE ID....: DC045704
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 940.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.08				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.09				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.27				0.90	47:14	L,BL
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.06				—
123478-HxCDF	ND		0.06				—
123678-HxCDF	ND		0.06				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.07				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.07				—
TOTAL TCDD	EMPC			~~0.21~~			IR cI MM 3/7/91
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.52			IR MM 3/7/91
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.6	42.6	0.80	21:53	—
13C12-2378-TCDD	21.0	39.5	0.81	22:40	V
13C12-HxCDD 678	25.5	48.0	1.27	34:37	—
13C12-HpCDF 678	44.2	41.5	1.05	38:57	—
13C12-OCDD	50.2	47.2	0.90	47:13	—

FLAG: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA VALID.

8280_RPT rev:3.02

AR300402

DC 045704

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.27	22:28	153.89	F	F	1.027	
304		*** Total ***		153.89	# of Peaks:		1	
316		0.80	21:53	8174.22	T	T	1.000	
316		*** Total ***		8174.22	# of Peaks:		1	
320		4.98	21:53	2306.26	F	F	0.965	
320		*** Total ***		2306.26	# of Peaks:		1	
332		0.80	22:27	10900.53	T	T	0.990	
		0.81	22:40	5278.89	T	T	1.000	
332		*** Total ***		16179.42	# of Peaks:		2	
340		D 1.03	23:46	19.82	F	F	1.086	RW 2-4-91 S/N
340		*** Total ***		19.82	# of Peaks:		1	
390		D 5.36	38:57	125.25	F	F	1.125	AT 2-2-91 O/W
390		*** Total ***		125.25	# of Peaks:		1	
402		1.27	34:37	4612.94	T	T	1.000	
		1.26	35:13	10615.83	T	T	1.017	
402		*** Total ***		15228.77	# of Peaks:		2	
420		1.05	38:57	12352.38	T	T	1.000	
420		*** Total ***		12352.38	# of Peaks:		1	
424		D 3.27	38:57	3611.88	F	F	1.125	AT 2-2-91 O/W
424		*** Total ***		3611.88	# of Peaks:		1	
458		0.90	47:14	22.23	T	T	1.000	
458		*** Total ***		22.23	# of Peaks:		1	
470		0.90	47:13	6899.89	T	T	1.000	
470		*** Total ***		6899.89	# of Peaks:		1	

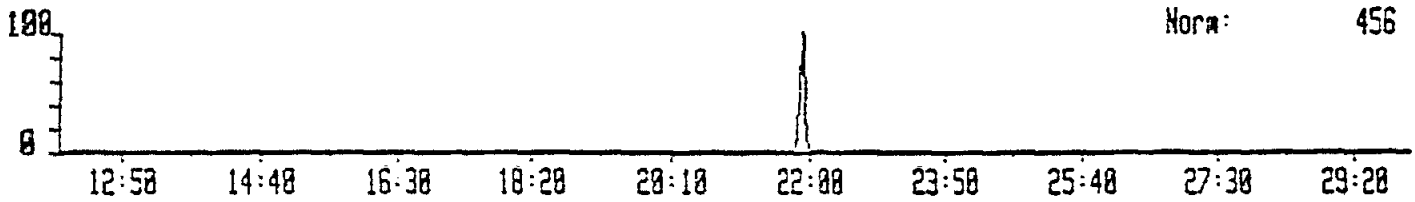
*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time of window
S/N = Signal to noise not met
MI = Manual Integration

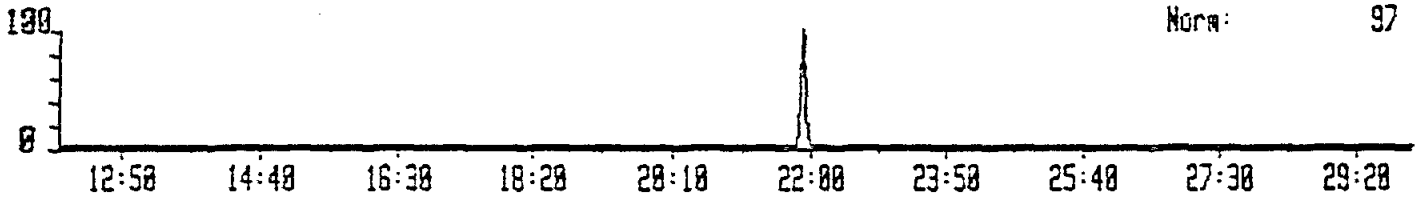
Add 304 (2.048) 22:41 11.79 F F 1.037 ~~1.006~~ RW 2-4-91 MI

AR300403

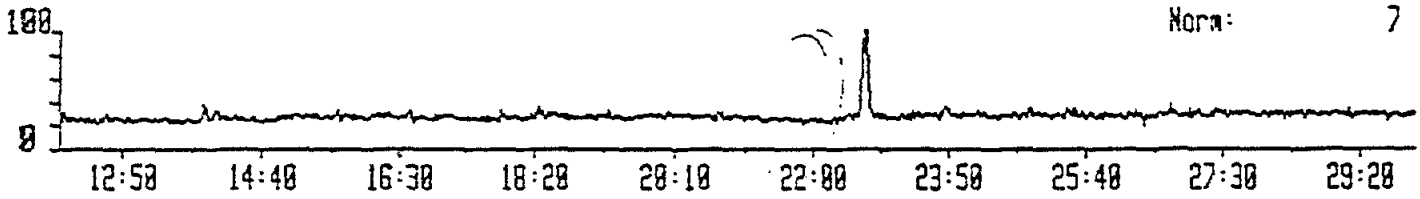
E002133 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-4A TLH#198-W3 DC045704



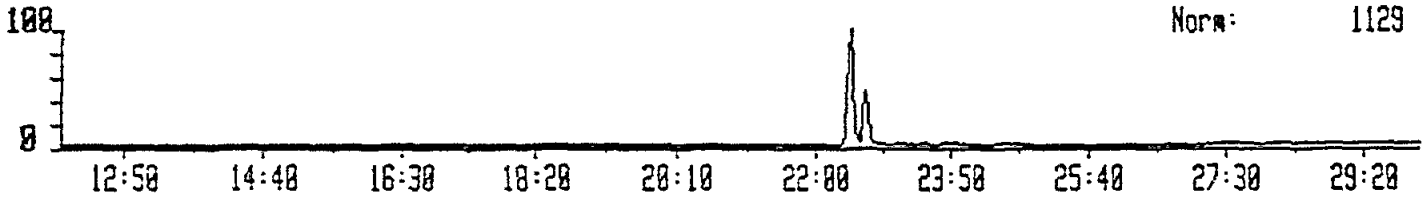
E002133 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-4A TLH#198-W3 DC045704



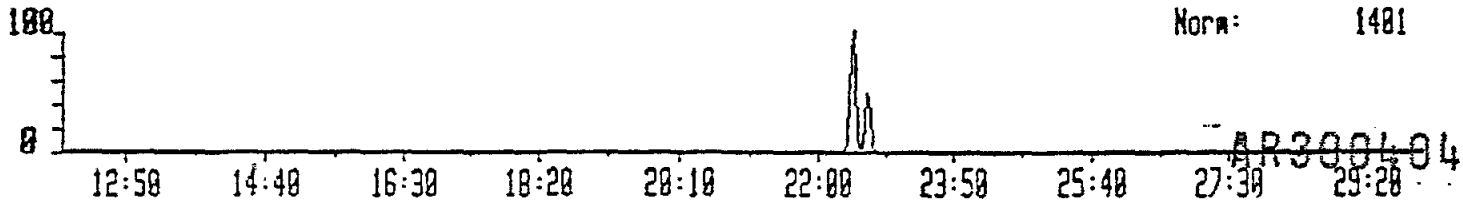
E002133 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-4A TLH#198-W3 DC045704



E002133 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-4A TLH#198-W3 DC045704



E002133 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-4A TLH#198-W3 DC045704



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/09/91

FILE NAME....: E002134
CONCAL.....: E002130
ANALYST.....: XL
SAMPLE SIZE..: 930.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82805W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC045705
ANALYSIS DATE: 01/25/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-35-5C
PROJECT NUMBER: 198-W3
DATE RECEIVED.: 11/14/90
DATE COLLECTED: 11/13/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	ND		0.1				___
123789-HxCDD	ND		0.1				___
1234678-HpCDD	ND		0.1				___
OCDD	0.40				0.80	47:07	L,BL
2378-TCDF	ND		0.06				___
12378-PeCDF	ND		0.08				___
23478-PeCDF	ND		0.07				___
123478-HxCDF	ND		0.08				___
123678-HxCDF	ND		0.07				___
234678-HxCDF	ND		0.06				___
123789-HxCDF	ND		0.09				___
1234678-HpCDF	ND		0.08				___
1234789-HpCDF	ND		0.1				___
OCDF	ND		0.10				___
TOTAL TCDD	EMPC			~~6.09~~			IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	ND		0.1				___
TOTAL HpCDD	ND		0.1				___
TOTAL TCDF	EMPC			0.43			IR MM 3/7/91
TOTAL PeCDF	ND		0.07				___
TOTAL HxCDF	ND		0.07				___
TOTAL HpCDF	ND		0.09				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	23.9	44.4	0.80	21:47	___
13C12-2378-TCDD	22.2	41.3	0.79	22:34	___
13C12-HxCDD 678	26.9	50.1	1.27	34:32	___
13C12-HpCDF 678	47.0	43.7	1.06	38:50	___
13C12-OCDD	51.1	47.5	0.90	47:06	___

8280_RPT

AR300405

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

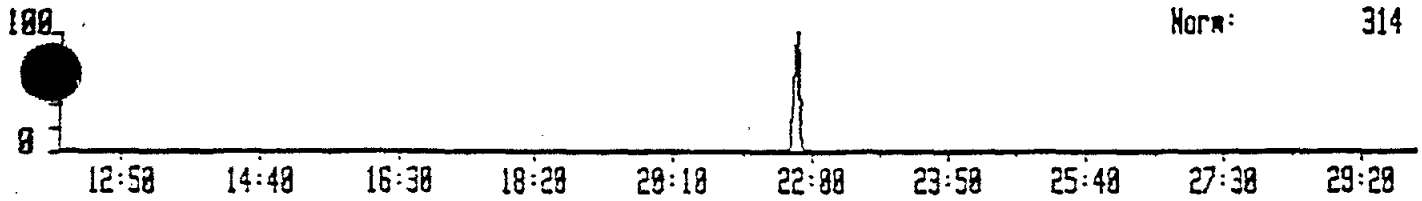
Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.23	22:23	106.12	F	F	1.028	
304		*** Total ***		106.12	# of Peaks:		1	
316		0.80	21:47	6337.74	T	T	1.000	
316		*** Total ***		6337.74	# of Peaks:		1	
320		4.86	21:47	1691.39	F	F	0.965	
320		*** Total ***		1691.39	# of Peaks:		1	
332		0.79	22:22	8047.96	T	T	0.991	
		0.79	22:34	4050.82	T	T	1.000	
332		*** Total ***		12098.78	# of Peaks:		2	
390		D 5.69	38:51	99.44	F	F	1.125	AH 2-2-91 O/W
390		*** Total ***		99.44	# of Peaks:		1	
402		1.27	34:32	3254.49	T	T	1.000	
		1.26	35:07	7178.44	T	T	1.017	
402		*** Total ***		10432.93	# of Peaks:		2	
420		1.06	38:50	8741.13	T	T	1.000	
420		*** Total ***		8741.13	# of Peaks:		1	
424		D 3.27	38:50	2727.15	F	F	1.125	AH 2-2-91 O/W
424		*** Total ***		2727.15	# of Peaks:		1	
458		0.80	47:07	21.49	T	T	1.000	
458		*** Total ***		21.49	# of Peaks:		1	
470		0.90	47:06	4700.14	T	T	1.000	
470		*** Total ***		4700.14	# of Peaks:		1	

*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time of window.

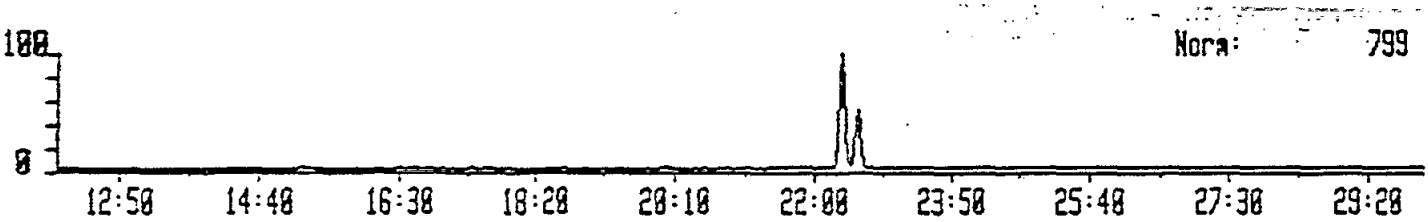
E802134 25-JAN-91 Sir:Voltage 70-E Sys: 8280IF80F
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-35-5C TLH#198-W3 DC845785



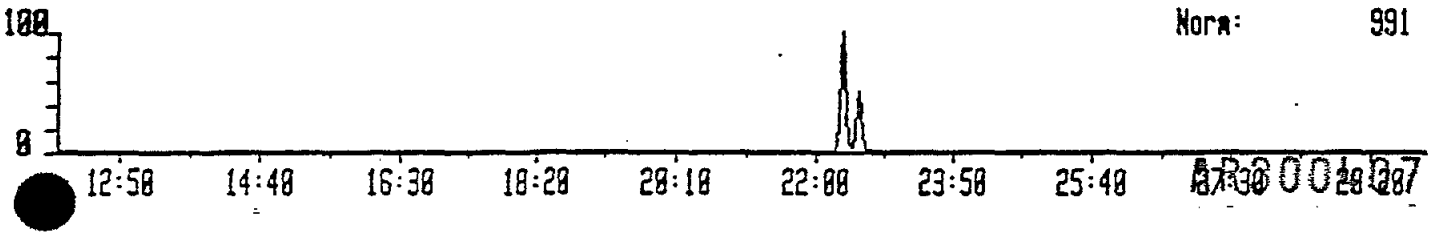
E802134 25-JAN-91 Sir:Voltage 70-E Sys: 8280IF80F
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-35-5C TLH#198-W3 DC845785

E802134 25-JAN-91 Sir:Voltage 70-E Sys: 8280IF80F
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-35-5C TLH#198-W3 DC845785

E802134 25-JAN-91 Sir:Voltage 70-E Sys: 8280IF80F
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-35-5C TLH#198-W3 DC845785



E802134 25-JAN-91 Sir:Voltage 70-E Sys: 8280IF80F
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-35-5C TLH#198-W3 DC845785



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/09/91

FILE NAME....: E002136 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-36-2C
CONCAL.....: E002130 SAMPLE ID....: DC045706
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 860.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.08				—
123678-HxCDD	ND		0.09				—
123789-HxCDD	ND		0.08				—
1234678-HpCDD	ND		0.1				—
OCDD	0.32				0.97	47:07	L,BL
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.06				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.06				—
123678-HxCDF	ND		0.05				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.06				—
1234678-HpCDF	ND		0.06				—
1234789-HpCDF	ND		0.08				—
OCDF	ND		0.07				—
TOTAL TCDD	EMPC			~~6.58~~			IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.09				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.58			IR MM 3/7/91
TOTAL PeCDF	ND		0.06				—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.07				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	25.6	44.0	0.80	21:49	—
13C12-2378-TCDD	23.8	40.9	0.78	22:36	—
13C12-HxCDD 678	28.3	48.8	1.27	34:33	—
13C12-HpCDF 678	49.6	42.7	1.05	38:51	—
13C12-OCDD	55.5	47.7	0.91	47:07	—

FLAG: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

AR300408

02/01/91

Listing of E002136B.dbf

DC045706

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.12	22:24	136.64	F	F	1.027	
304		*** Total ***		136.64	# of Peaks:		1	
316		0.80	21:49	7359.96	T	T	1.000	
316		*** Total ***		7359.96	# of Peaks:		1	
320		4.86	21:49	2052.35	F	F	0.965	
320		*** Total ***		2052.35	# of Peaks:		1	
332		0.79	22:24	9439.26	T	T	0.991	
		0.78	22:36	4681.08	T	T	1.000	
332		*** Total ***		14120.34	# of Peaks:		2	
390	D	5.06	38:52	137.40	F	F	1.125	AV 2-2-91 O/W
390		*** Total ***		137.40	# of Peaks:		1	
402		1.27	34:33	3917.60	T	T	1.000	
		1.26	35:09	8878.67	T	T	1.017	
402		*** Total ***		12796.27	# of Peaks:		2	
420		1.05	38:51	10610.43	T	T	1.000	
420		*** Total ***		10610.43	# of Peaks:		1	
424	D	3.20	38:51	3413.24	F	F	1.124	AV 2-2-91 O/W
424		*** Total ***		3413.24	# of Peaks:		1	
470		0.91	47:07	5863.42	T	T	1.000	
470		*** Total ***		5863.42	# of Peaks:		1	

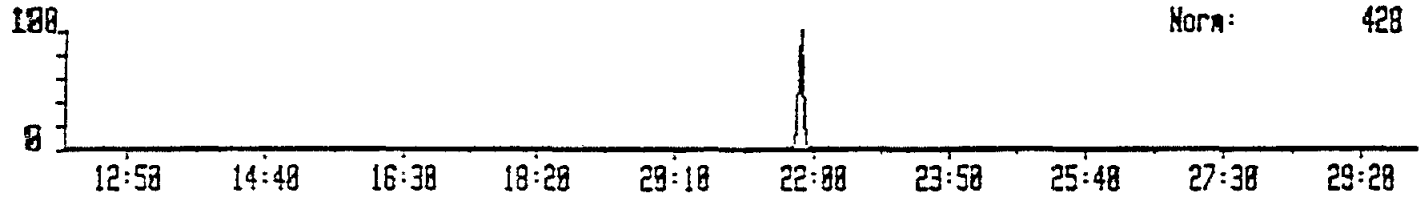
*** End of Report ***

FCAE
D=Delete
O/W=outside of retention time of window
MI= Manual Integration

Add								
304		2.688	22:36	12.54	F	F	1.036	RW 2-4-91 MI
458		0.970	47:07	21.55	T	T	1.000	RW 2-4-91 MI

AR300409

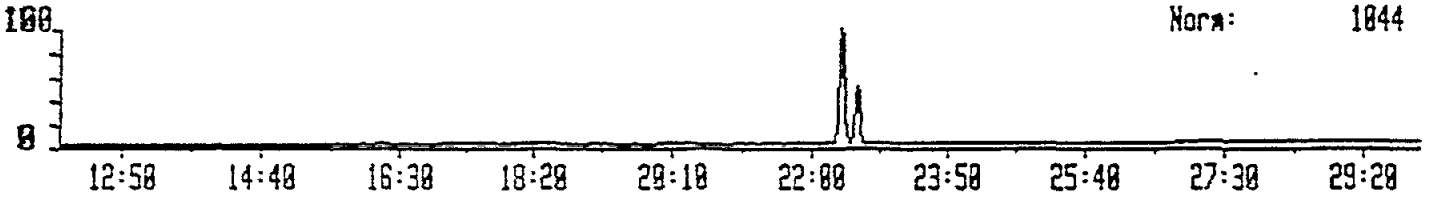
E002136 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-36-2C TLH#198-W3 DC045706



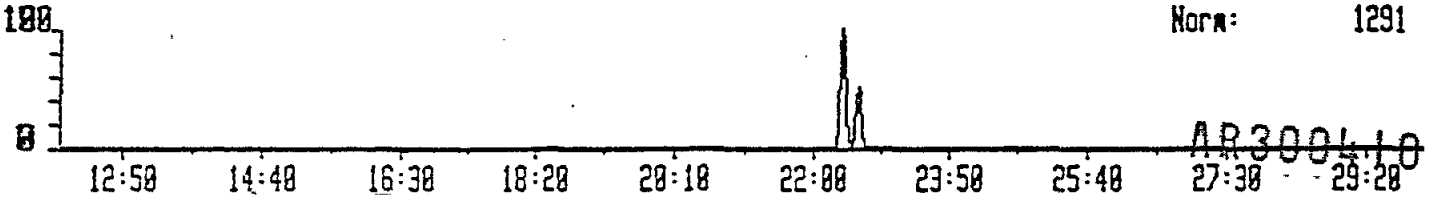
E002136 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-36-2C TLH#198-W3 DC045706

E002136 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-36-2C TLH#198-W3 DC045706

E002136 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-36-2C TLH#198-W3 DC045706



E002136 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-36-2C TLH#198-W3 DC045706



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002135 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-36-1A
CONCAL.....: E002130 SAMPLE ID....: DC045707
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 905.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				—
12378-PeCDD	ND		0.1				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.1				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	ND		0.1				—
OCDD	0.34				0.82	47:10	BL,L
2378-TCDF	ND		0.06				—
12378-PeCDF	ND		0.08				—
23478-PeCDF	ND		0.07				—
123478-HxCDF	ND		0.07				—
123678-HxCDF	ND		0.07				—
234678-HxCDF	ND		0.06				—
123789-HxCDF	ND		0.08				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.1				—
OCDF	ND		0.09				—
TOTAL TCDD	0.23	1		~~5.4~~	0.78		IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.1				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	ND		0.1				—
TOTAL TCDF	EMPC			0.51			IR MM 3/7/91
TOTAL PeCDF	ND		0.07				—
TOTAL HxCDF	ND		0.07				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	22.5	40.8	0.80	21:50	—
13C12-2378-TCDD	21.0	38.0	0.79	22:36	V
13C12-HxCDD 678	25.5	46.1	1.27	34:34	—
13C12-HpCDF 678	42.9	38.8	1.05	38:52	V
13C12-OCDD	46.7	42.2	0.90	47:08	—

8280_RPT rev

#R300411

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE
V = RECOVERY BELOW QC ADVISORY LIMIT; DATA CONSIDERED VALID

Page No. 1 Listing of E002135B.dbf DC 045707
02/01/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.14	22:25	137.14	F	F	1.027	
304		*** Total ***		137.14	# of Peaks:		1	
316		0.80	21:50	7383.53	T	T	1.000	
316		*** Total ***		7383.53	# of Peaks:		1	
320		4.95	21:50	1980.66	F	F	0.966	
		0.78	23:43	22.21	T	F	1.049	
320		*** Total ***		2002.87	# of Peaks:		2	
332		0.79	22:24	10212.11	T	T	0.991	
		0.79	22:36	4727.01	T	T	1.000	
332		*** Total ***		14939.12	# of Peaks:		2	
340	D	C 2.66	23:43	164.93	F	F	1.086	SP 2-10-91 O/—
340		*** Total ***		164.93	# of Peaks:		1	
390		D 5.10	38:53	117.83	F	F	1.125	AF 2-2-91 O/W
390		*** Total ***		117.83	# of Peaks:		1	
402		1.27	34:34	4158.17	T	T	1.000	
		1.26	35:09	9958.90	T	T	1.017	
402		*** Total ***		14117.07	# of Peaks:		2	
420		1.05	38:52	10834.37	T	T	1.000	
420		*** Total ***		10834.37	# of Peaks:		1	
424		D 3.23	38:52	3096.40	F	F	1.124	AF 2-2-91 O/W
424		*** Total ***		3096.40	# of Peaks:		1	
470		0.90	47:08	5791.42	T	T	1.000	
470		*** Total ***		5791.42	# of Peaks:		1	

*** End of Report ***

FLAG:
D-Delete
O/W = outside of retention time of window.
MI = Manual Integration

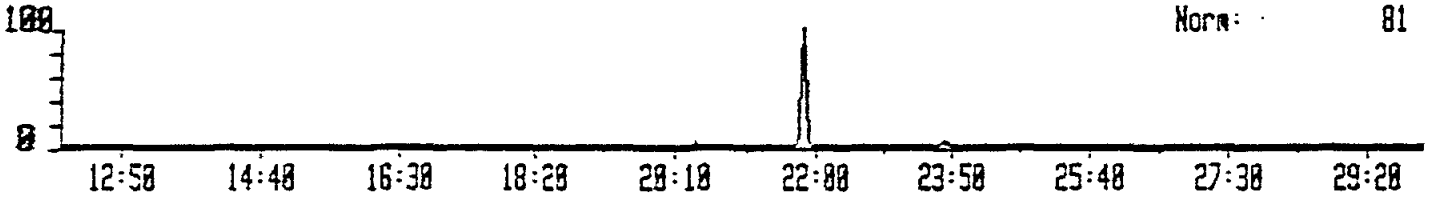
Add
458 0.822 47:10 21.99 T RW FT 1.001 RW 2-4-91 MI

AR300412

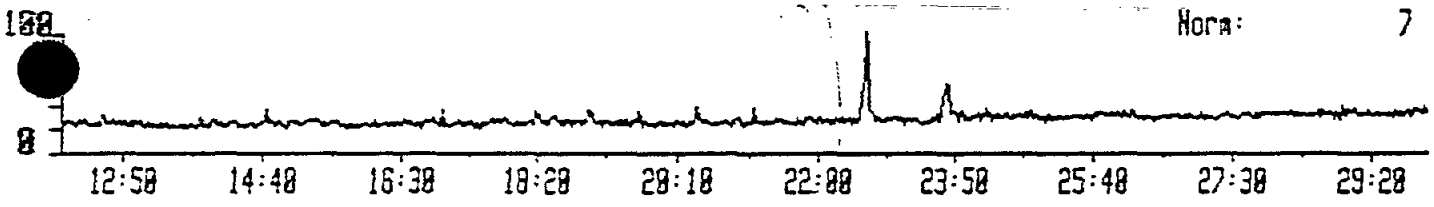
AR300412

E002135 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-36-1A TLH#198-W3 DC045707

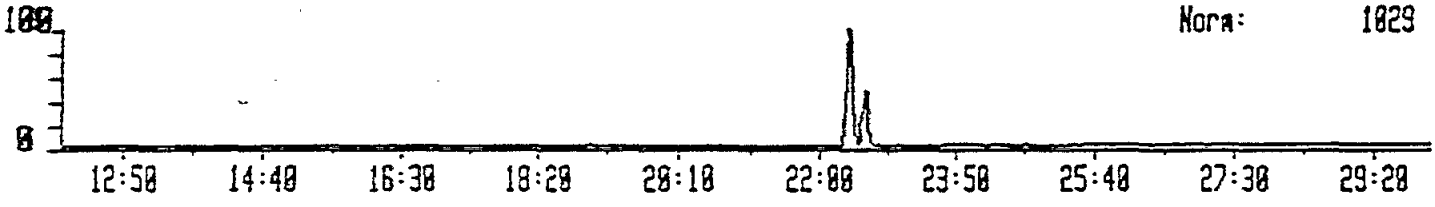
E002135 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-36-1A TLH#198-W3 DC045707



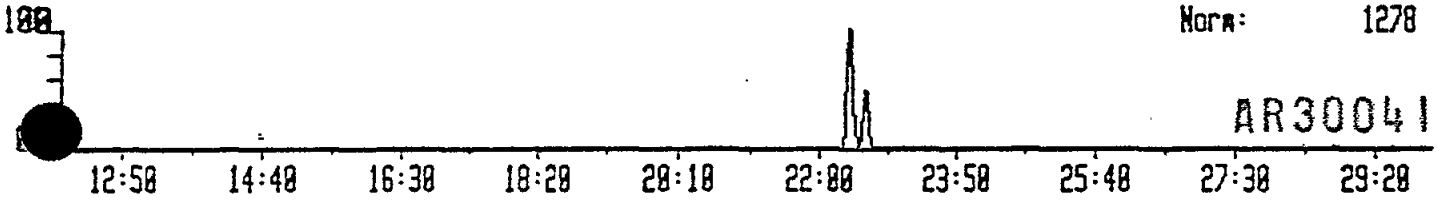
E002135 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-36-1A TLH#198-W3 DC045707



E002135 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-36-1A TLH#198-W3 DC045707



E002135 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-36-1A TLH#198-W3 DC045707



AR300413

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002137 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-36-3A
CONCAL.....: E002130 SAMPLE ID....: DC045708
ANALYST.....: XL ANALYSIS DATE: 01/25/91 PROJECT NUMBER: 198-W3
SAMPLE SIZE..: 865.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/14/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/13/90
SPIKE FILE...: SP82905W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				—
12378-PeCDD	ND		0.2				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.2				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	0.31				1.20	40:55	L
OCDD	3.7				0.91	47:07	BL,L
2378-TCDF	ND		0.08				—
12378-PeCDF	ND		0.1				—
23478-PeCDF	ND		0.09				—
123478-HxCDF	ND		0.09				—
123678-HxCDF	ND		0.09				—
234678-HxCDF	ND		0.08				—
123789-HxCDF	ND		0.1				—
1234678-HpCDF	0.08				1.15	38:50	L
1234789-HpCDF	ND		0.1				—
OCDF	0.46				0.86	47:19	L
TOTAL TCDD	EMPC			~~6.13~~			IR, CI MM 3/2/91
TOTAL PeCDD	ND		0.2				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	0.45	2			1.10		—
TOTAL TCDF	EMPC			0.57			IR
TOTAL PeCDF	ND		0.10				—
TOTAL HxCDF	0.19	1			1.26		CI
TOTAL HpCDF	0.09	1		~~0.37~~ 0.27	1.15		IR

MM 3/7/91

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	25.4	44.0	0.79	21:46	—
13C12-2378-TCDD	23.6	40.8	0.78	22:33	—
13C12-HxCDD 678	28.1	48.7	1.27	34:30	—
13C12-HpCDF 678	48.3	41.8	1.06	38:49	—
13C12-OCDD	51.8	44.8	0.91	47:05	—

