PHILIPS

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Philips Semiconductors

Philips Semiconductors
a North American Philips Company

9201 Pan American Freeway, NE
Albuquerque, New Mexico 87113
(505) 822-7000

May 27, 1996

Ms. Stephanie Kruse
Hazardous & Radioactive Materials Bureau
NMED
2044A Galisteo Street
Santa Fe, NM 87505

RECEIVED
MAY 30 1996

Certified Mail: Z 729 721 025

SUBJECT: Groundwater Monitoring Results

Dear Ms. Kruse:

According to Philips Semiconductors' HSWA permit (NMD000709782-1), modified March 18, 1996, to include the Coronado Municipal Landfill, we are required to perform quarterly groundwater sampling beginning no later than April 17, 1996. Enclosed are the results from the second quarter groundwater monitoring performed on April 15 and 16. All samples were tested for the constituents listed in 40 CFR 264 Appendix IX as requested. The only constituents found in the samples were arsenic, barium, chromium, zinc, and tetrachloroethene. All concentrations were well below the NMWQCC standards for groundwater.

Our next groundwater monitoring is scheduled for July in accordance with our permit. Due to the fact that the RCRA Facility Investigation Workplan will probably not be approved by that time, we are requesting that our monitoring requirements be reduced to testing for volatile compounds only as of the July monitoring. As you are well aware, testing for all Appendix IX constituents is very costly and is excessive in this situation. Please let us know by June 14 if this change is possible.

If you have any questions regarding this submission, please call me at (505) 822-7634.

Sincerely,

Melanie McKinley

Melanie McKinley
Environmental Engineer

(ENV627)

Enclosure

cc: Jim Cochran, EHS Manager
James Casey, Legal Counsel

DANIEL B. STEPHENS & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS AND ENGINEERS

North American Philips Company
Quarterly Ground-Water Monitoring Report

Prepared for

North American Philips Company

Albuquerque, New Mexico

May 24, 1996

6020 ACADEMY NE • SUITE 100 • ALBUQUERQUE, NM 87109 • (505) 822-9400

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North American Philips Company
Quarterly Ground-Water Monitoring Report

1. Introduction

In accordance with *Modifications to Module IV-Corrective Action of RCRA Permit No. NMD000709782-1 Section C (Special Conditions), Subsection C.1 (Quarterly Sampling of Existing Ground Water Monitoring Wells)*, ground-water monitoring was conducted by Daniel B. Stephens & Associates, Inc. (DBS&A), at North American Philips Company's (Philips) facility in Albuquerque, New Mexico, on April 15 and 16, 1996. Sampling and analysis procedures followed New Mexico Environment Department (NMED) ground-water sampling guidelines and U.S. Environmental Protection Agency (EPA's) *RCRA Ground-Water Monitoring: Draft Technical Guidance*, dated November 1992.

This report summarizes the results of the April 1996 sampling event at the Philips facility, formerly known as Signetics Corporation, Inc. Sections 2 through 4 describe the background and history of the Philips site, the hydrogeologic setting, and monitoring methods and results, respectively. Conclusions are provided in Section 5.

2. Background

The Philips facility is located at the north edge of the City of Albuquerque, near the intersection of Interstate 25 and Alameda Boulevard, as shown in Figures 1 and 2. The facility is located on approximately 60-acres obtained from the City of Albuquerque. Construction of the 470,000 square foot plant began in 1978, operations began in 1982, and full operational status was reached in 1983. A portion of the site was formerly occupied by the City of Albuquerque Coronado Municipal Landfill, which operated from 1963 to 1965 and received mainly household and commercial trash. Historical evidence suggests that it was a relatively small landfill composed of two sections that occupied an area of approximately 7.5 acres (PRC, 1992). The site is bordered to the north by vacant land, to the south by private businesses, to the east by the Pan American Freeway (Interstate 25), and to the west by Honeywell, Inc., a manufacturing facility.

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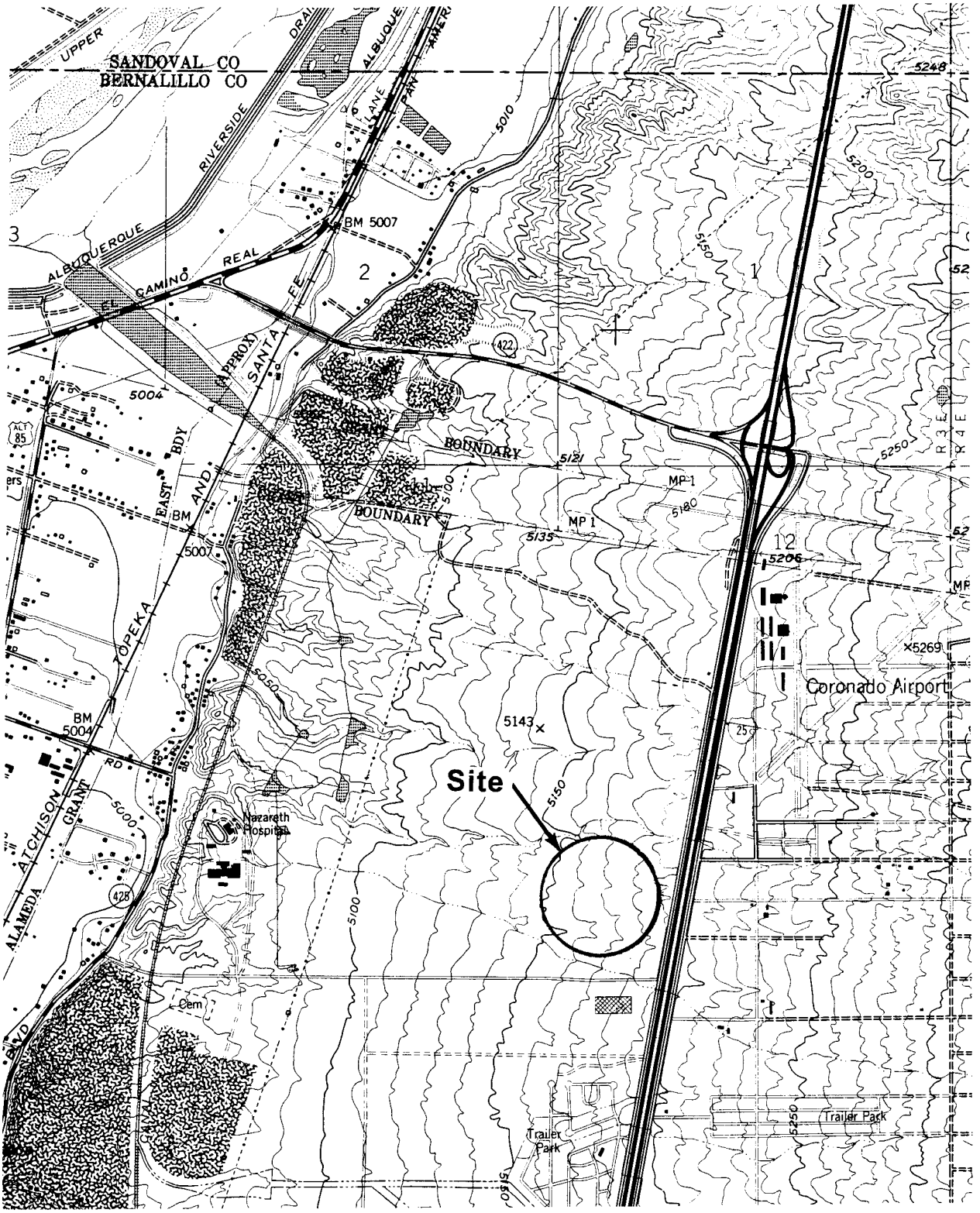

Source: Adapted from Alameda, NM, 7.5 minute USGS quadrangle map.

N

0 2000 ft

PHILIPS SEMICONDUCTORS, INC.

General Site Vicinity

DANIEL B. STEPHENS & ASSOCIATES, INC.

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Figure 1

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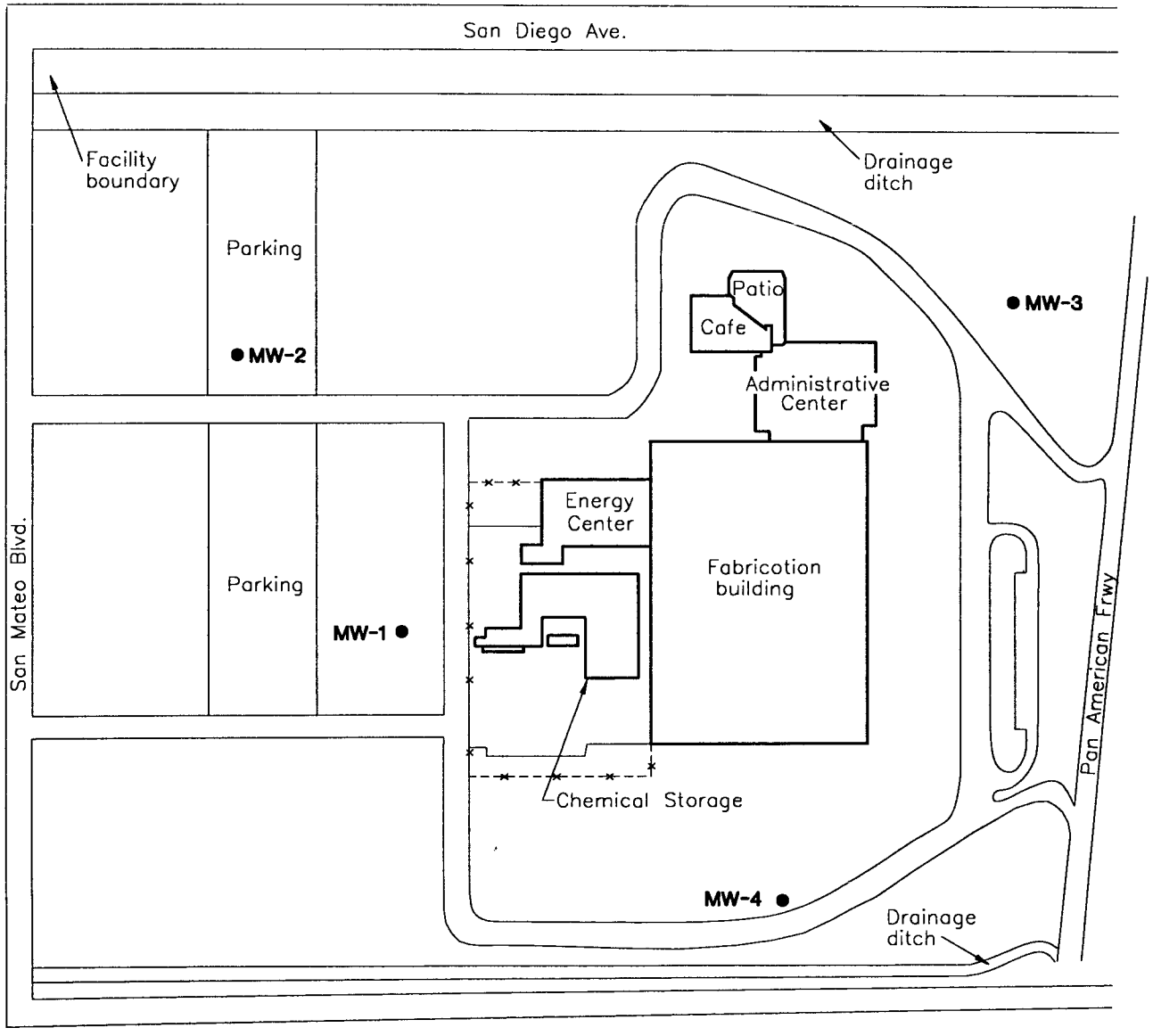

N

Not to scale

Explanation

Monitor well

Fence

PHILIPS SEMICONDUCTORS, INC.

Site Plan

DANIEL B. STEPHENS & ASSOCIATES, INC.

4-30-96

JN 6023

Figure 2

Four ground-water monitoring wells (MW-1 through MW-4) were installed on the property in May and June 1987. The monitoring wells were sampled for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, and general water quality parameters in June and August 1987. Ground-water samples were subsequently collected from the monitor wells in September 1988, in May, September, and December 1989, and approximately quarterly from 1990 through 1993. The wells were sampled twice in 1994 and once in 1995. Previous ground-water samples consistently contained low concentrations of tetrachloroethene (PCE). Early (three rounds in 1988 and 1989) monitoring results also showed low concentrations of 1,1,2,2-tetrachlorethane.

3. Hydrogeologic Setting

The Philips site is located in the easternmost portion of the Basin and Range Province of the United States. The geologic setting is generally characterized by thick alluvial sediments deposited in a north-south trending fault basin, the Rio Grande Rift. Sediments deposited by the Rio Grande are poorly consolidated, and are generally quite permeable. Ground water in the shallow unconfined aquifer is recharged via the Rio Grande and local precipitation within the basin boundaries (Kaehler, 1990; Wilkins, 1986).

3.1 Geology

The Philips facility is located about 2 miles east of the Rio Grande at an elevation of about 5,200 feet above mean sea level. The facility is located on the lower portion of the Sandia piedmont plain, which consists of coalescing alluvial fans from the Sandia Mountains dissected by westward trending arroyos. Two small, lined arroyos lie north and south of the facility and are reportedly part of the La Cueva Arroyo drainage area. La Cueva Arroyo drains an area of approximately 6.4 miles upgradient of the Philips facility (PRC, 1992).

Sediments underlying the site include the Santa Fe Group, alluvial fans, and valley alluvium. The tertiary Santa Fe Group underlies the Quaternary surficial deposits of the modern Rio Grande and crops out on the east and west mesas. Materials of the Santa Fe Group were derived from erosion of the highlands east and west of the Rio Grande Rift, and volcanic activity and erosion

of the highlands farther north. The Santa Fe Group consists of unconsolidated to poorly consolidated sediments and interbedded volcanic rocks. The deposits range from boulders to clay and from well sorted stream channel deposits to poorly sorted slopewash deposits. Extrusive volcanic rocks of Tertiary and Quaternary ages, mainly basaltic rocks, are interbedded with sediments (PRC, 1992). Details of the regional geology are available in numerous reports (Anderholm, 1988; Bjorklund and Maxwell, 1961; Hawley and Haase, 1992; Kernodle and Scott, 1986).

3.2 Ground Water

The sediments that fill the Rio Grande Rift include the Santa Fe Group, and the overlying alluvium deposited by the modern Rio Grande (valley fill). Both units are hydraulically interconnected, and water moves from one formation into the other based on the local hydraulic gradient (Bjorklund, 1961). Ground water in the valley fill is generally under water table conditions, but locally, artesian conditions may exist as a result of a confinement of saturated gravel or sand beds between beds of silt or clay. The water table generally slopes southwestward from the Sandia and Manzano Mountains at a rate of approximately 5 to 20 feet per mile (Bjorklund, 1961). Variations in the direction of the water table slope are caused by differences in permeability and saturated thicknesses, or especially by ground-water withdrawals for water supply systems. Recharge to the aquifer is from precipitation, underflow of ground water derived from further north along the Rio Grande Rift, and recharge from streams, drains, canals, surface reservoirs, and irrigation water within the Albuquerque basin.

4. Monitoring Methods and Results

This section describes the methods used to collect ground-water samples from monitor wells at the Philips facility, and a discussion of the April 1996 results.

4.1 Ground-Water Sampling Methods

DBS&A sampled the four on-site ground-water monitor wells at the Philips facility on April 15 and 16, 1996. All samples were collected in accordance with (1) DBS&A's standard operating

procedures for ground-water sampling, (2) the methods in *RCRA Ground-Water Monitoring: Draft Technical Guidance* (EPA, 1992), and (3) accepted regulatory and industry standards. A representative of the NMED, Mr. Dale Conover, was present on April 15, 1996, to observe the sampling activities.

Prior to sampling each monitor well, the depth to water was measured with an electric sounder. The well was then purged of approximately three well-bore volumes of water using the dedicated bladder pump at each well. A summary of the April 1996 ground-water elevation measurements and calculated purge volumes is presented in Table 1. During purging, pH, temperature, and electrical conductance were monitored to ensure that water quality had stabilized prior to sampling. Table 2 summarizes the ground-water quality data obtained during sample purging of each well.

Table 1. Summary of Water Table Measurements and Calculated Purge Volumes April 12, 1996

Monitor Well	Surface Elevation (ft)	Measuring Point Elevation [a] (ft)	Approximate Total Depth (ft)	Depth to Water [b] (ft)	Water Table Elevation (ft)	Water Column Thickness (ft)	Purge Volume [c] (gal)
MW-1	5168.17	5168.70	247	207.28	4961.42	39.72	19.45
MW-2	5158.15	5159.36	245	196.14	4963.22	48.86	23.92
MW-3	5185.48	5186.43	260	231.59	4954.84	28.41	13.91
MW-4	5182.46	5182.94	260	224.24	4958.70	35.76	17.51

[a] Top of casing
[b] Measured from the top of casing
[c] Calculated by as $V = 3\pi r^2 h \times 7.48$ gal/ft^3, where h = water column thickness (feet) and r = well bore radius (feet)

In accordance with Philips' RCRA Permit Section C, Subsection C.1, ground-water samples were analyzed for all chemical parameters on the RCRA Appendix IX Ground-Water Monitoring List. Additionally, several quality control/quality assurance (QC/QA) samples were collected. A matrix spike sample (MW-3MS) and a matrix spike duplicate sample (MW-3MSD) were obtained from

Table 2. Summary of Ground-Water Parameters Obtained During Sample Purging, April 15 and 16, 1996

Monitor Well	Purge Volume[a] (gal)	Volume Purged (gal)	Time	pH	Electrical Conductivity (µS/cm)	Temperature (°C)
MW-1	19.45	3.00	1340	7.78	383	19.6
		6.00	1355	9.29	391	16.9
		9.00	1410	7.98	556	17.0
		12.00	1425	8.07	609	17.1
		15.00	1440	7.97	631	17.2
		18.00	1455	7.88	640	17.1
		20.00	1505	7.89	647	17.2
MW-2	23.92	4.00	1525	6.82	634	16.2
		8.00	1548	6.83	768	16.2
		12.00	1610	6.84	762	16.1
		16.00	1630	6.84	760	16.1
		20.00	1645	6.85	689	16.1
		24.00	1700	6.85	748	16.3
		26.00	1710	6.86	754	16.2
MW-3	13.91	2.50	1125	4.21	330	16.0
		5.00	1145	4.31	350	16.3
		7.50	1200	6.13	396	16.7
		10.00	1215	7.30	330	16.1
		12.50	1230	7.34	330	16.1
		15.00	1245	7.39	268	17.2
		15.20	1250	7.39	296	17.1
MW-4	17.51	3.00	957	6.92	922	16.7
		6.00	1020	7.01	921	16.6
		9.00	1050	7.04	922	17.1
		12.00	1120	7.03	923	17.1
		15.00	1150	7.04	918	16.9
		18.00	1200	7.05	921	16.7
		19.00	1205	7.04	920	16.7

Notes: Measurements obtained using a YSI flowthrough meter
[a] Calculated by $V = 3\pi r^2 h \times 7.48\ gal/ft^3 \times 3$, where h = water column thickness (feet), r = well bore radius (feet)

MW-3, and a blind duplicate sample (Duplicate) was obtained from MW-2 and analyzed for Appendix IX constituents. The laboratory methods employed included the following:

- VOCs by EPA method 8260
- SVOCs by EPA method 8270
- Pesticides/polychlorinated biphenyls (PCBs) by EPA 8080
- Herbicides by EPA method 8150
- Polycyclic aromatic hydrocarbons (PAHs) by EPA method 8310
- Polychlorinated dioxins and furans by EPA method 8280
- Metals by EPA 6000 Series/7000 Series
- Cyanide by EPA method 335.3
- Sulfide by EPA method SM427C

As recommended by NMED, each well sample was also analyzed for ethylene dibromide (EDB) by EPA method 502. The full list of compounds and elements analyzed is included with the laboratory reports in Appendix A.

Water samples were collected in appropriate bottles with appropriate preservatives for selected samples. As a QA/QC measure, a trip blank for detection of possible VOC contaminants was included with the sample bottles. All sample bottles were pre-cooled with ice prior to sampling, and following collection, were kept in coolers with Blue Ice until delivered to the analytical laboratory. Chemical analysis for VOCs, SVOCs, pesticides/PCBs, herbicides, cyanide, sulfide, and metals were performed by ACZ Laboratories, Inc., of Steamboat Springs, Colorado. Chemical analyses for EDB and polycyclic hydrocarbons were performed by Hall Environmental Analysis Laboratory, Inc. (HEAL), of Albuquerque, New Mexico, and analysis for dioxins and furans was subcontracted by HEAL to Ionics International, Inc., of Houston, Texas.

4.2 Ground-Water Elevation Results

Ground water is encountered in the Philips' monitor wells at depths of approximately 200 feet below ground surface (bgs). Based on our April 1996 data, the ground-water flow direction is to the east-northeast. This is consistent with ground-water elevation data measured during previous

site investigations. The depths to ground water and ground-water table elevations as measured on April 12, 1996, are summarized in Table 1 and shown graphically on Figure 3.

