SUPERFUND
CONTRACT SUPPORT TEAM
SAMPLING REPORT

June 1-11, 1999
AMENIA LANDFILL SITE
Amenia, New York

Participating Personnel:

U.S. Environmental Protection Agency
Michael A. Mercado, Environmental Scientist
Mark Denno, Environmental Scientist
Keith Glenn, Environmental Scientist
Diane Salkie, Environmental Scientist
William Glynn, Environmental Scientist

Report Prepared By:

Michael A. Mercado, Environmental Scientist

Approved for the Director By:

Robert Runyon, Chief,
Hazardous Waste Support Branch

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1.0 BACKGROUND:

The Amenia Landfill site's address is Route 22 S (1.5 miles south of Route 44), Amenia, Dutchess County, New York. The site is located on the western side of Route 22 in the Town of Amenia. Approximately 10 acres were used between the 1940's and 1976 as a municipal landfill. Occupying a northern portion of the site is Sharon Oil & Gas company. Sharon Oil & Gas Company has a fuel storage enclosure consisting of above ground storage tanks within a fenced-in, bermed area. In the northern portion of the site is a helipad and access road. A site map can be found in Appendix A

During the period when the Landfill was in operation, it is suspected that the site was used for the disposal of industrial waste. The New York State Department of Environmental Conservation (NYSDEC) referred the site to the USEPA after a test pit investigation in September 1998 revealed partially and totally buried drums.

By November 1998, the USEPA had found one hundred & sixty-seven drums on the site. The one hundred & sixty-seven drums were combined into eleven composite groups for disposal analysis with the exception of Drums D-137, D-143, D-144 & D-145. Drums D-137 & D-143 were sampled individually. Drums D-144 & D-145 are the contents from one drum put into two different overpack drums named D-144 & D-145. The sample from the recombination of these two overpacks is named D-145.

Analytical results for the composite samples and the individual drum samples indicated that the drums had high concentrations of: volatile organics(VOAs), base/neutral/acid extractables (BNAs), pesticides, inorganic compounds, flammable substances, and corrosive acids & bases.

The USEPA, Region II, ERRD, Removal Action Branch requested technical sampling support from the Hazardous Waste Support Branch(HWSB) in performing an enforcement sampling event at the Amenia Landfill Site. The sampling parameters are listed below:

- Target Compound List (TCL)
    - Volatile Organic Compounds (VOCs)
    - Base, Neutral, Acids (BNAs)
    - Pesticides
    - Herbicides
- Target Analyte List (TAL) Metals
- Ignitability
- Corrosivity
- Toxicity Characteristic Leaching Procedure (TCLP):
    - VOCs
    - BNAs

Pesticides
Herbicides
Metals

Ten drums were sampled for TCLP parameters and twenty drums for TCL/TAL parameters. In addition, seven soil sample points were sampled for TCL/TAL parameters (see Appendix A). All sampling tasks conform with the guidelines set forth in the Quality Assurance Project Plan(QAPP)(see Appendix B). A copy of the QAPP was on-site and available for reference during the sampling event.

2.0 SAMPLING PROCEDURES:

The sampling procedures were in accordance with the guidelines set forth in Appendix B - QAPP.

3.0 DESCRIPTION OF EVENTS:

On June 1, 1999, a sampling team consisting of Environmental Scientists Michael Mercado, Keith Glenn and Diane Salkie from USEPA Region II traveled to Amenia, New York and setup operation at the Amenia Landfill Site. The picture below shows the exclusion zone taped off where the drums were sampled. The drums were placed in order on a plastic tarp to prevent contaminating the ground during the sampling event. The taped off section delineated the area where personal protective equipment was needed (see Appendix A).

Between June 2 and 4, the sampling team suited up in Level B Personnel Protective Equipment(PPE) and sampled 12 drums. These samples were labeled,

preserved, packed, and shipped according to the QAPP.

The sampling team also collected a composite sample of drums DL-113, 122, 130, 137, and 166. An equal amount of sample was taken from each drum. The samples were placed in a stainless steel mixing bowl. Samples for TCL VOAs were taken before homogenizing. All samples for other analytical parameters were homogenized in the mixing bowl and then poured into the sample containers. The composite samples taken were given to the START team on-site to ship for analysis.

On June 7, 1999, a sampling team consisting of Environmental Scientists Michael Mercado, Mark Denno and William Glynn from USEPA Region II traveled to Amenia, New York and continued operations at the Amenia Landfill Site. Between June 7 and 9, the sampling team completed the sampling of the Site. Samples were obtained from thirteen drums and seven soil locations. These samples were labeled, preserved, packed, and shipped in accordance with the QAPP.

Split samples were given to the PRP consultant for each drum sampled. The consultant provided his glassware in the amount and volume he needed.

The Laboratory control numbers and Quality Assurance/Quality Control (QA/QC) for the samples are identified in Table 1.

The drum samples and the drum QA/QC blanks were analyzed for TCLP VOCs & BNAs, TAL metals, Corrosivity and Ignitability by the EPA Laboratory Branch(LABB) in Edison, NJ. The drum samples and the drum QA/QC blanks were sent and analyzed for TCL VOAs, BNAs, Pesticide & PCBs by CompuChem Environmental Corp., Cary, NC, a Contract Laboratory Program (CLP) laboratory. The drum samples and the drum QA/QC blanks were sent and analyzed for TAL Metals by Southwest Labs of Oklahoma, Inc., Broken Arrow, OK a CLP laboratory. The Trip Report for this event can be found in Appendix C.

4.0 RESULTS:

The drum samples sent to the CLP laboratories were above the concentration level that these laboratories could handle under the CLP contract. Under the CLP contract the laboratories are limited to low & medium concentration samples. The samples sent to the CLP laboratories were considered high concentration. Because of this situation, another contract had to be initiated to handle these high concentration samples. The START contractor for the site, under the control of the Site OSC contracted Southwest Labs of Oklahoma, Inc. to do the analysis. Southwest Labs of Oklahoma, Inc. already had the inorganic samples because they were the laboratory assigned by the CLP to originally do the analysis for the inorganic samples. CompuChem Environmental Corp. sent the organic samples to Southwest Labs of Oklahoma, Inc., for analysis of the organic samples. CompuChem kept and did the analysis for the organic soil samples which were not high concentration samples.

The equipment blanks and trip blanks were taken for QA/QC and to determine if any outside contaminants were introduced into the samples. According to Region II's Data Validation SOP for CLP Data when contaminants are found in the blanks, in order to consider the same contaminants as attributable to the sample location, the sample compound must be greater than five times the amount detected in the blanks. Chloroform and 2-Butanone were detected in the trip blanks. The following compounds were detected in the equipment blanks:

Drum Sampling Equipment Blank results:

(Organic)

Chloroform,	004.0 ppb	Toluene,	002.0 ppb
Dibenzofuran,	000.5 ppb	Diethylphthalate,	000.5 ppb
Di-n-butylphthalate,	000.8 ppb	Phenanthrene,	000.8 ppb

(Inorganic)

Aluminum,	016.00 ppb	Calcium,	056.5 ppb
Iron,	035.10 ppb	Magnesium,	058.5 ppb
Manganese,	001.40 ppb	Potassium,	026.9 ppb

The results of the blanks do not affect the overall results of the sampling event.

A soil background sample was taken. The background sample was number SS-8. To have a contaminant attributed to the site, the sample concentration must be three times greater than the background sample concentration. The following compounds were detected in the background sample:

Background Sample results:
(Inorganic)

Aluminum,	11100.0 ppm	Antimony,	1.3 ppm
Arsenic,	8.7 ppm	Barium,	22.6 ppm
Beryllium,	0.35 ppm	Cadmium,	1.0 ppm
Calcium,	26400.0 ppm	Chromium,	12.5 ppm
Cobalt,	17.1 ppm	Copper,	37.5 ppm
Iron,	30500.0 ppm	Lead,	22.9 ppm
Magnesium,	20000.0 ppm	Manganese,	757.0 ppm
Nickel,	28.5 ppm	Potassium,	1410.0 ppm
Sodium,	195.0 ppm	Thallium,	1.6 ppm
Vanadium,	15.2 ppm	Zinc,	72.8 ppm

The ignitability test, done by the EPA LABB and the Southwest Lab of OK, showed the following drum samples having a flash point of less than 140°F.

DL-93/94 DL-97 DL-105 DL-135 DL-137 DL-144/145 DL-157
DL-201 DS-90 DS-161

Samples having a flash point of less than 140°F makes them ignitable substances. Ignitable substances are considered to have the characteristic of a hazardous waste and should have been treated as a hazardous waste with an EPA Hazardous Waste Number of D001.

The following compounds were detected in the soil samples taken at Amenia Landfill Site above the New York State Soil Cleanup Objectives (SCO) and three times greater than the site background sample. (See Table 2 & 3):

Organics (See Table 2)

Alpha BHC: SS-01
Heptachlor epoxide: SS-03 & SS-05
2-Butanone: SS-06 & SS-07
Beta-BHC: in SS-01, SS-04 & SS-07
Bis(2-Ethylhexyl)Phthalate: in all
Phenol: SS-01, SS-04 & SS-06
4,4'-DDT: in SS-04, SS-05 & SS-06
Endrin: in SS-04
Gamma-BHC: in all
1,4-DDE: SS-02
Aldrin: in all
Dieldrin: in SS-01, SS-02, SS-03, SS-04 & SS-05

Inorganics (See Table 3)

Antimony: in SS-01 & SS-03
Chromium: in SS-01,SS-02, SS-03,SS-04,& SS-05
Cobalt: in SS-02, SS-06, & SS-07
Copper: in SS-05
Lead: in all the sample points
Mercury: in SS-02,SS-03,& SS-04
Nickel: in SS-01, SS-02, SS-6, & SS-07
Zinc: in SS-06 & SS-07

The above compounds were only those compounds detected above the SCO, there were more compounds identified in the sample data reports (see Appendix D & E). Tables four thru, seven provide a summary of the results of the analysis. Table 4 shows the results of the equipment blank and the background soil sample used for QA/QC. Table 5 shows the results of the soil samples which are above the QA/QC levels set in Table 4. Table 6 shows the results of the QA/QC samples and the drums samples for TCLP analysis and Table 7 for the TCL/TAL analysis. The laboratories data can be found in Appendices D, E, & F.

5. CONCLUSION:

The results of the analysis show that the soil has been contaminated with organic and inorganic compounds that can be attributed to the drums on the site. All of the compounds addressed in section 4 (RESULTS), were found in the soil samples to be above the SCO, three time greater than the background site sample,

and were also detected in the drum samples except for Heptachlor epoxide, Alpha-BHC, Beta-BHC, and Dieldrin. Heptachlor epoxide, Alpha-BHC, Beta-BHC, and Dieldrin were found in the soil samples but were not detected in the drums sampled.

The drum sample analyses demonstrated that there were hazardous wastes in some of the drums. Arsenic, cadmium, chromium, mercury, lead, & selenium were detected above the Maximum Concentration of Contaminants for the Toxicity Characteristic. In addition, a pH less than two and flash points less than 140° F were also detected in the analysis, making the waste a RCRA hazardous waste.

TABLE 1
QA/QC SAMPLE DATA

TYPE OF SAMPLE	SAMPLE NUMBERS	SAMPLE LOCATION
TRIP BLANK	BYF-32,BYF-36, BYF-45, BYF-51, 209765, 209767 & 209768	N/A
EQUIPMENT BLANK	BYF-44, MBTA61 & 209766	N/A
SOIL BACKGROUND	BYF-54 & MBTA69	SS-08
BLIND DUPLICATE	BYF-29 = BYF-30 MBTA48 = MBTA49 209758 = 209759	DL-201 = DL-144/145
	BYF-40 = BYF-43 MBTA57 = MBTA60 209762 = 209764	DS-202 = DS-40
	BYF-59 = BYF-60 MBTA74 = MBTA75	SS-06 = SS-07
MS/MSD & MS/D	BYF-27, MBSY46 & 209755	DL-135
	BYF-41, MBTA58 & 209762	DS-125
	BYF-54 & MBTA69	SS-01

TABLE 2
ORGANIC COMPOUNDS ABOVE NY STATE
SOIL CLEANUP OBJECTIVES(SCO)
AND
THREE TIMES GREATER THAN
SITE BACKGROUND SAMPLE

Compound Name (Organic)	SCO or Soil Background Col A (ug/kg)	Soil Sample Points (above NY State SCO)	Drum Sample
Aldrin	5.0	All sample points	DS-40 & DS-202
Alpha BHC	2.0	SS-01	
Beta-BHC	2.0	SS-01, SS-04 & SS-07	
Bis(2-Ethylhexyl) phthalate	4,350.0	All sample points	DS-40, DS-161, DS-90, & DS-202
Dieldrin	1.0	SS-01, SS-02, SS-03, SS-04 & SS-05	
Endrin	1.0	SS-04	*DL-93/94, DL-122, DL-135, DL-137, DS-40, DS-161, & DS-202
Gamma-BHC (Lindane)	0.6	All sample points	DL-93/94 & DS-202
Heptachlor epoxide	0.2	SS-03 & SS-05	
Phenol	0.3	SS-01, SS-04, & SS-06	DL-48, DL-93/94, DL-97, DL-105, DL-135, DL-137, DL-144/145, DL-201, DS-40, DS-90, DS-108, DS-115, DS-123, DS-161, & DS-202
2-Butanone	3.0	SS-06 & SS-07	DL-93/94, DL-97, DL-144/145, DL-201, & DS-161
4,4'-DDT	25.0	SS-04, SS-05, & SS-06	DL-137 & DS-40

* Endrin found in compounds such as: Endrin Ketone & Endrin Aldehyde

TABLE 3
INORGANIC COMPOUNDS ABOVE NY STATE
SOIL CLEANUP OBJECTIVES(SCO)
AND
THREE TIMES GREATER THAN
SITE BACKGROUND SAMPLE

Compound Name (Inorganic)	SCO or Soil Background Col A (mg/kg)	Soil Sample Points (above NY State SCO)	Drum Sample
Antimony	1.3	SS-01 & SS-03	DL-97 & DS-155
Chromium	12.5	SS-01, SS-02, SS-03, SS-04 & SS-05	DL-48, DL-93/94, DL-97, DL-105, DL-124, DL-135, DL-137, DL-144/145, DS-40, DS-90, DS-108, DS-115, DS-123, DS-125, DS-155, & DS-161
Cobalt	30.0	SS-02, SS-06, & SS-07	DL-48, DL-97, DL-124, DL-135, DS-40, DS-108, DS-115, DS-123, DS-155, & DS-161
Copper	37.5	SS-05	DL-48, DL-93/94, DL-97, DL-105, DL-122, DL-124, DL-130, DL-135, DL-137, DS-40, DS-90, DS-108, DS-115, DS-123, DS-125, DS-155, DS-157, & DS-161
Lead	22.9	All sample points	DL-48, DL-93/94, DL-97, DL-105, DL-122, DL-124, DL-130, DL-135, DL-137, DS-40, DS-90, DS-108, DS-115, DS-125, DS-155, DS-157, & DS-161
Mercury	0.1	SS-02, SS-03 & SS-04	DL-48, DL-97, DL-144/145, & DS-40
Nickel	28.5	SS-01, SS-02, SS-06, & SS-07	DL-48, DL-93/94, DL-97, DL-105, DL-122, DL-124, DL-130, DL-135, DL-137, DS-40, DS-90, DS-108, DS-115, DS-123, DS-125, DS-155, DS-157, & DS-161
Zinc	72.8	SS-06 & SS-07	DL-48, DL-93/94, DL-97, DL-105, DL-122, DL-124, DL-130, DL-135, DL-137, DL-144/145, DS-40, DS-90, DS-108, DS-115, DS-123, DS-125, DS-155, DS-157, & DS-161

TABLE 4
QA/QC
SOIL SAMPLE SUMMARY

Soil Sample Location/ Numbers	Organic Compounds & Concentrations (ug/kg)			Inorganic Compounds & Concentrations (mg/kg)		
	Compounds	Conc.	QC	Compounds	Conc.	QC
Equip Blk # 1 BYF-44/MBTA61	Chloroform	4	J	Aluminum	.0160	B
	Toluene	2	J	Calcium	.0565	B
	Dibenzofuran	0.5	J	Iron	.0351	B
	Diethylphthalate	0.5	J	Magnesium	.0585	B
	Di-n-butylphthalate	0.8	J	Manganese	.0014	B
	Phenanthrene	0.8	J	Potassium	.0269	B
Background Sample is: SS-08 BYF-61/MBTA76 to be attributive to the site the sample concentration must be 3 times greater than the Background Sample concentration	Non-detected			Aluminum	11100.0	
				Antimony	1.3	BNJ
				Arsenic	8.7	
				Barium	22.6	B
				Beryllium	0.35	B
				Cadmium	1.0	
				Calcium	26400.0	
				Chromium	12.5	
				Cobalt	17.1	
				Copper	37.5	
				Iron	30500.0	
				Lead	22.9	J
				Magnesium	20000.0	
				Manganese	757.0	
				Nickel	28.5	
				Potassium	1410.0	
				Sodium	195.0	B
				Thallium	1.6	B
				Vanadium	15.2	
				Zinc	72.8	

1*= Sample concentration is above the NY State Soil Cleanup Objectives
B = Indictates a value between IDL and CRDL
J = The reported value is an estimated value.
NJ= Presumptive evidence of the presence of the material at an estimated concentration.

TABLE 5
SOIL SAMPLE SUMMARY
ATTRIBUTIVE TO THE SITE

Soil Sample Location/ Numbers	Organic Compounds & Concentrations (ug/L)			Inorganic Compounds & Concentrations (mg/kg)		
	Compounds	Conc.	QC	Compounds	Conc.	QC
SS-01 BYF-54/MBTA69	Tetrachloroethene	6	J	1* Antimony	63.2	NJ
	1* Phenol	7800	J	1* Chromium	49.7	
	1* Bis(2-Ethylhexyl)phthalate	54000	B	1* Lead	505	J
	1* Alpha-BHC	3.9	NJ	Mercury	0.07	B
	1* Beta-BHC	25	J	1* Nickel	98.3	
	1* Gamma-BHC (Lindane)	220	J	Selenium	0.84	BNJ
	1* Aldrin	57	J			
	1* Dieldrin	33	NJ			
	Methoxychlor	58				
	Gamma-Chlordane	2.2				
SS-02 BYF-55/MBTA70	2-Butanone	2	J	1* Chromium	46.2	
	Tetrachloroethene	6	J	1* Cobalt	71.6	
	1* Bis(2-Ethylhexyl)phthalate	46000	BJ	1* Lead	138.0	J
	1* Gamma-BHC (Lindane)	160	J	1* Mercury	0.15	
	1* Aldrin	15	J	1* Nickel	118.0	
	1* Dieldrin	21	J			
	4,4'-DDE	6.1				
	Methoxychlor	180	J			
	Alpha-Chlordane	3	NJ			
SS-03 BYF-56/MBTA71	Tetrachloroethene	4	J	1* Antimony	9.7	BNJ
	Pyrene	110	J	Cadmium	4.9	
	Butylbenzylphthalate	55	J	1* Chromium	38.6	
	1* Bis(2-Ethylhexyl)phthalate	37000	J	1* Lead	90.8	J
	1* Gamma-BHC (Lindane)	590	J	1* Mercury	0.12	
	1* Aldrin	170	J			
	1* Heptachlor epoxide	2.8				
	1* Dieldrin	120				
	4,4'-DDE	5.1				
	4,4'-DDT	24	NJ			
	Methoxychlor	85	J			
SS-04 BYF-57/MBTA72	Tetrachloroethene	3	J	1* Chromium	57.8	
	1* Phenol	76	J	1* Lead	128.0	J
	Pyrene	42	J	1* Mercury	0.11	B
	1* Bis(2-Ethylhexyl)phthalate	14000		Selenium	0.73	BNJ
	1* Beta-BHC	36	J			
	1* Gamma-BHC (Lindane)	450	J			
	1* Aldrin	500	J			
	1* Dieldrin	300	NJ			
	4,4'-DDE	4.2				
	1* Endrin	4.5				
	Endosulfan sulfate	1.4	J			
	1* 4,4'-DDT	30	NJ			
	Endrin ketone	16	J			

1*= Sample concentration is above the NY State Soil Cleanup Objectives
B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL
J=. The reported value is an estimated value.
NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 5
SOIL SAMPLE SUMMARY
ATTRIBUTIVE TO THE SITE

Soil Sample Location/ Numbers	Organic Compounds & Concentrations (ug/L)			Inorganic Compounds & Concentrations (mg/kg)		
	Compounds	Conc.	QC	Compounds	Conc.	QC
SS-05	Tetrachloroethene	4	J	1* Chromium	62.6	
BYF-58/MBTA73	1* Bis(2-Ethylhexyl)phthalate	47000	B	1* Copper	213.0	
	1* Gamma-BHC (Lindane)	41	NJ	1* Lead	195.0	J
	1* Aldrin	5	J	Mercury	0.1	B
	1* Heptachlor epoxide	1.6	J			
	1* Dieldrin	13				
	4,4'-DDD	2.3	J			
	1* 4,4'-DDT	84	NJ			
	Methoxychlor	7.9	J			
SS-06	1* 2-Butanone	8	J	1* Cobalt	270.0	
BYF-59/MBTA74	1* Phenol	910	J	1* Lead	69.3	J
	1* Bis(2-Ethylhexyl)phthalate	26000	B	Mercury	0.06	B
	1* Gamma-BHC (Lindane)	58	NJ	1* Nickel	490.0	
	1* Aldrin	120	D	1* Zinc	338.0	
	4,4'-DDE	17	DJ			
	1* 4,4'-DDT	59	DNJ			
	Methoxychlor	12	DJ			
SS-07	1* 2-Butanone	5	J	1* Cobalt	281.0	
BYF-60/MBTA75	1* Bis(2-Ethylhexyl)phthalate	26000	B	1* Lead	88.1	J
	1* Beta-BHC	31	DNJ	Mercury	0.09	B
	1* Gamma-BHC (Lindane)	190	DJ	1* Nickel	507.0	
	1* Aldrin	90	D	1* Zinc	366.0	
	4,4'-DDE	9.5	DJ			
	Methoxychlor	3.9	DJ			

1*= Sample concentration is above the NY State Soil Cleanup Objectives

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

TABLE 6
QA/QC & DRUM SAMPLE
TCLP SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (mg/l)		Inorganic Compounds & Concentrations (mg/l)		Remarks
	Compounds	Conc.	Compounds	Conc.	
TripBlk 6/2 209765	2-Butanone	0.01	Not-Sampled		
TripBlk 6/4 209767	Non-detected		Not-Sampled		
TripBlk 6/8 209768	Non-detected		Not-Sampled		
EquipBlk 209766	Non-detected		Non-detected		
DL-48 209757	Non-detected		Arsenic Barium 1*Cadmium 1*Chromium 1*Mercury 1*Lead 1*Selenium	3.9 6.8 9.9 115 1.6 48.9 17.1	1.0 pH
DL-93/94 209751	O-Cresol P-Cresol	0.36 0.25	Non-detected		88 deg F 5.4 pH
DL-122 209753	Non-detected		Arsenic	0.2	145 deg F 4.5 pH
DL-124 209754	Non-detected		Arsenic	0.2	145 deg F 6.0 pH
DL-135 209755	O-Cresol P-Cresol	13 18	Chromium Lead	0.3 0.6	95 deg F 9.1% Alcohols
DL-137 209756	Non-detected		Non-detected		145 deg F 5.1 pH
DL-144/145 209758	2-Butanone O-Cresol	45,000J 240	Non-detected		61 deg F 5.1 pH
DL-201 209759 Dupl of DL-144/145	2-Butanone O-Cresol	48,000J 250	Non-detected		59 deg F 5.1 pH
DS-40 209760	Non-detected		Non-detected		145 deg F
DS-125 209762	1,2-Dichloroethylene	0.05	Non-detected		145 deg F
DS-161 209752	2-Butanone O-Cresol	2.4 0.44	Non-detected		118 deg F
DS-202 209764 Dupl of DS-40	Non-detected		Non-detected		145 deg F

1*= Sample concentration is above 40 CFR Ch1. Part 261 Subpart C Table 1
J= The reported value is an estimated value.

TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
TripBlk 6/2 BYF-32	Non-detected		Not-Sampled		N/A
TripBlk 6/4 BYF-36	Non-detected		Not-Sampled		N/A
TripBlk 6/8 BYF-45	Chloroform	3.0J	Not-Sampled		N/A
TripBlk 6/8 BYF-51	Non-detected		Not-Sampled		N/A
EquipBlk BFY-44/MBTA61	Chloroform Toluene Dibenzofuran Diethylphthalate Phenanthrene Di-n-butylphthalate	4.0J 2.0J 0.5J 0.5J 0.8J 0.8J	Aluminum Calcium Iron Magnesium Manganese Potassium	16.0B 56.5B 35.1B 58.5B 1.4B 26.9B	N/A
DL-48 BYF-48/MBTA64	Vinyl Chloride Benzene Phenol	220000J 14000J 99000J	Aluminum Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel Potassium Selenium Sodium Thallium Vanadium Zinc	16900J 13.7 38.6 0.57 0.17B 1370J 20.2 20.3 47.6 48000 33.3 9060 1360 40.3 1090 0.76J 210B 1 23.4 115	pH=0.1
DL-93/94 BYF-31/MBTA50	4-Methyl-2-Pentanone Toluene Total Xylenes Phenol gamma-BHC (Lindane) Endosulfan II Methoxychlor Endrin Ketone Endrin Aldehyde alpha-Chlordane	47000J 9500J 4600J 26000000J 450NJ 310J 1600J 180J 370NJ 980J	Barium Chromium Copper Lead Nickel Selenium Sodium Zinc	0.22B 0.18B 1.60B 0.28B 0.20B 0.51 209.00B 5.00	pH=4.5 104 deg. F Reactive Sulfide 24.0 mg/kg

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
DL-97 BYF-35/MBTA53	2-Butanone 4-Methyl-2-Pentanone Toluene Ethylbenzene Total Xylenes Phenol	17000J 4000J 7400J 760J 4700J 540000J	Aluminum Antimony Arsenic Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Manganese Mercury Nickel Selenium Sodium Thallium Vanadium Zinc	335 3.4B 5 1.2 4.5 438B 103 4110 608 139000 84.8 670 0.34 5380 1.4 263B 15.4 2.9B 387	pH=5.3 109 deg. F
DL-105 BYF-28/MBTA47	4-Methyl-2-Pentanone Toluene Total Xylenes Phenol alpha-Chlordane	240000J 28000J 14000J 24000000J 750J	Barium Chromium Copper Lead Nickel Selenium Sodium Zinc	0.17B 0.18B 1.7B 0.71 0.13B 0.56 218B 2.9	PH=3.7 121 deg. F
DL-122 BYF-37/MBTA54	Benzene Toluene Ethylbenzene Total Xylenes 2-Methyl naphthalene Endrin Ketone	360J 10000J 12000J 69000J 94000J 180J	Barium Copper Lead Nickel Selenium Sodium Zinc Cyanide	0.11B 0.71B 0.23B 0.13B 0.76 235B 1.9B 27.4NJ	pH=n/a Reactive Cyanide 5.5J mg/kg
DL-124 BYF-33/MBTA51	Benzene Toluene Ethylbenzene Total Xylenes 2-Methyl naphthalene	520J 9100J 26000J 120000J 97000J	Arsenic Barium Calcium Chromium Cobalt Copper Lead Nickel Selenium Sodium Zinc Cyanide	19.6 9.8B 474B 1.1 0.43B 1.4B 8.1 13.6 0.64 205B 5.1 34.3NJ	Ph=0.77

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL
J= The reported value is an estimated value.
NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
DL-130 BYF-39/MBTA56	Benzene Toluene Ethylbenzene Total Xylenes 2-Methyl naphthalene	460J 9500J 13000J 86000J 100000J	Arsenic Barium Copper Lead Nickel Selenium Sodium Zinc Cyanide	2.0 0.55B 1.3B 1.6 1.2B 0.56 207B 8.3 5.2NJ	pH=3.2 Reactive Cyanide 0.29J mg/kg
DL-135 BYF-27/MBTA46	4-Methyl-2-Pentanone Toluene Total Xylenes Phenol Endrin Aldehyde	79000J 22000J 9700J 2200000J 150J	Barium Chromium Cobalt Copper Iron Lead Manganese Nickel Sodium Zinc	0.43B 0.12B 0.2B 0.37B 549 1.2 29.2 0.26B 4640 3.7	pH=5.6 125 deg. F
DL-137 BYF-38/MBTA55	Benzene Toluene Ethylbenzene Total Xylenes Phenol 2-Methyl naphthalene Endosulfan II 4,4'-DDT Endrin Ketone	470J 15000J 17000J 100000J 100000J 120000J 93J 80J 320J	Arsenic Barium Copper Selenium Sodium Zinc Cyanide	0.23B 0.13B 0.73B 0.70 232B 3.4 9.0NJ	pH=n/a 109 deg. F Reactive Cyanide 2.3J mg/kg
DL-144/145 BYF-29/MBTA48	2-Butanone Ethylbenzene Total Xylenes Phenol 2-Methyl phenol	22000000J 370000J 1500000J 2000000J 180000J	Chromium Iron Mercury Sodium Zinc	0.14B 363 0.12 184B 2.1	pH=2.1 114 deg. F
DL-157 BYF-34/MBTA52	Vinyl Chloride Benzene Total Xylenes	5800J 180J 460J	Barium Chromium Copper Lead Nickel Potassium Selenium Sodium Zinc	0.11B 0.11B 0.33B 0.61 0.13B 505 0.4B 2800 3	pH=2.3 114 deg. F

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
DL-201 BYF-30/MBTA49	2-Butanone Total Xylenes Phenol 2-Methyl phenol	25000000J 1500000J 2100000J 170000J	Barium Copper Iron Selenium Sodium Zinc	0.11B 0.58B 378.0 0.69 271.0B 2.0B	pH=2.8 78 deg. F
DS-40 BYF-40/MBTA57	Methylene Chloride Phenol Bis(2-Ethylhexyl) - phthalate Di-n-octylphthalate Aldrin 4,4'-DDE Endrin 4,4'-DDT alpha-Chlordane Aroclor-1254	10J 1000J 5600J 18J 3.1J 3.9J 1.5J 8J 3.9J 96J	Aluminum Arsenic Barium Beryllium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Sodium Thallium Vanadium Zinc Cyanide	16100 12J 36.9B 0.57B 1180 19.5 22.1 48.1NJ 36800 30.1J 8780 1140 0.13J 37.6 1010B 225B 2.8J 21.5 92.7 0.19B	pH=7.4
DS-90 BYF-53/MBTA68	Acetone Trichloroethene 4-Methyl-2-Pentanone Toluene Ethylbenzene Total Xylenes Phenol delta-BHC 2-Methyl phenol 4-Methyl phenol 2,4-Dimethyl phenol Di-n-butylphthalate	27000J 4000J 34000J 11000J 62000J 400000J 35000000J 310J 300000J 18000000J 1800000J 3200000J	Barium Chromium Copper Lead Nickel Selenium Sodium Zinc	0.27B 0.12B 5.3 0.26B 0.45B 0.96J 190B 5.5	pH=5.2 127 deg. F
DS-108 BYF-50/MBTA66	Bromomethane Carbon Disulfide 4-Methyl-2-Pentanone Toluene Total Xylenes Phenol	1000J 4900J 1200J 380J 690J 1700J	Arsenic Barium Chromium Cobalt Copper Lead Nickel Sodium Zinc	1.3 0.26B 0.37B 0.19B 1.8B 0.77 1.4B 556 8.5	pH=4.6 Reactive Sulfide 24.0 mg/kg

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
DS-115 BYF-46/MBTA62	Bromomethane 1,2-Dichloroethane Benzene Toluene Total Xylenes Phenol	620J 690J 180J 600J 180J 1800J	Aluminum Arsenic Barium Chromium Cobalt Copper Iron Lead Nickel Selenium Sodium Vanadium Zinc	80.2J 1.9 062B 0.48B 0.26B 2B 765 0.42 1.8B 0.36BJ 540 0.13BJ 11.5	pH=5.2 Reactive Sulfide 24.0 mg/kg
DS-123 BYF-49/MBTA65	Carbon Disulfide Tran-1,3-Dichloropropene Toluene Styrene Total Xylenes Phenol Butylbenxylphthalate	620J 300J 940J 150J 160J 930J 16J	Arsenic Barium Chromium Cobalt Copper Nickel Sodium Zinc	1.6 0.23B 0.32B 0.19B 1.7B 1.4B 589 3.4	pH=5.2 Reactive Sulfide 24.0 mg/kg
DS-125 BYF-41/MBTA58	Chloromethane Bromomethane	3300J 6300J	Barium Chromium Copper Iron Lead Nickel Sodium Zinc	0.13B 0.11B 0.58B 1240 0.89 0.24B 217B 2.6	pH=2.8 Reactive Cyanide 0.2J & Sulfide 6.9 mg/kg
DS-155 BYF-52/MBTA67	Bromomethane Acetone Trichloroethene Toluene Ethylbenzene Total Xylenes	4500J 25000J 3400J 12000J 64000J 450000J	Aluminum Antimony Arsenic Barium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Nickel Potassium Selenium Sodium Vanadium Zinc Cyanide	1890J 2.8B 86.2 317 3410J 19.2 3B 9.8 3730 277 791 84.7 67.5 140B 0.45BJ 388B 3.8BJ 28.1 0.49B	pH=6.8

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

CONTINUATION TO TABLE 7
QA/QC & DRUM SAMPLE
TAL/TCL SUMMARY

Sample Location/Numbers	Organic Compounds & Concentrations (ug/kg)		Inorganic Compounds & Concentrations (mg/kg)		Remarks
	Compounds	Conc.	Compounds	Conc.	
DS-157 BYF-42/MBTA59	Bromomethane 1,2-Dichloroethane Benzene Toluene Total Xylenes Methoxychlor	930J 5400J 1700J 1600J 190J 610J	Barium Copper Lead Nickel Potassium Sodium Zinc	0.14B 0.4B 0.21B 0.1B 409B 2190 3.3	pH=7.7 Reactive Cyanide 0.089J mg/kg
DS-161 BYF-47/MBTA63	4-Methyl-2-Pentanone Phenol 2-Methyl phenol Butylbenxylphthalate Bis(2-Ethylhexyl) - phthalate Endrin Endosulfan Sulfate Endrin Aldehyde alpha-Chlordane gamma-Chlordane	98000J 18000000J 210000J 690000J 720000J 190J 100J 23000J 38J 29J	Barium Chromium Cobalt Copper Lead Nickel Selenium Sodium Vanadium Zinc	0.61B 2.1 0.14B 3.2 19.2 0.29B 0.83J 2380 0.2BJ 28.8	pH=5.6 Reactive Sulfide 20.0 mg/kg
DS-202 BYF-43/MBTA60	Methylene Chloride Phenol Bis(2-Ethylhexyl) phthalate Di-n-octylphthalate gamma-BHC (Lindane) Aldrin 4,4'-DDE Endrin Endosulfan II 4,4'-DDD 4,4'-DDT alpha-Chlordane Aroclor-1254	13J 240J 6200J 19J 2.5J 5.3J 4.7JN 2.4J 2.7J 1.2JN 9.2J 5.5J 120J	Aluminum Arsenic Barium Beryllium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Sodium Thallium Vanadium Zinc Cyanide	16500 11.4J 42.9 0.57B 1380 21.2 19.6 40NJ 39100 31.9J 8850 1140 0.1J 35.3 960B 276B 2.9J 22 93.1 0.19B	pH=7.3

B = (for Organic) The analyte is present in the associated method blank as well as in the sample,
(for Inorganic) Dictate that the value is between the IDL and the CRDL

J= The reported value is an estimated value.