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300414

DC045708

02/01/91

Listing of E002137B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		1.99	22:21	159.78	F	F	1.027	
304		*** Total ***		159.78	# of Peaks:		1	
316		0.79	21:46	9205.99	T	T	1.000	
316		*** Total ***		9205.99	# of Peaks:		1	
320		4.79	21:46	2286.71	F	F	0.965	
	D	1.18	23:40	13.30	F	F	1.050	SP 2.8.91 S/N
320		*** Total ***		2300.01	# of Peaks:		2	
332		0.78	22:21	11803.77	T	T	0.991	
		0.78	22:33	5870.54	T	T	1.000	
332		*** Total ***		17674.31	# of Peaks:		2	
340	D	1.49	23:39	80.20	T	F	1.087	SP 2.10.91 O/W
340		*** Total ***		80.20	# of Peaks:		1	
374		1.26	33:41	29.06	T	F	0.868	
374		*** Total ***		29.06	# of Peaks:		1	
390	D	4.83	38:49	154.35	F	F	1.125	AS 2-2-91 O/W
390		*** Total ***		154.35	# of Peaks:		1	
402		1.27	34:30	5196.74	T	T	1.000	
		1.25	35:06	11743.58	T	T	1.017	
402		*** Total ***		16940.32	# of Peaks:		2	
408		1.23	39:38	40.82	F	F	1.021	
408		*** Total ***		40.82	# of Peaks:		1	
420		1.06	38:49	13750.33	T	T	1.000	
420		*** Total ***		13750.33	# of Peaks:		1	
424	D	3.23	38:49	4123.37	F	F	1.125	AS 2-2-91 O/W
		1.00	39:28	13.76	T	F	1.144	
		1.20	40:55	26.30	T	T	1.186	
424		*** Total ***		4163.43	# of Peaks:		3	
442		0.86	47:19	56.81	T	T	1.005	
442		*** Total ***		56.81	# of Peaks:		1	
458		0.91	47:07	302.55	T	T	1.001	
458		*** Total ***		302.55	# of Peaks:		1	
470		0.91	47:05	7311.47	T	T	1.000	
470		*** Total ***		7311.47	# of Peaks:		1	

*** End of Report ***

Flag:
D= Delete
O/W: outside correlation time or window
MI= Manual Integration
S/N - Signal to noise < 2.5:1

AR300415

Next Page

DC 045708

Add

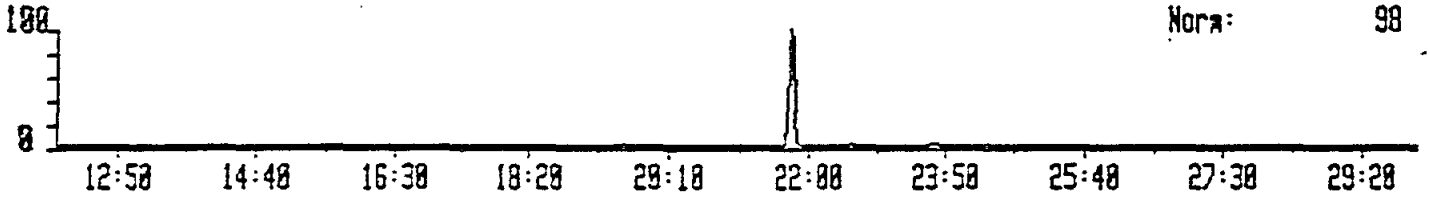
304	2.121	22:33	15.51		F	F	1.036	RW 2-4-9
~~408~~	~~1.216~~	~~38:50~~	~~12.97~~	12.97	~~F~~	~~T~~	~~1.000~~	~~RW 2-4-~~
				SP 2891				
408	1.153	38:50	11.99		T	T	1.000	RW 2-8

RW 8-91

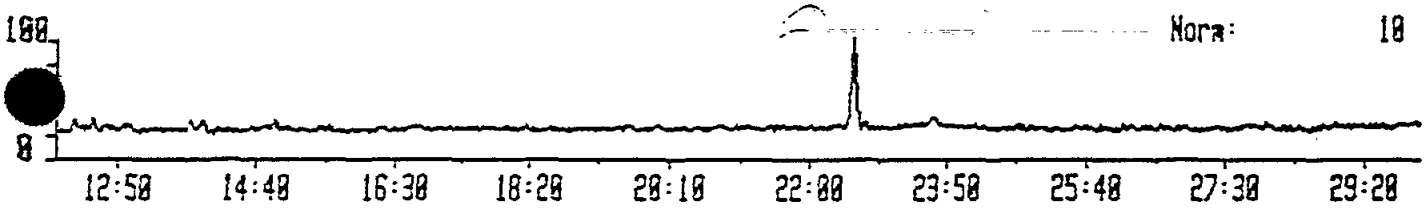
AR300416

E002137 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-36-3A TLH#198-W3 DC045708

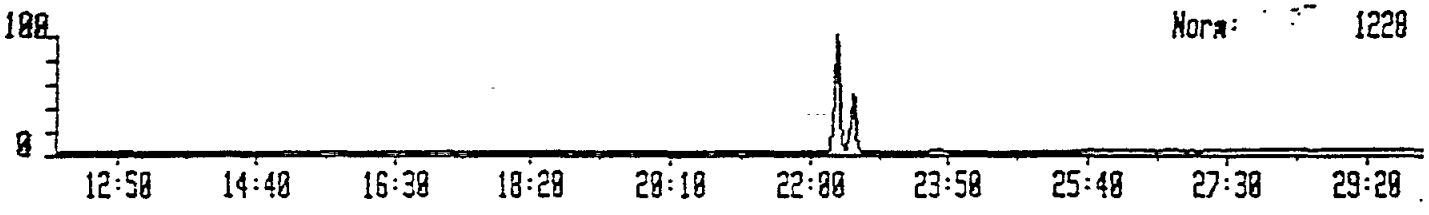
E002137 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-36-3A TLH#198-W3 DC045708



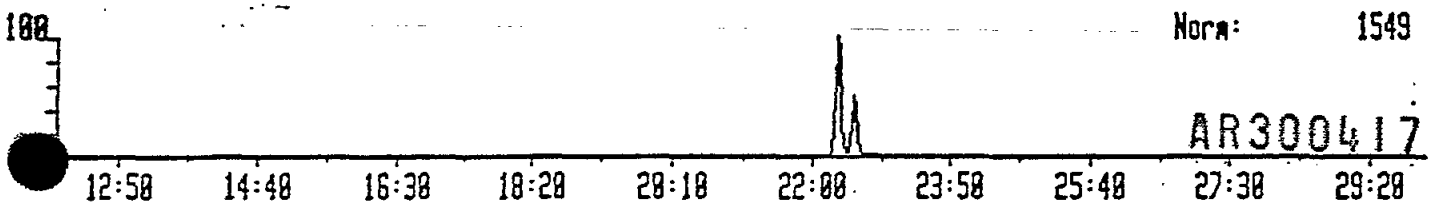
E002137 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-36-3A TLH#198-W3 DC045708



E002137 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-36-3A TLH#198-W3 DC045708



E002137 25-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-36-3A TLH#198-W3 DC045708



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....: E002119
CONCAL.....: E002115
ANALYST.....: XL
SAMPLE SIZE..: 900.00 ml
ICAL DATE....: 01/02/91
SPIKE FILE...: SP82S05W

CLIENT ID....: SAS 5742C
SAMPLE ID....: DC045709
ANALYSIS DATE: 01/24/91
SAMPLE MATRIX: WATER
SAMPLE ORIGIN: N/A

TLI NUMBER....: 3-39-1A
PROJECT NUMBER: 198-W2
DATE RECEIVED.: 11/16/90
DATE COLLECTED: 11/15/90
SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				—
12378-PeCDD	ND		0.09				—
123478-HxCDD	ND		0.07				—
123678-HxCDD	ND		0.07				—
123789-HxCDD	ND		0.07				—
1234678-HpCDD	0.23				1.12	42:00	L
OCDD	3.5				0.86	48:19	L
2378-TCDF	ND		0.03				—
12378-PeCDF	ND		0.05				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.03				—
123678-HxCDF	ND		0.03				—
234678-HxCDF	ND		0.03				—
123789-HxCDF	ND		0.04				—
1234678-HpCDF	0.07				1.01	39:56	L
1234789-HpCDF	ND		0.06				—
OCDF	0.58				0.98	48:33	L
TOTAL TCDD	EMPC			~~5.87~~			IR, CI MM 3/7/91
TOTAL PeCDD	ND		0.09				—
TOTAL HxCDD	ND		0.07				—
TOTAL HpCDD	0.23	1			1.12		—
TOTAL TCDF	EMPC			0.24			IR MM 3/7/91
TOTAL PeCDF	ND		0.05				—
TOTAL HxCDF	ND		0.03				—
TOTAL HpCDF	0.37	2			1.07		—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.1	72.2	0.79	22:39	—
13C12-2378-TCDD	40.2	72.4	0.79	23:27	—
13C12-HxCDD 678	40.8	73.4	1.28	35:33	—
13C12-HpCDF 678	94.2	84.8	1.06	39:55	—
13C12-OCDD	65.3	58.8	0.92	48:18	—

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

DC 045709

Page No. 1 Listing of E002119B.dbf
02/01/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.44	23:15	73.06	F	F	1.026	
304		*** Total ***		73.06	# of Peaks:		1	
316		0.79	22:39	8574.52	T	T	1.000	
316		*** Total ***		8574.52	# of Peaks:		1	
320		4.92	22:39	2250.19	F	F	0.966	
320		*** Total ***		2250.19	# of Peaks:		1	
332		0.79	23:15	6479.69	T	T	0.991	
		0.79	23:27	5629.06	T	T	1.000	
332		*** Total ***		12108.75	# of Peaks:		2	
390		D 5.83	39:55	147.29	F	F	1.123	AV 2-1-91 O/W
390		*** Total ***		147.29	# of Peaks:		1	
402		1.28	35:33	4076.12	T	T	1.000	
		1.27	36:10	6100.62	T	T	1.017	
402		*** Total ***		10176.74	# of Peaks:		2	
408		1.12	40:44	36.72	T	F	1.020	
408		*** Total ***		36.72	# of Peaks:		1	
420		1.06	39:55	11821.34	T	T	1.000	
420		*** Total ***		11821.34	# of Peaks:		1	
424		D 3.25	39:55	4095.87	F	F	1.123	AV 2-1-91 O/W
424		*** Total ***		4095.87	# of Peaks:		1	
442		0.98	48:33	50.60	T	T	1.005	
442		*** Total ***		50.60	# of Peaks:		1	
458		0.86	48:19	188.06	T	T	1.000	
458		*** Total ***		188.06	# of Peaks:		1	
470		0.92	48:18	4642.38	T	T	1.000	
470		*** Total ***		4642.38	# of Peaks:		1	

*** End of Report ***

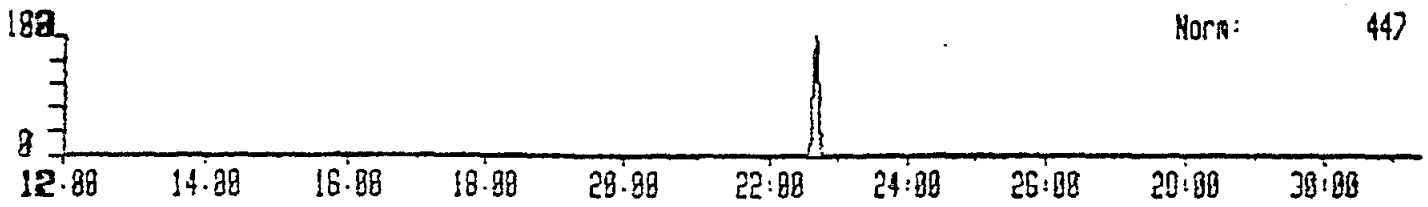
FLAG
D = Delete
O/W = outside of retention time of window.
MI = Manual Integration

Add 304	2.119	23:27	9.88	F	F	1.035	RW 2-1-91 M
RW 2-1-91 3408	1.006	39:56	9.89	T	T	1.[illegible]	RW 2-1-91 M
424	1.120	42:00	13.74	T	~~F~~ T	1.181	RW 2-1-91 M

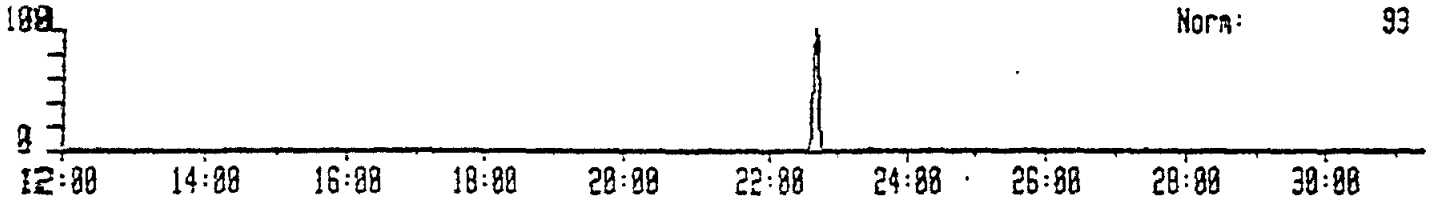
MV 2/7/91

AR300419

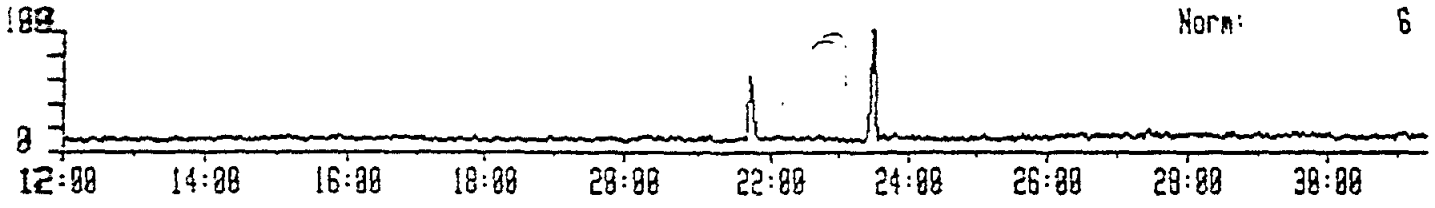
E002119 24 JAN 91 Sir:Voltage 70 E Sys: 0200IFDDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-39-1A TLH#198-W2 DC045789



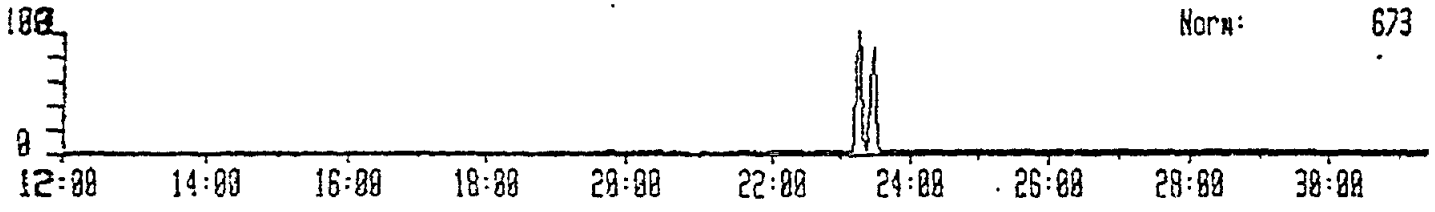
E002119 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-39-1A TLH#198-W2 DC045789



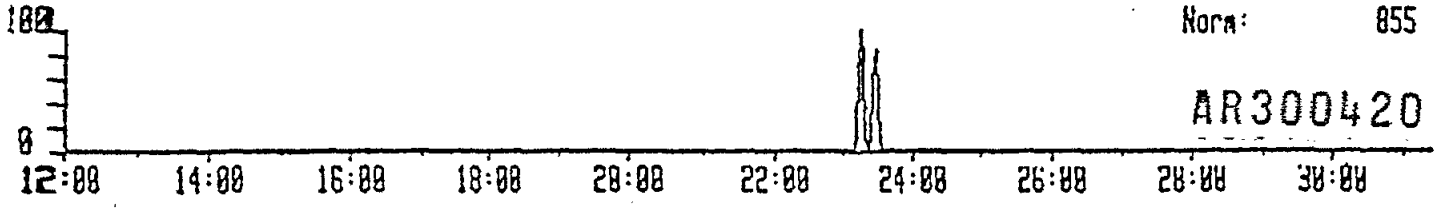
E002119 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-39-1A TLH#198-W2 DC045789



E002119 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-39-1A TLH#198-W2 DC045789



E002119 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-39-1A TLH#198-W2 DC045789



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002222 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-2
CONCAL.....: E002219 SAMPLE ID....: DC045710
ANALYST.....: XL ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R2
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82305W SHIPMENT NO...: 5745C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	0.54				0.75	22:33	L
12378-PeCDD	ND		0.6				—
123478-HxCDD	ND		0.6				—
123678-HxCDD	ND		0.5				—
123789-HxCDD	ND		0.5				—
1234678-HpCDD	28.1				1.03	40:49	L
OCDD	340 J				0.89	46:58	BL,L
2378-TCDF	ND		0.2				—
12378-PeCDF	ND		0.3				—
23478-PeCDF	EMPC			0.97			IR MM 3/7/91
123478-HxCDF	ND		0.3				—
123678-HxCDF	ND		0.3				—
234678-HxCDF	ND		0.3				—
123789-HxCDF	ND		0.4				—
1234678-HpCDF	7.9				1.08	38:45	L
1234789-HpCDF	ND		0.6				—
OCDF	82.0 J				0.85	47:11	L
TOTAL TCDD	0.54	1		~~51.66~~	0.75		IR, CI MM 3/7/91
TOTAL PeCDD	EMPC			6.9			IR
TOTAL HxCDD	ND		0.6				—
TOTAL HpCDD	41.1	2			1.04		—
TOTAL TCDF	EMPC			1.59			IR
TOTAL PeCDF	EMPC			1.03			IR } MM 3/7/91
TOTAL HxCDF	4.3	1			1.29		—
TOTAL HpCDF	46.7	2			1.09		—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	467	97.5	0.80	21:44	—
13C12-2378-TCDD	466	93.2	0.80	22:31	—
13C12-HxCDD 678	472	94.4	1.27	34:26	—
13C12-HpCDF 678	937	93.7	1.06	38:44	—
13C12-OCDD	1250	125	0.91	46:58	X

_____ __/__/__: 8280_RPT

AR300421

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
X = RECOVERY ABOVE QC ADVISORY LIMIT.

02/02/91

DC 045710

Listing of E002222B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.68	22:19	58.33	F	F	1.027	
304		*** Total ***		58.33	# of Peaks:		1	
316		0.80	21:44	9655.21	T	T	1.000	
316		*** Total ***		9655.21	# of Peaks:		1	
320		5.03	21:44	2420.40	F	F	0.965	
320		*** Total ***		2420.40	# of Peaks:		1	
332		0.79	22:19	5111.96	T	T	0.991	
		0.80	22:31	6035.37	T	T	1.000	
332		*** Total ***		11147.33	# of Peaks:		2	
340		D 0.05	23:29	248.83	F	F	1.081	AS 2-4-91 O/W
		0.05	27:52	197.14	F	T	1.282	
340		*** Total ***		445.97	# of Peaks:		2	
356		8.81	27:52	189.25	F	F	1.238	
356		*** Total ***		189.25	# of Peaks:		1	
374		1.29	32:04	68.85	T	F	0.828	
		D 1.24	39:33	20.45	T	F	1.021	AS 2-4-91 O/W
374		*** Total ***		89.30	# of Peaks:		2	
390		D 6.33	38:44	138.31	F	F	1.125	AS 2-4-91 O/W
390		*** Total ***		138.31	# of Peaks:		1	
402		D 6.19	32:22	271.58	F	F	0.940	AS 2-4-91 O/W
		1.27	34:26	3769.02	T	T	1.000	
		1.27	35:02	4515.65	T	T	1.017	
		D 5.72	36:52	301.17	F	F	1.071	AS 2-4-91 O/W
402		*** Total ***		8857.42	# of Peaks:		4	
408		1.08	38:45	109.07	T	T	1.000	
		1.09	39:32	435.77	T	F	1.021	
408		*** Total ***		544.84	# of Peaks:		2	
420		1.06	38:44	10774.56	T	T	1.000	
420		*** Total ***		10774.56	# of Peaks:		1	
424		D 3.23	38:44	3315.18	F	F	1.125	AS 2-4-91 O/W
		1.04	39:22	84.03	T	F	1.143	
		1.03	40:49	185.59	T	T	1.185	
424		*** Total ***		3584.80	# of Peaks:		3	
442		0.85	47:11	837.42	T	T	1.005	
442		*** Total ***		837.42	# of Peaks:		1	
458		0.89	46:58	2274.29	T	T	1.000	
458		*** Total ***		2274.29	# of Peaks:		1	
470		0.91	46:58	5169.97	T	T	1.000	
470		*** Total ***		5169.97	# of Peaks:		1	

AR300422

DC 045710

Matched GC Peaks / Ratio / Ret. Time

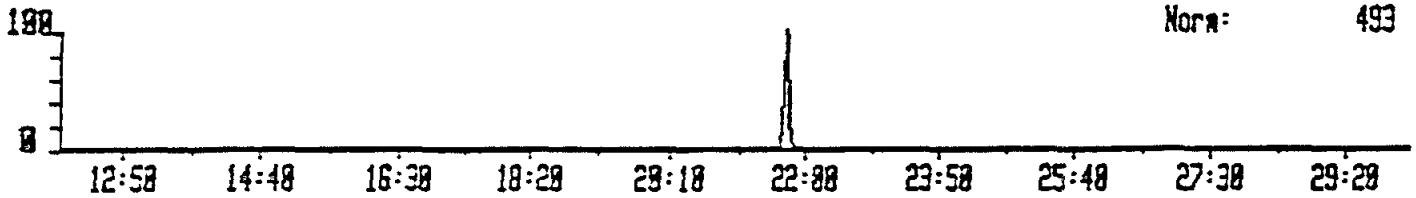
M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
*** End of Report ***								

FLAG
D= Delete
O/W = outside of retention time of window
ME = Manual Integration

dd 304		2.051	22:31	15.83	F	F	1.036	RW 2-6-9
320		0.752	22:33	7.36	T	T	1.001	SP 2891

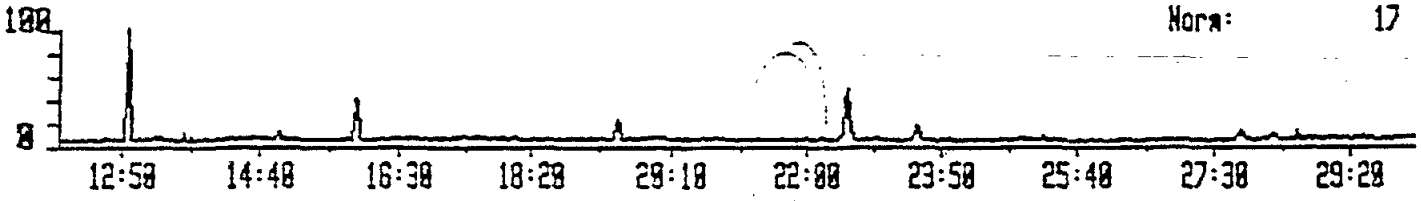
AR300423

E802222 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-39-2 TLH#198-R2 DC845710

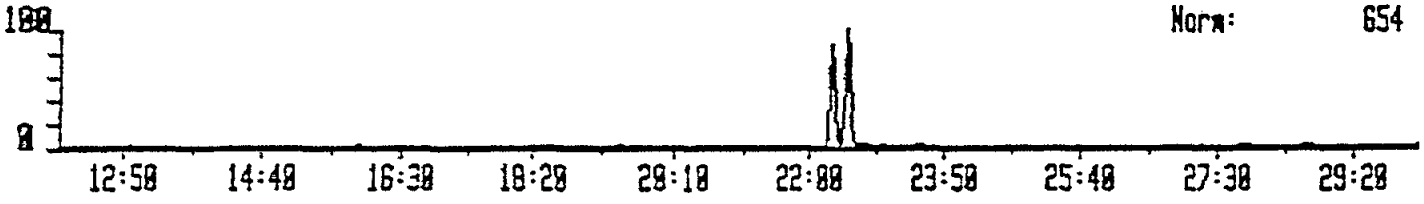


E802222 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-39-2 TLH#198-R2 DC845710

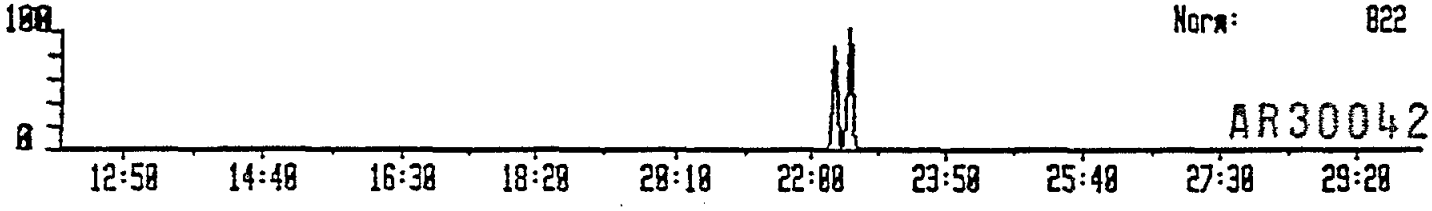
E802222 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-39-2 TLH#198-R2 DC845710



E802222 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-39-2 TLH#198-R2 DC845710



E802222 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-39-2 TLH#198-R2 DC845710



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002120 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-3A
CONCAL.....: E002115 SAMPLE ID....: DC045711
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 1000.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				—
12378-PeCDD	ND		0.06				—
123478-HxCDD	ND		0.05				—
123678-HxCDD	23.6				1.24	35:35	L
123789-HxCDD	1.9				1.30	36:11	L
1234678-HpCDD	998				1.05	42:03	H
OCDD	6440				0.88	48:35	H
2378-TCDF	EMPC			0.09			—
12378-PeCDF	EMPC			0.71			—
23478-PeCDF	0.39				1.42	28:53	L
123478-HxCDF	4.1				1.24	33:56	L
123678-HxCDF	0.74				1.30	34:08	L
234678-HxCDF	ND		0.02				—
123789-HxCDF	0.09				1.32	36:36	L
1234678-HpCDF	186				1.05	39:57	—
1234789-HpCDF	9.3				1.04	42:49	L
OCDF	1480				0.86	48:44	H
TOTAL TCDD	EMPC			4.57			IR, CI } MM 3/7/91
TOTAL PeCDD	EMPC			0.52			IR
TOTAL HxCDD	54.3	5		~~54.66~~ 1.26	1.29		IR
TOTAL HpCDD	1470	2			1.05		—
TOTAL TCDF	0.07	2		0.28	0.68		IR } MM 3/7/91
TOTAL PeCDF	5.1	5		~~5.87~~ 0.77	1.45		IR
TOTAL HxCDF	142	10		~~140.96~~ 0.59	1.27		IR
TOTAL HpCDF	1190	3		~~1190~~ 0.9	1.05		IR

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	40.2	80.4	0.79	22:39	—
13C12-2378-TCDD	41.9	83.9	0.79	23:26	—
13C12-HxCDD 678	46.8	93.5	1.27	35:34	—
13C12-HpCDF 678	98.0	98.0	1.06	39:56	—
13C12-OCDD	117	117	0.99	48:33	—

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE

AR300425

D C045711

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.56	23:14	81.61	F	F	1.026	
304		*** Total ***		81.61	# of Peaks:		1	
316		0.79	22:39	11944.88	T	T	1.000	
316		*** Total ***		11944.88	# of Peaks:		1	
320		5.00	22:39	2869.08	F	F	0.967	
320		*** Total ***		2869.08	# of Peaks:		1	
332		0.79	23:14	8110.14	T	T	0.991	
		0.79	23:26	8163.58	T	T	1.000	
332		*** Total ***		16273.72	# of Peaks:		2	
340		1.56	24:59	458.62	T	F	1.103	
		1.47	26:32	289.04	T	F	1.171	
		1.34	27:38	17.56	T	F	1.220	
		1.17	27:46	77.79	F	T	1.226	
		1.16	28:12	63.28	F	F	1.245	
		1.42	28:53	73.63	T	T	1.275	
		1.48	29:11	105.06	T	F	1.288	
340		*** Total ***		1084.98	# of Peaks:		7	
374		1.25	32:03	773.16	T	F	0.803	
		1.23	32:19	4659.81	T	F	0.809	
		1.17	32:52	18.20	T	F	0.823	
		1.23	33:11	31588.54	T	F	0.831	
		1.24	33:56	1090.44	T	T	0.850	
		1.30	34:08	208.33	T	T	0.855	
		1.59	34:41	26.24	F	F	0.869	
		1.29	35:02	376.30	T	~~F~~ T	0.877	MV 2/9/91 other
		1.28	35:16	140.02	F ~~T~~	F	0.883	MV 2/9/91 MV 2/9/91 MI
	D	1.40	36:46	215.77	T	F	0.921	
	D	1.28	39:57	1833.27	T	F	1.000	AV 2-1-91 O/W
		1.26	40:46	6407.76	T	F	1.021	
374		*** Total ***		47317.84	# of Peaks:		12	
390		1.25	33:02	929.94	T	F	0.929	
		1.59	33:55	159.39	F	F	0.954	
		1.23	34:21	2949.47	T	F	0.966	
		1.41	34:38	40.33	T	F	0.974	
		1.24	35:35	3292.03	T	T	1.000	
		1.30	36:11	274.31	T	T	1.017	
		0.57	37:53	267.84	F	F	1.065	
	D	4.67	39:56	133.27	F	F	1.123	AV 2-1-91 O/W
		1.27	40:35	1985.12	T	F	1.141	
		1.26	42:03	4419.07	T	F	1.182	
390		*** Total ***		14450.77	# of Peaks:		10	
402		1.27	35:34	5959.10	T	T	1.000	
		1.27	36:10	7033.82	T	T	1.017	
402		*** Total ***		12992.92	# of Peaks:		2	
408		1.05	39:57	39224.22	T	T	1.000	

AR300426

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
408		1.05	40:46	183765.42	T	F	1.021	
		6.55	41:50	67.76	F	F	1.048	
		1.54	42:03	29.89	F	F	1.053	
		1.04	42:49	1549.83	T	T	1.072	
408		*** Total ***		224637.12	# of Peaks:		5	
420		1.06	39:56	15758.66	T	T	1.000	
420		*** Total ***		15758.66	# of Peaks:		1	
424		D 3.28	39:56	4534.24	F	F	1.123	AV 2-1-91 O/W
		1.05	40:35	47617.32	T	F	1.141	
		1.05	42:03	100404.23	T	T	1.182	
424		*** Total ***		152555.79	# of Peaks:		3	
442		0.86	48:44	305947.11	T	T	1.004	
442		*** Total ***		305947.11	# of Peaks:		1	
458		0.88	48:35	881659.53	T	T	1.001	
458		*** Total ***		881659.53	# of Peaks:		1	
470		0.99	48:33	11003.41	T	T	1.000	
470		*** Total ***		11003.41	# of Peaks:		1	