4.3 Ground-Water Monitoring Results and Analyses

Laboratory results for ground-water samples collected during April 1996 are presented in Table 3. The data table includes only analytes detected above the laboratory detection limits. Full laboratory reports are provided in Appendix A. Concentrations of PCE in ground-water samples from MW-1, MW-2, and MW-4 were slightly greater than laboratory detection levels, but less than the NMWQCC ground-water standard of 20 µg/L. Concentrations of arsenic, barium, chromium, and zinc were also detected, but were well below NMWQCC ground-water standards.

4.4 Ground-Water Quality Discussion

The April 1996 monitoring results indicate that ground-water quality in the area of the Philips facility is generally good, and water quality degradation is minimal. The monitoring results indicate that all chemical parameters are below NMWQCC ground-water standards. These results are similar to past monitoring results that have periodically indicated minor ground-water contamination with VOCs. No chemical parameters in the historical monitoring record have consistently exceeded standards, and none exhibit a trend of increasing concentrations.

5. Conclusions

Environmental monitoring activities were conducted at the Philips facility during April 1996 in accordance with the *Modification to Module IV-Corrective Action of RCRA Permit No. NMD000709782-1, Section C (Special Conditions), subsection C.1 (Quarterly Sampling of Existing Ground Water Monitoring Wells).* As specified in the Permit, ground-water samples were collected and analyzed for all analytes listed in the Appendix IX–Ground-Water Monitoring List for RCRA TSD facilities. The concentrations of PCE detected in ground-water samples obtained from MW-1, MW-2, and MW-4 were slightly greater than laboratory detection limits, but less than the NMWQCC ground-water standard. The priority pollutant metals arsenic, barium, chromium,

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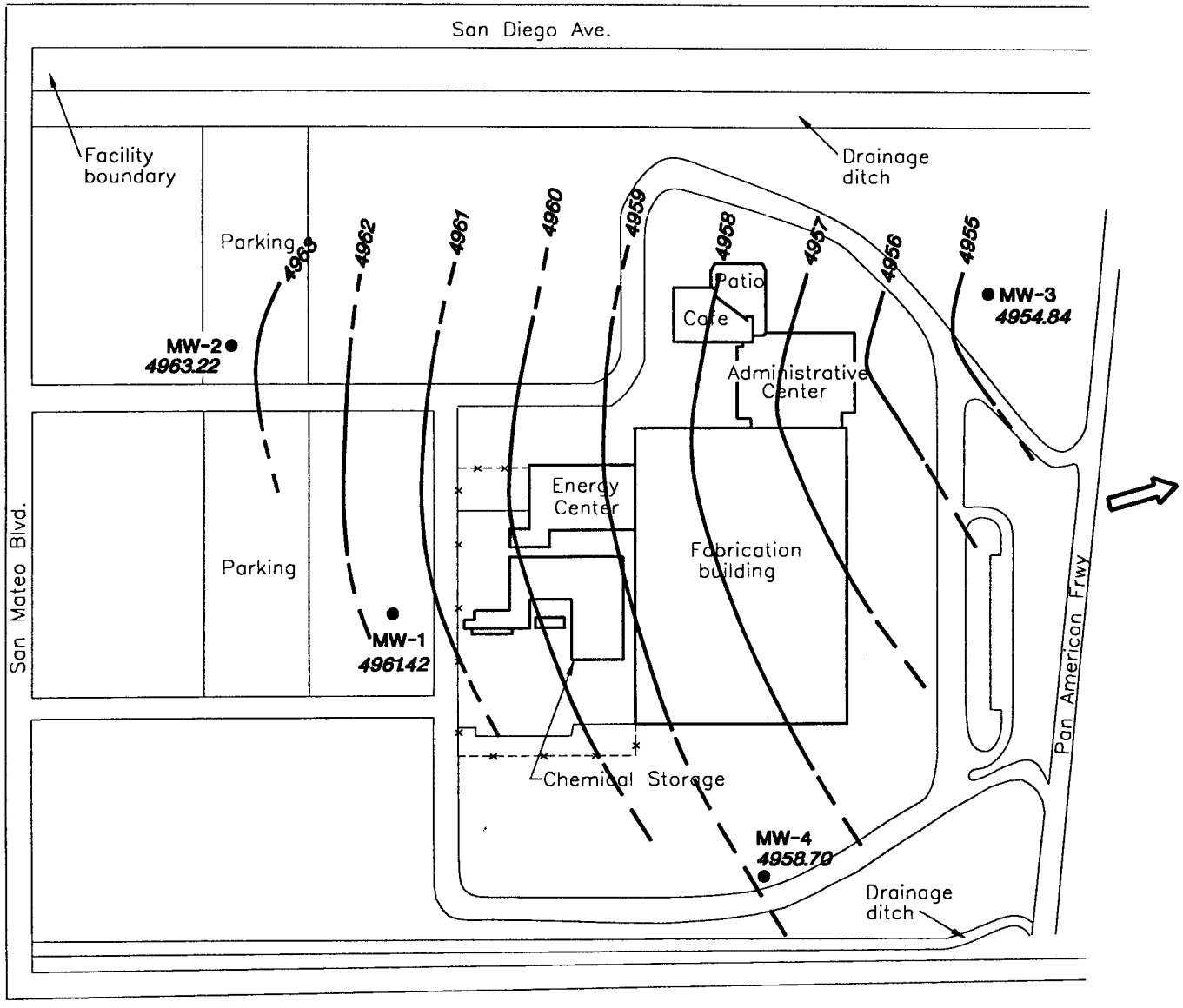

N

Not to scale

Explanation

Monitor well

Fence

General ground-water flow direction

DANIEL B. STEPHENS & ASSOCIATES, INC.
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PHILIPS SEMICONDUCTORS, INC.

Ground-Water Table Elevation Data
April 12, 1996

Figure 3

Table 3. Summary of Chemical Analytical Data, April 15 and 16, 1996

Monitor Well	EDB [a] (µg/L)	EPA Method 8310 [b] (µg/L)	EPA Method 8280 [c] (µg/L)	EPA Methods 6000 Series/7000 Series [d]		Cyanide [e] (µg/L)	Sulfide [f] (µg/L)	EPA Method 8150 [g] (µg/L)	EPA Method 8080 [h] (µg/L)	EPA Method 8270 [i] (µg/L)	EPA Method 8260 [j]	
				Detected Analyte	Concentration (µg/L)						Detected Analyte	Concentration (µg/L)
MW-1	<0.01	ND	ND	Barium Chromium Zinc	198 20 20	ND	ND	ND	ND	ND	PCE	7.4
MW-2	<0.01	ND	ND	Arsenic Barium Zinc	2 109 30	ND	ND	ND	ND	ND	PCE	6.6
MW-3	<0.01	ND	ND	Arsenic Barium Zinc	2 45 20	ND	ND	ND	ND	ND	ND	---
MW-4	<0.01	ND	ND	Arsenic Barium Zinc	2 141 20	ND	ND	ND	ND	ND	ND	---
MW-2 Duplicate	<0.01	ND	ND	Arsenic Barium Zinc	1 107 30	ND	ND	ND	ND	ND	PCE	6.9
Trip Blank	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	---
NMWQCC standards for ground water	0.1	---	---	Arsenic Barium Chromium Zinc	100 1,000 50 10,000	200	---	---	---	---	PCE	20

[a] EDB = Ethylene dibromide, analyzed by EPA Method 504.
[b] EPA method 8310 for polycyclic aromatic hydrocarbons (PAHs).
[c] EPA method 8280 for polychlorinated dioxins and furans.
[d] EPA methods 6000 Series/7000 Series for priority pollutant metals by 29 CFR Appendix IX. Only analytes detected above laboratory detection limits are included in this table. Detection limits are shown on laboratory reports included in Appendix A.
[e] Total cyanide analyzed by EPA method 335.3, colorimetric with distillation.
[f] Sulfide analyzed by EPA method SM427C, modified methylene blue.
[g] EPA method 8150 for herbicides.
[h] EPA method 8270 for semi-volatile organic compounds.
[i] EPA method 8080 for pesticides and polychlorinated biphenols.
[j] EPA method 8260 for volatile organic compounds. Only analytes detected greater than laboratory detection limits are included in this table. Detection limits are shown on laboratory reports, included in Appendix A.

µg/L = Micrograms per liter (ppb)
ND = Analytes not detected at method detection limits. Detection limits for each analyte are shown on laboratory reports included in Appendix A.
NA = Not analyzed
PCE = Tetrachloroethene

and zinc were detected at concentrations greater than laboratory detection limits, but far less than NMWQCC ground-water standards.

The ground-water monitoring results do not indicate any adverse ground-water quality impacts. Previous sampling in 1987 for SVOCs and metals also showed no adverse impacts. In view of these findings and the results of prior ground-water monitoring, we suggest that future ground-water monitoring be performed on a semiannual schedule for VOCs only.

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APPENDIX A

LABORATORY CHEMICAL ANALYSIS REPORTS

ACZ Laboratory
Data Sheets
MW-3

ACZ

Analytical Results

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493

Lab Sample ID: *L9302-01*
Client Sample ID: *MW-3*
Client Project ID: *#6023 Phillips SC*
ACZ Report ID: *RG24958*

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109
Richard Meixner

Date Sampled: *4/15/96 13:00*
Date Received: *4/16/96*
Date Reported: *4/24/96*

Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Antimony, total	M7041 GFAA		U	mg/L	0.002	0.01	4/18/96	sh
Arsenic, total	M7060 GFAA	0.002	B	mg/L	0.001	0.005	4/18/96	sh
Barium, total	M6010 ICP	0.045		mg/L	0.003	0.01	4/22/96	rs
Beryllium, total	M6010 ICP		U	mg/L	0.002	0.01	4/22/96	rs
Cadmium, total	M6010 ICP		U	mg/L	0.003	0.02	4/22/96	rs
Chromium, total	M6010 ICP		U	mg/L	0.01	0.06	4/22/96	rs
Cobalt, total	M6010 ICP		U	mg/L	0.01	0.06	4/22/96	rs
Copper, total	M6010 ICP		U	mg/L	0.01	0.06	4/22/96	rs
Lead, total	M6010 ICP		U	mg/L	0.02	0.1	4/22/96	rs
Mercury, total	M7470 CVAA		U	mg/L	0.0002	0.001	4/18/96	jd
Nickel, total	M6010 ICP		U	mg/L	0.01	0.06	4/22/96	rs
Selenium, total	SM 3500-Se C, AA-Hydride		U	mg/L	0.001	0.005	4/18/96	rd
Silver, total	M6010 ICP		U	mg/L	0.006	0.03	4/22/96	rs
Thallium, total	M7841 GFAA		U	mg/L	0.002	0.01	4/18/96	sh
Tin, total	M6010 ICP		U	mg/L	0.1	0.6	4/22/96	rs
Vanadium, total	M6010 ICP		U	mg/L	0.006	0.03	4/22/96	rs
Zinc, total	M6010 ICP	0.02	B	mg/L	0.01	0.06	4/22/96	rs

Metals Prep

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Total Digestion	M3015 ICP						4/18/96	jaw
Total Digestion	M3015 GFAA						4/18/96	jaw

Wet Chemistry

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.3 - Colorimetric w/ distillation		U	mg/L	0.01	0.05	4/17/96	jk
Sulfide as S	SM427C - Modified, Methylene Blue		U	mg/L	0.02	0.1	4/18/96	jk

Inorganic Qualifiers (based on EPA CLP 3/90)

U = Analyte was analyzed for but not detected at the indicated MDL

B = Analyte concentration detected at a value between MDL and PQL

PQL = Practical Quantitation Limit

Ralph V. Poulsen

Vice President of Operations: Ralph Poulsen

ACZ Laboratories, Inc.
Quality Control Data Summary

COVER PAGE

Client:	Daniel B.Stephens & Associates	Report Date:	04/29/96
Project:	#6023 Philips SC	Date Received:	04/16/96
Matrix:	Groundwater	Lab Nos.:	L9302-01

Sample Identification:	Lab I.D.	Client I.D.
	L9302-01	MW-3

Name: Brad Craig

Title: QA/QC Officer

Signature: BW

Date: 5·6·96

SPIKE SAMPLE RECOVERY

Client:	Daniel B.Stephens & Associates	Report Date:	04/29/96
Project:	#6023 Philips SC	Date Received:	04/16/96
Matrix:	Groundwater	Lab Nos.:	L9302-01

Concentration Units mg/l

Analyte	Method	Analysis Date	Sample No.	Spiked Sample Value	Sample Value	C	Spike Added	Recovery %	
Cyanide, total	M335.3	04/17/96	L9302-01	0.08	0.01	U	0.10	80.0	
Sulfide as S	SM427C	4/18/960	L9302-01	0.47	0.02	U	0.56	80.4	
Antimony, total	M7041	04/18/96	L9302-01	0.02	0.02	U	0.02	100.0	
Arsenic, total	M7060	04/18/96	L9302-01	0.02	0.02	U	0.02	100.0	
Barium, total	M6010	04/22/96	L9302-01	2.95	2.82		0.50	26.0	**
Beryllium, total	M6010	04/22/96	L9302-01	0.47	0.01	B	0.50	91.8	
Cadmium, total	M6010	04/22/96	L9302-01	0.48	0.02		10.00	121.0	
Chromium, total	M6010	04/22/96	L9302-01	0.69	0.24		0.50	90.6	
Cobalt, total	M6010	04/22/96	L9302-01	0.45	0.05		0.50	90.0	
Copper, total	M6010	04/22/96	L9302-01	0.62	0.15	U	0.50	94.2	
Lead, total	M6010	04/22/96	L9302-01	1.06	0.18	U	1.00	88.0	
Mercury, total	M7470	04/18/96	L9293-01	0.001	0.0002	U	0.001	84.0	*
Nickel, total	M6010	04/22/96	L9302-01	0.51	0.01	U	0.50	100.2	
Selenium, total	SM3500	04/18/96	L9302-01	0.02	0.003	U	0.02	100.0	
Silver, total	M6010	04/22/96	L9302-01	0.18	0.005	U	0.50	34.2	
Thallium, total	M7841	04/18/96	L9302-01	0.02	0.002	U	0.02	96.0	
Tin, total	M6010	04/22/96	L9302-01	0.66	0.10	U	1.00	66.0	
Vanadium, total	M6010	04/22/96	L9302-01	0.66	0.18		0.50	95.0	
Zinc, total	M6010	04/22/96	L9302-01	0.98	0.55		0.50	85.8	

* Sample not a Daniel B. Stevens, but run in the same batch

** Sample value 4 times the spike value

PREP BLANK/ICB & LABORATORY CONTROL SAMPLE/ICV

Client:	Daniel B.Stephens & Associates	Report Date:	04/29/96
Project:	#6023 Philips SC	Date Received:	04/16/96
Matrix:	Groundwater	Lab Nos.:	L9302-01

Concentration Unit mg/l

Analyte	Method	Analysis Date	Preparation Blank Observed Value	C	Laboratory Control Sample or ICV True Value	Observed Value	C	Recovery %
Cyanide, total	M335.3	04/17/96	0.01	U	0.25	0.23		92.0
Sulfide as S	SM427C	04/18/96	N/A	N/A	N/A	N/A		
Antimony, total	M7041	04/18/96	0.002	U	0.02	0.02		102.0
Arsenic, total	M7060	04/18/96	0.001	U	0.02	0.02		84.0
Barium, total	M6010	04/22/96	0.003	U	1.00	0.88		87.8
Beryllium, total	M6010	04/22/96	0.002	U	1.00	0.89		88.5
Cadmium, total	M6010	04/22/96	0.003	U	1.00	0.88		87.7
Chromium, total	M6010	04/22/96	0.01	U	1.00	0.89		88.5
Cobalt, total	M6010	04/22/96	0.01	U	1.00	0.89		88.6
Copper, total	M6010	04/22/96	0.00	U	0.03	0.03		102.3
Lead, total	M6010	04/22/96	0.02	U	1.00	0.88		87.6
Mercury, total	M7470	04/18/96	0.0002	U	0.003	0.0024		97.6
Nickel, total	M6010	04/22/96	0.01	U	1.00	0.89		88.7
Selenium, total	SM3500	04/18/96	0.001	U	0.02	0.02		102.0
Silver, total	M6010	04/22/96	0.005	U	1.00	0.90		90.4
Thallium, total	M7841	04/18/96	0.002	U	0.02	0.02		97.5
Tin, total	M6010	04/22/96	0.10	U	1.00	1.25		125.0
Vanadium, total	M6010	04/22/96	0.005	U	1.00	0.87		87.2
Zinc, total	M6010	04/22/96	0.01	U	1.00	0.90		90.2

DUPLICATE SAMPLE PRECISION

Client:	Daniel B.Stephens & Associates	Report Date:	04/29/96
Project:	#6023 Philips SC	Date Received:	04/16/96
Matrix:	Groundwater	Lab Nos.:	L9302-01

Concentration Units mg/l

Analyte	Method	Analysis Date	Sample No.	Control Limit %RPD	Control Limit 5xIDL	Sample Value	C	Duplicate Value	C	RPD %
Cyanide, total	M335.3	04/17/96	L9302-01	+/- 20	50	0.01	U	0.01	U	0.0
Sulfide as S	SM427C	4/18/960	L9302-01	+/- 20	10	0.02	U	0.02	U	0.0
Antimony, total	M7041	04/18/96	L9302-01	+/- 20	0.01	0.02	U	0.02	U	2.3
Arsenic, total	M7060	04/18/96	L9302-01	+/- 20	0.005	0.02	U	0.02	U	18.8
Barium, total	M6010	04/22/96	L9302-01	+/- 20	0.015	0.64		0.675		4.7
Beryllium, total	M6010	04/22/96	L9302-01	+/- 20	0.01	0.472		0.412		13.6
Cadmium, total	M6010	04/22/96	L9302-01	+/- 20	0.0150	0.482		0.424		12.8
Chromium, total	M6010	04/22/96	L9302-01	+/- 20	0.05	0.69		0.61		13.0
Cobalt, total	M6010	4/22/96	L9302-01	+/- 20	0.05	0.51		0.45		12.3
Copper, total	M6010	04/22/96	L9302-01	+/- 20	0.05	0.62		0.55		11.7
Lead, total	M6010	04/22/96	L9302-01	+/- 20	0.005	1.06		0.943		11.7
Mercury, total	M7470	4/18/96	L9302-01	+/- 20	0.001	0.001	B	0.001	B	1.9
Nickel, total	M6010	04/22/96	L9302-01	+/- 20	0.05	0.53		0.56		4.2
Selenium, total	SM3500	4/18/96	L9302-01	+/- 20	0.005	0.45		0.51		12.9
Silver, total	M6010	04/22/96	L9302-01	+/- 20	0.0100	0.18		0.1790		1.7
Thallium, total	M7841	4/18/96	L9302-01	+/- 20	0.01	0.017		0.018		2.3
Tin, total	M6010	04/22/96	L9302-01	+/- 20	0.5	0.64		0.66		3.8
Vanadium, total	M6010	04/22/96	L9302-01	+/- 20	0.025	0.66		0.576		12.8
Zinc, total	M6010	04/22/96	L9302-01	+/- 20	0.05	0.98		0.87		12.4

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	60501-17
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/15/96	Date Analyzed:	05/01/96
Report Date:	05/03/96	Dilution Factor:	1
Method ID:	Herbicides by EPA 8150, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
94-75-7	2,4-D		0.4	U
93-76-5	2,4,5-TP (Silvex)		0.1	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Parkins
Organic Laboratory Supervisor

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ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water

Herbicides by EPA Method 8150 (GC/ECD)

Lab Number	GC File	Analysis Date	2,4,5-T(1) R%	2,4,5-T(2) R%					
HRB 100 0501-01	60501-07	05/02/96	107	107					
WO/L9322-PREPBK	60501-09	05/02/96	88	108					
WO/L9322-LCS	60501-10	05/02/96	70	83					
WO/L9322-LCSD	60501-11	05/02/96	72	86					
WO/L9302-01	60501-12	05/02/96	151	199					
WO/L9322-01	60501-13	05/02/96	65	70					
WO/L9322-02	60501-14	05/02/96	105	110					
WO/L9322-03	60501-15	05/02/96	97	106					
WO/L9322-04	60501-16	05/02/96	98	116					
WO/L9184-01 10X	60501-17	05/02/96	110	122					
HRB 100 0501-02	60501-18	05/02/96	101	109					
WO/L9184-PREPBK	60501-19	05/03/96	42	49					
WO/L9184-LCS	60501-20	05/03/96	96	142					
WO/L9184-LCSD	60501-21	05/03/96	75	97					
WO/L9302-01 MS	60501-22	05/03/96	86	96					
WO/L9302-01 MSD	60501-23	05/03/96	44	55					
HRB 100 0501-03	60501-24	05/03/96	103	110					

CE means the surrogate co-eluted with an interferant peak.