NJ= Presumptive evidence of the presence of the material at an estimated concentration.

PICTURES
DRUMS

The following pictures demonstrates the condition of drums sampled during this sampling event and the associated sample containers. Drum samples were sent to the EPA LABB for TCLP analysis. The analysis performed on the drum samples identified five samples as ignitable. In addition organic and inorganic compounds were detected in the drum samples.

DRUM# DL-48: The picture below demonstrates the different types and volumes of the containers used to hold the samples. The samples, as can be seen in the picture, have the honey color of motor oil. The sample also has the consistency of motor oil.

Picture # 24 Roll 1
Drum# D-48

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. EPA LABB detected the following in this sample: Arsenic, Barium, Cadmium, Chromium, Mercury, Lead, and Selenium. The sample also had a pH of 1.0. A summary of the analysis can be found in Table 6 & 7 (Drum Sample Summary)

DRUM# DL-93/94: The three pictures below demonstrate the condition of the two drums and of the different types and volumes of the containers used to hold the samples. The contents of these two overpack drums come from one drum. The drum can be seen in picture #3, roll 1a shown below. At the time of excavation prior to this sampling event, in order to prevent the spill of the contents of the drum onto the ground, the contents were drained into the overpack drum labeled D-93. The contents of the drum can be seen in picture #4, roll 1a. The drum did not fit in the 85 gal overpack D-93 so it was placed in the 110 gal overpack drum labeled D-94. The sample containers can be seen in the picture #8, roll 1. Samples were taken from both drums to provide a homogenized sample of the original drum. The sample had the honey color of fresh motor oil. The samples also have the consistency of motor oil.

Picture # 3 Roll 1a
Drum# D-94

Picture # 4 Roll 1a
Drum # D-93

Picture # 8 Roll 1
Drum Samples DL-93/94

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. EPA LABB detected the following in the sample: O-Cresol, P-Cresol, and 88 degree F flash point. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DL-122: The two pictures below demonstrate the condition of the drum and of the different types and volumes, of the containers used to hold the samples. The drum can be seen in picture #7, roll 1a shown below. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-122. The sample containers can be seen in the picture #14, roll 1.

Picture # 7, Roll 1a
Drum Samples DL-122

Picture # 14, Roll 1
Drum Samples DL-122

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. In addition to the above mentioned analysis, the sample from the drum was also combined with samples from DL-113, DL-130, DL-137, and DL-166 for a composite sample. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. Arsenic was detected by the EPA LABB in the sample. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DL-135: The picture below demonstrates the different types and volumes of the containers used to hold the samples. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-135. The sample containers can be seen in the picture #6, roll 1.

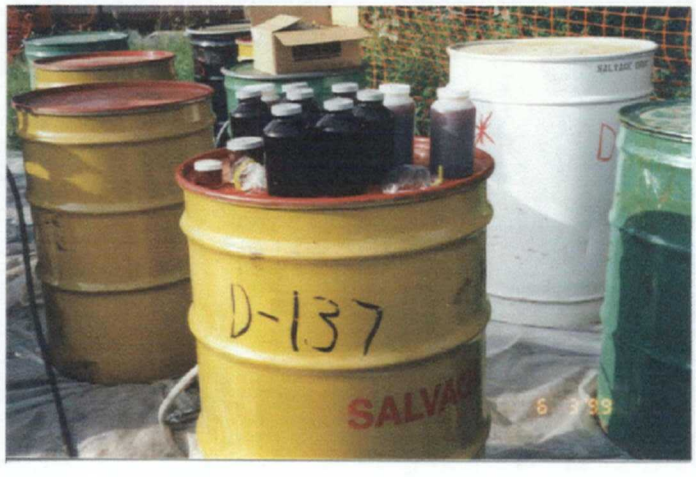
Picture # 6, Roll 1
Drum Samples DL-135

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. O-Cresol, P-Cresol, Chromium, and Lead were detected by the EPA LABB in the sample. Also the sample had a 95-degree F flash point and was 9.1% alcohol. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DL-137: The two pictures below demonstrate the condition of the drum and of the different types and volumes of the containers used to hold the samples. The drum can be seen in picture #5, roll 1a shown below. Besides the liquid contents in the drum there were rags inside. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-137. The sample containers can be seen in the picture #13, roll 1.

Picture # 5, Roll 1a
Drum DL-137

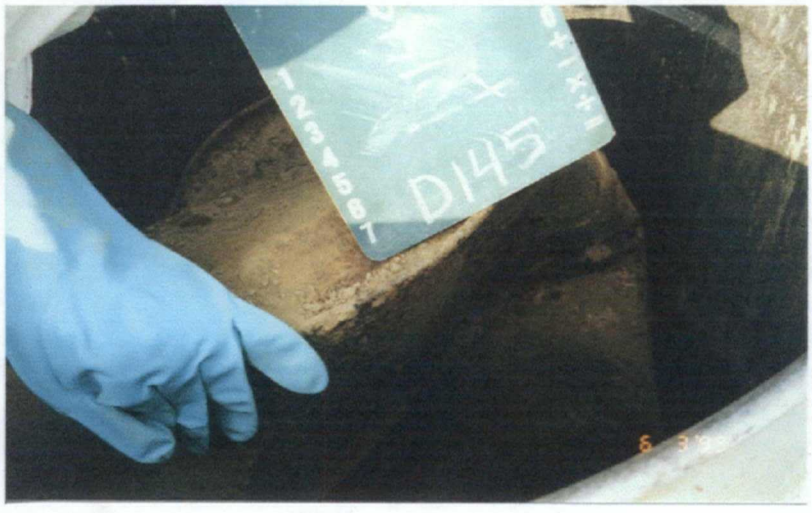
Picture # 13, Roll 1
Drum Samples DL-137



Samples were taken for TCL, TAL, TCLP and RCRA characteristics. In addition to the above mention analysis, the sample from the drum was also combined with samples from DL-113, DL 122, DL-130, and DL-166 to form a composite sample. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DL-144/145 and DL-201: The drum sample designated as DL-201 was a blind duplicate of Drum# DL-144/145. This met the QA/QC requirement for a blind duplicate of the liquid drum samples. The pictures below demonstrate the condition of the two drums and of the different types and volumes of the containers used to hold the samples. The contents of these two drums were placed in one overpack drum and labeled D-145. The drum can be seen in picture #15, roll 1 shown below. The sample containers can be seen in the picture #5, roll 1.

Picture # 15 Roll 1
Drum D-144/145



Picture # 5 Roll 1
Drum D-144/145

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP, pH, and ignitability were done by EPA LABB, in Edison, NJ. EPA LABB detected the following in the sample for DL-144/145: Methyl Ethyl Ketone, O-Cresol, and a flash point of 61 degrees F. EPA LABB detected the following in the sample for DL-201: Methyl Ethyl Ketone, O-Cresol, and 59 degree F flash point. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

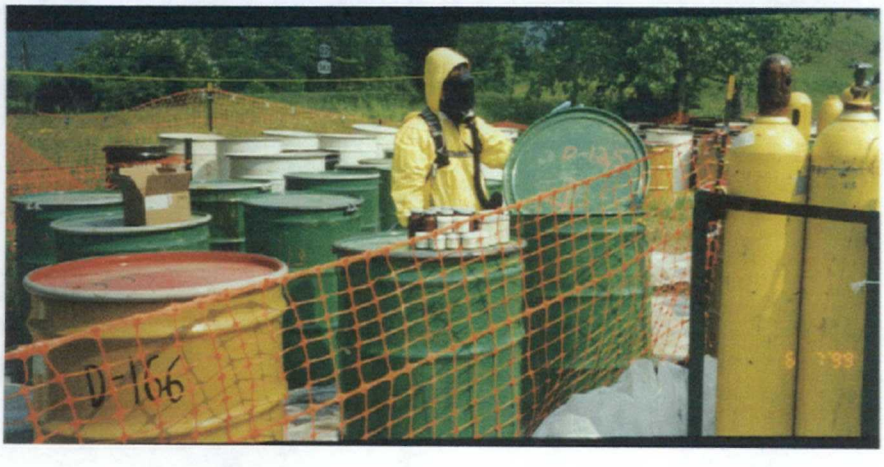
DRUM# DS-40 & DS-202: The drum sample designated as DS-202 was a blind duplicate of Drum# DS-40. This met the QA/QC requirement for a blind duplicate of the solid drum samples. The picture below demonstrates the different types and volumes of the containers used to hold the samples. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-40. The sample containers can be seen in the picture #21, roll 1.

Picture # 21,
Roll 1

Drum Samples
DS-40 & DS-202

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP, pH, and ignitability were done by the EPA LABB in Edison, NJ. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DS-125: The picture below demonstrates the different types and volumes of the containers used to hold the samples. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-125. The sample containers can be seen in picture #19, roll 1.

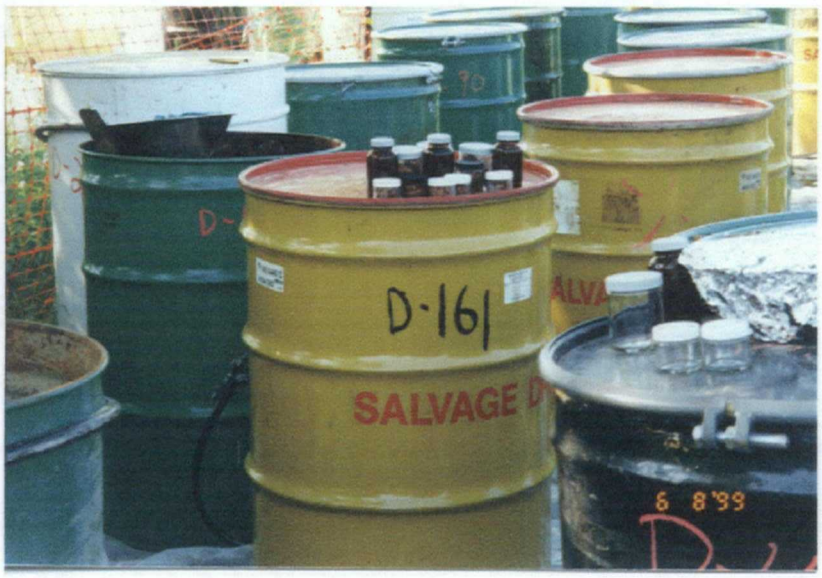


Picture # 19, Roll 1
Drum Samples DS-125

Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP and ignitability were done by the EPA LABB, in Edison, NJ. 1,2-Dichloroethylene was detected by the EPA LABB in the sample. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

DRUM# DL-161: The picture below demonstrates the different types and volumes of the containers used to hold the samples. At the time of excavation prior to this sampling event, the drum was placed in the overpack drum labeled D-161. The sample containers can be seen in picture #22, roll 1.

Picture # 22, Roll 1
Drum Samples DL-161

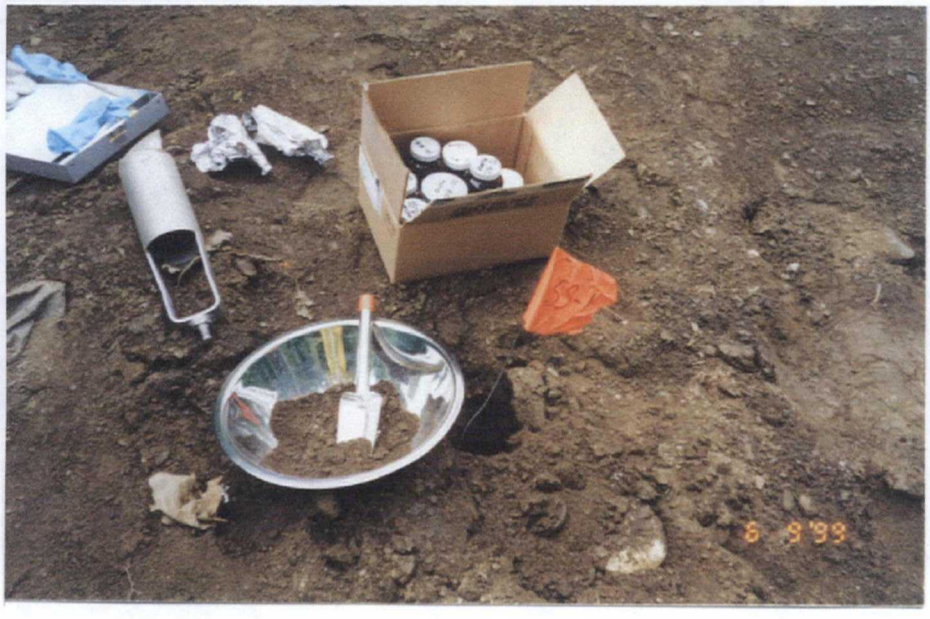


Samples were taken for TCL, TAL, TCLP and RCRA characteristics. TCLP and ignitability were done by EPA LABB, in Edison, NJ. Methyl Ethyl Ketone, O-Cresol, and a flash point of 118 degree F were detected by the EPA LABB. A summary of the analysis can be found in Tables 6 & 7 (Drum Sample Summary)

PICTURES
SOIL SAMPLES

The pictures below demonstrate the location, the equipment and the associated sample containers with the samples. The soil samples were taken from the excavated soil pile. During the excavation of the drums on the site, the soil around the drums were excavated and stock piled in the southwest end of the site. Soil samples were taken from the stock pile of soil and sent to CLP laboratories for analysis. Seven sample points were chosen for sampling. One of the seven sample points was chosen as a background sample. The six sample points were named SS-01 thru. SS-06. A blind duplicate was taken from sample point SS-01 and named SS-07. SS-08 is the background soil sample taken on the eastern side of the site away from the stock pile. The analysis performed on the soil samples identified organic and inorganic contaminants above New York State Allowable Soil concentration. A summary of the soil sample analysis can be found in Table 4 & Table 5. A diagram of the sampling locations is included in Appendix A

Soil Sample # SS-01
Picture # 9 Roll 2



The following contaminants were detected in the soil sample: Phenol, Tetrachloroethene, Bis(2-Ethylhexyl)phthalate, Alpha-BHC, Beta-BHC, Gamma-BHC (Lindane), Aldrin, Dieldrin, Methoxychlor, Gamma-Chlordane, Antimony, Chromium, Lead, Mercury, Nickel, Selenium.

Soil Sample # SS-02
Picture # 10 Roll 2

The following contaminants were detected in the soil sample: 2-Butanone, Tetrachloroethene, Bis(2-Ethylhexyl)phthalate, Gamma-BHC (Lindane), Aldrin, Dieldrin, 4,4'-DDE, Methoxychlor, Alpha-Chlordane, Chromium, Cobalt, Lead, Mercury, and Nickel.

Soil Sample # SS-03
Picture # 11 Roll 2

The following contaminants were detected in the soil sample: Pyrene, Tetrachloroethene, Butylbenzylphthalate, Bis(2-Ethylhexyl)phthalate, Gamma-BHC (Lindane), Aldrin, Dieldrin, 4,4'-DDE, 4,4'-DDT, Methoxychlor, Antimony, Cadmium, Chromium and Lead.

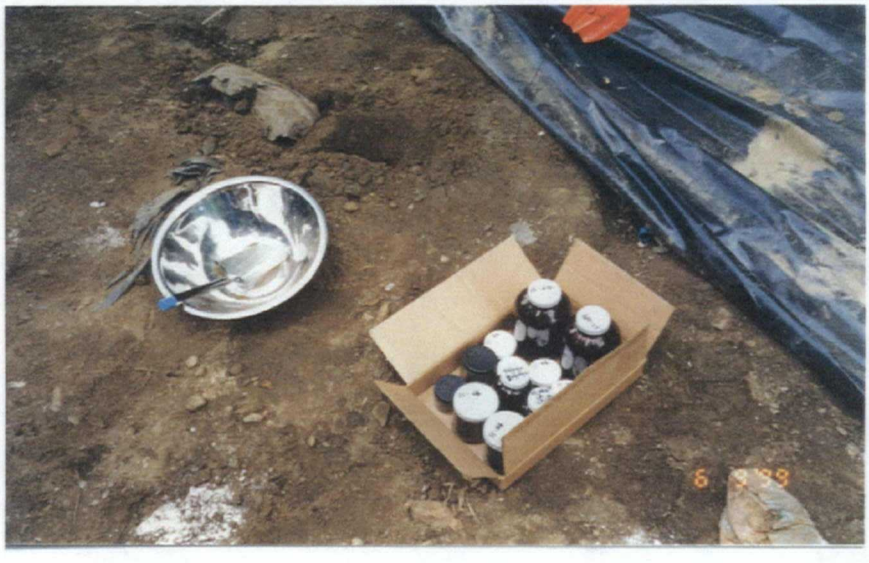
Soil Sample # SS-04
Picture # 12 Roll 2

The following contaminants were detected in the soil sample: Phenol, Tetrachloroethene, Pyrene, Bis(2-Ethylhexyl)phthalate, Beta-BHC, Gamma-BHC (Lindane), Aldrin, Dieldrin, 4,4'-DDE, Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin Ketone, Chromium and Lead.

Soil Sample # SS-05
Picture # 14 Roll 2

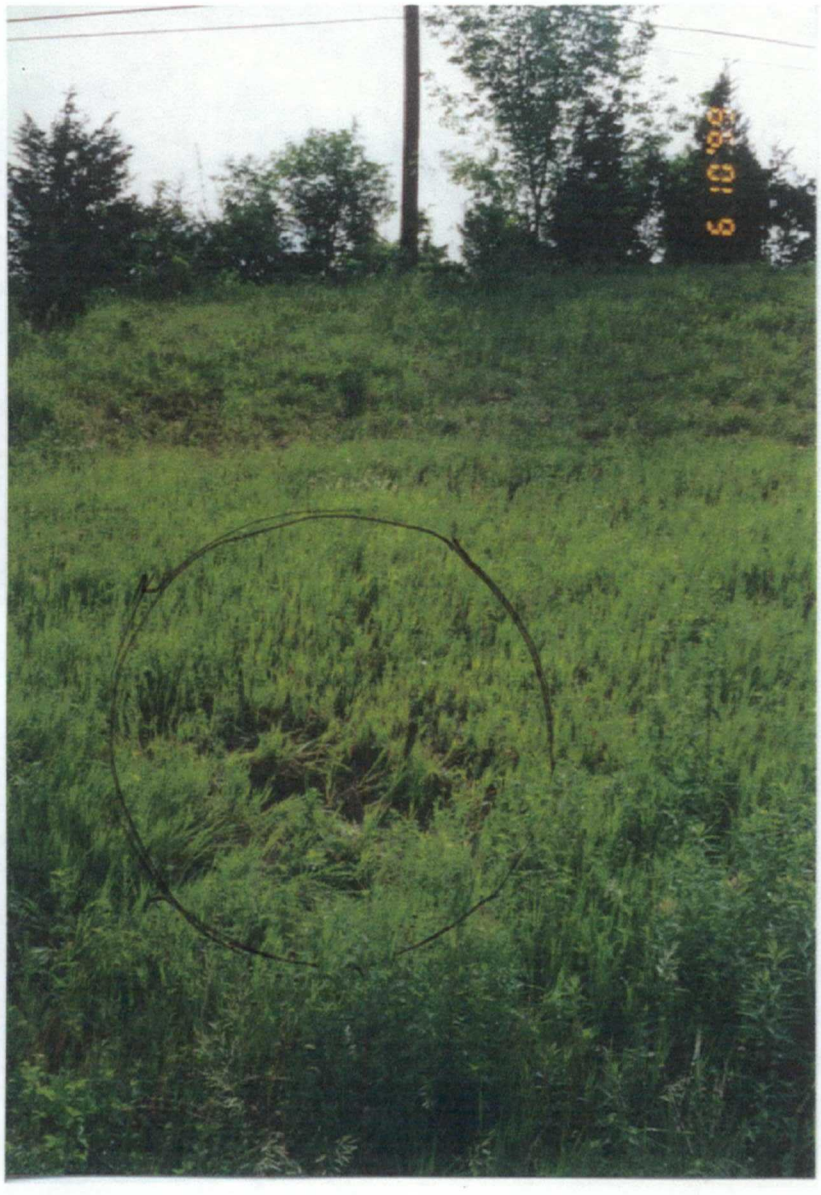
The following contaminants were detected in the soil sample: Tetrachloroethene, Bis(2-Ethylhexyl)phthalate, Gamma-BHC (Lindane), Aldrin, Heptachlor epoxide, Dieldrin, 4,4'-DDD, 4,4'-DDT, Methoxychlor, Chromium, Copper, and Lead.

Soil Sample # SS-06/SS-07
Picture # 13 Roll 2



Soil samples, SS-06 and SS-07 were from the same sample point. SS-07 is the blind duplicate of SS-06. The following contaminants were detected in both soil samples at similar levels: Aldrin, 2-Butanone, Bis(2-Ethylhexyl)phthalate, 4,4'-DDE, Cobalt, Lead, Mercury, Nickel, and Zinc.

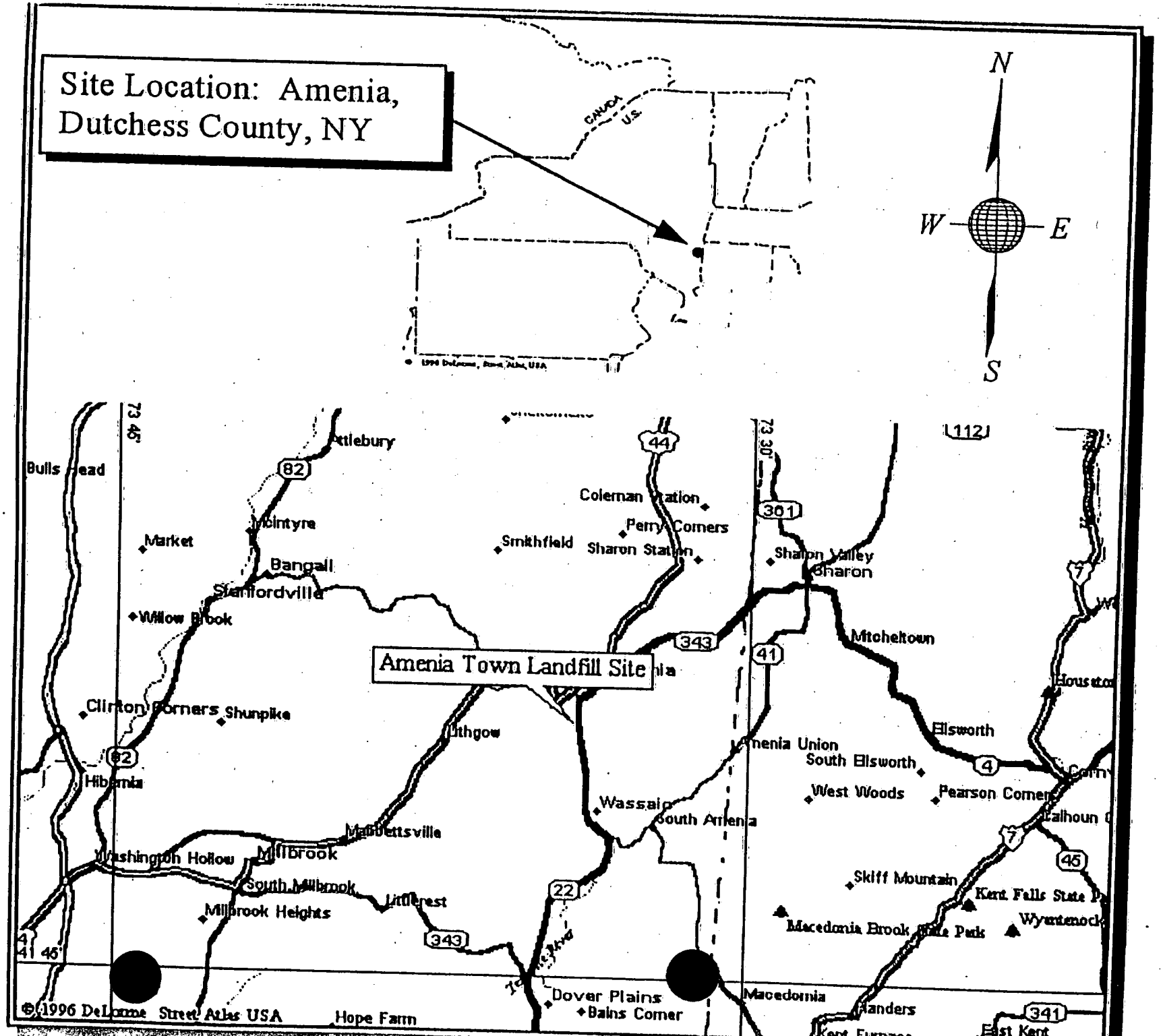
Soil Sample # SS-08
(BACKGROUND SAMPLE)
Picture # 15 Roll 2

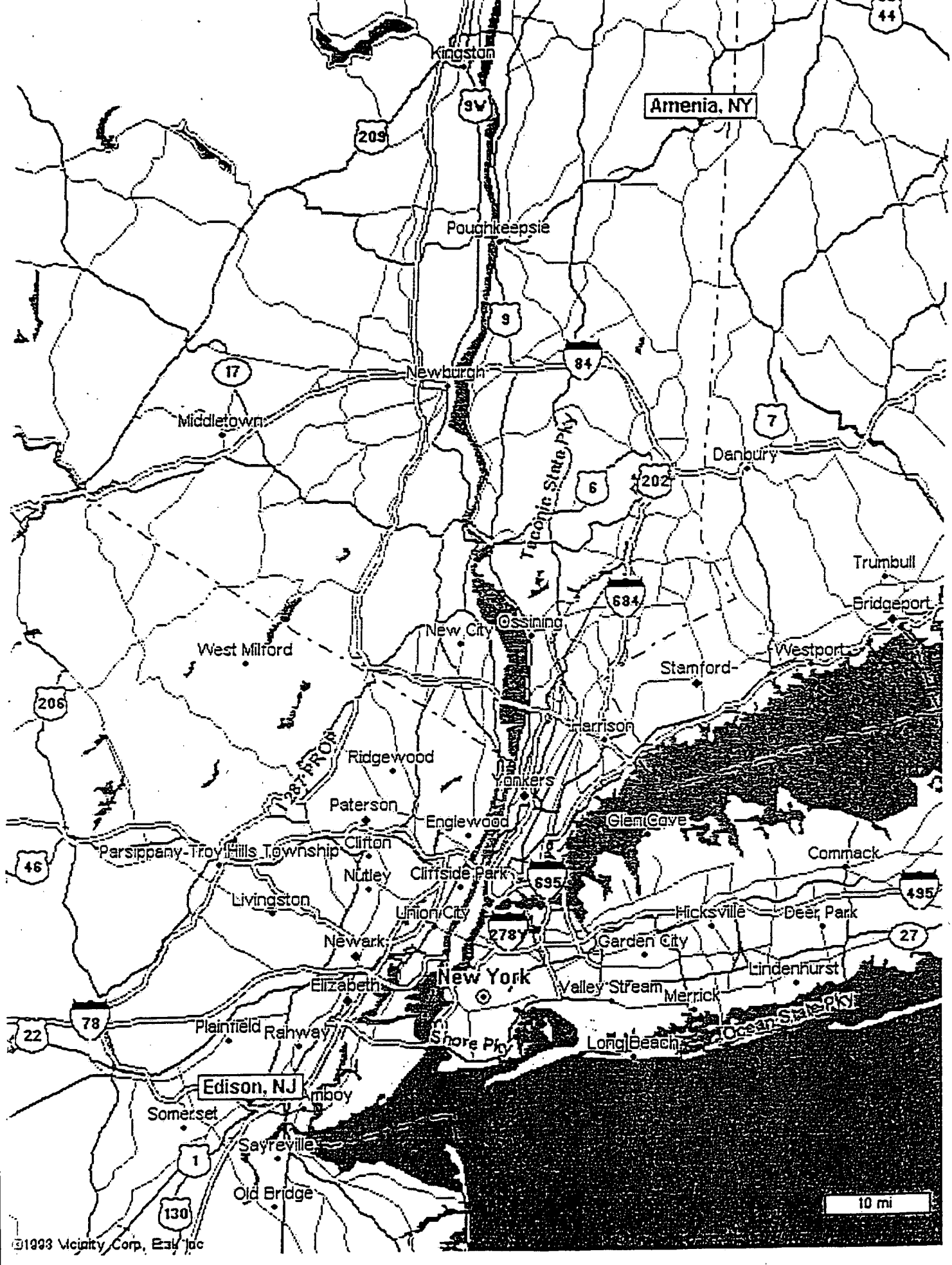


The circled area is the location of the background sample. This photo was taken facing east. The telephone pole in the picture is Telephone Pole Number 39 2140 30. The Backgound sample point was 22 yards west of this Telephone Pole.