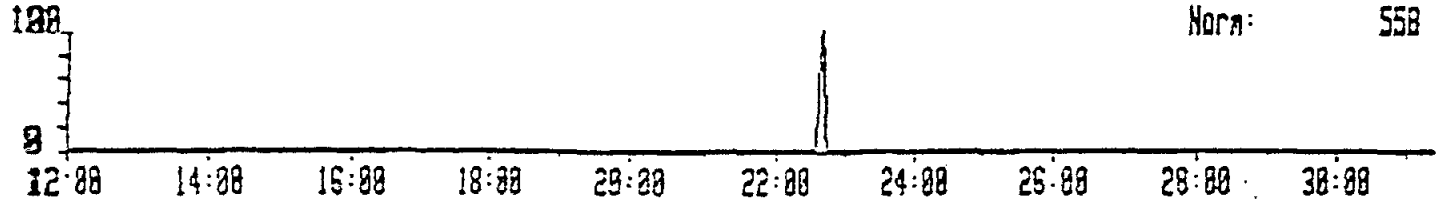
*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time or window.
MI = Manual Integration
other = presence of polychlorinated diphenyl ether

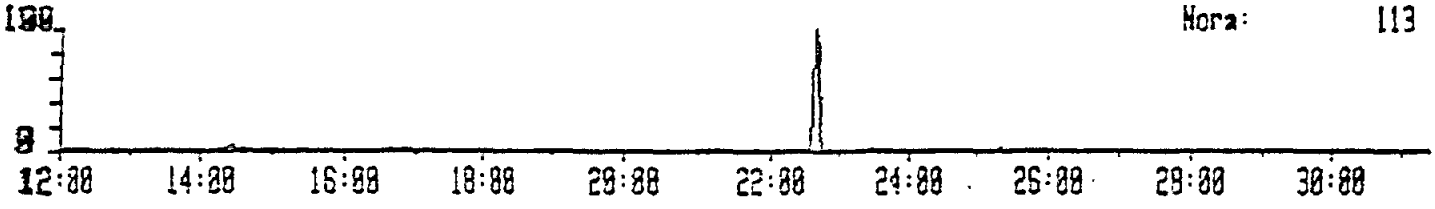
Add:								
304	0.647	22:02	13.26		T	F	0.973	RW 2-1-91 MI
304	0.712	22:13	6.30		T	F	0.981	RW 2-1-91 M
304	0.606	22:40	15.11		F	T	1.001	RW 2-1-91 M
304	2.106	23:26	11.07		F	F	1.035	RW 2-1-91 M
356	2.339	26:41	11.84		F	F	1.139	RW 2-1-91 M
374	1.32	36:36	20.77		T	T	~~1.029~~ MV 2/9/91 0.917	MV 2/9/91
374	1.31	36:44	192.28	109.03	T	F	0.920	MV 2/9/91
374	1.38	36:53	15.70	8.79	T	F	0.924	MV 2/9/91
356	2.16	27:23	6.67		F	F	1.169	MV 2/9/91
356	2.50	27:44	9.79		F	F	1.134	MV 2/9/91
356	2.59	27:56	10.91		F	F	1.192	MV 2/9/9
356	2.01	28:13	8.94		F	F	1.209	MV 2/9/9
356	1.81	28:36	14.35		F	F	1.220	MV 2/9/9

AR300427

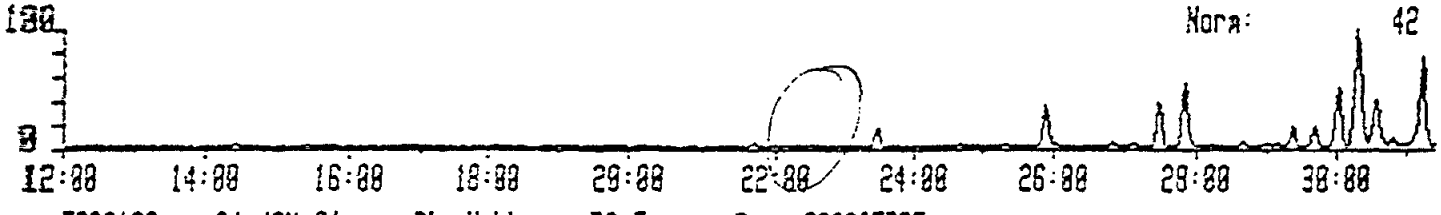
E882129 24-JAN-91 Str:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-39-3A TLH#198-W2 DC845711



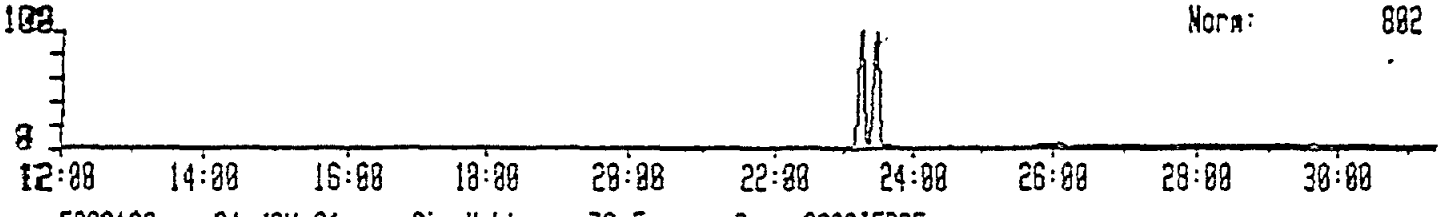
E882129 24-JAN-91 Str:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-39-3A TLH#198-W2 DC845711



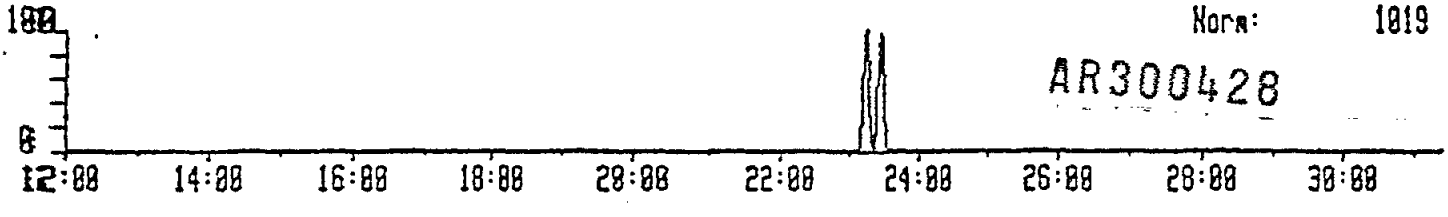
E882129 24-JAN-91 Str:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 253.9299
Text:3-39-3A TLH#198-W2 DC845711



E882129 24-JAN-91 Str:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-39-3A TLH#198-W2 DC845711



E882129 24-JAN-91 Str:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-39-3A TLH#198-W2 DC845711



AR300428

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002093 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-4B
CONCAL.....: E002091 SAMPLE ID....: DC045712
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W4
SAMPLE SIZE..: 820.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				—
12378-PeCDD	ND		0.09				—
123478-HxCDD	ND		0.08				—
123678-HxCDD	39.1				1.24	35:34	—
123789-HxCDD	4.0				1.28	36:10	L
1234678-HpCDD	1730				1.04	42:03	H
OCDD	~~10600~~ 9410 J CE MM 3/7/91				0.89	48:34	BL,H
2378-TCDF	0.13				0.67	22:40	L
12378-PeCDF	0.73				1.42	27:46	L
23478-PeCDF	EMPC			0.74			IR
123478-HxCDF	10.5				1.26	33:54	L
123678-HxCDF	1.7				1.28	34:07	L
234678-HxCDF	2.6				1.28	35:02	L
123789-HxCDF	ND		0.06				—
1234678-HpCDF	316				1.04	39:57	—
1234789-HpCDF	17.0				1.06	42:49	L
OCDF	2550 J				0.86	48:43	H
TOTAL TCDD	0.06	1		~~5.06~~ 1.0	0.79		IR
TOTAL PeCDD	0.23	1		~~1.33~~	1.74		IR, CI (S/N) MM 3/7/91
TOTAL HxCDD	93.5	5		~~88.69~~ 1.7	1.27		IR
TOTAL HpCDD	2530	2			1.05		—
TOTAL TCDF	~~0.35~~ 0.53	4		~~0.53~~ 0.32	0.75		IR
TOTAL PeCDF	10.3	5		~~12.08~~ 1.8	1.48		IR
TOTAL HxCDF	305	8		~~304.19~~ 0.55	1.27		IR
TOTAL HpCDF	376	3		~~2307.5~~ 144.5	1.02		IR

MM 3/7/91

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	52.7	86.4	0.79	22:39	—
13C12-2378-TCDD	59.5	97.6	0.79	23:27	—
13C12-HxCDD 678	55.6	91.2	1.31	35:33	—
13C12-HpCDF 678	105	85.7	1.06	39:55	—
13C12-OCDD	152	124	1.01	48:31	X

AR300429

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
X = RECOVERY ABOVE QC ADVISORY LIMIT

DC045712

Add	0.074	28:46	243.69	F	F	~~1.227~~ 1.270	RW 2-2-91
340	0.982	28:52	120.53	F	T	1.274	RW 2-2-91
408	2.573	41:33	88.72	F	F	1.041	RW 2-2-91

AR300432

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....: E002093 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-39-4B
CONCAL.....: E002091 SAMPLE ID....: DC045712
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W4
SAMPLE SIZE..: 820.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/16/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/15/90
SPIKE FILE...: SF82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				—
12378-PeCDD	ND		0.09				—
123478-HxCDD	ND		0.08				—
123678-HxCDD	39.1				1.24	35:34	—
123789-HxCDD	4.0				1.28	36:10	_L_
1234678-HpCDD	1720				1.04	42:03	_H_
OCDD	~~10600~~ 9410 J	CE MM 3/7/91			0.89	48:34	BL,H
2378-TCDF	0.13				0.67	22:40	_L_
12378-PeCDF	0.73				1.42	27:46	_L_
23478-PeCDF	EMPC			0.74			_R
123478-HxCDF	10.5				1.26	33:54	_L_
123678-HxCDF	1.7				1.28	34:07	_L_
234678-HxCDF	2.6				1.28	35:02	_L_
123789-HxCDF	ND		0.06				—
1234678-HpCDF	316				1.04	39:57	—
1234789-HpCDF	17.0				1.06	42:49	_L_
OCDF	2550 J				0.86	48:43	_H_
TOTAL TCDD	0.06	1		~~5.06~~ 1.0	0.79		IR,
TOTAL PeCDD	0.23	1		~~1.33~~	1.74		IR, CI (S/N)
TOTAL HxCDD	93.5	5		~~68.69~~ 1.7	1.27		IR
TOTAL HpCDD	2530	2			1.05		—
TOTAL TCDF	~~0.35~~ 0.53	4		~~0.53~~ 0.32	0.75		IR
TOTAL PeCDF	10.3	5		~~12.08~~ 1.8	1.48		IR
TOTAL HxCDF	305	8		~~304.19~~ 0.55	1.27		IR
TOTAL HpCDF	376	3		~~2007.5~~ 14.5	1.02		IR

MM 3/7/91

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	52.7	86.4	0.79	22:39	—
13C12-2378-TCDD	59.5	97.6	0.79	23:27	—
13C12-HxCDD 678	55.6	91.2	1.31	35:33	—
13C12-HpCDF 678	105	85.7	1.06	39:55	—
13C12-OCDD	152	124	1.01	48:31	X

AR300429

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
X = RECOVERY ABOVE QC ADVISORY LIMIT

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.86	20:59	14.11	T	F	0.926	
		0.88	22:03	19.38	T	F	0.974	
		0.57	22:40	25.20	T	T	1.001	
		2.46	23:15	67.49	F	F	1.026	
304		*** Total ***		126.18	# of Peaks:		4	
316		0.79	22:39	10565.94	T	T	1.000	
316		*** Total ***		10565.94	# of Peaks:		1	
320		4.90	22:39	2430.63	F	F	0.966	
		1.62	24:27	16.01	F	F	1.043	
	D	2.41	25:19	30.53	F	F	1.080	AV 2-2-91 O/W
320		*** Total ***		2477.17	# of Peaks:		3	
328		0.00	23:27	7974.45	T	T	1.000	
	D	0.00	24:21	264.46	T	F	1.038	AV 2-2-91 O/W
328		*** Total ***		8238.91	# of Peaks:		2	
332		0.79	23:14	6587.12	T	T	0.991	
		0.79	23:27	7765.41	T	T	1.000	
332		*** Total ***		14352.53	# of Peaks:		2	
340	D	0.05	24:21	250.10	F	F	1.075	AV 2-2-91 O/W
		1.51	24:59	665.93	T	F	1.103	
		1.51	26:31	441.06	T	F	1.171	
		1.04	27:20	18.69	F	F	1.207	
		1.51	27:38	26.53	T	F	1.220	
		1.42	27:46	98.02	T	T	1.226	
		1.30	28:12	98.96	F	F	1.245	
		1.44	29:11	137.21	T	F	1.288	
340		*** Total ***		1736.50	# of Peaks:		8	
356		7.88	28:46	281.73	F	F	1.227	
356		*** Total ***		281.73	# of Peaks:		1	
374		1.25	32:02	970.20	T	F	0.803	
		1.24	32:18	5627.87	T	F	0.809	
		1.37	32:51	36.05	T	F	0.823	
		1.24	33:11	38952.98	T	F	0.831	
		1.26	33:54	1555.57	T	T	0.849	
		1.28	34:07	278.89	T	T	0.855	
		1.57	34:41	79.38	F	F	0.869	
		1.28	35:02	494.02	T	T	0.878	
		1.31	35:16	200.07	F ~~T~~	F	0.884	MV 2/4/91 other
		1.25	36:45	276.17	T	F	0.921	
		1.24	36:54	136.94	F ~~T~~	F	0.924	MV 2/4/91 other
		1.31	37:54	296.87	T	F	0.949	
	D	1.30	39:57	2629.21	T	F	1.001	AV 2-2-91 O/W
		1.26	40:46	9472.93	T	F	1.021	
374		*** Total ***		61007.15	# of Peaks:		14	
390		1.24	33:01	1115.02	T	F	0.929	
		1.52	33:54	174.71	F	F	0.954	

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
390		1.24	34:20	3295.69	T	F	0.966	
		1.34	34:37	62.72	T	F	0.974	
		1.24	35:34	3666.26	T	T	1.000	
		1.28	36:10	364.50	T	T	1.017	
		0.62	37:53	291.26	F	F	1.066	
		4.60	39:55	174.20	F	F	1.123	
	D	1.26	40:35	2805.57	T	F	1.142	AN 2-2-91 O/W
		1.40	41:16	15.41	T	F	1.161	
		1.25	42:03	6001.69	T	F	1.183	
390		*** Total ***		17967.03	# of Peaks:		11	
402		5.61	33:20	495.78	F	F	0.938	AN 2-2-91 O/W
	D	8.15	35:14	385.30	F	F	0.991	
		1.31	35:33	4895.77	T	T	1.000	
		1.37	36:09	6010.59	T	T	1.017	
	D	5.15	37:53	598.84	F	F	1.066	AN 2-2-91 O/W
402		*** Total ***		12386.28	# of Peaks:		5	
408		1.04	39:57	45194.27	T	T	1.001	MV 2/11/91 μs coc
		1.17	40:26	76.22	F ~~T~~	F	1.013	
		1.04	40:46	242886.61	F ~~T~~	F	1.021	MV 2/11/91 Ether
		6.51	41:49	66.70	F	F	1.048	
		0.96	42:03	62.18	T	F	1.053	
		1.06	42:49	1766.56	T	T	1.073	
408		*** Total ***		290052.54	# of Peaks:		6	
420		1.06	39:55	13446.43	T	T	1.000	
420		*** Total ***		13446.43	# of Peaks:		1	
424	D	3.26	39:55	4508.79	F	F	1.123	AN 2-2-91 O/W
		1.05	40:35	56486.08	T	F	1.142	
		1.04	42:03	123218.72	T	T	1.183	
424		*** Total ***		184213.59	# of Peaks:		3	
442		0.86	48:43	372360.68	T	T	1.004	
442		*** Total ***		372360.68	# of Peaks:		1	
458		0.89	48:34	1021405.22	T	T	1.001	
458		*** Total ***		1021405.22	# of Peaks:		1	
470		1.01	48:31	9594.76	T	T	1.000	
470		*** Total ***		9594.76	# of Peaks:		1	

*** End of Report ***

FLAG
D=Delete
O/W= outside of retention time of window.
MI= Manual Integration

AR300431

Add							
304	0.790	22:14	13.23	T	F	0.982	RW 2-2-91 N
304	2.562	23:27	11.18	F	F	1.035	RW 2-2-91 N
320	0.794	22:09	9.49	T	F	0.945	RW 2-2-91 N
~~340~~ ~~320~~ RW	1.736	26:40	16.41	T ~~F~~ RW	F	1.137	RW 2-2-91 N
356 MV 2/11/91							

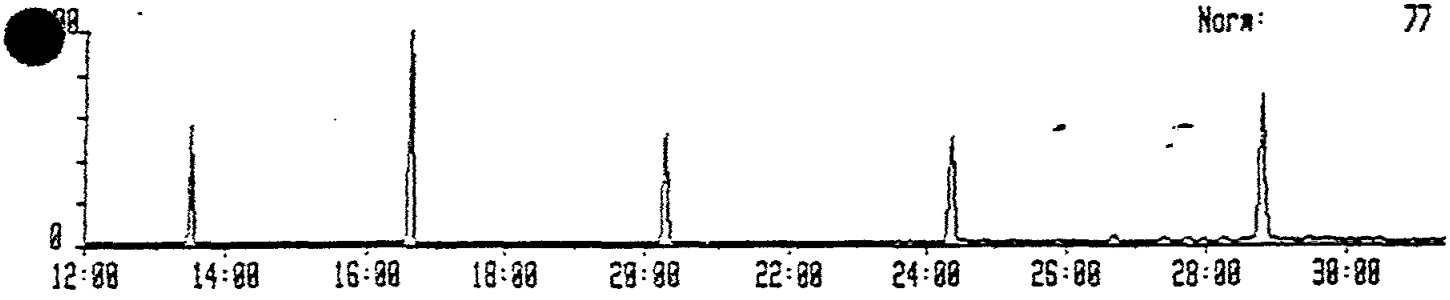
Next Page

DC045712

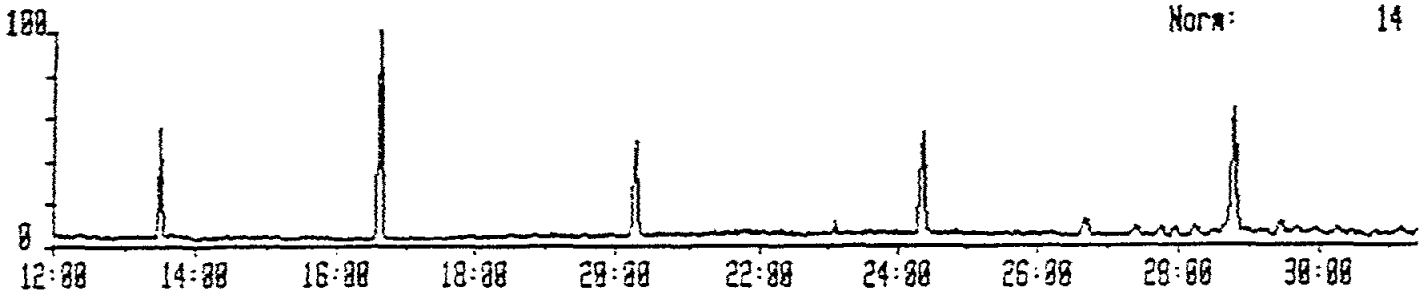
Add	0.074	28:46	243.69	F	F	~~RW 1.227~~ 1.270	RW 2-2-91
340	0.982	28:52	120.53	F	T	1.274	RW 2-2-[illegible]
340	2.573	41:33	88.72	F	F	1.041	RW 2-2-91
408							

AR300432

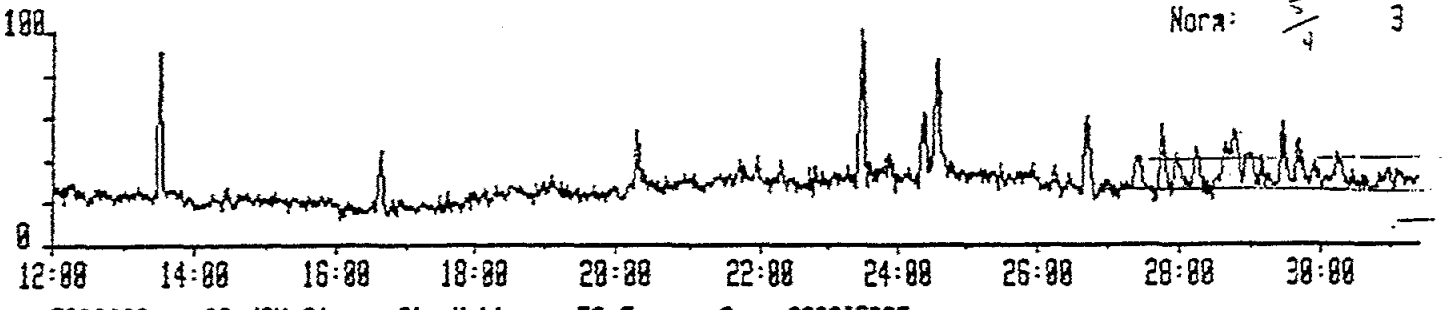
E002893 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 355.8546
Text:3-39-48 TLH#198-W4 DC045712



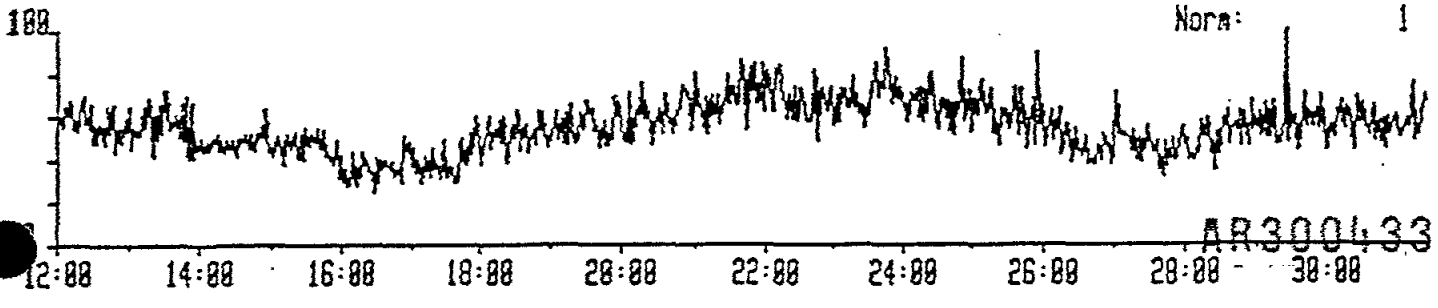
E002893 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 357.8516
Text:3-39-48 TLH#198-W4 DC045712



E002893 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 292.9988
Text:3-39-48 TLH#198-W4 DC045712



E002893 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 489.7974
Text:3-39-48 TLH#198-W4 DC045712



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002162 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-1A
CONCAL.....: E002160 SAMPLE ID....: DC046201
ANALYST.....: XL ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 995.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
CAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				---
12378-PeCDD	ND		0.3				---
123478-HxCDD	ND		0.3				---
123678-HxCDD	ND		0.3				---
123789-HxCDD	ND		0.3				---
1234678-HpCDD	~ 7.3				1.06	41:01	_L_
OCDD	~107				0.89	47:13	_BL
2378-TCDF	ND		0.09				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.1				---
123478-HxCDF	ND		0.1				---
123678-HxCDF	ND		0.1				---
234678-HxCDF	ND		0.1				---
123789-HxCDF	ND		0.2				---
1234678-HpCDF	~ 1.7				1.13	38:57	_L_
1234789-HpCDF	ND		0.3				---
OCDF	~ 15.1				0.88	47:25	_L_
TOTAL TCDD	~ EMPC			~~5.8~~ ND DJO			IR, CI DJO 3/4/91
TOTAL PeCDD	ND		0.3				---
TOTAL HxCDD	ND		0.3				---
TOTAL HpCDD	~ 11.5	2			1.11		---
TOTAL TCDF	~ EMPC			0.19			IR DJO 3/4/91
TOTAL PeCDF	ND		0.1				---
TOTAL HxCDF	~ 1.2	2			1.36		---
TOTAL HpCDF	~ 10.7	2			1.09		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	~32.6	64.9	0.81	21:54	---
13C12-2378-TCDD	~30.5	60.8	0.80	22:42	---
13C12-HxCDD 678	~39.2	78.1	1.29	34:37	---
13C12-HpCDF 678	~79.5	79.1	1.06	38:56	---
13C12-OCDD	~77.2	76.8	0.91	47:11	---

AR300434

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

DC0462-01

Page No. 1 Listing of E002162B.dbf
02/02/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
316		0.81	21:54	2598.56	T	T	1.000	
316		*** Total ***		2598.56	# of Peaks:		1	
320		5.15	21:54	717.66	F	F	0.965	
320		*** Total ***		717.66	# of Peaks:		1	
332		0.80	22:29	2135.32	T	T	0.990	
		0.80	22:42	1569.65	T	T	1.000	
332		*** Total ***		3704.97	# of Peaks:		2	
374		1.30	32:16	37.71	T	F	0.829	
374		*** Total ***		37.71	# of Peaks:		1	
402		1.29	34:37	868.53	T	T	1.000	
		1.28	35:13	1195.15	T	T	1.017	
402		*** Total ***		2063.68	# of Peaks:		2	
408		1.13	38:57	48.72	T	T	1.000	
		1.05	39:44	235.79	T	F	1.021	
408		*** Total ***		284.51	# of Peaks:		2	
420		1.06	38:56	2318.16	T	T	1.000	
420		*** Total ***		2318.16	# of Peaks:		1	
424		D 3.54	38:56	763.67	F	F	1.125	AV 2-2-91 O/W
		1.16	39:34	59.27	T	F	1.143	
		1.06	41:01	108.61	T	T	1.185	
424		*** Total ***		931.55	# of Peaks:		3	
442		0.88	47:25	354.24	T	T	1.005	
442		*** Total ***		354.24	# of Peaks:		1	
458		0.89	47:13	1614.00	T	T	1.001	
458		*** Total ***		1614.00	# of Peaks:		1	
470		0.91	47:11	1147.54	T	T	1.000	
470		*** Total ***		1147.54	# of Peaks:		1	

*** End of Report ***

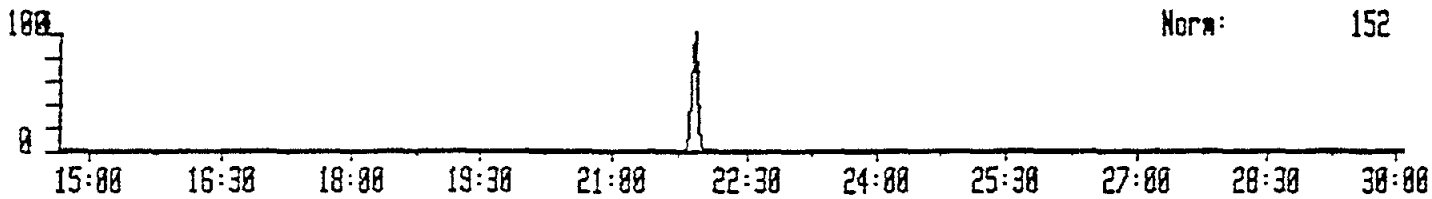
FLAG:
D = Delete
O/W = outside of retention time or window
MI = Manual Integration

374								
bd ~~374~~ RW		1.411	31:25	6.02	T ~~F~~ RW	F	0.807	RW 2-7-91 MI
304		2.18	22:28	2146	F	F	1.026	MV 2/10/91 MI

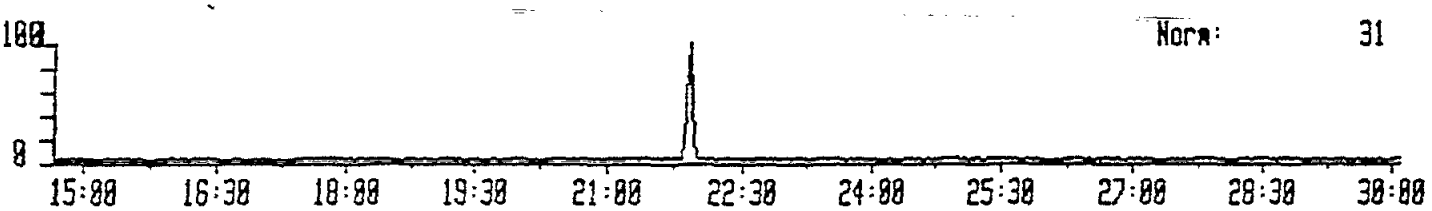
AR300435

E002162 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-1A TLH#281-WF DC046281

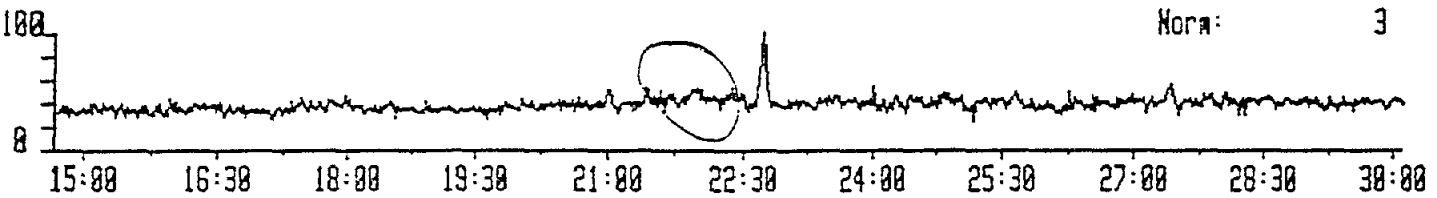
DC0462-01



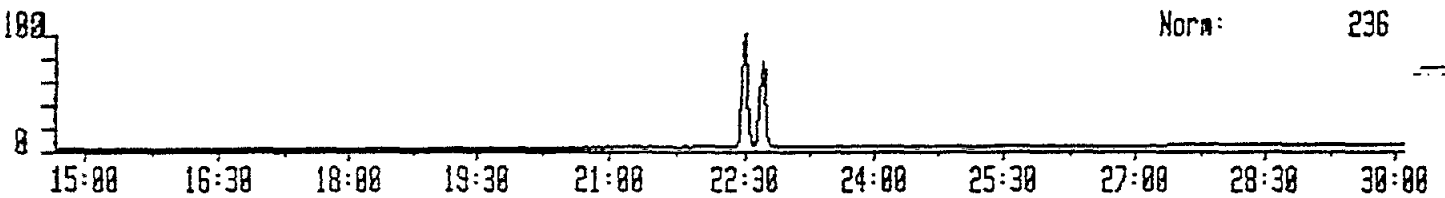
E002162 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-1A TLH#281-WF DC046281