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water

Herbicides by EPA Method 8150 (GC/ECD)

Concentration Units: ug/L

Compounds Detected	WO/L9322-PREPBK 60501-09 05/02/96									
	DET 1	DET 2								
2,4-D										
2,4,5-TP (Silvex)		0.024								

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water

Herbicides by EPA Method 8150 (GC/ECD)

Concentration Units: ug/L

Compound		Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike %R	Matrix Spike Dup %R	RPD %	
sample spiked	lab #								
MW-3	L9302-01	detector 1							
2,4-D		0.000	0.100	0.060	0.033	60	33	58.36	
2,4,5-TP		0.000	0.100	0.062	0.038	62	38	48.18	
		detector 2							
2,4-D		0.006	0.100	0.078	0.050	72	43	49.59	
2,4,5-TP		0.007	0.100	0.069	0.041	63	34	58.57	

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	60426-21
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Extracted:	04/19/96
Sample Date:	04/15/96	Date Analyzed:	04/27/96
Report Date:	04/30/96	Dilution Factor:	1
Method ID:	Pest./PCBs by EPA 8080, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
319-84-6	Alpha-BHC		0.05	U
319-85-7	Beta-BHC		0.05	U
319-86-8	Delta-BHC		0.05	U
58-89-9	Gamma-BHC(Lindane)		0.05	U
76-44-6	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor Epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.10	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan Sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
53494-70-5	Endrin Ketone		0.10	U
7421-93-4	Endrin Aldehyde		0.10	U
72-43-5	Methoxychlor		0.50	U
57-74-9	Chlordane		0.50	U
8001-35-2	Toxaphene		1.00	U
12674-11-2	Aroclor-1016		0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.00	U
11096-82-5	Aroclor-1260		1.00	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED:

Organic Laboratory Supervisor

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ACZ Laboratories, Inc.

Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	4/30/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water
Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

	Sample Identification	Sample Date	Lab Number
1	MW-3	04/15/96	L9302-01

Name: Ron Martino

Signature: Ron Martino

Title: Organic Supervisor

Date: 4/30/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/30/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water
Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

Lab Number	GC File	Analysis Date	TCX 1 R%	TCX 2 R%	DCB 1 R%	DCB 2 R%			
IBLK-01 0426-01	60626-14	04/27/96	101	109	92	96			
PE MIX 0426-01	60426-15	04/27/96	95	102	87	90			
PESTA@40 0426-1	60426-16	04/27/96	97	103	99	101			
PESTB@40 0426-1	60426-17	04/27/96	96	102	101	101			
WO/L9322-PREPBK	60426-18	04/27/96	71	73	40	42			
WO/L9322-LCS	60426-19	04/27/96	68	73	43	45			
WO/L9322-LCSD	60426-20	04/27/96	64	73	39	44			
WO/L9302-01	60426-21	04/27/96	68	76	40	38			
WO/L9322-01	60426-22	04/27/96	75	83	44	47			
WO/L9322-02	60426-23	04/27/96	72	78	40	43			
WO/L9322-03	60426-24	04/27/96	69	77	39	42			
WO/L9322-04	60426-25	04/27/96	69	79	41	42			
WO/L9302-01 MS	60426-26	04/27/96	73	90	46	49			
WO/L9302-01 MSD	60426-27	04/27/96	78	89	43	46			
PESTA@40 0426-2	60426-28	04/27/96	101	111	103	108			
PESTB@40 0426-2	60426-29	04/27/96	96	109	99	107			

DCB is decachlorobiphenyl and TCX is tetrachloro-m-xylene
CE means the surrogate co-eluted with an interferant peak.

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/30/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Numbers:	L9302-01

Matrix: Water

Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

Concentration Units: ug/L

Compound		Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike %R	Matrix Spike Dup %R	RPD %	
sample spiked	lab #								
MW-3	L9302-01	detector 1							
γ-BHC		0.000	0.250	0.209	0.209	84	84	0.00	
Heptachlor		0.000	0.250	0.211	0.212	84	85	0.47	
Aldrin		0.000	0.250	0.213	0.212	85	85	0.47	
Dieldrin		0.000	0.500	0.441	0.428	88	86	2.99	
Endrin		0.000	0.500	0.456	0.443	91	89	2.89	
4,4'-DDT		0.000	0.500	0.422	0.411	84	82	2.64	
		detector 2							
γ-BHC		0.000	0.250	0.225	0.224	90	90	0.45	
Heptachlor		0.000	0.250	0.224	0.224	90	90	0.00	
Aldrin		0.000	0.250	0.225	0.225	90	90	0.00	
Dieldrin		0.000	0.500	0.473	0.464	95	93	1.92	
Endrin		0.000	0.500	0.486	0.472	97	94	2.92	
4,4'-DDT		0.000	0.500	0.467	0.462	93	92	1.08	

ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	A2502
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Analyzed:	04/19/96
Sample Date:	04/15/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.		COMPOUND	CONCENTRATION	MDL	Q
74-87-3		Chloromethane		10	U
74-83-9		Bromomethane		10	U
75-01-4	2 ppb 1 ppb	Vinyl Chloride		10	U
75-00-3		Chloroethane		10	U
75-09-2	5 ppb	Methylene Chloride		5	U
107-13-1		Acrylonitrile		10	U
67-64-1		Acetone		10	U
75-15-0		Carbon Disulfide		5	U
75-35-4	5 ppb	1,1-Dichloroethene		5	U
75-34-3		1,1-Dichloroethane		5	U
540-59-2		cis-1,2-Dichloroethene		5	U
540-60-5		trans-1,2-Dichloroethene		5	U
67-66-3		Chloroform		5	U
107-06-2		1,2-Dichloroethane		5	U
78-93-3		2-Butanone		10	U
71-55-6	5	1,1,1-Trichloroethane		5	U
56-23-5	5	Carbon Tetrachloride		5	U
108-05-4		Vinyl Acetate		10	U
75-27-4		Bromodichloromethane		5	U
78-87-5		1,2-Dichloropropane		5	U
10061-01-5		cis-1,3-Dichloropropene		5	U
79-01-6	5	Trichloroethene		5	U
124-48-1		Dibromochloromethane		5	U
79-00-5		1,1,2-Trichloroethane		5	U
71-43-2		Benzene		5	U
10061-02-6		trans-1,3-dichloropropene		5	U
75-25-2		Bromoform		5	U
108-10-1		4-Methyl-2-Pentanone		10	U
591-78-6		2-Hexanone		10	U
127-18-4	5	Tetrachloroethene		5	U
79-34-5		1,1,2,2-Tetrachloroethane		5	U
108-88-3		Toluene		5	U
108-90-7		Chlorobenzene		5	U
100-41-4		Ethylbenzene		5	U
100-42-5		Styrene		5	U
1330-20-7		Xylene (total)		5	U
95-50-1		1,2-Dichlorobenzene		5	U

may have to use large sample

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	A2502
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Analyzed:	04/19/96
Sample Date:	04/15/96	Dilution Factor:	1
Report Date:	04/19/96		

Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichloroflurometh ane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED: Ron Martino
Organic Laboratory Supervisor

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ACZ Laboratories, Inc.

Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

	Sample Identification	Sample Date	Lab Number
1	MW-3	04/15/96	L9302-01

Comments:

Name: Ron Martino

Signature: Ron Martino

Title: Organic Manager

Date: 4/19/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Lab Number	GC File	Analysis Date	DBF R%	Tol. R%	4BFB R%					
Reagent Blank	A2500	04/18/96	102	102	96					
L9302-01	A2502	04/18/96	106	100	98					
L9302-01MS	A2509	04/18/96	108	104	104					
L9302-01MSD	A2510	04/18/96	108	104	102					

Note: DBF = Dibromofluoromethane, Tol = Toluene-d8, 4BFB = 4-Bromofluorobenzene

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Concentration Units: ug/L

Compound	Reagent Blank A2500 Conc ug/L									
None Detected										

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Concentration Units: ug/L

Compound	Sample No.	Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike R%	Matrix Spike Dup R%	RPD%	
1,1 DCE	L9302-01	0	50	47	46	94	92	2.2	
Benzene	L9302-01	0	50	49	50	98	100	2.0	
Trichloroethene	L9302-01	0	50	48	49	96	98	2.1	
Toluene	L9302-01	0	50	48	48	96	96	0.0	
Chlorobenzene	L9302-01	0	50	47	49	94	98	4.2	

Note:

ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	B7187
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Extracted:	04/18/96
Sample Date:	04/15/96	Date Analyzed:	04/19/96
Report Date:	04/23/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL Q
108-95-2	* Phenol		10 U
111-44-4	* bis-(2-Chloroethyl)Ether		10 U
95-57-8	* 2-Chlorophenol		10 U
541-73-1	* 1,3-Dichlorobenzene		10 U
106-46-7	* 1,4-Dichlorobenzene		10 U
100-51-6	* Benzyl Alcohol		10 U
95-50-1	* 1,2-Dichlorobenzene		10 U
95-48-7	* 2-Methylphenol		10 U
108-60-1	* bis(2-Chloroisopropyl) ether		10 U
106-44-5	* 4-Methylphenol		10 U
621-64-7	* N-Nitroso-Di-n-propylamine		10 U
67-72-1	* Hexachloroethane		10 U
98-95-3	* Nitrobenzene		10 U
78-59-1	* Isophorone		10 U
88-75-5	* 2-Nitrophenol		10 U
105-67-9	* 2,4-Dimethylphenol		50 U
65-85-0	* Benzoic Acid		10 U
111-91-1	* bis(2-Chloroethoxy)methane		10 U
120-83-2	* 2,4-Dichlorophenol		10 U
120-82-1	* 1,2,4-Trichlorobenzene		10 U
91-20-3	* Naphthalene		10 U
106-47-8	* 4-Chloroaniline		10 U
87-68-3	* Hexachlorobutadiene		10 U
59-50-7	* 4-Chloro-3-Methylphenol		10 U
91-57-6	* 2-Methylnaphthalene		10 U
77-47-4	* Hexachlorocylopentadiene		10 U
88-06-2	* 2,4,6-Trichlorophenol		10 U
95-95-4	* 2,4,5-Trichlorophenol		50 U
91-58-7	* 2-Chloronaphthalene		10 U
88-74-4	* 2-Nitroaniline		50 U
131-11-3	* Dimethyl Phthalate		10 U
606-20-8	* 2,6-Dinitrotoluene		50 U
99-09-2	* 3-Nitroaniline		50 U

ACZ Laboratories, Inc.
30400 Downhill Dr.
Steamboat Springs, CO 80487
(800) 334-5493
FAX: (303) 879-2216

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	B7187
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Extracted:	04/18/96
Sample Date:	04/15/96	Date Analyzed:	04/19/96
Report Date:	04/23/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
534-52-1	* 2-Methyl-4,6-dinitrophenol		50	U
62-75-9	* N-nitrosodimethylamine		10	U
83-32-9	* Acenaphthene		10	U
51-28-5	* 2,4-Dinitrophenol		50	U
100-02-07	* 4-Nitrophenol		50	U
132-64-9	* Dibenzofuran		10	U
121-14-2	* 2,4-Dinitrotoluene		10	U
84-66-2	* Diethylphthalate		10	U
7005-72-3	* 4-Chlorophenyl-phenylether		10	U
86-73-7	* Fluorene		10	U
100-01-6	* 4-Nitroaniline		50	U
534-52-1	* 4,6-Dinitro-2-methylphenol		50	U
86-30-6	* N-Nitrosodiphenylamine(1)		10	U
101-55-3	* 4-Bromophenyl-phenylether		10	U
118-74-1	* Hexachlorobenzene		10	U
87-86-5	* Pentachlorophenol		50	U
85-01-8	* Phenanthrene		10	U
120-12-7	* Anthracene		10	U
84-74-2	* Di-n-Butylphthalate		10	U
206-44-0	* Fluoranthene		10	U
129-00-0	* Pyrene		10	U
85-68-7	* Butylbenzylphthalate		10	U
91-94-1	* 3,3-Dichlorobenzidine		20	U
56-55-3	* Benzo(a)Anthracene		10	U
117-81-7	* Bis(2-ethylhexyl)Phthalate		10	U
218-01-9	* Chrysene		10	U
117-84-0	* Di-n-Octyl Phthalate		10	U
205-99-2	* Benzo(b)Fluoranthene		10	U
207-08-9	* Benzo(k)Fluoranthene		10	U
50-32-8	* Benzo(a)Pyrene		10	U
193-39-5	* Indeno(1,2,3-cd)Pyrene		10	U
53-70-3	* Dibenz(a,h)Anthracene		10	U
191-24-2	* Benzo(g,h,i)Perylene		10	U
103-33-3	* Azobenzene		50	U

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9302-01
Client Project No:	6023# Phillips SC	Lab File ID:	B7187
Sample ID:	MW-3	Date Received:	04/16/96
Matrix:	Water	Date Extracted:	04/18/96
Sample Date:	04/15/96	Date Analyzed:	04/19/96
Report Date:	04/23/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX compounds

APPROVED: Ron Hartford
Organic Laboratory Supervisor

ACZ Laboratories, Inc.
30400 Downhill Dr.
Steamboat Springs, CO 80487
(800) 334-5493
FAX: (303) 879-2216

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/23/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

	Sample Identification	Sample Date	Lab Number
1	MW-3	04/15/96	L9302-01

Comments:

Name: Ron Martino

Title: Organic Supervisor

Signature: Ron Martino

Date: 4/23/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/23/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Lab Number	GC File	Analysis Date	2-FP R%	PHEN R%	NB R%	2-FBP R%	2,4,6-TBP R%	TP R%	
Reagent Blank	B7184	04/19/96	43	40	40	46	28	78	
L9302-01	B7187	04/19/96	49	51	50	52	35	74	
L9302-01MS	B7188	04/19/96	77	65	52	56	69	70	
L9302-01MSD	B7189	04/19/96	64	65	60	62	76	72	

Note: 2-FP = 2-Fluorophenol, PHEN = Phenol-d5, NB = Nitrobenzene-d5, 2-FBP = 2-Fluorobiphenyl, 2,4,6-TBP = 2,4,6-Tribromophenol, TP = Terphenyl-d14

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/23/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Concentration Units: ug/L

Compound	SBLK File B7183							
	C		C		C			
	All compounds BDL							
None Detected								

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/23/96
Project:	6023# Phillips SC	Date Received:	04/16/96
ACZ SDG No.:	L9302	Lab Nos.:	L9302-01

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Concentration Units: ug/L

Compound	Sample No.	Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike R%	Matrix Spike Dup R%	RPD%	
Phenol	L9203-01	0	75	43	48	57	64	11.0	
2-Chlorophenol	L9203-01	0	75	45	49	60	65	8.5	
1,4-DCB	L9203-01	0	50	31	32	62	64	3.2	
N-Nitroso-di-n-PA	L9203-01	0	50	29	33	58	66	12.9	
1,2,4-TCB	L9203-01	0	50	22	30	44	60	30.8	
4-Chloro-3-MP	L9203-01	0	75	39	43	52	57	9.8	
Acenaphthene	L9203-01	0	50	32	34	64	68	6.1	
4-Nitrophenol	L9203-01	0	75	104	104	139	139	0.0	
2,4-Dinitrotoluene	L9203-01	0	50	22	25	44	50	12.8	
Pentachlorophenol	L9203-01	0	75	22	23	29	31	4.4	
Pyrene	L9203-01	0	50	34	34	68	68	0.0	

Note: 1,3-DCB = 1,3-Dichlorobenzene, PA = Propylamine, 1,2,4-TCB = 1,2,4-Trichlorobenzene, MP = Methylphenol

CHAIN OF CUSTODY RECORD

Laboratory Sample Numbers (ACZ Use Only): 1930Z

COC # 03839

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(970) 879-6590 • (800) 334-5493

Name to Appear on Report and Invoice:

Attn: Tel:

cc: (Report) - (Invoice) to: (circle one or both)

Attn: Tel:

Project or P.O. #

Shipped Via: FED X___ UPS___ Hand___ Other___

SAMPLE IDENTIFICATION	DATE	TIME	Sample Matrix *	# of CONTAINERS	ANALYSES REQUESTED										REMARKS

* Matrix Options: SW (Surface water) • GW (Ground water) • WW (Wastewater) • DW (Drinking water) • SL (Sludge) • SOIL • OIL • Other (Specify)

COMMENTS Route #: J5151

SAMPLE DISPOSAL OPTIONS - Please complete section A, or choose one option from sections B AND C. Proper charges will be assessed.

(A) Long-term storage
Hold until _____(date)
for future analysis.

(B) If Sample Is Non-Hazardous
1) Local Disposal
2) RCRA - Permitted Facility
3) Return to Client

(C) If Sample Is Hazardous
1) RCRA-Permitted Facility
2) Return to Client

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	PAGE #
						1
			B. [illegible]	4-6-96	[illegible]	OF 1

White - Return w/ sample Yellow - Return w/ sample Pink - Return w/ sample Gold - Keep for your records

ACZ Laboratory
Data Sheets
MW-4, MW-1, and MW-2

ACZ

Analytical Results

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493

Lab Sample ID: *L9322-01*
Client Sample ID: *MW-4*
Client Project ID: *6023*
ACZ Report ID: *RG25230*

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109
Richard Meixner

Date Sampled: *4/16/96 12:30*
Date Received: *4/17/96*
Date Reported: *4/30/96*

Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Antimony, total	M7041 GFAA		U	mg/L	0.002	0.01	4/26/96	fp
Arsenic, total	M7060 GFAA	0.002	B	mg/L	0.001	0.005	4/23/96	sh
Barium, total	M6010 ICP	0.141		mg/L	0.003	0.01	4/23/96	rs
Beryllium, total	M6010 ICP		U	mg/L	0.002	0.01	4/23/96	rs
Cadmium, total	M6010 ICP		U	mg/L	0.003	0.02	4/23/96	rs
Chromium, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Cobalt, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Copper, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Lead, total	M6010 ICP		U	mg/L	0.02	0.1	4/23/96	rs
Mercury, total	M7470 CVAA		U	mg/L	0.0002	0.001	4/23/96	jd
Nickel, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Selenium, total	SM 3500-Se C, AA-Hydride		U	mg/L	0.001	0.005	4/19/96	rd
Silver, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Thallium, total	M7841 GFAA		U	mg/L	0.002	0.01	4/29/96	rd
Tin, total	M6010 ICP		U	mg/L	0.1	0.6	4/23/96	rs
Vanadium, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Zinc, total	M6010 ICP	0.02	B	mg/L	0.01	0.06	4/23/96	rs

Metals Prep

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Total Digestion	M3015 ICP						4/22/96	jaw
Total Digestion	M3015 GFAA						4/22/96	jaw

Wet Chemistry

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.3 - Colorimetric w/ distillation		U	mg/L	0.01	0.05	4/19/96	jk
Sulfide as S	SM427C - Modified, Methylene Blue		U	mg/L	0.02	0.1	4/18/96	jk

Inorganic Qualifiers (based on EPA CLP 3/90)

U = Analyte was analyzed for but not detected at the indicated MDL

B = Analyte concentration detected at a value between MDL and PQL

PQL = Practical Quantitation Limit

Ralph V. Poulsen

Vice President of Operations: Ralph Poulsen

ACZ

Analytical Results

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493

Lab Sample ID: *L9322-02*
Client Sample ID: *MW-1*
Client Project ID: *6023*
ACZ Report ID: *RG25231*

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109
Richard Meixner

Date Sampled: *4/16/96 15:15*
Date Received: *4/17/96*
Date Reported: *4/30/96*

Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Antimony, total	M7041 GFAA		U	mg/L	0.002	0.01	4/26/96	fp
Arsenic, total	M7060 GFAA		U	mg/L	0.001	0.005	4/23/96	sh
Barium, total	M6010 ICP	0.198		mg/L	0.003	0.01	4/23/96	rs
Beryllium, total	M6010 ICP		U	mg/L	0.002	0.01	4/23/96	rs
Cadmium, total	M6010 ICP		U	mg/L	0.003	0.02	4/23/96	rs
Chromium, total	M6010 ICP	0.02	B	mg/L	0.01	0.06	4/23/96	rs
Cobalt, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Copper, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Lead, total	M6010 ICP		U	mg/L	0.02	0.1	4/23/96	rs
Mercury, total	M7470 CVAA		U	mg/L	0.0002	0.001	4/23/96	jd
Nickel, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Selenium, total	SM 3500-Se C, AA-Hydride		U	mg/L	0.001	0.005	4/19/96	rd
Silver, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Thallium, total	M7841 GFAA		U	mg/L	0.002	0.01	4/29/96	rd
Tin, total	M6010 ICP		U	mg/L	0.1	0.6	4/23/96	rs
Vanadium, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Zinc, total	M6010 ICP	0.02	B	mg/L	0.01	0.06	4/23/96	rs

Metals Prep

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Total Digestion	M3015 ICP						4/22/96	jaw
Total Digestion	M3015 GFAA						4/22/96	jaw

Wet Chemistry

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.3 - Colorimetric w/ distillation		U	mg/L	0.01	0.05	4/19/96	jk
Sulfide as S	SM427C - Modified, Methylene Blue		U	mg/L	0.02	0.1	4/18/96	jk

Inorganic Qualifiers (based on EPA CLP 3/90)

U = Analyte was analyzed for but not detected at the indicated MDL

B = Analyte concentration detected at a value between MDL and PQL

PQL = Practical Quantitation Limit

Ralph V. Poulsen

Vice President of Operations: Ralph Poulsen

ACZ

Analytical Results

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493

Lab Sample ID: ***L9322-03***
Client Sample ID: *MW-2*
Client Project ID: *6023*
ACZ Report ID: *RG25232*

