ECOLOGY AND ENVIRONMENT, INC.

REGION VI

MEMORANDUM

TO: Keith Bradley, RPO Region VI

FROM: Larry Landry, FIT-Chemist

THRU: K.H. Malone Jr., RPM

X REF IN SA Vol. 1

DATE: October 2, 1985

SUBJ: Sampling Inspection at the Centralized Tie Plant, Somerville, TX. (TX10448)
TDD# R-6-8405-19

TXD000778621

On October 24 and 25, 1984, the FIT (Team Leader - L. Landry and Team Members M. Levine, H. Ray, R. Kratzke, A. Chriss, S. Cantor, A. Newton and L. Ross) performed a sampling inspection at the Centralized Tie Plant, Somerville, TX. The Centralized Tie Plant has been in operation since 1897. The facility uses creosote to treat cross ties, bridge timbers, crossing plates and other timber products for railroad service. The wood is placed in pressurized cylinders with creosote oil and heated. The facility has active waste disposal areas which are covered under RCRA. There are also inactive waste lagoons on-site. These are referred to as lagoons A, B, C, D and E (See attachments 1, 2 and photos 1-7) and lagoon F that has been filled with soil and other earth material.

Samples were collected from lagoons A-E (Stations 1-5); Monitoring wells GW-12 (Station 8); GW-3 (Station 9); GW-4 (Station 10); GW-5 (Station 11); GW-6 (Station 12); GW-7 (Station 13); GW-15 (Station 14); GW-20 (Station 15); GW-2 (Station 16); GW-14 (Station 17); upstream and downstream-Thompson Creek (Stations 6 and 7) and the surface soil in the area that was filled in above lagoon F (See photos 1-18 and attachment 2). Monitoring well GW-1, which was to be sampled, was discovered to have a broken casing. Therefore monitoring well GW-12 was substituted for it.

From the organic analysis it appears there is possible subsurface migration from lagoons D & E (Stations 4 and 5) to monitoring well GW-5 (Station 11). Numerous polycyclic hydrocarbons (i.e. naphthalene, phenanthrene, fluoranthene, pyrene, and other organic compounds) appeared in the Lagoon D analysis as well as in the GW-5 monitoring well analysis (See attached organic summary sheets). There appears to be no surface runoff contamination from the samples analyzed and taken from Thompson Creek (upstream and downstream) compared to the samples taken on site.

From the inorganic analysis it is difficult to document migration from the lagoons because the high hazard sample data obtained from lagoons D, E, and monitoring wells GW-2 (Station 16) and GW-14 (Station 17) are highly

Reviewed by 6AW-SC date 11/21/85

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questionable and were not acceptable to the Environmental Protection Agency Houston Branch Laboratory. The data was not acceptable due to some of the spike sample recoveries being out of control. Two of the duplicates were out of control and some laboratory control sample recoveries were <50% (indicative of severe laboratory or method deficiencies). A copy of the CLP data review (Case 3449-SAS1344F) sheets from the EPA Houston Lab are attached.

Possible subsurface migration of arsenic from lagoons A & B appears to exist at GW-7 (Station 13). Arsenic was detected in lagoon A-Station 1 (2680ppb) and lagoon B-Station 2 (2320 ppb) and also at GW-7 (48 ppb). However, this amount of arsenic (i.e. 48 ppb) is within the established Primary Drinking Water Standard. Although arsenic was not detected in any of the other wells, it appears from the inorganic analysis that there were possible elevated levels of other metals found in the monitoring wells sampled.

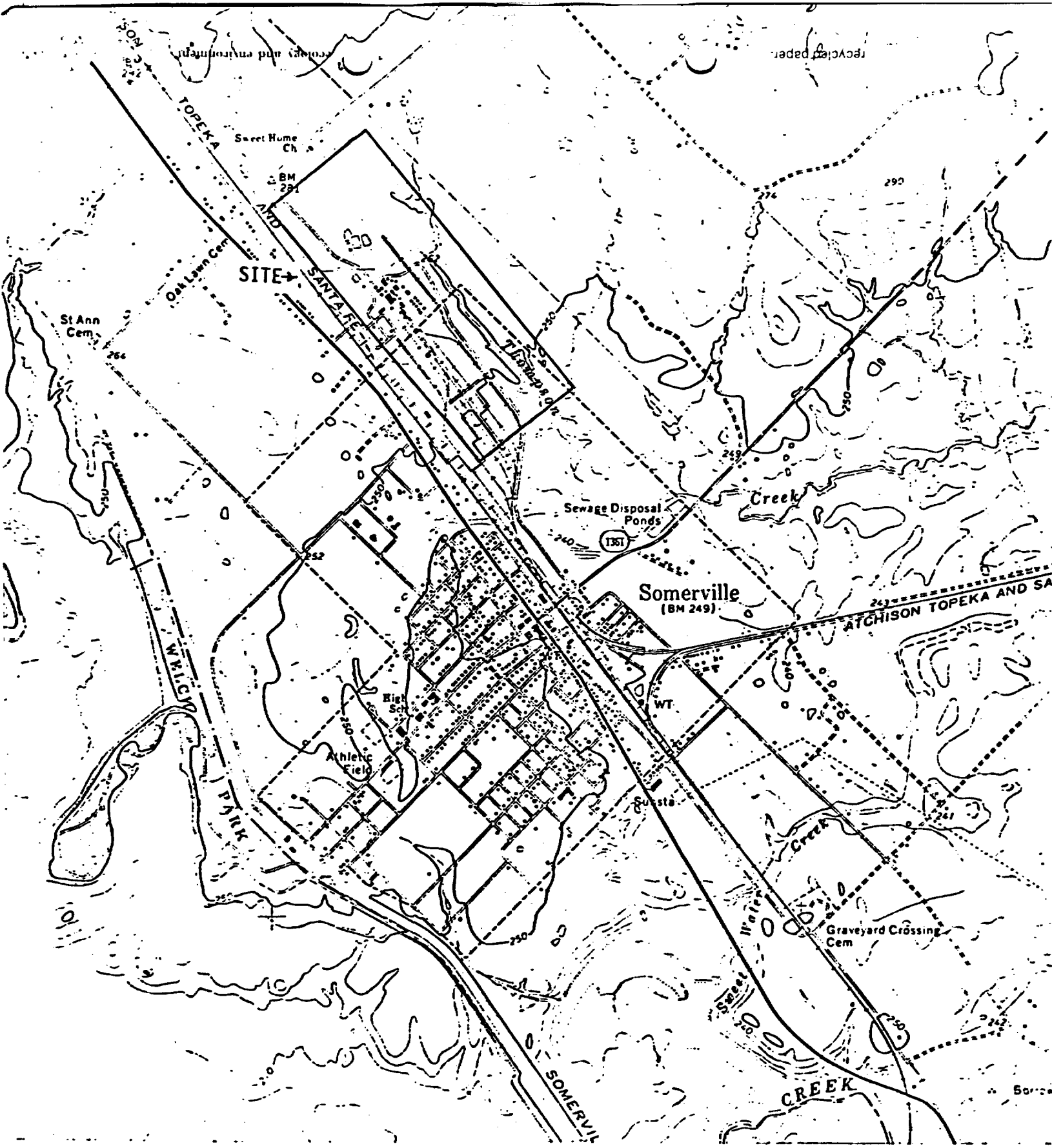
The possible elevated metals are shown below:

Sample Location	Metals
Station 9 (GW-3)	Aluminum, chromium, copper, lead, nickel, vanadium and zinc.
Station 10 (GW-4)	Nickel, vanadium and zinc.
Station 11 (GW-5)	Aluminum, beryllium, cobalt, iron, nickel, vanadium and zinc.
Station 12 (GW-6)	Beryllium, cadmium, cobalt, nickel and zinc.
Station 13 (GW-7)	Aluminum, arsenic, beryllium, chromium, iron, lead, nickel, vanadium and zinc.
Station 14 (GW-15)	Antimony and silver.
Station 15 (GW-20)	Antimony, beryllium, cadmium, cobalt, copper, iron, nickel, vanadium and zinc.

It appears that the water from the monitoring wells is very salty and hard due to the high levels of potassium, sodium, calcium and magnesium detected. It is difficult to determine if this phenomena occurs naturally or is a result of migration of these elements from lagoons A-E.

Because of the potential migration of wastes in the groundwater and the unacceptability of a portion of the data package, the FIT recommends that the site be resampled. Samples should be analyzed for all parameters because of the time lapse since the initial inspection.

The resampled locations (See attachment 2) should include Station 10 (GW-4); Station 11 (GW-5); Station 15 (GW-20); Station 8 (GW-12) and two other wells (GW-21 and P-12) located on-site. Monitoring wells GW-21 and P-12 were not sampled initially because they were not included in the EPA task request. Also, liquid and sludge samples should be collected from Stations 1 thru 5 (Lagoons A-E).



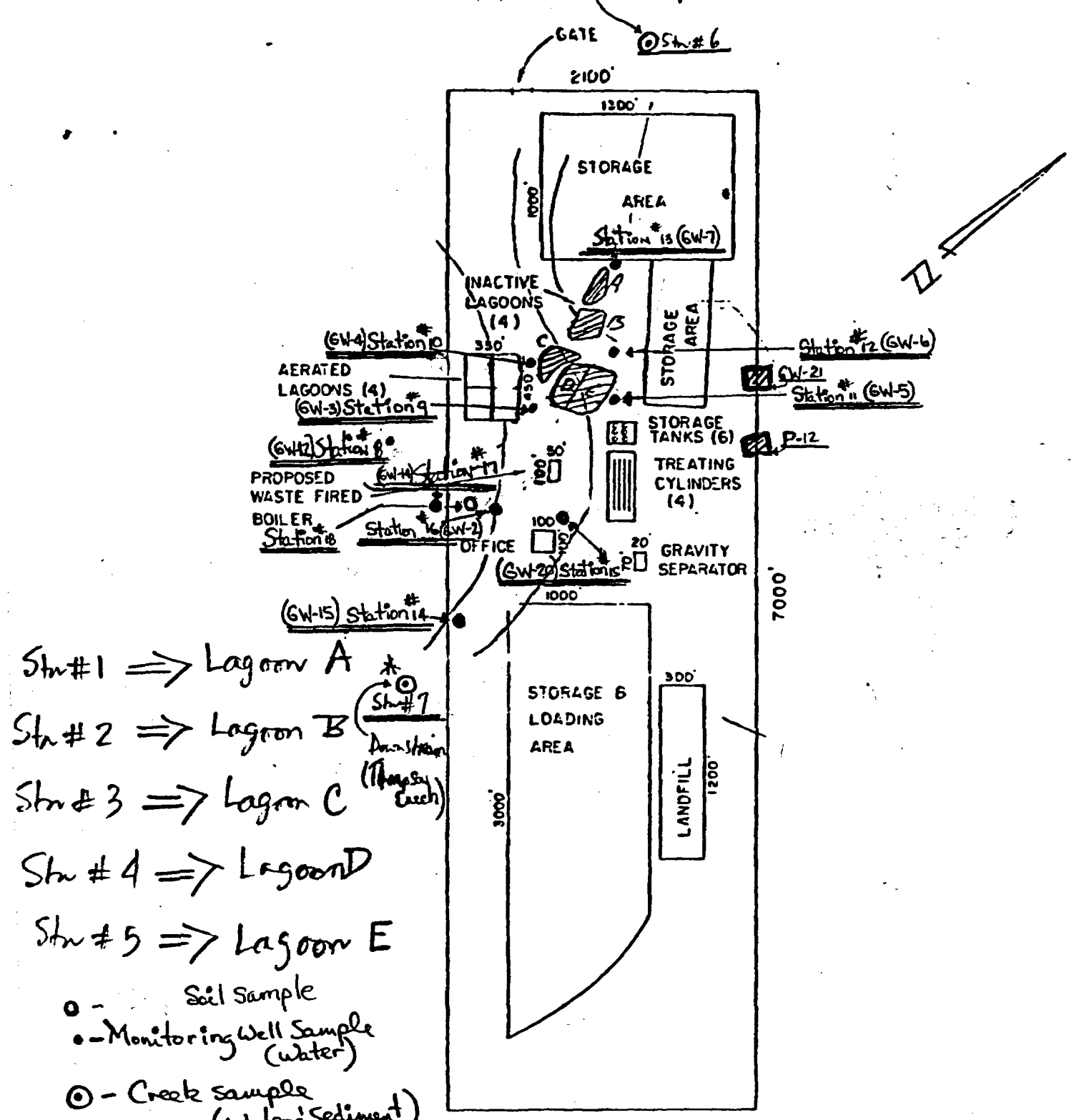
SITE LOCATION MAP
FOR CENTRALIZED TIE PLANT
ATTACHMENT 1

Scale: 1 inch= 2000 Ft.

USGS 1971
Somerville, TX.

A.T. & S.F. CENTRALIZED TIE PLANT SAMPLE LOCATIONS

ATTACHMENT TWO



Stn #1 ⇒ Lagoon A

Stn #2 ⇒ Lagoon B

Stn #3 ⇒ Lagoon C

Stn #4 ⇒ Lagoon D

Stn #5 ⇒ Lagoon E

o - Soil Sample

• - Monitoring Well Sample (water)

⊙ - Creek sample (water & Sediment)

▨ - Other wells to be sampled on the proposed resampling mission

* off site

Note: Down stream sample must be taken above City discharge point into Thompson Creek, but off the company property

A.T. & S.F. CENTRALIZED TIE PLANT

SCALE 1" = 1000'

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant

TX10448

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	FA048	FA049	FA050	FA051	FA052	FA053	FA054	FA055	FA056
Methylene chloride	VOA	1	6B	3JB	4JB	7B	7B	10B	4JB	5B	4JB
Chloroform	VOA	1	3J								
1,1,2,2-tetra chloro ethane	VOA	1	2J								
Ethylbenzene	VOA	1	5			27	4	5	4J	3J	
Tetrachloroethene	VOA	1			2J	2J	30	85	14	88	88
Benzene	VOA	1				5					
Toluene	VOA	1				22					
4-methyl-2-pentanone	VOA	2				4J					
Acetone	VOA	2			12				14B	11B	11B
2-butanone	VOA	2		4J		41B	28B	41B		17B	17B
Total xylenes	VOA	2	7			23	5	8	1J	29	31
Unknown 628	VOA	3	20J	18J	15J		41J		25J	30J	30J
Unknown 1031	VOA	3	10J				21J		17J		
Unknown 1245	VOA	3	30J	27J							
Unknown 1135	VOA	3				38J			17J		
Unknown 978	VOA	3					28J				
2-propenylbenzene	VOA	3				220J					
Bis(2-ethylhexyl)phthalate	ABN	1	4JB		6JB		2JB	2JB	2JB	2JB	2JB
Di-n-butylphthalate	ABN	1						2J	2J		
Naphthalene	ABN	1				12,000			160	6J	
Acenaphthene	ABN	1				5600					
4-nitrophenol	ABN	1				320J					
Dibenzofuran	ABN	1				4000			40		44
Fluorene	ABN	1				5200			58	6J	48
Phenanthrene	ABN	1				26,000			160	40	14J
Fluoranthene	ABN	1				11,000			40	28	38
Matrix Type			WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Station Number			06	07	10	11	09	12	15	19	08
Sample Station Location			ENTRANCE RD. ADJACENT TO R.R. TRACKS AT AQUADUCT	S.W. OF SEWAGE DISPOSAL POND 50' W.N. OF AQUADUCT	GW-4	GW-5	GW-3	GW-6	GW-20	RINSATE BLANK	GW-12

1. Priority Pollutant.
2. Specified Hazardous Substance.
3. Tentatively Identified.

B - The analyte is found in the lab blank.
J - Indicates an estimated value for tententatively identified compounds or for compounds found below detection limit.
P - Present in sample, but not reported by lab.

TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant

TX10488

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	FA048	FA049	FA050	FA051	FA052	FA053	FA054	FA055	FA056
Pyrene	ABN	1				2500			4J	4J	4J
Benzo (a) anthracene	ABN	1				760					2J
Benzo (k) fluoranthene	ABN	1				360					
2-methylnaphthalene	ABN	2				4100			40J	2J	
1-methylnaphthalene	ABN	3				1750J					
2-ethylnaphthalene	ABN	3				800J					
1,3-methylnaphthalene	ABN	3				800J					
2-methyl-1,1-biphenyl	ABN	3				510J					
4-methylphenanthrene	ABN	3				760J					
Unknown 1011	ABN	3							16J		
Unknown 1059	ABN	3							12J		15J
Unknown 1280	ABN	3								15J	
Unknown 697	ABN	3									15J
Unknown 1377	ABN	3				470J					
Unknown 1390	ABN	3				840J					
Unknown 1440	ABN	3				330J					
Unknown 1610	ABN	3				655J					
Unknown 1687	ABN	3				330J					
Unknown 1820	ABN	3				470J					
Unknown 1857	ABN	3				250J					
Unknown 1902	ABN	3				290J					
Unknown 1980	ABN	3				220J					
Sulfur	ABN	3							21J		
Matrix Type			WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Sample Station Number			06	07	10	11	09	12	15	19	08
Sample Station Location			ENTRANCE RD. ADJACENT TO R.R. TRACKS AT AQUADUCT	S.W. OF SEWAGE DISPOSAL POND 50' N.W. OF AQUADUCT	GW-4	GW-5	GW-3	GW-6	GW-20	RINSATE BLANK	GW-12

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CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant
TX10488

CONCENTRATIONS (ppb)

PARAMETERS				EPA SAMPLE NUMBERS								
Compound		Fraction	Class	FA057	FA058	FA065						
Pyrene		ABN	1		2J							
Benzo (a) anthracene		ABN	1									
Benzo (k) fluoranthene		ABN	1									
2-methylnaphthalene		ABN	2									
1-methylnaphthalene		ABN	3									
2-ethylnaphthalene		ABN	3									
1,3-methylnaphthalene		ABN	3									
2-methyl-1,1-biphenyl		ABN	3									
4-methylphenanthrene		ABN	3									
Unknown	1011	ABN	3	14J		20J						
Unknown	1059	ABN	3									
Unknown	1280	ABN	3									
Unknown	697	ABN	3	27J	45J	29J						
Unknown	1377	ABN	3									
Unknown	1390	ABN	3									
Unknown	1440	ABN	3									
Unknown	1610	ABN	3									
Unknown	1687	ABN	3									
Unknown	1820	ABN	3									
Unknown	1857	ABN	3		20J							
Unknown	1902	ABN	3									
Unknown	1980	ABN	3									
Sulfur		ABN	3									
Unknown	1190	ABN	3	14J								
Unknown	1230	ABN	3	14J		30J						
Unknown	824	VOA	3			10J						
Matrix Type				WATER	WATER	WATER						
Sample Station Number				14	13	20						
Sample Station Location				GW-15	GW-7	RINSATE BLANK						

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CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant
TX10488

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	FA057	FA958	FA065						
Methylene Chloride	VOA	1	8B	10B	9						
Chloroform	VOA	1									
1,1,2,2-tetrachloroethane	VOA	1									
Ethylbenzene	VOA	1		5	4						
Tetrachloroethene	VOA	1	34	85	4						
Benzene	VOA	1	1J	1J							
Toluene	VOA	1									
4-methyl-2-pentanone	VOA	2									
Acetone	VOA	2			16						
2-butanone	VOA	2	36B	39B	30B						
Total Xylenes	VOA	2	7	42	35						
Unknown 628	VOA	3									
Unknown 1031	VOA	3									
Unknown 1245	VOA	3									
Unknown 1135	VOA	3									
Unknown 978	VOA	3									
2-propnylbenzene	VOA	3									
Bis(2-ethylhexyl)phthalate	ABN	1	4JB	4JB	2JB						
Di-n-butylphthalate	ABN	1	2J	2J	2J						
Naphthalene	ABN	1									
Acenaphthene	ABN	1									
4-nitrophenol	ABN	1									
Dibenzofuran	ABN	1									
Fluorene	ABN	1									
Phenanthrene	ABN	1		8J							
Fluoranthene	ABN	1		6J	2J						
Matrix Type			WATER	WATER	WATER						
Sample Station Number			14	13	20						
Sample Station Location			GW-15	GW-7	RINSATE BLANK						

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TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant
TX10448

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	FA059	FA062	FA063						
Methylene chloride	VOA	1			5J						
Acetone	VOA	1	15								
2-butanone	VOA	1	10JB	10JB	10JB						
Benzene	VOA	1	5J								
Toluene	VOA	1	5JB		5JB						
Chlorobenzene	VOA	1		5J	5J						
Ethylbenzene	VOA	1	5J								
Styrene	VOA	1	5J								
Total Xylenes	VOA	2	11								
Fluoranthene	ABN	1	51		60						
Pyrene	ABN	1	20J		48						
Benzo (a) anthracene	ABN	1	20J								
2-propenylidene cyclobutene	ABN	3	38J								
Tetrachloroethene	ABN	3	11J								
5-methyl-2-hexanone	ABN	3	60J								
1(2H)-isoquinolinone	ABN	3	41J								
Unknown 206	ABN	3		30J	20J						
Unknown 1088	ABN	3	82J								
Unknown 1191	ABN	3	56J								
Unknown 1195	ABN	3	40J								
Unknown 1552	ABN	3	39J								
Unknown 1586	ABN	3	11J								
Unknown 1621	ABN	3	54J								
Matrix Type			WATER	WATER	WATER						
Sample Station Number			01	02	03						
Sample Station Location			LAGOON A	LAGOON B	LAGOON C						

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TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	FA060	FA061	FA064						
Methylene chloride	VOA	1	500B	600B	100B						
Acetone	VOA	1	1200	260	120						
Chloroform	VOA	1	26JB	35JB	69B						
2-butanone	VOA	1	52JB	71B	14JB						
3[illegible]ene	VOA	1	26JB	35B	7JB						
5-(acetyloxy)-2-pentanone	ABN	3	1500J	1000J	1000J						
Unknown 97	ABN	3	470J		200J						
Unknown 197	ABN	3	55000J	50000J	30000J						
Unknown 207	ABN	3		600J	400J						
Unknown 294	ABN	3	1400J	1000J	1000J						
Unknwon 398	ABN	3		600J							
Unknown 1489	ABN	3			7000J						
Matrix Type			SOIL	SOIL	SOIL						
Sample Station Number			06	07	18						
Sample Station Location			ENTRANCE RD ADJACENT TO R.R. TRACKS AT AQUADUCT	S.W. OF SEWAGE DISPOSAL POND 50' N.W. OF AQUADUCT	300' S.E. FROM ASPIRATION POND #1, ABOVE LAGOON F						

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TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant
TX10488

CONCENTRATIONS (ppb)

PARAMETERS			EPA SAMPLE NUMBERS								
Compound	Fraction	Class	F5144	F5145	F5146	F5147					
Analyzed for											
Pesticide/PCB'S but none											
were found											
[illegible]hylphthalate	ABN	1	200000J		200000J						
Di-n-butyl phthalate	ABN	1	200000J		200000J	200000J					
Unknown 350	ABN	3	160000J		140000J	28000J					
Naphthalene	ABN	1		1400000J							
2-methylnaphthalene	ABN	2		1400000J							
Acenaphthene	ABN	1		1400000J							
Dibenzofuran	ABN	1		1400000J							
Fluorene	ABN	1		1400000J							
Phenanthrene	ABN	1		3000000J							
Anthracene	ABN	1		1400000J							
Fluoranthene	ABN	1		1900000							
Pyrene	ABN	1		1400000J							
Benzo (a) anthracene	ABN	1		1400000J							
Chrysene	ABN	1		1400000J							
Benzo (b) fluoranthene	ABN	1		1400000J							
1-methylnaphthalene	ABN	3		410000J							
Unknown hydrocarbon 1788	ABN	3		710000J							
Unknown hydrocarbon 1835	ABN	3		700000J							
Unknown hydrocarbon 1689	ABN	3		680000J							
Unknown hydrocarbon 1637	ABN	3		670000J							
Unknown hydrocarbon 1739	ABN	3		650000J							
Matrix Type			LIQUID	SLUDGE	LIQUID	LIQUID					
Sample Station Number			05	04	16	17					
Sample Station Location			LAGOON E	LAGOON D	GW-2	GW-14					

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TABLE II. ORGANIC ANALYSIS SUMMARY

CASE NUMBER: 3449

SITE NAME/CODE: Centralized Tie Plant
TX10488

CONCENTRATIONS (ppb)

PARAMETERS				EPA SAMPLE NUMBERS								
Compound		Fraction	Class	F5144	F5145	F5146	F5147					
Unknown hydrocarbon	1582	ABN	3		630000J							
2-methylphenanthrene		ABN	3		360000J							
Unknown hydrocarbon	1937	ABN	3		810000J							
Unknown hydrocarbon	1883	ABN	3		770000J							
Unknown hydrocarbon	1525	ABN	3		300000J							
Unknown hydrocarbon	1997	ABN	3		600000J							
1-methylpyrene		ABN	3		330000J							
Unknown hydrocarbon	2066	ABN	3		430000J							
Unknown hydrocarbon	2147	ABN	3		290000J							
Matrix Type				LIQUID	SLUDGE	LIQUID	LIQUID					
Sample Station Number				05	04	16	17					
Sample Station Location				LAGOON E	LAGOON D	GW-2	GW-14					

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1/30/85

INORGANIC SOIL ANALYSIS SUMMARY

CASE NUMBER: 3449
SITE NAME/CODE: Centralized Tie Plant/TX10448

CONCENTRATIONS (ppm)

PARAMETER	EPA Sample Numbers											AMBIENT BACKGROUND 1.	
	MF1671	MF1672	MF1687									Western U.S. 2.	Eastern U.S. 2.
Matrix type	SOIL	SOIL	SOIL									Soil	Soil
Aluminum	4867	3022	12,576									58,000	33,000
Antimony			51 R									.47	.52
Arsenic												5.5	4.8
Barium	210	115	465									580	290
Beryllium			5.6									0.68	0.55
Cadmium												1	1
Calcium	3176 E	3493 E	8797E										
Chromium			26									41	33
Cobalt			40									7.1	5.9
Copper			18									21	13
Iron	4319	3625	8010									21,000	14,000
Lead	13R	13R	32R									17	14
Magnesium	597 E	2204 E	1831 E										
Manganese	58E	83E	149E									380	260
Mercury												0.046	0.081
Nickel			41									15	11
Potassium			1043										
Selenium												.23	.30
Silver												-	-
Sodium	1136 E	1357 E	1715 E										
Thallium												9.1	7.7
Tin	512R	603R	747R									.90	.96
Vanadium			50									70	43
Zinc	24	49	123									55	40
Cyanide			4.5										
Station No.	06	07	18										
Sample Station Location	ENTRANCE RD. ADJACENT TO R.R. TRACKS AT AQUADUCT	S.W. OF SEWAGE DISPOSAL POND 50' N.W. OF AQUADUCT	300' S. FROM ASPIRATION POND #1, ABOVE LAGOON F										

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not within control limits.
*-duplicate analysis is not within control limits.

1. Values obtained fr "Element Concentration Soils and Other Surfac Materials of the Conte minous United States", dated 1984. U.S.G.S. Professional Paper 127
2. Reference for East West Division is the 96 W longitudinal line which bisects Region V

7/85

INORGANIC WATER ANALYSIS SUMMARY

CASE NUMBER: 3449
SITE NAME/CODE: Centralized Tie Plant
TX10448

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers										Drinking Water Criteria	
	MF1669	MF1670	MF1673	MF1674	MF1675	MF1676	MF1677	MF1678	MF1679	MF1680	Primary	Secondary
Matrix type	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER		
Aluminum	1172	734	6582	25,560	43,540	23,010	21,960		22900	8167		
Antimony							500			57		
Arsenic											50	
Barium	54	66	150	158	222	76	500		286		1000	
Beryllium				26		62	42					
Cadmium						14	20				10	
Calcium	8387E	19860E	597,800E	562,100E	275,300E	661,100E	1,158,000E	218	57,400	34680		
Chromium			13	20	53		50		36	13	50	
Cobalt				149		127	200					
Copper	24	13	23	34	54	37	100	29	32	23		1000
Iron	782	736	5250	50250	20,900	8643	27,700	158	11,710	5057		300
Lead		6.5R	30R		51R	38.4R	19R	9	28		50	
Magnesium	2311E	3230E	96,210E	142,500E	43,320E	98,260E	258,200E	5000	6332	5180		
Manganese	16E	51E	240E	7997E	436E	2146E	12,390E		139	72		50
Mercury											2	
Nickel			30	206	26	183	200					
Potassium	4778	3973	28,728	63,688	19,625	50,164	108,432		6045	4296		
Selenium			43			8					10	
Silver							50R			13	50	
Sodium	4119 E	14,470E	386,600E	440,600E	346600E	490,200E	1,208,000E	2115	93610	75420		
Thallium												
Tin												
Vanadium			54	79	57		227		25			
Zinc	50	49	287	1151	418	1476	595	31	186	222		5000
Cyanide								10		17		
Station No.	06	07	10	11	9	12	15	19	08	14		
Sample Station Location	ENTRANCE ROAD ADJACENT TO R.R. TRACKS AT AQUADUCT	SW. OF SEWAGE DISPOSAL POND 50' N.W. OF AQUADUCT	GW-4	GW-5	GW-3	GW-6	GW-20	RINSATE BLANK	GW-12	GW-15		

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not withing control limits.
*-duplicate annalysis is not within control limits.

INORGANIC WATER ANALYSIS SUMMARY

CASE NUMBER: 3449
SITE NAME/CODE: Centralized Tie Plant
TX10448

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers											Drinking Water Criteria	
	MF1681	MF1682	MF1685	MF1686	MF1688							Primary	Secondary
Matrix type	WATER	WATER	WATER	WATER	WATER								
Aluminum	27,430	50240	14620	402									
Antimony													
Arsenic	48	2680R	2320R									50	
Barium	339	923	314									1000	
Beryllium	8.2												
Cadmium												10	
Calcium	436,300E	53990E	14940E	2715 E	792 E								
Chromium	84	61		11								50	
Cobalt													
Copper	29	79	57	30	33								1000
Iron	23,750	17,230	6502	300	142								300
Lead	54R				11R							50	
Magnesium	65750E	12940E	3764 E	753 E	425 E								
Manganese	2905E	152E	34E	12 E									50
Mercury												2	
Nickel	23	24											
Potassium	51124	10394	3666	1312									
Selenium												10	
Silver												50	
Sodium	290500E	220100E	87260E	3461 E	1592 E								
Thallium													
Tin													
Vanadium	66	53	23										
Zinc	431	110	79	53	94								5000
Cyanide													
Station No.	13	01	02	03	20								
Sample Station Location	GW-7	LAGOON A	LAGOON B	LAGOON C	RINSATE BLANK								

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not withing control limits.
*-duplicate annalysis is not within control limits.

TX 10448

S-CUBED

A Division of Maxwell Laboratories, Inc.

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NARRATIVE: CASE 3449/SAS 1344F

S-CUBED Contract No. 68-01-6868

This case was extracted by high concentration methods and extracts shipped to S-CUBED for analysis of acid and base/neutral compounds only. Consequently forms pertaining to volatile and pesticide analyses were either not submitted (tuning and standards' forms) or submitted and labeled as not applicable (Form 1, data sheets). It appears that sample F5992 was a reagent blank but since it had an EPA assigned sample number, it was treated as a regular sample. Reagent blank form was not submitted, background compounds ("B" subscript) were not flagged, and the data sheet was enclosed in the data section rather than the QC section. The only compound detected in this sample was diethyl phthalate.

According to the information submitted to S-CUBED, 1.5-g were extracted with 15-mL of solvent. 10-mL was submitted for analysis. Sludge sample F5145 was cleaned up by GPC at S-CUBED. All data has been corrected to represent the total sample, including the GPC losses. Header information on chromatograms, spectra and quantitation reports for sample F5145 represent the entire sample. However, for the remaining samples this information is correct for the aliquot S-CUBED received and does not directly reflect the entire sample.

As per instructions of the Hazardous Substance Laboratory (questions refered to them by SMO) all data is being reported as if the samples were medium level soil samples. Consequently the

P.O. Box 1620, La Jolla, California 92038-1620 3398 Carmel Mountain Road, San Diego, California 92121-1095
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detection limits and thus the reportable levels are based on the contract detection limits as modified for medium level soils (part C, page 5). In actuality the instrumental detection limit appears to be considerably lower, thus reporting requirements mask the presence of considerable levels of polynuclear aromatic hydrocarbon in sample F5145. The actual quantitation of the compounds reported with the "J" subscript can be found on the appropriate quantitation reports. All data has been reported with units of µg/kg.

Surrogate and matrix spike recoveries are based on information received from the Hazardous Substance Laboratory. Surrogates spike level was 750-µg. Matrix compounds were spiked at the 150-µg level with the exception of di-n-butyl phthalate which was spiked at a 210-µg level. All surrogate recoveries were within the expected windows. Matrix recoveries were at acceptable levels except for the consistently poor recovery of 4-nitro phenol. This is not unusual for complex samples. Matrix extractions and analyses were carried out in triplicate. Form III has been modified to reflect this, with the percent difference calculation based on an average percent difference from the mean recovery of all three spiked samples. The formulas used are presented in the comments section of this form.