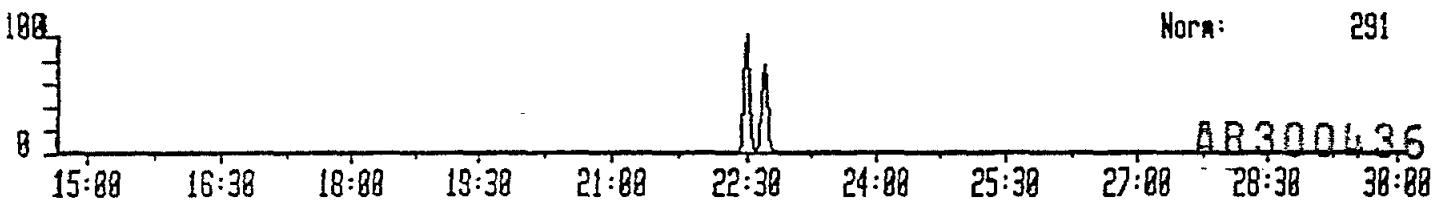
E002162 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-1A TLH#281-WF DC046281



E002162 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-1A TLH#281-WF DC046281



E002162 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-1A TLH#281-WF DC046281



AR300436

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)
02/11/91

FILE NAME....:	E002169	CLIENT ID....:	SAS 5742C	TLI NUMBER....:	3-24-2A
CONICAL.....:	E002160	SAMPLE ID....:	DC046202		
ANALYST.....:	XL	ANALYSIS DATE:	01/29/91	PROJECT NUMBER:	201-WF
SAMPLE SIZE..:	950.00 ml	SAMPLE MATRIX:	WATER	DATE RECEIVED.:	11/08/90
ICAL DATE....:	01/02/91	SAMPLE ORIGIN:	N\A	DATE COLLECTED:	11/07/90
SPIKE FILE...:	SP8280SW			SHIPMENT NO...:	5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.08				---
12378-PeCDD	ND		0.1				---
123478-HxCDD	ND		0.1				---
123678-HxCDD	ND		0.1				---
123789-HxCDD	ND		0.1				---
1234678-HpCDD	- 1.4				1.02	40:59	_L_
OCDD	- 30.7				0.89	47:10	L,BL
2378-TCDF	ND		0.05				---
12378-PeCDF	ND		0.08				---
23478-PeCDF	ND		0.07				---
123478-HxCDF	ND		0.07				---
123678-HxCDF	ND		0.06				---
234678-HxCDF	ND		0.06				---
123789-HxCDF	ND		0.08				---
1234678-HpCDF	- 0.32				1.03	38:55	_L_
1234789-HpCDF	ND		0.1				---
OCDF	- 3.7				0.86	47:22	_L_
TOTAL TCDD	EMPC			~~7.07~~ ND PJO			IR, CJ PJO 3/2/91
TOTAL PeCDD	ND		0.1				---
TOTAL HxCDD	ND		0.1				---
TOTAL HpCDD	- 2.0	2			1.03		---
TOTAL TCDF	-EMPC			0.21			IR
TOTAL PeCDF	ND		0.08				---
TOTAL HxCDF	- 0.24	1			1.28		---
TOTAL HpCDF	- 1.8	2			1.07		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	~ 40.8	77.6	0.81	21:52	---
13C12-2378-TCDD	~ 40.8	77.6	0.80	22:39	---
13C12-HxCDD 678	~ 44.2	83.9	1.29	34:35	---
13C12-HpCDF 678	~90.7	86.2	1.08	38:53	---
13C12-OCDD	~94.1	89.4	0.91	47:09	---

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

AR300437

DC0462-02

Page No. 1 Listing of E002169B.dbf
02/02/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.46	22:27	53.24	F	F	1.027	
304		*** Total ***		53.24	# of Peaks:		1	
316		0.81	21:52	5675.99	T	T	1.000	
316		*** Total ***		5675.99	# of Peaks:		1	
320		4.98	21:52	1791.82	F	F	0.965	
		2.53	23:38	56.17	F	F	1.043	
		D 2.28	24:29	177.70	F	F	1.081	AV 2-2-91 o/w
		2.40	24:52	37.59	F	F	1.098	
320		*** Total ***		2063.28	# of Peaks:		4	
332		0.80	22:27	3898.21	T	T	0.991	
		0.80	22:39	3659.23	T	T	1.000	
332		*** Total ***		7557.44	# of Peaks:		2	
374		1.28	32:12	23.48	T	F	0.828	
374		*** Total ***		23.48	# of Peaks:		1	
390		D 7.04	38:54	77.19	F	F	1.125	AV 2-2-91 o/w
390		*** Total ***		77.19	# of Peaks:		1	
402		1.29	34:35	2320.94	T	T	1.000	
		1.29	35:10	2984.45	T	T	1.017	
402		*** Total ***		5305.39	# of Peaks:		2	
408		1.03	38:55	25.64	T	T	1.001	
		1.10	39:42	100.70	T	F	1.021	
408		*** Total ***		126.34	# of Peaks:		2	
420		1.08	38:53	6223.33	T	T	1.000	
420		*** Total ***		6223.33	# of Peaks:		1	
424		D 3.25	38:53	2397.32	F	F	1.124	AV 2-2-91 o/w
		1.03	39:32	22.62	T	F	1.143	
		1.02	40:59	54.37	T	T	1.185	
424		*** Total ***		2474.31	# of Peaks:		3	
442		0.86	47:22	238.66	T	T	1.005	
442		*** Total ***		238.66	# of Peaks:		1	
458		0.89	47:10	1275.90	T	T	1.000	
458		*** Total ***		1275.90	# of Peaks:		1	
470		0.91	47:09	3319.68	T	T	1.000	
470		*** Total ***		3319.68	# of Peaks:		1	

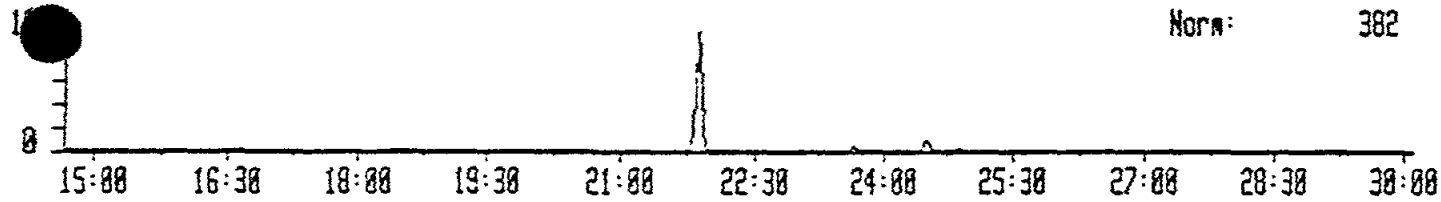
*** End of Report ***

FLAG
D=Delete
o/w=outside retention time of window.

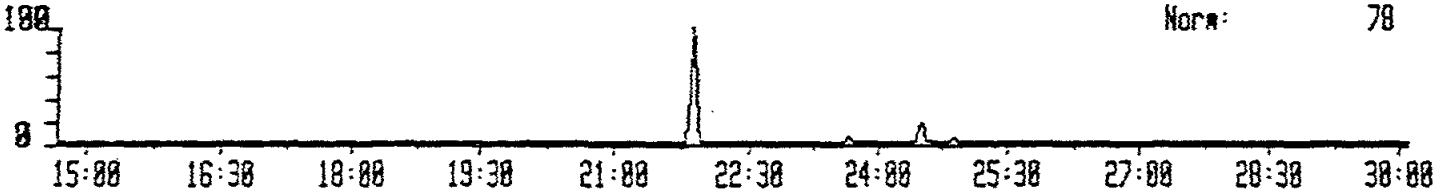
AR300438

E002169 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-2A TLH#201-WF DC046202

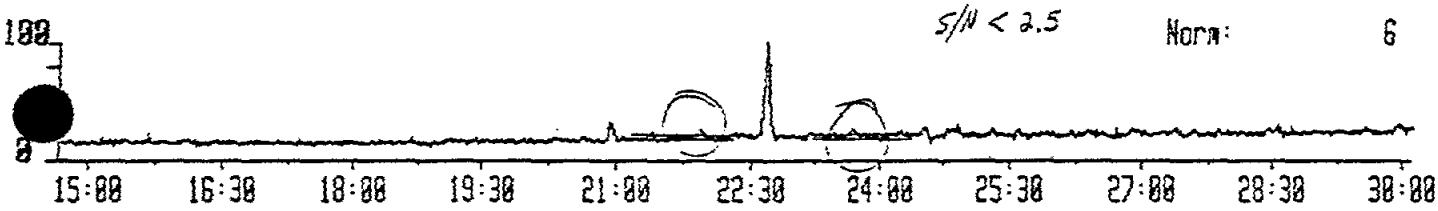
DC0462-02



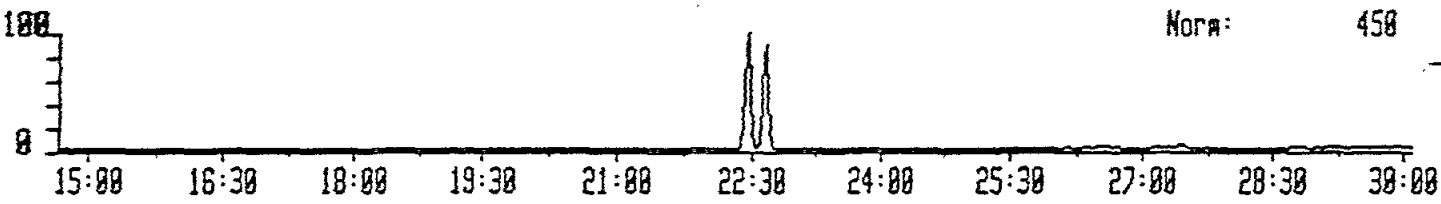
E002169 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-2A TLH#201-WF DC046202



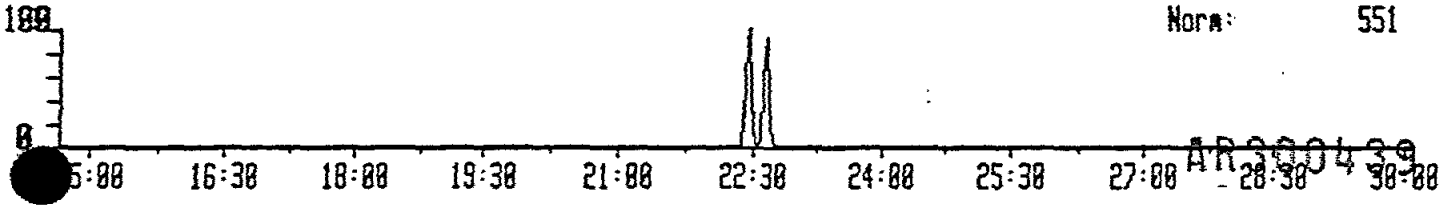
E002169 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-2A TLH#201-WF DC046202



E002169 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-2A TLH#201-WF DC046202



E002169 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-2A TLH#201-WF DC046202



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002097 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-3A
CONCAL.....: E002091 SAMPLE ID....: DC046203
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 945.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.09				—
12378-PeCDD	ND		0.2				—
123478-HxCDD	ND		0.1				—
123678-HxCDD	ND		0.1				—
123789-HxCDD	ND		0.1				—
1234678-HpCDD	ND		0.2				—
OCDD	0.28				0.90	48:20	BL,L
2378-TCDF	ND		0.05				—
12378-PeCDF	ND		0.08				—
23478-PeCDF	ND		0.08				—
123478-HxCDF	ND		0.07				—
123678-HxCDF	ND		0.06				—
234678-HxCDF	ND		0.05				—
123789-HxCDF	ND		0.08				—
1234678-HpCDF	ND		0.08				—
1234789-HpCDF	ND		0.1				—
OCDF	ND		0.1				—
TOTAL TCDD	EMPC			~~5.07~~ ND DJO			IR DJO 3/1/91
TOTAL PeCDD	ND		0.2				—
TOTAL HxCDD	ND		0.1				—
TOTAL HpCDD	ND		0.2				—
TOTAL TCDF	EMPC			0.21			IR DJO 3/1/91
TOTAL PeCDF	ND		0.08				—
TOTAL HxCDF	ND		0.06				—
TOTAL HpCDF	ND		0.09				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.0	79.3	0.80	22:39	—
13C12-2378-TCDD	40.0	75.6	0.79	23:27	—
13C12-HxCDD 678	48.8	92.2	1.27	35:34	—
13C12-HpCDF 678	91.9	86.9	1.06	39:56	—
13C12-OCDD	94.8	89.5	0.91	48:19	—

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

AR300441

37 Cl-TCDD 44.3 88.6 DJO 3/1/91

DC0462-03

01/30/91

Listing of E002097B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.18	23:15	60.50	F	F	1.026	
304		*** Total ***		60.50	# of Peaks:		1	
316		0.80	22:39	8363.24	T	T	1.000	
316		*** Total ***		8363.24	# of Peaks:		1	
320		4.98	22:39	1943.97	F	F	0.966	
320		*** Total ***		1943.97	# of Peaks:		1	
332		0.79	23:15	5646.43	T	T	0.991	
		0.79	23:27	5157.77	T	T	1.000	
332		*** Total ***		10804.20	# of Peaks:		2	
390		D 6.37	39:56	125.16	F	F	1.123	AV 1-31-91 O/W
390		*** Total ***		125.16	# of Peaks:		1	
402		1.27	35:34	4222.34	T	T	1.000	
		1.28	36:11	5020.25	T	T	1.017	
402		*** Total ***		9242.59	# of Peaks:		2	
420		1.06	39:56	11829.76	T	T	1.000	
420		*** Total ***		11829.76	# of Peaks:		1	
424		D 3.25	39:55	3392.62	F	F	1.122	AV 1-31-91 O/W
424		*** Total ***		3392.62	# of Peaks:		1	
470		0.91	48:19	5693.71	T	T	1.000	
470		*** End of Report ***		5693.71	# of Peaks:		1	

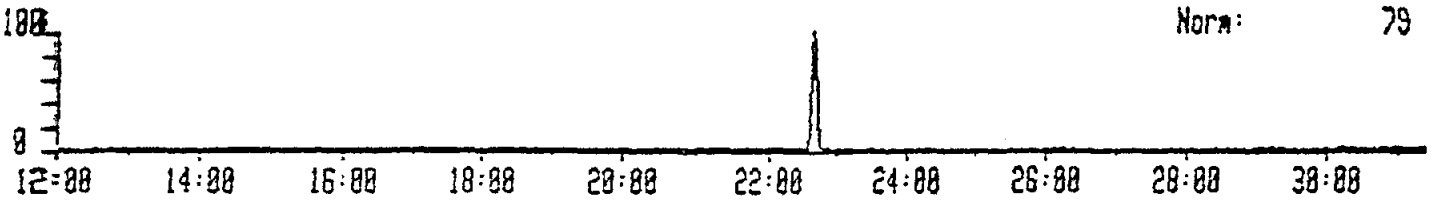
FLAG
D = Delete
O/W = outside of retention time or window.
MI = Manual Integrations

Add 304	1.992	23:27	8.89	F	F	1.035	RW 2-1-91 MI
458	0.90	48:20	19.16	T	T	1.000	MV 2/7/91 MI

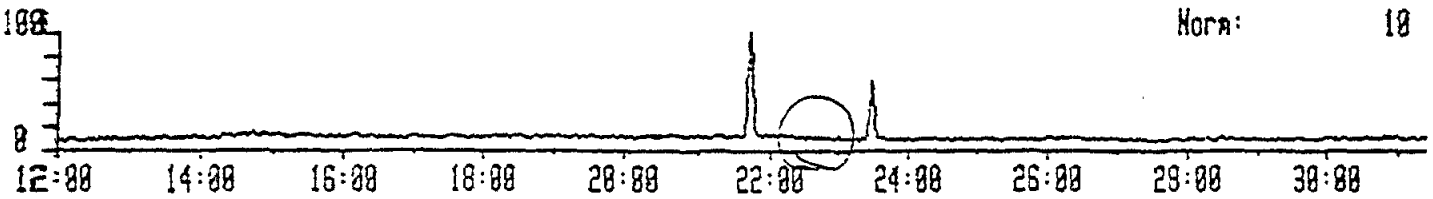
AR300441

E002097 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-3A TLH#198-W1 DC846283

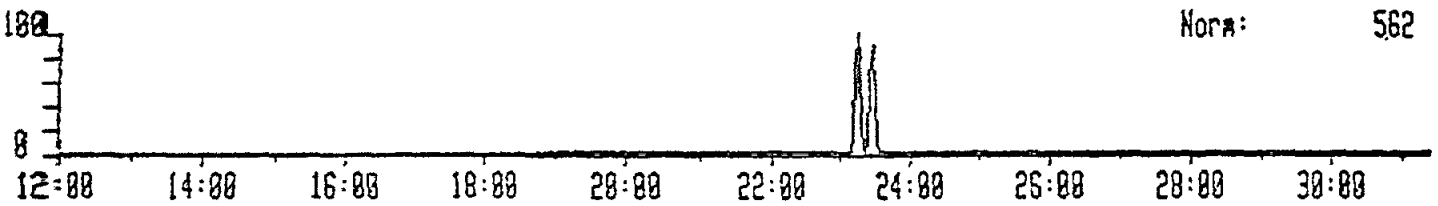
E002097 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8938
Text:3-24-3A TLH#198-W1 DC846283



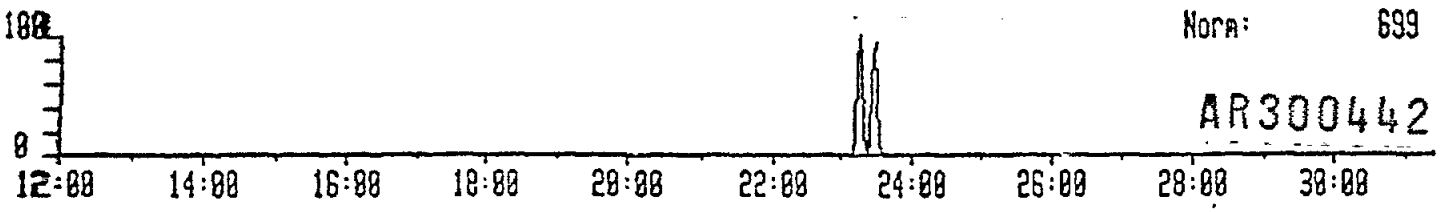
E002097 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-3A TLH#198-W1 DC846283



E002097 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-3A TLH#198-W1 DC846283



E002097 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-3A TLH#198-W1 DC846283



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002098 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4A
CONCAL.....: E002091 SAMPLE ID....: DC046204
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 965.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				—
12378-PeCDD	ND		0.08				—
123478-HxCDD	ND		0.05				—
123678-HxCDD	ND		0.05				—
123789-HxCDD	ND		0.05				—
1234678-HpCDD	ND		0.06				—
OCDD	0.15				0.79	48:21	BL,L
2378-TCDF	ND		0.03				—
12378-PeCDF	ND		0.04				—
23478-PeCDF	ND		0.04				—
123478-HxCDF	ND		0.04				—
123678-HxCDF	ND		0.03				—
234678-HxCDF	ND		0.03				—
123789-HxCDF	ND		0.04				—
1234678-HpCDF	ND		0.04				—
1234789-HpCDF	ND		0.05				—
OCDF	ND		0.05				—
TOTAL TCDD	EMPC			~~4.13~~ ND DJO			IR DJO 3/1/91
TOTAL PeCDD	ND		0.08				—
TOTAL HxCDD	ND		0.05				—
TOTAL HpCDD	ND		0.06				—
TOTAL TCDF	EMPC			0.18			IR DJO 3/1/91
TOTAL PeCDF	ND		0.04				—
TOTAL HxCDF	ND		0.03				—
TOTAL HpCDF	ND		0.05				—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	38.6	74.6	0.78	22:40	—
13C12-2378-TCDD	36.6	70.7	0.79	23:27	—
13C12-HxCDD 678	48.0	92.6	1.28	35:34	—
13C12-HpCDF 678	73.7	71.1	1.06	39:56	—
13C12-OCDD	79.0	76.3	0.90	48:19	—

_____ __/__/__ 8280_RPT

AR300443

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

37Cl - TCDD 41.9 80.9 DJO 3/1/91

DC0462-04

Page No. 1 Listing of E002098B.dbf
01/30/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.33	23:15	65.31	F	F	1.026	
304		*** Total ***		65.31	# of Peaks:		1	
316		0.78	22:40	9664.99	T	T	1.000	
316		*** Total ***		9664.99	# of Peaks:		1	
320		5.11	22:40	1910.18	F	F	0.967	
320		*** Total ***		1910.18	# of Peaks:		1	
332		0.79	23:15	7019.55	T	T	0.991	
		0.79	23:27	5991.23	T	T	1.000	
332		*** Total ***		13010.78	# of Peaks:		2	
390	D	5.37	39:57	110.73	F	F	1.123	AV 1-31-91 O/W
390		*** Total ***		110.73	# of Peaks:		1	
402		1.28	35:34	5752.15	T	T	1.000	
		1.28	36:11	6784.41	T	T	1.017	
402		*** Total ***		12536.56	# of Peaks:		2	
420		1.06	39:56	13087.17	T	T	1.000	
420		*** Total ***		13087.17	# of Peaks:		1	
424	D	3.22	39:56	3143.76	F	F	1.123	AV 1-31-91 O/
424		*** Total ***		3143.76	# of Peaks:		1	
470		0.90	48:19	6520.82	T	T	1.000	
470		*** Total ***		6520.82	# of Peaks:		1	

*** End of Report ***

Flag:
D = Delete
O/W = outside of Retention time of window.
MI = Manual Integration

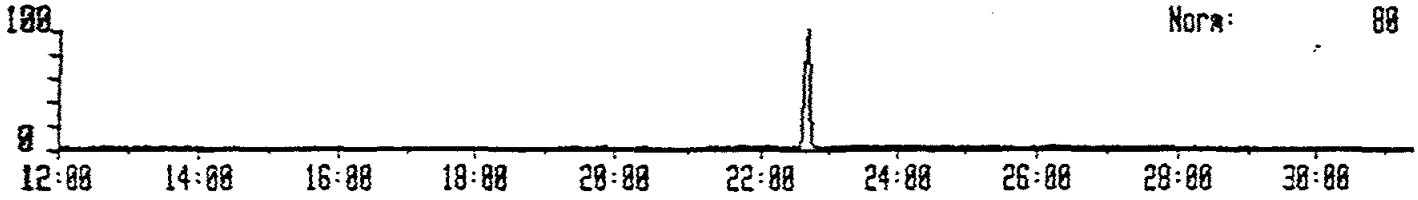
Add 304		2.023	23:28	9.40	F	F	1.035	RW 1-1-91 MI
458		0.786	48:21	11.68	T	T	1.001	RW 2-1-91 MI

AR300444

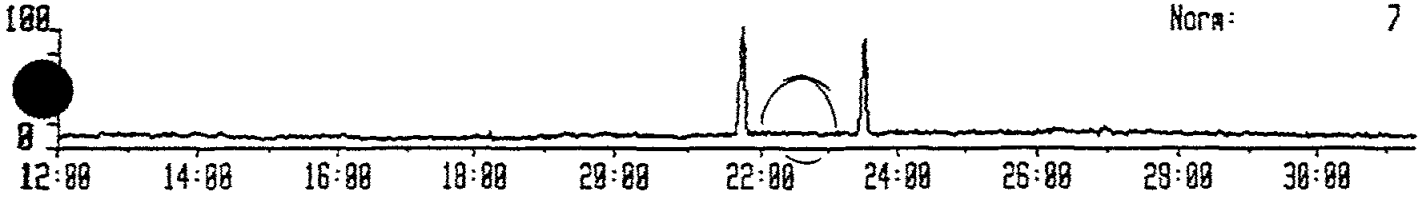
DC0462-04

E002098 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-4A TLH#198-W1 DC046204

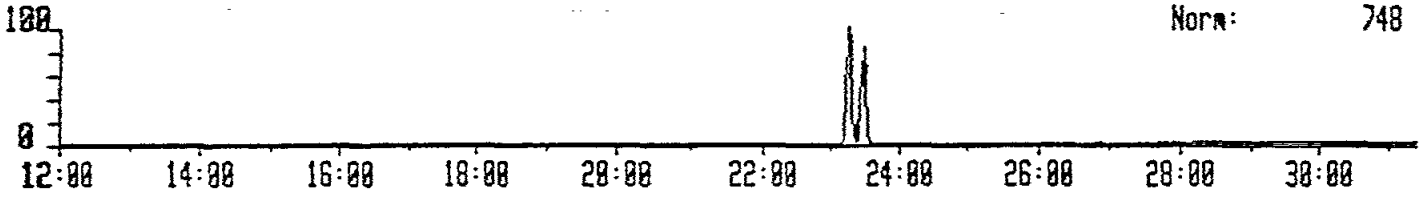
E002098 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-4A TLH#198-W1 DC046204



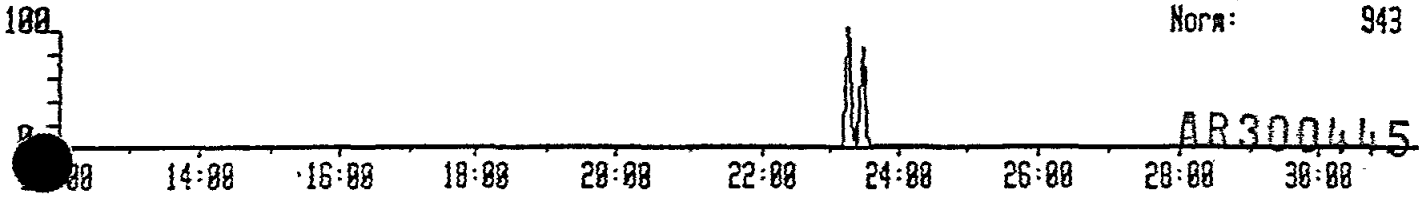
E002098 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-4A TLH#198-W1 DC046204



E002098 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-4A TLH#198-W1 DC046204



E002098 22-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-4A TLH#198-W1 DC046204



AR300445

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002102 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4B MS
CONCAL.....: E002101 SAMPLE ID....: DCO 46204 MS
ANALYST.....: XL ANALYSIS DATE: 01/22/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 900.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	50.7				0.78	23:15	___
12378-PeCDD	62.6				1.57	29:14	___
123478-HxCDD	124				1.24	35:11	___
123678-HxCDD	128				1.24	35:21	___
123789-HxCDD	130				1.23	35:58	___
1234678-HpCDD	138				1.05	41:47	___
OCDD	245				0.89	48:07	BL_
2378-TCDF	51.7				0.76	22:27	___
12378-PeCDF	65.8				1.56	27:34	___
23478-PeCDF	60.1				1.56	28:40	___
123478-HxCDF	121				1.23	33:42	___
123678-HxCDF	119				1.23	33:54	___
234678-HxCDF	116				1.23	34:55	___
123789-HxCDF	110				1.24	36:23	___
1234678-HpCDF	132				1.05	39:43	___
1234789-HpCDF	129				1.04	42:35	___
OCDF	232				0.88	48:21	___
TOTAL TCDD	50.7	1		~~53.8~~ ND	0.78	IR, CC	___
TOTAL PeCDD	62.6	1		~~63.26~~ 0.76	1.57	IR	___
TOTAL HxCDD	386	4			1.26		___
TOTAL HpCDD	140	2			1.08		___
TOTAL TCDF	53.6	3		~~52.7~~ 0.28	0.72	IR	___
TOTAL PeCDF	128	6		~~131.38~~ 1.5	1.49	IR	___
TOTAL HxCDF	473	6			1.27		___
TOTAL HpCDF	267	3			1.09		___

MM 3/6/91

MM 3/6/91

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	41.0	73.9	0.79	22:26	___
13C12-2378-TCDD	40.1	72.2	0.78	23:14	___
13C12-HxCDD 678	46.1	83.1	1.27	35:20	___
13C12-HpCDF 678	97.5	87.7	1.06	39:41	___
13C12-OCDD	94.9	85.4	0.91	48:06	___

!_____ __/__/__! 8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300446

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.70	21:22	20.23	T	F	0.952	
		0.69	22:01	83.79	T	F	0.981	
		0.76	22:27	7487.28	T	T	1.001	
		2.12	23:02	58.86	F	F	1.027	
304		*** Total ***		7650.16	# of Peaks:		4	
316		0.79	22:26	6783.57	T	T	1.000	
316		*** Total ***		6783.57	# of Peaks:		1	
320		4.96	22:26	1528.79	F	F	0.966	
		0.78	23:15	4532.75	T	T	1.001	
320		*** Total ***		6061.54	# of Peaks:		2	
332		0.78	23:01	4932.91	T	T	0.991	
		0.78	23:14	4280.27	T	T	1.000	
332		*** Total ***		9213.18	# of Peaks:		2	
340		1.49	26:17	152.70	T	F	1.172	
		1.15	27:00	99.98	F	F	1.204	
		1.56	27:34	5559.92	T	T	1.229	
		1.60	27:48	40.79	T	F	1.239	
		1.35	28:00	123.21	T	F	1.248	
		1.56	28:40	5114.13	T	T	1.278	
		1.38	28:53	65.49	T	F	1.288	
		1.29	30:15	39.26	F	F	1.348	
340		*** Total ***		11195.48	# of Peaks:		8	
356		1.57	29:14	2661.39	T	T	1.258	
356		*** Total ***		2661.39	# of Peaks:		1	
374		1.25	32:05	63.04	T	F	0.808	
		1.23	33:42	17217.60	T	T	0.849	
		1.23	33:54	18587.37	T	T	0.854	
		1.23	34:55	20289.87	T	T	0.880	
		1.43	35:20	18.58	T	F	0.890	
		1.24	36:23	13492.03	T	T	0.917	
	D	1.27	39:43	741.07	T	F	1.001	Jean 2-8-91
374		*** Total ***		70409.56	# of Peaks:		7	
390		1.24	35:11	8992.29	T	T	0.996	
		1.24	35:21	9658.71	T	T	1.000	
		1.23	35:58	10016.83	T	T	1.018	
	D	5.41	39:42	75.72	F	F	1.124	Jean 2-8-91
		1.26	41:48	426.12	T	F	1.183	
390		*** Total ***		29169.67	# of Peaks:		5	
402		1.27	35:20	3503.74	T	T	1.000	
		1.26	35:56	4651.32	T	T	1.017	
402		*** Total ***		8155.06	# of Peaks:		2	
408		1.05	39:43	13977.10	T	T	1.001	
		1.19	40:30	31.64	T	F	1.021	
		1.04	42:35	10546.17	T	T	1.073	