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109
Richard Meixner

Date Sampled: *4/15/96 12:30*
Date Received: *4/17/96*
Date Reported: *4/30/96*

Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Antimony, total	M7041 GFAA		U	mg/L	0.002	0.01	4/26/96	fp
Arsenic, total	M7060 GFAA	0.002	B	mg/L	0.001	0.005	4/23/96	sh
Barium, total	M6010 ICP	0.109		mg/L	0.003	0.01	4/23/96	rs
Beryllium, total	M6010 ICP		U	mg/L	0.002	0.01	4/23/96	rs
Cadmium, total	M6010 ICP		U	mg/L	0.003	0.02	4/23/96	rs
Chromium, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Cobalt, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Copper, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Lead, total	M6010 ICP		U	mg/L	0.02	0.1	4/23/96	rs
Mercury, total	M7470 CVAA		U	mg/L	0.0002	0.001	4/23/96	jd
Nickel, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Selenium, total	SM 3500-Se C, AA-Hydride		U	mg/L	0.001	0.005	4/19/96	rd
Silver, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Thallium, total	M7841 GFAA		U	mg/L	0.002	0.01	4/29/96	rd
Tin, total	M6010 ICP		U	mg/L	0.1	0.6	4/23/96	rs
Vanadium, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Zinc, total	M6010 ICP	0.03	B	mg/L	0.01	0.06	4/23/96	rs

Metals Prep

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Total Digestion	M3015 ICP						4/22/96	jaw
Total Digestion	M3015 GFAA						4/22/96	jaw

Wet Chemistry

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.3 - Colorimetric w/ distillation		U	mg/L	0.01	0.05	4/19/96	jk
Sulfide as S	SM427C - Modified, Methylene Blue		U	mg/L	0.02	0.1	4/18/96	jk

Inorganic Qualifiers (based on EPA CLP 3/90)

U = Analyte was analyzed for but not detected at the indicated MDL

B = Analyte concentration detected at a value between MDL and PQL

PQL = Practical Quantitation Limit

Ralph V. Poulsen

Vice President of Operations: Ralph Poulsen

ACZ

Analytical Results

ACZ Laboratories, Inc.
30400 Downhill Drive
Steamboat Springs, CO 80487
(800) 334-5493

Lab Sample ID: *L9322-04*
Client Sample ID: *Duplicate*
Client Project ID: *6023*
ACZ Report ID: *RG25233*

Daniel B. Stephens & Associates
6020 Academy NE Suite 100
Albuquerque, NM 87109
Richard Meixner

Date Sampled: *4/16/96 09:00*
Date Received: *4/17/96*
Date Reported: *4/30/96*

Sample Matrix: *Ground Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Antimony, total	M7041 GFAA		U	mg/L	0.002	0.01	4/26/96	fp
Arsenic, total	M7060 GFAA	0.001	B	mg/L	0.001	0.005	4/23/96	sh
Barium, total	M6010 ICP	0.107		mg/L	0.003	0.01	4/23/96	rs
Beryllium, total	M6010 ICP		U	mg/L	0.002	0.01	4/23/96	rs
Cadmium, total	M6010 ICP		U	mg/L	0.003	0.02	4/23/96	rs
Chromium, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Cobalt, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Copper, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Lead, total	M6010 ICP		U	mg/L	0.02	0.1	4/23/96	rs
Mercury, total	M7470 CVAA		U	mg/L	0.0002	0.001	4/23/96	jd
Nickel, total	M6010 ICP		U	mg/L	0.01	0.06	4/23/96	rs
Selenium, total	SM 3500-Se C, AA-Hydride		U	mg/L	0.001	0.005	4/19/96	rd
Silver, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Thallium, total	M7841 GFAA		U	mg/L	0.002	0.01	4/29/96	rd
Tin, total	M6010 ICP		U	mg/L	0.1	0.6	4/23/96	rs
Vanadium, total	M6010 ICP		U	mg/L	0.006	0.03	4/23/96	rs
Zinc, total	M6010 ICP	0.03	B	mg/L	0.01	0.06	4/23/96	rs

Metals Prep

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Total Digestion	M3015 ICP						4/22/96	jaw
Total Digestion	M3015 GFAA						4/22/96	jaw

Wet Chemistry

Parameter	EPA Method	Result	Qual	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.3 - Colorimetric w/ distillation		U	mg/L	0.01	0.05	4/19/96	jk
Sulfide as S	SM427C - Modified, Methylene Blue		U	mg/L	0.02	0.1	4/18/96	jk

Inorganic Qualifiers (based on EPA CLP 3/90)

U = Analyte was analyzed for but not detected at the indicated MDL

B = Analyte concentration detected at a value between MDL and PQL

PQL = Practical Quantitation Limit

Ralph V. Poulsen

Vice President of Operations: Ralph Poulsen

ACZ Laboratories, Inc.
Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Associates	Report Date:	05/03/96
Project:	MW-4	Date Received:	04/17/96
Matrix:	Groundwater	Lab Nos.:	L9322-01 through 04

Sample Identification:

Lab I.D.	Client I.D.
L9322-01	MW-4
L9322-02	MW-1
L9322-03	MW-2
L9322-04	Duplicate

Name: Brad Craig

Title: QA/QC Officer

Signature: BWC

Date: 5·6·96

PREP BLANK/ICB & LABORATORY CONTROL SAMPLE/ICV

Client:	Daniel B. Stephens & Associates	Report Date:	05/03/96
Project:	MW-4	Date Received:	04/17/96
Matrix:	Groundwater	Lab Nos.:	L9322-01 through 04

Concentration Units mg/l

Analyte	Method	Analysis Date	Preparation Blank Observed Value	C	Laboratory Control Sample or ICV True Value	Observed Value	C	Recovery %
Cyanide, total	M335.3	04/19/96	0.01	U	0.25	0.216		86.4
Sulfide as S	SM427C	04/18/96	0.02	U	0.446	0.455		102.0
Antimony, total	M7041	04/26/96	0.002	U	0.02	0.0164		82.0
Arsenic, total	M7060	04/23/96	0.001	U	0.02	0.02		111.0
Barium, total	M6010	04/23/96	0.003	U	1	0.9		90.0
Beryllium, total	M6010	04/23/96	0.002	U	1	0.884		88.4
Cadmium, total	M6010	04/23/96	0.003	U	1	0.871		87.1
Chromium, total	M6010	04/23/96	0.01	U	1	0.871		87.1
Cobalt, total	M6010	04/23/96	0.01	U	0.5	0.481		96.2
Copper, total	M6010	04/23/96	0.01	U	1	0.882		88.2
Lead, total	M6010	04/23/96	0.02	U	1	0.865		86.5
Mercury, total	M7470	04/23/96	0.0002	U	0.0025	0.0026		102.4
Nickel, total	M6010	04/23/96	0.01	U	1	0.875		87.5
Selenium, total	SM3500	04/19/96	0.001	U	0.02	0.0207		103.5
Silver, total	M6010	04/23/96	0.006	U	1	0.9		90.0
Thallium, total	M7841	04/29/96	0.002	U	0.1	0.086		86.0
Tin, total	M6010	04/23/96	0.1	U	1	1.23		123.0
Vanadium, total	M6010	04/23/96	0.006	U	1	0.867		86.7
Zinc, total	M6010	04/23/96	0.01	U	1	0.89		89.0

SPIKE SAMPLE RECOVERY

Client:	Daniel B. Stephens & Associates	Report Date:	05/03/96
Project:	MW-4	Date Received:	04/17/96
Matrix:	Groundwater	Lab Nos.:	L9322-01 through 04

Concentration Units: mg/l

Analyte	Method	Analysis Date	Sample No.	Spiked Sample Value	Sample Value	C	Spike Added	Recovery %
Cyanide, total	M335.3	04/19/96	L9322-04	0.099	0.01	U	0.1	99.0
Sulfide as S	SM427C	04/18/96	L9302-01	0.498	0.007	U	0.5	98.2
Antimony, total	M7041	04/26/96	L9322-02	0.0186	0.002	U	0.02	95.0
Arsenic, total	M7060	04/23/96	L9322-01	0.0278	0.008		0.022	90.0
Barium, total	M6010	04/23/96	L9322-01	0.602	0.127		0.5	95.0
Beryllium, total	M6010	04/23/96	L9322-01	0.478	0.002	U	0.5	95.2
Cadmium, total	M6010	04/23/96	L9322-01	0.486	0.003	U	0.5	96.6
Chromium, total	M6010	04/23/96	L9322-01	0.486	0.01	U	0.5	95.2
Cobalt, total	M6010	04/23/96	L9322-01	0.481	0.01	U	0.5	94.2
Copper, total	M6010	04/23/96	L9322-01	0.499	0.01	U	0.55	88.9
Lead, total	M6010	04/23/96	L9322-01	0.993	0.02	U	1	97.3
Mercury, total	M7470	04/23/96	L9322-01	0.0101	0.0002	U	0.001	101.0
Nickel, total	M6010	04/23/96	L9322-01	0.48	0.01	U	0.5	94.0
Selenium, total	SM3500	04/19/96	L9233-04	0.0207	0.001	U	0.02	98.5
Silver, total	M6010	04/23/96	L9233-01	0.291	0.006	U	0.5	57.0
Thallium, total	M7841	04/29/96	L9322-02	0.0174	0.002	U	0.02	87.0
Tin, total	M6010	04/23/96	L9233-01	0.993	0.1	U	1	99.3
Vanadium, total	M6010	04/23/96	L9233-01	0.501	0.01	U	0.5	98.2
Zinc, total	M6010	04/23/96	L9233-01	0.524	0.01	U	0.5	102.8

* Sample not from Daniel B. Stephens & Associates, but run in the same batch.

DUPLICATE SAMPLE PRECISION

Client:	Daniel B. Stephens & Associates	Report Date:	05/03/96
Project:	MW-4	Date Received:	04/17/96
Matrix:	Groundwater	Lab Nos.:	L9322-01 through 04

Concentration Units mg/l

Analyte	Method	Analysis Date	Sample No.	Control Limit %RPD	Control Limit 5xIDL	Sample Value	C	Duplicate Value	C	RPD %
Cyanide, total	325.2	04/19/96	L9322-04	+/- 20	50	0.01	U	0.01	U	0.0
Sulfide as S	9050	04/18/96	L9302-01	+/- 20	100	0.02	U	0.02	U	0.0
Antimony, total	7041	04/26/96	L9322-02	+/- 20	100	0.0186		0.0183		1.6
Arsenic, total	7060	04/23/96	L9322-02	+/- 20	100	0.0217		0.0214		1.4
Barium, total	6010	04/23/96	L9322-01	+/- 20	15	0.602		0.591		1.8
Beryllium, total	6010	04/23/96	L9322-01	+/- 20	10	0.478		0.467		2.3
Cadmium, total	7131	04/23/96	L9322-01	+/- 20	15	0.486		0.472		2.9
Chromium, total	6010	04/23/96	L9322-01	+/- 20	50	0.486		0.473		2.7
Cobalt, total	6010	04/23/96	L9322-01	+/- 20	50	0.481		0.468		2.7
Copper, total	6010	04/23/96	L9322-01	+/- 20	50	0.499		0.485		2.8
Lead, total	7421	04/23/96	L9322-01	+/- 20	100	0.993		0.955		3.9
Mercury, total	7470	04/23/96	L9322-01	+/- 20	1	0.0016		0.0015		9.0
Nickel, total	6010	04/23/96	L9322-01	+/- 20	50	0.48		0.465		3.2
Selenium, total	3500	04/19/96	L9233-04	+/- 20	10	0.0207		0.0204		1.5
Silver, total	7761	04/23/96	L9233-01	+/- 20	30	0.291		0.3		3.0
Thallium, total	7841	04/29/96	L9322-02	+/- 20	10	0.0174		0.0178		2.3
Tin, total	6010	04/23/96	L9233-01	+/- 20	500	1.18		1.15		2.6
Vanadium, total	6010	04/23/96	L9233-01	+/- 20	30	0.501		0.486		3.0
Zinc, total	6010	04/23/96	L9233-01	+/- 20	50	0.524		0.51		2.7

* Sample not from Daniel B. Stephens & Associates, but run in the same batch.

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	60501-13
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	05/02/96
Report Date:	05/03/96	Dilution Factor:	1
Method ID:	Herbicides by EPA 8150, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
94-75-7	2,4-D		0.4	U
93-76-5	2,4,5-TP (Silvex)		0.1	U

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martinez
Organic Laboratory Supervisor

ACZ Laboratories, Inc.
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FAX: (303) 879-2216

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	60501-14
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	05/01/96
Report Date:	05/03/96	Dilution Factor:	1
Method ID:	Herbicides by EPA 8150, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
94-75-7	2,4-D		0.4	U
93-76-5	2,4,5-TP (Silvex)		0.1	U

Q FORMAT:
"U" indicates compound was not detected
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"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martinez
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ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	60501-15
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/15/96	Date Analyzed:	05/01/96
Report Date:	05/03/96	Dilution Factor:	1
Method ID:	Herbicides by EPA 8150, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
94-75-7	2,4-D MCL = 70 ppb		0.4	U OK
93-76-5	2,4,5-TP (Silvex) MCL = 50 ppb		0.1	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	60501-16
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	05/01/96
Report Date:	05/03/96	Dilution Factor:	1
Method ID:	Herbicides by EPA 8150, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
94-75-7	2,4-D		0.4	U
93-76-5	2,4,5-TP (Silvex)		0.1	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martino

Organic Laboratory Supervisor

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ACZ Laboratories, Inc.

Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	5/3/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water
Herbicides by EPA Method 8150 (GC/ECD)

	Sample Identification	Sample Date	Lab Number
1	MW-4	04/16/96	L9322-01
2	MW-1	04/16/96	L9322-02
3	MW-2	04/16/96	L9322-03
4	Duplicate	04/16/96	L9322-04

Name: Ron Martino

Title: Organic Supervisor

Signature: Ron Martino

Date: 5/3/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water
Herbicides by EPA Method 8150 (GC/ECD)

Lab Number	GC File	Analysis Date	2,4,5-T(1) R%	2,4,5-T(2) R%					
HRB 100 0501-01	60501-07	05/02/96	107	107					
WO/L9322-PREPBK	60501-09	05/02/96	88	108					
WO/L9322-LCS	60501-10	05/02/96	70	83					
WO/L9322-LCSD	60501-11	05/02/96	72	86					
WO/L9302-01	60501-12	05/02/96	151	199					
WO/L9322-01	60501-13	05/02/96	65	70					
WO/L9322-02	60501-14	05/02/96	105	110					
WO/L9322-03	60501-15	05/02/96	97	106					
WO/L9322-04	60501-16	05/02/96	98	116					
WO/L9184-01 10X	60501-17	05/02/96	110	122					
HRB 100 0501-02	60501-18	05/02/96	101	109					
WO/L9184-PREPBK	60501-19	05/03/96	42	49					
WO/L9184-LCS	60501-20	05/03/96	96	142					
WO/L9184-LCSD	60501-21	05/03/96	75	97					
WO/L9302-01 MS	60501-22	05/03/96	86	96					
WO/L9302-01 MSD	60501-23	05/03/96	44	55					
HRB 100 0501-03	60501-24	05/03/96	103	110					

CE means the surrogate co-eluted with an interferant peak.

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water

Herbicides by EPA Method 8150 (GC/ECD)

Concentration Units: ug/L

Compounds Detected	WO/L9322-PREPBK 60501-09 05/02/96									
	DET 1	DET 2								
2,4-D										
2,4,5-TP (Silvex)		0.024								

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	05/03/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water

Herbicides by EPA Method 8150 (GC/ECD)

Concentration Units: ug/L

Compound		Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike %R	Matrix Spike Dup %R	RPD %	
sample spiked	lab #								
MW-3	L9302-01	detector 1							
2,4-D		0.000	0.100	0.060	0.033	60	33	58.36	
2,4,5-TP		0.000	0.100	0.062	0.038	62	38	48.18	
		detector 2							
2,4-D		0.006	0.100	0.078	0.050	72	43	49.59	
2,4,5-TP		0.007	0.100	0.069	0.041	63	34	58.57	

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	60426-22
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/19/96
Sample Date:	04/16/96	Date Analyzed:	04/27/96
Report Date:	04/30/96	Dilution Factor:	1
Method ID:	Pest./PCBs by EPA 8080, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
319-84-6	Alpha-BHC		0.05	U
319-85-7	Beta-BHC		0.05	U
319-86-8	Delta-BHC		0.05	U
58-89-9	Gamma-BHC(Lindane)		0.05	U
76-44-6	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor Epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.10	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan Sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
53494-70-5	Endrin Ketone		0.10	U
7421-93-4	Endrin Aldehyde		0.10	U
72-43-5	Methoxychlor		0.50	U
57-74-9	Chlordane		0.50	U
8001-35-2	Toxaphene		1.00	U
12674-11-2	Aroclor-1016		0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.00	U
11096-82-5	Aroclor-1260		1.00	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	60426-23
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/19/96
Sample Date:	04/16/96	Date Analyzed:	04/27/96
Report Date:	04/30/96	Dilution Factor:	1
Method ID:	Pest./PCBs by EPA 8080, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
319-84-6	Alpha-BHC		0.05	U
319-85-7	Beta-BHC		0.05	U
319-86-8	Delta-BHC		0.05	U
58-89-9	Gamma-BHC(Lindane)		0.05	U
76-44-6	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor Epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.10	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan Sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
53494-70-5	Endrin Ketone		0.10	U
7421-93-4	Endrin Aldehyde		0.10	U
72-43-5	Methoxychlor		0.50	U
57-74-9	Chlordane		0.50	U
8001-35-2	Toxaphene		1.00	U
12674-11-2	Aroclor-1016		0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.00	U
11096-82-5	Aroclor-1260		1.00	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED:

Organic Laboratory Supervisor

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ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	60426/24
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/19/96
Sample Date:	04/15/96	Date Analyzed:	04/27/96
Report Date:	04/30/96	Dilution Factor:	1
Method ID:	Pest./PCBs by EPA 8080, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
319-84-6	Alpha-BHC		0.05	U
319-85-7	Beta-BHC		0.05	U
319-86-8	Delta-BHC		0.05	U
58-89-9	Gamma-BHC(Lindane)		0.05	U
76-44-6	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor Epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.10	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan Sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
53494-70-5	Endrin Ketone		0.10	U
7421-93-4	Endrin Aldehyde		0.10	U
72-43-5	Methoxychlor		0.50	U
57-74-9	Chlordane		0.50	U
8001-35-2	Toxaphene		1.00	U
12674-11-2	Aroclor-1016		0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.00	U
11096-82-5	Aroclor-1260		1.00	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED: Ron Martinez
Organic Laboratory Supervisor

ACZ Laboratories, Inc.
30400 Downhill Dr.
Steamboat Springs, CO 80487
(800) 334-5493
FAX: (303) 879-2216

ACZ Laboratories, Inc

ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	60426-25
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/19/96
Sample Date:	04/16/96	Date Analyzed:	04/27/96
Report Date:	04/30/96	Dilution Factor:	1
Method ID:	Pest./PCBs by EPA 8080, GC/ECD	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
319-84-6	Alpha-BHC		0.05	U
319-85-7	Beta-BHC		0.05	U
319-86-8	Delta-BHC		0.05	U
58-89-9	Gamma-BHC(Lindane)		0.05	U
76-44-6	Heptachlor		0.05	U
309-00-2	Aldrin		0.05	U
1024-57-3	Heptachlor Epoxide		0.05	U
959-98-8	Endosulfan I		0.05	U
60-57-1	Dieldrin		0.10	U
72-55-9	4,4'-DDE		0.10	U
72-20-8	Endrin		0.10	U
33213-65-9	Endosulfan II		0.10	U
72-54-8	4,4'-DDD		0.10	U
1031-07-8	Endosulfan Sulfate		0.10	U
50-29-3	4,4'-DDT		0.10	U
53494-70-5	Endrin Ketone		0.10	U
7421-93-4	Endrin Aldehyde		0.10	U
72-43-5	Methoxychlor		0.50	U
57-74-9	Chlordane		0.50	U
8001-35-2	Toxaphene		1.00	U
12674-11-2	Aroclor-1016		0.50	U
11104-28-2	Aroclor-1221		0.50	U
11141-16-5	Aroclor-1232		0.50	U
53469-21-9	Aroclor-1242		0.50	U
12672-29-6	Aroclor-1248		0.50	U
11097-69-1	Aroclor-1254		1.00	U
11096-82-5	Aroclor-1260		1.00	U

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS:

APPROVED:

Organic Laboratory Supervisor

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Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	4/30/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water
Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

	Sample Identification	Sample Date	Lab Number
1	MW-4	04/16/96	L9322-01
2	MW-1	04/16/96	L9322-02
3	MW-2	04/16/96	L9322-03
4	Duplicate	04/16/96	L9322-04

Name: Ron Martino

Title: Organic Supervisor

Signature: Ron Martino

Date: 4/30/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/30/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water
Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

Lab Number	GC File	Analysis Date	TCX 1 R%	TCX 2 R%	DCB 1 R%	DCB 2 R%			
IBLK-01 0426-01	60626-14	04/27/96	101	109	92	96			
PE MIX 0426-01	60426-15	04/27/96	95	102	87	90			
PESTA@40 0426-1	60426-16	04/27/96	97	103	99	101			
PESTB@40 0426-1	60426-17	04/27/96	96	102	101	101			
WO/L9322-PREPBK	60426-18	04/27/96	71	73	40	42			
WO/L9322-LCS	60426-19	04/27/96	68	73	43	45			
WO/L9322-LCSD	60426-20	04/27/96	64	73	39	44			
WO/L9302-01	60426-21	04/27/96	68	76	40	38			
WO/L9322-01	60426-22	04/27/96	75	83	44	47			
WO/L9322-02	60426-23	04/27/96	72	78	40	43			
WO/L9322-03	60426-24	04/27/96	69	77	39	42			
WO/L9322-04	60426-25	04/27/96	69	79	41	42			
WO/L9302-01 MS	60426-26	04/27/96	73	90	46	49			
WO/L9302-01 MSD	60426-27	04/27/96	78	89	43	46			
PESTA@40 0426-2	60426-28	04/27/96	101	111	103	108			
PESTB@40 0426-2	60426-29	04/27/96	96	109	99	107			

DCB is decachlorobiphenyl and TCX is tetrachloro-m-xylene
CE means the surrogate co-eluted with an interferant peak.