APPENDIX A
Site Maps

APPENDIX A-1
Site Maps


Site Location: Amenia, Dutchess County, NY
CANADA
U.S.
N
W
E
S
Amenia Town Landfill Site
Bulls Head
Attlebury
Coleman Station
Perry Corners
Smithfield
Sharon Station
Sharon Valley
Sharon
Market
McIntyre
Bangall
Stanfordville
Willow Brook
Mitcheltown
Clinton Corners
Shunpike
Lithgow
Ellsworth
Amenia Union
South Ellsworth
West Woods
Pearson Corners
Hibernia
Wassaic
South Amenia
Malibettsville
Washington Hollow
Millbrook
South Millbrook
Millbrook Heights
Littlerest
Skiff Mountain
Kent Falls State Park
Wyantenock
Macedonia Brook State Park
Dover Plains
Bains Corner
Macedonia
Handers
East Kent
Hope Farm
© 1996 DeLorme Street Atlas USA



Amenia, NY
Kingston
9W
209
44
Poughkeepsie
9
84
17
Newburgh
Middletown
7
Danbury
Taconic State Pky
6
202
Trumbull
684
Bridgeport
Ossining
New City
West Milford
Westport
Stamford
206
Harrison
Ridgewood
287 PROP
Yonkers
Paterson
Englewood
Glen Cove
Parsippany-Troy Hills Township
Clifton
Commack
46
Nutley
Cliffside Park
695
495
Livingston
Union City
Hicksville
Deer Park
278
Newark
Garden City
27
Lindenhurst
New York
Elizabeth
Valley Stream
Merrick
78
Ocean State Pky
22
Plainfield
Rahway
Shore Pky
Long Beach
Edison, NJ
Amboy
Somerset
Sayreville
1
Old Bridge
130
10 mi
©1993 Vicinity Corp, Etak Inc

APPENDIX A-2
Site Maps
Drum Station

DRUM STATIONING

ROUTE 22 S

COMPOSITE DRUM STATIONING								
D-20	D-70	D-71	D-56	D-34	D-11	D-38	D-79	-
D-39	D-41	D-04	D-47	D-80	D-86	D-54	D-27	
D-19	D-160	D-164	D-156	D-12	D-21	D-55	D-46	
D-10	D-88	D-131	D-91	D-89	D-31	D-100	D-162	
D-11	D-148	D-30	D-33	D-154	D-92	D-96	D-35	
		D-123/	D-112	D-99	D-116	D-140	D-142	
			D-110		D-98	D-101	D-163	

							D-145*/	
D-25	D-157/	D-115 /	D-26	D-97 /	D-90 /	D-93 */	D-94 */	D-124*/
D-108 /	D-161*/	D-155 /	D-137*/+	D-119	D-113+	D-121	D-102	
D-40*/	D-105/	D-135*/	D-130/+	D-166+	D-95	D-125*/	D-122*/+	D-158

D-48/	D-37	D-75	D-02	D-43
	D-73	D-07	D-03	D-64
	D-42	D-134		D-44
	D-117	D-36		
		D-136		
		D-129		
		D-118		
		D-104	D-114	

D-62	D-77	D-68	D-59	D-52	D-32	D-81	D-15
D-16	D-76	D-83	D-67	D-50	D-24	D-28	D-14
D-23	D-61	D-60	D-63	D-82	D-85	D-78	D-74
D-51	D-58	D-69	D-66	D-57	D-87	D-72	D-84
D-167	D-159	D-08	D-09	D-01	D-105	D-45	D-49
D-147	D-128	D-22	D-13	D-132	D-103	D-02	D-29
D-152	D-138	D-150	D-149	D-143	D-01	D-17	D-18
D-151	D-165	D-109	D-127	D-126	D-116	D-141	D-153
				D-106	D-107	D-120	D-133

THE MAIN DRUM SAMPLING STATIONING

TRAILER

PPE REMOVAL

MASK WASH

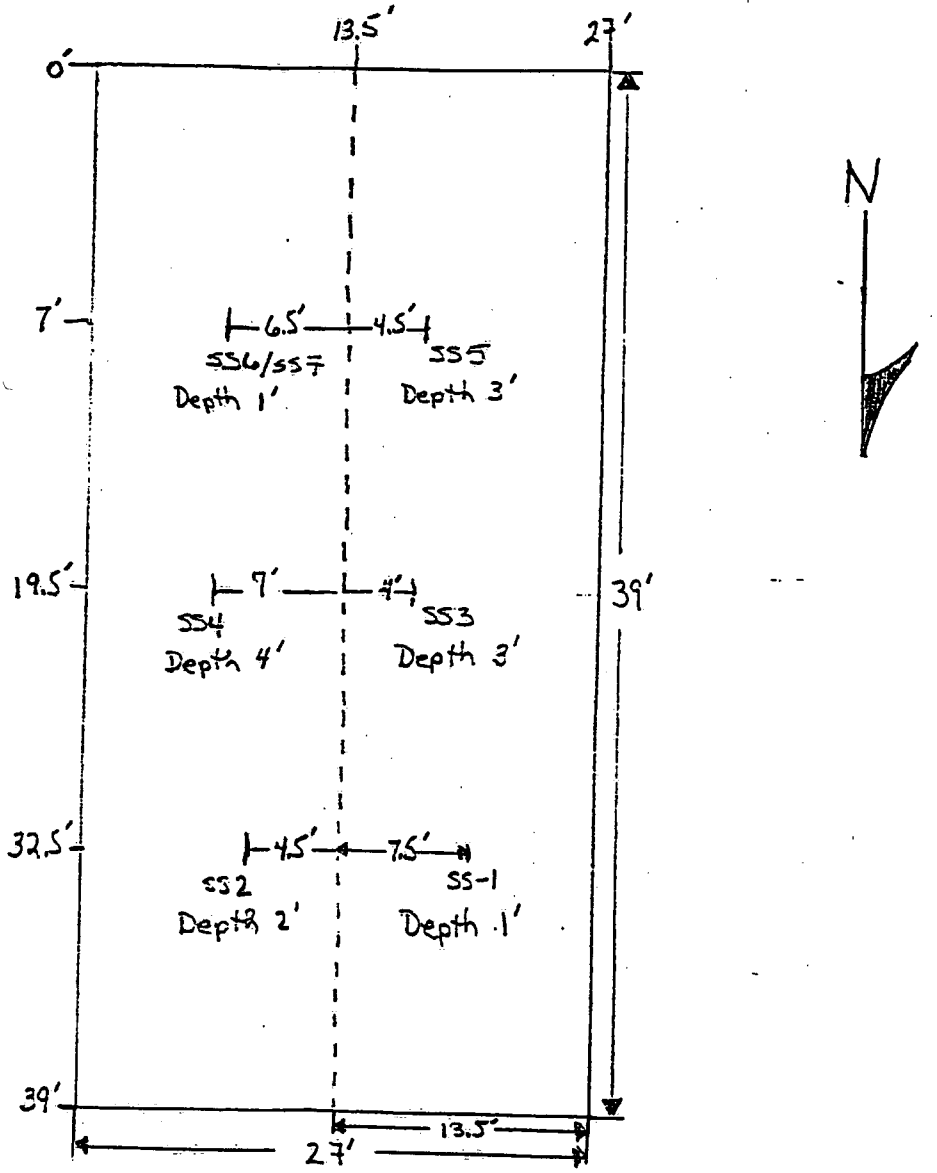
ENTER EXIT

DIRT ROAD

HELI-PAD

Z

APPENDIX A-3
Site Maps
Soil Sample Points



APPENDIX B
Quality Assurance Project Plan

BROSSMAN QUALITY ASSURANCE PROJECT PLAN (QAPP) SHORT FORM

FOR THE

ENFORCEMENT SAMPLING

AT

AMENIA LANDFILL SITE

AMENIA, DUTCHESS COUNTY, NEW YORK

JUNE 1 - 11, 1999

Project Officer's Signature: _____ Date: 1 Jun 99

Project Officer's Name: Michael A. Mercado

Project Quality Assurance Officer's Signature: _____ Date: June 1, 1999

Project Quality Assurance Officer's Name: Joseph Hudek

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Appendix C - U.S. EPA (Environmental Protection Agency). March 1995, *Emergency Removal Guidance*, Office of Solid Waste and Emergency Response, Emergency Response Division, Washington, DC.

Appendix D - U.S. EPA (Environmental Protection Agency). August 1994. *Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Analysis, Multi-Media, Multi-Concentration (OLM0 3.2); Exhibit C: Target Compound List (TCL) with Contract Required Quantitation Limits (CRQLs).* Office of Emergency and Remedial Response (OERR), Analytical Operations Center (AOC), Washington, DC.

Appendix E - U.S. EPA (Environmental Protection Agency). March 1995. *Contract Laboratory Program (CLP) Statement of Work (SOW) for Inorganic Analysis, Multi-Media, Multi-Concentration (ILM0 4.0); Exhibit C: Target Analyte List (TAL) with Contract Required Detection Limits (CRDLs)* . Office of Emergency and Remedial Response (OERR), Analytical Operations Center (AOC), Washington, DC.

Appendix F - U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment. Part 261: Identification and Listing of Hazardous Waste. Subpart C: Characteristics of Hazardous Waste. Section 24: Toxicity Characteristic. *Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic.* 7-1-95 Edition.

Appendix G- U.S. EPA (Environmental Protection Agency). January 1991, Environmental Response Team (ERT) Standard Operating Procedure (SOP) Sampling Equipment Decontamination Procedures #2006.

Appendix H- U.S. EPA (Environmental Protection Agency). January 1991, *Environmental Response Team (ERT) Standard Operating Procedure (SOP) #2009: Drum Sampling;* from the *Compendium of ERT Waste Sampling Procedures*. OSWER Directive 9360.4-07. Interim Final. EPA/540/P-91/008. Office of Emergency and Remedial Response (OERR), Washington, DC.

Appendix I- U.S. EPA (Environmental Protection Agency). January 1991, *Environmental Response Team (ERT) Standard Operating Procedure (SOP) #2012: Soil Sampling;* from the *Compendium of ERT Soil Procedures*. OSWER Directive 9360.4-02. Interim Final. EPA/540/P-91/006. Office of Emergency and Remedial Response (OERR), Washington, DC.

Appendix J- Field and Sample Documentation Examples

1. **Project Name:** Enforcement Sampling at Amenia Landfill.

2. **Project Requested By:** U.S. Environmental Protection Agency (USEPA) Region II, Emergency & Remedial Division (ERRD), Response Action Branch (RAB)

3. **Date of Request:** December 15, 1998

4. **Date of Project Initiation:** December 15, 1998

5. **EPA Project Officer:** Michael A. Mercado

6. **EPA Quality Assurance Officer (QAO):** Joseph Hudek

7. **Project Description**

The Amenia Landfill site's address is route 22 S (1.5 miles south of route 44), Amenia, Dutchess County, New York. The site is located on the western side of Route 22 in the Town of Amenia. Approximately 10 acres were used between 1940's and 1976 as a municipal landfill. Occupying a northern portion of the site is Sharon Oil & Gas company. Sharon Oil & Gas Company has a fuel storage enclosure consisting of above ground storage tanks within a fenced-in, bermed area. In the ~~southern~~ northern portion of the site is a helipad and access road.

During a three-year period when the Landfill was in operations, it is suspected that the site was used for the disposal of industrial waste. The New York State Department of Environmental Conservation referred the site to the USEPA after a test pit investigation in Sept 98 revealed partially and totally buried drums.

By November 1998, the USEPA had found one hundred & sixty-seven drums on the site. The one hundred & sixty-seven drums were combined into eleven composite groups for sampling except Drums D-137, D-143, D-144 & D-145. Drums D-137 & D-143 were sampled individually. Drums D-144 & D-145 are the contents from the one drum put into two different overpack drums named D-144 & D-145. The sample from the recombination of these two overpacks is named D-145.

Analytical results for the composite samples and the individual drum samples indicated that the drums had high concentrations of:

- Volatile Organic (VOAs)
- Base/Neutral/Acid Extractables (BNAs)
- Pesticides
- Inorganic compounds
- Flammable substances
- Corrosives Acids & Bases

The USEPA, Region II, ERRD, ~~Response~~ Removal Action Branch requests technical sampling

support from Hazardous Waste Support Branch(HWSB) in performing a enforcement sampling at the Amenia Landfill Site. The sampling parameters are listed below:

- Target Compound List (TCL)
  - Volatile Organic Compounds (VOCs)
  - Base, Neutral, Acids (BNAs)
  - Pesticides
  - Herbicides
- Target Analyte List (TAL) Metals
- Ignitability
- Corrosivity
- Toxicity Characteristic Leaching Procedure (TCLP):
  - VOCs
  - BNAs
  - Pesticides
  - Herbicides
  - Metals

Approximately twelve drums will be sampled for TCLPs and twenty drums for TCL/TAL. All sampling tasks will conform with the guidelines set forth in this QAPP. A copy of this QAPP will be on-site and available for reference during the sampling event.

A. Objective and Scope Statement: The main objective(s) of this sampling event as described in this Brossman Quality Assurance Project Plan (QAPP) Short Form will be to sample the contents of drums that are located on the site. Analysis of these samples will determine if contaminants are located within the contents of the containers. This will also ascertain the level of contamination as to the disposal of such material. Analysis of these samples may be used for enforcement of environmental regulations and Potentially Responsible Parties (PRPs) search.

The purpose and scope of this QAPP are to specify the details related to the collection, analysis and validation of the samples by the USEPA Region 2, Division of Environmental Science and Assessment (DESA), Hazardous Waste Support Branch (HWSB), Superfund Contract Support Team (SCST).

B. Data Usage: Data will be used to evaluate enforcement and potential health risks and environmental impacts. The samples will be compared to:

U.S. EPA (Environmental Protection Agency). May 1996. *Soil Screening*

Guidance: Technical Background Document, Appendix A - Generic Soil Screening Levels (SSLs). 2nd Edition. EPA/540/R95/128. Publication 9355.4-17A. Office of Solid Waste and Emergency Response (OSWER), Washington, DC. (Appendix B)

U.S. EPA (Environmental Protection Agency). March 1995, *Emergency Removal Guidines*, as prepared by the USEPA Office of Solid Waste and Emergency Response, Emergency Response Division. (Appendix C)

Data will be sent to ERRD for incorporation into the project file. ERRD will utilize the validated analytical results to determine if the site is eligible for a enforcement action. In addition, the data being from EPA laboratory and CLP laboratory quality, will be use for enforcement procedures and may be use in the preparation of an Integrated Site Assessment, should the sample results demand that one be scheduled.

C. Monitoring Network Design and Rationale: The USEPA Region 2 DESA/ HWSB/SCST will collect samples to be analyzed for Target Compound List (TCL) and Target Analyte List (TAL) parameters under the Contract Laboratory Program (CLP) Routine Analytical Services (RAS). The TCL analysis will include Volatile Organic Compound (VOC) and Base/Neutral and Acid Extractable Organic (BNA), Pesticides and Herbicides. The above parameters will be analyzed by a CLP laboratory. Toxicity Characteristic Leaching Procedure (TCLP) for: VOCs, BNAs, Pesticides, Herbicides, and Metals; along with ignitability and corrosivity will be analyzed by EPA Laboratory Branch (LABB). The TCL parameter list is presented as Appendix D. Presented in Appendix E is the TAL parameter list. The TCLP parameter list is presented as Appendix F.

Drums Sampling: Liquid drum samples will be labeled DL -#. D for drum and L for Liquids followed by a dash and the drum number. The solid drum samples will be labeled the same way except an S will be used in place of the L. The S will stand for solid. The drums will be sampled using ERT's SOP #2009 Appendix H. There were approximately 167 drums found on the site during the last inspection. Of the 167 containers 36 will be sampled. A total of 12 drum samples will be analyzed for TCLP by the LABB. The following 12 drums are identified for TCLP sampling are: DL-93/94, DL-119, DL-122, DL-124, DL-135, DL-137, DL-143, & DL-144/145 for liquid samples and DS-40, DS-95, DS-125, & DS-158 for solid samples.

Twenty drums will be analyzed for TCL/TAL through the Contract Laboratory Program's Laboratories (CLP). The twenty drums identified for sampling are: DL-25, DL-93/94, DL-105, DL-119, DL-122, DL-124, DL-130, DL-135, DL-137, DL-143, DL-144/145, & DL-157 for liquid samples and DS-25, DS-40, DS-95, DS-102, DS-108, DS-115, DS-125, & DS-158 for solid samples.

In addition to the 32 samples analyzed for TCLP and TCL/TAL up to 12 samples, to

be determined in the field, will be tested for pH and Flammability.

Soil Sampling: The soil contaminated by the drums was excavated and covered during the excavation of the drums. To test these soils, four to eight soil samples will be taken during this sampling event. One background sample will be taken away from the site and of similar type soil, to provide a reference point that can be used to evaluate whether or not a release from the site has occurred. A maximum of ten soil samples at a depth between zero and five feet will be taken throughout the pile of excavated soil on the site. The soil sample locations will be determined in the field. The sampling procedure for the total of 10 soil samples (eight soil sample points, one duplicate, and one rinsate blank) will be in accordance with ERT's SOP # 2012 appendix I.

To assess data quality, PARCC (Precision, Accuracy, Representativeness, Completeness, and Comparability) parameters will be utilized. This is an integral part of the overall monitoring network design. Precision and accuracy are expressed in purely quantitative terms. The other parameters are only expressed using a mixture of quantitative and qualitative terms. All of these parameters are interrelated in terms of overall data quality and they may be difficult to evaluate separately due to these interrelationships. The relative significance of each of the parameters depends on the type and intended use of the data being collected. Therefore, these essential data quality elements are delineated as follows.

(1) **Analytical and Sample Collection Precision:** To assess error associated with analyte interference with the quantitation of other analytes and error due to laboratory bias and precision, Matrix Spike and Matrix Spike Duplicate samples (MS/MSDs) will be collected. Hence, one sample will have three aliquots. The first aliquot will be analyzed routinely for the parameters of interest, while the other two aliquots will be spiked with known quantities of the parameters of interest prior to analysis. The Relative Percent Difference (RPD) between the two results will be calculated and used as an indication of the precision of the analyses performed. The equation for this calculation is presented below.

$$RPD = \frac{|MSR - MSDR|}{(MSR+MSDR)/2} \times 100$$

where: MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery

| | indicates absolute value of the difference. Hence, RPD is always expressed as a positive value.

Sample collection precision and data representativeness will be assessed by collecting field replicate samples. The field replicates are used to evaluate errors associated with sample heterogeneity, sampling methodology and analytical procedures. The analytical results from these collocated samples will provide data on the overall measurement precision.

(2) Analytical and Sample Collection Accuracy: Analytical accuracy will be assessed through the analysis of quality control samples specified in the analytical method (i.e., matrix spike, surrogate spike). The quality control samples will be used to reduce the sources of error associated with sample matrix, sample preparation and analysis techniques. Accuracy is defined as a measure of how close an analytically determined concentration is to the true value. The analytical accuracy will be expressed as the percent recovery (%R) of an analyte which has been added to the environmental sample at a known concentration before analysis and is calculated according to the following equation.

$$\%R = [(A-B)/C] \times 100$$

where: A = The analyte concentration determined experimentally from the spiked sample.
B = The unspiked sample concentration.
C = The amount of spike added.

To assess sample accuracy, field quality control samples will be collected including trip blanks and rinsate blanks. The blanks will be used to evaluate errors arising from potential cross-contamination due to: improper handling of samples by collectors and lab personnel, improper decontamination procedures, improper shipment and storage, or on-site atmospheric contaminants.

(3) Data Representativeness: As previously discussed, data representativeness will be assessed by collecting field replicate samples. The field replicates are by definition equally representative of a given point, space, and time. Representativeness is a qualitative parameter which is dependent upon the proper design of the sampling program and proper laboratory protocol. Therefore, data representativeness will be satisfied by:

a. ensuring that the sampling program is followed according to the USEPA Region II QA Manual

b. proper sampling techniques are used in accordance with:

- Drum Sampling for ERTs SOP #2009
- Soil Sampling, ERTs SOP #2012

c. proper analytical procedures are followed

d. holding times of the samples are not exceeded in the laboratory according the USEPA Region II, DESA, Laboratory Branch (LABB), SOPs and the USEPA Contract Laboratory Program (CLP) Statement of

Work (SOW) for Organics [OLMO 3.2] and Inorganics [ILMO4.0].

(4) Data Completeness: Data completeness will be expressed as the percentage of valid data obtained from measurement system. For data to be considered valid, it must meet all the acceptable criteria including accuracy and precision, as well as any other criteria specified by the analytical method used. Therefore, all data points critical to the sampling program in terms of completeness will be 100% validated by USEPA Region II DESA/HWSB/ HWSS and LABB. With 100% validation, the rationale for considering data points non-critical is not required.

(5) Data Comparability: To ensure data comparability, sampling and analysis for all samples will be performed using a standardized analytical method and adherence to the quality control procedures outlined in the method and this QAPP. Therefore, the data will be comparable.

D. Monitoring Parameters and their Frequency of Collection: As previously stated:

- LABB: A total number of 12 drum samples and will be sampled for TCLP: VOAs, BNAs, Pesticides, Herbicides, and Metals.
- In addition to the drum samples analyzed by LABB for TCLP up to 12 samples, to be determined in the field, will be tested for pH and Flammability.
- Contract Laboratory Program's Laboratories (CLP): A total number of thirty-six drums will be sampled for TCL/TAL: VOAs, BNAs, Pesticides, Herbicides, and Metals.
- In addition to the drum samples analyzed by CLP Laboratories for TCL/TAL up to 10 soil samples (seven soil sample points, one duplicate, one background, and one rinsate blank), to be determined in the field, will be collected for TCL/TAL.

To assess error associated with analyte interference with the quantitation of other analytes and error due to laboratory bias and precision, a Matrix Spike and Matrix Spike Duplicate samples (MS/MSDs) are collected for organics and for inorganics a Matrix Spike and Duplicate samples (MS/D) will be collected. Sample collection frequency is one MS/MSD and one MS/D per twenty (20) samples collected per analytical parameter/fraction analyzed. Triple sample collection volume is required for MS/MSD and double volume for MS/D analysis.

To assess sample collection precision and data representativeness, field replicate samples will be collected. The field replicates will be used to evaluate errors associated with sample heterogeneity, sampling methodology and analytical

procedures. One field replicate will be collected per analytical parameter/fraction analyzed.

Trip blanks will be prepared before each day's sampling trip by filling the appropriate sample container(s) with demonstrated analyte free, deionized water. Sample collection frequency is one trip blank per each VOC sample cooler. Trip blanks will only be analyzed for TCL VOC fractions.

A field rinsate blank will be prepared in the field by pouring demonstrated analyte free, deionized water over and through decontaminated sampling equipment. Sample collection frequency is one rinsate blank per each day a decontamination event is carried out.

All sample containers comply with OSWER Directive #9240.0-05A; Specifications and Guidance for obtaining Contaminant-Free Containers, EPA 540/R-93/051. All blanks will be prepared using demonstrated analyte free, deionized water as specified in the EPA Region II CERCLA QA Manual. The demonstrated analyte free water, meets the assigned criteria values for the Contract Laboratory Program (CLP) Contract Required Detection Limits (CRDLs) and Contract Required Quantitation Limits (CRQLs) as outlined in the most recent CLP Statements of Work (SOWs). The criteria is as follows: purgeable organics < 10 ppb; semi-volatile organics < CRQL; pesticides < CRQL; PCBs < CRQL; inorganics < CRDL. However, for common laboratory contaminants (i..e., methylene chloride, acetone, toluene, 2-butanone, and phthalates), the allowable limits are three times the respective CRQLs.

E. Parameter Table: (see next two tables)

(1) Parameter Table for LABB: All analytical and quality assurance requirements will be followed. All data pertaining to samples, collected for LABB, parameters are incorporated into the parameter table.

TCLP LIQUID DRUM SAMPLE PARAMETER TABLE

Parameter	No. of Samples	Sample Matrix	Analytical Method	Sample Pres.	Hold Time*2	Bottles
TCLP VOAs (Trip Blank)	1 per cooler	aqueous	LABB SOP	cool to 4°C, HCl, pH<2	14 days	3-40 ml Glass Vials
TCLP VOAs (EQ. Blank)	1	aqueous	LABB SOP	cool to 4°C, HCl, pH<2	14 days	3-40 ml Glass Vials
TCLP VOAs	9*1	Drum (liquid)	LABB SOP	cool to 4°C	14 days	40 ml Glass Vials*3
TCLP BNAs (EQ. Blank)	1	aqueous	LABB SOP	cool to 4°C	7 days to extract, 40 days to analyze	1 liter Amber Glass*4
TCLP BNAs	9*1	Drum (liquid)	LABB SOP	cool to 4°C	7 days to extract, 40 days to analyze	1 liter Amber Glass*4
TCLP Metals (EQ. Blank)	1	aqueous	LABB SOP	cool to 4°C HNO_3 pH<2	6 month	I liter Plastic*5
TCLP Metals	9*1	Drum (Liquid)	LABB SOP	cool to 4°C	6 month	I liter Plastic*5
Ignitable	7	Drum (Liquid)	LABB SOP	cool to 4°C	10 days	8oz Glass Jar*6
Corrosive	12	Drum (Liquid)	LABB SOP	cool to 4°C	14 days	2oz Glass Jar*7

*1 Eight samples plus one environmental duplicate for a total of Nine samples.
*2 Holding times are from verified time of sample receipt (VTSR)
*3 One of the samples will be a matrix spike/matrix spike duplicate requiring six-40ml Vials and all other samples will only require three-40ml Vials.
*4 One of the samples will be a matrix spike/matrix spike duplicate requiring 6-1 liter amber glass bottle and all other samples will only require three-1 liter amber glass bottles.
*5 One of the samples will be a matrix spike/duplicate requiring two-1 liter plastic bottle and all other samples will only require one-1 liter.
*6 The seven samples will each require one-8oz glass jar.
*7 The twelve samples will each require one-2oz glass jar.

TCLP SOLID DRUM SAMPLE PARAMETER TABLE

Parameter	No. of Samples	Sample Matrix	Analytical Method	Sample Pres.	Hold Time*2	Bottles
TCLP VOAs	7*1	Drum (Solid)	LABB SOP	cool to 4°C	14 days	40 ml Glass Vials*3
TCLP BNAs	7*1	Drum (Solid)	LABB SOP	cool to 4°C	7 days to extract, 40 days to analyze	1 liter Amber Glass*4
TCLP Metals	7*1	Drum (Solid)	LABB SOP	cool to 4°C	6 month	I liter Plastic*5
Ignitable	7	Drum (Solid)	LABB SOP	cool to 4°C	10 days	2oz Glass Jar*6

*1 Six samples plus one environmental duplicate for a total of Seven samples.
*2 Holding times are from verified time of sample receipt (VTSR)
*3 One of the seven samples will be a matrix spike/matrix spike duplicate requiring four 2oz Jars and all other samples will only require two-2oz Jars.
*4 One of the seven samples will be a matrix spike/matrix spike duplicate requiring 6-8oz amber glass jars and all other samples will only require two-8oz amber jars.
*5 One of the seven samples will be a matrix spike/duplicate requiring two-8oz glass jars and all other samples will only require one-8oz glass jars.
*6 The seven samples will only require one-8oz glass jar.

(2) Parameter Table for CLP Laboratory: All analytical and quality assurance requirements of the Contract Laboratory Program will be followed. All data pertaining to the sample parameters are incorporated into the parameter table.

Parameter	No. of Samples	Sample Matrix	Analytical Method	Sample Pres.	Hold Time*2	Bottles
TCL VOAs (Trip Blank)	1 per cooler	aqueous	CLP SOW	cool to 4°C, HCl, pH<2	10 days	2-40 ml Glass Vials
TCL VOAs (EQ. Blank)	1	aqueous	CLP SOW	cool to 4°C, HCl, pH<2	10 days	2-40 ml Glass Vials
TCL VOAs (Liquid)	15*1	Drum	CLP SOW	cool to 4°C HCl, pH<2	10 days	2-40 ml Glass Vials*3
TCL VOAs (Solid)	15*1	Drum or Soil	CLP SOW	cool to 4°C	10 days	2oz Glass Jars*4
TCL BNAs (EQ. Blank)	1	aqueous	CLP SOW	cool to 4°C	10 days to extract, 40 days to analyze	4-1Lt Amber Glass
TCL BNAs (Liquid)	15*1	Drum	CLP SOW	cool to 4°C	10 days to extract, 40 days to analyze	1Lt Amber Glass*5
TCL BNAs (Solid)	15*1	Drum or Soil	CLP SOW	cool to 4°C	10 days to extract, 40 days to analyze	8oz Amber Glass*6
TAL Metals (EQ. Blank)	1	aqueous	CLP SOW	cool to 4°C HNO_3 pH<2	6 month	1-1Lt Plastic
TAL Metals (Liquid)	15*1	Drum	CLP SOW	cool to 4°C HNO_3 pH<2	6 month	1Lt Plastic*7
TAL Metals (Solid)	15*1	Drum or Soil	CLP SOW	cool to 4°C	6 month	8oz Glass*8

*1 Fourteen samples plus one environmental duplicate and one equipment blank for a total of Fifteen samples.
*2 Holding times are from verified time of sample receipt (VTSR)
*3 One of the fifteen samples will be a matrix spike/matrix spike duplicate requiring six-40ml Vials and all other samples will only require two-40ml Vials.
*4 One of the fifteen samples will be a matrix spike/matrix spike duplicate requiring four-2oz Jars and all other samples will only require two-2oz jar.
*5 One of the fifteen samples will be a matrix spike/matrix spike duplicate requiring twelve-1Lt Amber Bottles and all other samples will only require four-1Lt Amber Bottles.
*6 One of the fifteen samples will be a matrix spike/matrix spike duplicate requiring two-8oz Amber Jars and all other samples will only require one-8oz Amber jar.
*7 One of the fifteen samples will be a matrix spike/matrix spike duplicate requiring two-1Lt Plastic Bottles and all other samples will only require one-1Lt Plastic Bottle.
*8 One of the ten samples will be a matrix spike/matrix spike duplicate, all samples will only require one-8oz Jar.

8. Project Fiscal Information (Optional): Not included.

9. Schedule of Tasks and Products:

ACTIVITY	DATE
Date of the request which initiates the project.	December 15, 1998
Review and Background information completed	January 10, 1999
Book samples anticipated to be collected	May 24, 1999
Date by which the project plan will be submitted to all interested parties.	May 18, 1999
Obtain site access	Prearranged by ERRD
Date by which comments on the plan are to be received by the project officer.	May 24, 1999
Date(s) of the Sampling Team mobilizes.	June 1, 1999
Date(s) of the field reconnaissance.	June 1, 1999
Date(s) of the field sampling activities.	June 1 - 11, 1999
Date(s) the samples will be submitted to the laboratory for analysis.	June 1 - 11, 1999 All samples will be shipped to the EPA Region II Lab or CLP laboratories within 24 hours of collection.
Date(s) by which all analyses are to be completed and the data submitted to the project officer.	Not applicable
Date(s) the data will be entered into STORET or other computerized systems.	Not applicable.
Date of the completion of the draft interim/final project report. (Sampling Trip Report)	Within one week of the end of the sampling event
Date by which the reviewer's comments on the report(s) must be received	Not applicable.
Date for completion of the peer review process.	Not applicable.
Date for the issuance of the final project report.	Within two weeks of receipt of validated analytical data.

10. Project Organization and Responsibility: The following is a list of key project personnel and their corresponding responsibilities:

PROJECT PERSONNEL	RESPONSIBILITY
Irmee Huhn, On-Scene Coordinator, ERRD/RAB	Overall Project Coordination
Michael Mercado, Project Officer DESA/HWSB Superfund Contract Support Team	Sampling Operations/Team Leader
Mark Denno, Project Quality Assurance Officer DESA/HWSB Superfund Contract Support Team	Sampling QC
Keith C. Glenn, Project Health and Safety Officer DESA/HWSB Superfund Contract Support Team	Safety
Russell Arnone, Sampling Team member DESA/HWSB Superfund Contract Support Team	Chemist
Diane L. Salkie, Sampling Team member DESA/HWSB Superfund Contract Support Team	Recorder
EPA Region II Laboratory Branch	Laboratory Analysis of Drum samples for TCLP and HAZCAT
Contract Laboratory Program	Laboratory Analysis of all other samples
EPA Region II Laboratory Branch	Laboratory QC for Drum samples for TCLP and HAZCAT
Contract Laboratory Program	Laboratory QC of all other samples
EPA Region II Laboratory Branch	Data Processing Activities for Drum samples for TCLP and HAZCAT
Contract Laboratory Program	Data Processing Activities for all other samples
EPA Region II Laboratory Branch	Data Quality Review for Drum samples for TCLP and HAZCAT
DESA/HWSB Hazardous Waste Support Section	Data Quality Review for all other samples
Not Applicable	Performance Auditing
Not Applicable	Systems Auditing
DESA/Hazardous Waste Support Branch	Overall QA

11. Data Quality Requirements and Assessments:

A. Data Precision: Precision is defined as a measure of the reproducibility of individual measurements of the same property under a given set of conditions. The overall precision of measurement data is a mixture of sampling and analytical factors.

(1) Analytical Precision: Analytical precision will be determined through the use of matrix spikes and matrix spike duplicate samples for the analytical work performed. One sample will have three aliquots. The first aliquot will be analyzed routinely for the parameters of interest, while the other two aliquots will be spiked with known quantities of the parameters of interest prior to analysis. The Relative Percent Difference (RPD) between the two results will be calculated and used as an indication of the precision of the analyses performed.

$$RPD = \frac{|MSR - MSDR|}{(MSR+MSDR)/2} \times 100$$

MSR = Matrix Spike Recovery
MSDR = Matrix Spike Duplicate Recovery
| | indicates absolute value of the difference. Hence, RPD is always expressed as a positive value.