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
408		*** Total ***		24554.91	# of Peaks:		3	
420		1.06	39:41	8875.77	T	T	1.000	
420		*** Total ***		8875.77	# of Peaks:		1	
424	D [	3.24	39:41	2535.04	F	F	1.123	] ew 2-8-91 o/c
		1.05	41:47	6647.34	T	T	1.183	
424		*** Total ***		9182.38	# of Peaks:		2	
442		0.88	48:21	19606.26	T	T	1.005	
442		*** Total ***		19606.26	# of Peaks:		1	
458		0.89	48:07	13258.41	T	T	1.000	
458		*** Total ***		13258.41	# of Peaks:		1	
470		0.91	48:06	4550.74	T	T	1.000	
470		*** Total ***		4550.74	# of Peaks:		1	

*** End of Report ***

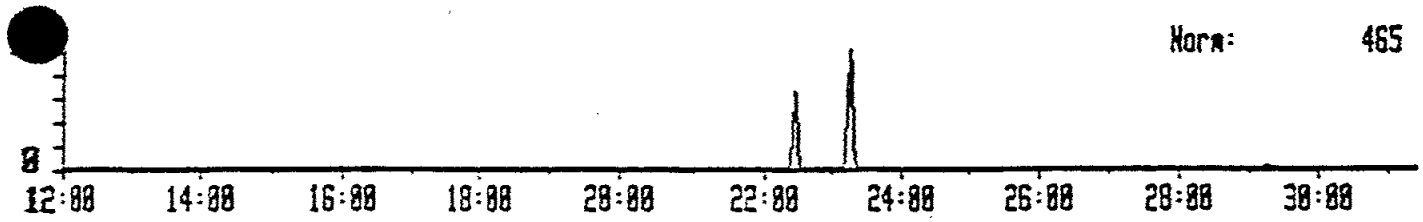
FLAGS:

D = Delete
o/w = outside of retention window
MI = Manual Integrations

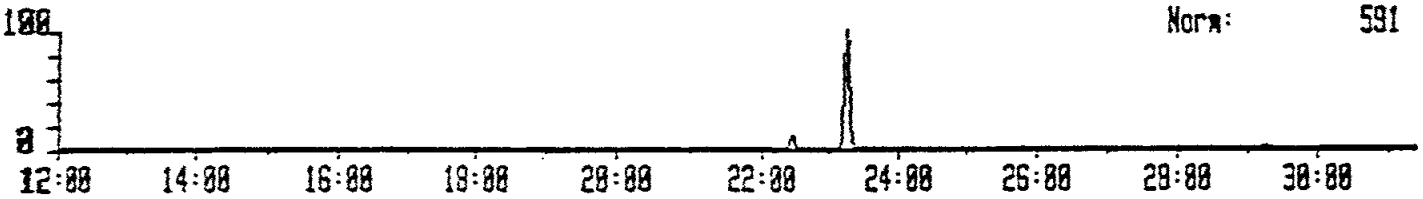
add:

304	1.636	23:14	11:14	F	F	1.036	ew 2-8-91 M
356	2.209	28:00	8.37	F	~~T~~ F ew 2-8-91	1.205	ew 2-8-91 M
356	2.355	27:30	11.54	F	F	1.184	ew 2-8-91 M
356	1.854	27:44	9.16	F	F	1.194	ew 2-8-91 M
390	1.341	34:07	9.57	T	F	0.966	ew 2-8-91 M
424	1.102	40:21	8.83	T	F	1.14	ew 2-8-91 M

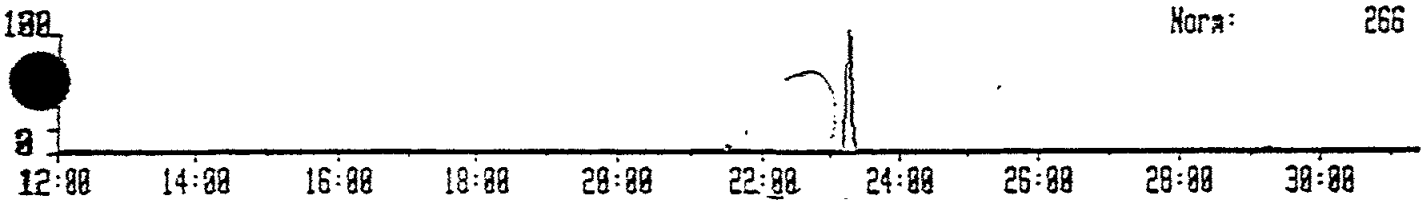
E002102 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-48 MS TLH#198-W1 DC046284MS



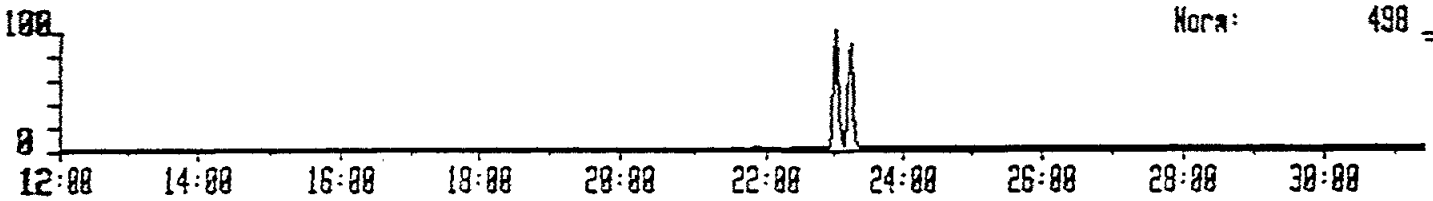
E002102 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-48 MS TLH#198-W1 DC046284MS



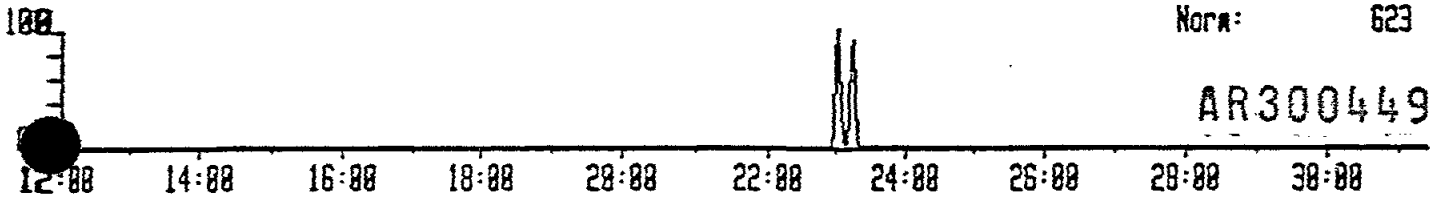
E002102 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-48 MS TLH#198-W1 DC046284MS



E002102 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-48 MS TLH#198-W1 DC046284MS



E002102 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-48 MS TLH#198-W1 DC046284MS



AR300449

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002103 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-4CMSD
CONCAL.....: E002101 SAMPLE ID....: DC0 46204 MSD
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 970.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	48.5				0.78	23:26	___
12378-PeCDD	62.5				1.56	29:25	___
123478-HxCDD	122				1.23	35:23	___
123678-HxCDD	115				1.23	35:33	___
123789-HxCDD	117				1.23	36:10	___
1234678-HpCDD	128				1.05	42:00	___
OCDD	229				0.89	48:20	BL_
2378-TCDF	48.9				0.77	22:38	___
12378-PeCDF	65.9				1.57	27:45	___
23478-PeCDF	60.2				1.56	28:51	___
123478-HxCDF	115				1.23	33:54	___
123678-HxCDF	113				1.23	34:06	___
234678-HxCDF	108				1.23	35:07	___
123789-HxCDF	104				1.24	36:35	___
1234678-HpCDF	123				1.05	39:55	___
1234789-HpCDF	115				1.05	42:48	___
OCDF	212				0.89	48:33	___
TOTAL TCDD	46.9	~~2~~ 1	0.062	~~53.5~~ ND	0.84		IR, CE
TOTAL PeCDD	62.5	1		~~63.05~~ 0.93	1.56		IR
TOTAL HxCDD	355	3		~~355.36~~ 0.28	1.23		IR
TOTAL HpCDD	133	2			1.13		___
TOTAL TCDF	50.2	3		~~50.5~~ 0.30	0.75		IR, MM 3/6/91
TOTAL PeCDF	127	6		~~131.86~~ 1.7	1.47		IR
TOTAL HxCDF	441	5		~~442~~ 0.13	1.23		IR
TOTAL HpCDF	244	4			1.09		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	36.2	70.2	0.79	22:37	___
13C12-2378-TCDD	36.2	70.1	0.79	23:25	___
13C12-HxCDD 678	46.5	90.3	1.27	35:32	___
13C12-HpCDF 678	97.3	94.3	1.06	39:54	___
13C12-OCDD	89.6	86.9	0.91	48:19	___

!_____ __/__/__!

8280_RPT rev:3.01

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300450

02/08/91

Listing of E002103B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.70	21:34	35.52	T	F	0.954	
		0.77	22:12	126.48	T	F	0.982	
		0.77	22:38	11513.11	T	T	1.001	
		2.11	23:13	100.55	F	F	1.027	
		1.80	23:25	18.37	F	F	1.035	
304		*** Total ***		11794.03	# of Peaks:		5	
316		0.79	22:37	10168.94	T	T	1.000	
316		*** Total ***		10168.94	# of Peaks:		1	
320		4.85	22:37	2452.68	F	F	0.966	
		0.78	23:26	7152.74	T	T	1.001	
320		*** Total ***		9605.42	# of Peaks:		2	
332		0.79	23:13	7823.73	T	T	0.991	
		0.79	23:25	6590.28	T	T	1.000	
332		*** Total ***		14414.01	# of Peaks:		2	
340		1.48	26:28	200.84	T	F	1.170	
		1.44	27:11	137.01	T	F	1.202	
		1.57	27:45	8971.17	T	T	1.227	
		1.22	27:59	77.48	F	F	1.237	
		1.30	28:11	173.27	F	F	1.246	
		1.56	28:51	8276.95	T	T	1.276	
		1.42	29:05	110.02	T	F	1.286	
		1.33	30:27	80.65	T	F	1.346	
340		*** Total ***		18027.39	# of Peaks:		8	
356		1.56	29:25	4396.30	T	T	1.256	
356		*** Total ***		4396.30	# of Peaks:		1	
374		1.44	32:02	19.45	F	F	0.803	
		1.23	32:17	81.24	T	F	0.809	
		1.23	33:54	29279.99	T	T	0.850	
		1.23	34:06	31499.40	T	T	0.855	
		1.23	35:07	33788.67	T	T	0.880	
		1.70	35:33	35.28	F	F	0.891	
		1.24	36:35	22525.89	T	T	0.917	
	D	1.27	39:56	1180.21	T	F	1.001	] ean 2-8-91 o/w
374		*** Total ***		118410.13	# of Peaks:		8	
390		1.48	34:18	27.54	F	F	0.965	
		1.23	35:23	15969.48	T	T	0.996	
		1.23	35:33	15683.12	T	T	1.000	
		1.23	36:10	16214.68	T	T	1.018	
	D	5.45	39:55	133.48	F	F	1.123	] ean 2-8-91 o/w
		1.26	42:00	713.52	T	F	1.182	
390		*** Total ***		48741.82	# of Peaks:		6	
402		1.27	35:32	5840.98	T	T	1.000	
		1.26	36:09	7135.43	T	T	1.017	
402		*** Total ***		12976.41	# of Peaks:		2	

AR300451

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
408		1.05	39:55	23250.13	T	T	1.000	
		1.11	40:42	37.63	T	F	1.020	
		1.05	42:48	16652.34	T	T	1.073	
408		*** Total ***		39940.10	# of Peaks:		3	
420		1.06	39:54	14646.16	T	T	1.000	
420		*** Total ***		14646.16	# of Peaks:		1	
424		D (3.25	39:54	4451.95	F	F	1.123	] em 2-8-91 o/w
		1.05	42:00	11049.39	T	T	1.182	
424		*** Total ***		15501.34	# of Peaks:		2	
442		0.89	48:33	30401.92	T	T	1.005	
442		*** Total ***		30401.92	# of Peaks:		1	
458		0.89	48:20	20819.01	T	T	1.000	
458		*** Total ***		20819.01	# of Peaks:		1	
470		0.91	48:19	7109.64	T	T	1.000	
470		*** Total ***		7109.64	# of Peaks:		1	

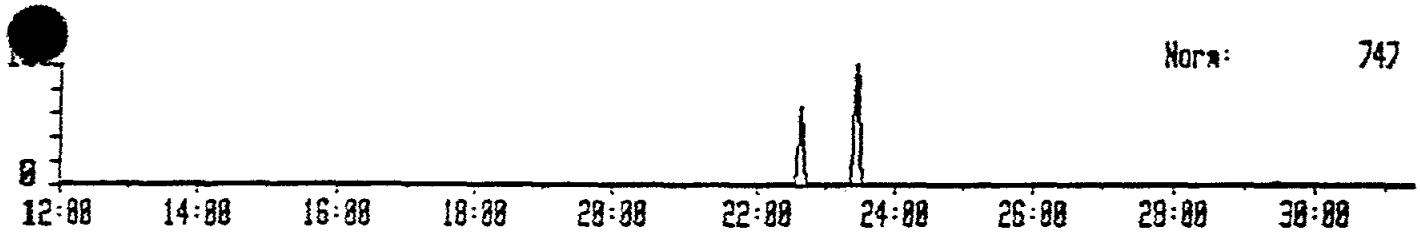
*** End of Report ***

FLAGS:
D = Delete
o/w = outside of retention window
MI = Manual Integration

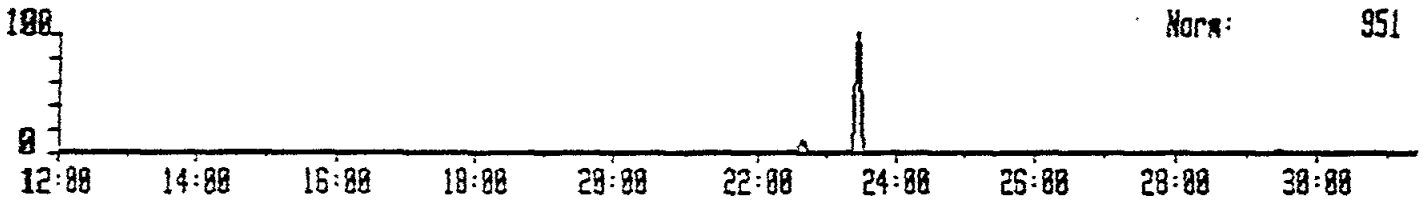
Add:

320	0.895	22:10	10.27	T	F	0.946	em 2-8-91 M
356	2.186	27:43	18.69	F	F	1.184	em 2-8-91 M
356	2.214	27:55	18.77	F	F	1.192	em 2-8-91 M
356	1.855	28:12	15.04	F	F	1.204	em 2-8-91 M
374	1.930	36:10	11.71	F	F	0.906	em 2-8-91 M
408	1.133	40:42	40.44	T	F	1.020	em 2-8-91
424	1.195	40:31	15.40	T	F	1.140	em 2-8-91

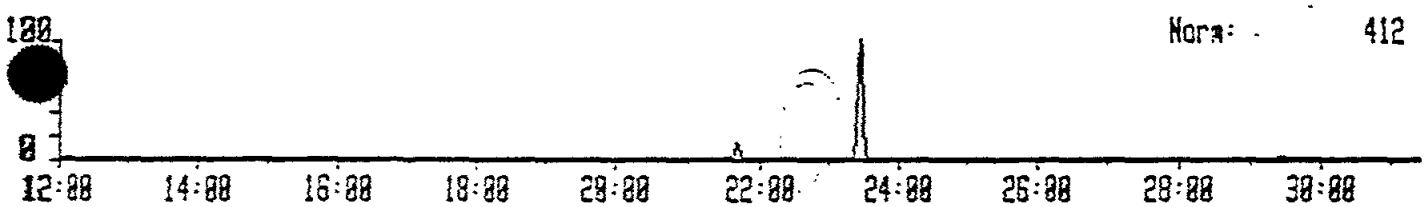
E002103 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-4MSD TLH#198-W1 DC846204 MSD



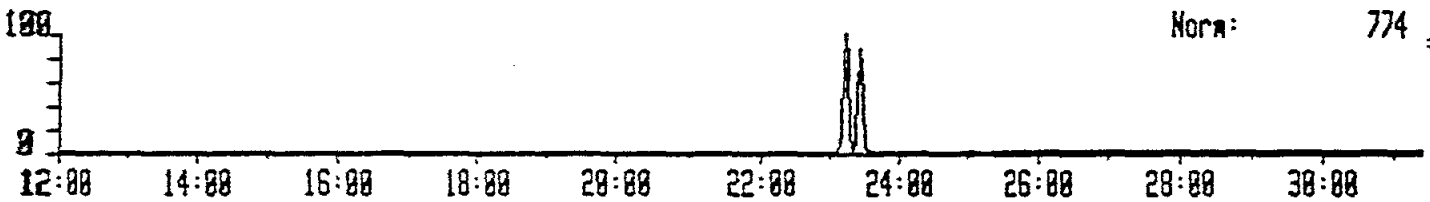
E002103 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-4MSD TLH#198-W1 DC846204 MSD



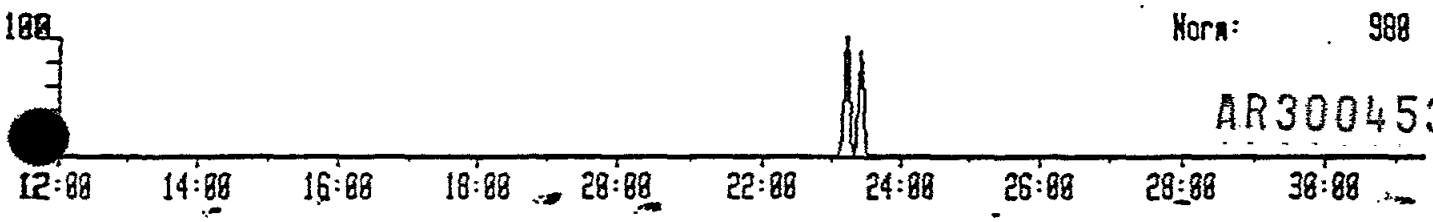
E002103 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-4MSD TLH#198-W1 DC846204 MSD



E002103 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-4MSD TLH#198-W1 DC846204 MSD



E002103 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-4MSD TLH#198-W1 DC846204 MSD



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002227 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-24-5
CONCAL.....: E002224 SAMPLE ID....: DC046205
ANALYST.....: MV ANALYSIS DATE: 02/02/91 PROJECT NUMBER: 198-R
SAMPLE SIZE..: 100.00 ml SAMPLE MATRIX: RINSE DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82905W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.9				___
12378-PeCDD	ND		1.6				___
123478-HxCDD	ND		1.3				___
123678-HxCDD	3.0				1.25	34:34	_L_
123789-HxCDD	ND		1.2				___
1234678-HpCDD	146				1.05	40:55	_L_
OCDD	1536				0.88	47:07	BL_
2378-TCDF	ND		0.5				___
12378-PeCDF	ND		0.8				___
23478-PeCDF	ND		0.7				___
123478-HxCDF	ND		0.8				___
123678-HxCDF	ND		0.8				___
234678-HxCDF	ND		0.6				___
123789-HxCDF	ND		0.9				___
1234678-HpCDF	38.6				1.07	38:51	_L_
1234789-HpCDF	1.1				1.00	41:42	_L_
OCDF	301				0.86	47:19	_L_
TOTAL TCDD	EMPC			~~28.19~~ ND PJO			IR, CI PJO 2/1/91
TOTAL PeCDD	ND		1.6				___
TOTAL HxCDD	5.1	2			1.26		___
TOTAL HpCDD	220	2			1.05		___
TOTAL TCDF	EMPC			5.28			IR PJO 2/1/91
TOTAL PeCDF	ND		0.7				___
TOTAL HxCDF	31.2	3			1.31		___
TOTAL HpCDF	226	3			1.04		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	234	46.9	0.80	21:51	___
13C12-2378-TCDD	218	43.5	0.80	22:38	___
13C12-HxCDD 678	282	56.4	1.28	34:33	___
13C12-HpCDF 678	490	49.0	1.06	38:49	___
13C12-OCDD	523	52.3	0.90	47:06	___

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%

AR300454

DC0462-05

Page No. 1 Listing of E002227B.dbf
02/04/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.39	22:26	89.42	F	F	1.027	
		0.34	23:47	63.33	F	F	1.088	
304		*** Total ***		152.75	# of Peaks:		2	
316		0.80	21:51	6526.85	T	T	1.000	
316		*** Total ***		6526.85	# of Peaks:		1	
320		5.04	21:51	1779.95	F	F	0.965	
		0.54	23:46	252.02	F	F	1.050	
320		*** Total ***		2031.97	# of Peaks:		2	
332		0.80	22:26	7154.68	T	T	0.991	
		0.80	22:38	4007.37	T	T	1.000	
332		*** Total ***		11162.05	# of Peaks:		2	
340	D	4.20	23:46	360.81	F	F	1.088	AR 2-4-91 O/n
340		*** Total ***		360.81	# of Peaks:		1	
374		1.26	31:20	29.65	T	F	0.807	
		1.29	32:12	292.28	T	F	0.830	
	D	1.35	39:39	71.56	T	F	1.021	AR 2-4-91 O/n
374		*** Total ***		393.49	# of Peaks:		3	
390		1.27	33:22	14.03	T	F	0.966	
		1.25	34:34	19.49	T	T	1.000	
	D	7.12	38:50	64.36	F	F	1.124	AR 2-4-91 O/n
		1.25	40:56	32.76	T	F	1.185	
390		*** Total ***		130.64	# of Peaks:		4	
402		1.28	34:33	2809.50	T	T	1.000	
		1.27	35:09	5434.28	T	T	1.017	
402		*** Total ***		8243.78	# of Peaks:		2	
408		1.07	38:51	331.88	T	T	1.001	
		1.04	39:38	1375.92	T	F	1.021	
408		*** Total ***		1707.80	# of Peaks:		2	
420		1.06	38:49	6585.88	T	T	1.000	
420		*** Total ***		6585.88	# of Peaks:		1	
424	D	3.31	38:49	1973.69	F	F	1.123	AR 2-4-91 O/n
		1.05	39:28	352.85	T	F	1.142	
		1.05	40:55	697.32	T	T	1.184	
424		*** Total ***		3023.86	# of Peaks:		3	
442		0.86	47:19	2109.50	T	T	1.005	
442		*** Total ***		2109.50	# of Peaks:		1	
458		0.88	47:07	6965.53	T	T	1.000	
458		*** Total ***		6965.53	# of Peaks:		1	
470		0.90	47:06	3460.56	T	T	1.000	
470		*** Total ***		3460.56	# of Peaks:		1	

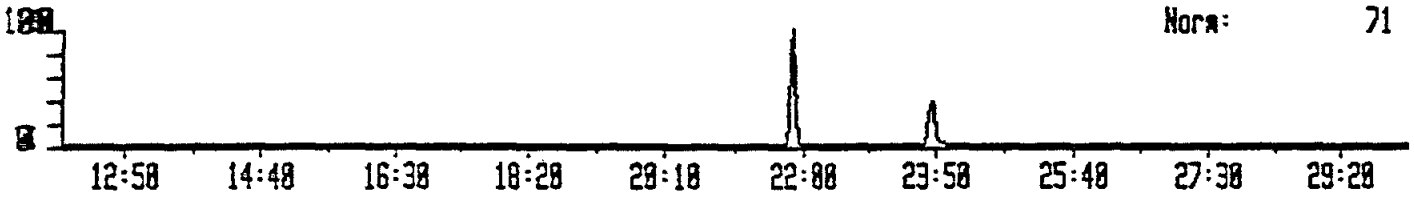
AR300455

E002227 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF

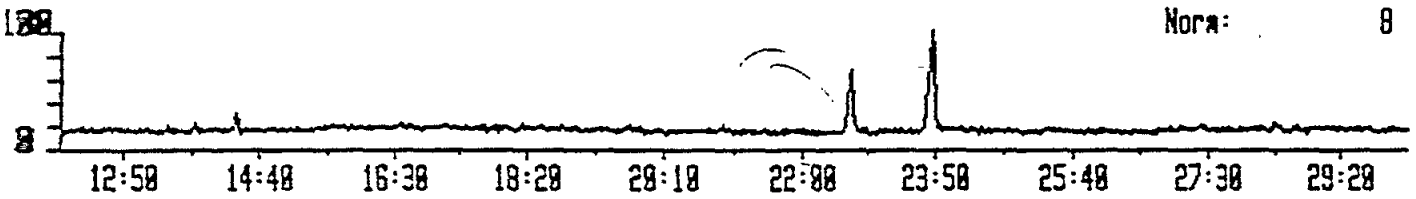
DC0462-05

Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-24-5 TLH#198-R DC846285

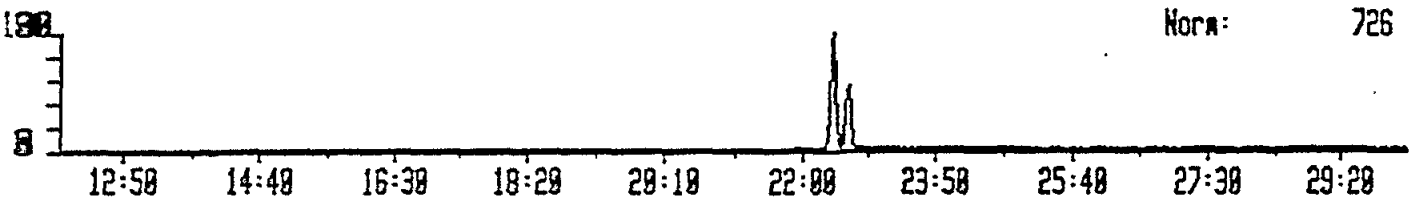
E002227 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-24-5 TLH#198-R DC846285



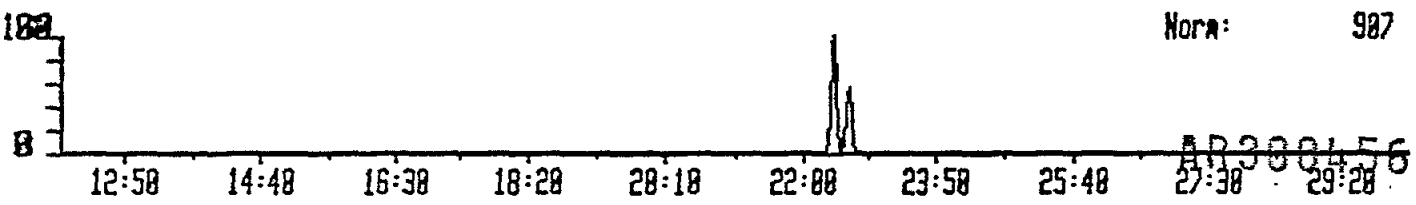
E002227 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-24-5 TLH#198-R DC846285



E002227 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-24-5 TLH#198-R DC846285



E002227 2-FEB-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-24-5 TLH#198-R DC846285



AR300456

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002170 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-25-1A
CONCAL.....: E002160 SAMPLE ID....: DC046206
ANALYST.....: OR ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 950.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: n/a DATE COLLECTED: 11/07/90
SPIKE FILE...: SP8280SW SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.1				---
12378-PeCDD	ND		0.3				---
123478-HxCDD	ND		0.2				---
123678-HxCDD	ND		0.2				---
123789-HxCDD	ND		0.2				---
1234678-HpCDD	0.57				0.88	40:54	L
OCDD	9.5				0.91	47:06	L,BL
2378-TCDF	ND		0.09				---
12378-PeCDF	ND		0.1				---
23478-PeCDF	ND		0.1				---
123478-HxCDF	ND		0.1				---
123678-HxCDF	ND		0.1				---
234678-HxCDF	ND		0.09				---
123789-HxCDF	ND		0.1				---
1234678-HpCDF	0.29				1.06	38:49	---
1234789-HpCDF	ND		0.2				---
OCDF	1.5				0.89	47:19	---
TOTAL TCDD	EMPC			~~0.19~~ ND	DJO		IR, CI DJO 3/1/91
TOTAL PeCDD	ND		0.3				---
TOTAL HxCDD	ND		0.2				---
TOTAL HpCDD	0.57	1			0.88		---
TOTAL TCDF	EMPC			0.15			IR DJO 3/1/91
TOTAL PeCDF	ND		0.1				---
TOTAL HxCDF	0.20	1			1.08		---
TOTAL HpCDF	1.4	2			1.10		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.3	80.4	0.80	21:47	---
13C12-2378-TCDD	40.3	76.6	0.79	22:34	---
13C12-HxCDD 678	37.4	71.1	1.28	34:30	---
13C12-HpCDF 678	80.8	76.7	1.06	38:48	---
13C12-OCDD	76.1	72.3	0.90	47:05	---