Sample F5145 contained one peak corresponding to either or both benzofluoranthene isomers. In complex samples it is difficult to determine which isomer this is since the retention time difference between the isomers is at most 5 seconds. Consequently this has been arbitrarily reported as the benzo(b)fluoranthene isomer. Benzo(a)pyrene is possibly present in this sample, but due to high levels of interfering hydrocarbons this did not pass contract spectral requirements and is thus left unreported.

(4/29/85, 12068, 1626V-7)

DATE: 10-26-84

SAMPLE CUSTODIAN SIGNATURE: C. Lafbore

DOCUMENT CONTROL

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal — present/absent; intact/not intact
2. Chain-of-Custody — present/absent
3. Sample Tags — present/absent
   Sample Tag Numbers — listed/not listed on chain-of-custody
4. SMO Forms — present/absent

CASE NUMBER 3449

AIRBILL NUMBER 593 990 504

(6) 3H 3S

DATE RECEIVED	TIME RECEIVED	CHAIN-OF-CUSTODY RECORD NUMBER	SMO SAMPLE NUMBERS	CORRESPONDING SAMPLE TAG NUMBERS	CORRESPONDING ASSIGNED LAB NUMBERS	DOES INFORMATION ON CUSTODY RECORDS, TRAFFIC REPORTS, AND SAMPLE TAGS AGREE?	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
10-26-84	0900	6-2943	FA059	6-06415	41008807	All information agrees	good condition
				6-06416			H_2Os
				6-06417			med. Conc.
				6-06418			no ice, not cold
				6-06419			
				6-06420			
			FA060	6-06345	41008808		Soils
				6-06346			Low Conc.
			FA061	6-06325	41008809		
				6-06326			
		6-2938	FA062	6-06423	41008810		H_2O
				6-06424			Med. Conc.
				6-06427			
				6-06428			
				6-06429			

DATE: 10-26-84

SAMPLE CUSTODIAN SIGNATURE: C. Lefebvre

DOCUMENT CONTROL

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal — present/absent; intact/not intact
2. Chain-of-Custody — present/absent
3. Sample Tags — present/absent
   Sample Tag Numbers — listed/not listed on chain-of-custody
4. SMO Forms — present/absent

CASE NUMBER 3449

AIRBILL NUMBER 593 990 504

DATE RECEIVED	TIME RECEIVED	CHAIN-OF-CUSTODY RECORD NUMBER	SMO SAMPLE NUMBERS	CORRESPONDING SAMPLE TAG NUMBERS	CORRESPONDING ASSIGNED LAB NUMBERS	DOES INFORMATION ON CUSTODY RECORDS, TRAFFIC REPORTS, AND SAMPLE TAGS AGREE?	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
10-26-84	0900	6-2938	FA062	6-06430	41008810	All	good condition
		6-2937	FA063	6-06431	41008811		H_2O s
				6-06432		Info	med. Conc.
				6-06433			no ice, not cold
				6-06434			
				6-06435			
				6-06436			
		6-2943	FA064	6-06453	41008812		Soil
				6-06451			Low Conc.

EPA SAMPLE CONTROL RECORD

STORAGE LOCATION: Raetone

CASE #: 3449

STORAGE DATE: 10/26/84

Laboratory Sample #	Removed by	Date/Time Removed	Reason for Removal	Date/Time Returned
FA059	DDW	9:45 AM 10/26/84	BAN Ext	2:00 10/26/84
FA063				
FA062				
FA060			BAN/Pest Ext	
FA061				
FA064				
FA059	10/29/84 DDW	7:00 10/29/84	BAN Ext	10:00 10/29/84
FA062				
FA063				
FA059	G. Graf	0845 11-1-84	VOA ANALYSIS	1300 HRS 11-8-84 GJB
FA062				
FA063				
FA059	GB	11:15 am 11-1-84	pesticide extraction	3:30 11-1-84
FA062				
FA063				
FA061	G. Graf	1300 11-6-84	VOA	1300 HRS 11-8-84 GJB
FA064				
FA060				
FA059	DDW	7:00 1/2/85	BAN Re-ext	7:30 1/2/85

FORM HLW 34 (10/83)

GRIND: 00082700 (MUST BE 8 DIGITS) CHARGE NO.: 1855 ABBREV: ENPA LAB: MA PRICE-CODE: S1A PAGE 1 OF 1

DEPT: 7 SAF-CODE: — PLANT: QA PRIORITY: 2 P.O. #: CASE 3449

U.S. EPA RESEARCH TRIANGLE PARK, NC

CONTRACT NO. 68-01-6961

PREPROCESSED BY: [illegible] DATE: 10-26-84 CSR #: 21

REPORTS TO: MARIAN BERND Environ. Acct. # 1855 ENTERED BY: [illegible] POSTPROCESSED BY: Clb

OCT 26 1984 21

14 * = BATCH NUMBER

DESC / SMPL CODE / V-DATA	ASSAY NAME	#	MNEM	LOW LIMIT	HI LIMIT	UNIT	LIMS #
SMO # FA059 H_2O_2	ENPA GCMS Analysis	2	HGMS	—	—	UNIT	41008807
FA060 Soils				↓	↓	↓	41008808
FA061 Soils							41008809
FA062 H_2O_2							41008810
FA063 H_2O							41008811
FA064 Soils							41008812
Low xx Matrix Spike Soils							41008813
↓ xx Matrix Spike Dup							41008814
Med xx Matrix Spike							41008815
↓ xx Matrix Spike Dup							41008816
Low xx Matrix Spike H_2O							41008817
↓ xx Matrix Spike Dup							41008818
Med xx Matrix Spike							41008819
↓ xx Matrix Spike Dup							41008820

Condition: S1L

Storage:

Smpl. Rec'd.: OCT 26 1984

Date Entered:

LIMS #:

Environmental Protection Agency. CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
INST BLANK

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: HAZLETON LABORATORIES
Case No: 3287
Lab Sample ID No: INST BLANK
QC Report No:
Sample Matrix: WATER
Contract No:
Data Release Authorized By:
Date Sample Received:

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 10-30-84
Date Analyzed: 10-30-84
Conc/Dil Factor: 1 — pH —
Percent Moisture: —
Percent Moisture (Decanted):

Blank from Initial Calibration Run

CAS Number		ug/l or ug/Kg (Circle One)
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
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
156-60-5	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	J 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

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1, 1, 2, 2-Tetrachloroethane	5 U
78-87-5	1, 2-Dichloropropane	5 U
10061-02-6	Trans-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
10061-01-5	cis-1, 3-Dichloropropene	5 U
110-75-8	2-Chloroethylvinylether	10 U
75-25-2	Bromoform	5 U
591-78-6	2-Hexanone	10 U
108-10-1	4-Methyl-2-Pentanone	10 U
127-18-4	Tetrachloroethene	5 U
108-88-3	Toluene	5 J ~~5 U~~
108-90-7	Chlorobenzene	5 U
100-41-4	Ethylbenzene	5 U
100-42-5	Styrene	5 U
	Total Xylenes	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets identification criteria but the result is less than the specified detection limit but greater than zero. (e.g., 10J)

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

85

Sp-2

N-Nitrosodimethylamine

F52	Hexachlorobutadiene
F53	Hexachlorocyclopentadiene
F54	Isophorone
F55	Naphthalene
F56	Nitrobenzene
F62	N-Nitrosodiphenylamine
F63	N-Nitrodipropylamine
F66	Bis(2-ethylhexyl)phthalate
F67	Butylbenzophthalate
F68	Di-n-butyl phthalate
F69	Di-n-octyl phthalate
F70	Diethyl phthalate
F71	Dimethyl phthalate
F72	Benzo(a)anthracene
F73	Benzo(a)pyrene
F74	Benzo(b)fluoranthene
F75	Benzo(k)fluoranthene
F76	Chrysene
F77	Acenaphthylene
F79	Benzo(ghi)perylene
F80	Fluorene
F81	Phenanthrene
F82	Dibenz(a,h)anthracene
F83	Indeno(1,2,3-c,d)pyrene
F84	Pyrene
F78	Anthracene
F701	Aniline
F703	Benzyl alcohol
F706	4-Chloroaniline
F707	Dibenzofuran
F709	2-Methylnaphthalene
F713	2-Nitroaniline
F714	3-Nitroaniline
F715	4-Nitroaniline
F1	Acenaphthene
F8	1.2.4-Trichlorobenzene
F9	Hexachlorobenzene
F12	Hexachloroethane
F18	Bis(2-chloroethyl)ether
F20	2-Chloronaphthalene
F25	1.2-Dichlorobenzene
F26	1.3-Dichlorobenzene
F27	1.4-Dichlorobenzene
F35	2.4-Dinitrotoluene
F36	2.6-Dinitrotoluene
F39	Fluoranthene
F40	4-Chlorophenylphenylether
F41	4-Bromophenyl phenyl ether
F42	Bis(2-chloro isopropyl)ether
F43	Bis(2-chloroethoxy)methane

200 ml. total volume
Conc. 400 ug/ml (micrograms) in Methylene chloride
Packaged in 2 ml. ampules.

SP-1 Exp. 10 '85
CHEM SERV
WEST CHESTER, PA 19380
Base-Neutral Extractal
in METHYLENE CHLORIDE
Lot no 9-93B (0.4mg/m.
WARNING: AVOID CONTACT
FOR CHEMICAL PURPOSES NOT DRUG

SP-2 Exp. 10/85 1
CHEM SERV
WEST CHESTER, PA 19380
Phenols Mixture in
METHYLENE CHLORIDE
Lot no 9-93A (0.4mg/
WARNING: AVOID CONTAC
FOR CHEMICAL PURPOSES NOT DRI

Sp-2

F21	2.4.6-Trichlorophenol
F22	p-Chloro-m-cresol
F24	2-Chlorophenol
F31	2.4-Dichlorophenol
F34	2.4-Dimethylphenol
F57	2-Nitrophenol
F58	4-Nitrophenol
F59	2.4-Dinitrophenol
F60	4.6-Dinitro-2-methylphenol
F64	Pentachlorophenol
F65	Phenol
F702	Benzoic acid
F711	2-Methylphenol
F712	4-Methylphenol
F717	2.4.5-Trichlorophenol

200 ml. total volume
400 ug/ml. concentration in Methylene chloride
Packaged in 2 ml. ampules.

QC SUMMARY PACKAGE

Case No. 3449

HAZLETON LABORATORIES AMERICA, INC.
Chemical & BioMedical Sciences Division
3301 KINSMAN BLVD. P.O. BOX 7545
MADISON, WISCONSIN 53707
PHONE (608) 241-4471

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No. 3449 Contract Laboratory HAZLETON Contract No. 68-01-6725

	SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (88-119)	VOLATILE: BFB (85-121)	VOLATILE: 1,2 DICHLORO-ETHANE-D4 (77-120)	SEMI-VOLATILE: NITRO-BENZENE-D5 (41-120)	SEMI-VOLATILE: 2-FLUORO-BIPHENYL (44-119)	SEMI-VOLATILE: TERPHENYL-D14 (33-120)			SEMI-VOLATILE: PHENOL-D5 (18-103)	SEMI-VOLATILE: 2-FLUORO-PHENOL (23-121)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (10-130)	PESTICIDE: DIBUTYL-CHLORENDATE (48-136) **
	FA059	104	104	97	64	60	23 *			11 *	17 *	0 *	106 *
	FA062	109	105	108	51	53	49			18	29	21	66
	FA063	103	96	97	65	69	71			27	45	50	69
	FA062MS	100	104	96	NR	NR	NR			NR	NR	NR	92
	FA062MSD	106	110	99	NR	NR	NR			NR	NR	NR	72
	FA063MS	NR	NR	NR	67	74	121			34	44	49	NR
	FA063MSD	NR	NR	NR	118	120 *	128			81	115	74	NR
MB-1	(26346)	107	103	101	NR	NR	NR			NR	NR	NR	NR
RB	(25344)	NR	NR	NR	35 *	37 *	68			16	23	29	NR
RB-RE	(25435)	NR	NR	NR	102	124 *	99			38	55	88	NR
RB	PEST	NR	NR	NR	NR	NR	NR			NR	NR	NR	72
	FA059RE	NR	NR	NR	161 *	177 *	130 *			76	115	161 *	NR

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: 0 out of 18 ; outside of QC limits

Semi-Volatiles: 12 out of 48 ; outside of QC limits

Pesticides: 0 out of 6 ; outside of QC limits

Comments: # FA059 DIBUTYLCHLORENDATE RECOVERY FROM CONFIRMATION RUN DUE TO POOR CHROMATOGRAPHY IN QUANTITATION RUN.

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. 3449 Contract Laboratory HAZLETON Contract No. 68-01-6725

Low ✓ Medium _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (50-160)	BFB (50-160)	1,2 DICHLORO-ETHANE-D4 (50-160)	NITRO-BENZENE-D5 (20-140)	2-FLUORO-BIPHENYL (20-140)	TERPHENYL-D14 (20-150)			PHENOL-D5 (20-140)	2-FLUORO-PHENOL (20-140)	2,4,6 TRIBROMO-PHENOL (10-140)	DIBUTYL-CHLORENDATE** (20-150)
FA060	98	94	93	75	70	95			77	67	37	150
FA061	104	109	92	98	88	102			109	124	59	141
FA064	99	86	87	69	66	95			74	79	61	121
FA061 MS	100	97	92	NR	NR	NR			NR	NR	NR	NR
FA061 MSD	99	102	87	NR	NR	NR			NR	NR	NR	NR
FA064 MS	NR	NR	NR	52	53	107			62	62	66	128
FA064 MSD	NR	NR	NR	74	65	96			85	95	64	120
BLANKS MB-2 26368	99	107	92	NR	NR	NR			NR	NR	NR	NR
MB-3 26385	100	107	92	NR	NR	NR			NR	NR	NR	NR
MB-4 26394	99	102	89	NR	NR	NR			NR	NR	NR	NR
BMN 25351	NR	NR	NR	40	43	108			43	37	30	NR
RB PEST	NR	NR	NR	NR	NR	NR			NR	NR	NR	100

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: 0 out of 24 ; outside of QC limits

Semi-Volatiles: 0 out of 36 ; outside of QC limits

Pesticides: 0 out of 6 ; outside of QC limits

Comments: _____

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

FRACTION	COMPOUND	CONC.* SPIKE ADDED (ug)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY	CONC* SPIKE ADDED (ug/L)
VOA SMO SAMPLE NO. FA062	1,1-Dichloroethene	0.250	0	50	99	53	106	6	14	61-145	50
	Trichloroethene			47	94	50	101	8	14	71-120	
	Chlorobenzene			48	96	51	102	6	13	75-130	
	Toluene			43	86	50	100	15 *	13	76-125	
	Benzene			48	95	52	103	8	11	76-127	
B/N SMO SAMPLE NO. FA063	1,2,4-Trichlorobenzene	100	0	115	67	139	81	19	28	39-98	172
	Acenaphthene			129	75	147	85	12	31	46-118	
	2,4 Dinitrotoluene			126	73	131	76	4	38	24-96	
	Di-n-Butylphthalate			129	75	132	77	2	40	11-117	
	Pyrene		48	135	51	193	112	35 *	31	26-127	
	N-Nitroso-Di-n-Propylamine		0	134	78	146	85	9	38	41-116	
	1,4-Dichlorobenzene			132	77	140	81	6	28	36-97	
ACID SMO SAMPLE NO. FA063	Pentachlorophenol	200	0	132	38	144	42	9	50	9-103	344
	Phenol			143	42	207	60	36	42	12-89	
	2-Chlorophenol			193	56	272	79	34	40	27-123	
	4-Chloro-3-Methylphenol			149	43	183	53	20	42	23-97	
	4-Nitrophenol			100	29	103	30	3	50	10-80	
PEST SMO SAMPLE NO. FA062	Lindane	0.22	0	0.12	38 *	0.12	37 *	2	15	56-123	0.31
	Heptachlor	0.22		0.195	63	0.19	60	4	20	40-131	0.31
	Aldrin	0.18		0.175	68	0.22	84	21	22	40-120	0.26
	Dieldrin	0.52		0.62	84	0.59	80	5	18	52-126	0.74
	Endrin	0.53		0.70	92	0.60	79	15	21	56-121	0.76
	4,4'-DDT	0.48		0.67	98	0.60	88	10	27	38-127	0.69

% RECOVERY CALCULATED BEFORE ROUNDING TO 2 SIGNIFICANT FIGURES.