(2) Sampling Precision: Sampling precision will be determined by collecting and analyzing collocated samples and then creating and analyzing laboratory replicates for one or more of the field samples. The analytical results from these collocated samples will provide data on the overall measurement precision.

B. Data Accuracy: Accuracy is defined as the degree of difference between measured or calculated values and the true value. The closer the numerical value of the measurement comes to the true value, or actual concentration, the more accurate the measurement is. It is difficult to measure accuracy for the entire data collection activity. Sources of error are the sampling process, field contamination, preservation, handling, sample matrix, sample preparation and analysis techniques.

(1) Analytical Accuracy: Analytical accuracy will be assessed through the analysis of quality control samples specified in the analytical method (i.e., matrix spike, surrogate spike). The analytical accuracy will expressed as the percent recovery (%R) of an analyte which has been added to the environmental sample at a known concentration before analysis and is calculated according to the following equation. See previous table for estimated accuracy.

$$\%R = [(A-B)/C] \times 100$$

where: A = The analyte concentration determined experimentally from the spiked sample.
B = The unspiked sample concentration.
C = The amount of spike added.

(2) Sample Collection Accuracy: To assess sample accuracy, field quality control samples will be collected and evaluated including trip blanks and rinsate blanks. The blanks will be used to evaluate errors arising from potential cross-contamination due to: improper handling of samples by collectors and lab personnel, improper decontamination procedures, improper shipment and storage, or on-site atmospheric contaminants.

C. Data Representativeness: Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or and environmental condition. Representativeness is a qualitative parameter which is most concerned with the proper design of the sampling program and proper laboratory protocol. The representativeness criterion is best satisfied by making certain that sampling locations are selected properly and a sufficient number of samples are collected. Therefore, data representativeness will be assessed by the collection of the collocated samples and field replicate samples. Collocated/replicate samples are by definition equally representative of a given point and space and time.

Data representativeness will be satisfied by ensuring that the sampling program is followed according to the USEPA Region II QA Manual; proper sampling techniques are used in accordance with, Drums Sampling using ERT's SOP #2009 Appendix H & Soil Sampling using ERT's SOP # 2012 appendix I, and proper analytical procedures are followed and holding times of the samples are not exceeded in the laboratory according the USEPA LABB SOPs and USEPA Contract Laboratory Program (CLP) Statement of Work (SOW).

D. Data Comparability: Completeness is defined as the confidence with which one data set can be compared to another. Field and laboratory procedures greatly affect comparability. Therefore, to optimize comparability, sampling and analysis for all samples will be performed using standardized analytical methods and adherence to the quality control procedures outlined in the methods and this QAPP.

E. Data Completeness: Completeness is defined as the measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions. Data completeness will be expressed as the percentage of valid data obtained from measurement system. For data to be considered valid, it must meet all the acceptable criteria including accuracy and precision, as well as any other criteria specified by the analytical

method used. Therefore, all data points critical to the sampling program in terms of completeness will be 100% validated by USEPA Region II DESA/HWSB/HWSS and LABB. With 100% validation, the rationale for considering data points non-critical is not required.

12. Sampling Procedures:

A. Standard Operating Procedures: Sampling will be in accordance with the USEPA Region II QA Manual and USEPA, ERTs SOPs

(1) Drums Sampling: There were approximately 167 drums found on the site. Of the 167 drums a total of 20 drums will be sampled using ERT's SOP #2009 Appendix H.

(2) Soil Sampling: During the excavation of the drums the contaminated soil, approximately 220 cu.yds were excavated and covered. Four to eight samples will be taken during the sampling event. One background sample will be taken away from the site, to provide a reference point that can be used to evaluate whether or not a release from the site has occurred. A maximum of ten soil samples at a depth between zero and five feet will be taken throughout the pile of excavated soil on the site. The soil sample locations will be determined in the field. The sampling procedure for the total of 10 soil samples (8 soil sample points, one duplicate, and one rinsate blank) will be in accordance with ERT's SOP # 2012 appendix I.

B. Sample Collection:

(1) Methodology: All samples, including QA/QC samples, will be collected by personnel from the USEPA Region II DESA/HWSB/SCST. As previously stated, the specific SOPs utilized are identified above in 12. Sampling Procedures, A. Standard Operating Procedures subparagraphs 1 and 2.

(2) Sample Containers, Volume, Preservation, and Holding Times: Sample container type, volume, preservation, and holding times are dependent upon analytical parameter, fraction and are matrix specific. Refer to 7. Project Description, E. Parameter Table, Tables 1, 2, 3, and 4 for the required information.

C. Field Measurement Data Collection:

(1) Drum Sampling: Drum Data Sheets will be filled out and logged in the field notebook.

(2) Soil Sampling: Soil Boring Field Logs will be filled out and logged in the field notebook.

D. Sampling Equipment Decontamination: All sample bottles used for this project are pre-clean containers, decontaminated in accordance with the OSWER Directive # 9240.0-05A, Specifications and Guidance for Contaminant-Free Sample Containers, EPA 540/R-93/051. All equipment not pre-clean will be decontaminated following the decontamination procedure in ERTs SOP # 2006 (Appendix G).

E. Sample Handling and Shipment: Samples will be packaged and shipped in accordance with USEPA, Department of Transportation (DOT), and International Air Transport Association (IATA) procedures. Each sample will be properly identified and sealed in a polyethylene bag. Samples will be placed in waterproof metal or plastic coolers. The coolers will be packed with sufficient ice to cool the samples to 4°C and sufficient non-combustible adsorbent cushioning material to minimize the possibility of container breakage and movement during shipment. Custody seals and strapping tape will then be affixed to the coolers. All samples will be shipped within 24 hours of collection via Federal Express to work assignment laboratories for analysis.

When samples are transported, the USEPA Contract Laboratory Analytical Support Services (CLASS) office will be notified on that day or the following morning of the shipment with the airbill number, and number of samples being shipped to the assigned CLP laboratory.

13. Sample Custody Procedures: Sample custody seals will be placed on each cooler in which samples are contained. The custody seal will record the date and time of placement as well as the originator. Chain of custody forms will accompany each cooler. At the conclusion of the sampling event samples will be delivered via Federal Express to both the LABB in Edison NJ and the CLP Laboratory.

14. Calibration Procedures and Preventative Maintenance: The laboratory will follow procedures as specified under the USEPA, Region II, DESA, LABB SOP for EPA laboratory and CLP Contract SOWs for CLP laboratories. Calibrated and maintained all field equipment before operating IAW equipment operators' manual.

15. Documentation, Data Reduction, and Reporting:

A. Documentation: Data sheets, field logs, reports, photographs and chain of custody forms will be kept by the project manager for each individual sample.

B. Data Reduction and Reporting: The laboratory performing the analysis will calculate and transfer data EPA per DESA protocol.

16. Data Validation: The US EPA HWSB will evaluate data based on surrogate recoveries, detection limits, instrument calibration standards and the evolution of the chromatograms and spectra for all CLP data using Region II Data Validation SOPs. The US EPA LABB will evaluate data based on surrogate recoveries, detection limits,

instrument calibration standards and the evolution of the chromatograms and spectra for all LABB data using Region II Data Validation SOPs.

17. Performance and Systems Audits: No performance audit of field operations is anticipated at this time. If conducted, performance and systems audits will be in accordance with USEPA Region II DESA/HWSB SOPs.

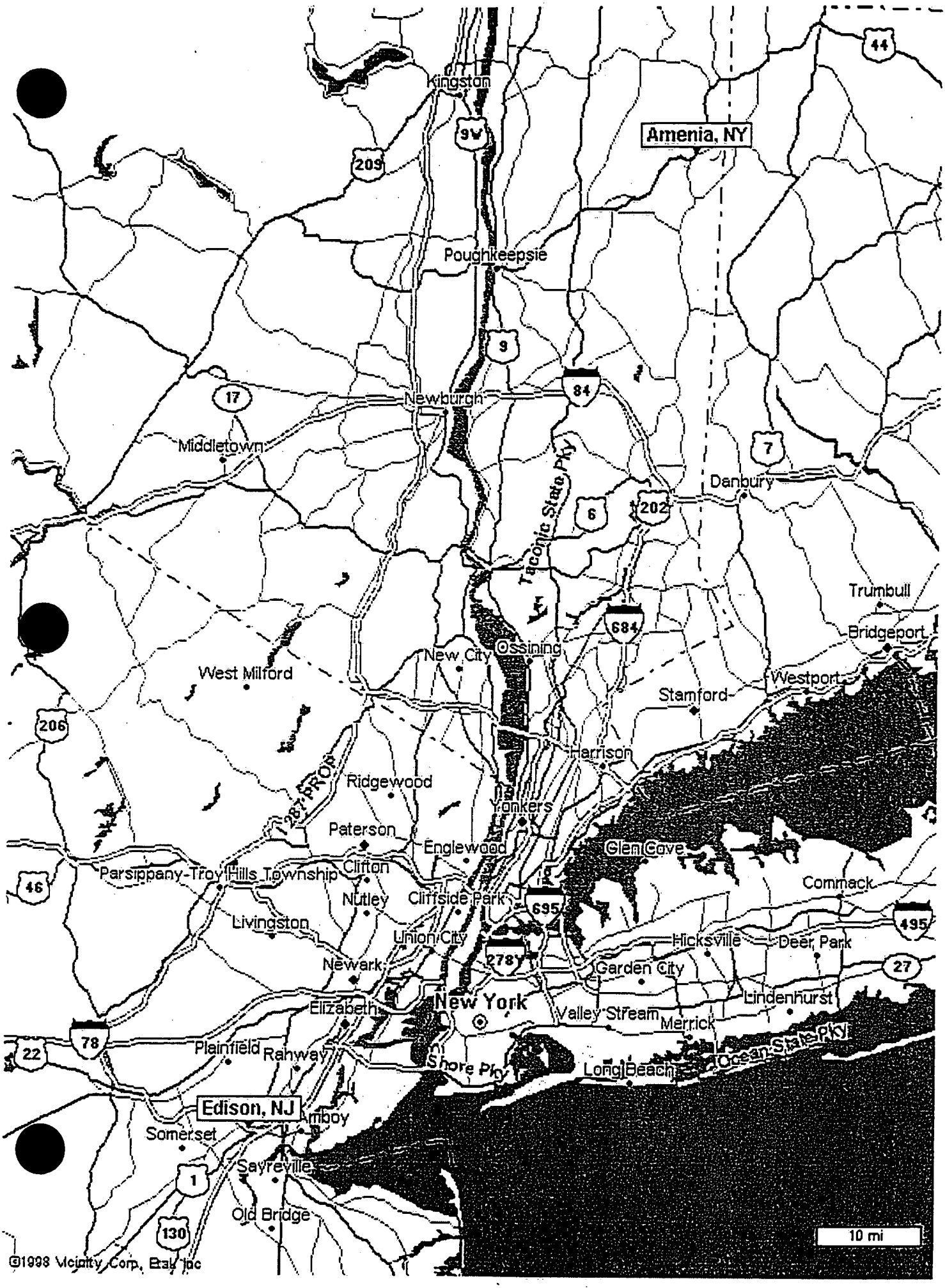
18. Corrective Action: Procedures are provided for project personnel to make changes, take corrective actions and document the process. Corrective action can occur during field activities, laboratory analysis, data validation, and data assessment.

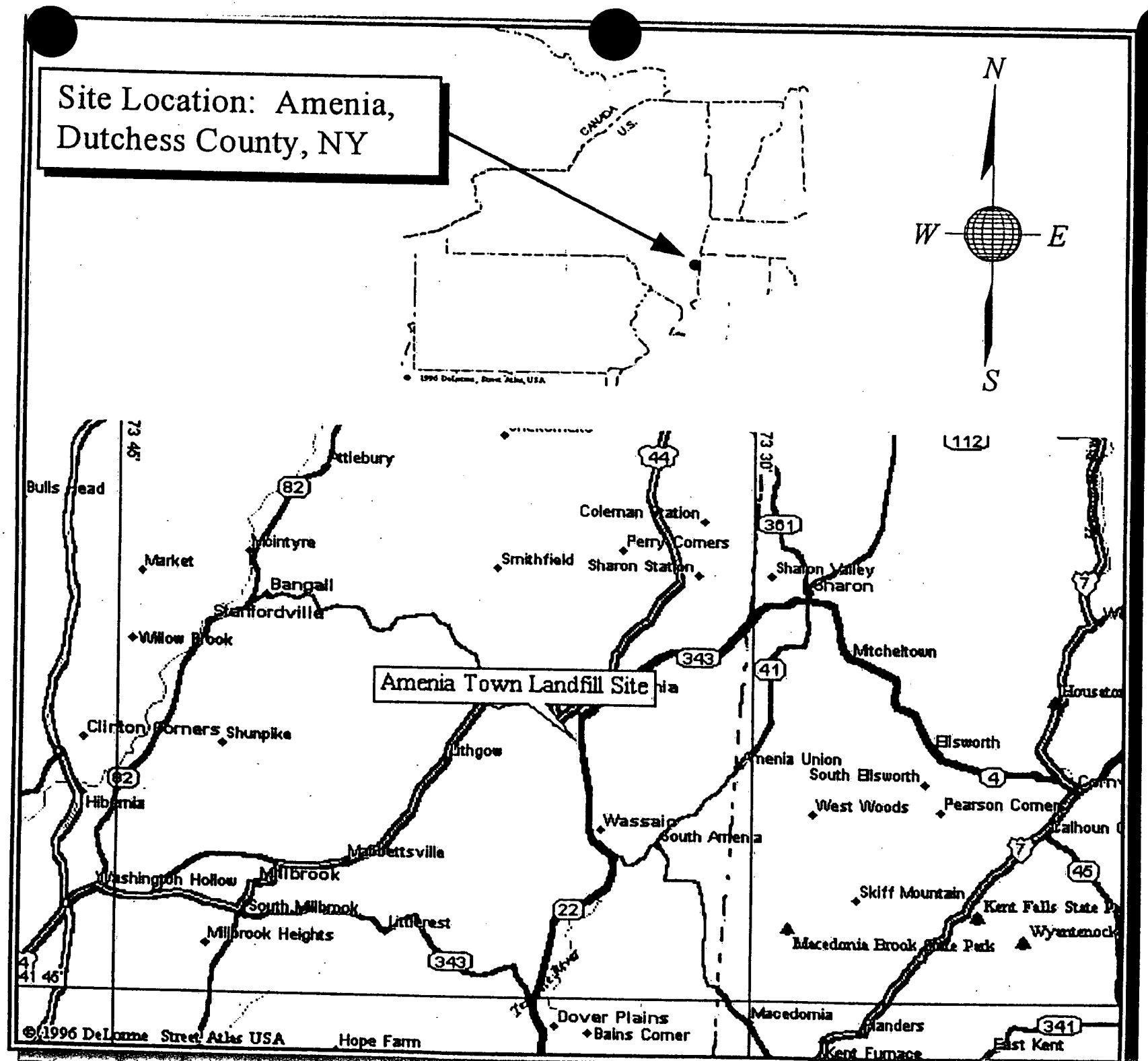
Corrective action in the field may be necessary when the monitoring network design is changed. A change in the field includes: increasing the number or type of samples or analyses; changing sampling locations; and/or modifying sampling protocol. When this occurs, the project officer or project QA officer will identify any suspected technical or QA deficiencies and note them in the field logbook. The project QA officer will be responsible for assessing the suspected deficiency and determining the impact on the quality of the data. Development of the appropriate corrective action will be the responsibility of the OSC. Laboratory corrective action will be in accordance with LABB Laboratory SOPs and the CLP Laboratory's SOWs.

Data validation and data assessment corrective action will be in accordance with USEPA Region II DESA/HWSB/HWSS SOPs and the Region II QA Manual.

19. Reports: A data presentation will be prepared by the project manager and submitted to ERRD/RAB in New Jersey.

APPENDIX A
SITE MAP


Amenia, NY
Kingston
9W
209
44
Poughkeepsie
9
84
17
Newburgh
Middletown
7
Danbury
Taconic State Pky
6
202
Trumbull
684
Bridgeport
New City
Ossining
West Milford
Westport
Stamford
206
Harrison
Ridgewood
287 PROP
Yonkers
Paterson
Englewood
Glen Cove
Parsippany-Troy Hills Township
Clifton
46
Commack
Nutley
Cliffside Park
695
Livingston
495
Union City
Hicksville
Deer Park
Newark
278
Garden City
27
Lindenhurst
Elizabeth
New York
Valley Stream
Merrick
78
22
Plainfield
Rahway
Shore Pky
Long Beach
Ocean State Pky
Edison, NJ
Amboy
Somerset
Sayreville
1
Old Bridge
130
10 mi
©1998 Vicinity Corp., Etak Inc


Site Location: Amenia, Dutchess County, NY
CANADA
U.S.
N
W
E
S
Amenia Town Landfill Site
Bulls Head
Attlebury
Mointyre
Market
Bangall
Stanfordville
Willow Brook
Clinton Corners
Shunpike
Hibernia
Washington Hollow
Millbrook
South Millbrook
Millbrook Heights
Littlerest
Lithgow
Smithfield
Coleman Station
Perry Corners
Sharon Station
Sharon Valley
Sharon
Mitcheltown
Ellsworth
Amenia Union
South Ellsworth
West Woods
Pearson Corners
Wassaic
South Amenia
Skiff Mountain
Kent Falls State Park
Wyantenock
Macedonia Brook State Park
Dover Plains
Bains Corner
Macedonia
Flanders
Kent Furnace
East Kent
Hope Farm
Calhoun
Houston
73 45'
73 30'
41 45'
82
44
361
112
343
41
4
7
45
22
341
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APPENDIX B
U.S. EPA SOIL SCREENING LEVELS

APPENDIX B
U.S. EPA SOIL SCREENING LEVELS

Generic SSLs

Table A-1 provides generic SSLs for 110 chemicals. Generic SSLs are derived using default values in the standardized equations presented in Part 2 of this document. The default values (listed in Table A-2) are conservative and are likely to be protective for the majority of site conditions across the nation.

However, the generic SSLs are not necessarily protective of all known human exposure pathways, reasonable land uses, or ecological threats. Thus, before applying generic SSLs at a site, it is extremely important to compare the conceptual site model (see the *User's Guide)* with the assumptions behind the SSLs to ensure that the site conditions and exposure pathways match those used to develop generic SSLs (see Parts 1 and 2 and Table A-2). If this comparison indicates that the site is more complex than the SSL scenario, or that there are significant exposure pathways **not** accounted for by the SSLs, then generic SSLs are not sufficient for a full evaluation of the site. A more detailed site-specific approach will be necessary to evaluate the additional pathways or site conditions.

Generic SSLs are presented separately for major pathways of concern in both surface and subsurface soils. The first column to the right of the chemical name presents levels based on direct ingestion of soil and the second column presents levels based on inhalation. As discussed in the *User's Guide*, the fugitive dust pathway may be of concern for certain metals but does not appear to be of concern for organic compounds. Therefore, SSLs for the fugitive dust pathway are only presented for inorganic compounds. Except for mercury, no SSLs for the inhalation of volatiles pathway are provided for inorganic compounds because these chemicals are not volatile.

The user should note that several of the generic SSLs for the inhalation of volatiles pathway are determined by the soil saturation concentration (C_{sat}), which is used to address and screen the potential presence of nonaqueous phase liquids (NAPLs). As explained in Section 2.4.4, for compounds that are liquid at ambient soil temperature, concentrations above C_{sat} indicate a potential for free-phase liquid contamination to be present and the need for additional investigation.

The third column presents generic SSL values for the migration to ground water pathway developed using a default DAF (dilution-attenuation factor) of 20 to account for natural processes that reduce contaminant concentrations in the subsurface (see Section 2.5.6). SSLs in Table A-1 are rounded to two significant figures except for values less than 10, which are rounded to one significant figure. Note that the 20 DAF values in Table A-1 are not exactly 20 times the 1 DAF values because each SSL is calculated independently in both the 20 DAF and 1 DAF columns, with the final value presented according to the aforementioned rounding conventions.

The fourth column contains the generic SSLs for the migration to ground water pathway developed assuming no dilution or attenuation between the source and the receptor well (i.e., a DAF of 1). These values can be used at sites where little or no dilution or attenuation of soil leachate concentrations is expected at a site (e.g., sites with shallow water tables, fractured media, karst topography, or source size greater than 30 acres).

Generally, if an SSL is not exceeded for a pathway of concern, the user may eliminate the pathway or portion of the site from further investigation. If more than one exposure pathway is of concern, the lowest SSL should be used.

Table A-1. Generic SSLs [a]

Organics				Migration to ground water	
CAS No.	Compound	Ingestion (mg/kg)	Inhalation volatiles (mg/kg)	20 DAF (mg/kg)	1 DAF (mg/kg)
83-32-9	Acenaphthene	4,700 [b]	--- [c]	570 [b]	29 [b]
67-64-1	Acetone	7,800 [b]	1.0E+05 [d]	16 [b]	0.8 [b]
309-00-2	Aldrin	0.04 [e]	3 [e]	0.5 [e]	0.02 [e]
120-12-7	Anthracene	23,000 [b]	--- [c]	12,000 [b]	590 [b]
56-55-3	Benz(*a*)anthracene	0.9 [e]	--- [c]	2 [e]	0.08 [e,f]
71-43-2	Benzene	22 [e]	0.8 [e]	0.03	0.002 [f]
205-99-2	Benzo(*b*)fluoranthene	0.9 [e]	--- [c]	5 [e]	0.2 [e,f]
207-08-9	Benzo(*k*)fluoranthene	9 [e]	--- [c]	49 [e]	2 [e]
65-85-0	Benzoic acid	3.1E+05 [b]	--- [c]	400 [b,i]	20 [b,i]
50-32-8	Benzo(*a*)pyrene	0.09 [e,f]	--- [c]	8	0.4
111-44-4	Bis(2-chloroethyl)ether	0.6 [e]	0.2 [e,f]	0.0004 [e,f]	2E-05 [e,f]
117-81-7	Bis(2-ethylhexyl)phthalate	46 [e]	31,000 [d]	3,600	180
75-27-4	Bromodichloromethane	10 [e]	3,000 [d]	0.6	0.03
75-25-2	Bromoform	81 [e]	53 [e]	0.8	0.04
71-36-3	Butanol	7,800 [b]	10,000 [d]	17 [b]	0.9 [b]
85-68-7	Butyl benzyl phthalate	16,000 [b]	930 [d]	930 [d]	810 [b]
86-74-8	Carbazole	32 [e]	--- [c]	0.6 [e]	0.03 [e,f]
75-15-0	Carbon disulfide	7,800 [b]	720 [d]	32 [b]	2 [b]
56-23-5	Carbon tetrachloride	5 [e]	0.3 [e]	0.07	0.003 [f]
57-74-9	Chlordane	0.5 [e]	20 [e]	10	0.5
106-47-8	*p*-Chloroaniline	310 [b]	--- [c]	0.7 [b]	0.03 [b,f]
108-90-7	Chlorobenzene	1,600 [b]	130 [b]	1	0.07
124-48-1	Chlorodibromomethane	8 [e]	1,300 [d]	0.4	0.02
67-66-3	Chloroform	100 [e]	0.3 [e]	0.6	0.03
95-57-8	2-Chlorophenol	390 [b]	53,000 [d]	4 [b,i]	0.2 [b,f,i]
218-01-9	Chrysene	88 [e]	--- [c]	160 [e]	8 [e]
72-54-8	DDD	3 [e]	--- [c]	16 [e]	0.8 [e]
72-55-9	DDE	2 [e]	--- [c]	54 [e]	3 [e]
50-29-3	DDT	2 [e]	--- [g]	32 [e]	2 [e]
53-70-3	Dibenz(*a,h*)anthracene	0.09 [e,f]	--- [c]	2 [e]	0.08 [e,f]
84-74-2	Di-*n*-butyl phthalate	7,800 [b]	2,300 [d]	2,300 [d]	270 [b]
95-50-1	1,2-Dichlorobenzene	7,000 [b]	560 [d]	17	0.9
106-46-7	1,4-Dichlorobenzene	27 [e]	--- [g]	2	0.1 [f]
91-94-1	3,3-Dichlorobenzidine	1 [e]	--- [c]	0.007 [e,f]	0.0003 [e,f]
75-34-3	1,1-Dichloroethane	7,800 [b]	1,300 [b]	23 [b]	1 [b]
107-06-2	1,2-Dichloroethane	7 [e]	0.4 [e]	0.02	0.001 [f]
75-35-4	1,1-Dichloroethylene	1 [e]	0.07 [e]	0.06	0.003 [f]
156-59-2	*cis*-1,2-Dichloroethylene	780 [b]	1,200 [d]	0.4	0.02
156-60-5	*trans*-1,2-Dichloroethylene	1,600 [b]	3,100 [d]	0.7	0.03
120-83-2	2,4-Dichlorophenol	230 [b]	--- [c]	1 [b,i]	0.05 [b,f,i]

Table A-1 (continued)

CAS No.	Compound	Ingestion (mg/kg)	Inhalation volatiles (mg/kg)	Migration to ground water: 20 DAF (mg/kg)	Migration to ground water: 1 DAF (mg/kg)
Organics					
78-87-5	1,2-Dichloropropane	9 [e]	15 [b]	0.03	0.001 [f]
542-75-6	1,3-Dichloropropene	4 [e]	0.1 [e]	0.004 [e]	0.0002 [e]
60-57-1	Dieldrin	0.04 [e]	1 [e]	0.004 [e]	0.0002 [e,f]
84-66-2	Diethylphthalate	63,000 [b]	2,000 [d]	470 [b]	23 [b]
105-67-9	2,4-Dimethylphenol	1,600 [b]	--- [c]	9 [b]	0.4 [b]
51-28-5	2,4-Dinitrophenol	160 [b]	--- [c]	0.3 [b,f,i]	0.01 [b,f,i]
121-14-2	2,4-Dinitrotoluene	0.9 [e]	--- [c]	0.0008 [e,f]	4E-05 [e,f]
606-20-2	2,6-Dinitrotoluene	0.9 [e]	--- [c]	0.0007 [e,f]	3E-05 [e,f]
117-84-0	Di-*n*-octyl phthalate	1,600 [b]	10,000 [d]	10,000 [d]	10,000 [d]
115-29-7	Endosulfan	470 [b]	--- [c]	18 [b]	0.9 [b]
72-20-8	Endrin	23 [b]	--- [c]	1	0.05
100-41-4	Ethylbenzene	7,800 [b]	400 [d]	13	0.7
206-44-0	Fluoranthene	3,100 [b]	--- [c]	4,300 [b]	210 [b]
86-73-7	Fluorene	3,100 [b]	--- [c]	560 [b]	28 [b]
76-44-8	Heptachlor	0.1 [e]	4 [e]	23	1
1024-57-3	Heptachlor epoxide	0.07 [e]	5 [e]	0.7	0.03
118-74-1	Hexachlorobenzene	0.4 [e]	1 [e]	2	0.1 [f]
87-68-3	Hexachloro-1,3-butadiene	8 [e]	8 [e]	2	0.1 [f]
319-84-6	α-HCH (α-BHC)	0.1 [e]	0.8 [e]	0.0005 [e,f]	3E-05 [e,f]
319-85-7	β-HCH (β-BHC)	0.4 [e]	--- [g]	0.003 [e]	0.0001 [e,f]
58-89-9	γ-HCH (Lindane)	0.5 [e]	--- [c]	0.009	0.0005 [f]
77-47-4	Hexachlorocyclopentadiene	550 [b]	10 [b]	400	20
67-72-1	Hexachloroethane	46 [e]	55 [e]	0.5 [e]	0.02 [e,f]
193-39-5	Indeno(1,2,3-*cd*)pyrene	0.9 [e]	--- [c]	14 [e]	0.7 [e]
78-59-1	Isophorone	670 [e]	4,600 [d]	0.5 [e]	0.03 [e,f]
7439-97-6	Mercury	23 [b,l]	10 [b,i]	2 [i]	0.1 [i]
72-43-5	Methoxychlor	390 [b]	--- [c]	160	8
74-83-9	Methyl bromide	110 [b]	10 [b]	0.2 [b]	0.01 [b,f]
75-09-2	Methylene chloride	85 [e]	13 [e]	0.02 [e]	0.001 [e,f]
95-48-7	2-Methylphenol	3,900 [b]	--- [c]	15 [b]	0.8 [b]
91-20-3	Naphthalene	3,100 [b]	--- [c]	84 [b]	4 [b]
98-95-3	Nitrobenzene	39 [b]	92 [b]	0.1 [b,f]	0.007 [b,f]
86-30-6	*N*-Nitrosodiphenylamine	130 [e]	--- [c]	1 [e]	0.06 [e,f]
621-64-7	*N*-Nitrosodi-*n*-propylamine	0.09 [e,f]	--- [c]	5E-05 [e,f]	2E-06 [e,f]
1336-36-3	PCBs	1 [h]	--- [h]	--- [h]	--- [h]
87-86-5	Pentachlorophenol	3 [e,j]	--- [c]	0.03 [f,j]	0.001 [f,j]
108-95-2	Phenol	47,000 [b]	--- [c]	100 [b]	5 [b]
129-00-0	Pyrene	2,300 [b]	--- [c]	4,200 [b]	210 [b]
100-42-5	Styrene	16,000 [b]	1,500 [d]	4	0.2
79-34-5	1,1,2,2-Tetrachloroethane	3 [e]	0.6 [e]	0.003 [e,f]	0.0002 [e,f]

Table A-1 (continued)

Organics				Migration to ground water	
CAS No.	Compound	Ingestion (mg/kg)	Inhalation volatiles (mg/kg)	20 DAF (mg/kg)	1 DAF (mg/kg)
127-18-4	Tetrachloroethylene	12 [e]	11 [e]	0.06	0.003 [f]
108-88-3	Toluene	16,000 [b]	650 [d]	12	0.6
8001-35-2	Toxaphene	0.6 [e]	89 [e]	31	2
120-82-1	1,2,4-Trichlorobenzene	780 [b]	3,200 [d]	5	0.3 [f]
71-55-6	1,1,1-Trichloroethane	--- [c]	1,200 [d]	2	0.1
79-00-5	1,1,2-Trichloroethane	11 [e]	1 [e]	0.02	0.0009 [f]
79-01-6	Trichloroethylene	58 [e]	5 [e]	0.06	0.003 [f]
95-95-4	2,4,5-Trichlorophenol	7,800 [b]	--- [c]	270 [b,i]	14 [b,i]
88-06-2	2,4,6-Trichlorophenol	58 [e]	200 [e]	0.2 [e,f,i]	0.008 [e,f,i]
108-05-4	Vinyl acetate	78,000 [b]	1,000 [b]	170 [b]	8 [b]
75-01-4	Vinyl chloride	0.3 [e]	0.03 [e]	0.01 [f]	0.0007 [f]
108-38-3	*m*-Xylene	1.6E+05 [b]	420 [d]	210	10
95-47-6	*o*-Xylene	1.6E+05 [b]	410 [d]	190	9
106-42-3	*p*-Xylene	1.6E+05 [b]	460 [d]	200	10

Table A-1 (continued)

rganics

CAS No.	Compound	Ingestion (mg/kg)	Inhalation fugitive particulate (mg/kg)	Migration to ground water: 20 DAF (mg/kg)	Migration to ground water: 1 DAF (mg/kg)
7440-36-0	Antimony	31 [b]	--- [c]	5	0.3
7440-38-2	Arsenic	0.4 [e]	750 [e]	29 [i]	1 [i]
7440-39-3	Barium	5,500 [b]	6.9E+05 [b]	1,600 [i]	82 [i]
7440-41-7	Beryllium	0.1 [e]	1,300 [e]	63 [i]	3 [i]
7440-43-9	Cadmium	78 [b,m]	1,800 [e]	8 [i]	0.4 [i]
7440-47-3	Chromium (total)	390 [b]	270 [e]	38 [i]	2 [i]
16065-83-1	Chromium (III)	78,000 [b]	--- [c]	--- [g]	--- [g]
18540-29-9	Chromium (VI)	390 [b]	270 [e]	38 [i]	2 [i]
57-12-5	Cyanide (amenable)	1,600 [b]	--- [c]	40	2
7439-92-1	Lead	400 [k]	--- [k]	--- [k]	--- [k]
7440-02-0	Nickel	1,600 [b]	13,000 [e]	130 [i]	7 [i]
7782-49-2	Selenium	390 [b]	--- [c]	5 [i]	0.3 [i]
7440-22-4	Silver	390 [b]	--- [c]	34 [b,i]	2 [b,i]
7440-28-0	Thallium	--- [c]	--- [c]	0.7 [i]	0.04 [i]
7440-62-2	Vanadium	550 [b]	--- [c]	6,000 [b]	300 [b]
7440-66-6	Zinc	23,000 [b]	--- [c]	12,000 [b,i]	620 [b,i]

D[illegible]iution and attenuation factor.

a [illegible]eening levels based on human health criteria only.

b Calculated values correspond to a noncancer hazard quotient of 1.

c No toxicity criteria available for that route of exposure.

d Soil saturation concentration (C_{sat}).

e Calculated values correspond to a cancer risk level of 1 in 1,000,000.

f Level is at or below Contract Laboratory Program required quantitation limit for Regular Analytical Services (RAS).

g Chemical-specific properties are such that this pathway is not of concern at any soil contaminant concentration.

h A preliminary remediation goal of 1 mg/kg has been set for PCBs based on *Guidance on Remedial Actions for Superfund Sites with PCB Contamination* (U.S. EPA, 1990) and on EPA efforts to manage PCB contamination.

i SSL for pH of 6.8.

j Ingestion SSL adjusted by a factor of 0.5 to account for dermal exposure.

k A screening level of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities* (U.S. EPA, 1994).

l SSL is based on RfD for mercuric chloride (CAS No. 007487-94-7).

m SSL is based on dietary RfD.