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Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/30/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water

Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

Concentration Units: ug/L

Compounds Detected	WO/L9322-PREPBK 60426-18 04/27/96									
	DET 1	DET 2								
4,4'-DDD										
4,4'-DDE										
4,4'-DDT										
a-BHC										
a-Chlordane										
Aldrin		0.020								
b-BHC										
d-BHC										
Dieldrin										
Endosulfan										
Endosulfan 2										
Endosulfan Su										
Endrin										
Endrin Aldehd										
Endrin Ketone										
Heptachlor										
Heptachlor Epox										
Methoxychlor										
y-BHC										
y-Chlordane										
Aroclor 1016										
Aroclor 1221										
Aroclor 1232										
Aroclor 1242										
Aroclor 1248										
Aroclor 1254										
Aroclor 1260										

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/30/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Numbers:	L9322-01 through 04

Matrix: Water

Pesticide/PCB Analysis by EPA Method 8080 (GC/ECD)

Concentration Units: ug/L

Compound		Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike %R	Matrix Spike Dup %R	RPD %	
sample spiked	lab #								
MW-3	L9302-01	detector 1							
γ-BHC		0.000	0.250	0.209	0.209	84	84	0.00	
Heptachlor		0.000	0.250	0.211	0.212	84	85	0.47	
Aldrin		0.000	0.250	0.213	0.212	85	85	0.47	
Dieldrin		0.000	0.500	0.441	0.428	88	86	2.99	
Endrin		0.000	0.500	0.456	0.443	91	89	2.89	
4,4'-DDT		0.000	0.500	0.422	0.411	84	82	2.64	
		detector 2							
γ-BHC		0.000	0.250	0.225	0.224	90	90	0.45	
Heptachlor		0.000	0.250	0.224	0.224	90	90	0.00	
Aldrin		0.000	0.250	0.225	0.225	90	90	0.00	
Dieldrin		0.000	0.500	0.473	0.464	95	93	1.92	
Endrin		0.000	0.500	0.486	0.472	97	94	2.92	
4,4'-DDT		0.000	0.500	0.467	0.462	93	92	1.08	

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	A2503
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
74-87-3	* Chloromethane		10	U
74-83-9	* Bromomethane		10	U
75-01-4	* Vinyl Chloride		10	U
75-00-3	* Chloroethane		10	U
75-09-2	* Methylene Chloride		5	U
107-13-1	* Acrylonitrile		10	U
67-64-1	* Acetone		10	U
75-15-0	* Carbon Disulfide		5	U
75-35-4	* 1,1-Dichloroethene		5	U
75-34-3	* 1,1-Dichloroethane		5	U
540-59-2	* cis-1,2-Dichloroethene		5	U
540-60-5	* trans-1,2-Dichloroethene		5	U
67-66-3	* Chloroform		5	U
107-06-2	* 1,2-Dichloroethane		5	U
78-93-3	* 2-Butanone		10	U
71-55-6	* 1,1,1-Trichloroethane		5	U
56-23-5	* Carbon Tetrachloride		5	U
108-05-4	* Vinyl Acetate		10	U
75-27-4	* Bromodichloromethane		5	U
78-87-5	* 1,2-Dichloropropane		5	U
10061-01-5	* cis-1,3-Dichloropropene		5	U
79-01-6	* Trichloroethene		5	U
124-48-1	* Dibromochloromethane		5	U
79-00-5	* 1,1,2-Trichloroethane		5	U
71-43-2	* Benzene		5	U
10061-02-6	* trans-1,3-dichloropropene		5	U
75-25-2	* Bromoform		5	U
108-10-1	* 4-Methyl-2-Pentanone		10	U
591-78-6	* 2-Hexanone		10	U
127-18-4	* Tetrachloroethene		5	U
79-34-5	* 1,1,2,2-Tetrachloroethane		5	U
108-88-3	* Toluene		5	U
108-90-7	* Chlorobenzene		5	U
100-41-4	* Ethylbenzene		5	U
100-42-5	* Styrene		5	U
1330-20-7	* Xylene (total)		5	U
95-50-1	* 1,2-Dichlorobenzene		5	U

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	A2503
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichloroflurometh ane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U
541-73-1	* 1,3-Dichlorobenzene			

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED:

Organic Laboratory Supervisor

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	A2504
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
74-87-3	* Chloromethane		10	U
74-83-9	* Bromomethane		10	U
75-01-4	* Vinyl Chloride		10	U
75-00-3	* Chloroethane		10	U
75-09-2	* Methylene Chloride		5	U
107-13-1	* Acrylonitrile		10	U
67-64-1	* Acetone		10	U
75-15-0	* Carbon Disulfide		5	U
75-35-4	* 1,1-Dichloroethene		5	U
75-34-3	* 1,1-Dichloroethane		5	U
540-59-2	* cis-1,2-Dichloroethene		5	U
540-60-5	* trans-1,2-Dichloroethene		5	U
67-66-3	* Chloroform		5	U
107-06-2	* 1,2-Dichloroethane		5	U
78-93-3	* 2-Butanone		10	U
71-55-6	* 1,1,1-Trichloroethane		5	U
56-23-5	* Carbon Tetrachloride		5	U
108-05-4	* Vinyl Acetate		10	U
75-27-4	* Bromodichloromethane		5	U
78-87-5	* 1,2-Dichloropropane		5	U
10061-01-5	* cis-1,3-Dichloropropene		5	U
79-01-6	* Trichloroethene		5	U
124-48-1	* Dibromochloromethane		5	U
79-00-5	* 1,1,2-Trichloroethane		5	U
71-43-2	* Benzene		5	U
10061-02-6	* trans-1,3-dichloropropene		5	U
75-25-2	* Bromoform		5	U
108-10-1	* 4-Methyl-2-Pentanone		10	U
591-78-6	* 2-Hexanone		10	U
127-18-4	* Tetrachloroethene	7.4	5	
79-34-5	* 1,1,2,2-Tetrachloroethane		5	U
108-88-3	* Toluene		5	U
108-90-7	* Chlorobenzene		5	U
100-41-4	* Ethylbenzene		5	U
100-42-5	* Styrene		5	U
1330-20-7	* Xylene (total)		5	U
95-50-1	* 1,2-Dichlorobenzene		5	U

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	A2504
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichloroflurometh ane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U
541-73-1	* 1,3-Dichlorobenzene			

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	A2505
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/15/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
74-87-3	* Chloromethane		10	U
74-83-9	* Bromomethane		10	U
75-01-4	* Vinyl Chloride		10	U
75-00-3	* Chloroethane		10	U
75-09-2	* Methylene Chloride		5	U
107-13-1	* Acrylonitrile		10	U
67-64-1	* Acetone		10	U
75-15-0	* Carbon Disulfide		5	U
75-35-4	* 1,1-Dichloroethene		5	U
75-34-3	* 1,1-Dichloroethane		5	U
540-59-2	* cis-1,2-Dichloroethene		5	U
540-60-5	* trans-1,2-Dichloroethene		5	U
67-66-3	* Chloroform		5	U
107-06-2	* 1,2-Dichloroethane		5	U
78-93-3	* 2-Butanone		10	U
71-55-6	* 1,1,1-Trichloroethane		5	U
56-23-5	* Carbon Tetrachloride		5	U
108-05-4	* Vinyl Acetate		10	U
75-27-4	* Bromodichloromethane		5	U
78-87-5	* 1,2-Dichloropropane		5	U
10061-01-5	* cis-1,3-Dichloropropene		5	U
79-01-6	* Trichloroethene		5	U
124-48-1	* Dibromochloromethane		5	U
79-00-5	* 1,1,2-Trichloroethane		5	U
71-43-2	* Benzene		5	U
10061-02-6	* trans-1,3-dichloropropene		5	U
75-25-2	* Bromoform		5	U
108-10-1	* 4-Methyl-2-Pentanone		10	U
591-78-6	* 2-Hexanone		10	U
127-18-4	* Tetrachloroethene	6.6	5	
79-34-5	* 1,1,2,2-Tetrachloroethane		5	U
108-88-3	* Toluene		5	U
108-90-7	* Chlorobenzene		5	U
100-41-4	* Ethylbenzene		5	U
100-42-5	* Styrene		5	U
1330-20-7	* Xylene (total)		5	U
95-50-1	* 1,2-Dichlorobenzene		5	U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	A2505
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/15/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichlorofluromethane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U
541-73-1	* 1,3-Dichlorobenzene			

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	A2506
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
74-87-3	* Chloromethane		10	U
74-83-9	* Bromomethane		10	U
75-01-4	* Vinyl Chloride		10	U
75-00-3	* Chloroethane		10	U
75-09-2	* Methylene Chloride		5	U
107-13-1	* Acrylonitrile		10	U
67-64-1	* Acetone		10	U
75-15-0	* Carbon Disulfide		5	U
75-35-4	* 1,1-Dichloroethene		5	U
75-34-3	* 1,1-Dichloroethane		5	U
540-59-2	* cis-1,2-Dichloroethene		5	U
540-60-5	* trans-1,2-Dichloroethene		5	U
67-66-3	* Chloroform		5	U
107-06-2	* 1,2-Dichloroethane		5	U
78-93-3	* 2-Butanone		10	U
71-55-6	* 1,1,1-Trichloroethane		5	U
56-23-5	* Carbon Tetrachloride		5	U
108-05-4	* Vinyl Acetate		10	U
75-27-4	* Bromodichloromethane		5	U
78-87-5	* 1,2-Dichloropropane		5	U
10061-01-5	* cis-1,3-Dichloropropene		5	U
79-01-6	* Trichloroethene		5	U
124-48-1	* Dibromochloromethane		5	U
79-00-5	* 1,1,2-Trichloroethane		5	U
71-43-2	* Benzene		5	U
10061-02-6	* trans-1,3-dichloropropene		5	U
75-25-2	* Bromoform		5	U
108-10-1	* 4-Methyl-2-Pentanone		10	U
591-78-6	* 2-Hexanone		10	U
127-18-4	* Tetrachloroethene	6.9	5	
79-34-5	* 1,1,2,2-Tetrachloroethane		5	U
108-88-3	* Toluene		5	U
108-90-7	* Chlorobenzene		5	U
100-41-4	* Ethylbenzene		5	U
100-42-5	* Styrene		5	U
1330-20-7	* Xylene (total)		5	U
95-50-1	* 1,2-Dichlorobenzene		5	U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	A2506
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichlorofluromethane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U
541-73-1	* 1,3-Dichlorobenzene			

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED: Ron Parkins
Organic Laboratory Supervisor

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-05
Client Project No:	6023	Lab File ID:	A2501
Sample ID:	Trip Blank	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
74-87-3	* Chloromethane		10	U
74-83-9	* Bromomethane		10	U
75-01-4	* Vinyl Chloride		10	U
75-00-3	* Chloroethane		10	U
75-09-2	* Methylene Chloride		5	U
107-13-1	* Acrylonitrile		10	U
67-64-1	* Acetone		10	U
75-15-0	* Carbon Disulfide		5	U
75-35-4	* 1,1-Dichloroethene		5	U
75-34-3	* 1,1-Dichloroethane		5	U
540-59-2	* cis-1,2-Dichloroethene		5	U
540-60-5	* trans-1,2-Dichloroethene		5	U
67-66-3	* Chloroform		5	U
107-06-2	* 1,2-Dichloroethane		5	U
78-93-3	* 2-Butanone		10	U
71-55-6	* 1,1,1-Trichloroethane		5	U
56-23-5	* Carbon Tetrachloride		5	U
108-05-4	* Vinyl Acetate		10	U
75-27-4	* Bromodichloromethane		5	U
78-87-5	* 1,2-Dichloropropane		5	U
10061-01-5	* cis-1,3-Dichloropropene		5	U
79-01-6	* Trichloroethene		5	U
124-48-1	* Dibromochloromethane		5	U
79-00-5	* 1,1,2-Trichloroethane		5	U
71-43-2	* Benzene		5	U
10061-02-6	* trans-1,3-dichloropropene		5	U
75-25-2	* Bromoform		5	U
108-10-1	* 4-Methyl-2-Pentanone		10	U
591-78-6	* 2-Hexanone		10	U
127-18-4	* Tetrachloroethene		5	U
79-34-5	* 1,1,2,2-Tetrachloroethane		5	U
108-88-3	* Toluene		5	U
108-90-7	* Chlorobenzene		5	U
100-41-4	* Ethylbenzene		5	U
100-42-5	* Styrene		5	U
1330-20-7	* Xylene (total)		5	U
95-50-1	* 1,2-Dichlorobenzene		5	U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-05
Client Project No:	6023	Lab File ID:	A2501
Sample ID:	Trip Blank	Date Received:	04/17/96
Matrix:	Water	Date Analyzed:	04/18/96
Sample Date:	04/16/96	Dilution Factor:	1
Report Date:	04/19/96		
Method ID:	EPA 8260, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
106-46-7	* 1,4-Dichlorobenzene		5	U
96-12-8	* 1,2-Dibromo-3-chloropropane		5	U
106-93-4	* 1,2-Dibromoethane		5	U
75-71-8	* Dichlorodifluoromethane		5	U
74-95-3	* Dibromomethane		5	U
107-02-8	* Acrolein		5	U
630-20-6	* 1,1,1,2-Tetrachloroethane		5	U
75-69-4	* Trichlorofluromethane		5	U
96-18-4	* 1,2,3-Trichloropropane		5	U
594-20-7	* 2,2-Dichloropropane		5	U
563-58-6	* 1,1-Dichloropropene		5	U
142-28-9	* 1,3-Dichloropropane		5	U
98-82-8	* Isopropylbenzene		5	U
108-86-1	* Bromobenzene		5	U
103-65-1	* n-Propylbenzene		5	U
95-49-8	* 2-Chlorotoluene		5	U
106-43-4	* 4-Chlorotoluene		5	U
108-67-8	* 1,3,5-Trimethylbenzene		5	U
98-06-6	* tert-Butylbenzene		5	U
95-63-6	* 1,2,4-Trimethylbenzene		5	U
135-98-8	* sec-Butylbenzene		5	U
99-87-6	* 4-Isopropyltoluene		5	U
541-73-1	* 1,3-Dichlorobenzene		5	U
104-51-8	* n-Butylbenzene		5	U
102-82-1	* 1,2,4-Trichlorobenzene		5	U
87-68-3	* Hexachlorobutadiene		5	U
91-20-3	* Naphthalene		5	U
87-61-6	* 1,2,3-Trichlorobenzene		5	U
541-73-1	* 1,3-Dichlorobenzene			

Q FORMAT:
"U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX Compounds

APPROVED: Ron Martino
Organic Laboratory Supervisor

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Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 05

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

	Sample Identification	Sample Date	Lab Number
1	MW-4	04/16/96	L9322-01
2	MW-1	04/16/96	L9322-02
3	MW-2	04/16/96	L9322-03
4	Duplicate	04/16/96	L9322-04
5	Trip Blank	04/16/96	L9322-05

Comments:

Name: Ron Martino

Signature: Ron Martino

Title: Organic Manager

Date: 4/19/96

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 05

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Lab Number	GC File	Analysis Date	DBF R%	Tol. R%	4BFB R%					
Reagent Blank	A2500	04/18/96	102	102	96					
L9322-01	A2502	04/18/96	110	104	100					
L9322-02	A2503	04/18/96	106	104	96					
L9322-03	A2504	04/18/96	108	102	98					
L9322-04	A2505	04/18/96	110	104	98					
L9322-05	A2506	04/18/96	108	102	98					
L9302-01MS	A2509	04/18/96	108	104	104					
L9302-01MSD	A2510	04/18/96	108	104	102					

Note: DBF = Dibromofluoromethane, Tol = Toluene-d8, 4BFB = 4-Bromofluorobenzene

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 05

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Concentration Units: ug/L

Compound	Reagent Blank A2500 Conc ug/L									
None Detected										

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/19/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 05

Matrix: Water Samples
VOA Analyses by EPA Method 8260, GC/MS

Concentration Units: ug/L

Compound	Sample No.	Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike R%	Matrix Spike Dup R%	RPD%	
1,1 DCE	L9302-01	0	50	47	46	94	92	2.2	
Benzene	L9302-01	0	50	49	50	98	100	2.0	
Trichloroethene	L9302-01	0	50	48	49	96	98	2.1	
Toluene	L9302-01	0	50	48	48	96	96	0.0	
Chlorobenzene	L9302-01	0	50	47	49	94	98	4.2	

Note:

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	B7207
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
108-95-2	* Phenol		10	U
111-44-4	* bis-(2-Chloroethyl)Ether		10	U
95-57-8	* 2-Chlorophenol		10	U
541-73-1	* 1,3-Dichlorobenzene		10	U
106-46-7	* 1,4-Dichlorobenzene		10	U
100-51-6	* Benzyl Alcohol		10	U
95-50-1	* 1,2-Dichlorobenzene		10	U
95-48-7	* 2-Methylphenol		10	U
108-60-1	* bis(2-Chloroisopropyl) ether		10	U
106-44-5	* 4-Methylphenol		10	U
621-64-7	* N-Nitroso-Di-n-propylamine		10	U
67-72-1	* Hexachloroethane		10	U
98-95-3	* Nitrobenzene		10	U
78-59-1	* Isophorone		10	U
88-75-5	* 2-Nitrophenol		10	U
105-67-9	* 2,4-Dimethylphenol		50	U
65-85-0	* Benzoic Acid		10	U
111-91-1	* bis(2-Chloroethoxy)methane		10	U
120-83-2	* 2,4-Dichlorophenol		10	U
120-82-1	* 1,2,4-Trichlorobenzene		10	U
91-20-3	* Naphthalene		10	U
106-47-8	* 4-Chloroaniline		10	U
87-68-3	* Hexachlorobutadiene		10	U
59-50-7	* 4-Chloro-3-Methylphenol		10	U
91-57-6	* 2-Methylnaphthalene		10	U
77-47-4	* Hexachlorocylopentadiene		10	U
88-06-2	* 2,4,6-Trichlorophenol		10	U
95-95-4	* 2,4,5-Trichlorophenol		50	U
91-58-7	* 2-Chloronaphthalene		10	U
88-74-4	* 2-Nitroaniline		50	U
131-11-3	* Dimethyl Phthalate		10	U
606-20-8	* 2,6-Dinitrotoluene		50	U
99-09-2	* 3-Nitroaniline		50	U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	B7207
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL Q
534-52-1	* 2-Methyl-4,6-dinitrophenol		50 U
62-75-9	* N-nitrosodimethylamine		10 U
83-32-9	* Acenaphthene		10 U
51-28-5	* 2,4-Dinitrophenol		50 U
100-02-07	* 4-Nitrophenol		50 U
132-64-9	* Dibenzofuran		10 U
121-14-2	* 2,4-Dinitrotoluene		10 U
84-66-2	* Diethylphthalate		10 U
7005-72-3	* 4-Chlorophenyl-phenylether		10 U
86-73-7	* Fluorene		10 U
100-01-6	* 4-Nitroaniline		50 U
534-52-1	* 4,6-Dinitro-2-methylphenol		50 U
86-30-6	* N-Nitrosodiphenylamine(1)		10 U
101-55-3	* 4-Bromophenyl-phenylether		10 U
118-74-1	* Hexachlorobenzene		10 U
87-86-5	* Pentachlorophenol		50 U
85-01-8	* Phenanthrene		10 U
120-12-7	* Anthracene		10 U
84-74-2	* Di-n-Butylphthalate		10 U
206-44-0	* Fluoranthene		10 U
129-00-0	* Pyrene		10 U
85-68-7	* Butylbenzylphthalate		10 U
91-94-1	* 3,3-Dichlorobenzidine		20 U
56-55-3	* Benzo(a)Anthracene		10 U
117-81-7	* Bis(2-ethylhexyl)Phthalate		10 U
218-01-9	* Chrysene		10 U
117-84-0	* Di-n-Octyl Phthalate		10 U
205-99-2	* Benzo(b)Fluoranthene		10 U
207-08-9	* Benzo(k)Fluoranthene		10 U
50-32-8	* Benzo(a)Pyrene		10 U
193-39-5	* Indeno(1,2,3-cd)Pyrene		10 U
53-70-3	* Dibenz(a,h)Anthracene		10 U
191-24-2	* Benzo(g,h,i)Perylene		10 U
103-33-3	* Azobenzene		50 U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-01
Client Project No:	6023	Lab File ID:	B7207
Sample ID:	MW-4	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	B7208
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
108-95-2	* Phenol		10	U
111-44-4	* bis-(2-Chloroethyl)Ether		10	U
95-57-8	* 2-Chlorophenol		10	U
541-73-1	* 1,3-Dichlorobenzene		10	U
106-46-7	* 1,4-Dichlorobenzene		10	U
100-51-6	* Benzyl Alcohol		10	U
95-50-1	* 1,2-Dichlorobenzene		10	U
95-48-7	* 2-Methylphenol		10	U
108-60-1	* bis(2-Chloroisopropyl) ether		10	U
106-44-5	* 4-Methylphenol		10	U
621-64-7	* N-Nitroso-Di-n-propylamine		10	U
67-72-1	* Hexachloroethane		10	U
98-95-3	* Nitrobenzene		10	U
78-59-1	* Isophorone		10	U
88-75-5	* 2-Nitrophenol		10	U
105-67-9	* 2,4-Dimethylphenol		50	U
65-85-0	* Benzoic Acid		10	U
111-91-1	* bis(2-Chloroethoxy)methane		10	U
120-83-2	* 2,4-Dichlorophenol		10	U
120-82-1	* 1,2,4-Trichlorobenzene		10	U
91-20-3	* Naphthalene		10	U
106-47-8	* 4-Chloroaniline		10	U
87-68-3	* Hexachlorobutadiene		10	U
59-50-7	* 4-Chloro-3-Methylphenol		10	U
91-57-6	* 2-Methylnaphthalene		10	U
77-47-4	* Hexachlorocylopentadiene		10	U
88-06-2	* 2,4,6-Trichlorophenol		10	U
95-95-4	* 2,4,5-Trichlorophenol		50	U
91-58-7	* 2-Chloronaphthalene		10	U
88-74-4	* 2-Nitroaniline		50	U
131-11-3	* Dimethyl Phthalate		10	U
606-20-8	* 2,6-Dinitrotoluene		50	U
99-09-2	* 3-Nitroaniline		50	U