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 1 out of 5; outside QC limits
B/N 1 out of 7; outside QC limits
ACID 0 out of 5; outside QC limits
PEST 0 out of 6; outside QC limits

RECOVERY: VOAs 0 out of 10; outside QC limits
B/N 0 out of 14; outside QC limits
ACID 0 out of 10; outside QC limits
PEST 2 out of 12; outside QC limits

Comments:

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Low Level ✓ Medium Level

FRACTION	COMPOUND	~~CONC.~~* SPIKE ADDED (µg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY	CONC.* SPIKE ADDED mg/kg DRY wt.
VOA SMO SAMPLE NO.	1,1-Dicholorethene	0.250	0	234	100	224	95	4	22	59-172	235
	Trichloroethene	↓	↓	251	107	260	111	4	24	62-137	↓
	Chlorobenzene	↓	↓	234	100	247	105	5	21	60-133	↓
	Toluene	↓	↓	240	102	240	102	0	21	59-139	↓
FA061	Benzene	↓	↓	243	103	249	106	2	21	66-142	↓
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene	100	0	1340	54	1410	57	5	23	38-107	2470
	Acenaphthene	↓	↓	1620	66	1610	65	2	19	31-137	↓
	2,4 Dinitrotoluene	↓	↓	1790	72	1930	78	8	47	28-89	↓
	Di-n-Butylphthalate	↓	↓	2070	84	2360	95	12	47	29-135	↓
	Pyrene	↓	↓	1680	68	1270	51	29	36	35-142	↓
	N-Nitrosodi-n-Propylamine	↓	↓	1650	67	1680	68	1	38	41-126	↓
FA064	1,4-Dichlorobenzene	↓	↓	1280	52	1280	52	0	27	28-104	↓
ACID SMO SAMPLE NO.	Pentachlorophenol	200	0	2330	49	2250	48	2	47	17-109	4740
	Phenol	↓	↓	3500	74	3810	80	8	35	26-90	↓
	2-Chlorophenol	↓	↓	3620	76	3650	77	1	50	25-102	↓
	4-Chloro-3-Methylphenol	↓	↓	2620	55	3250	68	21	33	26-103	↓
FA064	4-Nitrophenol	↓	↓	2610	55	3380	71	25	50	11-114	↓
PEST SMO SAMPLE NO.	Lindane	0.221	0	12.7	121	6.1	58	70*	50	46-127	10.5
	Heptachlor	0.218	↓	6.8	66	5.3	51	25	31	35-130	10.3
	Aldrin	0.181	↓	6.8	80	5.7	67	18	43	34-132	8.59
	Dieldrin	0.516	↓	21.8	89	18.1	74	19	38	31-134	24.5
	Endrin	0.532	↓	22.2	88	21.1	83	5	45	42-139	25.2
FA064	4,4'-DDT	0.480	↓	18.4	81	17.7	77	4	50	23-134	22.8

µg SPIKE ADDED to sample MS/MSD CONC. ON DRY wt mg/kg basis

*ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs 0 out of 5; outside QC limits
B/N 0 out of 7; outside QC limits
ACID 0 out of 5; outside QC limits
PEST 1 out of 6; outside QC limits

RECOVERY: VOAs 0 out of 10; outside QC limits
B/N 0 out of 14; outside QC limits
ACID 0 out of 10; outside QC limits
PEST 0 out of 12; outside QC limits

Comments:
LINDANE PEAK OBSCURED BY INTERFERENCE ON QUANT COLUMN
(RECOVERY CALCULATED FROM CONF. COLUMN)

REAGENT BLANK SUMMARY

Case No. 3449 Contractor HARLETON Contract No. 68-01-6725

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL,TIC OR UNKNOWN)	CONC.	UNITS	CRDL
MB-1 26346	11-1-84	VOA	Water	low	HP5993	78-93-3	2-Butanone	7.5	ug/L	10
" "	"	"	"	"	"	108-88-3	Toluene	0.6	"	5
MB-2 26368	11-5-84	VOA	SOIL	low	HP5993	67-66-3	Chloroform	0.8	ug/kg	5
" "	"	"	"	"	"	78-93-3	2-Butanone	8.0	"	10
" "	"	"	"	"	"	108-88-3	Toluene	0.9	"	5
MB-3 26385	11-7-84	VOA	SOIL	low	HP5993	75-09-2	Methylene Chloride	4.0	ug/kg	5
" "	"	"	"	"	"	67-66-3	Chloroform	0.9	"	5
" "	"	"	"	"	"	78-93-3	2-Butanone	7.0	"	10
" "	"	"	"	"	"	108-88-3	Toluene	0.8	"	5
(HOLDING BLK) MB-4 26394	11-7-84	VOA	SOIL	low	HP5993	75-09-2	Methylene Chloride	4.3	ug/kg	5
" "	"	"	"	"	"	67-64-1	Acetone	7.7	"	10
" "	"	"	"	"	"	67-66-3	Chloroform	1.3	"	5
" "	"	"	"	"	"	78-93-3	2-Butanone	7.2	"	10
" "	"	"	"	"	"	108-88-3	Toluene	0.9	"	5

Comments:

FORM IV

REAGENT BLANK SUMMARY

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

FILE ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	CRDL
25351	12-20-84	BAN	Soil	Low	HP5985	–	Unknown	320	µg/kg	
↓	↓	↓	↓	↓	↓	5185977	5-(acetyloxy)-2-pentanone	180	↓	
↓	↓	↓	↓	↓	↓	–	Unknown	36000	↓	
↓	↓	↓	↓	↓	↓	–	Unknown	880	↓	
25344	12-20-84	BAN	Water	Low	HP5985			22	mg/L	
↓	↓	↓	↓	↓	↓			18	↓	
↓	↓	↓	↓	↓	↓			21	↓	
RB (Pesticide)	1-28-85	Pest	Water	low	10802		none detected			
RB (Pesticide)	2-2-85	Pest	Soil	low	10802		none detected			

Comments:

FORM IV

4/84

GC/MS TUNING AND MASS CALIBRATION
Decafluorotriphenylphosphine (DFTPP)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP5985 Date 12-20-84 Time 15:48

Lab ID 25338 Data Release Authorized By: David C. (illegible)

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	57.5
68	less than 2.0% of mass 69	0 (0)[1]
69	mass 69 relative abundance	99.5
70	less than 2.0% of mass 69	0 (0)[1]
127	40.0 - 60.0% of mass 198	53.1
197	less than 1.0% of mass 198	0
198	base peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	19.7
365	greater than 1.00% of mass 198	2.0
441	present, but less than mass 443	12.7
442	greater than 40.0% of mass 198	80.9
443	17.0 - 23.0% of mass 442	18.1 (22)[2]

[1]Value in parenthesis is % mass 69.
[2]Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
25339	160 ppm STD	11-20-84	16:59
25340	120 ppm STD	↓	18:10
25341	80 ppm STD	↓	19:21
25342	50 ppm STD	↓	20:32
25343	20 ppm STD	↓	21:44
25344	BLANK	↓	22:55
FA059	25345	11-21-84	00:05
FA062	25346	↓	01:16
FA063	25347	↓	02:26

GC/MS TUNING AND MASS CALIBRATION
Decafluorotriphenylphosphine (DFTPP)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP5985 Date 12-21-84 Time 0533

Lab ID 25348 Data Release Authorized By: David C. Hills

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	57.7
68	less than 2.0% of mass 69	0.0 (0)[1]
69	mass 69 relative abundance	84.8
70	less than 2.0% of mass 69	0.0 (0)[1]
127	40.0 - 60.0% of mass 198	47.5
197	less than 1.0% of mass 198	0.0
198	base peak, 100% relative abundance	100.0
199	5.0 - 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	22.6
365	greater than 1.00% of mass 198	2.5
441	present, but less than mass 443	16.3
442	greater than 40.0% of mass 198	93.2
443	17.0 - 23.0% of mass 442	20.2 (21.6)[2]

[1] Value in parenthesis is % mass 69.
[2] Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
FA063 MS	25349	11-21-84	04:22
FA063 MSD	25350	↓	05:33
25351	BLANK LS		06:44
FA060 LS	25352		07:54
FA061 LS	25353		09:04
FA064 LS	25354		10:16
FA064MS LS	25355		11:28
FA064MSD LS	25356		12:58

GC/MS TUNING AND MASS CALIBRATION
Decafluorotriphenylphosphine (DFTPP)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP5985 Date 1-15-85 Time 0935

Lab ID 25428 Data Release Authorized By: David C. Hills

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.4
68	less than 2.0% of mass 69	0 (0)[1]
69	mass 69 relative abundance	82.6
70	less than 2.0% of mass 69	0 (0)[1]
127	40.0 - 60.0% of mass 198	45.4
197	less than 1.0% of mass 198	0
198	base peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	5.8
275	10.0 - 30.0% of mass 198	20.8
365	greater than 1.00% of mass 198	2.0
441	present, but less than mass 443	14.5
442	greater than 40.0% of mass 198	93.4
443	17.0 - 23.0% of mass 442	16.8 (18)[2]

[1]Value in parenthesis is % mass 69.
[2]Value in parenthesis is % mass 442.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
160 ppm STD	25430	1-15-85	1133
120 ppm STD	25431	↓	1307
80 ppm STD	25432		1416
50 ppm STD	25433		1552
20 ppm STD	25434		1658
Blank	25435		1804
FA059	25436		1910

GC/MS TUNING AND MASS CALIBRATION
Bromofluorobenzene (BFB)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP5993 Date 10-30-84 Time 0800

Lab ID 26323 Data Release Authorized By: David C. Gilles

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE	
50	15.0 - 40.0% of the base peak	15.0	
75	30.0 - 60.0% of the base peak	39.1	
95	Base peak, 100% relative abundance	100	
96	5.0 - 9.0% of the base peak	8.3	
173	Less than 1.0% of the base peak	0.0	
174	Greater than 50.0% of the base peak	89.9	
175	5.0 - 9.0% of mass 174	7.0	(7.8)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	89.4	(99.4)[1]
177	5.0 - 9.0% of mass 176	6.3	(7.0)[2]

[1]Value in parenthesis is % mass 174.
[2]Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID FRN		DATE OF ANALYSIS	TIME OF ANALYSIS
INST BLANK	26324	INST BLANK	10-30-84	0850
200 PPB STD	26325		↓	0945
150 PPB STD	26326			1030
100 PPB STD	26327			1120
50 ppb STD	26328			1205
20 ppb STD	26329			1410

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FORM V

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP 5993 Date 11-1-84 Time 0805

Lab ID 26345 Data Release Authorized By: David C. Hill

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	16.6
75	30.0 - 60.0% of the base peak	39.9
95	Base peak, 100% relative abundance	100
96	5.0 - 9.0% of the base peak	8.2
173	Less than 1.0% of the base peak	0
174	Greater than 50.0% of the base peak	89.2
175	5.0 - 9.0% of mass 174	5.9 (6.6)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	87.8 (98.4)[1]
177	5.0 - 9.0% of mass 176	6.2 (7.1)[2]

[1] Value in parenthesis is % mass 174.
[2] Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID FRN		DATE OF ANALYSIS	TIME OF ANALYSIS
INST. BLANK	26346	—	11-1-84	0850
50ppb CHECK STD.	26347	—	↓	0945
FA062	26348	41008810	↓	1030
FA062 MS	26349	41008817	↓	1130
FA062 MSD	26350	41008818	↓	1210
FA063	26351	41008811	↓	1310
FA059	26353	41008807	↓	1550

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FORM V

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP 5993 Date 11-5-84 Time 0830

Lab ID 26367 Data Release Authorized By: David C. Kelly

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE	
50	15.0 - 40.0% of the base peak	15.5	
75	30.0 - 60.0% of the base peak	37.4	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of the base peak	8.4	
173	Less than 1.0% of the base peak	0.0	
174	Greater than 50.0% of the base peak	98.4	
175	5.0 - 9.0% of mass 174	7.3	(7.4)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	98.6	(100.2)[1]
177	5.0 - 9.0% of mass 176	8.0	(8.1)[2]

[1] Value in parenthesis is % mass 174.
[2] Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID FRN	LAB ID	DATE OF ANALYSIS	TIME OF ANALYSIS
26368	INST BLANK	11-5-84	
26369	50ppb STD	↓	1020
26370	20ppb STD		1115
26371	100ppb STD		1215
26372	150ppb STD		1325
26373	200ppb STD		1415

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FORM V

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. 3449 Contractor HAZLETON Contract No. 68-01-6725

Instrument ID HP5993 Date 11-7-84 Time 0800

Lab ID 26384 Data Release Authorized By: David C. [illegible]

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE	
50	15.0 - 40.0% of the base peak	15.7	
75	30.0 - 60.0% of the base peak	36.2	
95	Base peak, 100% relative abundance	100.0	
96	5.0 - 9.0% of the base peak	8.7	
173	Less than 1.0% of the base peak	0.0	
174	Greater than 50.0% of the base peak	92.1	
175	5.0 - 9.0% of mass 174	7.9	(8.6)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	88.8	(96.4)[1]
177	5.0 - 9.0% of mass 176	6.8	(7.7)[2]

[1]Value in parenthesis is % mass 174.
[2]Value in parenthesis is % mass 176.

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS AND STANDARDS.

SAMPLE ID	LAB ID FRN		DATE OF ANALYSIS	TIME OF ANALYSIS
INST BLANK	26385	—	11-7-84	0815
✓ STD	26386	—		0910
FA061	26387	41008809		1010
FA061 MS	26388	41008813		1100
FA061 MSD	26390	41008814		1305
FA064	26392	41008812		1435
FA060	26393	41008808		1515
HOLDING BLANK	26394	—		1605

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FORM V

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
FA059RE
RE-EXTRACTION

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 1-2-85

Date Analyzed: 1-15-85

Conc/Dil Factor: 1

CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	20 U
108-95-2	Phenol	20 U
62-53-3	Aniline	20 U
111-44-4	bis(-2-Chloroethyl)Ether	20 U
95-57-8	2-Chlorophenol	20 U
541-73-1	1, 3-Dichlorobenzene	20 U
106-46-7	1, 4-Dichlorobenzene	20 U
100-51-6	Benzyl Alcohol	40 U
95-50-1	1, 2-Dichlorobenzene	20 U
95-48-7	2-Methylphenol	20 U
39638-32-9	bis(2-chloroisopropyl)Ether	40 U
106-44-5	4-Methylphenol	20 U
621-64-7	N-Nitroso-Di-n-Propylamine	20 U
67-72-1	Hexachloroethane	20 U
98-95-3	Nitrobenzene	20 U
78-59-1	Isophorone	20 U
88-75-5	2-Nitrophenol	40 U
105-67-9	2, 4-Dimethylphenol	20 U
65-85-0	Benzoic Acid	200 U
111-91-1	bis(-2-Chloroethoxy)Methane	40 U
120-83-2	2, 4-Dichlorophenol	20 U
120-82-1	1, 2, 4-Trichlorobenzene	20 U
91-20-3	Naphthalene	20 U
106-47-8	4-Chloroaniline	100 U
87-68-3	Hexachlorobutadiene	20 U
59-50-7	4-Chloro-3-Methylphenol	20 U
91-57-6	2-Methylnaphthalene	40 U
77-47-4	Hexachlorocyclopentadiene	20 U
88-06-2	2, 4, 6-Trichlorophenol	20 U
95-95-4	2, 4, 5-Trichlorophenol	200 U
91-58-7	2-Chloronaphthalene	20 U
88-74-4	2-Nitroaniline	200 U
131-11-3	Dimethyl Phthalate	20 U
208-96-8	Acenaphthylene	20 U
99-09-2	3-Nitroaniline	20 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	20 U
51-28-5	2, 4-Dinitrophenol	20 U
100-02-7	4-Nitrophenol	240 U
132-64-9	Dibenzofuran	20 U
121-14-2	2, 4-Dinitrotoluene	40 U
606-20-2	2, 6-Dinitrotoluene	40 U
84-66-2	Diethylphthalate	20 U
7005-72-3	4-Chlorophenyl-phenylether	32 U
86-73-7	Fluorene	20 U
100-01-6	4-Nitroaniline	200 U
534-52-1	4, 6-Dinitro-2-Methylphenol	20 U
86-30-6	N-Nitrosodiphenylamine (1)	20 U
101-55-3	4-Bromophenyl-phenylether	20 U
118-74-1	Hexachlorobenzene	20 U
87-86-5	Pentachlorophenol	20 U
85-01-8	Phenanthrene	20 U
120-12-7	Anthracene	20 U
84-74-2	Di-n-Butylphthalate	20 U
206-44-0	Fluoranthene	51 ~~20 U~~
92-87-5	Benzidine	80 U
129-00-0	Pyrene	J 20 ~~U~~
85-68-7	Butylbenzylphthalate	20 U
91-94-1	3, 3'-Dichlorobenzidine	40 U
56-55-3	Benzo(a)Anthracene	J 20 ~~U~~
117-81-7	bis(2-Ethylhexyl)Phthalate	20 U
218-01-9	Chrysene	80 ~~U~~
117-84-0	Di-n-Octyl Phthalate	20 U
205-99-2	Benzo(b)Fluoranthene	40 U
207-08-9	Benzo(k)Fluoranthene	40 U
50-32-8	Benzo(a)Pyrene	40 U
193-39-5	Indeno(1, 2, 3-cd)Pyrene	40 U
53-70-3	Dibenz(a, h)Anthracene	20 U
191-24-2	Benzo(g, h, i)Perylene	40 U