Table A-2. Generic SSLs: Default Parameters and Assumptions

Parameter	SSL pathway: Inhalation	SSL pathway: Migration to ground water	Default
Source Characteristics			
Continuous vegetative cover	●		50 percent
Roughness height	○		0.5 cm for open terrain; used to derive $U_{t,7}$
Source area (A)	●	○	0.5 acres (2,024 m^2); used to derive L for MTG
Source length (L)		●	45 m (assumes square source)
Source depth		○	Extends to water table (i.e., no attenuation in unsaturated zone)
Soil Characteristics			
Soil texture	○	○	Loam; defines soil characteristics/ parameters
Dry soil bulk density (ρ_b)	●	●	1.5 kg/L
Soil porosity (n)	●	○	0.43
Vol. soil water content (θ_w)	●	●	0.15 (INH); 0.30 (MTG)
Vol. soil air content (θ_a)	●	●	0.28 (INH); 0.13 (MTG)
Soil organic carbon (f_{oc})	●	●	0.006 (0.6%, INH); 0.002 (0.2 %, MTG)
Soil pH	○	○	6.8; used to determine pH-specific K_d (metals) and K_{oc} (ionizable organics)
Mode soil aggregate size	○		0.5 mm; used to derive $U_{t,7}$
Threshold windspeed @ 7 m ($U_{t,7}$)	●		11.32 m/s
Meteorological Data			
Mean annual windspeed (U_m)	●		4.69 m/s (Minneapolis, MN)
Air dispersion factor (Q/C)	●		90th percentile conterminous U.S.
Volatilization Q/C	●		68.81; Los Angeles, CA; 0.5-acre source
Fugitive particulate Q/C	●		90.80; Minneapolis, MN; 0.5-acre source
Hydrogeologic Characteristics			
Hydrogeologic setting		○	Generic (national); surficial aquifer
Dilution/attenuation factor (DAF)		●	20

● Indicates input parameters directly used in SSL equations.
○ Indicates parameters/assumptions used to develop SSL input parameters.
INH = Inhalation pathway.
MTG = Migration to ground water pathway.

Table A-3.Source Depth where 30-acre[a] Mass-Limit SSLs = 0.5-acre[b] Infinite-Source SSLs[c]

Chemical	Source depth (m)	
	Inhalation	Migration to ground water[c]
Acetone	NA	21
Benzene	8.1	12
Benzoic acid	NA	21
Bis(2-chloroethyl)ether	0.7	18
Bromodichloromethane	NA	13
Bromoform	0.9	11
Butanol	NA	20
Carbon disulfide	19	11
Carbon tetrachloride	11	6
Chlorobenzene	3.5	6
Chlorodibromomethane	NA	13
Chloroform	8.3	14
2-Chlorophenol	NA	4
1,2-Dichlorobenzene	NA	3
1,4-Dichlorobenzene	NA	3
1,1-Dichloroethane	9.1	15
1,2-Dichloroethane	5.6	18
1,1-Dichloroethylene	15	10
cis-1,2-Dichloroethylene	NA	15
trans-1,2-Dichloroethylene	NA	12
2,4-Dichlorophenol	NA	8
1,2-Dichloropropane	6.2	14
1,3-Dichloropropene	12	12
2,4-Dimethylphenol	NA	7
2,4-Dinitrophenol	NA	21
2,4-Dinitrotoluene	NA	11
2,6-Dinitrotoluene	NA	12
Ethylbenzene	NA	4
Methyl bromide	12	17
Methylene chloride	8.9	18
2-Methylphenol	NA	11
Nitrobenzene	0.5	13
1,1,2,2-Tetrachloroethane	1.6	11
Tetrachloroethylene	8.7	7
Toluene	NA	7
1,1,1-Trichloroethane	NA	9
1,1,2-Trichloroethane	3.4	14
Trichloroethylene	6.8	7
Vinyl acetate	4.6	20

Table A-3. (continued)

Chemical	Source depth (m)	
	Inhalation	Migration to ground water[c]
Vinyl chloride	21	13
m-Xylene	NA	4
o-Xylene	NA	4
p-Xylene	NA	4

NA = Risk-based SSL not available.

[a] Q/C = 35.15; DAF = 10.

[b] Q/C = 68.81; DAF = 20.

[c] Migration to ground water mass-limit analysis based on 70-yr exposure duration and 0.18 m/yr infiltration rate.

Analysis of Effects of Source Size on Generic SSLs

A large number of commenters on the December 1994 Soil Screening Guidance suggested that most contaminated soil sources were 0.5 acre or less. Before changing this default assumption from 30 acres to 0.5 acre, the Office of Emergency and Remedial Response (OERR) conducted an analysis of the effects of changing the area of a contaminated soil source on generic SSLs calculated for the inhalation and migration to ground water exposure pathways. This analysis includes:

- An analysis of the sensitivity of SSLs to a change in source area from 30 acres to 0.5 acre
- Mass-limit modeling results showing the depth of contamination for a 30-acre source that corresponds to a 0.5-acre SSL.

All equations, assumptions, and model input parameters used in this analysis are consistent with those described in Part 2 of this document unless otherwise indicated. Chemical properties used in the analysis are described in Part 5 of this document.

In summary, the results of this analysis indicate that:

- The SSLs are not particularly sensitive to varying the source area from 30 acres to 0.5 acre. This reduction in source area lowers SSLs for the inhalation pathway by about a factor of 2 and lowers SSLs for the migration to ground water pathway by a factor of 2.9 under typical hydrogeologic conditions.
- Half-acre SSLs calculated for 43 volatile and semivolatile contaminants using the infinite source models correspond to mass-limit SSLs for a 30-acre source uniformly contaminated to a depth of about 1 to 21 meters (depending on contaminant and pathway); the average depth is 8 meters for the inhalation pathway (21 contaminants) and 11 meters for the migration to ground water pathway (43 contaminants).

Sensitivity Analysis. For the inhalation pathway, source area affects the Q/C value (a measure of dispersion), which directly affects the final SSL and is not chemical-specific. Higher Q/C values result in higher SSLs. As shown in Table 3 (Section 2.4.3), the effect of area on the Q/C value is not sensitive to meteorological conditions, with the ratio of a 0.5-acre Q/C to a 30-acre Q/C ranging from 1.93 to 1.96 over the 29 conditions analyzed. Decreasing the source area from 30 acres to 0.5 acre will therefore increase inhalation SSLs by about a factor of 2.

For the migration to ground water pathway, source area affects the DAF, which also directly affects the final SSLs and is not chemical-specific. The sensitivity analysis for the dilution factor is more complicated than for Q/C because increasing source area (expressed as the length of source parallel to ground water flow) not only increases infiltration to the aquifer, which decreases the dilution factor, but also increases the mixing zone depth, which tends to increase the dilution factor. The first effect generally overrides the second (i.e., longer sources have lower dilution factors) except for very thick aquifers (see Section 2.5.7).

The sensitivity analysis described in Section 2.5.7 shows that the dilution model is most sensitive to the aquifer's Darcy velocity (i.e., hydraulic conductivity × hydraulic gradient). For a less conservative Darcy velocity (90th percentile), decreasing the source area from 30 acres to 0.5 acre increased the dilution factor by a factor of 3.1 (see Table 9, Section 2.5.7). For the conditions analyzed, decreasing the source area from 30 acres to 0.5 acre affected dilution factor from no increase to a factor of 4.3 increase. No increase in dilution factor for a 0.5-acre source was observed for the less conservative

(higher) aquifer thickness (46 m). In this case the decrease in mixing zone depth balances the decrease in infiltration rate for the smaller source.

Mass-Limit Analysis. The infinite source assumption is one of the more conservative assumptions inherent in the SSL models, especially for small sources. This assumption should provide adequate protection for sources with larger areas than those used to calculate SSLs. To test this hypothesis the SSL mass-limit models (Section 2.6) were used to calculate, for 43 volatile and semivolatile chemicals, the depth at which a mass-limit SSL for a 30-acre source is equal to a 0.5-acre infinite-source SSL.

The mass-limit models are simple mass-balance models that calculate SSLs based on the conservative assumption that the entire mass of contamination in a source either volatilizes (inhalation model) or leaches (migration to ground water model) over the exposure period of interest. These models were developed to correct the mass-balance violation in the infinite source models for highly volatile or soluble contaminants.

Table A-3 presents the results of this analysis. These results demonstrate that 0.5-acre infinite source SSLs are protective of uniformly contaminated 30-acre source areas of significant depth. For the 21 chemicals analyzed for the inhalation pathway, these source depths range up to 21 meters, with an average depth of 8 meters and a standard deviation of 5.7. For the migration to ground water pathway, source depths for 43 contaminants range to 21 meters, with an average of 11 meters and a standard deviation of 5.4.

References

U.S. EPA (Environmental Protection Agency). 1990. *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*. Office of Solid Waste and Emergency Response, Washington, DC. NTIS PB91-921206CDH.

U.S. EPA (Environmental Protection Agency). 1994. *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*. Office of Solid Waste and Emergency Response, Washington, DC. Directive 9355.4-12.

APPENDIX D
U.S. EPA CLP SOW FOR ORGANIC

Appendix C ?

Target Compound List (TCL) and
Contract Required Quantitation Limits (CRQL)*

Semivolatiles	CAS Number	Quantitation Limits** Water ug/L	Low Soil/Sediment[1] ug/Kg
35. Phenol	108-95-2	10	330
36. bis(2-Chloroethyl) ether	111-44-4	10	330
37. 2-Chlorophenol	95-57-8	10	330
38. 1,3-Dichlorobenzene	541-73-1	10	330
39. 1,4-Dichlorobenzene	106-46-7	10	330
40. Benzyl alcohol	100-51-6	10	330
41. 1,2-Dichlorobenzene	95-50-1	10	330
42. 2-Methylphenol	95-48-7	10	330
43. bis(2-Chloroisopropyl) ether	108-60-1	10	330
44. 4-Methylphenol	106-44-5	10	330
45. N-Nitroso-di-n-dipropylamine	621-64-7	10	330
46. Hexachloroethane	67-72-1	10	330
47. Nitrobenzene	98-95-3	10	330
48. Isophorone	78-59-1	10	330
49. 2-Nitrophenol	88-75-5	10	330
50. 2,4-Dimethylphenol	105-67-9	10	330
51. Benzoic acid	65-85-0	50	1600
52. bis(2-Chloroethoxy) methane	111-91-1	10	330
53. 2,4-Dichlorophenol	120-83-2	10	330
54. 1,2,4-Trichlorobenzene	120-82-1	10	330
55. Naphthalene	91-20-3	10	330
56. 4-Chloroaniline	106-47-8	10	330
57. Hexachlorobutadiene	87-68-3	10	330
58. 4-Chloro-3-methylphenol (para-chloro-meta-cresol)	59-50-7	10	330
59. 2-Methylnaphthalene	91-57-6	10	330
60. Hexachlorocyclopentadiene	77-47-4	10	330
61. 2,4,6-Trichlorophenol	88-06-2	10	330
62. 2,4,5-Trichlorophenol	95-95-4	50	1600
63. 2-Chloronaphthalene	91-58-7	10	330
64. 2-Nitroaniline	88-74-4	50	1600
65. Dimethylphthalate	131-11-3	10	330
66. Acenaphthylene	208-96-8	10	330
67. 2,6-Dinitrotoluene	606-20-2	10	330
68. 3-Nitroaniline	99-09-2	50	1600
69. Acenaphthene	83-32-9	10	330

(continued)

Semivolatiles	CAS Number	Quantitation Limits* Water ug/L	Low Soil/Sediment[b] ug/Kg
70. 2,4-Dinitrophenol	51-28-5	50	1600
71. 4-Nitrophenol	100-02-7	50	1600
72. Dibenzofuran	132-64-9	10	330
73. 2,4-Dinitrotoluene	121-14-2	10	330
74. Diethylphthalate	84-66-2	10	330
75. 4-Chlorophenyl-phenyl ether	7005-72-3	10	330
76. Fluorene	86-73-7	10	330
77. 4-Nitroaniline	100-01-6	50	1600
78. 4,6-Dinitro-2-methylphenol	534-52-1	50	1600
79. N-nitrosodiphenylamine	86-30-6	10	330
80. 4-Bromophenyl-phenylether	101-55-3	10	330
81. Hexachlorobenzene	118-74-1	10	330
82. Pentachlorophenol	87-86-5	50	1600
83. Phenanthrene	85-01-8	10	330
84. Anthracene	120-12-7	10	330
85. Di-n-butylphthalate	84-74-2	10	330
86. Fluoranthene	206-44-0	10	330
87. Pyrene	129-00-0	10	330
88. Butylbenzylphthalate	85-68-7	10	330
89. 3,3'-Dichlorobenzidine	91-94-1	20	660
90. Benzo(a)anthracene	56-55-3	10	330
91. Chrysene	218-01-9	10	330
92. bis(2-Ethylhexyl)phthalate	117-81-7	10	330
93. Di-n-octylphthalate	117-84-0	10	330
94. Benzo(b)fluoranthene	205-99-2	10	330
95. Benzo(k)fluoranthene	207-08-9	10	330
96. Benzo(a)pyrene	50-32-8	10	330
97. Indeno(1,2,3-cd)pyrene	193-39-5	10	330
98. Dibenz(a,h)anthracene	53-70-3	10	330
99. Benzo(g,h,i)perylene	191-24-2	10	330

[b] Medium Soil/Sediment Contract Required Quantitation Limits (CRQL) for SemiVolatile TCL Compounds are 60 times the individual Low Soil/Sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

Target Compound List (TCL) and Contract Required Quantitation Limits (CROL)*

Volatiles	CAS Number	Quantitation Limits** Water ug/L	Low Soil/Sediment[a] ug/Kg
1. Chloromethane	74-87-3	10	10
2. Bromomethane	74-83-9	10	10
3. Vinyl Chloride	75-01-4	10	10
4. Chloroethane	75-00-3	10	10
5. Methylene Chloride	75-09-2	5	5
6. Acetone	67-64-1	10	10
7. Carbon Disulfide	75-15-0	5	5
8. 1,1-Dichloroethene	75-35-4	5	5
9. 1,1-Dichloroethane	75-34-3	5	5
10. 1,2-Dichloroethene (total)	540-59-0	5	5
11. Chloroform	67-66-3	5	5
12. 1,2-Dichloroethane	107-06-2	5	5
13. 2-Butanone	78-93-3	10	10
14. 1,1,1-Trichloroethane	71-55-6	5	5
15. Carbon Tetrachloride	56-23-5	5	5
16. Vinyl Acetate	108-05-4	10	10
17. Bromodichloromethane	75-27-4	5	5
18. 1,2-Dichloropropane	78-87-5	5	5
19. cis-1,3-Dichloropropene	10061-01-5	5	5
20. Trichloroethene	79-01-6	5	5
21. Dibromochloromethane	124-48-1	5	5
22. 1,1,2-Trichloroethane	79-00-5	5	5
23. Benzene	71-43-2	5	5
24. trans-1,3-Dichloropropene	10061-02-6	5	5
25. Bromoform	75-25-2	5	5
26. 4-Methyl-2-pentanone	108-10-1	10	10
27. 2-Hexanone	591-78-6	10	10
28. Tetrachloroethene	127-18-4	5	5
29. Toluene	108-88-3	5	5
30. 1,1,2,2-Tetrachloroethane	79-34-5	5	5

(continued)

Volatiles	CAS Number	Quantitation Limits: Water ug/L	Low Soil/Sediment[a] ug/Kg
31. Chlorobenzene	108-90-7	5	5
32. Ethyl Benzene	100-41-4	5	5
33. Styrene	100-42-5	5	5
34. Xylenes (Total)	1330-20-7	5	5

[a] Medium Soil/Sediment Contract Required Quantitation Limits (CRQL) for Volatile TCL Compounds are 125 times the individual Low Soil/Sediment CRQL.

* Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

** Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sadiment, calculated on dry weight basis as required by the contract, will be higher.

APPENDIX E
U.S. EPA CLP SOW FOR INORGANIC

ATTACHMENT A

USEPA CONTRACT LABORATORY PROGRAM

STATEMENT OF WORK

FOR

INORGANICS ANALYSIS

Multi-Media

Multi-Concentration

Document Number ILM04.0

STATEMENT OF WORK
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EXHIBIT C

INORGANIC TARGET ANALYTE LIST

INORGANIC TARGET ANALYTE LIST (TAL) - TABLE 1

Analyte	Contract Required Detection Limit[1,2] (ug/L)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Iron	100
Lead	3
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Sodium	5000
Thallium	10
Vanadium	50
Zinc	20
Cyanide	10

(1) Subject to the restrictions specified in Exhibits D and E, any analytical method specified in ILM04.0, Exhibit D may be utilized as long as the documented instrument or method detection limits meet the Contract Required Detection Limit (CRDL) requirements. Higher detection limits may only be used in the following circumstance:

If the sample concentration exceeds five times the detection limit of the instrument or method in use, the value may be reported even though the instrument or method detection limit may not equal the Contract Required Detection Limit. This is illustrated in the example below:

For lead: Method in use = ICP
Instrument Detection Limit (IDL) = 40
Sample concentration = 220
Contract Required Detection Limit (CRDL) = 3

The value of 220 may be reported even though the instrument detection limit is greater than CRDL. The instrument or method detection limit must be documented as described in Exhibits B and E.

(2) The CRDLs are the minimum levels of detection acceptable under the contract Statement of Work.

APPENDIX F
U.S. CFR TITLE 40 PART 261 SUBPART C, SECTION 24

of improper management considered in paragraph (a)(3)(vii) of this section.

(iv) The persistence of the constituent or any toxic degradation product of the constituent.

(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.

(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

(vii) The plausible types of improper management to which the waste could be subjected.

(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.

(ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

(x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

(xi) Such other factors as may be appropriate.

Substances will be listed on appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.

(Wastes listed in accordance with these criteria will be designated Toxic wastes.)

(b) The Administrator may list classes or types of solid waste as hazardous waste if he has reason to believe that individual wastes, within the class or type of waste, typically or frequently are hazardous under the definition of hazardous waste found in section 1004(5) of the Act.

(c) The Administrator will use the criteria for listing specified in this section to establish the exclusion limits referred to in § 261.5(c).

[45 FR 33119, May 19, 1980, as amended at 55 FR 18726, May 4, 1990; 57 FR 14, Jan. 2, 1992]

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this subpart.

[*Comment:* § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this subpart]

(b) A hazardous waste which is identified by a characteristic in this subpart is assigned every EPA Hazardous Waste Number that is applicable as set forth in this subpart. This number must be used in complying with the notification requirements of section 3010 of the Act and all applicable recordkeeping and reporting requirements under parts 262 through 265, 268, and 270 of this chapter.

(c) For purposes of this subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in appendix I to be a representative sample within the meaning of part 260 of this chapter.

[*Comment:* Since the appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 51 FR 40636, Nov. 7, 1986; 55 FR 22684, June 1, 1990; 56 FR 3876, Jan. 31, 1991]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D–93–79 or D–93–80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified

porated by reference, see §260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990]

§261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter.

(b) A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981; 55 FR 22684, June 1, 1990; 58 FR 46049, Aug. 31, 1993]

§261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

[45 FR 33119, May 19, 1980, as amended at 55 FR 22684, June 1, 1990]

§261.24 Toxicity characteristic.

(a) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in §260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is

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considered to be the extract for the purpose of this section.

(b) A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC

EPA HW No.[1]	Contaminant	CAS No.[2]	Regulatory Level (mg/L)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	[4]200.0
D024	m-Cresol	108-39-4	[4]200.0
D025	p-Cresol	106-44-5	[4]200.0
D026	Cresol		[4]200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	[3]0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide).	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	[3]0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentrachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	[3]5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

[1] Hazardous waste number.
[2] Chemical abstracts service number.
[3] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.
[4] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

[55 FR 11862, Mar. 29, 1990, as amended at 55 FR 22684, June 1, 1990; 55 FR 26987, June 29, 1990; 58 FR 46049, Aug. 31, 1993]

Subpart D—Lists of Hazardous Wastes

§ 261.30 General.

(a) A solid waste is a hazardous waste if it is listed in this subpart, unless it has been excluded from this list under §§ 260.20 and 260.22.

(b) The Administrator will indicate his basis for listing the classes or types of wastes listed in this subpart by employing one or more of the following Hazard Codes:

Ignitable Waste	(I)
Corrosive Waste	(C)
Reactive Waste	(R)
Toxicity Characteristic Waste	(E)
Acute Hazardous Waste	(H)
Toxic Waste	(T)

Appendix VII identifies the constituent which caused the Administrator to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32.

(c) Each hazardous waste listed in this subpart is assigned an EPA Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under parts 262 through 265, 268, and part 270 of this chapter.

(d) The following hazardous wastes listed in § 261.31 or § 261.32 are subject to the exclusion limits for acutely hazardous wastes established in § 261.5: EPA Hazardous Wastes Nos. FO20, FO21, FO22, FO23, FO26, and FO27.

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983; 50 FR 2000, Jan. 14, 1985; 51 FR 40636, Nov. 7, 1986; 55 FR 11863, Mar. 29, 1990]

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- High-Pressure Water: This method consists of a high-pressure pump, an operator-controlled directional nozzle, and a high pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) which relates to flow rates of 20 to 140 liters per minute.

- Ultra-High-Pressure Water: This system produces a pressurized water jet (from 1,000 to 4,000 atm). The ultra-high-pressure spray removes tightly-adhered surface film. The water velocity ranges from 500 m/sec (1,000 atm) to 900 m/sec (4,000 atm). Additives can enhance the method. This method is not applicable for hand-held sampling equipment.

Disinfection/Rinse Methods

- Disinfection: Disinfectants are a practical means of inactivating infectious agents.

- Sterilization: Standard sterilization methods involve heating the equipment. Sterilization is impractical for large equipment.

- Rinsing: Rinsing removes contaminants through dilution, physical attraction, and solubilization.

1.7.2 Field Sampling Equipment Cleaning Procedures

Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if analysis does not include inorganics.

1. Where applicable, follow physical removal procedures specified in section 1.7.1.
2. Wash equipment with a non-phosphate detergent solution.
3. Rinse with tap water.
4. Rinse with distilled/deionized water.
5. Rinse with 10% nitric acid if the sample will be analyzed for trace organics.
6. Rinse with distilled/deionized water.
7. Use a solvent rinse (pesticide grade) if the sample will be analyzed for organics.
8. Air dry the equipment completely.
9. Rinse again with distilled/deionized water.

Selection of the solvent for use in the decontamination process is based on the contaminants present at the site. Use of a solvent is required when organic contamination is present on-site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. An acid rinse step is required if metals are present on-site. If a particular contaminant fraction is not present at the site, the nine-step decontamination procedure listed above may be modified for site specificity. The decontamination solvent used should not be among the contaminants of concern at the site.

Table 1 lists solvent rinses which may be required for elimination of particular chemicals. After each solvent rinse, the equipment should be air dried and rinsed with distilled/deionized water.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing, before commencement of sampling and between sampling locations.

1.8 CALCULATIONS

This section is not applicable to this SOP.

1.9 QUALITY ASSURANCE/ QUALITY CONTROL

One type of quality control sample specific to the field decontamination process is the rinsate blank. The rinsate blank provides information on the effectiveness of the decontamination process employed in the field. When used in conjunction with field blanks and trip blanks, a rinsate blank can detect contamination during sample handling, storage and sample transportation to the laboratory.

Table 1: Recommended Solvent Rinse for Soluble Contaminants

SOLVENT	SOLUBLE CONTAMINANTS
Water	• Low-chain hydrocarbons • Inorganic compounds • Salts • Some organic acids and other polar compounds
Dilute Acids	• Basic (caustic) compounds • Amines • Hydrazines
Dilute Bases -- for example, detergent and soap	• Metals • Acidic compounds • Phenol • Thiols • Some nitro and sulfonic compounds
Organic Solvents[1] - for example, alcohols, ethers, ketones, aromatics, straight-chain alkanes (e.g., hexane), and common petroleum products (e.g., fuel, oil, kerosene)	• Nonpolar compounds (e.g., some organic compounds)

[1] - WARNING: Some organic solvents can permeate and/or degrade protective clothing.

A rinsate blank consists of a sample of analyte-free (i.e, deionized) water which is passed over and through a field decontaminated sampling device and placed in a clean sample container.

Rinsate blanks should be run for all parameters of interest at a rate of 1 per 20 for each parameter, even if samples are not shipped that day. Rinsate blanks are not required if dedicated sampling equipment is used.

1.10 DATA VALIDATION

This section is not applicable to this SOP.

1.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and specific health and safety procedures.

Decontamination can pose hazards under certain circumstances even though performed to protect health and safety. Hazardous substances may be incompatible with decontamination methods. For example, the decontamination solution or solvent may react with contaminants to produce heat, explosion, or toxic products. Decontamination methods may be incompatible with clothing or equipment; some solvents can permeate or degrade protective clothing. Also, decontamination solutions and solvents may pose a direct health hazard to workers through inhalation or skin contact, or if they combust.

The decontamination solutions and solvents must be determined to be compatible before use. Any method that permeates, degrades, or damages personal protective equipment should not be used. If decontamination methods pose a direct health hazard, measures should be taken to protect personnel or the methods should be modified to eliminate the hazard.

1.0 SAMPLING EQUIPMENT DECONTAMINATION: SOP #2006

1.1 SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) describes methods used for preventing or reducing cross-contamination, and provides general guidelines for sampling equipment decontamination procedures at a hazardous waste site. Preventing or minimizing cross-contamination in sampled media and in samples is important for preventing the introduction of error into sampling results and for protecting the health and safety of site personnel.

Removing or neutralizing contaminants that have accumulated on sampling equipment ensures protection of personnel from permeating substances, reduces or eliminates transfer of contaminants to clean areas, prevents the mixing of incompatible substances, and minimizes the likelihood of sample cross-contamination.

1.2 METHOD SUMMARY

Contaminants can be physically removed from equipment, or deactivated by sterilization or disinfection. Gross contamination of equipment requires physical decontamination, including abrasive and non-abrasive methods. These include the use of brushes, air and wet blasting, and high-pressure water cleaning, followed by a wash/rinse process using appropriate cleaning solutions. Use of a solvent rinse is required when organic contamination is present.

1.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

This section is not applicable to this SOP.

1.4 INTERFERENCES AND POTENTIAL PROBLEMS

- The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free.
- An untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal water treatment system for mixing of decontamination solutions.
- Acids and solvents utilized in the decontamination sequence pose the health and safety risks of inhalation or skin contact, and raise shipping concerns of permeation or degradation.
- The site work plan must address disposal of the spent decontamination solutions.
- Several procedures can be established to minimize contact with waste and the potential for contamination. For example:
  - Stress work practices that minimize contact with hazardous substances.
  - Use remote sampling, handling, and container-opening techniques when appropriate.
  - Cover monitoring and sampling equipment with protective material to minimize contamination.
  - Use disposable outer garments and disposable sampling equipment when appropriate.

1.5 EQUIPMENT/APPARATUS

- appropriate personal protective clothing
- non-phosphate detergent
- selected solvents
- long-handled brushes
- drop cloths/plastic sheeting
- trash container
- paper towels
- galvanized tubs or buckets
- tap water

- distilled/deionized water
- metal/plastic containers for storage and disposal of contaminated wash solutions
- pressurized sprayers for tap and deionized/distilled water
- sprayers for solvents
- trash bags
- aluminum foil
- safety glasses or splash shield
- emergency eyewash bottle

1.6 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions and solvents. In general, the following solvents are utilized for decontamination purposes:

- 10% nitric acid[1]
- acetone (pesticide grade)[2]
- hexane (pesticide grade)[2]
- methanol

[1] Only if sample is to be analyzed for trace metals.
[2] Only if sample is to be analyzed for organics.

1.7 PROCEDURES

As part of the health and safety plan, develop and set up a decontamination plan before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- the number, location, and layout of decontamination stations
- which decontamination apparatus is needed
- the appropriate decontamination methods
- methods for disposal of contaminated clothing, apparatus, and solutions

1.7.1 Decontamination Methods

All personnel, samples, and equipment leaving the contaminated area of a site must be decontaminated. Various decontamination methods will either physically remove contaminants, inactivate contaminants by disinfection or sterilization, or do both.

In many cases, gross contamination can be removed by physical means. The physical decontamination techniques appropriate for equipment decontamination can be grouped into two categories: abrasive methods and non-abrasive methods.

Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The following abrasive methods are available:

- Mechanical: Mechanical cleaning methods use brushes of metal or nylon. The amount and type of contaminants removed will vary with the hardness of bristles, length of brushing time, and degree of brush contact.
- Air Blasting: Air blasting is used for cleaning large equipment, such as bulldozers, drilling rigs or auger bits. The equipment used in air blast cleaning employs compressed air to force abrasive material through a nozzle at high velocities. The distance between the nozzle and the surface cleaned, as well as the pressure of air, the time of application, and the angle at which the abrasive strikes the surface, determines cleaning efficiency. Air blasting has several disadvantages: it is unable to control the amount of material removed, it can aerate contaminants, and it generates large amounts of waste.
- Wet Blasting: Wet blast cleaning, also used to clean large equipment, involves use of a suspended fine abrasive delivered by compressed air to the contaminated area. The amount of materials removed can be carefully controlled by using very fine abrasives. This method generates a large amount of waste.

Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off of a surface with pressure. In general, less of the equipment surface is removed using non-abrasive methods. The following non-abrasive methods are available:

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U.S. EPA ERT's SOP 2009

2.0 DRUM SAMPLING: SOP #2009

2.1 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide technical guidance on safe and cost-effective response actions at hazardous waste sites containing drums with unknown contents. Container contents are sampled and characterized for disposal, bulking, recycling, grouping, and/or classification purposes.

2.2 METHOD SUMMARY

Prior to sampling, drums must be inventoried, staged, and opened. An inventory entails recording visual qualities of each drum and any characteristics pertinent to the contents' classification. Staging involves the organization, and sometimes consolidation of drums which have similar wastes or characteristics. Opening of closed drums can be performed manually or remotely. Remote drum opening is recommended for worker safety. The most widely used method of sampling a drum involves the use of a glass thief. This method is quick, simple, relatively inexpensive, and requires no decontamination.

2.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Samples collected from drums are considered waste samples. No preservatives should be added since there is a potential reaction of the sample with the preservative. Samples should, however, be cooled to 4°C and protected from sunlight in order to minimize any potential reaction due to the light sensitivity of the sample.

Sample bottles for collection of waste liquids, sludges, or solids are typically wide-mouth amber jars with Teflon-lined screw caps. Actual volume required for analysis should be determined in conjunction with the laboratory performing the analysis.

Follow these waste sample handling procedures:

1. Place sample container in two Ziploc plastic bags.
2. Place each bagged container in a 1-gallon covered can containing absorbent packing material. Place the lid on the can.
3. Mark the sample identification number on the outside of the can.
4. Place the marked cans in a cooler, and fill remaining space with absorbent packing material.
5. Fill out chain of custody form for each cooler, place in plastic, and affix to inside lid of cooler.
6. Secure and custody seal the lid of cooler.
7. Arrange for the appropriate transportation mode consistent with the type of hazardous waste involved.

2.4 INTERFERENCES AND POTENTIAL PROBLEMS

The practice of tapping drums to determine their contents is neither safe nor effective and should not be used if the drums are visually overpressurized or if shock-sensitive materials are suspected. A laser thermometer may be used instead.

Drums that have been overpressurized, to the extent that the head is swollen several inches above the level of the chime, should not be moved. A number of devices have been developed for venting critically swollen drums. One method that has proven to be effective is a tube and spear device. A light aluminum tube (3 meters long) is positioned at the vapor space of the drum. A rigid, hooking device attached to the tube goes over the chime and holds the tube securely in place. The spear is inserted in the tube and positioned against the drum wall. A sharp blow on the end of the spear drives the sharpened tip through the drum and the gas vents along the grooves. The venting should be done from behind a wall or barricade. This device can be cheaply and easily designed and constructed where needed. Once the pressure has been relieved, the bung can be removed and the drum sampled.