AR300457

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

DC0462-06

02/02/91

Listing of E002170B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.49	22:22	27.15	F	F	1.027	
304		*** Total ***		27.15	# of Peaks:		1	
316		0.80	21:47	4023.39	T	T	1.000	
316		*** Total ***		4023.39	# of Peaks:		1	
320		5.05	21:47	1137.63	F	F	0.965	
		D 2.30	24:25	54.20	F	F	1.082	AV 2-2-91 O/W
320		*** Total ***		1191.83	# of Peaks:		2	
332		0.80	22:22	2681.81	T	T	0.991	
		0.79	22:34	2471.73	T	T	1.000	
332		*** Total ***		5153.54	# of Peaks:		2	
402		1.28	34:30	1664.55	T	T	1.000	
		1.26	35:06	2502.91	T	T	1.017	
402		*** Total ***		4167.46	# of Peaks:		2	
408		1.14	39:37	55.65	T	F	1.021	
408		*** Total ***		55.65	# of Peaks:		1	
420		1.06	38:48	4748.48	T	T	1.000	
420		*** Total ***		4748.48	# of Peaks:		1	
424		D 3.36	38:48	1452.25	F	F	1.125	AV 2-2-91 O/W
		0.88	40:54	16.97	T	T	1.186	
424		*** Total ***		1469.22	# of Peaks:		2	
442	0.89	~~0.33~~	47:19	~~74.56~~ 66.54	T ~~F~~	T	1.005	MV 2/11/91 MI
442		*** Total ***		74.56	# of Peaks:		1	
458		0.91	47:06	274.96	T	T	1.000	
458		*** Total ***		274.96	# of Peaks:		1	
470		0.90	47:05	2268.49	T	T	1.000	
470		*** Total ***		2268.49	# of Peaks:		1	

*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time or window
MI = Manual Integration

~~Id: 374 1.012 12.15~~ RW 2-7-91

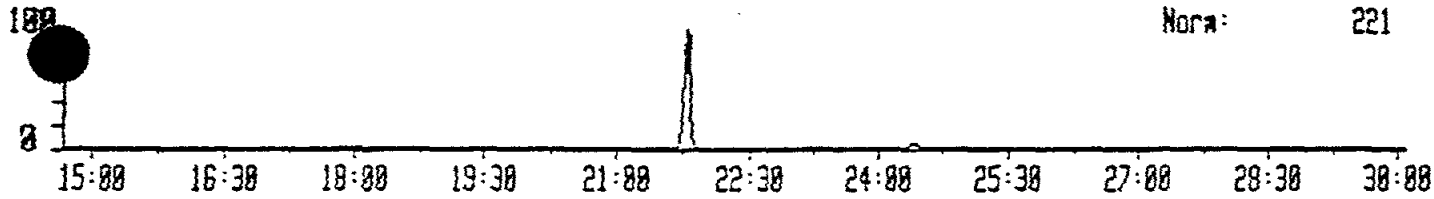
Add:

408	1.06	38:49	17.39	T	T	1.000	MV 2/11/91 MI
374	1.08	32:07	15.70	T	F	0.8[illegible]	2/11/91 MI

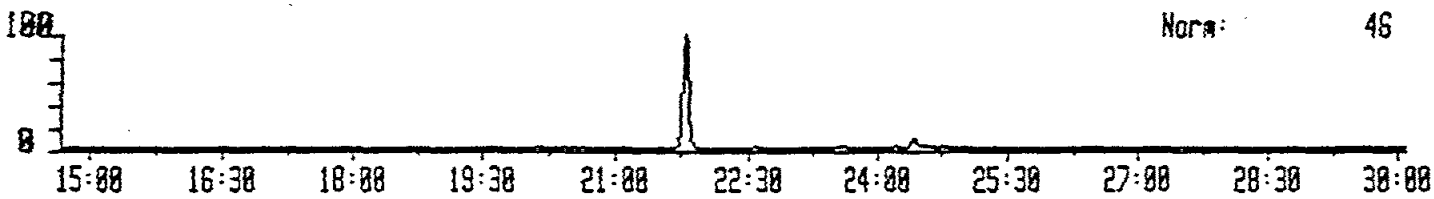
AR300458

E002170 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-25-1A TLH#201-WF DC046206

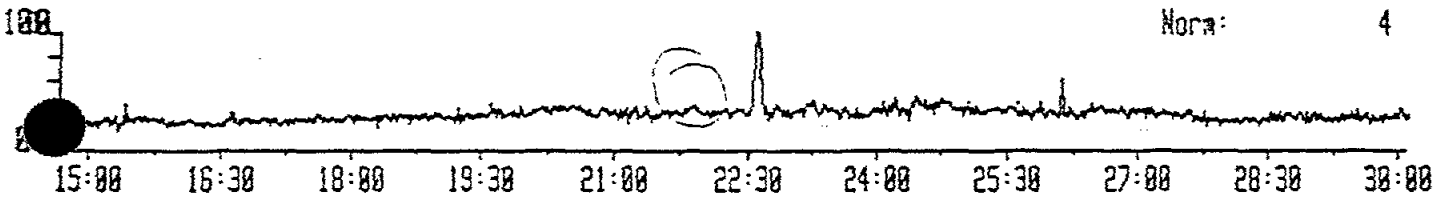
DC0462-076



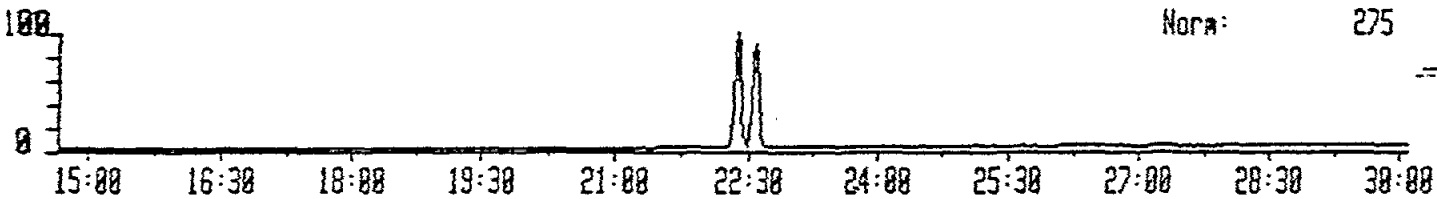
E002170 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-25-1A TLH#201-WF DC046206



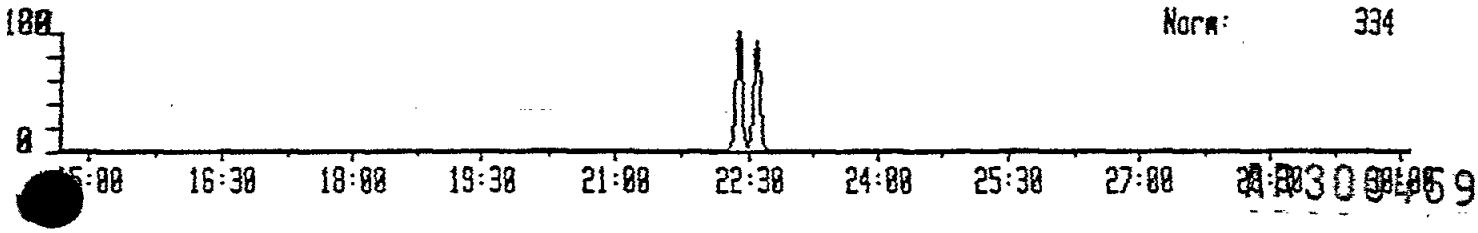
E002170 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-25-1A TLH#201-WF DC046206



E002170 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-25-1A TLH#201-WF DC046206



E002170 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-25-1A TLH#201-WF DC046206



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002171 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-25-2A
CONCAL.....: E002160 SAMPLE ID....: DC046207
ANALYST.....: OR ANALYSIS DATE: 01/29/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 930.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.2				---
12378-PeCDD	ND		0.4				---
123478-HxCDD	ND		0.3				---
123678-HxCDD	ND		0.3				---
123789-HxCDD	ND		0.3				---
1234678-HpCDD	3.4				1.05	40:59	L
OCDD	36.3				0.89	47:10	L,BL
2378-TCDF	ND		0.1				---
12378-PeCDF	ND		0.2				---
23478-PeCDF	ND		0.2				---
123478-HxCDF	ND		0.1				---
123678-HxCDF	ND		0.1				---
234678-HxCDF	ND		0.1				---
123789-HxCDF	ND		0.1				---
1234678-HpCDF	0.65				0.95	38:56	L
1234789-HpCDF	ND		0.2				---
OCDF	6.8				0.84	47:23	L
TOTAL TCDD	EMPC			~~6.8~~ ND pg			IR, CI
TOTAL PeCDD	ND		0.4				---
TOTAL HxCDD	ND		0.3				---
TOTAL HpCDD	4.7	2			1.08		---
TOTAL TCDF	EMPC			0.27			IR
TOTAL PeCDF	ND		0.2				---
TOTAL HxCDF	0.41	1			1.06		---
TOTAL HpCDF	4.3	2			1.02		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	30.2	56.1	0.81	21:53	---
13C12-2378-TCDD	30.0	55.8	0.82	22:40	---
13C12-HxCDD 678	38.3	71.2	1.28	34:36	---
13C12-HpCDF 678	89.8	83.5	1.07	38:54	---
13C12-OCDD	88.3	82.1	0.91	47:09	---

AR300460

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

DC0462-07

02/02/91

Listing of E002171B.dbf

Matched GC Peaks / Ratio / Ret. Time

_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.13	22:27	21.52	F	F	1.026	
304		*** Total ***		21.52	# of Peaks:		1	
316		0.81	21:53	2024.77	T	T	1.000	
316		*** Total ***		2024.77	# of Peaks:		1	
320		5.35	21:53	594.47	F	F	0.965	
320		*** Total ***		594.47	# of Peaks:		1	
332		0.80	22:27	1923.63	T	T	0.990	
		0.82	22:40	1313.47	T	T	1.000	
332		*** Total ***		3237.10	# of Peaks:		2	
374		1.06	32:14	21.37	T	F	0.829	
374		*** Total ***		21.37	# of Peaks:		1	
402		1.28	34:36	1006.37	T	T	1.000	
		1.28	35:12	1524.00	T	T	1.017	
402		*** Total ***		2530.37	# of Peaks:		2	
408		0.95	38:56	26.25	T	T	1.001	
		1.08	39:42	123.95	T	F	1.021	
408		*** Total ***		150.20	# of Peaks:		2	
420		1.07	38:54	3106.08	T	T	1.000	
420		*** Total ***		3106.08	# of Peaks:		1	
424		D 3.31	38:54	1123.04	F	F	1.124	JN 2-2-91 o/w
		1.11	39:33	19.80	T	F	1.143	
		1.05	40:59	55.93	T	T	1.184	
424		*** Total ***		1198.77	# of Peaks:		3	
442		0.84	47:23	199.11	T	T	1.005	
442		*** Total ***		199.11	# of Peaks:		1	
458		0.89	47:10	695.89	T	T	1.000	
458		*** Total ***		695.89	# of Peaks:		1	
470		0.91	47:09	1564.39	T	T	1.000	
470		*** Total ***		1564.39	# of Peaks:		1	

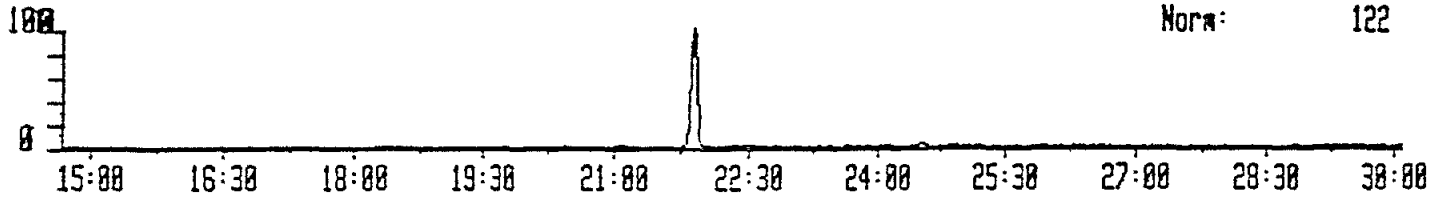
*** End of Report ***

FLAG
D = delete
o/w = outside of retention time or window.

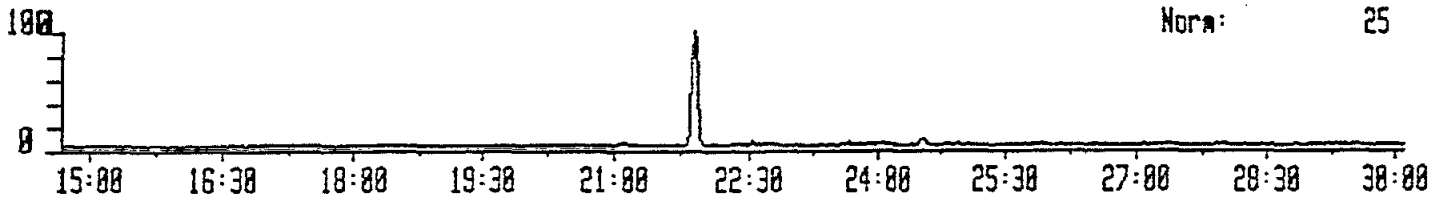
AR300461

E002171 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-25-2A TLH#201-WF DC846287

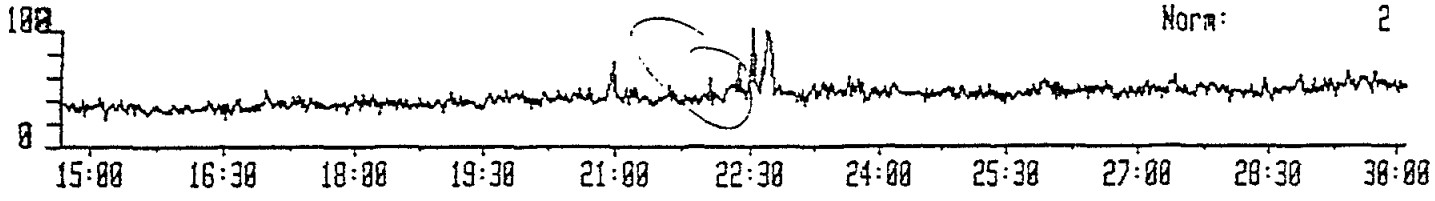
DC0462-07



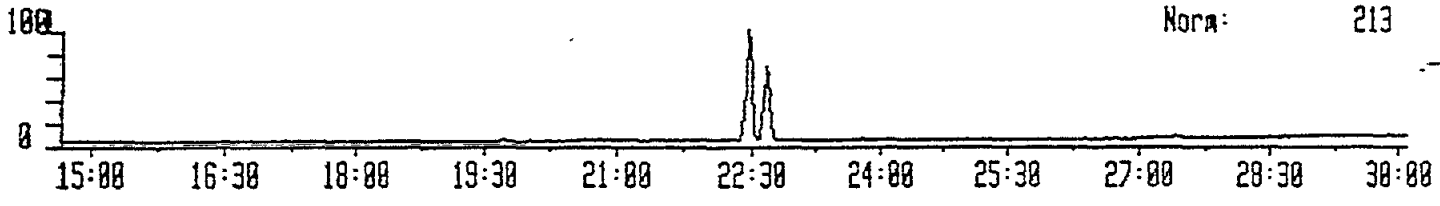
E002171 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-25-2A TLH#201-WF DC846287



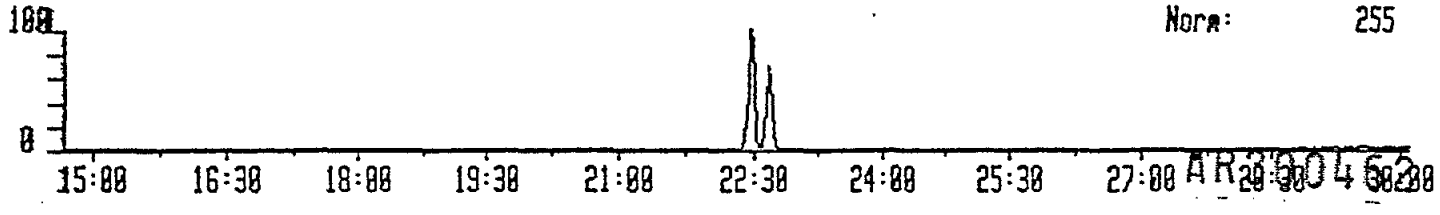
E002171 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-25-2A TLH#201-WF DC846287



E002171 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-25-2A TLH#201-WF DC846287



E002171 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-25-2A TLH#201-WF DC846287



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002121 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-25-3B
CONCAL.....: E002115 SAMPLE ID....: DC046208
ANALYST.....: XL ANALYSIS DATE: 01/24/91 PROJECT NUMBER: 198-W2
SAMPLE SIZE..: 790.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/08/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/07/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				—
12378-PeCDD	ND		0.09				—
123478-HxCDD	ND		0.06				—
123678-HxCDD	ND		0.06				—
123789-HxCDD	ND		0.06				—
1234678-HpCDD	0.36				1.11	41:58	L
OCDD	6.7				0.86	48:17	L
2378-TCDF	ND		0.03				—
12378-PeCDF	ND		0.05				—
23478-PeCDF	ND		0.05				—
123478-HxCDF	ND		0.03				—
123678-HxCDF	ND		0.03				—
234678-HxCDF	ND		0.03				—
123789-HxCDF	ND		0.04				—
1234678-HpCDF	0.08				1.14	39:54	L
1234789-HpCDF	ND		0.06				—
OCDF	1.1				0.88	48:30	L
TOTAL TCDD	EMPC			~~5.68~~ ND DJO			IR,CI DJO 3/4/91
TOTAL PeCDD	ND		0.09				—
TOTAL HxCDD	ND		0.06				—
TOTAL HpCDD	0.36	1		~~0.57~~ 0.21 DJO	1.11		IR DJO 3/4/91
TOTAL TCDF	EMPC			0.24			IR DJO 3/4/91
TOTAL PeCDF	ND		0.05				—
TOTAL HxCDF	0.04	1			1.31		—
TOTAL HpCDF	0.59	2			1.12		—

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	44.4	70.2	0.79	22:36	—
13C12-2378-TCDD	44.9	70.9	0.79	23:23	—
13C12-HxCDD 678	54.6	86.2	1.29	35:30	—
13C12-HpCDF 678	109	86.4	1.06	39:52	—
13C12-OCDD	93.3	73.7	0.91	48:16	—

8280_RPT rev:3.02

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE

AR300463

DC0462-08

Page No. 1 Listing of E002121B.dbf
02/01/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.75	23:11	65.52	F	F	1.026	
304		*** Total ***		65.52	# of Peaks:		1	
316		0.79	22:36	8383.49	T	T	1.000	
316		*** Total ***		8383.49	# of Peaks:		1	
320		5.04	22:35	1921.36	F	F	0.966	
320		*** Total ***		1921.36	# of Peaks:		1	
332		0.79	23:11	6517.08	T	T	0.991	
		0.79	23:23	5548.26	T	T	1.000	
332		*** Total ***		12065.34	# of Peaks:		2	
390		D 6.35	39:53	122.53	F	F	1.123	AS 2-1-91 O/W
390		*** Total ***		122.53	# of Peaks:		1	
402		1.29	35:30	4553.64	T	T	1.000	
		1.27	36:07	5780.11	T	T	1.017	
402		*** Total ***		10333.75	# of Peaks:		2	
408		1.10	40:41	52.63	T	F	1.020	
408		*** Total ***		52.63	# of Peaks:		1	
420		1.06	39:52	11411.21	T	T	1.000	
420		*** Total ***		11411.21	# of Peaks:		1	
424		D 3.28	39:52	3738.27	F	F	1.123	AS 2-1-91 O/W
		1.11	41:58	20.79	T	T	1.182	
424		*** Total ***		3759.06	# of Peaks:		2	
442		0.88	48:30	97.94	T	T	1.005	
442		*** Total ***		97.94	# of Peaks:		1	
458		0.86	48:17	370.92	T	T	1.000	
458		*** Total ***		370.92	# of Peaks:		1	
470		0.91	48:16	5483.71	T	T	1.000	
470		*** Total ***		5483.71	# of Peaks:		1	

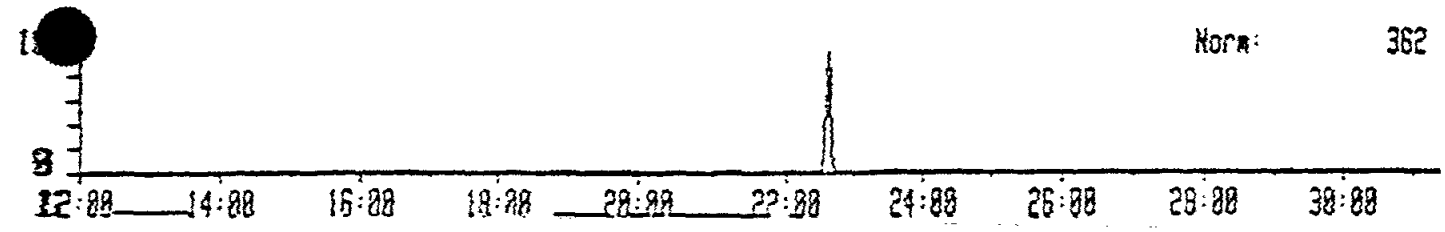
*** End of Report ***

FLAG
D = Delete
O/W = outside of retention time of window.
MI = Manual Integrations

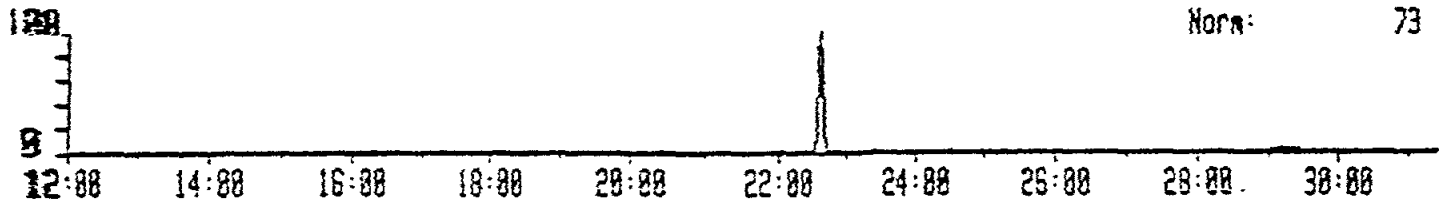
Add: 374	1.380	33:08	5.48	T	F	0.831	MV 2/9/91
304	3.827	23:23	7.39	F	F	1.035	RW 2-1-91 MI
D 374	1.386	33:08	RW ~~1.38~~	T	F	~~0.791~~ 0.831	RW 2-1-91 MI RW 2-1-91 O/
D RW ~~390~~ 408	1.139	39:54	9.48	T	F	~~1.124~~ 0.953	RW 2-1-91 MI RW 2-1-91 O/
424	1.311	40:30	6.77	F	F	1.141	RW 2-1-91 MI
[illegible]	1.14	39:54	9.48	T	T	1.000	MV 2/9/91

AR300464

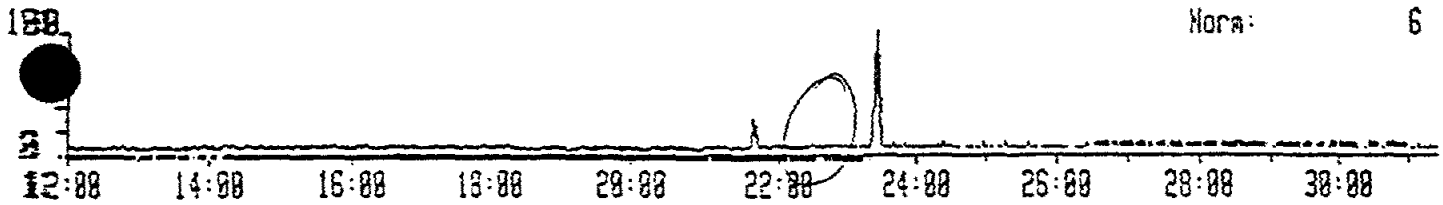
E002121 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-25-38 TLH#198-W2 DC046288



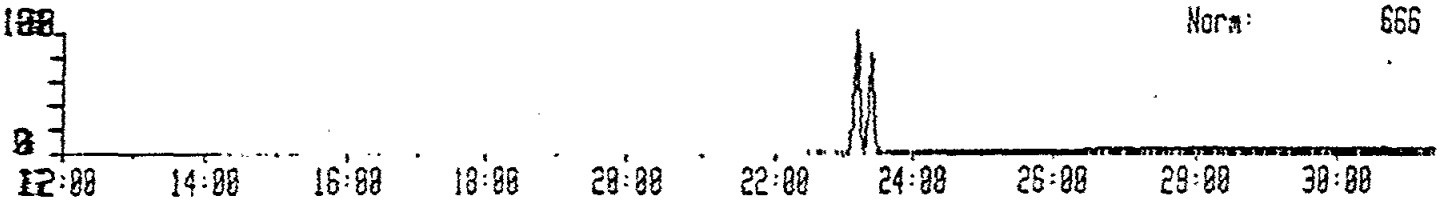
E002121 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-25-38 TLH#198-W2 DC046288



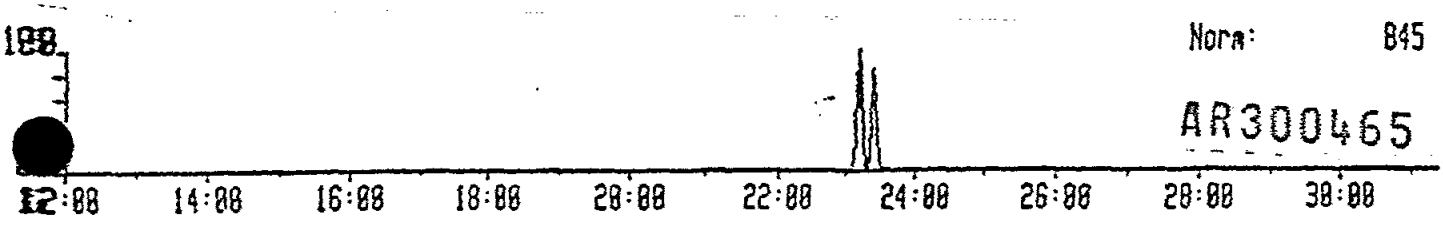
E002121 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 259.9299
Text:3-25-38 TLH#198-W2 DC046288



E002121 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-25-38 TLH#198-W2 DC046288



E002121 24-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-25-38 TLH#198-W2 DC046288



AR300465

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....:	E002172	CLIENT ID....:	SAS 5742C	TLI NUMBER....:	3-29-1B
INITIAL.....:	E002160	SAMPLE ID....:	DC043209		
ANALYST.....:	XL	ANALYSIS DATE:	01/29/91	PROJECT NUMBER:	201-WF
SAMPLE SIZE..:	880.00 ml	SAMPLE MATRIX:	WATER	DATE RECEIVED.:	11/09/90
CAL DATE....:	01/02/91	SAMPLE ORIGIN:	N/A	DATE COLLECTED:	11/08/90
SPIKE FILE...:	SP8280SW			SHIPMENT NO...:	5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				---
12378-PeCDD	ND		0.08				---
123478-HxCDD	ND		0.07				---
123678-HxCDD	~ 3.6				1.28	34:36	_L_
123789-HxCDD	ND		0.07				---
1234678-HpCDD	~143				1.05	40:59	_H_
OCDD	~1080				0.89	47:13	H,BL
2378-TCDF	ND		0.03				---
12378-PeCDF	ND		0.04				---
23478-PeCDF	ND		0.04				---
123478-HxCDF	~ 0.17				1.41	32:57	_L_
123678-HxCDF	ND		0.03				---
234678-HxCDF	ND		0.03				---
123789-HxCDF	ND		0.04				---
1234678-HpCDF	~ 40.8				1.06	38:55	---
1234789-HpCDF	~ 1.4				1.03	41:46	_L_
OCDF	~260				0.87	47:24	_H_
TOTAL TCDD	~ 0.41	1		~~2.74~~ ND PJO	0.66		IR, CI PJO 2/4/91
TOTAL PeCDD	ND		0.08				---
TOTAL HxCDD	~ 8.4	3		~~0.57~~ 0.12 PJO	1.30		IR PJO 2/4/91
TOTAL HpCDD	~ 215	2			1.05		---
TOTAL TCDF	EMPC			0.26			IR PJO 2/4/91
TOTAL PeCDF	~ 0.27	1		~~0.39~~ ND PJO	1.59		IR,CI PJO 2/4/91
TOTAL HxCDF	~ 30.0	5			1.28		---
TOTAL HpCDF	~223	3			1.04		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	~45.9	80.8	0.80	21:49	---
13C12-2378-TCDD	~43.0	75.7	0.80	22:36	---
13C12-HxCDD 678	~46.6	82.1	1.28	34:35	---
13C12-HpCDF 678	~93.1	81.9	1.06	38:54	---
13C12-OCDD	~118	104	0.91	47:11	---

AR300466

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
H = CONCENTRATION ABOVE CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

DC0462-09

02/02/91

Listing of E002172B.dbf

Matched GC Peaks / Ratio / Ret. Time

_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.53	22:24	44.43	F	F	1.027	
304		*** Total ***		44.43	# of Peaks:		1	
316		0.80	21:49	6498.04	T	T	1.000	
316		*** Total ***		6498.04	# of Peaks:		1	
320		5.06	21:49	1887.37	F	F	0.965	
		2.68	23:36	66.91	F	F	1.044	
		0.66	23:43	30.40	T	F	1.049	
	D	2.14	24:27	657.19	F	F	1.082	AV 2-2-91 O/W
		2.86	24:49	28.12	F	F	1.098	
320		*** Total ***		2669.99	# of Peaks:		5	
332		0.80	22:24	4308.26	T	T	0.991	
		0.80	22:36	3948.27	T	T	1.000	
332		*** Total ***		8256.53	# of Peaks:		2	
340	D	3.85	23:42	43.23	F	F	1.086	AV 2-2-91 O/W
		1.59	24:06	23.28	T	F	1.105	
340		*** Total ***		66.51	# of Peaks:		2	
374		1.35	31:06	56.07	T	F	0.799	
		1.29	31:21	398.65	T	F	0.806	
		1.26	32:12	2448.03	T	F	0.828	
		1.41	32:57	44.23	T	T	0.847	
		1.07	34:03	12.70	T	F	0.875	
	D	1.32	38:55	167.77	T	F	1.000	AV 2-2-91 O/W
		1.27	39:42	736.20	T	F	1.021	
374		*** Total ***		3863.65	# of Peaks:		7	
390		1.29	32:04	55.93	T	F	0.927	
		1.32	33:23	181.71	T	F	0.965	
		1.28	34:36	193.00	T	T	1.000	
		7.67	38:54	64.69	F	F	1.125	
	D	1.35	39:33	132.23	T	F	1.144	AV 2-2-91 O/W
		1.32	40:59	349.40	T	F	1.185	
390		*** Total ***		976.96	# of Peaks:		6	
402		1.28	34:35	2576.00	T	T	1.000	
		1.30	35:11	3415.85	T	T	1.017	
402		*** Total ***		5991.85	# of Peaks:		2	
408		1.06	38:55	3203.32	T	T	1.000	
		1.04	39:42	12474.58	T	F	1.021	
		1.03	41:46	88.43	T	T	1.074	
408		*** Total ***		15766.33	# of Peaks:		3	
420		1.06	38:54	6801.76	T	T	1.000	
420		*** Total ***		6801.76	# of Peaks:		1	
424	D	3.32	38:54	2230.50	F	F	1.125	AV 2-2-91 O/W
		1.05	39:32	2839.80	T	F	1.143	
		1.05	40:59	5632.57	T	T	1.185	