(1)-Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

LOW WATER

Sample Number
FA059

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 11-1-85

Date Analyzed: 11/28/85

Conc/Dil Factor: 1

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	0.05U
319-85-7	Beta-BHC	0.05U
319-86-8	Delta-BHC	0.05U
58-89-9	Gamma-BHC (Lindane)	0.05U
76-44-8	Heptachlor	0.05U
309-00-2	Aldrin	0.05U
1024-57-3	Heptachlor Epoxide	0.05U
959-98-8	Endosulfan I	0.05U
60-57-1	Dieldrin	0.10U
72-55-9	4, 4'-DDE	0.10U
72-20-8	Endrin	0.10U
33213-65-9	Endosulfan II	0.10U
72-54-8	4, 4'-DDD	0.10U
7421-93-4	Endrin Aldehyde	0.10U
1031-07-8	Endosulfan Sulfate	0.10U
50-29-3	4, 4'-DDT	0.10U
72-43-5	Methoxychlor	0.50U
53494-70-5	Endrin Ketone	0.10U
57-74-9	Chlordane	0.50U
8001-35-2	Toxaphene	1.0 U
12674-11-2	Aroclor-1016	0.50U
11104-28-2	Aroclor-1221	0.50U
11141-16-5	Aroclor-1232	0.50U
53469-21-9	Aroclor-1242	0.50U
12672-29-6	Aroclor-1248	0.50U
11097-69-1	Aroclor-1254	1.0 U
11096-82-5	Aroclor-1260	1.0 U

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s 1000 ml or W_s _____ V_t 10,000 µl V_i 4 µl

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
FA059 RE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 5097855	2-PROPENYLIDENE CYCLOBUTENE (FOR LIBRARY SEARCH) (See Blank 1-15)	BAN	61	38 J
2. 127184	ETHENE, TETRACHLORO	BAN	124	11 J
3. 110123	5-METHYL 2-HEXANONE (FOR SEARCH) (See Blank 1-15-85)	BAN	197	60 J
4. "	UNKNOWN	BAN	1088	82 J
5. "	UNKNOWN	BAN	1191	56 J
6. "	UNKNOWN	BAN	1195	40 J
7. 580187	1(2H)-ISOQUINOLINONE	BAN	1226	41 J
8. "	UNKNOWN	BAN	1552	39 J
9. "	UNKNOWN	BAN	1586	18 J
10. "	UNKNOWN	BAN	1621	54 J
11.				
12.				
13.				
14.				
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Environmental Protection Agency, CLP Sam Management Office,
P. O. Box 818, Alexandria, Virginia 22313 /557-2490

Organics Analysis Data Sheet
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INSTRUMENT DETECTION LIMITS

HP 5993

HAZLETON LABORATORIES AMERICA

CAS Number		ug/L
74-87-3	Chloromethane	4
74-83-9	Bromomethane	5
75-01-4	Vinyl Chloride	6
75-00-3	Chloroethane	4
75-09-2	Methylene Chloride	8
67-64-1	Acetone	39
75-15-0	Carbon Disulfide	5
75-35-4	1, 1-Dichloroethene	5
75-34-3	1, 1-Dichloroethane	1
156-60-5	Trans-1, 2-Dichloroethene	3
67-66-3	Chloroform	3
107-06-2	1, 2-Dichloroethane	2
78-93-3	2-Butanone	3
71-55-6	1, 1, 1-Trichloroethane	5
56-23-5	Carbon Tetrachloride	6
108-05-4	Vinyl Acetate	4
75-27-4	Bromodichloromethane	5

CAS Number		ug/L
79-34-5	1, 1, 2, 2-Tetrachloroethane	7
78-87-5	1, 2-Dichloropropane	1
10061-02-6	Trans-1, 3-Dichloropropene	5
79-01-6	Trichloroethene	10
124-48-1	Dibromochloromethane	4
79-00-5	1, 1, 2-Trichloroethane	3
71-43-2	Benzene	2
10061-01-5	cis-1, 3-Dichloropropene	1
110-75-8	2-Chloroethylvinylether	2
75-25-2	Bromoform	6
591-78-6	2-Hexanone	2
108-10-1	4-Methyl-2-Pentanone	6
127-18-4	Tetrachloroethene	5
108-88-3	Toluene	4
108-90-7	Chlorobenzene	3
100-41-4	Ethylbenzene	8
100-42-5	Styrene	3
	Total Xylenes	1

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

INSTRUMENT DETECTION LIMITS
HP 5985

Organics Analysis Data Sheet
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Semivolatile Compounds

HAZLETON LABORATORIES AMERICA

CAS Number		ug/L
62-75-9	N-Nitrosodimethylamine	10
108-95-2	Phenol	11
62-53-3	Aniline	2
111-44-4	bis(-2-Chloroethyl)Ether	16
95-57-8	2-Chlorophenol	6
541-73-1	1, 3-Dichlorobenzene	8
106-46-7	1, 4-Dichlorobenzene	1
100-51-6	Benzyl Alcohol	8
95-50-1	1, 2-Dichlorobenzene	4
95-48-7	2-Methylphenol	3
39638-32-9	bis(2-chloroisopropyl)Ether	6
106-44-5	4-Methylphenol	2
621-64-7	N-Nitroso-Di-n-Propylamine	11
67-72-1	Hexachloroethane	3
98-95-3	Nitrobenzene	3
78-59-1	Isophorone	2
88-75-5	2-Nitrophenol	14
105-67-9	2, 4-Dimethylphenol	7
65-85-0	Benzoic Acid	120
111-91-1	bis(-2-Chloroethoxy)Methane	5
120-83-2	2, 4-Dichlorophenol	8
120-82-1	1, 2, 4-Trichlorobenzene	1
91-20-3	Naphthalene	4
106-47-8	4-Chloroaniline	44
87-68-3	Hexachlorobutadiene	10
59-50-7	4-Chloro-3-Methylphenol	2
91-57-6	2-Methylnaphthalene	3
77-47-4	Hexachlorocyclopentadiene	4
88-06-2	2, 4, 6-Trichlorophenol	26
95-95-4	2, 4, 5-Trichlorophenol	60
91-58-7	2-Chloronaphthalene	14
88-74-4	2-Nitroaniline	126
131-11-3	Dimethyl Phthalate	5
208-96-8	Acenaphthylene	12
99-09-2	3-Nitroaniline	45

CAS Number		ug/L
83-32-9	Acenaphthene	11
51-28-5	2, 4-Dinitrophenol	114
100-02-7	4-Nitrophenol	240
132-64-9	Dibenzofuran	5
121-14-2	2, 4-Dinitrotoluene	13
606-20-2	2, 6-Dinitrotoluene	20
84-66-2	Diethylphthalate	6
7005-72-3	4-Chlorophenyl-phenylether	32
86-73-7	Fluorene	9
100-01-6	4-Nitroaniline	104
534-52-1	4, 6-Dinitro-2-Methylphenol	76
86-30-6	N-Nitrosodiphenylamine (1)	12
101-55-3	4-Bromophenyl-phenylether	5
118-74-1	Hexachlorobenzene	18
87-86-5	Pentachlorophenol	8
85-01-8	Phenanthrene	9
120-12-7	Anthracene	7
84-74-2	Di-n-Butylphthalate	9
206-44-0	Fluoranthene	14
92-87-5	Benzidine	80
129-00-0	Pyrene	3
85-68-7	Butylbenzylphthalate	2
91-94-1	3, 3'-Dichlorobenzidine	20
56-55-3	Benzo(a)Anthracene	6
117-81-7	bis(2-Ethylhexyl)Phthalate	19
218-01-9	Chrysene	78
117-84-0	Di-n-Octyl Phthalate	5
205-99-2	Benzo(b)Fluoranthene	34
207-08-9	Benzo(k)Fluoranthene	34
50-32-8	Benzo(a)Pyrene	32
193-39-5	Indeno(1, 2, 3-cd)Pyrene	18
53-70-3	Dibenza, h)Anthracene	22
191-24-2	Benzo(g, h, i)Perylene	8

(1)-Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office.
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INSRTUMENT DETECTION LIMITS

FINNIGAN 4021 T

Organics Analysis Data Sheet
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Semivolatile Compounds

HAZLETON LABORATORIES AMERICA

CAS Number		ug/L
62-75-9	N-Nitrosodimethylamine	10
108-95-2	Phenol	6
62-53-3	Aniline	9
111-44-4	bis(-2-Chloroethyl)Ether	6
95-57-8	2-Chlorophenol	3
541-73-1	1, 3-Dichlorobenzene	3
106-46-7	1, 4-Dichlorobenzene	9
100-51-6	Benzyl Alcohol	9
95-50-1	1, 2-Dichlorobenzene	3
95-48-7	2-Methylphenol	9
39638-32-9	bis(2-chloroisopropyl)Ether	26
106-44-5	4-Methylphenol	18
621-64-7	N-Nitroso-Di-n-Propylamine	19
67-72-1	Hexachloroethane	7
98-95-3	Nitrobenzene	7
78-59-1	Isophorone	12
88-75-5	2-Nitrophenol	9
105-67-9	2, 4-Dimethylphenol	12
65-85-0	Benzoic Acid	18
111-91-1	bis(-2-Chloroethoxy)Methane	18
120-83-2	2, 4-Dichlorophenol	9
120-82-1	1, 2, 4-Trichlorobenzene	9
91-20-3	Naphthalene	12
106-47-8	4-Chloroaniline	27
87-68-3	Hexachlorobutadiene	9
59-50-7	4-Chloro-3-Methylphenol	9
91-57-6	2-Methylnaphthalene	9
77-47-4	Hexachlorocyclopentadiene	25
88-06-2	2, 4, 6-Trichlorophenol	26
95-95-4	2, 4, 5-Trichlorophenol	4
91-58-7	2-Chloronaphthalene	15
88-74-4	2-Nitroaniline	10
131-11-3	Dimethyl Phthalate	6
208-96-8	Acenaphthylene	10
99-09-2	3-Nitroaniline	7

CAS Number		ug/L
83-32-9	Acenaphthene	12
51-28-5	2, 4-Dinitrophenol	36
100-02-7	4-Nitrophenol	9
132-64-9	Dibenzofuran	7
121-14-2	2, 4-Dinitrotoluene	18
606-20-2	2, 6-Dinitrotoluene	4
84-66-2	Diethylphthalate	10
7005-72-3	4-Chlorophenyl-phenylether	9
86-73-7	Fluorene	22
100-01-6	4-Nitroaniline	36
534-52-1	4, 6-Dinitro-2-Methylphenol	15
86-30-6	N-Nitrosodiphenylamine (1)	12
101-55-3	4-Bromophenyl-phenylether	10
118-74-1	Hexachlorobenzene	24
87-86-5	Pentachlorophenol	30
85-01-8	Phenanthrene	12
120-12-7	Anthracene	10
84-74-2	Di-n-Butylphthalate	30
206-44-0	Fluoranthene	12
92-87-5	Benzidine	9
129-00-0	Pyrene	6
85-68-7	Butylbenzylphthalate	16
91-94-1	3, 3'-Dichlorobenzidine	3
56-55-3	Benzo(a)Anthracene	30
117-81-7	bis(2-Ethylhexyl)Phthalate	6
218-01-9	Chrysene	6
117-84-0	Di-n-Octyl Phthalate	32
205-99-2	Benzo(b)Fluoranthene	18
207-08-9	Benzo(k)Fluoranthene	12
50-32-8	Benzo(a)Pyrene	12
193-39-5	Indeno(1, 2, 3-cd)Pyrene	32
53-70-3	Dibenz(a, h)Anthracene	30
191-24-2	Benzo(g, h, i)Perylene	22

(1)-Cannot be separated from diphenylamine

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INSTRUMENT DETECTION LIMITS

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Organics Analysis Data Sheet
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Pesticide/PCBs

HAZLETON LABORATORIES AMERICA

CAS Number		3X S.D. ug/L
319-84-6	Alpha-BHC	0.00025
319-85-7	Beta-BHC	0.0006
319-86-8	Delta-BHC	0.003
58-89-9	Gamma-BHC (Lindane)	0.0045
76-44-8	Heptachlor	0.0005
309-00-2	Aldrin	0.0002
1024-57-3	Heptachlor Epoxide	0.0002
959-98-8	Endosulfan I	0.0015
60-57-1	Dieldrin	0.0006
72-55-9	4, 4'-DDE	0.0015
72-20-8	Endrin	0.0014
33213-65-9	Endosulfan II	0.0012
72-54-8	4, 4'-DDD	0.0004
7421-93-4	Endrin Aldehyde	0.0027
1031-07-8	Endosulfan Sulfate	0.0014
50-29-3	4, 4'-DDT	0.0007
72-43-5	Methoxychlor	0.0076
53494-70-5	Endrin Ketone	0.0041
57-74-9	Chlordane	0.0286
8001-35-2	Toxaphene	0.0260
12674-11-2	Aroclor-1016	0.0250
11104-28-2	Aroclor-1221	0.0210
11141-16-5	Aroclor-1232	0.0076
53469-21-9	Aroclor-1242	0.0450
12672-29-6	Aroclor-1248	0.0075
11097-69-1	Aroclor-1254	0.0150
11096-82-5	Aroclor-1260	0.0068

INITIAL CALIBRATIONS
CONTINUING CALIBRATIONS
PESTICIDE SUMMARY FORMS

Initial Calibration Data
Volatile HSL Compounds

Case No: 3449 Instrument I D: HP 5993

Contractor: HAZLETON Calibration Date: 10-30-84

Contract No: 68-01-6725

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30%

Laboratory ID	26329	26328	26327	26326	26325			
Compound	RF_{20}	RF_{50}	RF_{100}	RF_{150}	RF_{200}	$\overline{RF}$	% RSD	CCC* SPCC**
Chloromethane	.404	.354	.407	.359	.364	.376	6.8	**
Bromomethane	.112	.117	.115	.109	.131	.117	7.3	
Vinyl Chloride	.239	.219	.218	.205	.219	.220	5.5	*
Chloroethane	.108	.125	.109	.108	.113	.113	6.4	
Methylene Chloride	1.001	.916	.864	.828	.802	.882	8.9	
Acetone	.294	.220	.193	.170	.168	.209	24.	
Carbon Disulfide	2.515	2.410	2.358	2.223	2.288	2.359	4.7	
1, 1-Dichloroethene	1.091	1.007	1.008	.852	.854	.962	10.9	*
1, 1-Dichloroethane	1.803	1.668	1.612	1.488	1.527	1.620	7.7	**
Trans-1, 2-Dichloroethene	1.367	1.260	1.245	1.162	1.192	1.245	6.3	
Chloroform	2.787	2.522	2.452	2.259	2.318	2.468	8.38	*
1, 2-Dichloroethane	1.673	1.516	1.443	1.349	1.336	1.463	9.4	
2-Butanone	.117	.100	.078	.056	.084	.087	26	
1, 1, 1-Trichloroethane	.421	.385	.387	.323	.523	.408	18.1	
Carbon Tetrachloride	2.323	1.282	.922	.389	.634	1.11	68.	
Vinyl Acetate	.344	.338	.334	.277	.442	.348	17.1	
Bromodichloromethane	.400	.370	.370	.311	.494	.389	17.2	
1, 2-Dichloropropane	.218	.200	.194	.163	.255	.206	16.5	*
Trans-1, 3-Dichloropropene	.383	.335	.318	.280	.459	.355	19.4	
Trichloroethene	.398	.361	.360	.306	.501	.385	18.8	
Dibromochloromethane	.351	.320	.329	.276	.440	.343	17.6	
1, 1, 2-Trichloroethane	.284	.235	0.225	.181	.276	.240	17.4	
Benzene	.750	.662	.656	.525	.831	.685	16.7	
cis-1, 3-Dichloropropene	.334	.293	.271	.217	.328	.289	16.4	
2-Chloroethylvinylether	.139	.132	.130	.111	.179	.138	18.1	
Bromoform	.306	.295	.319	.282	.467	.334	22.7	**
2-Hexanone	.160	.132	.135	.121	.135	.137	10.4	
4-Methyl-2-Pentanone	.218	.198	.196	.181	.201	.198	6.6	
Tetrachloroethene	.417	.362	.360	.323	.328	.358	10.4	
1, 1, 2, 2-Tetrachloroethane	.415	.353	.327	.274	.279	.330	17.6	**
Toluene	.775	.685	.668	.570	.627	.665	11.4	*
Chlorobenzene	1.259	1.031	1.024	.864	.971	1.029	14	**
Ethylbenzene	.515	.452	.459	.362	.424	.442	12.6	*
Styrene	.813	.749	.764	.662	.735	.745	7.4	
Total Xylenes	.343/1.04	.275/1.137	.281/1.007	.244/.898	.265/.935	.234/1.005	N/9.4	