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	B7208
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL Q
534-52-1	* 2-Methyl-4,6-dinitrophenol		50 U
62-75-9	* N-nitrosodimethylamine		10 U
83-32-9	* Acenaphthene		10 U
51-28-5	* 2,4-Dinitrophenol		50 U
100-02-07	* 4-Nitrophenol		50 U
132-64-9	* Dibenzofuran		10 U
121-14-2	* 2,4-Dinitrotoluene		10 U
84-66-2	* Diethylphthalate		10 U
7005-72-3	* 4-Chlorophenyl-phenylether		10 U
86-73-7	* Fluorene		10 U
100-01-6	* 4-Nitroaniline		50 U
534-52-1	* 4,6-Dinitro-2-methylphenol		50 U
86-30-6	* N-Nitrosodiphenylamine(1)		10 U
101-55-3	* 4-Bromophenyl-phenylether		10 U
118-74-1	* Hexachlorobenzene		10 U
87-86-5	* Pentachlorophenol		50 U
85-01-8	* Phenanthrene		10 U
120-12-7	* Anthracene		10 U
84-74-2	* Di-n-Butylphthalate		10 U
206-44-0	* Fluoranthene		10 U
129-00-0	* Pyrene		10 U
85-68-7	* Butylbenzylphthalate		10 U
91-94-1	* 3,3-Dichlorobenzidine		20 U
56-55-3	* Benzo(a)Anthracene		10 U
117-81-7	* Bis(2-ethylhexyl)Phthalate		10 U
218-01-9	* Chrysene		10 U
117-84-0	* Di-n-Octyl Phthalate		10 U
205-99-2	* Benzo(b)Fluoranthene		10 U
207-08-9	* Benzo(k)Fluoranthene		10 U
50-32-8	* Benzo(a)Pyrene		10 U
193-39-5	* Indeno(1,2,3-cd)Pyrene		10 U
53-70-3	* Dibenz(a,h)Anthracene		10 U
191-24-2	* Benzo(g,h,i)Perylene		10 U
103-33-3	* Azobenzene		50 U

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-02
Client Project No:	6023	Lab File ID:	B7208
Sample ID:	MW-1	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	B7209
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/15/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
108-95-2	* Phenol		10	U
111-44-4	* bis-(2-Chloroethyl)Ether		10	U
95-57-8	* 2-Chlorophenol		10	U
541-73-1	* 1,3-Dichlorobenzene		10	U
106-46-7	* 1,4-Dichlorobenzene		10	U
100-51-6	* Benzyl Alcohol		10	U
95-50-1	* 1,2-Dichlorobenzene		10	U
95-48-7	* 2-Methylphenol		10	U
108-60-1	* bis(2-Chloroisopropyl) ether		10	U
106-44-5	* 4-Methylphenol		10	U
621-64-7	* N-Nitroso-Di-n-propylamine		10	U
67-72-1	* Hexachloroethane		10	U
98-95-3	* Nitrobenzene		10	U
78-59-1	* Isophorone		10	U
88-75-5	* 2-Nitrophenol		10	U
105-67-9	* 2,4-Dimethylphenol		50	U
65-85-0	* Benzoic Acid		10	U
111-91-1	* bis(2-Chloroethoxy)methane		10	U
120-83-2	* 2,4-Dichlorophenol		10	U
120-82-1	* 1,2,4-Trichlorobenzene		10	U
91-20-3	* Naphthalene		10	U
106-47-8	* 4-Chloroaniline		10	U
87-68-3	* Hexachlorobutadiene		10	U
59-50-7	* 4-Chloro-3-Methylphenol		10	U
91-57-6	* 2-Methylnaphthalene		10	U
77-47-4	* Hexachlorocylopentadiene		10	U
88-06-2	* 2,4,6-Trichlorophenol		10	U
95-95-4	* 2,4,5-Trichlorophenol		50	U
91-58-7	* 2-Chloronaphthalene		10	U
88-74-4	* 2-Nitroaniline		50	U
131-11-3	* Dimethyl Phthalate		10	U
606-20-8	* 2,6-Dinitrotoluene		50	U
99-09-2	* 3-Nitroaniline		50	U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	B7209
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/15/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
534-52-1	* 2-Methyl-4,6-dinitrophenol		50	U
62-75-9	* N-nitrosodimethylamine		10	U
83-32-9	* Acenaphthene		10	U
51-28-5	* 2,4-Dinitrophenol		50	U
100-02-07	* 4-Nitrophenol		50	U
132-64-9	* Dibenzofuran		10	U
121-14-2	* 2,4-Dinitrotoluene		10	U
84-66-2	* Diethylphthalate		10	U
7005-72-3	* 4-Chlorophenyl-phenylether		10	U
86-73-7	* Fluorene		10	U
100-01-6	* 4-Nitroaniline		50	U
534-52-1	* 4,6-Dinitro-2-methylphenol		50	U
86-30-6	* N-Nitrosodiphenylamine(1)		10	U
101-55-3	* 4-Bromophenyl-phenylether		10	U
118-74-1	* Hexachlorobenzene		10	U
87-86-5	* Pentachlorophenol		50	U
85-01-8	* Phenanthrene		10	U
120-12-7	* Anthracene		10	U
84-74-2	* Di-n-Butylphthalate		10	U
206-44-0	* Fluoranthene		10	U
129-00-0	* Pyrene		10	U
85-68-7	* Butylbenzylphthalate		10	U
91-94-1	* 3,3-Dichlorobenzidine		20	U
56-55-3	* Benzo(a)Anthracene		10	U
117-81-7	* Bis(2-ethylhexyl)Phthalate		10	U
218-01-9	* Chrysene		10	U
117-84-0	* Di-n-Octyl Phthalate		10	U
205-99-2	* Benzo(b)Fluoranthene		10	U
207-08-9	* Benzo(k)Fluoranthene		10	U
50-32-8	* Benzo(a)Pyrene		10	U
193-39-5	* Indeno(1,2,3-cd)Pyrene		10	U
53-70-3	* Dibenz(a,h)Anthracene		10	U
191-24-2	* Benzo(g,h,i)Perylene		10	U
103-33-3	* Azobenzene		50	U

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-03
Client Project No:	6023	Lab File ID:	B7209
Sample ID:	MW-2	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/15/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

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ACZ Laboratories, Inc

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	B7210
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL Q
108-95-2	* Phenol		10 U
111-44-4	* bis-(2-Chloroethyl)Ether		10 U
95-57-8	* 2-Chlorophenol		10 U
541-73-1	* 1,3-Dichlorobenzene		10 U
106-46-7	* 1,4-Dichlorobenzene		10 U
100-51-6	* Benzyl Alcohol		10 U
95-50-1	* 1,2-Dichlorobenzene		10 U
95-48-7	* 2-Methylphenol		10 U
108-60-1	* bis(2-Chloroisopropyl) ether		10 U
106-44-5	* 4-Methylphenol		10 U
621-64-7	* N-Nitroso-Di-n-propylamine		10 U
67-72-1	* Hexachloroethane		10 U
98-95-3	* Nitrobenzene		10 U
78-59-1	* Isophorone		10 U
88-75-5	* 2-Nitrophenol		10 U
105-67-9	* 2,4-Dimethylphenol		50 U
65-85-0	* Benzoic Acid		10 U
111-91-1	* bis(2-Chloroethoxy)methane		10 U
120-83-2	* 2,4-Dichlorophenol		10 U
120-82-1	* 1,2,4-Trichlorobenzene		10 U
91-20-3	* Naphthalene		10 U
106-47-8	* 4-Chloroaniline		10 U
87-68-3	* Hexachlorobutadiene		10 U
59-50-7	* 4-Chloro-3-Methylphenol		10 U
91-57-6	* 2-Methylnaphthalene		10 U
77-47-4	* Hexachlorocylopentadiene		10 U
88-06-2	* 2,4,6-Trichlorophenol		10 U
95-95-4	* 2,4,5-Trichlorophenol		50 U
91-58-7	* 2-Chloronaphthalene		10 U
88-74-4	* 2-Nitroaniline		50 U
131-11-3	* Dimethyl Phthalate		10 U
606-20-8	* 2,6-Dinitrotoluene		50 U
99-09-2	* 3-Nitroaniline		50 U

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VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	B7210
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q
534-52-1	* 2-Methyl-4,6-dinitrophenol		50	U
62-75-9	* N-nitrosodimethylamine		10	U
83-32-9	* Acenaphthene		10	U
51-28-5	* 2,4-Dinitrophenol		50	U
100-02-07	* 4-Nitrophenol		50	U
132-64-9	* Dibenzofuran		10	U
121-14-2	* 2,4-Dinitrotoluene		10	U
84-66-2	* Diethylphthalate		10	U
7005-72-3	* 4-Chlorophenyl-phenylether		10	U
86-73-7	* Fluorene		10	U
100-01-6	* 4-Nitroaniline		50	U
534-52-1	* 4,6-Dinitro-2-methylphenol		50	U
86-30-6	* N-Nitrosodiphenylamine(1)		10	U
101-55-3	* 4-Bromophenyl-phenylether		10	U
118-74-1	* Hexachlorobenzene		10	U
87-86-5	* Pentachlorophenol		50	U
85-01-8	* Phenanthrene		10	U
120-12-7	* Anthracene		10	U
84-74-2	* Di-n-Butylphthalate		10	U
206-44-0	* Fluoranthene		10	U
129-00-0	* Pyrene		10	U
85-68-7	* Butylbenzylphthalate		10	U
91-94-1	* 3,3-Dichlorobenzidine		20	U
56-55-3	* Benzo(a)Anthracene		10	U
117-81-7	* Bis(2-ethylhexyl)Phthalate		10	U
218-01-9	* Chrysene		10	U
117-84-0	* Di-n-Octyl Phthalate		10	U
205-99-2	* Benzo(b)Fluoranthene		10	U
207-08-9	* Benzo(k)Fluoranthene		10	U
50-32-8	* Benzo(a)Pyrene		10	U
193-39-5	* Indeno(1,2,3-cd)Pyrene		10	U
53-70-3	* Dibenz(a,h)Anthracene		10	U
191-24-2	* Benzo(g,h,i)Perylene		10	U
103-33-3	* Azobenzene		50	U

ACZ Laboratories, Inc.

VOLATILE ORGANICS ANALYSIS REPORT

Client:	Daniel B. Stephens & Assoc.	Lab Sample ID:	L9322-04
Client Project No:	6023	Lab File ID:	B7210
Sample ID:	Duplicate	Date Received:	04/17/96
Matrix:	Water	Date Extracted:	04/22/96
Sample Date:	04/16/96	Date Analyzed:	04/24/96
Report Date:	04/25/96	Cleanup:	
		Dilution Factor:	1
Method ID:	SEMI-VOLATILES BY EPA 8270, GC/MS	Concentration Units:	ug/L

CAS NO.	COMPOUND	CONCENTRATION	MDL	Q

Q FORMAT: "U" indicates compound was not detected
"J" indicates compound detected < MDL (Method Detection Limit)
"B" indicates compound was found in daily calibration blank

COMMENTS: * = Appendix IX compounds

APPROVED: Ron Martinez
Organic Laboratory Supervisor

ACZ Laboratories, Inc.
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Steamboat Springs, CO 80487
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ACZ Laboratories, Inc.

Organic Quality Control Data Summary

COVER PAGE

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/25/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 04

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

	Sample Identification	Sample Date	Lab Number
1	MW-4	04/16/96	L9322-01
2	MW-1	04/16/96	L9322-02
3	MW-2	04/16/96	L9322-03
4	Duplicate	04/16/96	L9322-04

Comments:

Name: Ron Martino

Signature: Ron Martino

Title: Organic Supervisor

Date:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

SURROGATE SPIKE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/25/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 04

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Lab Number	GC File	Analysis Date	2-FP R%	PHEN R%	NB R%	2-FBP R%	2,4,6-TBP R%	TP R%	
SBLK	B7204	04/24/96	68	67	44	56	68	54	
L9322-01	B7207	04/24/96	22	11	4.2	16	4.3	52	
L9322-02	B7208	04/24/96	56	52	26	44	33	72	
L9322-03	B7209	04/24/96	9.2	24	20	26	21	60	
L9322-04	B7210	04/24/96	17	34	18	37	26	53	
LCS	B7205	04/24/96	51	50	22	26	51	37	
LCS DUP	B7206	04/24/96	40	33	15	20	39	29	

Note: 2-FP = 2-Fluorophenol, PHEN = Phenol-d5, NB = Nitrobenzene-d5, 2-FBP = 2-Fluorobiphenyl, 2,4,6-TBP = 2,4,6-Tribromophenol, TP = Terphenyl-d14

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

METHOD BLANK DATA

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/25/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 04

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Concentration Units: ug/L

Compound	SBLK File B7204							
	C		C		C			
	All compounds BDL							
None Detected								

Note:

ACZ Laboratories, Inc.

Organic Quality Control Data Summary

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERIES

Client:	Daniel B. Stephens & Assoc.	Report Date:	04/25/96
Project:	6023	Date Received:	04/17/96
ACZ SDG No.:	L9322	Lab Nos.:	L9322-01 through 04

Matrix: Soil Samples
Semi-volatile Analyses by EPA Method 8270, GC/MS

Concentration Units: ug/L

Compound	Sample No.	Sample Value ug/L	Spike Added ug/L	Matrix Spike ug/L	Matrix Spike Dup ug/L	Matrix Spike R%	Matrix Spike Dup R%	RPD%	
Phenol	LCS	0	75	37	26	49	35	34.9	
2-Chlorophenol	LCS	0	75	40	29	53	39	31.9	
1,4-DCB	LCS	0	50	28	21	56	42	28.6	
N-Nitroso-di-n-PA	LCS	0	50	23	20	46	40	14.0	
1,2,4-TCB	LCS	0	50	25	19	50	38	27.3	
4-Chloro-3-MP	LCS	0	75	32	26	43	35	20.7	
Acenaphthene	LCS	0	50	31	25	62	50	21.4	
4-Nitrophenol	LCS	0	75	78	59	104	79	27.7	
2,4-Dinitrotoluene	LCS	0	50	18	15	36	30	18.2	
Pentachlorophenol	LCS	0	75	23	15	31	20	42.1	
Pyrene	LCS	0	50	36	29	72	58	21.5	

Note: 1,3-DCB = 1,3-Dichlorobenzene, PA = Propylamine, 1,2,4-TCB = 1,2,4-Trichlorobenzene, MP = Methylphenol

CHAIN-OF-CUSTODY RECORD

LCF0070

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite C
Albuquerque, New Mexico 87109
505.345.3975
Fax 505.345.4107

ACZ

Client: Daniel B. Stephens & Assoc

Project Name: Philips

Address: 6020 Academy Road N.E.
Albuquerque NM 87109

Project #: 6023

Project Manager: Rich Meixner

Phone #: (505) 822-9400

Sampler: B. Sherupski

Fax #: (505) 822-8877

Samples Cold? ☑ Yes ☐ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Other	ACZ ~~HEAT~~ No.	BTEX + MTBE (602/8020)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015 MOD (Gas/Diesel)	THP (Method 418.1)	~~8260~~ Volatiles VOAs	EDB (Method 504)	EDC	~~8270~~ SVOCs	~~RCRA 8~~ Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	Basic Soil Test (PH, EC, SAR, PSA)	8080 Pesticides / PCB's	Cyanide	Sulfide	Herbicides	Air Bubbles or Headspace (Y or N)
4/16	1230	GW	MW-4	8									X			X	X				X	X	X	X	
↓	1515	↓	MW-1	8									X			X	X				X	X	X	X	

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4/16/96	1700	Barbara J. Sherupski	[illegible] ACZ
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

1/2

CHAIN-OF-CUSTODY RECORD

ACZ
~~HALL ENVIRONMENTAL ANALYSIS LABORATORY~~
4901 Hawkins NE, Suite C
Albuquerque, New Mexico 87109
505.345.3975
Fax 505.345.4107

Client: Daniel B. Stephens & Assoc.

Address: 6020 Academy Rd NE
Albuquerque NM 87109

Phone #: (505) 822-9400

Fax #: (505) 822-8877

Project Name: Philips

Project #: 6023

Project Manager: Rick Meixner

Sampler: B. Sherupski

Samples Cold? ☒ Yes ☐ No

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Other	~~HEAL~~ No.	BTEX + MTBE (602/8020)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015 MOD (Gas/Diesel)	~~TPH (Method 418.1)~~ VOAs	8010/8020 Volatiles	EDB (Method 504)	~~PAH~~ SVOCs	8310 (PNA or PAH)	~~RCRA~~ Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	Basic Soil Test (PH, EC, SAR, PSA)	8080 Pesticides / PCB's	Herbicides	Cyanide	Sulfide	Air Bubbles or Headspace (Y or N)
4/10	1510	GW	Trip Blank	1																					
4/15	1715	↓	MW-2	8								X			X		X				X	X	X	X	
4/16	0900	↓	Duplicate	8								X			X		X				X	X	X	X	

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4/16/96	1700	Barbara J. Sherupski	ACZ ~~HEAL~~
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

2/2

HEAL Laboratory Data Sheets

Hall Environmental Analysis Laboratory

Hall Environmental Analysis Laboratory
4901 Hawkins, NE Suite C
Albuquerque, NM 87109
(505)345-3975

5/3/96

Daniel B. Stephens and Associates, Inc.
6020 Academy NE, Suite 100
Albuquerque, NM 87109

Dear Mr. Rich Meixner,

Enclosed are the results for the analyses that were requested. These were done according to EPA procedures or the equivalent.

Detection limits are determined by EPA methodology. No determination of compounds below these levels (denoted by the < sign) has been made.

Please don't hesitate to contact me for any additional information or clarifications.