AR300467

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
424		*** Total ***		10702.87	# of Peaks:		3	
442		0.87	47:24	20545.62	T	T	1.005	
442		*** Total ***		20545.62	# of Peaks:		1	
458		0.89	47:13	55003.23	T	T	1.001	
458		*** Total ***		55003.23	# of Peaks:		1	
470		0.91	47:11	4398.75	T	T	1.000	
470		*** Total ***		4398.75	# of Peaks:		1	

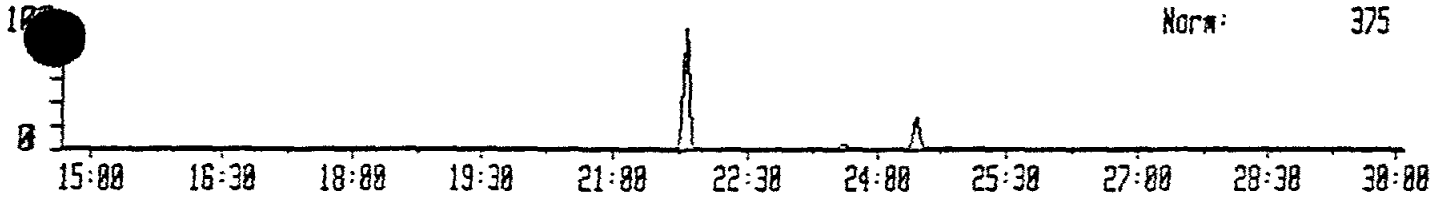
*** End of Report ***

FLAG
D= Delete
o/w = outside of retention time of window.
MI = Manual Integration

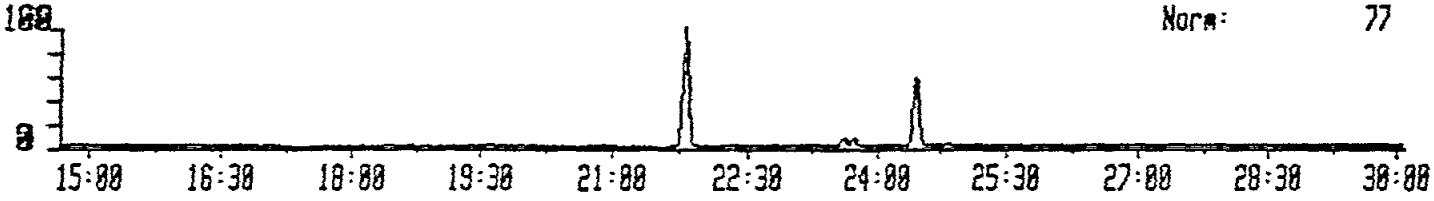
2 304	1.994	22:35	7.24	F	F	1.035	RW 2-7-91	MI
340	0.232	25:37	33.04	F	F	1.174	RW 2-7-91	MI
390	2.113	32:56	11.24	F	F	0.847	RW 2-7-91	MI
304	0.57	23:42	11.33	F	F	1.086	MV 2/11/91	MI

E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-29-18 TLH#201-WF DC046209

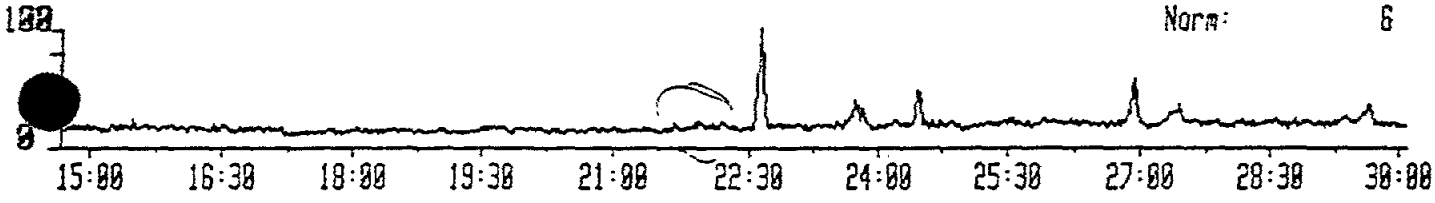
DC0462-09



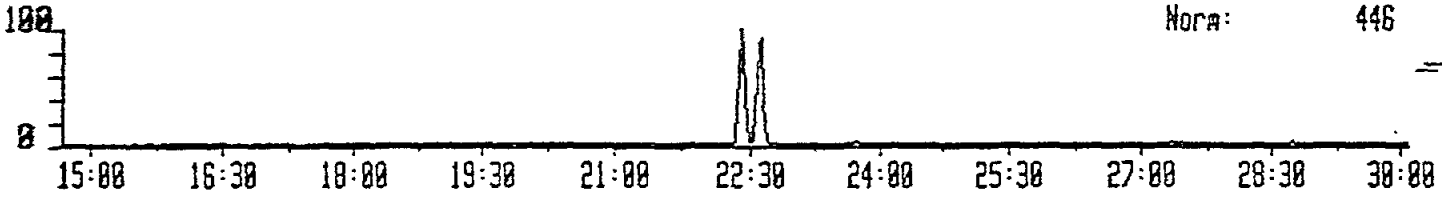
E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-29-18 TLH#201-WF DC046209



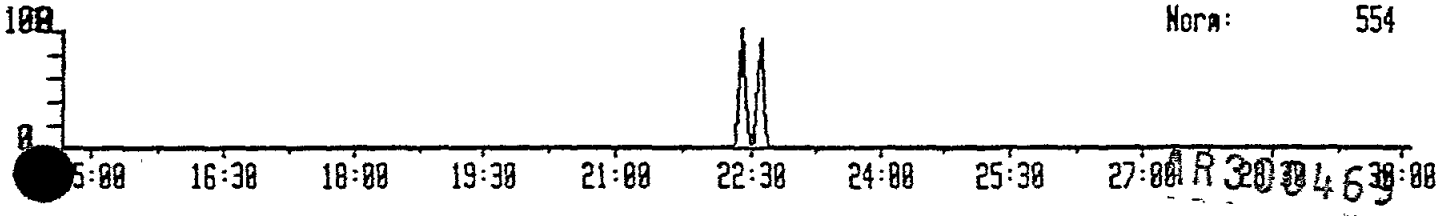
E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-29-18 TLH#201-WF DC046209



E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-29-18 TLH#201-WF DC046209

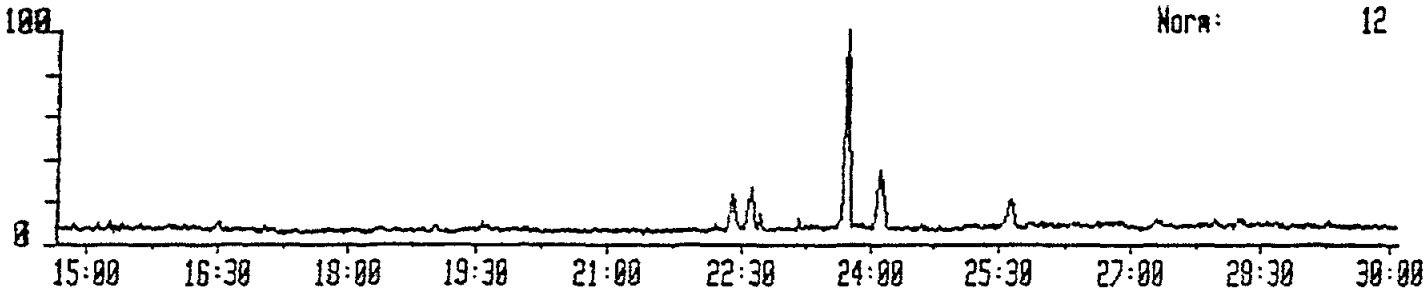


E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-29-18 TLH#201-WF DC046209



E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 339.8597
Text:3-29-18 TLH#201-WF DC846289

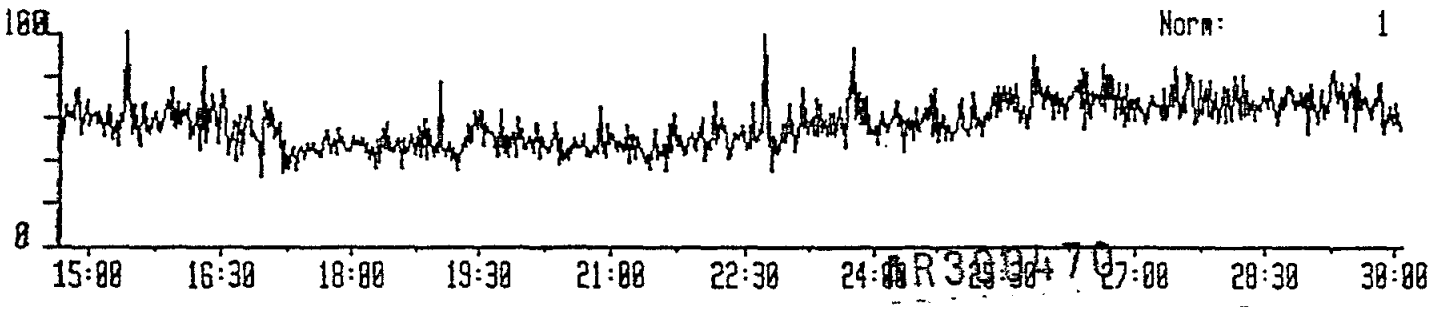
DC0462-09



E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 341.8567
Text:3-29-18 TLH#201-WF DC846289

E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 276.8959
Text:3-29-18 TLH#201-WF DC846289

E002172 29-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 375.8364
Text:3-29-18 TLH#201-WF DC846289



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002180 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-2C
CONCAL.....: E002175 SAMPLE ID....: DCD46210
ANALYST.....: OR ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-W2
SAMPLE SIZE..: 850.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82305W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	0.14				0.75	22:49	_L_
12378-PeCDD	ND		0.2				___
123478-HxCDD	ND		0.1				___
123678-HxCDD	203				1.31	34:43	___
123789-HxCDD	29.1				1.38	35:21	_L_
1234678-HpCDD	7110				1.04	41:05	_H_
OCDD	42850 J				0.90	47:29	BL,H
2378-TCDF	0.65				0.69	22:04	_L_
12378-PeCDF	EMPC			63.6			IR PJO 2/4/91
23478-PeCDF	ND		0.07				___
123478-HxCDF	19.2				1.11	33:06	_L_
123678-HxCDF	EMPC			2.0			IR PJO 2/4/91
234678-HxCDF	9.2				1.13	34:10	_L_
123789-HxCDF	ND		0.09				___
1234678-HpCDF	1670				1.05	39:02	_H_
1234789-HpCDF	93.4				1.05	41:49	___
OCDF	12520 J				0.89	47:38	_H_
TOTAL TCDD	1.9	7		~~13.00~~ 11.1 PJO	0.78		IR PJO 2/4/91
TOTAL PeCDD	6.4	6		~~10.41~~ 4.91	1.53		IR PJO 2/4/91
TOTAL HxCDD	499	5		~~504.78~~ 5.72	1.29		IR PJO 2/4/91
TOTAL HpCDD	10730	2			1.04		___
TOTAL TCDF	1.7	5		~~69.65~~ 67.75	0.73		IR PJO 2/4/91
TOTAL PeCDF	29.9	3		~~228.18~~ 192.3	1.56		IR PJO 2/4/91
TOTAL HxCDF	1260	6		~~1885.33~~ 625.5	1.21		IR PJO 2/4/91
TOTAL HpCDF	10660	3		~~10645.78~~ 12.8	1.05		IR PJO 2/4/91

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	48.0	81.7	0.81	22:03	___
13C12-2378-TCDD	40.7	69.1	0.77	22:49	___
13C12-HxCDD 678	58.3	99.0	1.27	34:42	___
13C12-HpCDF 678	105	89.6	1.09	39:01	___
13C12-OCDD	98.0	83.3	1.26	47:24	_RO

8280_RPT Rev 3.0

AR300471

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE
H = CONCENTRATION ABOVE CALIBRATION RANGE
BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
RO = RATIO OUT FOR INTERNAL STANDARD (POSSIBLE INTERFERENCE)

Listing of E002180B.dbf

DC0462-1D

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
340		1.60	28:06	430.33	T	F	1.274	
		1.62	28:23	882.64	F ~~T~~	F	1.287	Ether MV 2/11/91
		1.55	29:09	367.35	F ~~T~~	F	1.322	Ether MV 2/11/91
		1.57	29:21	14664.45	F ~~T~~	F	1.331	Ether MV 2/11/91
		1.19	29:40	46.42	F	F	1.345	
	D	0.46	29:56	46.67	F	F	1.358	AN 2-3-91 O/W
340		*** Total ***		30218.82	# of Peaks:		16	
356		1.46	25:58	121.37	T	F	1.138	
		1.40	26:40	33.99	T	F	1.169	
		1.64	27:00	73.19	T	F	1.183	
		1.52	27:11	74.17	T	F	1.191	
		1.61	27:28	58.94	T	F	1.204	
		1.09	27:52	119.58	F	F	1.221	
		0.63	28:10	36.55	F	F	1.234	
		1.57	28:23	26.05	T	F	1.244	
		2.25	28:40	81.31	F	F	1.256	
356		*** Total ***		625.15	# of Peaks:		9	
374	D	0.53	30:41	391.64	F	F	0.786	AN 2-3-91 O/W
		0.24	30:58	133.40	F	F	0.794	
		1.19	31:14	2654.50	T	F	0.801	
		1.29	31:30	22251.83	T	F	0.807	
		0.80	31:59	769.09	F	F	0.820	
		1.25	32:21	156338.43	T	F	0.829	
		1.95	32:42	12166.09	F	F	0.838	
		1.24	32:59	5570.06	F ~~T~~	~~T~~ F	~~0.845~~ 0.844	Ether MV 2/11/91
		1.11	33:06	2885.91	T	T	0.848	
		0.58	33:17	455.18	F	T	0.853	
		1.23	33:48	64838.79	F ~~T~~	F	0.866	Ether MV 2/11/91
		1.13	34:10	1669.12	T	T	0.876	
		0.41	34:22	578.24	F	F	0.881	
		0.72	35:07	133.21	F	F	0.900	
		0.83	35:22	137.98	F	F	0.906	
	D	1.10	36:00	2862.06	T	F	0.923	MV 2/11/91 — MI
		0.83	36:11	154.08	F	F	0.927	
		1.26	37:00	6429.58	T	F	0.948	
		2.68	37:17	103.58	F	F	0.956	
		1.97	37:46	319.66	F	F	0.968	
		2.03	38:10	1067.20	F	F	0.978	
		1.29	38:27	105.60	T	F	0.985	AN 2-3-91 O/W
	D	1.26	38:44	331.82	T	F	0.993	
		1.22	39:02	6099.70	T	F	1.000	
		1.26	39:20	458.50	T	F	1.008	
		1.26	39:51	21116.44	T	F	1.021	
		5.24	40:51	182.28	F	F	1.047	
374		*** Total ***		310203.97	# of Peaks:		27	
390	D	1.74	31:27	37.12			0.906	AN 2-3-91 O/W
		1.25	32:13	5067.16	T	F	0.928	
		1.26	33:05	871.73	T	F	0.953	
		1.27	33:30	16817.37	T	F	0.965	
		1.54	33:47	451.08	F	F	0.974	

AR300472

Listing of E0021808.dbf

PC0462-1D

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
390		1.54	34:09	153.02	F	F	0.984	
		1.31	34:43	17275.35	T	T	1.000	
		1.38	35:21	2453.97	T	T	1.012	OK MV 2/11/91
		4.35	36:03	1616.33	F	F	1.039	
		2.42	36:31	253.05	F	F	1.052	
		0.62	36:57	2496.63	F	F	1.065	
		3.97	37:46	1518.92	F	F	1.088	
		0.52	37:59	161.96	F	F	1.095	
	D	4.53	39:00	63.02	F	F	1.124	AV 2-3-91 O/W
		1.24	39:42	6366.52	T	F	1.144	
		1.18	39:50	2207.27	T	F	1.148	
		0.49	40:10	152.38	F	F	1.158	
		0.50	40:19	65.78	F	F	1.162	
		1.42	40:41	115.97	T	F	1.172	
		1.28	41:05	13988.01	T	F	1.184	
390		*** Total ***		72132.64	# of Peaks:		20	
402		1.27	34:42	4279.62	T	T	1.000	
		1.26	35:19	4646.02	T	T	1.018	
		0.84	35:33	81.30	F	F	1.024	
		1.96	36:33	1265.85	F	F	1.053	
	D	2.63	37:27	112.36	F	F	1.079	AV 2-3-91 O/W
		1.50	37:43	333.56	F	F	1.087	
		0.79	38:07	3236.65	F	F	1.098	
402		*** Total ***		13955.36	# of Peaks:		7	
408		6.89	37:07	883.87	F	F	0.951	
	D	5.09	38:05	868.21	F	F	0.976	AV 2-3-91 O/W
		1.20	38:33	3024.18	T	F	0.988	
		1.05	39:02	185516.85	T	T	1.000	
		1.05	39:51	826095.50	F ~~T~~	F	1.021	MV 2/11/91 other
		5.05	40:34	1022.11	F	F	1.040	
		4.36	40:50	1182.05	F	F	1.047	
		3.86	41:12	779.87	F	F	1.056	
		1.05	41:49	7495.48	T	T	1.072	—
408		*** Total ***		1026868.12	# of Peaks:		9	
420		1.09	39:01	10091.82	T	T	1.000	
	D	1.94	40:42	456.72	F	F	1.043	AV 2-3-91 O/W
420		*** Total ***		10548.54	# of Peaks:		2	
424		1.06	36:42	126.07	T	F	1.058	
	D	1.14	37:05	38.89	T	F	1.069	
		1.04	37:52	1805.72	T	F	1.091	AV 2-3-91 O/W
		3.13	39:01	3952.27	F	F	1.124	
		0.73	39:16	385.51	F	F	1.132	
		1.04	39:41	206406.88	T	F	1.144	
		1.04	41:05	405533.97	T	T	1.184	
424		*** Total ***		618249.31	# of Peaks:		7	
442		2.50	43:48	2416.24	F	F	0.924	
	D	3.00	44:08	1505.72	F	F	0.931	AV 2-3-91 O/W
		0.98	44:41	189.23	T	F	0.943	

AR300473

DC0462-1D

02/02/91

Listing of E002180B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
442		0.89	47:38	811763.31	T	T	1.005	
442		*** Total ***		815874.50	# of Peaks:		4	
458		D 0.89	43:47	15492.77	T	F	0.924	AI 2-3-91
		0.90	47:29	1796368.37	T	T	1.002	
458		*** Total ***		1811861.14	# of Peaks:		2	
470		D 1.62	45:20	51.03	F	F	0.956	AI 2-3-91 O/W
		1.26	47:24	4495.46	T ~~F~~	T	1.000	RW 2-6-91 RO
		D 1.27	48:04	117.98	F	F	1.014	AI 2-3-91 O/W
470		*** Total ***		4664.47	# of Peaks:		3	

*** End of Report ***

FLAG
D=Delete
O/W=outside of retention time of window.
RO = Ratio out due to high quantity of analyte
MI= Manual Integration

Add

304	3.371	19:37	37.50	F	F	0.890	RW 2-6-91	MI
320	1.130	23:01	19.32	F	F	1.009	RW 2-6-91	MI
320	1.431	23:28	13.64	F	F	1.028	RW 2-6-91	MI
340	1.268	26:39	152.29	F ~~T~~ MV 2/11/91	F	1.208	RW 2-6-91	MI
320	0.75	22:49	15.97	T	T	1.000	MV 2/11/91	MI
374	1.28	35:53	1207.34	T	T	0.920	MV 2/11/91	MI
374	1.44	35:59	2127.58	F	F	0.923	MV 2/11/91	MI

AR300474

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002176 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-3A
CONCAL.....: E002175 SAMPLE ID....: DC046211
ANALYST.....: XL ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-WF
SAMPLE SIZE..: 920.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.04				---
12378-PeCDD	ND		0.08				---
123478-HxCDD	ND		0.06				---
123678-HxCDD	ND		0.06				---
123789-HxCDD	ND		0.06				---
1234678-HpCDD	~ 3.9				1.03	40:59	_L__
OCDD	~ 27.9				0.90	47:10	L,BL
2378-TCDF	ND		0.03				---
12378-PeCDF	ND		0.04				---
23478-PeCDF	ND		0.04				---
123478-HxCDF	ND		0.03				---
123678-HxCDF	ND		0.03				---
234678-HxCDF	ND		0.03				---
123789-HxCDF	ND		0.04				---
1234678-HpCDF	~ 0.97				1.07	38:55	_L_
1234789-HpCDF	ND		0.06				---
OCDF	~ 7.8				0.94	47:22	_L_
TOTAL TCDD	EMPC			9.51			IR DJO 3/4/91
TOTAL PeCDD	ND		0.08				---
TOTAL HxCDD	ND		0.06				---
TOTAL HpCDD	~ 6.1	2			1.06		---
TOTAL TCDF	~ 0.72	1		~~1.02~~ 0.30 DJO	0.76		IR DJO 3/4/91
TOTAL PeCDF	EMPC			0.16			IR DJO 3/4/91
TOTAL HxCDF	~ 0.60	2			1.27		---
TOTAL HpCDF	~ 5.3	2			1.06		---

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	42.5	78.2	0.81	21:53	---
13C12-2378-TCDD	40.6	74.7	0.80	22:39	---
13C12-HxCDD 678	48.1	88.5	1.29	34:37	---
13C12-HpCDF 678	101	93.1	1.07	38:54	---
13C12-OCDD	110	101	0.91	47:08	---

AR300475

FLAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

DC0462-11

02/02/91

Listing of E002176B.dbf

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.76	21:17	172.00	T	F	0.973	
		2.42	22:27	104.35	F	F	1.026	
304		*** Total ***		276.35	# of Peaks:		2	
316		0.81	21:53	11126.41	T	T	1.000	
316		*** Total ***		11126.41	# of Peaks:		1	
320		4.97	21:53	3533.44	F	F	0.966	
		0.38	23:23	61.42	F	F	1.032	
		2.14	23:39	582.89	F	F	1.044	
		2.09	24:31	9547.45	F	F	1.082	AV 2-2-91 O/W
	D	2.20	24:54	409.29	F	F	1.099	
320		*** Total ***		14134.49	# of Peaks:		5	
332		0.80	22:27	7605.03	T	T	0.991	
		0.80	22:39	7110.68	T	T	1.000	
332		*** Total ***		14715.71	# of Peaks:		2	
340		0.03	25:41	556.07	F	F	1.174	
340		*** Total ***		556.07	# of Peaks:		1	
374		1.17	31:30	18.28	T	F	0.810	
		1.37	32:20	113.24	T	F	0.831	
	D	1.59	39:42	18.68	F	F	1.021	AV 2-2-91 O/W
374		*** Total ***		150.20	# of Peaks:		3	
390	D	0.58	36:55	32.71	F	F	1.066	MV 2/11/91 O/W
	D	5.12	38:55	140.25	F	F	1.124	AV 2-2-91 O/W
390		*** Total ***		172.96	# of Peaks:		2	
402		1.29	34:37	5235.79	T	T	1.000	
		1.28	35:12	6359.99	T	T	1.017	
402		*** Total ***		11595.78	# of Peaks:		2	
408		1.07	38:55	162.73	T	T	1.000	
		1.04	39:42	610.51	T	F	1.021	
408		*** Total ***		773.24	# of Peaks:		2	
420		1.07	38:54	14365.27	T	T	1.000	
420		*** Total ***		14365.27	# of Peaks:		1	
424	D	3.21	38:54	4690.07	F	F	1.124	AV 2-2-91 O/W
		1.09	39:32	160.27	T	F	1.142	
		1.03	40:59	295.67	T	T	1.184	
424		*** Total ***		5146.01	# of Peaks:		3	
442		0.94	47:22	921.28	T	T	1.005	
442		*** Total ***		921.28	# of Peaks:		1	
458		0.90	47:10	2081.60	T	T	1.001	
458		*** Total ***		2081.60	# of Peaks:		1	
470		0.91	47:08	6250.83	T	T	1.000	

AR300476

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
70		*** Total ***		6250.83	# of Peaks:		1	

*** End of Report ***

FLAG
D=Delete
O/W=outside of retention time of a window.
MI= Manual Integration

dd 304	2.531	22:40	15.62	F	F	1.036	RW 2-7-91	MI
304	0.210	23:23	26.30	F	F	1.069	RW 2-7-91	MI
320	1.183	22:27	9.33	F	F	0.991	RW 2-7-91	MI

Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

TLE NAME....: E002177	CLIENT ID....: SAS 5742C	TLI NUMBER....: 3-29-4A
ONCAL.....: E002175	SAMPLE ID....: DC046212	
NALYST.....: XL	ANALYSIS DATE: 01/30/91	PROJECT NUMBER: 201-WF
AMPLE SIZE..: 1040.00 ml	SAMPLE MATRIX: WATER	DATE RECEIVED.: 11/09/90
CAL DATE....: 01/02/91	SAMPLE ORIGIN: N/A	DATE COLLECTED: 11/08/90
PIKE FILE...: SP82805W		SHIPMENT NO...: 5742C

AME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
378-TCDD	ND		0.1				---
2378-PeCDD	ND		0.2				---
23478-HxCDD	~ 0.18				1.24	34:19	_L_
23678-HxCDD	~ 0.51				1.37	34:29	_L_
23789-HxCDD	~ 0.50				1.34	35:04	_L_
234678-HpCDD	~ 19.3				1.04	40:51	_L_
CDD	~ 115				0.91	47:03	_BL
378-TCDF	ND		0.06				---
2378-PeCDF	ND		0.1				---
3478-PeCDF	ND		0.09				---
23478-HxCDF	ND		0.06				---
23678-HxCDF	ND		0.05				---
34678-HxCDF	ND		0.05				---
23789-HxCDF	ND		0.07				---
234678-HpCDF	~ 0.74				1.08	38:47	_L_
234789-HpCDF	ND		0.1				---
CDF	~ 4.6				0.88	47:15	_L_
OTAL TCDD	0.15	1		~~3.76~~ 2.10 pgo	0.86		IR, CI pgo 3/4/91
OTAL PeCDD	ND		0.2				---
OTAL HxCDD	1.6	4		~~2.79~~ 0.16 pgo	1.29		IR
OTAL HpCDD	41.8	2			1.04		---
OTAL TCDF	0.80	1		~~1.16~~ 0.36 pgo	0.76		IR
OTAL PeCDF	ND		0.09				---
OTAL HxCDF	0.21	1		~~0.25~~ 0.05 pgo	1.37		IR
OTAL HpCDF	3.3	2		~~3.83~~ 0.50 pgo	1.06		IR

NTERNAL STANDARDS RECOVERY SUMMARY

AME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
3C12-2378-TCDF	~ 24.1	50.0	0.82	21:45	---
3C12-2378-TCDD	~ 23.7	49.3	0.82	22:31	---
3C12-HxCDD 678	~ 33.4	69.6	1.32	34:27	---
3C12-HpCDF 678	~ 78.2	81.3	1.06	38:46	---
3C12-OCDD	~ 82.8	86.2	0.93	47:02	---

AR300478

8280_RPT rev:3.02

LAGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
BL = FOND IN BLANK AT CONCENTRATION < 2%.