RF -Response Factor (subscript is the amount of ug/L)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation

CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)

Form VI

Continuing Calibration Check
Volatile HSL Compounds

Case No: 3449
Contractor: HAZLETON
Contract No: 68-01-6725
Instrument ID: HP5993

Calibration Date: 11-1-84
Time: 0945
Laboratory ID: 26347
Initial Calibration Date: 10-30-84

Minimum RF for SPCC is 0.300 Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	% D	CCC	SPCC
Chloromethane	.376	.356	5.4		**
Bromomethane	.117	.101	13.6		
Vinyl Chloride	.220	.193	12.4	*	
Chloroethane	.113	.092	18		
Methylene Chloride	.882	.734	16.8		
Acetone	.209	.180	14		
Carbon Disulfide	2.359	2.081	11.8		
1,1-Dichloroethene	.962	.935	2.8	*	
1,1-Dichloroethane	1.620	1.403	13.4		**
Trans-1,2-Dichloroethene	1.245	1.170	6.0		
Chloroform	2.468	2.211	10.4	*	
1,2-Dichloroethane	1.463	1.302	11		
2-Butanone	.087	.084	3.4		
1,1,1-Trichloroethane	.408	.368	9.6		
Carbon Tetrachloride	1.110	.449	59		
Vinyl Acetate	.348	.286	17.8		
Bromodichloromethane	.389	.328	15.8		
1,2-Dichloropropane	.206	.175	15.2	*	
Trans-1,3-Dichloropropene	.335	.273	18.5		
Trichloroethene	.385	.357	7.4		
Dibromochloromethane	.343	.327	4.8		
1,1,2-Trichloroethane	.240	.228	4.6		
Benzene	.685	.601	12.2		
cis-1,3-Dichloropropene	.289	.261	9.6		
2-Chloroethylvinylether	.138	.113	18.4		
Bromoform	.334	.287	14		**
2-Hexanone	.137	.113	17.6		
4-Methyl-2-Pentanone	198	.168	15		
Tetrachloroethene	.358	.378	5.6		
1,1,2,2-Tetrachloroethane	.330	.303	8.2		**
Toluene	.665	.604	9.2	*	
Chlorobenzene	1.029	.963	6.4		**
Ethylbenzene	.442	.425	3.8	*	
Styrene	.745	.671	10		
Total Xylenes	.284/1.005	.270/.945	4.9/5.9		

RF_{50} -Response Factor from daily standard file at 50 ug/l
RF -Average Response Factor from initial calibration Form VI

%D -Percent Difference
CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)

Form VII

SURR. RF's UPDATED

Initial Calibration Data
Volatile HSL Compounds

Case No: 3449 (SOILS) Instrument I D: HP 5993

Contractor: HAZLETON Calibration Date: 11-5-84

Contract No: 68-01-6725

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30%

Laboratory ID	26370	26369	26371	26372	26373			
Compound	RF_{20}	RF_{50}	RF_{100}	RF_{150}	RF_{200}	$\overline{RF}$	% RSD	CCC* SPCC**
Chloromethane	.415	.423	.375	.392	.399	.401	4.7	**
Bromomethane	.073	.082	.067	.078	.080	.076	7.9	
Vinyl Chloride	.123	.109	.134	.161	.164	.138	17.3	*
Chloroethane	.091	.081	.077	.083	.086	.084	6.3	
Methylene Chloride	.984	.729	.685	.679	.739	.763	16.5	
Acetone	.437	.289	.240	.244	.256	.293	28	
Carbon Disulfide	2.050	1.828	1.825	1.887	2.015	1.921	5.5	
1, 1-Dichloroethene	.914	.886	.820	.887	.902	.878	4.2	*
1, 1-Dichloroethane	1.024	1.285	1.180	1.288	1.287	1.213	9.4	**
Trans-1, 2-Dichloroethene	1.145	1.170	1.028	1.083	1.132	1.111	5.1	
Chloroform	2.554	2.102	1.876	2.024	2.041	2.119	12.1	*
1, 2-Dichloroethane	1.354	1.303	1.161	1.279	1.249	1.270	5.6	
2-Butanone	.267	.153	.102	.101	.099	.144	49	
1, 1, 1-Trichloroethane	.407	.360	.340	.358	.375	.368	6.8	
Carbon Tetrachloride	.443	.436	.407	.444	.463	.439	4.6	
Vinyl Acetate	.359	.336	.311	.330	.359	.336	5.2	
Bromodichloromethane	.324	.264	.305	.326	.334	.314	9.1	
1, 2-Dichloropropane	.174	.158	.147	.150	.160	.157	6.7	*
Trans-1, 3-Dichloropropene	.293	.280	.267	.282	.297	.284	4.1	
Trichloroethene	.338	.375	.333	.354	.381	.356	6.1	
Dibromochloromethane	.342	.348	.317	.334	.341	.336	3.5	
1, 1, 2-Trichloroethane	.259	.241	.204	.201	.199	.221	12.4	
Benzene	.621	.583	.522	.526	.555	.561	7.4	
cis-1, 3-Dichloropropene	.279	.261	.223	.216	.213	.238	12.4	
2-Chloroethylvinylether	.133	.129	.116	.128	.129	.127	5.1	
Bromoform	.325	.369	.353	.416	.430	.379	11.6	**
2-Hexanone	.199	.205	.168	.197	.205	.195	7.9	
4-Methyl-2-Pentanone	.277	.213	.225	.261	.272	.250	11.6	
Tetrachloroethene	.403	.422	.342	.376	.394	.387	7.8	
1, 1, 2, 2-Tetrachloroethane	.423	.406	.318	.329	.325	.360	13.9	**
Toluene	.660	.661	.522	.563	.567	.595	10.5	*
Chlorobenzene	1.097	.984	.829	.883	.915	.942	10.9	**
Ethylbenzene	.464	.469	.387	.415	.430	.433	7.9	*
Styrene	.750	.781	.626	.714	.752	.725	8.3	
Total Xylenes	.294/1.006	.282/.981	.254/.976	.264/1.048	.279/1.134	.275/1.029	4.8/6.3	

RF -Response Factor (subscript is the amount of ug/L)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation

CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)

Form VI

Continuing Calibration Check
Volatile HSL Compounds

Case No: 3449 SOILS
Contractor: HAZLETON
Contract No: 68-01-6725
Instrument ID: HP5993

Calibration Date: 11-7-84
Time: 0910
Laboratory ID: 26386
Initial Calibration Date: 11-5-84

Minimum RF for SPCC is 0.300 Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	%D	CCC	SPCC
Chloromethane	.415	.467	12.6		**
Bromomethane	.073	.086	18.4		
Vinyl Chloride	.123	.142	15.4	*	
Chloroethane	.091	.099	8.8		
Methylene Chloride	.984	1.021	3.8		
Acetone	.437	.497	13.8		
Carbon Disulfide	2.050	2.037	6.0		
1, 1-Dichloroethene	.914	.959	4.9	*	
1, 1-Dichloroethane	1.024	1.071	4.6		**
Trans-1, 2-Dichloroethene	1.145	1.199	4.8		
Chloroform	2.554	2.544	0.3	*	
1, 2-Dichloroethane	1.354	1.322	2.4		
2-Butanone	.267	.281	5.6		
1, 1, 1-Trichloroethane	.407	.428	5.2		
Carbon Tetrachloride	.443	.472	6.5		
Vinyl Acetate	.359	.361	0.6		
Bromodichloromethane	.324	.341	5.4		
1, 2-Dichloropropane	.174	.177	2.0	*	
Trans-1, 3-Dichloropropene	.293	.283	3.4		
Trichloroethene	.338	.378	11.8		
Dibromochloromethane	.324	.355	9.6		
1, 1, 2-Trichloroethane	.259	.286	10.4		
Benzene	.621	.630	1.4		
cis-1, 3-Dichloropropene	.279	.298	6.8		
2-Chloroethylvinylether	.133	.133	0.2		
Bromoform	.325	.335	3.2		**
2-Hexanone	.199	.209	4.8		
4-Methyl-2-Pentanone	.277	.298	7.6		
Tetrachloroethene	.403	.416	3.3		
1, 1, 2, 2-Tetrachloroethane	.423	.455	7.6		**
Toluene	.660	.681	3.2	*	
Chlorobenzene	1.097	1.125	2.6		**
Ethylbenzene	.464	.468	0.8	*	
Styrene	.750	.72	4.6		
Total Xylenes	.294/1.006	.304/.828	3.4/17.6		

RF_{50} -Response Factor from daily standard file at 50 ug/l
RF -Average Response Factor from initial calibration Form VI

%D -Percent Difference
CCC -Calibration Check Compounds (•)
SPCC -System Performance Check Compounds (••)

Form VII

NOTE: SURR RF's UPDATED TO RF'S OF THIS STD

Initial Calibration Data
Semivolatile HSL Compounds
(Page 1)

Case No: 3449 Instrument ID: HP 5985

Contractor: HAZLETON Calibration Date: 12-20-84

Contract No: 68-01-6725

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID	25343	25342	25341	25340	25339			
Compound	RF_{20}	RF_{50}	RF_{80}	RF_{120}	RF_{160}	$\overline{RF}$	% RSD	CCC* SPCC**
N-Nitrosodimethylamine	1.199	1.154	1.263	1.239	1.233	1.202	5	
Phenol	1.937	2.335	1.977	1.700	1.699	1.929	14	*
Aniline	2.077	2.006	2.324	1.893	1.898	2.039	7	
bis(-2-Chloroethyl)Ether	1.767	1.748	1.874	1.521	1.321	1.646	14	
2-Chlorophenol	1.140	1.422	1.618	1.342	1.216	1.349	14	
1, 3-Dichlorobenzene	1.238	1.298	1.476	1.254	1.090	1.271	11	
1, 4-Dichlorobenzene	1.316	1.347	1.492	1.252	1.140	1.309	10	*
Benzyl Alcohol	.894	1.094	1.251	1.189	1.237	1.133	13	
1, 2-Dichlorobenzene	1.159	1.247	1.413	1.233	1.089	1.228	9	
2-Methylphenol	1.044	1.298	1.505	1.276	1.118	1.248	14	
bis(2-chloroisopropyl)Ether	1.721	2.507	1.346	2.239	2.012	1.965	23	
4-Methylphenol	1.133	1.406	1.493	1.238	1.232	1.300	11	
N-Nitroso-Di-n-Propylamine	.265	.298	.324	.309	.383	.315	14	**
Hexachloroethane	.491	.516	.600	.577	.620	.561	10	
Nitrobenzene	.429	.463	.459	.377	.373	.420	10	
Isophorone	.746	.802	.750	.635	.671	.721	9	
2-Nitrophenol	.142	.190	.200	.204	.217	.190	15	*
2, 4-Dimethylphenol	.217	.267	.295	.269	.306	.271	13	
Benzoic Acid	†	.136	.130	.141	.210	.154	24	
bis(-2-Chloroethoxy)Methane	.448	.551	.499	.423	.421	.468	12	
2, 4-Dichlorophenol	.196	.253	.266	.262	.288	.253	14	
1, 2, 4-Trichlorobenzene	.233	.264	.273	.277	.277	.265	7	
Naphthalene	1.028	.878	.717	.519	.488	.726	32	
4-Chloroaniline	.253	.293	.315	.288	.324	.294	9	
Hexachlorobutadiene	.120	.126	.140	.138	.156	.136	10	*
4-Chloro-3-Methylphenol	.174	.200	.210	.199	.249	.206	13	*
2-Methylnaphthalene	.528	.620	.548	.462	.430	.517	14	
Hexachlorocyclopentadiene	.227	.220	.313	.368	.318	.287	21	**
2, 4, 6-Trichlorophenol	.240	.277	.305	.332	.303	.291	12	*
2, 4, 5-Trichlorophenol	†	.331	.357	.347	.398	.363	7	
2-Chloronaphthalene	1.010	1.065	1.152	1.112	.781	1.024	14	
2-Nitroaniline	†	.354	.388	.402	.400	.386	6	
Dimethyl Phthalate	.867	.845	.899	.858	.801	.854	4	
Acenaphthylene	1.410	1.465	1.488	1.238	.953	1.311	17	
3-Nitroaniline	†	.415	.442	.429	.486	.443	7	
Acenaphthene	1.016	1.094	1.144	1.109	.859	1.044	11	*
2, 4-Dinitrophenol	†	.051	.057	.058	.092	.064	29	**
4-Nitrophenol	†	.166	.173	.164	.226	.182	16	**
Dibenzofuran	1.261	1.236	1.240	1.057	.927	1.144	13	

Response Factor (subscript is the amount of nanograms)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation
CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)
† -not detectable at 20 ng

Initial Calibration Data
Semivolatile HSL Compounds
(Page 2)

Case No: 3449 Instrument ID: HP5985

Contractor: HAZLETON Calibration Date: 12-20-84

Contract No: 68-016725

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID	25343	25342	25341	25340	25339			
Compound	RF_{20}	RF_{50}	RF_{80}	RF_{120}	RF_{160}	$\overline{RF}$	% RSD	CCC* SPCC**
2, 4-Dinitrotoluene	.229	.227	.228	.206	.261	.230	9	
2, 6-Dinitrotoluene	.238	.243	.247	.241	.253	.244	2	
Diethylphthalate	.908	.826	.842	.772	.859	.841	6	
4-Chlorophenyl-phenylether	.488	.477	.513	.531	.617	.525	10	
Fluorene	.955	.905	.992	.895	.816	.912	7	
4-Nitroaniline	†	.237	.235	.225	.323	.255	18	
4, 6-Dinitro-2-Methylphenol	†	.070	.076	.083	.100	.082	16	
N-Nitrosodiphenylamine (1)	.241	.243	.263	.290	.262	.260	8	*
4-Bromophenyl-phenylether	.181	.201	.221	.236	.231	.214	11	
Hexachlorobenzene	.216	.211	.229	.251	.267	.234	10	*
Pentachlorophenol	†	.061	.068	.073	.101	.075	23	
Phenanthrene	.849	.875	.898	.977	.751	.870	9	
Anthracene	.794	.766	.805	.924	.724	.802	9	
Di-N-Butylphthalate	.958	.822	.903	.866	.525	.815	21	
Fluoranthene	.650	.585	.616	.692	.530	.614	10	*
Benzidine	†	ND	ND	ND	.029	.029	0	
Pyrene	2.379	2.381	2.204	2.482	1.770	2.243	13	
Butylbenzylphthalate	1.060	1.057	1.014	1.080	1.245	1.091	8	
3, 3'-Dichlorobenzidine	.215	.225	.226	.274	.266	.241	11	
Benzo(a)Anthracene	1.150	1.030	1.010	1.046	1.023	1.052	5	
bis(2-Ethylhexyl)Phthalate	.952	.838	.904	.982	1.273	.990	17	
Chrysene	1.157	.969	1.107	1.140	1.310	1.136	11	
Di-n-Octyl Phthalate	1.537	1.691	1.709	1.850	2.578	1.873	22	*
Benzo(b)Fluoranthene	1.064	1.062	1.027	1.074	1.217	1.089	7	
Benzo(k)Fluoranthene	1.064	1.062	1.027	1.074	1.217	1.089	7	
Benzo(a)Pyrene	.544	.539	.537	.559	.561	.548	2	*
Indeno(1, 2, 3-cd)Pyrene	.704	.925	.883	.901	.788	.876	14	
Dibenz(a, h)Anthracene	.517	.673	.643	.663	.605	.620	10	
Benzo(g, h, i)Perylene	.612	.729	.697	.686	.582	.661	9	

Response Factor (subscript is the amount of nanograms)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation
CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)
† -not detectable at 20 ng
(1) -Cannot be separated from diphenylamine

Form VI

Initial Calibration Data
Semivolatile HSL Compounds
(Page 1)