2.5 EQUIPMENT/APPARATUS

The following are standard materials and equipment required for sampling:

- personal protection equipment
- wide-mouth glass jars with Teflon cap liner, approximately 500 mL volume
- uniquely numbered sample identification labels with corresponding data sheets
- 1-gallon covered cans half-filled with absorbent (vermiculite)
- chain of custody forms
- decontamination materials
- glass thief tubes or Composite Liquid Waste Samplers (COLIWASA)
- laser thermometer
- drum opening devices

Drum opening devices include the following:

2.5.1 Bung Wrench

A common method for opening drums manually is using a universal bung wrench. These wrenches have fittings made to remove nearly all commonly encountered bungs. They are usually constructed of cast iron, brass, or a bronze-beryllium, non-sparking alloy formulated to reduce the likelihood of sparks. The use of a non-sparking bung wrench does not completely eliminate the possibility of a spark being produced. (See Figure 1, Appendix B.)

2.5.2 Drum Deheader

When a bung is not removable with a bung wrench, a drum can be opened manually by using a drum deheader. This tool is constructed of forged steel with an alloy steel blade and is designed to cut the lid of a drum off or part way off by means of a scissors-like cutting action. A limitation of this device is that it can be attached only to closed head drums. Drums with removable heads must be opened by other means. (See Figure 2, Appendix B.)

2.5.3 Hand Pick, Pickaxe, and Hand Spike

These tools are usually constructed of brass or a non-sparking alloy with a sharpened point that can penetrate the drum lid or head when the tool is swung. The hand picks or pickaxes that are most commonly used are commercially available; whereas the spikes are generally uniquely fabricated 4-foot long poles with a pointed end. (See Figure 3, Appendix B.)

2.5.4 Backhoe Spike

The most common means used to open drums remotely for sampling is the use of a metal spike attached or welded to a backhoe bucket. In addition to being very efficient, this method can greatly reduce the likelihood of personal exposure. (See Figure 4, Appendix B.)

2.5.5 Hydraulic Drum Opener

Another remote method for opening drums is with remotely operated hydraulic devices. One such device uses hydraulic pressure to pierce through the wall of a drum. It consists of a manually operated pump which pressurizes soil through a length of hydraulic line. (See Figure 5, Appendix B.)

2.5.6 Pneumatic Devices

A pneumatic bung remover consists of a compressed air supply that is controlled by a heavy-duty, two-stage regulator. A high-pressure air line of desired length delivers compressed air to a pneumatic drill, which is adapted to turn a bung fitting selected to fit the bung to be removed. An adjustable bracketing system has been designed to position and align the pneumatic drill over the bung. This bracketing system must be attached to the drum before the drill can be operated. Once the bung has been loosened, the bracketing system must be removed before the drum can be sampled. This remote bung opener does not permit the slow venting of the container, and therefore appropriate precautions must be taken. It also requires the container to be upright and relatively level. Bungs that are rusted shut cannot be removed with this device. (See Figure 6, Appendix B.)

2.6 REAGENTS

Reagents are not typically required for preserving drum samples. However, reagents are used for decontaminating sampling equipment. Decontamination solutions are specified in ERT SOP #2006, Sampling Equipment Decontamination.

2.7 PROCEDURES

2.7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are needed.

2. Obtain necessary sampling and monitoring equipment.

3. Decontaminate or preclean equipment, and ensure that it is in working order.

4. Prepare scheduling and coordinate with staff, clients, and regulatory agency, if appropriate.

5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions.

2.7.2 Drum Inspection

Appropriate procedures for handling drums depend on the contents. Thus, prior to any handling, drums should be visually inspected to gain as much information as possible about their contents. Those in charge of inspections should be on the look-out for:

- drum condition, corrosion, rust, and leaking contents
- symbols, words, or other markings on the drum indicating hazards (i.e., explosive, radioactive, toxic, flammable)
- signs that the drum is under pressure
- shock sensitivity

Monitor around the drums with radiation instruments, organic vapor monitors (OVA) and combustible gas indicators (CGI).

Classify the drums into categories, for instance:

- radioactive
- leaking/deteriorating
- bulging
- drums containing lab packs
- explosive/shock sensitive

All personnel should assume that unmarked drums contain hazardous materials until their contents have been categorized, and that labels on drums may not accurately describe their contents.

If it is presumed that there are buried drums on-site, geophysical investigation techniques such as magnetometry, ground penetrating radar, and metal detection can be employed in an attempt to determine depth and location of the drums. See ERT SOP #2159, General Surface Geophysics.

2.7.3 Drum Staging

Prior to sampling, the drums should be staged to allow easy access. Ideally, the staging area should be located just far enough from the drum opening area to prevent a chain reaction if one drum should explode or catch fire when opened.

While staging, physically separate the drums into the following categories: those containing liquids, those containing solids, lab packs, or gas cylinders, and those which are empty. This is done because the strategy for sampling and handling drums/containers in each of these categories will be different. This may be achieved by:

- Visual inspection of the drum and its labels, codes, etc. Solids and sludges are typically disposed of in open-top drums. Closed-head drums with a bung opening generally contain liquid.

- Visual inspection of the contents of the drum during sampling followed by restaging, if needed.

Once a drum has been excavated and any immediate hazard has been eliminated by overpacking or transferring the drum's contents, affix a numbered tag to the drum and transfer it to a staging area. Color-coded tags, labels, or bands should be used to mark similar waste types. Record a description of each drum, its condition, any unusual markings, and the location where it was buried or stored, on a drum data sheet (Appendix A). This data sheet becomes the principal

recordkeeping tool for tracking the drum onsite.

Where there is good reason to suspect that some drums contain radioactive, explosive, and shock-sensitive materials, these drums should be staged in a separate, isolated area. Placement of explosives and shock-sensitive materials in diked and fenced areas will minimize the hazard and the adverse effects of any premature detonation of explosives.

Where space allows, the drum opening area should be physically separated from the drum removal and drum staging operations. Drums are moved from the staging area to the drum opening area one at a time using forklift trucks equipped with drum grabbers or a barrel grappler. In a large-scale drum handling operation, drums may be conveyed to the drum opening area using a roller conveyor.

2.7.4 Drum Opening

There are three basic techniques available for opening drums at hazardous waste sites:

- Manual opening with non-sparking bung wrenches,
- Drum deheading, and
- Remote drum puncturing or bung removal.

The choice of drum opening techniques and accessories depends on the number of drums to be opened, their waste contents, and physical condition. Remote drum opening equipment should always be considered in order to protect worker safety. Under OSHA 1910.120, manual drum opening with bung wrenches or deheaders should be performed only with structurally sound drums having contents that are known to be (1) not shock sensitive, (2) non-reactive, (3) non-explosive, and (4) non-flammable.

Manual Drum Opening with a Bung Wrench

Manual drum opening with bung wrenches (Figure 1, Appendix B) should not be performed unless the drums are structurally sound (no evidence of bulging or deformation) and their contents are known to be non-explosive. If opening the drum with bung wrenches is deemed reasonably cost-effective and safe, then follow these procedures to minimize the hazard:

1. Fully outfit field personnel with protective gear.
2. Position drum upright with the bung up, or, for drums with bungs on the side, lay the drum on its side with the bung plug up.
3. Wrench the bung with a slow, steady pulling motion across the drum. If the length of the bung wrench handle provides inadequate leverage for unscrewing the plug, attach a "cheater bar" to the handle to improve leverage.

Manual Drum Opening with a Drum Deheader

Drums are opened with a drum deheader (Figure 2, Appendix B) by first positioning the cutting edge just inside the top chime and then tightening the adjustment screw so that the deheader is held against the side of the drum. Moving the handle of the deheader up and down while sliding the deheader along the chime will cut off the entire top. If the top chime of a drum has been damaged or badly dented, it may not be possible to cut off the entire top. Since there is always the possibility that a drum may be under pressure, make the initial cut very slowly to allow for the gradual release of any built-up pressure. A safer technique would be to use a remote method to puncture the drum prior to using the deheader.

Self-propelled drum openers which are either electrically or pneumatically driven can be used for quicker and more efficient deheading.

Manual Drum Opening with a Hand Pick, Pickaxe, or Spike

When a drum must be opened and neither a bung wrench nor a drum deheader is suitable, the drum can be opened for sampling by using a hand pick, pickaxe, or spike (Figure 3, Appendix B). Often the drum lid or head must be hit with a great deal of force in order to penetrate it. The potential for splash or spraying is greater than with other opening methods and, therefore, this method of drum opening is not recommended, particularly when opening drums containing liquids. Some spikes used have been modified by the addition of a circular splash plate near the penetrating end. This plate acts as a shield and reduces the amount of splash in the direction of the person using the spike. Even with this shield, good splash gear is essential.

Since drums cannot be opened slowly with these tools, spray from drums is common requiring appropriate safety measures. Decontaminate the pick or spike after each drum is opened to avoid cross-contamination and/or adverse chemical reaction from incompatible materials.

Remote Drum Opening with a Backhoe Spike

Remotely operated drum opening tools are the safest available means of drum opening. Remote drum opening is slow, but is much safer compared to manual methods of opening.

Drums should be "staged" or placed in rows with adequate aisle space to allow ease in backhoe maneuvering. Once staged, the drums can be quickly opened by punching a hole in the drum head or lid with the spike.

The spike (Figure 4, Appendix B) should be decontaminated after each drum is opened to prevent cross-contamination. Even though some splash or spray may occur when this method is used, the operator of the backhoe can be protected by mounting a large shatter-resistant shield in front of the operator's cage. This, combined with the required level of personal protection gear, should be sufficient to protect the operator. Additional respiratory protection can be afforded by providing the operator with an on-board airline system.

Remote Drum Opening with Hydraulic Devices

A piercing device with a metal point is attached to the end of a hydraulic line and is pushed into the drum by hydraulic pressure (Figure 5, Appendix B). The piercing device can be attached so that the sampling hole can be made on either the side or the head of the drum. Some of the metal piercers are hollow or tube-like so that they can be left in place if desired and serve as a permanent tap or sampling port. The piercer is designed to establish a tight seal after penetrating the container.

Remote Drum Opening with Pneumatic Devices

Pneumatically-operated devices utilizing compressed air have been designed to remove drum bungs remotely (Figure 6, Appendix B).

2.7.5 Drum Sampling

After the drum has been opened, monitor headspace gases using an explosimeter and organic vapor analyzer. In most cases it is impossible to observe the contents of these sealed or partially sealed vessels. Since some layering or stratification is likely in any solution left undisturbed over time, take a sample that represents the entire depth of the vessel.

When sampling a previously sealed vessel, check for the presence of a bottom sludge. This is easily accomplished by measuring the depth to the apparent bottom, then comparing it to the known interior depth.

Glass Thief Sampler

The most widely used implement for sampling is a glass tube commonly referred to as a glass thief (Figure 7, Appendix B). This tool is simple, cost effective, quick, and collects a sample without having to decontaminate. Glass thieves are typically 6mm to 16mm I.D. and 48 inches long.

Procedures for using a glass thief are as follows:

1. Remove cover from sample container.

2. Insert glass tubing almost to the bottom of the drum or until a solid layer is encountered. About one foot of tubing should extend above the drum.

3. Allow the waste in the drum to reach its natural level in the tube.

4. Cap the top of the sampling tube with a tapered stopper or thumb, ensuring liquid does not come into contact with stopper.

5. Carefully remove the capped tube from the drum and insert the uncapped end in the sample container.

6. Release stopper and allow the glass thief to drain until the container is approximately 2/3 full.

7. Remove tube from the sample container, break it into pieces and place the pieces in the drum.

8. Cap the sample container tightly and place prelabeled sample container in a carrier.

9. Replace the bung or place plastic over the drum.

10. Log all samples in the site logbook and on field data sheets.

11. Package samples and complete necessary paperwork.

12. Transport sample to decontamination zone to prepare it for transport to the analytical laboratory.

In many instances a drum containing waste material will have a sludge layer on the bottom. Slow insertion of the sample tube down into this layer and then a gradual withdrawal will allow the sludge to act as a bottom plug to maintain the fluid in the tube. The plug can be gently removed and placed into the sample container by the use of a stainless steel lab spoon.

It should be noted that in some instances disposal of the tube by breaking it into the drum may interfere with eventual plans for the removal of its contents. This practice should be cleared with the project officer or other disposal techniques evaluated.

COLIWASA Sampler

Some equipment is designed to collect a sample from the full depth of a drum and maintain it in the transfer tube until delivery to the sample bottle. These designs include primarily the Composite Liquid Waste Sampler (COLIWASA) and modifications thereof. The COLIWASA (Figure 8, Appendix B) is a much cited sampler designed to permit representative sampling of multiphase wastes from drums and other containerized wastes. One configuration consists of a 152 cm by 4 cm I.D. section of tubing with a neoprene stopper at one end attached by a rod running the length of the tube to a locking mechanism at the other end.

Manipulation of the locking mechanism opens and closes the sampler by raising and lowering the neoprene stopper. One model of the COLIWASA is shown in Appendix B; however, the design can be modified and/or adapted somewhat to meet the needs of the sampler.

The major drawbacks associated with using a COLIWASA concern decontamination and costs. The sampler is difficult, if not impossible to decontaminate in the field and its high cost in relation to alternative procedures (glass tubes) make it an impractical throwaway item. It still has applications, however, especially in instances where a true representation of a multiphase waste is absolutely necessary.

Follow these procedures for using the COLIWASA:

1. Put the sampler in the open position by placing the stopper rod handle in the T-position and pushing the rod down until the handle sits against the sampler's locking block.

2. Slowly lower the sampler into the liquid waste. Lower the sampler at a rate that permits the levels of the liquid inside and outside the sampler tube to be about the same. If the level of the liquid in the sample tube is lower than that outside the sampler, the sampling rate is too fast and will result in a non-representative sample.

3. When the sampler stopper hits the bottom of the waste container, push the sampler tube downward against the stopper to close the sampler. Lock the sampler in the closed position by turning the T-handle until it is upright and one end rests tightly on the locking block.

4. Slowly withdraw the sample from the waste container with one hand while wiping the sampler tube with a disposable cloth or rag with the other hand.

5. Carefully discharge the sample into a suitable sample container by slowly pulling the lower end of the T-handle away from the locking block while the lower end of the sampler is positioned in a sample container.

6. Cap the sample container tightly and place prelabeled sample container in a carrier.

7. Replace the bung or place plastic over the drum.

8. Log all samples in the site logbook and on field data sheets.

9. Package samples and complete necessary paperwork.

10. Transport sample to decontamination zone to prepare it for transport to the analytical laboratory.

2.8 CALCULATIONS

This section is not applicable to this SOP.

2.9 QUALITY ASSURANCE/ QUALITY CONTROL

The following general quality assurance procedures apply:

- Document all data on standard chain of custody forms, field data sheets, or within site logbooks.

- Operate all instrumentation in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

2.10 DATA VALIDATION

This section is not applicable to this SOP.

2.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA, and specific health and safety procedures.

The opening of closed containers is one of the most hazardous site activities. Maximum efforts should be made to ensure the safety of the sampling team. Proper protective equipment and a general awareness of the possible dangers will minimize the risk inherent in sampling operations. Employing proper drum-opening techniques and equipment will also safeguard personnel. Use remote sampling equipment whenever feasible.

APPENDIX I
U.S. EPA ERT's SOP 2012

2.1 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures for collecting representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment.

2.2 METHOD SUMMARY

Soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of soil. Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, a trier, a split-spoon, or, if required, a backhoe.

2.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Chemical preservation of solids is not generally recommended. Refrigeration to 4°C, supplemented by a minimal holding time, is usually the best approach.

2.4 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems associated with soil sampling. These include cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results.

2.5 EQUIPMENT/APPARATUS

- sampling plan
- maps/plot plan
- safety equipment, as specified in the health and safety plan
- compass
- tape measure
- survey stakes or flags
- camera and film
- stainless steel, plastic, or other appropriate homogenization bucket or bowl
- 1-quart mason jars w/Teflon liners
- Ziploc plastic bags
- logbook
- labels
- chain of custody forms and seals
- field data sheets
- cooler(s)
- ice
- decontamination supplies/equipment
- canvas or plastic sheet
- spade or shovel
- spatula
- scoop
- plastic or stainless steel spoons
- trowel
- continuous flight (screw) auger
- bucket auger
- post hole auger
- extension rods
- T-handle
- sampling trier
- thin-wall tube sampler
- Vehimeyer soil sampler outfit
  - tubes
  - points
  - drive head
  - drop hammer
  - puller jack and grip
- backhoe

2.6 REAGENTS

Reagents are not used for the preservation of soil samples. Decontamination solutions are specified in

ERT SOP #2006, Sampling Equipment Decontamination.

2.7 PROCEDURES

2.7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are required.

2. Obtain necessary sampling and monitoring equipment.

3. Decontaminate or preclean equipment, and ensure that it is in working order.

4. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.

5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.

6. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample location. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner prior to soil sampling.

2.7.2 Sample Collection

Surface Soil Samples

Collect samples from near-surface soil with tools such as spades, shovels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample.

This method can be used in most soil types but is limited to sampling near surface areas. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sampling team member. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Avoid the use of devices plated with chrome or other materials. Plating is particularly common with garden implements such as potting trowels.

Follow these procedures to collect surface soil samples.

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.

2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.

3. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

Sampling at Depth with Augers and Thin-Wall Tube Samplers

This system consists of an auger, a series of extensions, a "T" handle, and a thin-wall tube sampler (Appendix A, Figure 1). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The sample may be collected directly from the auger. If a core sample is to be collected, the auger tip is then replaced with a thin-wall tube sampler. The system is then lowered down the borehole, and driven into the soil at the completion depth. The system is withdrawn and the core collected from the thin-wall tube sampler.

Several types of augers are available. These include: bucket, continuous flight (screw), and posthole augers. Bucket augers are better for direct

sample recovery since they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly from the flights, which are usually at 5-feet intervals. The continuous flight augers are satisfactory for use when a composite of the complete soil column is desired. Posthole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil.

Follow these procedures for collecting soil samples with the auger and a thin-wall tube sampler.

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.

2. Clear the area to be sampled of any surface debris (e.g., twigs, rocks, litter). It may be advisable to remove the first 3 to 6 inches of surface soil for an area approximately 6 inches in radius around the drilling location.

3. Begin augering, periodically removing and depositing accumulated soils onto a plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.

After reaching the desired depth, slowly and carefully remove the auger from boring. When sampling directly from the auger, collect sample after the auger is removed from boring and proceed to Step 10.

5. Remove auger tip from drill rods and replace with a pre-cleaned thin-wall tube sampler. Install proper cutting tip.

6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into the soil. Care should be taken to avoid scraping the borehole sides. Avoid hammering the drill rods to facilitate coring as the vibrations may cause the boring walls to collapse.

7. Remove the tube sampler, and unscrew the drill rods.

8. Remove the cutting tip and the core from the device.

9. Discard the top of the core (approximately 1 inch), as this represents material collected before penetration of the layer of concern. Place the remaining core into the appropriate labeled sample container(s). Sample homogenization is not required.

10. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into the appropriate, labeled container(s) and secure the cap(s) tightly.

11. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.

12. Abandon the hole according to applicable state regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

Sampling at Depth with a Trier

The system consists of a trier, and a "T" handle. The auger is driven into the soil to be sampled and used to extract a core sample from the appropriate depth.

Follow these procedures to collect soil samples with a sampling trier.

1. Insert the trier (Appendix A, Figure 2) into the material to be sampled at a 0° to 45° angle from horizontal. This orientation minimizes the spillage of sample.

2. Rotate the trier once or twice to cut a core of material.

3. Slowly withdraw the trier, making sure that the slot is facing upward.

4. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly.

Sampling at Depth with a Split Spoon (Barrel) Sampler

The procedure for split spoon sampling describes the collection and extraction of undisturbed soil cores of 18 or 24 inches in length. A series of consecutive cores may be extracted with a split spoon sampler to give a complete soil column profile, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

When split tube sampling is performed to gain geologic information, all work should be performed in accordance with ASTM D 1586-67 (reapproved 1974).

Follow these procedures for collecting soil samples with a split spoon.

1. Assemble the sampler by aligning both sides of the barrel and then screwing the bit onto the bottom and the heavier head piece onto the top.

2. Place the sampler in a perpendicular position on the sample material.

3. Using a sledge hammer or well ring, if available, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.

4. Record in the site logbook or on field data sheets the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.

5. Withdraw the sampler, and open by unscrewing the bit and head and splitting the barrel. If a split sample is desired, a cleaned, stainless steel knife should be used to divide the tube contents in half, longitudinally. This sampler is typically available in diameters of 2 and 3 1/2 inches. However, in order to obtain the required sample volume, use of a larger barrel may be required.

6. Without disturbing the core, transfer it to an appropriate labeled sample container(s) and seal tightly.

Test Pit/Trench Excavation

These relatively large excavations are used to remove sections of soil, when detailed examination of soil characteristics (horizontal structure, color, etc.) are required. It is the least cost effective sampling method due to the relatively high cost of backhoe operation.

Follow these procedures for collecting soil samples from test pit/trench excavations.

1. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of utility lines and poles (subsurface as well as above surface).

2. Using the backhoe, dig a trench to approximately 3 feet in width and approximately 1 foot below the cleared sampling location. Place removed or excavated soils on plastic sheets. Trenches greater than 5 feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.

3. Use a shovel to remove a 1- to 2-inch layer of soil from the vertical face of the pit where sampling is to be done.

4. Take samples using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling

above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.

5. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

6. Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material.

2.8 CALCULATIONS

section is not applicable to this SOP.

2.9 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance activities which apply to the implementation of these procedures. However, the following QA procedures apply:

- All data must be documented on field data sheets or within site logbooks.

- All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

2.10 DATA VALIDATION

This section is not applicable to this SOP.

2.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA, and specific health and safety procedures.

APPENDIX J
FIELD AND SAMPLE DOCUMENTATION EXAMPLES

Drum Data Sheet Form

SOP #2009

Drum ID#: _____ Date Sampled: _____

Estimated Liquid Quantity: _____ Time: _____

Grid Location:* _____

Staging Location: _____

Sampler's Name: _____

Drum Condition: _____

Sampling Device: _____

Physical Appearance of the Drum/Bulk Contents: _____

Odor: _____

Color: _____

pH: _____ % Liquid: _____

Laboratory Analytical Data: _____ Date of Analysis: _____

Compatibility: _____

Hazard: _____

Waste ID: _____

Treatment Disposal Recommendations: _____

Approval

Lab: _____ Date: _____

Site Manager: _____ Date: _____

* Area of site where drum was originally located.

Based on di Napoli, 1982. Table originally printed in the Proceedings of the National Conference on Management of Uncontrolled Hazardous Waste Sites, 1982. Available from Hazardous Materials Control Research Institute, 9300 Columbia Blvd., Silver Spring, MD 20910.

Site _____ Date _____

Samplers _____

Sample Location			
GPS Coordinates			
Upper limit of observed contamination (feet)[1]			
Sample Depth			
Time of sample collection			
Lowest depth of observed contamination (ft.)[1]			
EPA Lab Number			
EPA Lab Analyses[2]			
CLP Lab Number			
CLP Lab Analyses[2]			
Other Lab Number[3]			
Other Lab Analyses[2]			
Notes/ Observations			

[1] Indicate signs of observed contamination (i.e., staining, elevated readings on field air monitoring equipment, etc.)

[2] Indicate number and type of sample containers filled for each analytical parameter.

[3] Indicate name of "other" laboratory

EPA United States Environmental Protection Agency
Contract Laboratory Program

Inorganic Traffic Report
Chain of Custody Record
(For Inorganic CLP Analysis)

Case No.

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
Regional Information		Sampler (Name)		Airbill Number	
Non-Superfund Program		Sampler Signature		5. Ship To	
Site Name		3. Purpose* Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD			
City, State	Site Spill ID			ATTN:	

6. Matrix (Enter In Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field QC, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (specify In Column A)

7. Preservative (Enter In Column D): 1. HCl, 2. HNO_3, 3. NaOH, 4. H_2SO_4, 5. $K_2CR_2O_7$, 6. Ice only, 7. Other (specify In Column D), N. Not preserved

CLP Sample Numbers (from labels)	A Matrix (from Box 6) / Other	B Conc. Low-Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 7) / Other	E – RAS Analysis: Diss. Metals	Total Metals	Cyanide	Low only: NO_2/NO_3	Low only: Fluoride	High only: pH	High only: Conduct.	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Organic Sample No.	J Sampler Initials	K Field QC Qualifier (B = Blank, S = Spike, D = Duplicate, R = Rinsate, PE = Perform. Eval, — = Not a QC Sample)

Shipment for Case Complete? (Y/N)

Page ___ of ___

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

DISTRIBUTION: Green - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-1

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

US EPA RE[redacted] LABORATORY

CHAIN OF CUS[redacted]/ FIELD DATA FORM

Page [redacted] _pages

SURVEY NAME & LOCALITY _____ PROJECT LEADER _____

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Permit # _____ RCRA ☐ NPDES ☐ SDWA ☐ AM ☐ CAA ☐ TSCA ☐ ENFORCEMENT: CRIMINAL ☐ CIVIL ☐

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	SPECIAL REQUIRE-MENTS?	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS, SPECIAL TEST REQUIREMENTS & ALIQUOTING	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			
			☐		1 2 3 4 5 6 7 8 9			

COMMENTS:

Preservative

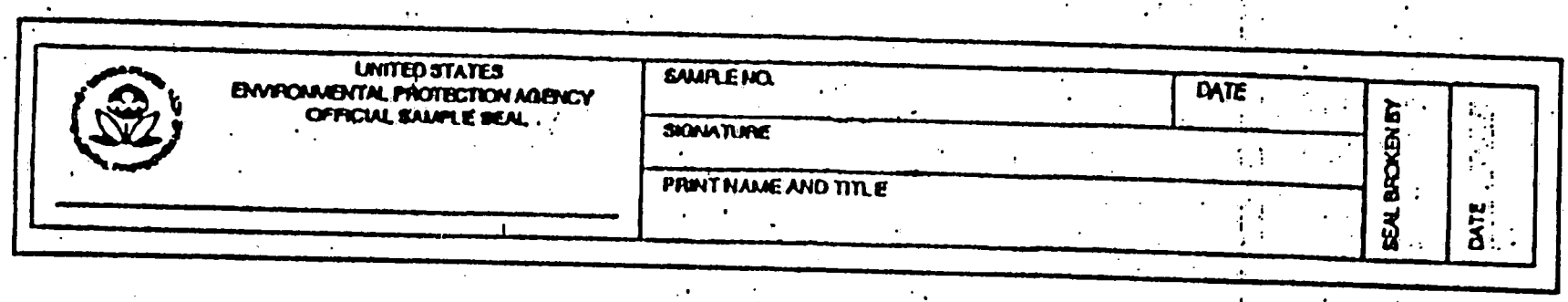
1=Ice
2=H_2SO_4 pH<2
3=HNO_3 pH<2
4=HCl pH<2
5=$Na_2S_2O_3$
6=NaOH pH>9
7=Ascorbic Acid
8 = FAS
9=ZnAc

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☐

		Time	Date
Relinquished By:	Person Assuming Responsibility for Sample(s):		
Relinquished By:	Received By:		
Relinquished By:	Received By:		
	Received By:		


UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
OFFICIAL SAMPLE SEAL
SAMPLE NO.
DATE
SIGNATURE
PRINT NAME AND TITLE
SEAL BROKEN BY
DATE

APPENDIX C
Trip Report

SAMPLING TRIP REPORT

Site Name: Amenia Landfill
CERCLIS ID Number: NYD980641559
Sampling Dates: 06/01/99 thru 06/11/99
CLP Case Number: 27064
Site Location: Amenia, New York
Sample Descriptions: Refer to Tables 1 - 10

Laboratories Receiving Samples (Table 1):

Case Number	Sample Type	Name and Address of Laboratory
27064	VOAs/BNAs*1	CompuChem Environmental Corp(COMPU) 501 Madison Ave Cary, N.C. 27513
27064	Total Metals	Southwest Labs of Oklahoma, Inc. (SWOK) 1700 West Albany, Suite C Broken Arrow, OK 74012
REF#RFP 4820 (WESTON)	All VOAs & BNAs sent to COMPU Except for Soil Samples*1	Southwest Labs of Oklahoma, Inc. (SWOK) 1700 West Albany, Suite C Broken Arrow, OK 74012
N/A	TCLP VOAs, TCLP BNAs, TCLP Metals, pH, & Ignitable	EPA Laboratory 2890 Woodbridge Ave Edison, NJ 08837

*1 All samples for VOAs/BNAs except for the soil samples (Numbers BYF54 thru BYF61) sent to COMPU were forwarded to SWOK for analysis. This was done because under the CLP program, the laboratories can not analyze high concentration samples. Therefore, EPAs Superfund Technical Assessment and Response Team (START) contractor set-up for SWOK to do the analysis.

Sample Dispatch Data (Table 2 thru 4):
Sixteen (16) samples were shipped to the EPA Laboratory for analyses. Of the 16 samples shipped, 16 samples were for TCLP VOAs, 8 for corrosivity, 13 for TCLP extractable, 13 for TCLP metals, and 11 for ignitability. Originally thirty-one (31) samples were shipped to SWOK for inorganic analysis, and thirty-five (35) samples were shipped to COMPU for VOAs analysis and thirty-one (31) samples for BNA analysis. On June 11 COMPU was asked to ship all samples received to SWOK, except for the eight soil samples (BYF69 to BYF 76).

Table 2 (EPA Laboratory)

FedEx Airbill No.	Number of Coolers	Number and Type of Samples	Time and Date of Shipping
809816430195	1	3 Liquids and 1 Trip Blank for TCLP VOAs/BNAs/Metals, Corrosivity and pH	06/03/99 @ 1200 TO: EPA LAB
N/A Hand Delivered	1	4 Liquids and 1 Trip Blank for TCLP VOAs/BNAs/Metals, Corrosivity and pH	06/04/99 @ 1630
806493167582	1	3 Solids for TCLP VOAs/BNAs/Metals, Corrosivity and pH	06/07/99 @ 1600
806493167560	1	1 Solid, 1 Liquids, 1 Rinsate and 1 Trip Blank for TCLP VOAs/BNAs/Metals, Corrosivity and pH	06/08/99 @ 1400 ---

Table 3 (SWOK)

FedEx Airbill No.	Number of Coolers	Number and Type of Samples	Time and Date of Shipping
804708001596	1	5 Liquids for TAL Metals	06/03/99 @ 1200
804708001449	1	6 Liquids for TAL Metals	06/04/99 @ 1730
804708001541	1	8 Solids, 1 Liquid and Rinsate for TAL Metals	06/08/99 @ 1400
809816430357	1	2 Solid for TAL Metals	06/11/99 @ 1600
806493167593	1	8 Soil Samples for TAL Metals	06/10/99 @ 1400

Table 4 (COMPU)

FedEx Airbill No.	Number of Coolers	Number and Type of Samples	Time and Date of Shipping
804708001600	1	2 Liquids for TCL BNAs	06/03/99 @ 1200
804708001585	1	5 Liquids for TCL VOAs, 3 for BNAs and 1 Trip Blank	06/03/99 @ 1200
806493167549	1	6 Liquids for TCL VOAs, 3 for BNAs and 1 Trip Blank	06/04/99 @ 1730
806493167550	1	3 Liquids for TCL BNAs	06/04/99 @ 1730
804708001520	1	8 Solids, 1 Liquid, 1 Rinsate, and a Trip Blank for TCL VOAs & BNAs	06/08/99 @ 1400
809816430357	1	2 Solids samples for TCL VOAs & BNAs and 1 Trip Blank	06/11/99 @ 1600
804708001438	1	8 Soils samples for TCL VOAs & BNAs	06/11/99 @ 1400

Table 5 (Samples sent from COMPU to SWOK)

FedEx Airbill No.	Number of Coolers	Number and Type of Samples	Time and Date of Delivery
428749619042 428749619053 428749619064 428749619075 428749619101	5	SOLID SAMPLES 10 Solids for TCL VOAs, 4 BNAs, Pesticides, & RCRA Characteristic LIQUID SAMPLES 12 Liquids for TCL VOAs, 12 for BNAs Pesticides, & RCRA Characteristic QC BLANKS 4 Trip Blanks 1 Rinsate for TCL VOAs, BNAs, & Pesticides	06/12/99 @ 0925

Sampling Personnel (Table 6):

Name	Organization	Site Duties
Irmee Huhn	Region II USEPA ERRD/RAB	Overall Project Coordinator
Michael A. Mercado	Region II USEPA DESA/HWSB	Sampling Operations/Team Leader
Mark Denno	Region II USEPA DESA/HWSB	Sampling QC/Sampler
Keith C. Glenn	Region II USEPA DESA/HWSB	Health & Safety/Sampler
Diane Salkie	Region II USEPA DESA/HWSB	Recorder/Sample Control
William Glynn	Region II USEPA DESA/SMB	Sampler

Sample Numbers and Collection Points (Table 7-10):

EPA Laboratory (Table 7)

Laboratory	Analyses	Sample Type	Sample #	Sample Collection Point (SCP)
EPA	TCLP VOAs, BNAs, & Metals	8 Liquids Drums sample, extra volumes collected for lab QC.	209765, 209767, & 209768	Samples were Trip Blanks
			209766	Sample was a Rinsate Blank.
			209751, 209753 thru 209759	Samples were collected from Drum 48, 93/94, 122, 124, 135, 137, & 144/145. Drum 201 is the Dupl from Drum 144/145.
EPA	TCLP VOAs, BNAs, & Metals	4 Solids Drums sample, extra volumes collected for lab QC.	209752, 209760, 209762, & 209764	Samples were collected from Drum 40, 125, & 161. Drum 202 is the Dupl from Drum 40.
EPA	Ignitable	11 Drums, extra volumes collected for lab QC.	209751 thru 209756, 209758 thru 209760, 209762, & 209764	Samples were collected from Drums 40, 93/94, 122, 124, 125, 135, 137, 144/145, & 161.
EPA	Corrosive	8 Drums, extra volumes collected for lab QC.	209751, 209753 thru 209759	Samples were collected from Drums 48, 93/94, 122, 124, 135, 137, & 144/145.