DC0462-12

02/02/91

Listing of E002177B.dbf

Matched GC Peaks / Ratio / Ret. Time

_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.76	21:09	109.84	T	F	0.972	
		2.36	22:20	95.60	F	F	1.027	
304		*** Total ***		205.44	# of Peaks:		2	
316		0.82	21:45	5686.43	T	T	1.000	
316		*** Total ***		5686.43	# of Peaks:		1	
320		4.96	21:45	1944.96	F	F	0.966	
		2.19	23:31	335.37	F	F	1.044	
		2.11	24:23	3088.28	F	F	1.083	AN 2-2-91 O/W
	D	2.20	24:45	300.03	F	F	1.099	
320		*** Total ***		5668.64	# of Peaks:		4	
332		0.81	22:19	6075.70	T	T	0.991	
		0.82	22:31	3768.40	T	T	1.000	
332		*** Total ***		9844.10	# of Peaks:		2	
374		1.37	32:06	32.59	T	F	0.828	
374		*** Total ***		32.59	# of Peaks:		1	
390		1.19	31:57	27.59	T	F	0.927	
		1.45	33:15	86.16	F	F	0.965	
	1.37	~~1.44~~	34:29	~~35.69~~ 37.60	T	~~F~~ T	1.001	
		1.34	35:04	37.68	T	T	1.018	
		0.55	36:47	74.44	F	F	1.068	
	D	5.26	38:47	123.28	F	F	1.126	AN 2-2-91 O/W
		1.35	39:24	62.22	T	F	1.144	
		1.36	40:52	65.38	T	F	1.186	
390		*** Total ***		512.44	# of Peaks:		8	
402		1.32	34:27	3134.08	T	T	1.000	
		1.28	35:03	4781.22	T	T	1.017	
402		*** Total ***		7915.30	# of Peaks:		2	
408		1.08	38:47	91.96	T	T	1.000	
		1.04	39:34	266.05	T	F	1.021	
408		*** Total ***		358.01	# of Peaks:		2	
420		1.06	38:46	9471.43	T	T	1.000	
420		*** Total ***		9471.43	# of Peaks:		1	
424	D	3.22	38:46	3401.44	F	F	1.125	AN 2-2-91 O/W
		1.04	39:24	1124.15	T	F	1.144	
		1.04	40:51	964.35	T	T	1.186	
424		*** Total ***		5489.94	# of Peaks:		3	
442		0.88	47:15	386.73	T	T	1.005	
442		*** Total ***		386.73	# of Peaks:		1	
458		0.91	47:03	6244.82	T	T	1.000	
458		*** Total ***		6244.82	# of Peaks:		1	
470		0.93	47:02	4051.59	T	T	1.000	

AR300479

Listing of E002177B.dbf

DC0462-12

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
470		*** Total ***		4051.59	# of Peaks:		1	

*** End of Report ***

FLAG:
D = Delete
O/W = outside of retention time of window
MI = Manual Integration

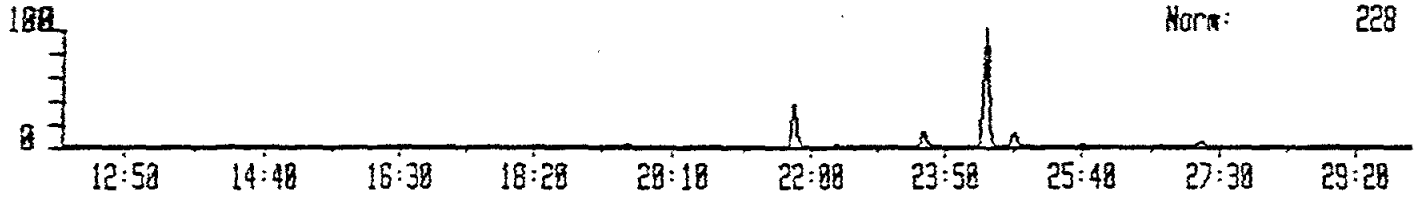
Add:

320	0.862	22:20	13.96	T	F	0.992	RW 2-7-91	MI
374	0.801	31:16	10.23	F	F	0.806	RW 2-7-91	MI
390	2.540	32:49	23.03	F	F	0.953	RW 2-7-91	MI
Add 390	1.392	33:32	6.94	T	F	0.973	RW 2-7-91	MI
390	1.235	34:19	13.17	T	T	0.996	RW 2-7-91	MI
Add 408	3.587	38:23	28.48	F	F	0.990	RW 2-7-91	MI
408	3.370	41:03	36.88	F	F	1.058	RW 2-7-91	MI

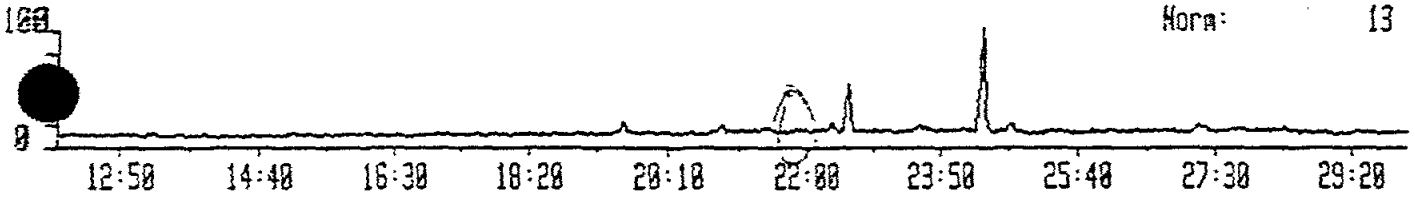
E002177 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-29-4A TLH#201-WF DC046212

DC0462-12

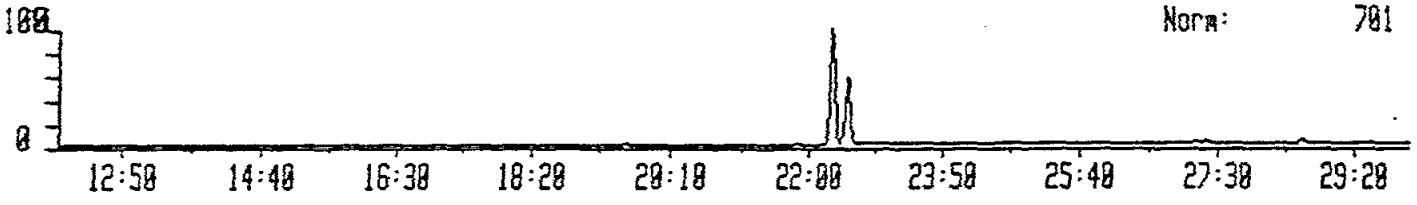
E002177 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-29-4A TLH#201-WF DC046212



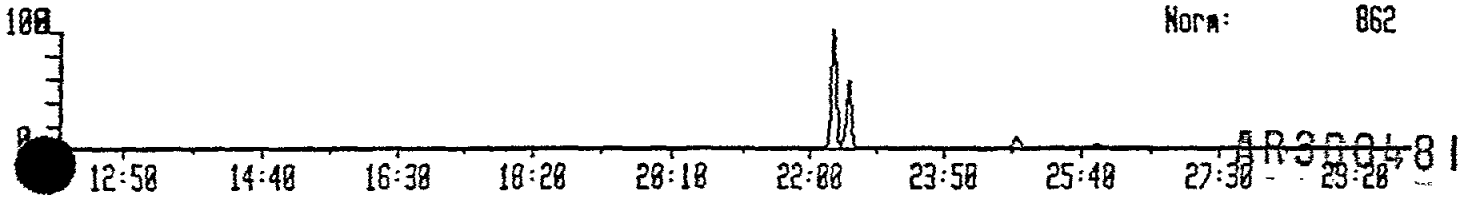
E002177 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-29-4A TLH#201-WF DC046212



E002177 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-29-4A TLH#201-WF DC046212



E002177 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-29-4A TLH#201-WF DC046212



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

ILE NAME....: E002178 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-29-5A
ONCAL.....: E002175 SAMPLE ID....: DC046213
NALYST.....: OR ANALYSIS DATE: 01/30/91 PROJECT NUMBER: 201-WF
MPLE SIZE..: 935.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/09/90
AL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
IKE FILE...: SP82905W SHIPMENT NO...: 5742C

AME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
378-TCDD	ND		0.1				---
2378-PeCDD	ND		0.2				---
3478-HxCDD	ND		0.2				---
3678-HxCDD	- EMPC			0.37			IR pjo 3/5/91
3789-HxCDD	ND		0.1				---
4678-HpCDD	- 34.7				1.05	40:56	---
DD	- 267 J				0.90	47:07	H,BL
378-TCDF	ND		0.07				---
2378-PeCDF	ND		0.1				---
4378-PeCDF	ND		0.09				---
3478-HxCDF	ND		0.07				---
3678-HxCDF	ND		0.07				---
4678-HxCDF	ND		0.06				---
3789-HxCDF	ND		0.08				---
4678-HpCDF	- 8.6				1.10	38:52	L
4789-HpCDF	- EMPC			0.19			IR pjo 3/5/91
DF	- 37.0 J				0.90	47:19	L
TAL TCDD	EMPC			~~11.52~~ 6.74 pjo			IR, CI pjo 3/5/91
TAL PeCDD	ND		0.2				---
TAL HxCDD	- 0.43	1		~~0.81~~ 0.37 pjo	1.05		---
TAL HpCDD	- 53.1	2			1.05		---
TAL TCDF	- 0.39	1		~~1.19~~ 0.80 pjo	0.75		IR pjo 3/5/91
TAL PeCDF	EMPC			0.60			IR pjo 3/5/91
TAL HxCDF	- 2.7	2		~~2.75~~ 0.05 pjo	1.30		IR pjo 3/5/91
TAL HpCDF	- 37.6	2		~~37.6~~ 0.19 pjo	1.08		IR pjo 3/5/91

TERNAL STANDARDS RECOVERY SUMMARY

AME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
3C12-2378-TCDF	- 37.9	70.9	0.81	21:50	---
3C12-2378-TCDD	- 34.0	63.6	0.79	22:37	---
3C12-HxCDD 678	- 41.2	77.0	1.27	34:33	---
3C12-HpCDF 678	- 96.4	90.1	1.06	38:51	---
3C12-OCDD	- 139	130	0.91	47:06	---

AR300482

AGS: L = CONCENTRATION BELOW CALIBRATION RANGE.
H = CONCENTRATION ABOVE CALIBRATION RANGE.
BL = FOUND IN BLANK AT CONCENTRATION < 2%.

8280_RPT rev:3.02

DC0462-13

02/02/91

Listing of E002178B.dbf

Matched GC Peaks / Ratio / Ret. Time

Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		0.75	21:14	66.54	T	F	0.973	
		2.27	22:25	81.60	F	F	1.027	
		0.48	23:46	123.96	F	F	1.089	
304		*** Total ***		272.10	# of Peaks:		3	
316		0.81	21:50	7785.50	T	T	1.000	
	D	0.90	23:50	59.69	F	F	1.092	AR 2-2-91 O/W
316		*** Total ***		7845.19	# of Peaks:		2	
320		4.92	21:50	2211.94	F	F	0.965	
		2.16	23:36	511.88	F	F	1.043	
		0.39	23:47	323.73	F	F	1.052	
	D	2.12	24:28	2317.64	F	F	1.082	AR 2-2-91 O/W
		2.28	24:51	192.75	F	F	1.099	
320		*** Total ***		5557.94	# of Peaks:		5	
332		0.80	22:24	5867.79	T	T	0.990	
		0.79	22:37	4649.61	T	T	1.000	
332		*** Total ***		10517.40	# of Peaks:		2	
340	D	4.16	23:46	724.71	F	F	1.089	MV 2/11/91 O/W
		0.05	25:37	864.35	F	F	1.173	
340		*** Total ***		1589.06	# of Peaks:		2	
374		1.32	31:22	65.88	T	F	0.807	
		1.27	32:12	400.03	T	F	0.829	
	D	1.69	38:52	45.03	F	F	1.000	AR 2-2-91 O/W
		1.37	39:40	171.66	T	F	1.021	
374		*** Total ***		682.60	# of Peaks:		4	
390		1.05	33:21	37.82	T	F	0.965	
		0.54	34:34	47.83	F	T	1.000	
		6.64	38:51	139.48	F	F	1.124	
	D	1.48	39:30	43.13	F	F	1.143	AR 2-2-91 O/W
		1.46	40:58	222.73	F	F	1.186	
390		*** Total ***		490.99	# of Peaks:		5	
402		1.27	34:33	3625.97	T	T	1.000	
		1.29	35:08	5128.69	T	T	1.017	
402		*** Total ***		8754.66	# of Peaks:		2	
408		1.10	38:52	1125.67	T	T	1.000	
		1.06	39:39	3149.77	T	F	1.021	
408		*** Total ***		4275.44	# of Peaks:		2	
420		1.06	38:51	11209.68	T	T	1.000	
420		*** Total ***		11209.68	# of Peaks:		1	
424	D	3.23	38:51	3876.37	F	F	1.124	AR 2-2-91 O/W
		1.05	39:29	970.38	T	F	1.143	
		1.05	40:56	1837.20	T	T	1.185	
424		*** Total ***		6683.95	# of Peaks:		3	

AR300483

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
442		0.90	47:19	4509.50	T	T	1.005	
442		*** Total ***		4509.50	# of Peaks:		1	
458		0.90	47:07	20948.15	T	T	1.000	
458		*** Total ***		20948.15	# of Peaks:		1	
470		0.91	47:06	6457.82	T	T	1.000	
470		*** Total ***		6457.82	# of Peaks:		1	

*** End of Report ***

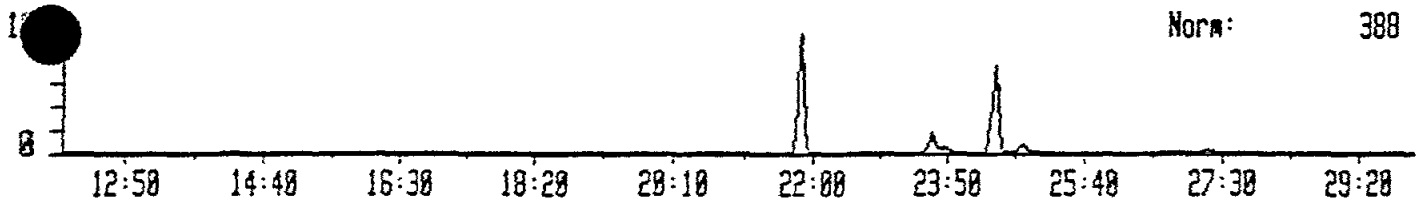
FLAG
D = Delete
O/W = outside retention time of window
MI = Manual Integration

idd:

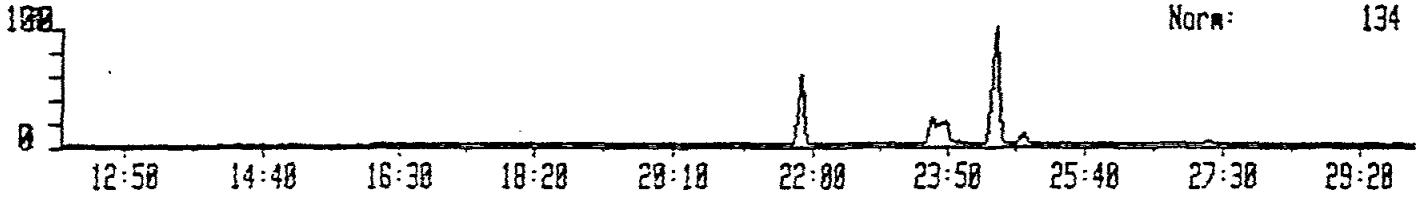
I 374	1.396	31:08	13.32	F	F	0.801	RW 2-7-91 O/W
408	1.273	41:42	20.27	F	T	1.073	RW 2-7-91
374	1.48	31:05	13.32	F	F	0.800	MV 2/11/91

E002178 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-29-5A TLH#201-WF DC046213

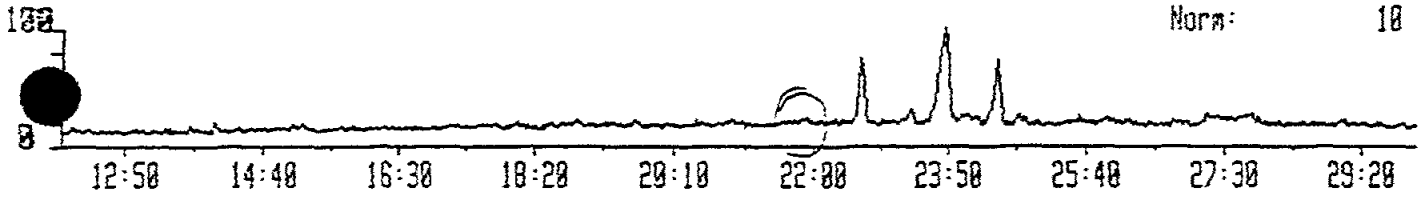
DC0462-13



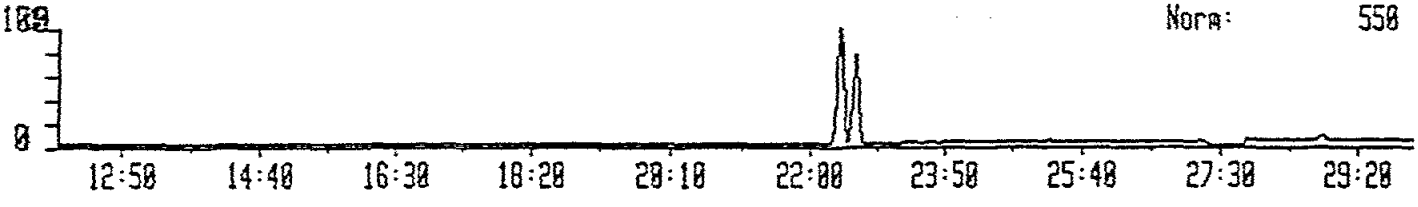
E002178 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-29-5A TLH#201-WF DC046213



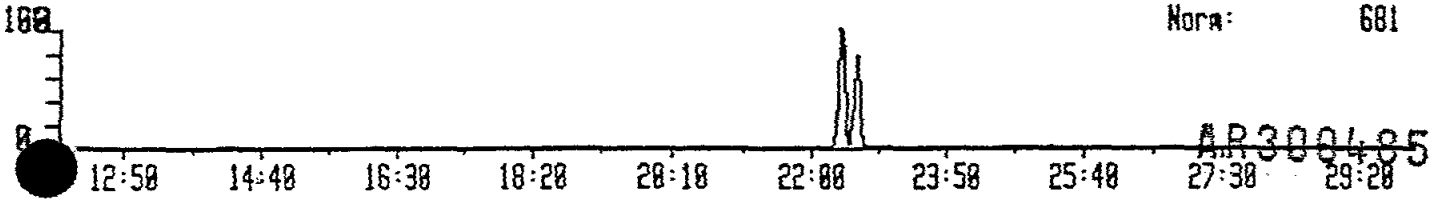
E002178 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-29-5A TLH#201-WF DC046213



E002178 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-29-5A TLH#201-WF DC046213



E002178 30-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-29-5A TLH#201-WF DC046213



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002104 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-30-1A
CONCAL.....: E002101 SAMPLE ID....: DC046214
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 1035.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.05				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.06				___
123678-HxCDD	ND		0.06				___
123789-HxCDD	ND		0.05				___
1234678-HpCDD	~ 0.09				0.91	42:03	_L_
OCDD	~ 1.1				0.91	48:22	BL,L
2378-TCDF	ND		0.03				___
12378-PeCDF	ND		0.05				___
23478-PeCDF	ND		0.05				___
123478-HxCDF	~ 0.03				1.24	33:58	_L_
123678-HxCDF	~ 0.03				1.25	34:08	_L_
234678-HxCDF	~ 0.03				1.20	35:09	_L_
123789-HxCDF	ND		0.03				___
1234678-HpCDF	~ 0.08				0.98	39:58	_L_
1234789-HpCDF	ND		0.05				___
OCDF	~ 0.16				1.02	48:36	_L_
TOTAL TCDD	EMPC			~~4.51~~ ND PJO			IR, CI PJO 3/5/91
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	ND		0.06				___
TOTAL HpCDD	0.09	1			0.91		___
TOTAL TCDF	EMPC			0.23			IR PJO 3/5/91
TOTAL PeCDF	ND		0.05				___
TOTAL HxCDF	0.09	3			1.23		___
TOTAL HpCDF	0.09	1			0.98		___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	~30.4	63.0	0.80	22:40	___
13C12-2378-TCDD	~29.7	61.5	0.79	23:27	___
13C12-HxCDD 678	~43.9	90.9	1.27	35:35	___
13C12-HpCDF 678	~98.0	101	1.05	39:57	___
13C12-OCDD	~96.9	100	0.91	48:21	___

!_____ __/__/__! 8280_RPT rev.03

AR300486

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

DC0462-14

 Listing of E002104B.dbf
02/08/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.26	23:15	66.99	F	F	1.026	
304		*** Total ***		66.99	# of Peaks:		1	
316		0.80	22:40	7323.17	T	T	1.000	
316		*** Total ***		7323.17	# of Peaks:		1	
320		5.01	22:40	1674.44	F	F	0.967	
	D	2.34	25:20	30.70	F	F	1.080	] ea 2-8-91 o/u
320		*** Total ***		1705.14	# of Peaks:		2	
332		0.79	23:15	6245.77	T	T	0.991	
		0.79	23:27	4614.55	T	T	1.000	
332		*** Total ***		10860.32	# of Peaks:		2	
390	D	5.70	39:58	118.80	F	F	1.123	] ea 2-8-91 o/u
390		*** Total ***		118.80	# of Peaks:		1	
402		1.27	35:35	4513.26	T	T	1.000	
		1.26	36:12	5476.49	T	T	1.017	
402		*** Total ***		9989.75	# of Peaks:		2	
420		1.05	39:57	12142.48	T	T	1.000	
420		*** Total ***		12142.48	# of Peaks:		1	
424	D	3.29	39:57	3302.48	F	F	1.123	] ea 2-8-91 o/u
424		*** Total ***		3302.48	# of Peaks:		1	
442		1.02	48:36	23.14	T	T	1.005	
442		*** Total ***		23.14	# of Peaks:		1	
458		0.91	48:22	93.65	T	T	1.000	
458		*** Total ***		93.65	# of Peaks:		1	
470		0.91	48:21	6291.40	T	T	1.000	
470		*** Total ***		6291.40	# of Peaks:		1	

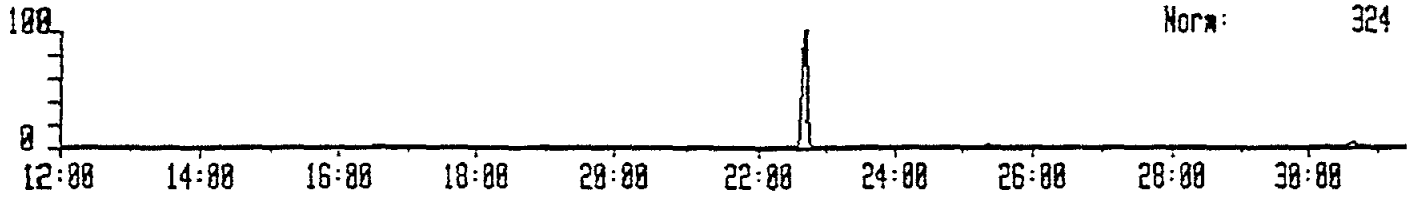
*** End of Report ***

FLAGS:
D = Delete
o/u = outside of retention window
MI = Manual Integrations

304	2.013	23:28	8.11	F	F	ea 2-8-91 1.035 ~~1.043~~	ea 2-8-91 MI
374	1.238	33:58	5.64	T	T	0.850	ea 2-8-91 MI
374	1.248	34:08	7.37	T	T	0.854	ea 2-8-91 MI
374	1.198	35:09	7.01	T	T ea	0.880	ea 2-8-91 MI
408	0.983	39:58	13.59	T	T	1.000	ea 2-8-91 MI
424	0.909	42:03	6.93	T	T	1.182	ea 2-8-91 MI

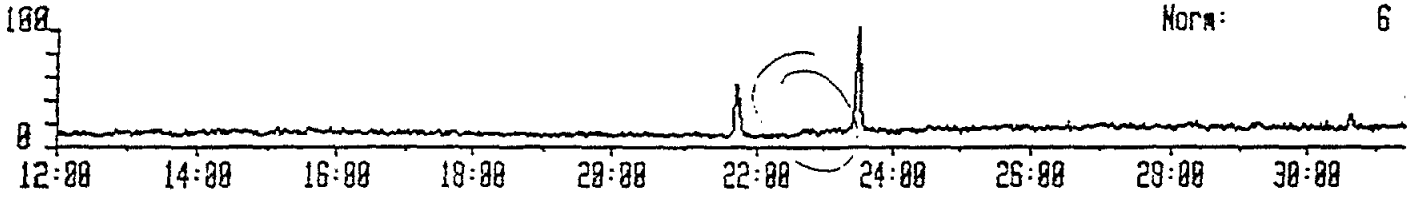
AR300487

E002104 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF DC0462-14
Sample 1 Injection 1 Group 1 Mass 319.8965
Text:3-30-1A TLH#198-W1 DC046214

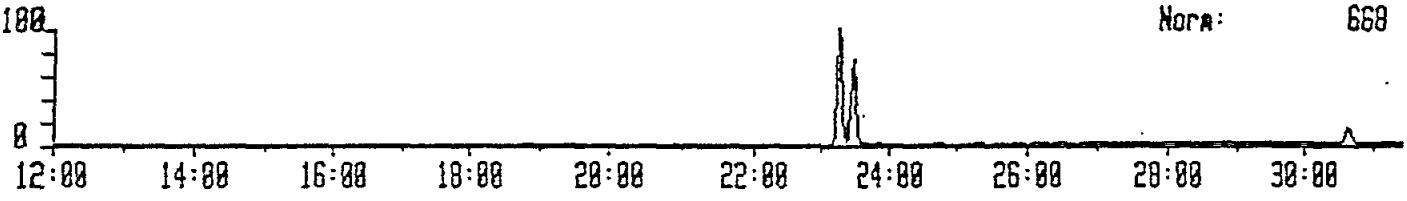


E002104 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 321.8936
Text:3-30-1A TLH#198-W1 DC046214

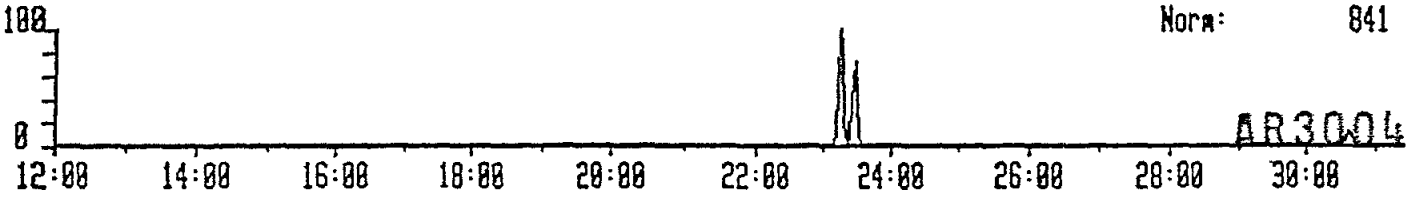
E002104 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 258.9299
Text:3-30-1A TLH#198-W1 DC046214



E002104 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 331.9368
Text:3-30-1A TLH#198-W1 DC046214



E002104 23-JAN-91 Sir:Voltage 70-E Sys: 8280IFBDF
Sample 1 Injection 1 Group 1 Mass 333.9339
Text:3-30-1A TLH#198-W1 DC046214



Triangle Laboratories of Houston, Inc.
PCDD/PCDF 8280 ANALYSIS (a)

02/11/91

FILE NAME....: E002105 CLIENT ID....: SAS 5742C TLI NUMBER....: 3-30-2A
CONCAL.....: E002101 SAMPLE ID....: DC046215
ANALYST.....: XL ANALYSIS DATE: 01/23/91 PROJECT NUMBER: 198-W1
SAMPLE SIZE..: 880.00 ml SAMPLE MATRIX: WATER DATE RECEIVED.: 11/10/90
ICAL DATE....: 01/02/91 SAMPLE ORIGIN: N/A DATE COLLECTED: 11/08/90
SPIKE FILE...: SP82805W SHIPMENT NO...: 5742C

NAME	CONC(ppt)	NUMBER	DL	EMPC	RATIO	RT	FLAGS
2378-TCDD	ND		0.07				___
12378-PeCDD	ND		0.1				___
123478-HxCDD	ND		0.07				___
123678-HxCDD	ND		0.07				___
123789-HxCDD	ND		0.07				___
1234678-HpCDD	ND		0.1				___
OCDD	~ 0.24				0.83	48:18	BL,L
2378-TCDF	ND		0.04				___
12378-PeCDF	ND		0.06				___
23478-PeCDF	ND		0.06				___
123478-HxCDF	ND		0.04				___
123678-HxCDF	ND		0.04				___
234678-HxCDF	ND		0.03				___
123789-HxCDF	ND		0.05				___
1234678-HpCDF	ND		0.06				___
1234789-HpCDF	ND		0.07				___
OCDF	ND		0.07				___
TOTAL TCDD	~ EMPC			~~0.41~~ ND			IR CI DJO 3/5/91
TOTAL PeCDD	ND		0.1				___
TOTAL HxCDD	~ EMPC			0.067			IR DJO 3/5/91
TOTAL HpCDD	ND		0.1				___
TOTAL TCDF	~ EMPC			0.29			IR DJO 3/5/91
TOTAL PeCDF	ND		0.06				___
TOTAL HxCDF	ND		0.04				___
TOTAL HpCDF	ND		0.06				___

INTERNAL STANDARDS RECOVERY SUMMARY

NAME	CONC (ppt)	% REC.	RATIO	RT	FLAGS
13C12-2378-TCDF	~37.5	66.1	0.80	22:36	___
13C12-2378-TCDD	~34.8	61.2	0.80	23:24	___
13C12-HxCDD 678	~52.2	91.9	1.31	35:31	___
13C12-HpCDF 678	~107	94.4	1.05	39:53	___
13C12-OCDD	~104	91.1	0.91	48:18	___

|_____ __/__/__| 8280_RPT rev.3.01 AR300489

FLAGS: BL = FOUND IN THE BLANK AT CONCENTRATION < 2%
L = CONCENTRATION BELOW CALIBRATION RANGE

Page No. 1 Listing of E002105B.dbf DC0462-1~~4~~5.pgs
02/08/91

Matched GC Peaks / Ratio / Ret. Time

M_Z	Omit	Ratio	RT.	Area	Match Rat	Match RT	REL_RT	Who/ Why
304		2.32	23:12	104.12	F	F	1.027	
304		*** Total ***		104.12	# of Peaks:		1	
316		0.80	22:36	10271.65	T	T	1.000	
316		*** Total ***		10271.65	# of Peaks:		1	
320		4.93	22:36	2670.87	F	F	0.966	
		D[2.49	25:17	50.88	F	F	1.080]	ea 2-8-91 o/w
320		*** Total ***		2721.75	# of Peaks:		2	
332		0.79	23:12	8354.70	T	T	0.991	
		0.80	23:24	6177.19	T	T	1.000	
332		*** Total ***		14531.89	# of Peaks:		2	
390		D[4.93	39:54	142.16	F	F	1.123]	ea 2-8-91 o/w
390		*** Total ***		142.16	# of Peaks:		1	
402		1.31	35:31	5560.38	T	T	1.000	
		1.27	36:08	6587.74	T	T	1.017	
402		*** Total ***		12148.12	# of Peaks:		2	
420		1.05	39:53	13525.31	T	T	1.000	
420		*** Total ***		13525.31	# of Peaks:		1	
424		D[3.28	39:53	3782.00	F	F	1.123]	ea 2-8-91 o/w
424		*** Total ***		3782.00	# of Peaks:		1	
470		0.91	48:18	6847.47	T	T	1.000	
470		*** Total ***		6847.47	# of Peaks:		1	

*** End of Report ***

FLAGS:
D = Delete
o/w = outside of retention window
MI = Manual Integrations

Add:							
304	2.273	23:24	12.90	F	F	1.035	ea 2.8.91 MI
390	3.286	34:03	14.58	F	F	0.959	ea 2.8.91 MI
458	0.832	48:18	18.39	T	T	1.000	ea 2.8.91 MI

AR300490