Case No: 3449 Instrument ID: HP 5985

Contractor: HAZLETON Calibration Date: 1-15-85

Contract No: 68-01-6725

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID	25434	25433	25432	25431	25430			
Compound	RF_{20}	RF_{50}	RF_{80}	RF_{120}	RF_{160}	$\overline{RF}$	% RSD	CCC• SPCC••
N-Nitrosodimethylamine	1.087	1.179	1.009	1.114	1.114	1.100	6	
Phenol	1.871	1.875	1.622	1.547	1.662	1.715	9	*
Aniline	.688	.674	.639	.571	.698	.654	8	
bis(-2-Chloroethyl)Ether	1.516	1.522	1.349	1.467	1.318	1.434	7	
2-Chlorophenol	1.121	1.143	.985	1.045	1.148	1.088	6	
1, 3-Dichlorobenzene	1.149	1.126	1.065	1.041	1.101	1.095	4	
1, 4-Dichlorobenzene	1.225	1.217	1.135	1.099	1.134	1.162	5	*
Benzyl Alcohol	.626	.653	.706	.710	.739	.686	7	
1, 2-Dichlorobenzene	1.107	1.137	1.025	.971	1.155	1.079	7	
2-Methylphenol	1.081	1.149	1.219	1.059	.980	1.097	8	
bis(2-chloroisopropyl)Ether	1.451	1.518	1.358	1.814	1.272	1.482	14	
4-Methylphenol	1.198	1.337	1.193	1.153	1.204	1.217	6	
N-Nitroso-Di-n-Propylamine	.239	.278	.274	.278	.331	.279	12	**
Hexachloroethane	.436	.453	.427	.437	.532	.457	9	
Nitrobenzene	.351	.369	.371	.327	.345	.352	5	
Isophorone	.575	.629	.521	.458	.500	.536	12	
2-Nitrophenol	.122	.138	.135	.165	.156	.143	12	*
2, 4-Dimethylphenol	.209	.238	.209	.221	.257	.226	9	
Benzoic Acid	†	.041	.068	.123	.152	.096	53	
bis(-2-Chloroethoxy)Methane	.304	.336	.295	.011	.315	.312	6	
2, 4-Dichlorophenol	.154	.176	.168	.200	.191	.174	11	
1, 2, 4-Trichlorobenzene	.189	.192	.186	.190	.204	.191	4	
Naphthalene	.847	.834	.577	.514	.478	.648	28	
4-Chloroaniline	.176	.201	.211	.215	.224	.205	9	
Hexachlorobutadiene	.084	.087	.088	.086	.101	.089	8	*
4-Chloro-3-Methylphenol	.148	.166	.154	.148	.161	.155	5	*
2-Methylnaphthalene	.413	.445	.409	.379	.375	.404	7	
Hexachlorocyclopentadiene	.202	.221	.223	.251	.266	.232	11	**
2, 4, 6-Trichlorophenol	.200	.231	.206	.218	.206	.212	6	*
2, 4, 5-Trichlorophenol	†	.133	.255	.310	.287	.246	32	
2-Chloronaphthalene	.747	.826	.960	.890	.831	.850	9	
2-Nitroaniline	†	.319	.317	.363	.273	.318	12	
Dimethyl Phthalate	.638	.631	.557	.648	.580	.610	6	
Acenaphthylene	1.304	1.355	1.281	1.308	1.142	1.278	6	
3-Nitroaniline	†	.370	.357	.381	.347	.363	4	
Acenaphthene	.840	.898	.862	.921	.828	.869	4	*
2, 4-Dinitrophenol	†	.072	.065	.081	.073	.072	9	**
4-Nitrophenol	†	.133	.134	.182	.155	.151	15	**
Dibenzofuran	1.001	1.057	.971	1.043	.908	.996	6	

Response Factor (subscript is the amount of nanograms)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation
CCC -Calibration Check Compounds (•)
SPCC -System Performance Check Compounds (••)
† -not detectable at 20 ng

Initial Calibration Data
Semivolatile HSL Compounds
(Page 2)

Case No: 3449 Instrument ID: HP5985

Contractor: HAZLETON Calibration Date: 1-15-85

Contract No: 68-01-6725

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % RSD for CCC is 30%

Laboratory ID	25434	25433	25432	25431	25430			
Compound	RF_{20}	RF_{50}	RF_{80}	RF_{120}	RF_{160}	$\overline{RF}$	% RSD	CCC* SPCC**
2, 4-Dinitrotoluene	.215	.217	.190	.229	.187	.207	9	
2, 6-Dinitrotoluene	.191	.198	.178	.205	.178	.198	6	
Diethylphthalate	.642	.652	.567	.725	.648	.646	9	
4-Chlorophenyl-phenylether	.315	.331	.309	.354	.348	.331	6	
Fluorene	.709	.754	.714	.836	.747	.752	7	
4-Nitroaniline	†	.239	.212	.254	.022	.235	9	
4, 6-Dinitro-2-Methylphenol	†	.076	.084	.098	.089	.086	11	
N-Nitrosodiphenylamine (1)	.296	.333	.405	.380	.401	.363	13	*
4-Bromophenyl-phenylether	.139	.152	.187	.207	.152	.167	17	
Hexachlorobenzene	.160	.171	.166	.174	.185	.171	5	*
Pentachlorophenol	†	.036	.047	.061	.056	.050	22	
Phenanthrene	.625	.688	.486	.611	.721	.626	14	
Anthracene	.633	.691	.585	.698	.733	.660	10	
Di-N-Butylphthalate	.725	.789	.762	.682	.706	.732	6	
Fluoranthene	.575	.626	.633	.588	.544	.593	6	*
Benzidine	†	.437	.385	.531	.421	.443	14	
Pyrene	1.177	1.277	.960	1.067	.878	1.071	15	
Butylbenzylphthalate	.454	.512	.380	.458	.413	.443	11	
3, 3'-Dichlorobenzidine	.244	.239	.199	.218	.221	.224	8	
Benzo(a)Anthracene	.912	.940	.680	.788	.723	.808	14	
bis(2-Ethylhexyl)Phthalate	.562	.627	.477	.615	.590	.574	10	
Chrysene	.895	.937	.733	.788	.758	.822	11	
Di-n-Octyl Phthalate	1.010	1.140	1.259	1.310	1.274	1.198	10	*
Benzo(b)Fluoranthene	.743	.751	.730	.765	.767	.751	2	
Benzo(k)Fluoranthene	.743	.751	.730	.765	.767	.751	2	
Benzo(a)Pyrene	.618	.623	.633	.643	.658	.635	2	*
Indeno(1, 2, 3-cd)Pyrene	.691	.732	.716	.755	.860	.750	9	
Dibenz(a, h)Anthracene	.521	.562	.623	.620	.690	.603	11	
Benzo(g, h, i)Perylene	.666	.703	.763	.744	.825	.740	8	

Response Factor (subscript is the amount of nanograms)
$\overline{RF}$ -Average Response Factor
%RSD -Percent Relative Standard Deviation
CCC -Calibration Check Compounds (*)
SPCC -System Performance Check Compounds (**)
† -not detectable at 20 ng
(1) -Cannot be separated from diphenylamine

Form VI

Pesticide Evaluation Standards Summary

Case No. 3449 - SOILS Laboratory HAZLETON

Contract No. 68-01-6725 Column 1.5% SP2250/1.95% SP2401

Date of Analysis 2/2/85 Instrument ID #10802

EVALUATION CHECK FOR LINEARITY

LABORATORY ID				
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	4.76×10^{-4}	5.41×10^{-4}	5.66×10^{-4}	7.2%
ENDRIN by pk ht on 5mv	4.25	3.78	3.66	6.5% — computer area error
4,4'-DDT	7.82×10^{-4}	7.77×10^{-4}	6.38×10^{-4}	9.1%
DIBUTYL CHLORENDATE	6.81×10^{-4}	6.87×10^{-4}	7.17×10^{-4}	2.3%

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	0%	0%	0%	
4,4'-DDT pk ht	0.9%	0.5%	1.5%	
LABORATORY ID				
TIME OF ANALYSIS	16:35 2/2/85	5:07 2/3/85	12:46 2/3/85	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
BLANK		1:38	0.3%				
FAD60		2:19	.04%				
* FAD61		9:59	0%				
FAD64		3:01	.04%				
FAD64 MS		3:43	.04%				
FAD64 MSD		4:25	.1%				

* ≤2% PACKED, ≤0.3% CAPILLARY

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* COMPUTER DID NOT LIST RETENTION TIME. SHIFT IS BASED ON MEASURED STD VALUES

FORM VIII

Pesticide/PCB Standards Summary

Case No. 3449- SOILS Laboratory HAZLETON
Contract No. 68-01-6725 GC Column 1.5%SP2250/1.95%SP2401 GC Instrument ID 10802

	DATE OF ANALYSIS 2/2/85 TIME OF ANALYSIS 17:17 - start LABORATORY ID				DATE OF ANALYSIS 2/3/85 TIME OF ANALYSIS 9:17 start LABORATORY ID			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.40	.02	1.02×10^{-1}	QUANT	2.41	1.07×10^{-1}	~~107~~	4.9%
beta-BHC	3.36	.02	2.78×10^{-1}		3.37	2.94×10^{-1}		5.8%
delta-BHC	3.90	~~.0~~	1.79×10^{-1}		—			
gamma-BHC	2.99	.03	1.26×10^{-1}		3.01	1.31×10^{-1}		4.0
Heptachlor	3.66	.02	1.44×10^{-1}		3.67	1.52×10^{-1}		5.6
Aldrin	4.39	.03	1.83×10^{-1}		4.41	1.87×10^{-1}		2.2%
Heptachlor Epoxide	6.41	.03	2.76×10^{-1}		6.43	2.81×10^{-1}		1.8%
Endosulfan I	8.00	.03	3.27×10^{-1}		8.02	3.47×10^{-1}		6.1%
Dieldrin	9.68		3.98×10^{-1}		—			
4,4'-DDE	9.06	.03	3.39×10^{-1}		9.08	3.57×10^{-1}		5.3%
Endrin	11.71	.04	6.87×10^{-1}		11.74	6.45×10^{-1}		6.1%
Endosulfan II	14.01	.06	6.45×10^{-1}		14.05	6.67×10^{-1}		3.4%
4,4'-DDD	13.58	.06	7.14×10^{-1}		13.62	7.41×10^{-1}		3.8%
Endrin Aldehyde	18.03		1.21×10^{-0}		—			
Endosulfan Sulfate	21.55		1.67		—			
4,4'-DDT	16.30	.08	8.73×10^{-1}		16.35	1.01×10^{-1}		15.7%
Methoxychlor	30.29		2.69		—			
Endrin Ketone	29.36	.08	1.18		29.41	1.25		5.9%
Tech. Chlordane	mr	mr	mr					
alpha-Chlordane*	—	—	—					
gamma-Chlordane*	—	—	—					
Toxaphene	mr	mr	mr					
Aroclor - 1016	mr	mr	mr					
Aroclor - 1221	mr	mr	mr					
Aroclor - 1232	mr	mr	mr					
Aroclor - 1242	mr	mr	mr					
Aroclor - 1248	mr	mr	mr					
Aroclor - 1254	mr	mr	mr					
Aroclor - 1260	mr	mr	mr					

4/84

* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

CALCULATED BY PEAK HEIGHT DUE TO

FORM IX

Pesticide Evaluation Standards Summary

Case No. 3449 Laboratory HAZLETON

Contract No. 68-01-6725 Column 3% OV-1 - Confirmation

Date of Analysis 2/6/85 Instrument ID 278211

EVALUATION CHECK FOR LINEARITY

LABORATORY ID				
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	6.04×10^{-4}	6.02×10^{-4}	5.01×10^{-4}	8.5%
ENDRIN	7.37×10^{-4}	7.34×10^{-4}	5.72×10^{-4}	11.3%
4,4'-DDT	8.31×10^{-4}	7.82×10^{-4}	6.34×10^{-4}	11.2%
DIBUTYL CHLORENDATE	5.39×10^{-4}	5.57×10^{-4}	5.49×10^{-4}	1.3%

≤20% FOR CONFIRM.

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	0.9%			
4,4'-DDT	0.5%			
LABORATORY ID				
TIME OF ANALYSIS	ENDRIN - 16:44 DDT - 17:25			

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
BLANK		18:07	0.4%				
FA060		18:49	0.7%				
FA064 MS		19:30	0.5%				
FA064 MSD		20:12	0.5%				

* ≤2% PACKED, ≤0.3% CAPILLARY

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FORM VIII

Pesticide/PCB Standards Summary

Case No. 3449-SOILS Laboratory HAZLETON
Contract No. 68-01-6725 GC Column 3% OV-1 GC Instrument ID 278211

	DATE OF ANALYSIS 2/6/85 TIME OF ANALYSIS START 14:39 LABORATORY ID				DATE OF ANALYSIS 2/6/85 TIME OF ANALYSIS 20:53 LABORATORY ID			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.11		7.23×10^{-4}	CONF				
beta-BHC	2.26		9.61×10^{-4}	CONF				
delta-BHC	2.57		8.72×10^{-4}	CONF				
gamma-BHC	2.49		6.88×10^{-4}	QUANT	2.48	7.46×10^{-4}	~~CONF~~ QUANT	8.4%
Heptachlor	4.05		4.60×10^{-4}	CONF	4.05	4.95×10^{-4}	CONF	7.6%
Aldrin	5.03		6.11×10^{-4}		5.03	6.92×10^{-4}	CONF	13.3%
Heptachlor Epoxide	6.16		5.34×10^{-4}		6.15	5.94×10^{-4}	CONF	11.2%
Endosulfan I	7.68		5.39×10^{-4}					
Dieldrin	8.98		6.12×10^{-4}					
4,4'-DDE	8.94		5.68×10^{-4}		8.93	6.10×10^{-4}	CONF	7.4%
Endrin	10.04		6.60×10^{-4}		10.03	6.73×10^{-4}	CONF	2.0%
Endosulfan II	10.22		5.68×10^{-4}					
4,4'-DDD	11.31		7.76×10^{-4}		11.29	8.66×10^{-4}	CONF	11.6%
Endrin Aldehyde	11.36		6.01×10^{-4}					
Endosulfan Sulfate	13.20		1.24×10^{-3}					
+ 4,4'-DDT	14.81		1.60		14.81	1.75	CONF	9.1%
Methoxychlor	21.96		1.04×10^{-3}					
Endrin Ketone	16.92		6.19×10^{-4}					
Tech. Chlordane	—							
alpha-Chlordane*	—							
gamma-Chlordane*	—							
Toxaphene	—							
Aroclor - 1016	—							
Aroclor - 1221	—							
Aroclor - 1232	—							
Aroclor - 1242	—							
Aroclor - 1248	—							
Aroclor - 1254	—							
Aroclor - 1260	—							

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* SEE EXHIBIT B, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

+ pk ht calc due to computer area error.

FORM IX

Pesticide Evaluation Standards Summary

Case No. 3449 Laboratory Hazleton Labs

Contract No. 68-01-6725 Column 1.5% SP2250/1.95% SP2401

Date of Analysis 1/28/85 Instrument ID 10802

EVALUATION CHECK FOR LINEARITY

LABORATORY ID				
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	6.2×10^{-4}	5.9×10^{-4}	5.9×10^{-4}	2.3%
ENDRIN	9.6×10^{-4}	9.5×10^{-4}	9.3×10^{-4}	1.3%
4,4'-DDT	8.9×10^{-4}	8.6×10^{-4}	7.0×10^{-4}	9.9%
DIBUTYL CHLORENDATE	7.1×10^{-4}	7.2×10^{-4}	7.7×10^{-4}	3.6%

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN calculated by peak height

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	0%	0%	0	
4,4'-DDT	1.0%	1.0%	1.0%	
LABORATORY ID				
TIME OF ANALYSIS	16:56:09	5:28:54	13:09:17	

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
Blank		1:59:49	0.04%				
FA062		2:41:38	0.0%				
FA062MS		3:23:27	0.04%				
FA062MSD		4:05:16	0.2%				
FA063		4:47:05	0.2%				
* FA059		6:10:42	2.7%				

* ≤2% PACKED, ≤0.3% CAPILLARY

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* DBC peak for FA059 ~~Assymetrical~~ Asymmetrical causing RT shift.