SWOK (Table 8)

Laboratory	Analyses	Sample Type	Sample #	Sample Collection Point (SCP)
SWOK	TAL Metals	12 Liquid Drums, extra volumes collected for lab QC.	MBTA61	Sample was a Rinsate Blank
			MBTA46 thru MBTA56, & MBTA64	Samples were from Drums 48, 93/94, 97, 105, 122, 124, 130, 135, 137, 144/145, & 157. Drum 201 is the Dupl from Drum 144/145.
		10 Solid Drums, extra volumes collected for lab QC.	MBTA57 thru MBTA60, MBTA62, MBTA63, & MBTA65 thru MBTA68	Samples were collected from Drum 40, 90, 108, 115, 123, 125, 155, 157, & 161. Drum 202 is the Dupl from Drum 40.
SWOK	TAL Metals	8 Soils, extra volumes collected for lab QC.	MBTA69 thru MBTA76	Samples were collected from SS-01 thru SS-8 .

COMPU (Table 9):

Laboratory	Analyses	Sample Type	Sample #	Sample Collection Point(SPC)
COMPU	TCL VOAs / BNAs / Pest /PCBs	12 Liquid Drums, extra volumes collected for lab QC.	BYF32, BYF36, BYF45, & BYF51	Samples were Trip Blanks
			BYF44	Sample was a Rinsate Blank
			BYF27 thru BYF31, BYF33 thru BYF35, BYF37 thru BYF39, & BYF48	Samples were from Drums 48, 93/94, 97, 105, 122, 124, 130, 135, 137, 144/145, & 157. Drum 201 is the Dupl from Drum 144/145.
		10 Solid Drums, extra volumes collected for lab QC.	BYF40 thru BYF43, BYF46, BYF47, BYF49, BYF50, BYF52, & BYF53	Samples were collected from Drum 40, 90, 108, 115, 123, 125, 155, 157, & 161. Drum 202 is the Dupl from Drum 40.
COMPU	TCL VOAs	8 Soils, extra volumes collected for lab QC.	BYF54 thru BYF61	Samples were collected from SS-01 thru SS-08.

Samples forwarded from COMPU to SWOK (Table 10):

Laboratory	Analyses	Sample Type	Sample #	Sample Collection Point(SPC)
COMPU forwarded to SWOK	TCL VOAs / BNAs / Pest /PCBs	12 Liquid Drums, extra volumes collected for lab QC.	BYF32, BYF36, BYF45, & BYF51	Samples were Trip Blanks
			BYF44	Sample was a Rinsate Blank
			BYF27 thru BYF31, BYF33 thru BYF35, BYF37 thru BYF39, & BYF48	Samples were from Drums 48, 93/94, 97, 105, 122, 124, 130, 135, 137, 144/145, & 157. Drum 201 is the Dupl from Drum 144/145.
		10 Solid Drums, extra volumes collected for lab QC.	BYF40 thru BYF43, BYF46, BYF47, BYF49, BYF50, BYF52, & BYF53	Samples were collected from Drum 40, 90, 108, 115, 123, 125, 155, 157, & 161. Drum 202 is the Dupl from Drum 40.

Additional Comments:

All the organic samples sent to COMPU were transfer to SWOK except for the soil samples. Organic analysis for the soil samples will be analyzed by COMPU, and TAL metals will be analyzed by SWOK under CLP Case # 27064. When it was realized that the drum samples were high concentration and did not fall under the CLP program, EPAs START contractor (WESTON) set-up a separate contract with SWOK to do the analysis. All other samples will be analyzed by SWOK under WESTON's Ref # RFP 4820.

cc: RSCC
Irmee Huhn
Yolanda Lamela
Raymond Klimcsak

APPENDIX D
Sample Data Sheets
EPA LABB Reports

LAB DATA MANAGEMENT SYSTEM - REGION II
COMPLETED PROJECT APPROVAL

REPORT DATE 99/09/16

PROJECT NUMBER	PROJECT DATE	PROJECT NAME			
047	99/06/03	AMENIA LF	JB	APPROVED	Jol R. Bowler for K. Kubik 9-21-99

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

EXPLANATIONS OF REMARK CODES

REMARK CODE	EXPLANATION
B	RESULTS BASED UPON COLONY COUNTS OUTSIDE ACCEPTABLE RANGE
J	ESTIMATED VALUE
K	ACTUAL VALUE KNOWN TO BE LESS THAN VALUE GIVEN
L	ACTUAL VALUE KNOWN TO BE GREATER THAN VALUE GIVEN
N	NO OBSERVABLE EFFECT CONCENTRATION < 0.3%
O	SAMPLED BUT NOT ANALYZED DUE TO LAB ACCIDENT
T	REPORTED VALUE LESS THAN CRITERIA OF DETECTION
U	REPORTING LIMIT

QA/QC REMARK CODES

CODE	EXPLANATION
QD	ACCURACY CHECK SAMPLE ABOVE UPPER ACCEPTANCE LIMIT
QE	ACCURACY CHECK SAMPLE BELOW LOWER ACCEPTANCE LIMIT
QF	PRECISION OF CALIBRATION CURVE LESS THAN ACCEPTANCE CRITERIA
QJ	ESTIMATED DETECTION LIMIT DUE TO INTERFERENCE
QG	CONTINUING CALIBRATION CHECK DOES NOT MEET ACCEPTANCE CRITERIA
QS	SPIKE RECOVERIES ABOVE UPPER ACCEPTANCE LIMIT
QR	SPIKE RECOVERIES BELOW LOWER ACCEPTANCE LIMIT
QP	SAMPLE REPLICATE PRECISION DOES NOT MEET ACCEPTANCE CRITERIA
QH	RECOMMENDED HOLDING TIMES EXCEEDED
QT	TENTATIVELY IDENTIFIED COMPOUND
QM	PRESENCE OF MATERIAL VERIFIED BUT NOT QUANTIFIED
QB	BLANK CONTAMINATED BY ANALYTE IN EXCESS OF ACCEPTANCE CRITERIA
QQ	SAMPLE IMPROPERLY PRESERVED

LOCATION CODES FOR IDENTIFICATION OF SAMPLING POINTS AT INDUSTRIAL / SANITARY FACILITIES, LANDFILLS, HAZARDOUS WASTE SITES.

CODE NUMBERS	SAMPLING POINTS
1001 - 1050	EFFLUENT PIPE NUMBER 001 TO 050
1051 - 1099	OTHER EFFLUENTS SUCH AS COOLING TOWER DISCHARGE, DISCHARGE FROM HOLDING PONDS, ETC...
1100 - 1249	IN PLANT SAMPLES
1435 - 1454	SEPARATE INFLUENT POINTS/WATER SOURCES
15XX	INFLUENT ASSOCIATED WITH EFFLUENT 10XX
2000	BLANK FOR VOLATILE ORGANICS
3000 - 3099	GROUND WATER FROM WELL 01 TO 99
3100 - 3199	SEDIMENT SAMPLE (WATER BOTTOM)
3200 - 3299	SOIL SAMPLE
3300 - 3399	STREAM WATER SAMPLE
3400 - 3499	LAGOON SAMPLE
3500 - 3599	STORAGE TANK SAMPLE
3600 - 3699	LEACHATE SAMPLE
3700 - 3799	OTHER TYPE SAMPLE

Sanitary Chemistry Laboratory Case Narrative

Amenia Landfill Project # 47

During the analysis of sample # 209754 for corrosivity, the pH meter used displayed an error message that the pH value was below -2.00 and therefore out of the range of detection for the meter. A pH indicator strip was used and the pH for the same sample read 6.

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
DL93/94	99/06/03	0800							
DEPTH: 0000	SUBSTRATE: OTHER								
DESCRIPTION:	DL93/94 DRUM SAMPLE								
			209751	39175	VINYL CHLORIDE	MG/L	TCLP	0.05 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.05 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.05 U	
				32106	CHLOROFORM	MG/L	TCLP	0.05 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.05 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.05 U	
				34030	BENZENE	MG/L	TCLP	0.05 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.05 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.05 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.05 U	
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.03 U	
				99999	O-CRESOL	MG/L	TCLP	0.36	
				99999	P-CRESOL	MG/L	TCLP	0.25	
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.03 U	
				99999	NITROBENZENE	MG/L	TCLP	0.03 U	
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.03 U	
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.03 U	
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.03 U	
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.03 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.03 U	
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.03 U	
				99999	SILVER	MG/L	TCLP	0.1 U	
				99999	ARSENIC	MG/L	TCLP	0.2 U	
				99999	BARIUM	MG/L	TCLP	2.0 U	
				99999	CADMIUM	MG/L	TCLP	0.1 U	
				99999	CHROMIUM	MG/L	TCLP	0.1 U	
				99999	MERCURY	MG/L	TCLP	0.2 U	
				99999	LEAD	MG/L	TCLP	0.2 U	
				99999	SELENIUM	MG/L	TCLP	0.3 U	
				99920	CORROSIVITY	PH		5.4	
				99999	IGNITABILITY	DEG F		88	
				99999	LIQUID		1=Y;0=N	1	
				99999	WATER (% WEIGHT)	%	TOTAL	5.75	
DS-161	99/06/08	0745							
DEPTH: 0000	SUBSTRATE: AQUEOUS								
DESCRIPTION:	DS-161 DRUM SAMPLE								
			209752	39175	VINYL CHLORIDE	MG/L	TCLP	0.01 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	2.4	

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
DL122	99/06/03	1740	209752	32106	CHLOROFORM	MG/L	TCLP	0.01 U	
DEPTH: 0000	SUBSTRATE: OTHER			32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01 U	
DESCRIPTION:	DL122			32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	
	DRUM SAMPLE			34030	BENZENE	MG/L	TCLP	0.01 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.01 U	
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.08 U	
				99999	O-CRESOL	MG/L	TCLP	0.44	
				99999	P-CRESOL	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.08 U	
				99999	NITROBENZENE	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.08 U	
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.08 U	
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	SILVER	MG/L	TCLP	0.1 U	
				99999	ARSENIC	MG/L	TCLP	0.2 U	
				99999	BARIUM	MG/L	TCLP	2.0 U	
				99999	CADMIUM	MG/L	TCLP	0.1 U	
				99999	CHROMIUM	MG/L	TCLP	0.1 U	
				99999	MERCURY	MG/L	TCLP	0.2 U	
				99999	LEAD	MG/L	TCLP	0.2 U	
				99999	SELENIUM	MG/L	TCLP	0.3 U	
				99999	IGNITABILITY	DEG F		118	
				99999	LIQUID		1=Y;0=N	0	
			209753	39175	VINYL CHLORIDE	MG/L	TCLP	34 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	34 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	34 U	
				32106	CHLOROFORM	MG/L	TCLP	34 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	34 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	34 U	
				34030	BENZENE	MG/L	TCLP	34 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	34 U	

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209753	34475	TETRACHLOROETHYLENE	MG/L	TCLP	34	U
				34301	CHLOROBENZENE	MG/L	TCLP	34	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	17	U
				99999	O-CRESOL	MG/L	TCLP	17	U
				99999	P-CRESOL	MG/L	TCLP	17	U
				99999	HEXACHLOROETHANE	MG/L	TCLP	17	U
				99999	NITROBENZENE	MG/L	TCLP	17	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	17	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	17	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	17	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	17	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	17	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	17	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99920	CORROSIVITY	PH		4.5	
				99999	IGNITABILITY	DEG F		145	L
DL124	99/06/04	0810							
DEPTH: 0000	SUBSTRATE: OTHER								
DESCRIPTION:	DL124								
	DRUM SAMPLE								
			209754	39175	VINYL CHLORIDE	MG/L	TCLP	27	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	27	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	27	U
				32106	CHLOROFORM	MG/L	TCLP	27	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	27	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	27	U
				34030	BENZENE	MG/L	TCLP	27	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	27	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	27	U
				34301	CHLOROBENZENE	MG/L	TCLP	27	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	19	U
				99999	O-CRESOL	MG/L	TCLP	19	U
				99999	P-CRESOL	MG/L	TCLP	19	U

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
DL135	99/06/02	1145	209754	99999	HEXACHLOROETHANE	MG/L	TCLP	19	U
DEPTH: 0000	SUBSTRATE: OTHER			99999	NITROBENZENE	MG/L	TCLP	19	U
DESCRIPTION:	DL135 MS/MSD			99999	HEXACHLOROBUTADIENE	MG/L	TCLP	19	U
	DRUM SAMPLE			99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	19	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	19	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	19	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	19	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	19	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99920	CORROSIVITY	PH		6.0	
				99999	IGNITABILITY	DEG F		145	L
			209755	39175	VINYL CHLORIDE	MG/L	TCLP	5	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	5	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	5	U
				32106	CHLOROFORM	MG/L	TCLP	5	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	5	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	5	U
				34030	BENZENE	MG/L	TCLP	5	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	5	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	5	U
				34301	CHLOROBENZENE	MG/L	TCLP	5	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	2.0	U
				99999	O-CRESOL	MG/L	TCLP	13	
				99999	P-CRESOL	MG/L	TCLP	18	
				99999	HEXACHLOROETHANE	MG/L	TCLP	2.0	U
				99999	NITROBENZENE	MG/L	TCLP	2.0	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	2.0	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	2.0	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	2.0	U

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

TATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209755	99999	2,4-DINITROTOLUENE	MG/L	TCLP	2.0 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	2.0 U	
				99999	PENTACHLOROPHENOL	MG/L	TCLP	2.0 U	
				99999	SILVER	MG/L	TCLP	0.1 U	
				99999	ARSENIC	MG/L	TCLP	0.2 U	
				99999	BARIUM	MG/L	TCLP	2.0 U	
				99999	CADMIUM	MG/L	TCLP	0.1 U	
				99999	CHROMIUM	MG/L	TCLP	0.3	
				99999	MERCURY	MG/L	TCLP	0.2 U	QR
				99999	LEAD	MG/L	TCLP	0.6	
				99999	SELENIUM	MG/L	TCLP	0.3 U	
				99920	CORROSIVITY	PH		6.5	
				99999	IGNITABILITY	DEG F		95	
				99999	LIQUID		1=Y;0=N	1	
				99999	WATER (% WEIGHT)	%	TOTAL	73.8	
				99999	ALCOHOLS (%VOL)	%	TOTAL	9.1	
137	99/06/03	1800							
PTH: 0000	SUBSTRATE: OTHER								
SCRIPTION:	DL137								
	DRUM SAMPLE								
			209756	39175	VINYL CHLORIDE	MG/L	TCLP	14 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	14 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	14 U	
				32106	CHLOROFORM	MG/L	TCLP	14 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	14 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	14 U	
				34030	BENZENE	MG/L	TCLP	14 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	14 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	14 U	
				34301	CHLOROBENZENE	MG/L	TCLP	14 U	
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	34 U	
				99999	O-CRESOL	MG/L	TCLP	34 U	
				99999	P-CRESOL	MG/L	TCLP	34 U	
				99999	HEXACHLOROETHANE	MG/L	TCLP	34 U	
				99999	NITROBENZENE	MG/L	TCLP	34 U	
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	34 U	
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	34 U	
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	34 U	
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	34 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	34 U	

COMPLETED ANALYSIS REPORT

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PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209756	99999	PENTACHLOROPHENOL	MG/L	TCLP	34	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	U
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99920	CORROSIVITY	PH		5.1	
				99999	IGNITABILITY	DEG F		145	L
DL-48	99/06/08	0745							
DEPTH: 0000	SUBSTRATE: AQUEOUS								
DESCRIPTION:	DL-48								
	DRUM SAMPLE								
			209757	39175	VINYL CHLORIDE	MG/L	TCLP	0.05	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.05	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.05	U
				32106	CHLOROFORM	MG/L	TCLP	0.05	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.05	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.05	U
				34030	BENZENE	MG/L	TCLP	0.05	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.05	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.05	U
				34301	CHLOROBENZENE	MG/L	TCLP	0.05	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	O-CRESOL	MG/L	TCLP	0.08	U
				99999	P-CRESOL	MG/L	TCLP	0.08	U
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.08	U
				99999	NITROBENZENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.08	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	SILVER	MG/L	TCLP	2.9	U
				99999	ARSENIC	MG/L	TCLP	3.9	
				99999	BARIUM	MG/L	TCLP	6.8	
				99999	CADMIUM	MG/L	TCLP	9.9	

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PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209757	99999	CHROMIUM	MG/L	TCLP	115	
				99999	MERCURY	MG/L	TCLP	1.6	
				99999	LEAD	MG/L	TCLP	48.9	
				99999	SELENIUM	MG/L	TCLP	17.1	
				00403	PH/CORROSIVITY	PH		1.0	U
DL144/145	99/06/02	0950							
DEPTH: 0000	SUBSTRATE: OTHER								
DESCRIPTION:	DL144/145 DRUM SAMPLE								
			209758	39175	VINYL CHLORIDE	MG/L	TCLP	50	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	50	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	45000	J
				32106	CHLOROFORM	MG/L	TCLP	50	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	50	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	50	U
				34030	BENZENE	MG/L	TCLP	50	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	50	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	50	U
				34301	CHLOROBENZENE	MG/L	TCLP	50	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	40	U
				99999	O-CRESOL	MG/L	TCLP	240	
				99999	P-CRESOL	MG/L	TCLP	40	U
				99999	HEXACHLOROETHANE	MG/L	TCLP	40	U
				99999	NITROBENZENE	MG/L	TCLP	40	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	40	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	40	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	40	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	40	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	40	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	40	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	U
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99920	CORROSIVITY	PH		5.1	
				99999	IGNITABILITY	DEG F		61	

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PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY
DL201	99/06/02	1000

DEPTH: 0000 SUBSTRATE: OTHER
DESCRIPTION: DL201
DRUM SAMPLE

LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
209758	99999	LIQUID		1=Y;0=N	1	
	99999	WATER (% WEIGHT)	%	TOTAL	11.0	
209759	39175	VINYL CHLORIDE	MG/L	TCLP	50	U
	34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	50	U
	99999	METHYL ETHYL KETONE	MG/L	TCLP	48000	J
	32106	CHLOROFORM	MG/L	TCLP	50	U
	32103	1,2-DICHLOROETHANE	MG/L	TCLP	50	U
	32102	CARBON TETRACHLORIDE	MG/L	TCLP	50	U
	34030	BENZENE	MG/L	TCLP	50	U
	39180	TRICHLOROETHYLENE	MG/L	TCLP	50	U
	34475	TETRACHLOROETHYLENE	MG/L	TCLP	50	U
	34301	CHLOROBENZENE	MG/L	TCLP	50	U
	99999	1,4-DICHLOROBENZENE	MG/L	TCLP	40	U
	99999	O-CRESOL	MG/L	TCLP	250	
	99999	P-CRESOL	MG/L	TCLP	40	U
	99999	HEXACHLOROETHANE	MG/L	TCLP	40	U
	99999	NITROBENZENE	MG/L	TCLP	40	U
	99999	HEXACHLOROBUTADIENE	MG/L	TCLP	40	U
	99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	40	U
	99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	40	U
	99999	2,4-DINITROTOLUENE	MG/L	TCLP	40	U
	99999	HEXACHLOROBENZENE	MG/L	TCLP	40	U
	99999	PENTACHLOROPHENOL	MG/L	TCLP	40	U
	99999	SILVER	MG/L	TCLP	0.1	U
	99999	ARSENIC	MG/L	TCLP	0.2	U
	99999	BARIUM	MG/L	TCLP	2.0	U
	99999	CADMIUM	MG/L	TCLP	0.1	U
	99999	CHROMIUM	MG/L	TCLP	0.1	U
	99999	MERCURY	MG/L	TCLP	0.2	U
	99999	LEAD	MG/L	TCLP	0.2	U
	99999	SELENIUM	MG/L	TCLP	0.3	U
	99920	CORROSIVITY	PH		5.1	
	99999	IGNITABILITY	DEG F		59	
	99999	LIQUID		1=Y;0=N	1	
	99999	WATER (% WEIGHT)	%	TOTAL	11.2	

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PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
DS-40	99/06/07	1545							
DEPTH: 0000 SUBSTRATE: SOIL									
DESCRIPTION: DS-40									
			209760	39175	VINYL CHLORIDE	MG/L	TCLP	0.01 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01 U	
				32106	CHLOROFORM	MG/L	TCLP	0.01 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	
				34030	BENZENE	MG/L	TCLP	0.01 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.01 U	
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.08 U	
				99999	O-CRESOL	MG/L	TCLP	0.08 U	
				99999	P-CRESOL	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.08 U	
				99999	NITROBENZENE	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.08 U	
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.08 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.08 U	
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.08 U	
				99999	SILVER	MG/L	TCLP	0.1 U	
				99999	ARSENIC	MG/L	TCLP	0.2 U	
				99999	BARIUM	MG/L	TCLP	2.0 U	
				99999	CADMIUM	MG/L	TCLP	0.1 U	
				99999	CHROMIUM	MG/L	TCLP	0.1 U	
				99999	MERCURY	MG/L	TCLP	0.2 U	
				99999	LEAD	MG/L	TCLP	0.2 U	
				99999	SELENIUM	MG/L	TCLP	0.3 U	
				99999	IGNITABILITY	DEG F		145 L	
DS 125	99/06/07	1545							
DEPTH: 0000 SUBSTRATE: OTHER									
DESCRIPTION: DS 125 MS/MSD DRUM SAMPLE									
			209762	39175	VINYL CHLORIDE	MG/L	TCLP	0.01 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01 U	
				32106	CHLOROFORM	MG/L	TCLP	0.01 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.05	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	

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PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
DS-202	99/06/07	1545	209762	34030	BENZENE	MG/L	TCLP	0.01	U
DEPTH: 0000 SUBSTRATE: SOIL				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01	U
DESCRIPTION: DS-202				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01	U
				34301	CHLOROBENZENE	MG/L	TCLP	0.01	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	O-CRESOL	MG/L	TCLP	0.08	U
				99999	P-CRESOL	MG/L	TCLP	0.08	U
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.08	U
				99999	NITROBENZENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.08	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	U
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99999	IGNITABILITY	DEG F		145	L
			209764	39175	VINYL CHLORIDE	MG/L	TCLP	0.01	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01	U
				32106	CHLOROFORM	MG/L	TCLP	0.01	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01	U
				34030	BENZENE	MG/L	TCLP	0.01	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01	U
				34301	CHLOROBENZENE	MG/L	TCLP	0.01	U
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	O-CRESOL	MG/L	TCLP	0.08	U

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PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209764	99999	P-CRESOL	MG/L	TCLP	0.08	U
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.08	U
				99999	NITROBENZENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.08	U
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.08	U
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.08	U
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.08	U
				99999	SILVER	MG/L	TCLP	0.1	U
				99999	ARSENIC	MG/L	TCLP	0.2	U
				99999	BARIUM	MG/L	TCLP	2.0	U
				99999	CADMIUM	MG/L	TCLP	0.1	U
				99999	CHROMIUM	MG/L	TCLP	0.1	U
				99999	MERCURY	MG/L	TCLP	0.2	U
				99999	LEAD	MG/L	TCLP	0.2	U
				99999	SELENIUM	MG/L	TCLP	0.3	U
				99999	IGNITABILITY	DEG F		145	L
TRIP BLANK	99/06/02	0000							
DEPTH: 0000	SUBSTRATE: OTHER								
DESCRIPTION: TRIP BLANK									
			209765	39175	VINYL CHLORIDE	MG/L	TCLP	0.01	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01	
				32106	CHLOROFORM	MG/L	TCLP	0.01	U
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01	U
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01	U
				34030	BENZENE	MG/L	TCLP	0.01	U
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01	U
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01	U
				34301	CHLOROBENZENE	MG/L	TCLP	0.01	U
RINSATE #1	99/06/08	0600							
DEPTH: 0000	SUBSTRATE: AQUEOUS								
DESCRIPTION: RINSATE #1									
			209766	39175	VINYL CHLORIDE	MG/L	TCLP	0.01	U
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01	U
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01	U

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PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			209766	32106	CHLOROFORM	MG/L	TCLP	0.01 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	
				34030	BENZENE	MG/L	TCLP	0.01 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.01 U	
				99999	1,4-DICHLOROBENZENE	MG/L	TCLP	0.01 U	
				99999	O-CRESOL	MG/L	TCLP	0.01 U	
				99999	P-CRESOL	MG/L	TCLP	0.01 U	
				99999	HEXACHLOROETHANE	MG/L	TCLP	0.01 U	
				99999	NITROBENZENE	MG/L	TCLP	0.01 U	
				99999	HEXACHLOROBUTADIENE	MG/L	TCLP	0.01 U	
				99999	2,4,6-TRICHLOROPHENOL	MG/L	TCLP	0.01 U	
				99999	2,4,5-TRICHLOROPHENOL	MG/L	TCLP	0.01 U	
				99999	2,4-DINITROTOLUENE	MG/L	TCLP	0.01 U	
				99999	HEXACHLOROBENZENE	MG/L	TCLP	0.01 U	
				99999	PENTACHLOROPHENOL	MG/L	TCLP	0.01 U	
				99999	SILVER	MG/L	TCLP	0.1 U	
				99999	ARSENIC	MG/L	TCLP	0.2 U	
				99999	BARIUM	MG/L	TCLP	2.0 U	
				99999	CADMIUM	MG/L	TCLP	0.1 U	
				99999	CHROMIUM	MG/L	TCLP	0.1 U	
				99999	MERCURY	MG/L	TCLP	0.2 U	QH
				99999	LEAD	MG/L	TCLP	0.2 U	
				99999	SELENIUM	MG/L	TCLP	0.3 U	
TRIP BLANK	99/06/04	0900							
DEPTH: 0000	SUBSTRATE: OTHER								
DESCRIPTION: TRIP BLANK									
			209767	39175	VINYL CHLORIDE	MG/L	TCLP	0.01 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01 U	
				32106	CHLOROFORM	MG/L	TCLP	0.01 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	
				34030	BENZENE	MG/L	TCLP	0.01 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.01 U	

COMPLETED ANALYSIS REPORT

REPORT DATE: 99/09/16

PROJECT NO: 047

PROJECT NAME: AMENIA LF

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
TRIP BLANK#2	99/06/08	0630							
DEPTH: 0000 SUBSTRATE: AQUEOUS									
DESCRIPTION: TRIP BLANK #2									
			209768	39175	VINYL CHLORIDE	MG/L	TCLP	0.01 U	
				34501	1,1-DICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				99999	METHYL ETHYL KETONE	MG/L	TCLP	0.01 U	
				32106	CHLOROFORM	MG/L	TCLP	0.01 U	
				32103	1,2-DICHLOROETHANE	MG/L	TCLP	0.01 U	
				32102	CARBON TETRACHLORIDE	MG/L	TCLP	0.01 U	
				34030	BENZENE	MG/L	TCLP	0.01 U	
				39180	TRICHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34475	TETRACHLOROETHYLENE	MG/L	TCLP	0.01 U	
				34301	CHLOROBENZENE	MG/L	TCLP	0.01 U	

***** END OF PROJECT *****

APPENDIX E
Sample Data Sheets
CLP Reports

APPENDIX E-1
Sample Data Sheets
CLP Reports
Organic

RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

DATE: JULY 14, 1999
SUBJECT: CLP Data Package for Quality Assurance Review
FROM: RSCC / ESAT
TO: George Karras, Hazardous Waste Support Section

RECEIVED
JUL 27 1999

Attached is the following ORGANIC Data Package to be reviewed for Quality Assurance

SITE AMENIA LANDFILL	CASE# 27064
CONTRACTOR USEPA	#SAMPLES 8 MATRIX SOIL
PHASE RS	
LAB COMPU	
TURN-AROUND-TIME 14 DAYS	FRACTION FULL TCL
CERCLIS ID # ~~NJ~~ NYD980641559	SITE SPILL # LZ

REGION II RSCC DATA TRANSFER LOG

Relinquished By		Received By	
Signature	Date/Time	Signature	Date/Time
John Balicki	7-14-99	John Balicki	7-12-99
[signature]	7/26/99	[signature]	7/19/99
J Balicki (DCR)	7/26/99	J Balicki (DCR)	7/26/99
G Karras	7/27/99	G Karras	7/26/99
		John Balicki	7/27/99

(over for instructions) revised 3/99

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 27064 **SDG No.:** BYF54 **LABORATORY:** COMPU

SITE: Amenia Landfill

DATA ASSESSMENT

The current SOP HW-6 (Revision 11) June 1996, USEPA Region II Data Validation SOP for Statement of Work OLMO3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R" (unusable). Due to the detection of QC problems some analytes may have the "J" (estimated), "N" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: _____ Date 7/23/99

Verified By: _____ Date 7/26/99

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

VOA, BNA:
See attached CADRE Holding Time Report for a list of samples qualified for this criteria.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

VOA, PEST:
See attached CADRE SMC/Surrogate Report for a list of samples qualified for this criteria.

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

4. BLANK CONTAMINATION:

Holding Time Report

SDG NO: BYF54
CASE NO: 27064
LABORATORY: COMPUCHEM
AGENCY INPUT FILE: BYF54.ASF

HOLDING TIME CRITERIA

Volatile

Preserved	Primary	Expanded
Water	14	28
Soil	14	28

	---- Aromatic ----		-- Non-aromatic --	
Unpreserved	Primary	Expanded	Primary	Expanded
Water	7	28	14	28
Soil	10	28	10	28

Semivolatile

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	28	40	60
Soil	7	28	40	60

Pesticide

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	28	40	60
Soil	7	28	40	60

*SC-3: The following volatile soil samples have aromatic analytes outside expanded holding time criteria.
Hits are qualified "J" and non-detects are qualified "R".

BYF55
Benzene, Toluene, Chlorobenzene, Ethylbenzene
Styrene, Xylene (total)

BYF55RE
Benzene, Toluene, Chlorobenzene, Ethylbenzene
Styrene, Xylene (total)

Holding Time Report

SDG NO: BYF54
CASE NO: 27064

LABORATORY: COMPUCHEM
AGENCY INPUT FILE: BYF54.ASF

DC-5: The following volatile soil samples have aromatic analytes outside primary holding time criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

- BYF54, BYF55, BYF55RE
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

BYF54MS
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

BYF54MSD
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF56
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF57
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF58
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF59
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF60
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

- BYF61
  Benzene, Toluene, Chlorobenzene, Ethylbenzene
  Styrene, Xylene (total)

~~DC-7: The following volatile soil samples have non-aromatic analytes outside expanded holding time criteria.
Hits are qualified "J" and non-detects are qualified "R".~~

- ~~BYF55~~

Holding Time Report

SDG NO: BYF54 LABORATORY: COMPUCHEM
CASE NO: 27064 AGENCY INPUT FILE: BYF54.ASF

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF55RE

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

DC-9: The following volatile soil samples have non-aromatic analytes outside primary holding time criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BYF54, BYF55, BYF55RE

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF54MS

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF54MSD

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone

2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF56

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF57

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF58

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF59

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

BYF60

Chloromethane, Bromomethane, Vinyl Chloride, Chloroethane
Methylene Chloride, Acetone, Carbon Disulfide, 1,1-Dichloroethene
1,1-Dichloroethane, 1,2-Dichloroethene (total), Chloroform, 1,2-Dichloroethane
2-Butanone, 1,1,1-Trichloroethane, Carbon Tetrachloride, Bromodichloromethane
1,2-Dichloropropane, cis-1,3-Dichloropropene, Trichloroethene, Dibromochloromethane
1,1,2-Trichloroethane, trans-1,3-Dichloropropene, Bromoform, 4-Methyl-2-Pentanone
2-Hexanone, Tetrachloroethene, 1,1,2,2-Tetrachloroethane

SMC/Surrogate Report

SDG NO: BYF54 LABORATORY: COMPUCHEM

CASE NO: 27064 AGENCY INPUT FILE: BYF54.ASF

SMC/SURROGATE CRITERIA

Volatile

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Toluene-d8	88.0	110.0	84.0	138.0
Bromofluorobenzene	86.0	115.0	59.0	113.0
1,2-Dichloroethane-d4	76.0	114.0	70.0	121.0

Semivolatile

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Nitrobenzene-d5	35.0	114.0	23.0	120.0
2-Fluorobiphenyl	43.0	116.0	30.0	115.0
Terphenyl-d14	33.0	141.0	18.0	137.0
Phenol-d5	10.0	110.0	24.0	113.0
2-Fluorophenol	21.0	110.0	25.0	121.0
2,4,6-Tribromophenol	10.0	123.0	19.0	122.0
2-Chlorophenol-d4	33.0	110.0	20.0	130.0
1,2-Dichlorobenzene-d4	16.0	110.0	20.0	130.0

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

DC-35: The following volatile samples have system monitoring compound

SMC/Surrogate Report

SDG NO: BYF54
CASE NO: 27064

LABORATORY: COMPUCHEM
AGENCY INPUT FILE: BYF54.ASF

recoveries above the upper limit of the criteria window.
Hits are qualified "J" and non-detects are not flagged.