Sincerely,

Scott Hallenbeck 5/3/96

Scott Hallenbeck, Lab Manager

Project: 9604055, 9604060/Philips

Results for sample: MW-2

Date collected: 4/15/96	Date received: 4/16/96
Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: 9604060-1
Project Manager: Rich Meixner	Sampled by: B. Sherupski
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (µg/L)
2-Methyl naphthalene	nd	2.5	PPB (µg /L)
1-Methyl naphthalene	nd	2.5	PPB (µg /L)
Acenaphthylene	nd	2.5	PPB (µg /L)
Acenaphthene	nd	2.5	PPB (µg /L)
Fluorene	nd	0.20	PPB (µg /L)
Phenanthrene	nd	0.60	PPB (µg /L)
Anthracene	nd	0.60	PPB (µg /L)
Fluoranthene	nd	0.30	PPB (µg /L)
Pyrene	nd	0.30	PPB (µg /L)
Benzo(a)anthracene	nd	0.02	PPB (µg /L)
Chrysene	nd	0.20	PPB (µg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(a)pyrene	nd	0.02	PPB (µg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (µg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (µg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (µg /L)

Benzo(e)pyrene (Surrogate) Recovery = 101 %
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (µg/L)

Dilution = 1

Results for sample: Duplicate

Date collected: 4/16/96	Date received: 4/16/96
Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: 9604060-2
Project Manager: Rich Meixner	Sampled by: B. Sherupski
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (µg/L)
2-Methyl naphthalene	nd	2.5	PPB (µg /L)
1-Methyl naphthalene	nd	2.5	PPB (µg /L)
Acenaphthylene	nd	2.5	PPB (µg /L)
Acenaphthene	nd	2.5	PPB (µg /L)
Fluorene	nd	0.20	PPB (µg /L)
Phenanthrene	nd	0.60	PPB (µg /L)
Anthracene	nd	0.60	PPB (µg /L)
Fluoranthene	nd	0.30	PPB (µg /L)
Pyrene	nd	0.30	PPB (µg /L)
Benzo(a)anthracene	nd	0.02	PPB (µg /L)
Chrysene	nd	0.20	PPB (µg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(a)pyrene	nd	0.02	PPB (µg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (µg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (µg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (µg /L)

Benzo(e)pyrene (Surrogate) Recovery = 104 %
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (µg/L)

Dilution = 1

Results for sample: MW-4

Date collected: 4/16/96	Date received: 4/16/96
Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: 9604060-3
Project Manager: Rich Meixner	Sampled by: B. Sherupski
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (µg/L)
2-Methyl naphthalene	nd	2.5	PPB (µg /L)
1-Methyl naphthalene	nd	2.5	PPB (µg /L)
Acenaphthylene	nd	2.5	PPB (µg /L)
Acenaphthene	nd	2.5	PPB (µg /L)
Fluorene	nd	0.20	PPB (µg /L)
Phenanthrene	nd	0.60	PPB (µg /L)
Anthracene	nd	0.60	PPB (µg /L)
Fluoranthene	nd	0.30	PPB (µg /L)
Pyrene	nd	0.30	PPB (µg /L)
Benzo(a)anthracene	nd	0.02	PPB (µg /L)
Chrysene	nd	0.20	PPB (µg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(a)pyrene	nd	0.02	PPB (µg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (µg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (µg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (µg /L)

Benzo(e)pyrene (Surrogate) Recovery = 87 %
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (µg/L)

Dilution = 1

Results for sample: MW-1

Date collected: 4/16/96	Date received: 4/16/96
Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: 9604060-4
Project Manager: Rich Meixner	Sampled by: B. Sherupski
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (µg/L)
2-Methyl naphthalene	nd	2.5	PPB (µg /L)
1-Methyl naphthalene	nd	2.5	PPB (µg /L)
Acenaphthylene	nd	2.5	PPB (µg /L)
Acenaphthene	nd	2.5	PPB (µg /L)
Fluorene	nd	0.20	PPB (µg /L)
Phenanthrene	nd	0.60	PPB (µg /L)
Anthracene	nd	0.60	PPB (µg /L)
Fluoranthene	nd	0.30	PPB (µg /L)
Pyrene	nd	0.30	PPB (µg /L)
Benzo(a)anthracene	nd	0.02	PPB (µg /L)
Chrysene	nd	0.20	PPB (µg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (µg /L)
Benzo(a)pyrene	nd	0.02	PPB (µg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (µg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (µg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (µg /L)

Benzo(e)pyrene (Surrogate) Recovery = 69%
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (µg/L)

Dilution = 1

Results for sample: MW-3

Date collected: 4/15/96	Date received: 4/15/96
Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: 9604055-1
Project Manager: Rich Meixner	Sampled by: B. Sherupski
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (μg/L)
2-Methyl naphthalene	nd	2.5	PPB (μg /L)
1-Methyl naphthalene	nd	2.5	PPB (μg /L)
Acenaphthylene	nd	2.5	PPB (μg /L)
Acenaphthene	nd	2.5	PPB (μg /L)
Fluorene	nd	0.20	PPB (μg /L)
Phenanthrene	nd	0.60	PPB (μg /L)
Anthracene	nd	0.60	PPB (μg /L)
Fluoranthene	nd	0.30	PPB (μg /L)
Pyrene	nd	0.30	PPB (μg /L)
Benzo(a)anthracene	nd	0.02	PPB (μg /L)
Chrysene	nd	0.20	PPB (μg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (μg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (μg /L)
Benzo(a)pyrene	nd	0.02	PPB (μg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (μg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (μg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (μg /L)

Benzo(e)pyrene (Surrogate) Recovery = 94 %
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (μg/L)

Dilution = 1

Results for QC: Reagent Blank

Date extracted:4/18,19/96	Date analyzed: 4/19/96
Client: Daniel B. Stephens and Associates, Inc.	
Project Name: Philips	HEAL #: RB 4/18,19
Project Manager: Rich Meixner	Sampled by: NA
Matrix: Aqueous	

Test: EPA 8310

Compound	Result	Detection limit	Units
Naphthalene	nd	2.5	PPB (μg/L)
2-Methyl naphthalene	nd	2.5	PPB (μg /L)
1-Methyl naphthalene	nd	2.5	PPB (μg /L)
Acenaphthylene	nd	2.5	PPB (μg /L)
Acenaphthene	nd	2.5	PPB (μg /L)
Fluorene	nd	0.20	PPB (μg /L)
Phenanthrene	nd	0.60	PPB (μg /L)
Anthracene	nd	0.60	PPB (μg /L)
Fluoranthene	nd	0.30	PPB (μg /L)
Pyrene	nd	0.30	PPB (μg /L)
Benzo(a)anthracene	nd	0.02	PPB (μg /L)
Chrysene	nd	0.20	PPB (μg /L)
Benzo(b)fluoranthene	nd	0.02	PPB (μg /L)
Benzo(k)fluoranthene	nd	0.02	PPB (μg /L)
Benzo(a)pyrene	nd	0.02	PPB (μg /L)
Indeno(1,2,3-cd)pyrene	nd	0.04	PPB (μg /L)
Dibenzo(a,h)anthracene	nd	0.03	PPB (μg /L)
Benzo(g,h,i)perylene	nd	0.08	PPB (μg /L)

Benzo(e)pyrene (Surrogate) Recovery = 76 %
Dilution Factor = 1

Test: EPA 504

Compound	Result	Units
EDB	<0.01	PPB (μg/L)

Dilution = 1

Results for QC: Matrix Spike / Matrix Spike Dup

Date extracted: 4/22,23/96	Date analyzed:4/22,23/96
Client: Daniel B. Stephens and Assoicates, Inc.	
Project Name: Philips	HEAL #: 9604055-2,3 MS/MSD
Project Manager: Rich Meixner	
Matrix: Aqueous	Units: PPB (μg/L)

Test: EPA 8310

Compound	Sample Result	Amount Added	Matrix Spike	MS %	MS Dup	MSD %	RPD
Naphthalene	<2.5	51.2	32.1	63	31.1	61	3
Acenaphthylene	<2.5	49.9	36.9	74	34.8	70	6
Acenaphthene	<2.5	50.0	41.5	83	38.5	77	8
Fluorene	<0.2	29.0	23.4	81	21.8	75	7
Phenanthrene	<0.6	4.07	3.45	85	3.32	82	4
Fluoranthene	<0.3	2.64	2.38	90	2.22	84	7
Pyrene	<0.3	4.28	3.76	88	3.54	83	6
Benzo(a)pyrene	<0.02	0.256	0.240	94	0.222	87	8
I(1,2,3-cd)P	<0.03	0.580	0.483	83	0.431	74	11

Test: EPA 504

Compound	Sample Result	Amount Added	Matrix Spike	MS %	MS Dup	MSD %	RPD
EDB	<0.01	0.10	0.096	96	0.099	99	9

CHAIN-OF-CUSTODY RECORD

~~HALL ENVIRONMENTAL ANALYSIS LABORATORY~~
4901 Hawkins NE, Suite C
Albuquerque, New Mexico 87109
505.345.3975
Fax 505.345.4107

Client: Daniel B. Stephens & Assoc

Project Name: Philips

Address: 6020 Academy Rd N.E.
Albuquerque NM 87109

Project #: 6023

Project Manager: Rich Meixner

Phone #: (505) 822-9400

Sampler: B. Sherupski

Fax #: (505) 822-8877

Samples Cold? ☒ Yes ☐ No

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative: Other	HEAL No.	BTEX + MTBE (602/8020)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015 MOD (Gas/Diesel)	THP (Method 418.1)	8010/8020 Volatiles	EDB (Method 504)	EDC	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	Basic Soil Test (PH, EC, SAR, PSA)	8080 Pesticides / PCB's	Dioxins/Furans			Air Bubbles or Headspace (Y or N)
4/15	1715	H_2O	MW-2	2@40mL 3@1L	X			9604060-1						X		X						X			N/A
4/16	0900	|	Duplicate	5	X			-2						X		X						X			N/A
↓	1230	|	MW-4	5	X			-3						X		X						X			N/A
↓	1515	↓	MW-1	5	X			-4						X		X						X			N/A

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4/16/96	1740	Barbara J. Sherupski	[signature]
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks: Dioxins/Furans subcontracted to Ioxin ~ verbal no preservative

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite C
Albuquerque, New Mexico 87109
505.345.3975
Fax 505.345.4107

Client: Daniel B. Stephens & Assoc

Address: 6020 Academy Rd NE Suite 100
Albuquerque NM 87109

Phone #: 822-9400

Fax #: 822-8877

Project Name: Philips

Project #: 6023

Project Manager: Rich Meixner

Sampler: B. Sherupski

Samples Cold? ☐ Yes ☐ No

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative HgCl2	Preservative HCl	Preservative Other	HEAL No.	BTEX + MTBE (602/8020)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015 MOD (Gas/Diesel)	THP (Method 418.1)	8010/8020 Volatiles	EDB (Method 504) 2-40 mL	EDC	8310 (PNA or PAH) 1-1 L	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	Basic Soil Test (PH, EC, SAR, PSA)	8080 Pesticides / PCB's	8280 Dioxin/Furan - 2-1-L			Air Bubbles or Headspace (Y or N)
4/15/96	1300	water	MW-3	2+1+2				9604055-1						X		X						X			
"	1330	"	MW-3MS	"				-2																	
"	1400	"	MW-3MSD	"				-3																	
"		"	MW-2	"																					
"		"	MW-1	"																					
"		"	MW-4	"																					
"	0900	"	Dup	"																					

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4-15-96	1515	Barbara J. Sherupski	R Meixner
Date: 4/15/96	Time: 1530	Relinquished By: (Signature) R Meixner	Received By: (Signature)

Remarks:

Dioxins and Furans
Laboratory Data Sheets

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

IONICS INTERNATIONAL PROJECT 96-616
CLIENT PROJECT 9604055

Client ID	Lab ID	File name
Method Blank	DFBLK B2-014	F20752
Lab Spike	LS B2-014	F20751
9604055-1	7-16-1	F20753
9604055-2 MS	7-16-2 MS	F20754
9604055-3 MSD	7-16-3 MSD	F20755

Stephen R. Missler, Ph.D.
Lab Manager

IONICS INTERNATIONAL, INC.
10655 Richmond Ave., Ste. 150
Houston, TX 77042
(800) 4-DIOXIN
Phone: (713) 972-1037
Fax: (713) 784-1152

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-1

SAMPLE ANALYSIS SUMMARY REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-1

Specific analytes	Sample		Blank	Lab spike		
	Conc (ppt)	DL (ppt)	Conc (ppt)	Conc (ppt)	Rec (%)	QC limits
2,3,7,8-TCDD	ND	0.82	ND	21.27	85%	50-150
1,2,3,7,8-PeCDD	ND	3.19	ND	54.03	86%	50-150
1,2,3,4,7,8-HxCDD	ND	2.56	ND	ND	-	-
1,2,3,6,7,8-HxCDD	ND	2.56	ND	56.41	90%	50-150
1,2,3,7,8,9-HxCDD	ND	2.56	ND	ND	-	-
2,3,7,8-TCDF	ND	0.64	ND	25.19	101%	50-150
1,2,3,7,8-PeCDF	ND	0.95	ND	60.66	97%	50-150
2,3,4,7,8-PeCDF	ND	0.95	ND	ND	-	-
1,2,3,4,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,6,7,8-HxCDF	ND	1.89	ND	75.48	121%	50-150
2,3,4,6,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,7,8,9-HxCDF	ND	1.89	ND	ND	-	-

Total analytes*	Number	Conc (ppt)	DL (ppt)	
TOTAL TCDD	0	ND	0.82	**Total dioxins/furans**
TOTAL PeCDD	0	ND	3.19	
TOTAL HxCDD	0	ND	2.56	**ND**
TOTAL TCDF	0	ND	0.64	**2,3,7,8-TCDD toxicity equivalent**
TOTAL PeCDF	0	ND	0.95	
TOTAL HxCDF	0	ND	1.89	**ND**

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

IONICS INTERNATIONAL, INC.
(800) 4-DIOXIN
10655 Richmond Ave., Ste. 150
Houston, TX 77042
Phone: (713) 972-1037
Fax: (713) 784-1152

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-1

SAMPLE ANALYSIS REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-1

Date collected:	4/15/96	Sample size:	1.02 L	File:	F20753
Date received:	4/17/96	Matrix:	Water	Ret check:	F20749
Date extracted:	4/23/96	Origin:	MW-3	Daily cal:	F20750
Date analyzed:	4/23/96			Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

IONICS INTERNATIONAL, INC.
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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-1

SAMPLE ANALYSIS
QC REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-1

Date collected:	4/15/96	Sample size:	1.02 L	File:	F20753
Date received:	4/17/96	Matrix:	Water	Ret check:	F20749
Date extracted:	4/23/96	Origin:	MW-3	Daily cal:	F20750
Date analyzed:	4/23/96			Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	38.43	78.4	0.08	21:49	-
13C12-2,3,7,8-TCDD	43.89	89.5	0.84	22:26	-
13C12-1,2,3,6,7,8-HxCDD	40.33	82.3	1.28	31:36	-
13C12-1,2,3,4,6,7,8-HpCDF	57.62	58.8	1.12	34:48	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	18.84	76.9	22:26	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.86	22:16	-
13C12-1,2,3,7,8,9-HxCDD	1.27	32:04	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-1

SAMPLE ANALYSIS
TEF REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-1

Date collected:	4/15/96	Sample size:	1.02 L	File:	F20753
Date received:	4/17/96	Matrix:	Water	Ret check:	F20749
Date extracted:	4/23/96	Origin:	MW-3	Daily cal:	F20750
Date analyzed:	4/23/96			Initial cal:	F052595

Specific analytes	Conc (ppt)		TEF		TEQ (ppt)
2,3,7,8-TCDD	ND	x	1.000	=	-
1,2,3,7,8-PeCDD	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDD	ND	x	0.100	=	-
2,3,7,8-TCDF	ND	x	0.100	=	-
1,2,3,7,8-PeCDF	ND	x	0.050	=	-
2,3,4,7,8-PeCDF	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDF	ND	x	0.100	=	-
2,3,4,6,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDF	ND	x	0.100	=	-

Total 2,3,7,8-TCDD toxicity equivalent (1989 ITEF): ND

Not all of the analytes have the same degree of toxicity, so it is convenient to express the toxicity of a sample as its equivalent 2,3,7,8-TCDD content. The concentration of each analyte is multiplied by the appropriate Toxicity Equivalence Factor (TEF), and the individual results of these calculations are summed to afford the 2,3,7,8-TCDD toxicity equivalent.

The 1989 International Toxicity Equivalence Factors are employed during these calculations.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055 | ***BLANK ANALYSIS REPORT*** | **Ionics Project: 96-616**
Client Sample: Method Blank | **Ionics Sample: DFBLK B2-014**

Date extracted:	4/23/96	Sample size:	1 L	File:	F20752
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055 | ***BLANK ANALYSIS*** | **Ionics Project: 96-616**
Client Sample: Method Blank | ***QC REPORT*** | **Ionics Sample: DFBLK B2-014**

Date extracted:	4/23/96	Sample size:	1 L	File:	F20752
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	36.14	72.3	0.86	21:48	-
13C12-2,3,7,8-TCDD	40.62	81.2	0.83	22:26	-
13C12-1,2,3,6,7,8-HxCDD	34.72	69.4	1.31	31:37	-
13C12-1,2,3,4,6,7,8-HpCDF	62.05	62.1	1.13	34:49	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	16.93	67.7	22:27	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.87	22:17	-
13C12-1,2,3,7,8,9-HxCDD	1.31	32:03	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

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Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: Lab Spike

LAB SPIKE ANALYSIS REPORT

Ionics Project: 96-616
Ionics Sample: LS B2-014

Date extracted:	4/23/96	Sample size:	1 L	File:	F20751
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	21.27	0.82	0.76	22:29	
1,2,3,7,8-PeCDD	54.03	3.19	1.76	27:07	
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	56.41	2.56	1.33	31:38	
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	25.19	0.64	0.77	21:52	
1,2,3,7,8-PeCDF	60.66	0.95	1.68	25:53	
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	75.48	1.89	1.31	30:37	
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	1	21.27	0.82
TOTAL PeCDD	1	54.03	3.19
TOTAL HxCDD	1	56.41	2.56
TOTAL TCDF	1	25.19	0.64
TOTAL PeCDF	1	60.66	0.95
TOTAL HxCDF	1	75.48	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: Lab Spike

LAB SPIKE ANALYSIS
QC REPORT

Ionics Project: 96-616
Ionics Sample: LS B2-014

Date extracted:	4/23/96	Sample size:	1 L	File:	F20751
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	42.34	84.7	0.86	21:52	-
13C12-2,3,7,8-TCDD	48.97	97.9	0.84	22:28	-
13C12-1,2,3,6,7,8-HxCDD	37.68	75.4	1.33	31:38	-
13C12-1,2,3,4,6,7,8-HpCDF	56.83	56.8	1.14	34:49	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	22.39	89.6	22:29	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.87	22:19	-
13C12-1,2,3,7,8,9-HxCDD	1.31	32:05	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-2 MS

MATRIX SPIKE ANALYSIS REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-2 MS

Date extracted:	4/23/96	Sample size:	1 L	File:	F20574
Date analyzed:	4/23/96	Matrix:	Water	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	24.79	0.82	0.75	22:28	
1,2,3,7,8-PeCDD	66.42	3.19	1.85	27:07	
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	60.91	2.56	1.29	31:38	
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	28.17	0.64	0.76	21:51	
1,2,3,7,8-PeCDF	69.94	0.95	1.68	25:53	
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	91.69	1.89	1.37	30:36	
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	1	24.79	0.82
TOTAL PeCDD	1	66.42	3.19
TOTAL HxCDD	1	60.91	2.56
TOTAL TCDF	1	28.17	0.64
TOTAL PeCDF	1	69.94	0.95
TOTAL HxCDF	1	91.69	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-2 MS

MATRIX SPIKE ANALYSIS
QC REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-2 MS

Date extracted:	4/23/96	Sample size:	1 L	File:	F20574
Date analyzed:	4/23/96	Matrix:	Water	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	36.64	73.3	0.86	21:50	-
13C12-2,3,7,8-TCDD	41.47	82.9	0.84	22:27	-
13C12-1,2,3,6,7,8-HxCDD	38.19	76.4	1.27	31:37	-
13C12-1,2,3,4,6,7,8-HpCDF	55.65	55.6	1.13	34:49	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	19.99	80.0	22:28	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.86	22:17	-
13C12-1,2,3,7,8,9-HxCDD	1.26	32:04	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055 | ***MATRIX SPIKE ANALYSIS REPORT*** | **Ionics Project: 96-616**
Client Sample: 9604055-3 MSD | **Ionics Sample: 7-16-3 MSD**

Date extracted:	4/23/96	Sample size:	1.02 L	File:	F20755
Date analyzed:	4/23/96	Matrix:	Water	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	23.74	0.82	0.70	22:30	
1,2,3,7,8-PeCDD	59.52	3.19	1.82	27:08	
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	60.91	2.56	1.31	31:39	
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	26.26	0.64	0.76	21:53	
1,2,3,7,8-PeCDF	68.90	0.95	1.72	25:54	
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	85.39	1.89	1.38	30:38	
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	1	23.74	0.82
TOTAL PeCDD	1	59.52	3.19
TOTAL HxCDD	1	60.91	2.56
TOTAL TCDF	1	26.26	0.64
TOTAL PeCDF	1	68.90	0.95
TOTAL HxCDF	1	85.39	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604055
Client Sample: 9604055-3 MSD

MATRIX SPIKE ANALYSIS
QC REPORT

Ionics Project: 96-616
Ionics Sample: 7-16-3 MSD

Date extracted:	4/23/96	Sample size:	1.02 L	File:	F20755
Date analyzed:	4/23/96	Matrix:	Water	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	37.01	75.5	0.85	21:52	-
13C12-2,3,7,8-TCDD	42.39	86.5	0.84	22:29	-
13C12-1,2,3,6,7,8-HxCDD	37.18	75.8	1.34	31:39	-
13C12-1,2,3,4,6,7,8-HpCDF	63.38	64.6	1.12	34:51	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	19.96	81.4	22:30	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.88	22:19	-
13C12-1,2,3,7,8,9-HxCDD	1.25	32:07	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

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PERCENT DIFFERENCE
FOR
MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Specific analytes	9604055-2 MS		9604055-3 MSD		Percent Difference	Range
	Conc (ppb)	Rec (%)	Conc (ppb)	Rec (%)		
2,3,7,8-TCDD	24.79	99%	23.74	97%	2%	50
1,2,3,7,8-PeCDD	66.42	106%	59.52	97%	9%	50
1,2,3,4,7,8-HxCDD	ND	-	ND	-	-	50
1,2,3,6,7,8-HxCDD	60.91	97%	60.91	99%	2%	50
1,2,3,7,8,9-HxCDD	ND	-	ND	-	-	50
2,3,7,8-TCDF	28.17	113%	26.26	107%	5%	50
1,2,3,7,8-PeCDF	69.94	112%	68.90	112%	0%	50
2,3,4,7,8-PeCDF	ND	-	ND	-	-	50
1,2,3,4,7,8-HxCDF	ND	-	ND	-	-	50
1,2,3,6,7,8-HxCDF	91.69	147%	85.39	139%	5%	50
2,3,4,6,7,8-HxCDF	ND	-	ND	-	-	50
1,2,3,7,8,9-HxCDF	ND	-	ND	-	-	50