FORM VIII

Pesticide/PCB Standards Summary

Case No. 3449 Laboratory Hazleton Labs

Contract No. 68-01-6725 GC Column 1.5% SP2250/1.95% SP2401 GC Instrument ID 10802

	DATE OF ANALYSIS 1/28/85				DATE OF ANALYSIS 1/29/85			
	TIME OF ANALYSIS 17:37:56				TIME OF ANALYSIS 9:40:01			
	LABORATORY ID				LABORATORY ID			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.40	.01	3.6×10^{-4}					
beta-BHC	3.35	.01	1.3×10^{-3}					
delta-BHC	3.90	.01	2.6×10^{-4}					
gamma-BHC	2.99	.01	1.4×10^{-1}		3.00	1.4×10^{-1}		0% *
Heptachlor	3.65	.01	1.6×10^{-1}		3.66	1.6×10^{-1}		0% *
Aldrin	4.39	.01	1.9×10^{-1}		4.40	2.0×10^{-1}		5.3% *
Heptachlor Epoxide	6.40	.01	2.5×10^{-1}		6.42	2.6×10^{-1}		4.0% *
Endosulfan I	8.00	.01	6.4×10^{-4}					
Dieldrin	9.68	.01	6.5×10^{-4}					
4,4'-DDE	9.04	.01	3.8×10^{-1}		9.06	3.8×10^{-1}		0% *
Endrin	11.70	.03	7.5×10^{-1}		11.73	7.0×10^{-1}		6.7% *
Endosulfan II	14.02	.01	6.5×10^{-4}					
4,4'-DDD	13.57	.03	7.8×10^{-1}		13.59	7.7×10^{-1}		1.3% *
Endrin Aldehyde	18.04	.03	8.3×10^{-4}					
Endosulfan Sulfate	21.56	.03	1.2×10^{-3}					
4,4'-DDT	16.28	.01	1.0		16.30	1.0		0% *
Methoxychlor	30.23	.03	1.5×10^{-3}					
Endrin Ketone	29.38	.02	6.6×10^{-4}					
Tech. Chlordane	MR	MR	MR		MR	MR		
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

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* SEE EXHIBIT B, PART 7

* calculated using Peak heights

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

FORM IX

Pesticide Evaluation Standards Summary

Case No. 3449 Laboratory Hazleton Labs

Contract No. 68-01-6725 Column 3% OV-1 confirmation

Date of Analysis 1/31/85 Instrument ID 278211

EVALUATION CHECK FOR LINEARITY

LABORATORY ID				
PESTICIDE	CALIBRATION FACTOR EVAL. MIX A	CALIBRATION FACTOR EVAL. MIX B	CALIBRATION FACTOR EVAL. MIX C	% RSD (≤10%)
ALDRIN	6.1×10^{-4}	6.1×10^{-4}	5.1×10^{-4}	8.1%
ENDRIN	7.1×10^{-4}	6.6×10^{-4}	5.8×10^{-4}	8.3%
4,4'-DDT	8.4×10^{-4}	8.0×10^{-4}	6.5×10^{-4}	10.8%
DIBUTYL CHLORENDATE	5.4×10^{-4}	5.6×10^{-4}	5.6×10^{-4}	1.7%

EVALUATION CHECK FOR 4,4'-DDT/ENDRIN BREAKDOWN calculated by peak height

	PERCENT BREAKDOWN EXPRESSED AS TOTAL DEGRADATION			
	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B	EVAL. MIX B
ENDRIN	0%			
4,4'-DDT	3.8%			
LABORATORY ID				
TIME OF ANALYSIS	EVAL Mix B 13:22:00			

EVALUATION OF RETENTION TIME SHIFT FOR DIBUTYLCHLORENDATE

SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *	SMO SAMPLE NO.	LAB ID	TIME OF ANALYSIS	PERCENT DIFF. *
Blank		17:31:49	0.2%				
FA059		18:13:24	0.2%				

* ≤2% PACKED, ≤0.3% CAPILLARY

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FORM VIII

Pesticide/PCB Standards Summary

Case No. 3449 Laboratory Hazleton Labs
Contract No. 68-01-6725 GC Column 3200V-1 GC Instrument ID 278211

	DATE OF ANALYSIS 1/31/85 TIME OF ANALYSIS 15:26:54 LABORATORY ID				DATE OF ANALYSIS 1/31/85 TIME OF ANALYSIS 20:18:18 LABORATORY ID			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF OR QUANT.	RT	CALIBRATION FACTOR	CONF OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.10	.02	7.5×10^{-4}					
beta-BHC	2.25	.01	9.8×10^{-4}					
delta-BHC	2.56	.01	8.6×10^{-4}					
gamma-BHC	2.48	.01	1.2×10^{-1}		2.49	1.3×10^{-1}		8.3% *
Heptachlor	4.04	.01	1.3×10^{-1}		4.05	1.5×10^{-1}		15.4% *
Aldrin	5.02	.01	2.1×10^{-1}		5.03	2.4×10^{-1}		14.3% *
Heptachlor Epoxide	6.14	.01	2.0×10^{-1}		6.15	2.2×10^{-1}		10.0% *
Endosulfan I	7.66	.01	5.5×10^{-4}					
Dieldrin	8.97	.01	6.1×10^{-4}					
4,4'-DDE	8.92	.01	3.4×10^{-1}		8.94	3.7×10^{-1}		8.8% *
Endrin	10.02	.01	4.9×10^{-1}		10.03	5.2×10^{-1}		6.1% *
Endosulfan II	10.20	.03	5.7×10^{-4}					
4,4'-DDD	11.28	.02	7.0×10^{-1}		11.29	7.5×10^{-1}		7.1% *
Endrin Aldehyde	11.34	.02	6.0×10^{-4}					
Endosulfan Sulfate	13.19	.02	1.2×10^{-3}					
4,4'-DDT	14.78	.02	8.1×10^{-1}		14.79	9.0×10^{-1}		11.1% *
Methoxychlor	21.93	.03	1.0×10^{-3}					
Endrin Ketone	16.89	.03	6.4×10^{-4}					
Tech. Chlordane	MR	MR	MR		MR	MR		
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

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* SEE EXHIBIT B, PART 7 *calculated by peak height

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<10% DIFFERENCE)

FORM IX

INORGANIC WATER ANALYSIS SUMMARY

CASE NUMBER: 3449
SITE NAME/CODE: Centralized Tie Plant TX10448

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers										Drinking Water Criteria	
	MF1669	MF1670	MF1673	MF1674	MF1675	MF1676	MF1677	MF1678	MF1679	MF1680	Primary	Secondary
Matrix type	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER		
Aluminum	1172	734	6582	25,560	43,540	23,010	21,960		22900	8167		
Antimony							500			57		
Arsenic											50	
Barium	54	66	150	158	222	76	500		286		1000	
Beryllium				26		62	42					
Cadmium						14	20				10	
Calcium	8387E	19860E	597,800E	562,100E	275,300E	661,100E	1,158,000E	218	57,400	34680		
Chromium			13	20	53		50		36	13	50	
Cobalt				149		127	200					
Copper	24	13	23	34	54	37	100	29	32	23		1000
Iron	782	736	5250	50250	20,900	8643	27,700	158	11,710	5057		300
Lead		6.5R	30R		51R	38.4R	19R	9	28		50	
Magnesium	2311E	3230E	96,210E	142,500E	43,320E	98,260E	258,200E	5000	6332	5180		
Manganese	16E	51E	240E	7997E	436E	2146E	12,390E		139	72		50
Mercury											2	
Nickel			30	206	26	183	200					
Potassium	4778	3973	28,728	63,688	19,625	50,164	108,432		6045	4296		
Selenium			43			8					10	
Silver							50R			13	50	
Sodium	4119 E	14,470E	386,600E	440,600E	346600E	490,200E	1,208,000E	2115	93610	75420		
Thallium												
Tin												
Vanadium			54	79	57		227		25			
Zinc	50	49	287	1151	418	1476	595	31	186	222		5000
Cyanide								10		17		
Station No.	06	07	10	11	9	12	15	19	08	14		
Sample Station Location	ENTRANCE ROAD ADJACENT TO R.R. TRACKS AT AQUADUCT	S.W. OF SEWAGE DISPOSAL POND 50' N.W. OF AQUADUCT	GW-4	GW-5	GW-3	GW-6	GW-20	RINSATE BLANK	GW-12	GW-15		

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not withing control limits.
*-duplicate annalysis is not within control limits.

INORGANIC WATER ANALYSIS SUMMARY

CASE NUMBER: 3449
SITE NAME/CODE: Centralized Tie Plant
TX10448

CONCENTRATIONS (ppb)

PARAMETER	EPA Sample Numbers											Drinking Water Criteria	
	MF1681	MF1682	MF1685	MF1686	MF1688							Primary	Secondary
Matrix type	WATER	WATER	WATER	WATER	WATER								
Aluminum	27,430	50240	14620	402									
Antimony													
Arsenic	48	2680R	2320R									50	
Barium	339	923	314									1000	
Beryllium	8.2												
Cadmium												10	
Calcium	436,300E	53990E	14940E	2715 E	792 E								
Chromium	84	61		11								50	
Cobalt													
Copper	29	79	57	30	33								1000
Iron	23,750	17,230	6502	300	142								300
Lead	54R				11R							50	
Magnesium	65750E	12940E	3764 E	753 E	425 E								
Manganese	2905E	152E	34E	12 E									50
Mercury												2	
Nickel	23	24											
Potassium	51124	10394	3666	1312									
Selenium												10	
Silver												50	
Sodium	290500E	220100E	87260E	3461 E	1592 E								
Thallium													
Tin													
Vanadium	66	53	23										
Zinc	431	110	79	53	94								5000
Cyanide													
Station No.	13	01	02	03	20								
Sample Station Location	GW-7	LAGOON A	LAGOON B	LAGOON C	RINSATE BLANK								

E-indicates a value estimated or not reported due to the presence of interference.
R-spike sample recovery is not withing control limits.
*-duplicate annalysis is not within control limits.

PHOTO # 1

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/1059/ SE

Comments:
SAMPLING POINT (STATION #1),
NW CORNER, APPROX.
2 FEET FROM THE BANK
LAGOON- A
LOG BOOK PHOTO # 21

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 2

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/ 1102 /SE

Comments:
LAGOON-A PANORAMA

LOG BOOK PHOTO # 22

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 3

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/ 1204/ WEST

Comments:
SAMPLING POINT (STATION #2),
EAST CORNER,
APPROX. 2 FEET FROM
THE BANK
LAGOON - B
LOG BOOK PHOTO #23

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 4

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/1235/ SOUTH

Comments:
SAMPLING POINT (STATION #3)
SHOWN BY WOODEN STICK
LAGOON- C
LOG BOOK PHOTO #28

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

Log Book 28

PHOTO #5

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/1236/SE to S

Comments:
PANORAMA OF LAGOON "C"
(STATION #3)
LAGOON - C
LOG BOOK PHOTO #29, 30

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 6

Photographer / Witness
LARRY LANDRY / ALCEE CHRISS

Date / Time / Direction
10-25-84 / 1220 / SE to WEST

Comments:
HIGH HAZARD SAMPLE
(STATION #4) WAS COLLECTED
FROM THE NORTH CORNER,
APPROX. 2 FEET FROM THE BANK
LAGOON - D
LOG BOOK PHOTO #26, 27

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 7

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/ 1215/ SE to W

Comments:
HIGH HAZARD SAMPLE (STATION #5) WAS COLLECTED FROM NW CORNER, APROX. 2' FROM THE BANK
LAGOON-E
LOG BOOK PHOTO # 24,25

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

Photographer / Witness

Date / Time / Direction

Comments:

NOT USED

PHOTO #8

Photographer / Witness
MIKE LEVINE/ALCEE CHRISS

Date / Time / Direction
10-24-84/1043/SOUTH

Comments: UPSTREAM (THOMPSON CREEK), SAMPLING POINT-STATION #6
LOG BOOK PHOTO #1

Photographer / Witness

Date / Time / Direction

Comments:

NOT USED

10

PHOTO #9

Photographer / Witness
MIKE LEVINE / ALCEE CHRISS

Date / Time / Direction
10-24-84 / 1142 / NORTH

Comments:
DOWNSTREAM (THOMPSON CREEK) SAMPLING POINT — STATION # 7
LOG BOOK PHOTO # 2

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 10

Photographer / Witness
AL NEWTON/LONNIE ROSS

Date / Time / Direction
10-25-84/1059/ NW

Comments:
STATION #8 (GW-12)
MONITORING WELL

LOG BOOK PHOTO #1

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

CENTRALIED TIE PLANT
SOMERVILLE, TEXAS

Photographer / Witness

Date / Time / Direction

Comments:

NOT USED

PHOTO # 11

Photographer / Witness
MIKE LEVINE/ALCEE CHRISS

Date / Time / Direction
10-24-84/1036/WEST

Comments: STATION #9 (GW-3)
MONITORING WELL

LOG BOOK PHOTO #6

6

Photographer / Witness

Date / Time / Direction

Comments:

NOT USED

PHOTO # 12

Photographer / Witness
MIKE LEVINE/ALCEE CHRISS

Date / Time / Direction
10-24-84/1049/WEST

Comments:
STATION # 10 (GW-4)
MONITORING WELL

LOG BOOK PHOTO # 4

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 13

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/1247PM/SOUTH

Comments:
STATION # 11 (GW-5)
MONITORING WELL

LOG BOOK PHOTO # 33

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 14

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/ 1240 PM/ WEST

Comments:
STATION-12 (GW-6)
MONITORING WELL

LOG BOOK PHOTO# 31

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 15

Photographer / Witness
LARRY LANDRY/ALCEE CHRISS

Date / Time / Direction
10-25-84/1245/SOUTH

Comments:
SAMPLE LOCATION
FOR STATION # 13 (GW-7)
MONITORING WELL
LOG BOOK PHOTO # 32

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

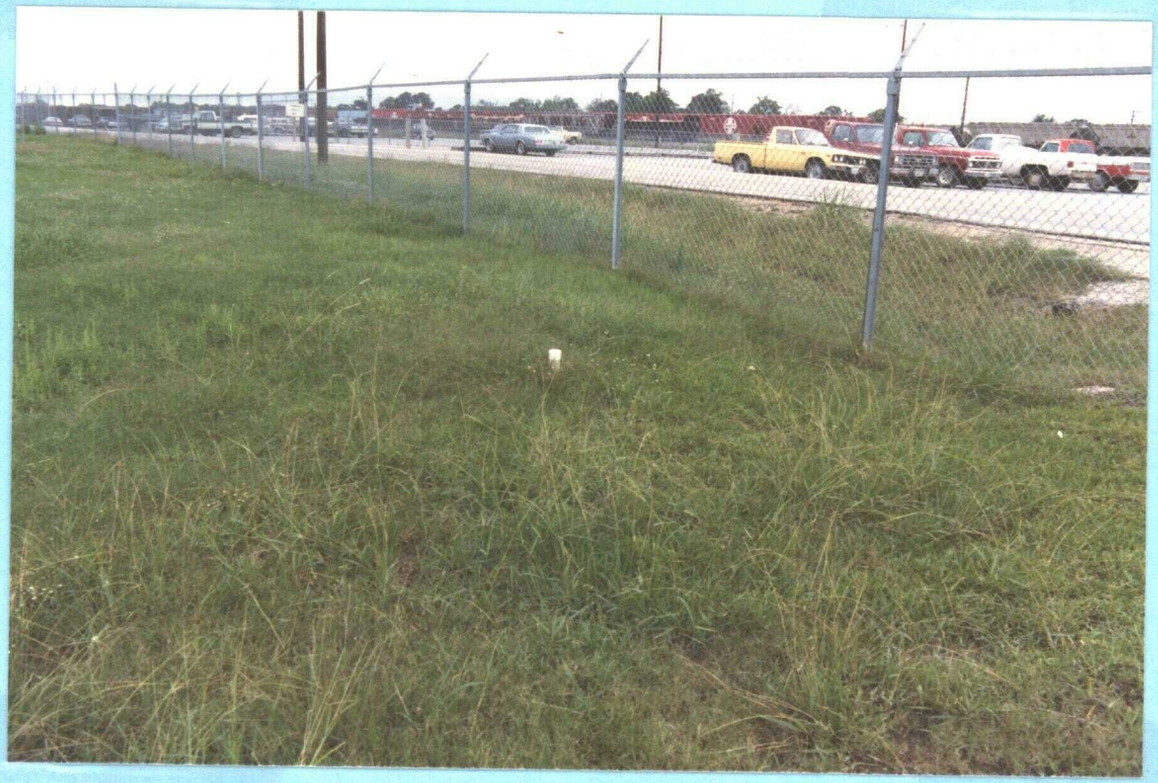

PHOTO # 16

15

Stn #16
(GW-2)

Photographer / Witness
ROBERT KRATZKE / ALCEE CHRISS

Date / Time / Direction
10-25-84 / 1310 / SOUTH

Comments:
STATION # 16 (GW-2)
MONITORING WELL

LOG BOOK PHOTO # 35

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 17

Photographer / Witness
ROBERT KRATZKE/ALCEE CHRISS

Date / Time / Direction
10-25-84/ 1300/WEST

Comments:
STATION-17 (GW-14)
MONITORING WELL

LOG BOOK PHOTO # 34

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS

PHOTO # 18

Photographer / Witness
AL NEWTON/LONNIE ROSS

Date / Time / Direction
10-25-84/1300/W

Comments:
STATION #18
SOIL SAMPLE COLLECTED
AT THE SURFACE OF
THE 'FILLED-IN' LAGOON-F
LOG BOOK PHOTO # 3,4

CENTRALIZED TIE PLANT
SOMERVILLE TEXAS