CHAIN-OF-CUSTODY RECORD

Houston, TX 77046

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4901 Hawkins NE, Suite C
Albuquerque, New Mexico 87109
505.345.3975
Fax 505.345.4107

Client:

Address:

Phone # :

Fax # :

Project Name: Phillips

Project #: 96041060

Project Manager: Scott Hallenbeck

Sampler:

Samples Cold? ☒ Yes ☐ No

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative HgCl2	Preservative HCl	Preservative Other	HEAL No.	BTEX + MTBE (602/8020)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015 MOD (Gas/Diesel)	THP (Method 418.1)	8010/8020 Volatiles	EDB (Method 504)	EDC	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	Basic Soil Test (PH, EC, SAR, PSA)	8080 Pesticides / PCB's	8260 Appendix 9			Air Bubbles or Headspace (Y or N)
4/17/10	1115	H2O	MW-2	1 Liter																					
4/16/10	0900	H2O	Duplicate	1 Liter																					
4/16/10	1330	H2O	MW-4	1 Liter																					
4/16/10	1515	H2O	MW-1	1 Liter																					

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4/17/10	1425	[signature]	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

IONICS INTERNATIONAL PROJECT 96-620
CLIENT PROJECT 9604060

Client ID	Lab ID	File name
Method Blank	DFBLK B2-014	F20752
Lab Spike	LS B2-014	F20751
9604060-1	7-21-1	F20773
9604060-2	7-20-1	F20768
9604060-3	7-20-2	F20772
9604060-4	7-21-2	F20774

Stephen R. Missler, Ph.D.
Lab Manager

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SUMMARY REPORT

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-1

SAMPLE ANALYSIS SUMMARY REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-1

Specific analytes	Sample		Blank	Lab spike		
	Conc (ppt)	DL (ppt)	Conc (ppt)	Conc (ppt)	Rec (%)	QC limits
2,3,7,8-TCDD	ND	0.82	ND	21.27	85%	50-150
1,2,3,7,8-PeCDD	ND	3.19	ND	54.03	86%	50-150
1,2,3,4,7,8-HxCDD	ND	2.56	ND	ND	-	-
1,2,3,6,7,8-HxCDD	ND	2.56	ND	56.41	90%	50-150
1,2,3,7,8,9-HxCDD	ND	2.56	ND	ND	-	-
2,3,7,8-TCDF	ND	0.64	ND	25.19	101%	50-150
1,2,3,7,8-PeCDF	ND	0.95	ND	60.66	97%	50-150
2,3,4,7,8-PeCDF	ND	0.95	ND	ND	-	-
1,2,3,4,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,6,7,8-HxCDF	ND	1.89	ND	75.48	121%	50-150
2,3,4,6,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,7,8,9-HxCDF	ND	1.89	ND	ND	-	-

Total analytes*	Number	Conc (ppt)	DL (ppt)	
TOTAL TCDD	0	ND	0.82	**Total dioxins/furans**
TOTAL PeCDD	0	ND	3.19	
TOTAL HxCDD	0	ND	2.56	**ND**
TOTAL TCDF	0	ND	0.64	**2,3,7,8-TCDD toxicity equivalent**
TOTAL PeCDF	0	ND	0.95	
TOTAL HxCDF	0	ND	1.89	**ND**

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-2

SAMPLE ANALYSIS SUMMARY REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-1

Specific analytes	Sample		Blank	Lab spike		
	Conc (ppt)	DL (ppt)	Conc (ppt)	Conc (ppt)	Rec (%)	QC limits
2,3,7,8-TCDD	ND	0.82	ND	21.27	85%	50-150
1,2,3,7,8-PeCDD	ND	3.19	ND	54.03	86%	50-150
1,2,3,4,7,8-HxCDD	ND	2.56	ND	ND	-	-
1,2,3,6,7,8-HxCDD	ND	2.56	ND	56.41	90%	50-150
1,2,3,7,8,9-HxCDD	ND	2.56	ND	ND	-	-
2,3,7,8-TCDF	ND	0.64	ND	25.19	101%	50-150
1,2,3,7,8-PeCDF	ND	0.95	ND	60.66	97%	50-150
2,3,4,7,8-PeCDF	ND	0.95	ND	ND	-	-
1,2,3,4,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,6,7,8-HxCDF	ND	1.89	ND	75.48	121%	50-150
2,3,4,6,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,7,8,9-HxCDF	ND	1.89	ND	ND	-	-

Total analytes*	Number	Conc (ppt)	DL (ppt)	
TOTAL TCDD	0	ND	0.82	**Total dioxins/furans**
TOTAL PeCDD	0	ND	3.19	
TOTAL HxCDD	0	ND	2.56	**ND**
TOTAL TCDF	0	ND	0.64	**2,3,7,8-TCDD toxicity equivalent**
TOTAL PeCDF	0	ND	0.95	
TOTAL HxCDF	0	ND	1.89	**ND**

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-3

SAMPLE ANALYSIS SUMMARY REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-2

Specific analytes	Sample		Blank	Lab spike		
	Conc (ppt)	DL (ppt)	Conc (ppt)	Conc (ppt)	Rec (%)	QC limits
2,3,7,8-TCDD	ND	0.82	ND	21.27	85%	50-150
1,2,3,7,8-PeCDD	ND	3.19	ND	54.03	86%	50-150
1,2,3,4,7,8-HxCDD	ND	2.56	ND	ND	-	-
1,2,3,6,7,8-HxCDD	ND	2.56	ND	56.41	90%	50-150
1,2,3,7,8,9-HxCDD	ND	2.56	ND	ND	-	-
2,3,7,8-TCDF	ND	0.64	ND	25.19	101%	50-150
1,2,3,7,8-PeCDF	ND	0.95	ND	60.66	97%	50-150
2,3,4,7,8-PeCDF	ND	0.95	ND	ND	-	-
1,2,3,4,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,6,7,8-HxCDF	ND	1.89	ND	75.48	121%	50-150
2,3,4,6,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,7,8,9-HxCDF	ND	1.89	ND	ND	-	-

Total analytes*	Number	Conc (ppt)	DL (ppt)	
TOTAL TCDD	0	ND	0.82	**Total dioxins/furans**
TOTAL PeCDD	0	ND	3.19	
TOTAL HxCDD	0	ND	2.56	**ND**
TOTAL TCDF	0	ND	0.64	**2,3,7,8-TCDD toxicity equivalent**
TOTAL PeCDF	0	ND	0.95	
TOTAL HxCDF	0	ND	1.89	**ND**

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-4

SAMPLE ANALYSIS SUMMARY REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-2

Specific analytes	Sample		Blank	Lab spike		
	Conc (ppt)	DL (ppt)	Conc (ppt)	Conc (ppt)	Rec (%)	QC limits
2,3,7,8-TCDD	ND	0.82	ND	21.27	85%	50-150
1,2,3,7,8-PeCDD	ND	3.19	ND	54.03	86%	50-150
1,2,3,4,7,8-HxCDD	ND	2.56	ND	ND	-	-
1,2,3,6,7,8-HxCDD	ND	2.56	ND	56.41	90%	50-150
1,2,3,7,8,9-HxCDD	ND	2.56	ND	ND	-	-
2,3,7,8-TCDF	ND	0.64	ND	25.19	101%	50-150
1,2,3,7,8-PeCDF	ND	0.95	ND	60.66	97%	50-150
2,3,4,7,8-PeCDF	ND	0.95	ND	ND	-	-
1,2,3,4,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,6,7,8-HxCDF	ND	1.89	ND	75.48	121%	50-150
2,3,4,6,7,8-HxCDF	ND	1.89	ND	ND	-	-
1,2,3,7,8,9-HxCDF	ND	1.89	ND	ND	-	-

Total analytes*	Number	Conc (ppt)	DL (ppt)	
TOTAL TCDD	0	ND	0.82	**Total dioxins/furans**
TOTAL PeCDD	0	ND	3.19	
TOTAL HxCDD	0	ND	2.56	**ND**
TOTAL TCDF	0	ND	0.64	**2,3,7,8-TCDD toxicity equivalent**
TOTAL PeCDF	0	ND	0.95	
TOTAL HxCDF	0	ND	1.89	**ND**

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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ANALYSIS REPORT

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-1

SAMPLE ANALYSIS REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-1

Date collected:	4/15/96	Sample size:	1 L	File:	F20773
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-1

SAMPLE ANALYSIS
QC REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-1

Date collected:	4/15/96	Sample size:	1 L	File:	F20773
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	41.45	82.9	0.80	21:58	-
13C12-2,3,7,8-TCDD	39.86	79.7	0.87	22:36	-
13C12-1,2,3,6,7,8-HxCDD	27.72	55.4	1.27	31:42	-
13C12-1,2,3,4,6,7,8-HpCDF	46.63	46.6	1.26	34:54	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	18.61	74.5	22:36	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.91	22:25	-
13C12-1,2,3,7,8,9-HxCDD	1.14	32:10	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-2

SAMPLE ANALYSIS REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-1

Date collected:	4/16/96	Sample size:	1 L	File:	F20768
Date received:	4/18/96	Matrix:	Water	Ret check:	F20763
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20764
Date analyzed:	4/26/96		Duplicate	Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-2

SAMPLE ANALYSIS
QC REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-1

Date collected:	4/16/96	Sample size:	1 L	File:	F20768
Date received:	4/18/96	Matrix:	Water	Ret check:	F20763
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20764
Date analyzed:	4/26/96			Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	38.44	76.9	0.78	22:00	-
13C12-2,3,7,8-TCDD	40.00	80.0	0.81	22:37	-
13C12-1,2,3,6,7,8-HxCDD	36.87	73.7	1.19	31:42	-
13C12-1,2,3,4,6,7,8-HpCDF	42.89	42.9	1.10	34:55	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	20.03	80.1	22:38	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.85	22:27	-
13C12-1,2,3,7,8,9-HxCDD	1.20	32:10	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-3

SAMPLE ANALYSIS REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20772
Date received:	4/18/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-4	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-3

SAMPLE ANALYSIS
QC REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20772
Date received:	4/18/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-4	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	36.18	73.8	0.84	21:58	-
13C12-2,3,7,8-TCDD	38.93	79.4	0.83	22:34	-
13C12-1,2,3,6,7,8-HxCDD	40.99	83.6	1.13	31:19	-
13C12-1,2,3,4,6,7,8-HpCDF	73.87	75.4	1.19	34:30	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	21.37	87.2	22:35	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.89	22:24	-
13C12-1,2,3,7,8,9-HxCDD	1.17	31:46	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

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Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-4

SAMPLE ANALYSIS REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20774
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-1	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-4

SAMPLE ANALYSIS
QC REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20774
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-1	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	35.45	72.3	0.83	21:55	-
13C12-2,3,7,8-TCDD	40.30	82.2	0.83	22:31	-
13C12-1,2,3,6,7,8-HxCDD	32.51	66.3	1.25	31:39	-
13C12-1,2,3,4,6,7,8-HpCDF	61.21	62.4	1.23	34:51	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	19.76	80.6	22:32	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.87	22:21	-
13C12-1,2,3,7,8,9-HxCDD	1.17	32:06	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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TOXICITY EQUIVALENCE REPORT

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-1

SAMPLE ANALYSIS
TEF REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-1

Date collected:	4/15/96	Sample size:	1 L	File:	F20773
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)		TEF		TEQ (ppt)
2,3,7,8-TCDD	ND	x	1.000	=	-
1,2,3,7,8-PeCDD	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDD	ND	x	0.100	=	-
2,3,7,8-TCDF	ND	x	0.100	=	-
1,2,3,7,8-PeCDF	ND	x	0.050	=	-
2,3,4,7,8-PeCDF	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDF	ND	x	0.100	=	-
2,3,4,6,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDF	ND	x	0.100	=	-

Total 2,3,7,8-TCDD toxicity equivalent (1989 ITEF): ND

Not all of the analytes have the same degree of toxicity, so it is convenient to express the toxicity of a sample as its equivalent 2,3,7,8-TCDD content. The concentration of each analyte is multiplied by the appropriate Toxicity Equivalence Factor (TEF), and the individual results of these calculations are summed to afford the 2,3,7,8-TCDD toxicity equivalent.

The 1989 International Toxicity Equivalence Factors are employed during these calculations.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-2

SAMPLE ANALYSIS
TEF REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-1

Date collected:	4/16/96	Sample size:	1 L	File:	F20768
Date received:	4/18/96	Matrix:	Water	Ret check:	F20763
Date extracted:	4/23/96	Origin:	MW-2	Daily cal:	F20764
Date analyzed:	4/26/96			Initial cal:	F052595

Specific analytes	Conc (ppt)		TEF		TEQ (ppt)
2,3,7,8-TCDD	ND	x	1.000	=	-
1,2,3,7,8-PeCDD	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDD	ND	x	0.100	=	-
2,3,7,8-TCDF	ND	x	0.100	=	-
1,2,3,7,8-PeCDF	ND	x	0.050	=	-
2,3,4,7,8-PeCDF	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDF	ND	x	0.100	=	-
2,3,4,6,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDF	ND	x	0.100	=	-

Total 2,3,7,8-TCDD toxicity equivalent (1989 ITEF): ND

Not all of the analytes have the same degree of toxicity, so it is convenient to express the toxicity of a sample as its equivalent 2,3,7,8-TCDD content. The concentration of each analyte is multiplied by the appropriate Toxicity Equivalence Factor (TEF), and the individual results of these calculations are summed to afford the 2,3,7,8-TCDD toxicity equivalent.

The 1989 International Toxicity Equivalence Factors are employed during these calculations.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-3

SAMPLE ANALYSIS
TEF REPORT

Ionics Project: 96-620
Ionics Sample: 7-20-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20772
Date received:	4/18/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-4	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)		TEF		TEQ (ppt)
2,3,7,8-TCDD	ND	x	1.000	=	-
1,2,3,7,8-PeCDD	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDD	ND	x	0.100	=	-
2,3,7,8-TCDF	ND	x	0.100	=	-
1,2,3,7,8-PeCDF	ND	x	0.050	=	-
2,3,4,7,8-PeCDF	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDF	ND	x	0.100	=	-
2,3,4,6,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDF	ND	x	0.100	=	-

Total 2,3,7,8-TCDD toxicity equivalent (1989 ITEF): ND

Not all of the analytes have the same degree of toxicity, so it is convenient to express the toxicity of a sample as its equivalent 2,3,7,8-TCDD content. The concentration of each analyte is multiplied by the appropriate Toxicity Equivalence Factor (TEF), and the individual results of these calculations are summed to afford the 2,3,7,8-TCDD toxicity equivalent.

The 1989 International Toxicity Equivalence Factors are employed during these calculations.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: 9604060-4

SAMPLE ANALYSIS
TEF REPORT

Ionics Project: 96-621
Ionics Sample: 7-21-2

Date collected:	4/16/96	Sample size:	1.02 L	File:	F20774
Date received:	4/19/96	Matrix:	Water	Ret check:	F20770
Date extracted:	4/23/96	Origin:	MW-1	Daily cal:	F20771
Date analyzed:	4/29/96			Initial cal:	F052595

Specific analytes	Conc (ppt)		TEF		TEQ (ppt)
2,3,7,8-TCDD	ND	x	1.000	=	-
1,2,3,7,8-PeCDD	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDD	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDD	ND	x	0.100	=	-
2,3,7,8-TCDF	ND	x	0.100	=	-
1,2,3,7,8-PeCDF	ND	x	0.050	=	-
2,3,4,7,8-PeCDF	ND	x	0.500	=	-
1,2,3,4,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,6,7,8-HxCDF	ND	x	0.100	=	-
2,3,4,6,7,8-HxCDF	ND	x	0.100	=	-
1,2,3,7,8,9-HxCDF	ND	x	0.100	=	-

Total 2,3,7,8-TCDD toxicity equivalent (1989 ITEF): ND

Not all of the analytes have the same degree of toxicity, so it is convenient to express the toxicity of a sample as its equivalent 2,3,7,8-TCDD content. The concentration of each analyte is multiplied by the appropriate Toxicity Equivalence Factor (TEF), and the individual results of these calculations are summed to afford the 2,3,7,8-TCDD toxicity equivalent.

The 1989 International Toxicity Equivalence Factors are employed during these calculations.

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QUALITY ASSURANCE DATA

HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060 | ***BLANK ANALYSIS REPORT*** | **Ionics Project: 96-621**
Client Sample: Method Blank | **Ionics Sample: DFBLK B2-014**

Date extracted:	4/23/96	Sample size:	1 L	File:	F20752
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	ND	0.82	-		U
1,2,3,7,8-PeCDD	ND	3.19	-		U
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	ND	2.56	-		U
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	ND	0.64	-		U
1,2,3,7,8-PeCDF	ND	0.95	-		U
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	ND	1.89	-		U
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	0	ND	0.82
TOTAL PeCDD	0	ND	3.19
TOTAL HxCDD	0	ND	2.56
TOTAL TCDF	0	ND	0.64
TOTAL PeCDF	0	ND	0.95
TOTAL HxCDF	0	ND	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: Method Blank

BLANK ANALYSIS
QC REPORT

Ionics Project: 96-621
Ionics Sample: DFBLK B2-014

Date extracted:	4/23/96	Sample size:	1 L	File:	F20752
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	36.14	72.3	0.86	21:48	-
13C12-2,3,7,8-TCDD	40.62	81.2	0.83	22:26	-
13C12-1,2,3,6,7,8-HxCDD	34.72	69.4	1.31	31:37	-
13C12-1,2,3,4,6,7,8-HpCDF	62.05	62.1	1.13	34:49	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	16.93	67.7	22:27	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.87	22:17	-
13C12-1,2,3,7,8,9-HxCDD	1.31	32:03	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: Lab Spike

LAB SPIKE ANALYSIS REPORT

Ionics Project: 96-621
Ionics Sample: LS B2-014

Date extracted:	4/23/96	Sample size:	1 L	File:	F20751
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Specific analytes	Conc (ppt)	DL (ppt)	Ratio	RT (min)	Flags
2,3,7,8-TCDD	21.27	0.82	0.76	22:29	
1,2,3,7,8-PeCDD	54.03	3.19	1.76	27:07	
1,2,3,4,7,8-HxCDD	ND	2.56	-		U
1,2,3,6,7,8-HxCDD	56.41	2.56	1.33	31:38	
1,2,3,7,8,9-HxCDD	ND	2.56	-		U
2,3,7,8-TCDF	25.19	0.64	0.77	21:52	
1,2,3,7,8-PeCDF	60.66	0.95	1.68	25:53	
2,3,4,7,8-PeCDF	ND	0.95	-		U
1,2,3,4,7,8-HxCDF	ND	1.89	-		U
1,2,3,6,7,8-HxCDF	75.48	1.89	1.31	30:37	
2,3,4,6,7,8-HxCDF	ND	1.89	-		U
1,2,3,7,8,9-HxCDF	ND	1.89	-		U

Total analytes*	Number	Conc (ppt)	DL (ppt)
TOTAL TCDD	1	21.27	0.82
TOTAL PeCDD	1	54.03	3.19
TOTAL HxCDD	1	56.41	2.56
TOTAL TCDF	1	25.19	0.64
TOTAL PeCDF	1	60.66	0.95
TOTAL HxCDF	1	75.48	1.89

*Includes non-specific analytes, in addition to those chlorinated at carbon atoms 2, 3, 7, and 8.

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HALL ENVIRONMENTAL

ANALYSIS OF POLYCHLORINATED DIOXINS/FURANS BY METHOD 8280

Client Project: 9604060
Client Sample: Lab Spike

LAB SPIKE ANALYSIS
QC REPORT

Ionics Project: 96-621
Ionics Sample: LS B2-014

Date extracted:	4/23/96	Sample size:	1 L	File:	F20751
Date analyzed:	4/23/96	Matrix:	Liquid	Ret check:	F20749
				Daily cal:	F20750
				Initial cal:	F052595

Internal standards	Conc (ppt)	% Rec	Ratio	RT (min)	Flags
13C12-2,3,7,8-TCDF	42.34	84.7	0.86	21:52	-
13C12-2,3,7,8-TCDD	48.97	97.9	0.84	22:28	-
13C12-1,2,3,6,7,8-HxCDD	37.68	75.4	1.33	31:38	-
13C12-1,2,3,4,6,7,8-HpCDF	56.83	56.8	1.14	34:49	-

Cleanup standard	Conc (ppt)	% Rec	RT (min)	Flags
37Cl4-2,3,7,8-TCDD	22.39	89.6	22:29	-

Recovery standards	Ratio	RT (min)	Flags
13C12-1,2,3,4-TCDD	0.87	22:19	-
13C12-1,2,3,7,8,9-HxCDD	1.31	32:05	-

Recovery standards are added to the sample extract immediately prior to analysis by GC-MS. Recoveries of the cleanup and internal standards are determined by comparing peak areas corresponding to those standards with the peak areas corresponding to the recovery standards.

The cleanup standard is added to the sample extract prior to initiation of cleanup procedures. Loss of cleanup standard reflects losses occuring during cleanup. Generally, greater losses of cleanup standard occur when exhaustive cleanup techniques are employed.

Internal standards are added to the sample prior to extraction. Losses of internal standards reflect losses occuring during both extraction and cleanup. It is difficult to recover the internal standard (and the analytes) from some sample matrices. However, since the data reported have been corrected for recoveries, those data are accurate. Severe losses of internal standards may result in impaired detection limits.

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