BYF54MSD, BYF55, BYF55RE

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window.
If %R for both surrogates on both columns are > contract limit, hits are flagged "J".

BYF54, BYF54DL, BYF54MSD, BYF55, BYF55DL, BYF56DL
BYF57, BYF57DL, BYF59DL, BYF60DL

DC-175: The following undiluted pesticide samples have surrogate percent recoveries of less than 10%.
Hits are qualified "J" and non-detects are qualified "R".

BYF59, BYF60

DC-176: The following diluted pesticide samples have surrogate percent recoveries of less than 10%. Professional judgement is recommended.
Hits and non-detects are not flagged.

BYF59DL, BYF60DL

DC-178: The following pesticide samples are not fully qualified for surrogate RT because of missing RT information. Visual inspection of the data is required. Samples with surrogates falling outside the RT window should be qualified based on professional judgement.

BYF59, BYF59DL, BYF60, BYF60DL

CLP DATA ASSESSMENT

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" (or "R" where indicated) for these reasons:

A) **Method blank contamination:**

VOA, BNA:
See attached CADRE Laboratory Blanks Report for a list of samples qualified for this criteria.

B) **Field or rinse blank contamination:**

No field blanks were submitted with this case.

C) **Trip blank contamination:**

No trip blanks were submitted with this case.

D) **Storage blank contamination:**

See attached CADRE Laboratory Blanks Report for a list of samples qualified for this criteria.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenylphosphine (DFTPP).

Laboratory Blanks Report

SDG NO: BYF54 LABORATORY: COMPUCHEM
CASE NO: 27064 AGENCY INPUT FILE: BYF54.ASF

LABORATORY BLANKS CRITERIA

Volatile

Method Blank Contamination Threshold Multipliers

	First	Expanded
Common contaminant compounds	10.00	10.00
Other compounds	5.00	5.00

Semivolatile

Method Blank Contamination Threshold Multipliers

	First	Expanded
Common contaminant compounds	10.00	10.00
Other compounds	5.00	5.00

Pesticide

Method Blank Contamination Threshold Multipliers

	First	Expanded
All compounds	5.00	5.00

DC-Y2: The blank associated with the following SV sample was qualified "R" during a previous qualification.
Hits are not flagged and non-detects are not flagged.

2,4-Dinitrophenol
BYF56, BYF56DL, BYF57, BYF57DL, BYF58, BYF59
BYF60, BYF61

4,6-Dinitro-2-methylphenol
BYF56, BYF56DL, BYF57, BYF57DL, BYF58, BYF59
BYF60, BYF61

CLP DATA ASSESSMENT

If the mass calibration is in error, all associated data will be classified as unusable "R".

No qualification of the data was necessary.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

BNA:
See attached CADRE Calibration Report for a list of samples qualified for this criteria.

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

CALIBRATION CRITERIA

Volatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	90
Maximum %D (continuing calibration)	25	90
Calibration time period	12	

Semivolatile

	Primary	Expanded
Minimum RRF	0.05	0.05
Maximum %RSD (initial calibration)	30	90
Maximum %D (continuing calibration)	25	90
Calibration time period	12	

Pesticide

Maximum %RSD (initial calibration)	- TCL analytes	20
	- surrogates	30
Maximum RPD (continuing calibration)		25
INDA/INDB percent resolution		90
Continuing calibration sequence time		12

DC-22: The following volatile samples are associated with a continuing calibration whose corresponding initial calibration has percent relative standard deviation (%RSD) outside primary criteria. Hits are qualified "J" and non-detects are not flagged.

VBLKC5
1,1-Dichloroethane

VHBLKI2
1,1-Dichloroethane

DC-23: The following volatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria. Hits are qualified "J" and non-detects are qualified "UJ".

2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol

DC-100: The following semivolatile samples are associated with a continuing calibration percent difference (%D) outside primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BYF54
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF54MS
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF54MSD
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF55
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF56DL
Hexachlorocyclopentadiene, 4-Nitrophenol, 4-Nitroaniline, Carbazole
3,3'-Dichlorobenzidine, Di-n-octylphthalate

BYF57DL
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF58
4-Methylphenol, 4-Nitrophenol, 4-Nitroaniline, Carbazole
Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

BYF59
4-Methylphenol, 4-Nitrophenol, 4-Nitroaniline, Carbazole
Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

BYF60
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

BYF61
2,4-Dinitrotoluene, 4-Nitroaniline, Carbazole

SBLKEB
Hexachlorocyclopentadiene, 4-Nitrophenol, 4-Nitroaniline, Carbazole
3,3'-Dichlorobenzidine, Di-n-octylphthalate

DC-195: The RPD between the nominal and the calculated amount of an

CLP DATA ASSESSMENT

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

VOA, BNA:
See attached CADRE Calibration Report for a list of samples qualified for this criteria.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

BNA:
See attached CADRE Internal Standards Report for a list of samples qualified for this criteria.

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e

5A

Internal Standards Report

SDG NO: BYF54
CASE NO: 27064

LABORATORY: COMPUCHEM
AGENCY INPUT FILE: BYF54.ASF

INTERNAL STANDARD CRITERIA

Volatile

Retention Time & Area Count Limits

	-- Primary --				- Expanded --			
	Lower		Upper		Lower		Upper	
Retention time	-	0.5	+	0.5	-	0.5	+	0.5
Area count	/	2	*	2	/	4	*	4

Semivolatile

Retention Time & Area Count Limits

	-- Primary --				- Expanded --			
	Lower		Upper		Lower		Upper	
Retention time	-	0.5	+	0.5	-	0.5	+	0.5
Area count	/	2	*	2	/	4	*	4

DC-78: The following semivolatile samples have internal standard area counts outside expanded criteria. Hits are qualified "J" and non-detects are qualified "R".

BYF59

Di-n-octylphthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(g,h,i)perylene

CLP DATA ASSESSMENT

intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

VOA TICs:
Laboratory artifacts were qualified "R" in the following samples: BYF56, BYF58.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

PEST:
See attached CADRE Quantitation Limit Report for a list of samples qualified for dual-column %D criteria.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

VOA:
BYF54MS - This sample was analyzed past VTSR holding time (SOW, Sec. 8.3, page D-18/VOA).

BNA:
BYF54, 54MS, 54MSD, 55, 56MS, 56MSD - These samples were extracted past VTSR holding time (SOW Sec. 8.4, page D-18/SVOA).

BYF59 - Internal standard response for this sample was outside QC limits and the sample was not reanalyzed (SOW, Sec. 11.3.6, page D-50/SVOA).

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

PEST:
BYF60 - Analyte concentrations for the CLP-PEST column were calculated incorrectly, due to the lack of a % moisture factor in the lab's calculations (see

Quantitation Limit Report

SDG NO: BYF54 LABORATORY: COMPUCHEM

CASE NO: 27064 AGENCY INPUT FILE: BYF54.ASF

Endosulfan I, Endrin, Methoxychlor, gamma-Chlordane

BYF60DL
Endosulfan I, 4,4'-DDE, Endrin, 4,4'-DDT
Methoxychlor

BYF61
Dieldrin

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits > CRQL are flagged "J." Or: if %D is > 50% and value is < CRQL, sample result is elevated to the CRQL and qualified "U."

BYF54 J J J
beta-BHC, gamma-BHC (Lindane), Aldrin

BYF54DL J J
beta-BHC, Heptachlor epoxide

BYF54MS J J J J
gamma-BHC (Lindane), Heptachlor, Aldrin, 4,4'-DDE
gamma-Chlordane J

BYF54MSD J J J
gamma-BHC (Lindane), Aldrin, 4,4'-DDE

BYF55 J J J J
gamma-BHC (Lindane), Aldrin, Dieldrin, Methoxychlor

BYF55DL J J
4,4'-DDE, Methoxychlor

BYF56 J J J
gamma-BHC (Lindane), Aldrin, Methoxychlor

BYF56DL
4,4'-DDE J

BYF57 J J U J
beta-BHC, gamma-BHC (Lindane), Methoxychlor, Endrin ketone

BYF57DL J U
4,4'-DDE, Methoxychlor

BYF58 -J -J -J -J
Aldrin, Heptachlor epoxide, 4,4'-DDD, Methoxychlor

BYF58DL -J -J
Dieldrin, Endrin

BYF59
Endrin -J

BYF60 -J -J -J -J
beta-BHC, gamma-BHC (Lindane), Endosulfan sulfate, Methoxychlor

BYF60DL
4,4'-DDE -J

DC-423: The following pesticide samples have analytes for which the percent difference between column results exceeds expanded criteria. Hits > CRQL are flagged "NJ;" or "R" when %D > 100; or "NJ" when %D is between 100 - 200 (interference detected). Hits < CRQL are elevated to the CRQL and qualified "U."

BYF54 -NJ -NJ -R -U
alpha-BHC, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, 4,4'-DDT, alpha-Chlordane
-U -R -U

BYF54DL -NJ -U -U -U
Dieldrin, 4,4'-DDE, Endrin, 4,4'-DDT
gamma-Chlordane -U

BYF54MS -R -U -NJ -U -NJ
alpha-BHC, Dieldrin, Endosulfan sulfate, 4,4'-DDT
Methoxychlor, alpha-Chlordane
-NJ -U

BYF54MSD -NJ -U -NJ -NJ
beta-BHC, Endosulfan I, Dieldrin, Endrin
Endosulfan sulfate, 4,4'-DDT
-U -NJ

BYF55 -R -U -R -NJ
alpha-BHC, Endrin, 4,4'-DDT, alpha-Chlordane
gamma-Chlordane -R

BYF55DL -R -U -U -U
beta-BHC, Dieldrin, Endrin, Endosulfan II
4,4'-DDT, alpha-Chlordane, gamma-Chlordane
-U -U -U

BYF56

Quantitation Limit Report

SDG NO: BYF54
CASE NO: 27064

LABORATORY: COMPUCHEM
AGENCY INPUT FILE: BYF54.ASF

4,4'-DDD, Endosulfan sulfate, 4,4'-DDT, gamma-Chlordane

BYF56DL
Heptachlor epoxide, 4,4'-DDT

BYF57
Dieldrin, 4,4'-DDD, 4,4'-DDT, alpha-Chlordane

BYF57DL
Dieldrin, 4,4'-DDT

BYF58
gamma-BHC (Lindane), 4,4'-DDE, Endrin, Endosulfan sulfate
4,4'-DDT, gamma-Chlordane

BYF58DL
gamma-BHC (Lindane), Heptachlor epoxide, 4,4'-DDE, 4,4'-DDD
4,4'-DDT, gamma-Chlordane

BYF59
alpha-BHC, delta-BHC, gamma-BHC (Lindane), Endosulfan I
4,4'-DDD, 4,4'-DDT, gamma-Chlordane

BYF59DL
gamma-BHC (Lindane), Endosulfan I, Endrin, 4,4'-DDT

BYF60
alpha-BHC, Endosulfan I, Endrin, 4,4'-DDT
gamma-Chlordane

BYF60DL
beta-BHC, Endosulfan I, Endrin, 4,4'-DDT

BYF61
Dieldrin

CLP DATA ASSESSMENT

pages 1225 thru 1227). Forms 10A show incorrect concentrations and %D values for target analytes. Appropriate changes were made to Forms 10A, pages 1320 and 1321.

13. **This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used:**

VOA:
BYF55RE - Surrogates outside criteria window.

BNA:
BYF56DL, BYF57DL - Original undiluted sample were used, instead.

PEST:
BYF54DL, BYF55DL, BYF56DL, BYF57DL, BYF58DL - The original undiluted samples were used, instead.

BYF59, BYF60 - These samples had data rejected due to SMC/Surrogate criteria.

Volatile Analysis Data - VBLKC5
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	LABORATORY ARTIFACT	18.89	9.000	R
	LABORATORY ARTIFACT	20.85	26.000	R
	LABORATORY ARTIFACT	21.94	29.000	R
	LABORATORY ARTIFACT	24.08	72.000	R

Volatile Analysis Data - VHBLKI2
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54
LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	LABORATORY ARTIFACT	18.85	8.000	R
	LABORATORY ARTIFACT	20.84	13.000	R
	LABORATORY ARTIFACT	21.91	75.000	R
	LABORATORY ARTIFACT	24.04	160.000	R

Volatile Analysis Data - BYF56
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	LABORATORY ARTIFACT	21.99	14.000	R

Volatile Analysis Data - BYF60
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	SUBSTITUTED BENZENE	20.71	8.000	J
	SUBSTITUTED BENZENE	21.13	14.000	J
	SUBSTITUTED BENZENE	22.35	9.000	J
	SUBSTITUTED BENZENE	22.89	9.000	J

Volatile Analysis Data - BYF58
Tentatively Identified Compounds

LABORATORY: COMPUCHEM

CASE NO: 27064
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	LABORATORY ARTIFACT	22.01	7.000	R

FILE NAME: BYF54.SDG DATE: 07/12/99 TIME: 16:30 CADRE98

Volatile Analysis Data - BYF59
Tentatively Identified Compounds

CASE NO: 27064 LABORATORY: COMPUCHEM
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
624-92-0	DISULFIDE, DIMETHYL	15.85	43.000	NJ
	SUBSTITUTED BENZENE	20.36	8.000	J
	SUBSTITUTED BENZENE	20.73	15.000	J
	SUBSTITUTED BENZENE	21.16	22.000	J
	SUBSTITUTED BENZENE	21.37	6.000	J
	SUBSTITUTED BENZENE	21.44	7.000	J
	SUBSTITUTED BENZENE	21.85	7.000	J
	SUBSTITUTED BENZENE	22.30	6.000	J
	SUBSTITUTED BENZENE	22.36	12.000	J
	SUBSTITUTED BENZENE	22.90	12.000	J

Semivolatile Analysis Data - BYF56
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	TRIMETHYLBENZENE	4.57	185.300	J
70-55-3	BENZENESULFONAMIDE, 4-METHYL-	11.09	657.600	NJ
	UNKNOWN	11.22	282.800	J
1912-24-9	ATRAZINE	11.41	632.900	NJ
1912-24-9	ATRAZINE	11.90	83330.000	NJ
5915-41-3	TERBUTHYLAZINE	11.99	10570.000	NJ
	UNKNOWN	12.06	661.200	J
26259-45-0	SECBUMETON	12.16	372.800	NJ
	UNKNOWN PHTHALATE	12.39	341.000	J
	UNKNOWN	12.72	1340.000	J
834-12-8	1,3,5-TRIAZINE-2,4-DIAMINE, N-ETHYL-N'-(	12.78	290.200	NJ
7287-19-6	1,3,5-TRIAZINE-2,4-DIAMINE, N,N'-BIS(1-M	12.81	386.200	NJ
	UNKNOWN	14.44	144.200	J
510-15-6	CHLOROBENZILATE	15.06	663.700	NJ
	UNKNOWN	15.55	127.600	J
	UNKNOWN	16.48	124.200	J
	METHYLPHENYLPHOSPHORIC ACID	17.79	214.600	J
	METHYLPHENYLPHOSPHORIC ACID	18.02	414.000	J
	METHYLPHENYLPHOSPHORIC ACID	18.23	392.600	J
	UNKNOWN	18.28	196.000	J
	UNKNOWN	18.42	213.600	J
	UNKNOWN	18.51	261.200	J
	UNKNOWN	18.93	186.000	J
	UNKNOWN	19.53	383.500	J
	UNKNOWN	19.61	274.500	J
	UNKNOWN	20.98	318.700	J
	UNKNOWN	22.09	232.500	J

Semivolatile Analysis Data - BYF57
Tentatively Identified Compounds

CASE NO: 27064 LABORATORY: COMPUCHEM
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
2953-29-9	PHOSPHORODITHIOIC ACID, O,O,S-TRIMETHYL	6.26	450.100	NJ
	UNKNOWN	7.20	199.900	J
103-90-2	ACETAMINOPHEN	8.66	273.900	NJ
70-55-3	BENZENESULFONAMIDE, 4-METHYL-	11.20	12.030	NJ
	UNKNOWN	11.36	14.230	J
1912-24-9	ATRAZINE	11.45	28.880	NJ
1610-18-0	PROMETON	11.64	277.600	NJ
1912-24-9	ATRAZINE	11.81	766.300	NJ
1912-24-9	ATRAZINE	12.16	3796.000	NJ
5915-41-3	TERBUTHYLAZINE	12.22	229.200	NJ
	UNKNOWN	12.27	40.050	J
26259-45-0	SECBUMETON	12.30	11.660	NJ
	UNKNOWN PHTHALATE	12.46	8.410	J
	UNKNOWN	12.76	10.640	J
7287-19-6	1,3,5-TRIAZINE-2,4-DIAMINE, N,N'-BIS(1-M	12.87	15.670	NJ
886-50-0	TERBUTRYN	13.02	14.570	NJ
950-37-8	METHIDATHION	14.08	14.690	NJ
0-00-0	2-HYDROXYMANDELIC ACID, ETHYL ESTER, DI-	14.20	389.500	NJ
	DIELDRIN	14.60	114.000	J
5836-10-2	CHLOROPROPYLATE	15.06	467.800	NJ
	UNKNOWN	15.55	150.000	J
	UNKNOWN	15.65	152.500	J
115-86-6	PHOSPHORIC ACID, TRIPHENYL ESTER	16.06	275.600	NJ
1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTE	17.79	204.600	NJ
563-04-2	PHOSPHORIC ACID, TRIS(3-METHYLPHENYL) ES	18.00	669.300	NJ
	UNKNOWN	18.07	405.900	J
1330-78-5	PHOSPHORIC ACID, TRIS(METHYLPHENYL) ESTE	18.23	608.600	NJ
	PCB	18.34	261.200	J
	UNKNOWN	18.49	385.400	J

Semivolatile Analysis Data - SBLKEB
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN (BC)	6.32	74.410	J
	UNKNOWN (BC)	6.83	110.700	J
	UNKNOWN (BC)	7.51	82.410	J
	UNKNOWN (BC)	7.63	90.720	J
1912-24-9	ATRAZINE	14.15	77.790	NJ

Semivolatile Analysis Data - BYF56DL
Tentatively Identified Compounds

LABORATORY: COMPUCHEM

CASE NO: 27064
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
		14.21	129600.000	NJB
1912-24-9	ATRAZINE	14.40	30140.000	NJ
5915-41-3	TERBUTHYLAZINE	15.44	2488.000	J
	UNKNOWN			

Semivolatile Analysis Data - BYF55
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	10.85	7611.000	J
70-55-3	BENZENESULFONAMIDE, 4-METHYL-	13.40	3246.000	NJ
1912-24-9	ATRAZINE	13.98	56660.000	NJB
5915-41-3	TERBUTHYLAZINE	14.19	18640.000	NJ
	UNKNOWN	15.20	3490.000	J
834-12-8	1,3,5-TRIAZINE-2,4-DIAMINE, N-ETHYL-N'-(	15.27	177300.000	NJ
510-15-6	CHLOROBENZILATE	17.99	2705.000	NJ

Semivolatile Analysis Data - SBLKJZ
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54
LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
1912-24-9	ATRAZINE	13.96	3337.000	NJ
	UNKNOWN ACID ESTER (BC)	18.92	2780.000	J

Semivolatile Analysis Data - BYF55
Tentatively Identified Compounds
LABORATORY: COMPUCHEM

CASE NO: 27064
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	10.85	7611.000	J
70-55-3	BENZENESULFONAMIDE, 4-METHYL-	13.40	3246.000	NJ
1912-24-9	ATRAZINE	13.98	56660.000	NJB
5915-41-3	TERBUTHYLAZINE	14.19	18640.000	NJ
	UNKNOWN	15.20	3490.000	J
834-12-8	1,3,5-TRIAZINE-2,4-DIAMINE, N-ETHYL-N'-(	15.27	177300.000	NJ
510-15-6	CHLOROBENZILATE	17.99	2705.000	NJ

FILE NAME: BYF54.SDG DATE: 07/12/99 TIME: 16:30 CADRE98

CASE NO: 27064
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
	UNKNOWN	7.21	3239.000	J
	UNKNOWN	10.94	3484.000	J
	UNKNOWN	11.10	4751.000	J
	UNKNOWN	13.38	3511.000	J
	UNKNOWN	13.98	86970.000	NJB
1912-24-9	ATRAZINE	14.19	18130.000	NJ
5915-41-3	TERBUTHYLAZINE	14.35	3454.000	NJ
102-54-5	FERROCENE	15.19	14830.000	J
	UNKNOWN	17.38	16860.000	NJ
80-05-7	PHENOL, 4,4'-(1-METHYLETHYLIDENE)BIS-	17.99	3419.000	NJ
5836-10-2	CHLOROPROPYLATE	21.13	2488.000	J
	UNKNOWN	21.38	3145.000	J
	UNKNOWN	21.66	2362.000	J
	UNKNOWN	22.04	4058.000	J
	UNKNOWN			

FILE NAME: BYF54.SDG DATE: 07/12/99 TIME: 16:30 CADRE98

Semivolatile Analysis Data - BYF60
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54
LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
100-52-7	BENZALDEHYDE	6.16	7084.000	NJ
100-52-7	BENZALDEHYDE	6.21	10460.000	NJ
	UNKNOWN	6.37	4215.000	J
2953-29-9	PHOSPHORODITHIOIC ACID, O,O,S-TRIMETHYL	8.59	1576.000	NJ
	UNKNOWN AMIDE	12.33	23260.000	J
1007-28-9	1,3,5-TRIAZINE-2,4-DIAMINE, 6-CHLORO-N-E	13.19	9395.000	NJ
	UNKNOWN	13.41	1849.000	J
	UNKNOWN	13.66	5036.000	J
1912-24-9	ATRAZINE	14.06	306600.000	NJB
5915-41-3	TERBUTHYLAZINE	14.26	162900.000	NJ
	UNKNOWN	14.40	84310.000	J
	UNKNOWN	14.90	4349.000	J
	UNKNOWN	15.22	7044.000	J
	UNKNOWN	15.34	2730.000	J
950-37-8	METHIDATHION	16.85	1616.000	NJ
5836-10-2	CHLOROPROPYLATE	17.99	1535.000	NJ
13674-87-8	2-PROPANOL, 1,3-DICHLORO-, PHOSPHATE (3:	18.46	2814.000	NJ
	UNKNOWN	20.85	1491.000	J
	UNKNOWN	21.36	5983.000	J
	UNKNOWN	21.67	1532.000	J
	UNKNOWN	22.04	1507.000	J

Semivolatile Analysis Data - BYF57DL
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54
LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
1610-18-0	PROMETON	13.89	5718.000	NJ
1912-24-9	ATRAZINE	14.12	152200.000	NJB
5915-41-3	TERBUTHYLAZINE	14.26	24460.000	NJ
	UNKNOWN	15.20	698.000	J
7287-19-6	1,3,5-TRIAZINE-2,4-DIAMINE, N,N'-BIS(1-M	15.29	939.600	NJ
886-50-0	TERBUTRYN	15.50	1002.000	NJ
950-37-8	METHIDATHION	16.85	950.200	NJ
115-32-2	4,4'-DICHLORO-.ALPHA.-(TRICHLOROMETHYL)B	17.99	648.200	NJ
	UNKNOWN	21.37	1402.000	J

Semivolatile Analysis Data - BYF59
Tentatively Identified Compounds

LABORATORY: COMPUCHEM

CASE NO: 27064
SDG NO: BYF54

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
		5.91	867.700	NJ
100-52-7	BENZALDEHYDE	6.14	799.300	J
	UNKNOWN	7.61	979.000	J
	UNKNOWN	8.24	757.200	NJ
65-85-0	BENZOIC ACID	8.35	1311.000	NJ
2953-29-9	PHOSPHORODITHIOIC ACID, O,O,S-TRIMETHYL	9.17	976.900	J
	UNKNOWN	12.01	4533.000	J
	UNKNOWN AMIDE	12.19	51840.000	J
	UNKNOWN AMIDE	12.96	10610.000	NJ
1007-28-9	1,3,5-TRIAZINE-2,4-DIAMINE, 6-CHLORO-N-E	13.38	2390.000	J
	UNKNOWN	13.66	9409.000	NJB
1912-24-9	ATRAZINE	13.82	96800.000	NJB
1912-24-9	ATRAZINE	13.87	2562.000	J
	UNKNOWN	14.01	67520.000	NJ
5915-41-3	TERBUTHYLAZINE	14.15	27250.000	J
	UNKNOWN	14.62	2184.000	J
	UNKNOWN	14.96	1752.000	J
	UNKNOWN	15.06	1246.000	J
	UNKNOWN	16.12	1524.000	J
	UNKNOWN	16.19	948.700	J
	UNKNOWN	16.55	839.200	J
	UNKNOWN	17.59	1417.000	J
	UNKNOWN PHTHALATE	17.68	1237.000	NJ
510-15-6	CHLOROBENZILATE	18.17	834.200	NJ
13674-87-8	2-PROPANOL, 1,3-DICHLORO-, PHOSPHATE (3:	18.61	1066.000	J
	UNKNOWN ACID ESTER	20.53	1422.000	J
	UNKNOWN	21.04	7731.000	J
	UNKNOWN	21.11	4236.000	J
	UNKNOWN	21.34	1656.000	J
	UNKNOWN	21.60	1660.000	J
	UNKNOWN	21.88	3066.000	J
	UNKNOWN			

FILE NAME: BYF54.SDG DATE: 07/12/99 TIME: 16:30 CADRE98

Semivolatile Analysis Data - BYF58
Tentatively Identified Compounds

CASE NO: 27064
SDG NO: BYF54

LABORATORY: COMPUCHEM

CAS NUMBER	COMPOUND NAME	RT	ESTIMATED CONCENTRATION	Q
		13.77	78240.000	NJB
1912-24-9	ATRAZINE	13.94	8024.000	NJ
5915-41-3	TERBUTHYLAZINE	18.38	2288.000	J
	UNKNOWN	18.60	1678.000	J
	UNKNOWN ACID ESTER	20.02	2078.000	J
	UNKNOWN	20.08	1681.000	J
	UNKNOWN PHTHALATE	20.48	2960.000	J
	UNKNOWN PHTHALATE	20.59	2044.000	J
	METHYLPHENYLPHOSPHORIC ACID	20.81	2420.000	J
	METHYLPHENYLPHOSPHORIC ACID	21.04	2329.000	J
	METHYLPHENYLPHOSPHORIC ACID	21.11	1651.000	J
	UNKNOWN			

CLP DATA ASSESSMENT

10. CONTRACT PROBLEMS NON-COMPLIANCE:

VOA:
BYF54MS - This sample was analyzed past VTSR holding time (SOW, Sec. 8.3, page D-18/VOA).

BNA:
BYF54, 54MS, 54MSD, 55, 56MS, 56MSD - These samples were extracted past VTSR holding time (SOW Sec. 8.4, page D-18/SVOA).

BYF59 - Internal standard response for this sample was outside QC limits and the sample was not reanalyzed (SOW, Sec. 11.3.6, page D-50/SVOA).

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

PEST:
BYF60 - Analyte concentrations for the CLP-PEST column were calculated incorrectly, due to the lack of a % moisture factor in the lab's calculations (see pages 1225 thru 1227). Forms 10A show incorrect concentrations and %D values for target analytes. Appropriate changes were made to Forms 10A, pages 1320 and 1321.

SOP NO. HW-6

Revision #11

May 1996

CLP ORGANICS DATA REVIEW AND PRELIMINARY REVIEW (CLP/SOW OLMO 3.2)

By: George Karras
George Karras, Work Assignment Manager/Chemist
Toxic and Hazardous Waste Section
Date: 6/12/96

By: Karen Taylor
Karen Taylor, Chemist
Toxic and Hazardous Waste Section
Date: 6/17/96

CONCURRED BY: Kevin W. Kubik
Kevin Kubik, Chief
Toxic and Hazardous Waste Section
Date: 6/18/96

APPROVED BY: Robert A. Runyon
Robert Runyon, Chief
Monitoring Management Branch
Date: 6/18/96

INTRODUCTION

Scope and Applicability

This SOP offers detailed guidance in evaluating laboratory data generated according to the methods in the "USEPA Contract Laboratory Program Statement of Work for Organics Analysis OLM03.2," August 1994. The validation methods and actions discussed in this document are based on the requirements set forth in the "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February 1994. This document attempts to cover technical as well as contractual problems specific to each fraction and sample matrix; however, situations may arise where data limitations must be assessed based on the reviewer's professional judgement.

In addition to technical requirements, contractual requirements are also covered in this document. While it is important that instances of contract non-compliance be addressed in the Data Assessment, the technical criteria are always used to qualify the analytical data.

Summary of Method

To ensure a thorough evaluation of each result in a data case, the reviewer must complete the checklist within this SOP, answering specific questions while performing the prescribed "ACTIONS" in each section. Qualifiers (or flags) are applied to questionable or unusable results as instructed. The data qualifiers discussed in this document are defined on page 4 of the National Functional Guidelines mentioned above.

The reviewer must prepare a detailed data assessment to be submitted along with the completed SOP checklist. The Data Assessment must list all data qualifications, reasons for qualifications, instances of missing data and contract non-compliance. This information is further summarized on the Organic Regional Data Assessment Summary and Data Rejection Summary forms (see attached).

CADRE reports, when available, are to be incorporated into the Data Assessment. To generate CADRE reports for a particular SDG, follow the SOP for Validating RAS/CLP Data Cases with MAGIC, CARD and CADRE (see attached).

Reviewer Qualifications

This SOP is intended for use by organic data validators who have successfully completed the USEPA Region II data validation training program. Data reviewers must possess a working knowledge of the USEPA Statement of Work and National Functional Guidelines mentioned above.

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CLP Data Assessment . . . . . Attachment 1

Organic Regional Data Assessment Summary Form . . . Attachment 2

Data Rejection Summary Form . . . . . Attachment 3

DEFINITIONS

Acronyms

BFB - bromofluorobenzene
BHC - benzene hexachloride
BNA - base neutral acid
CADRE - Computer Aided Data Review and Evaluation
CARD - CLP Analytical Results Database
CCS - contract compliance screening
CLASS - Contract Laboratory Analytical Services Support
CLP - Contract Laboratory Program
CRQL - Contract Required Quantitation Limit
%D - percent difference
DCB -decachlorobiphenyl
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenylethane
DDT - dichlorodiphenyltrichloroethane
GC - gas chromatography
GC/EC - gas chromatograph/electron capture detector
GC/MS - gas chromatograph/mass spectrometer
GPC - gel permeation chromatography
IS - internal standard
kg - kilogram
µg - microgram
MAGIC - Mainframe Access Graphical Interface with CARD
MS - matrix spike
MSD - matrix spike duplicate
ℓ - liter
mℓ - mililiter
PCB - polychlorinated biphenyl
PE - performance evaluation
PEM - Performance Evaluation Mixture
QC - quality control
RAS - Routine Analytical Services
RIC - reconstructed ion chromatogram
RPD - relative percent difference
RRF - relative response factor
$\overline{RRF}$ - average relative response factor (from initial calibration)
RRT - relative retention time
RSD - relative standard deviation
RT - retention time
RSCC - Regional Sample Control Center
SDG - sample delivery group
SMC - system monitoring compound
SOP - standard operating procedure
SOW - Statement of Work
SVOA - semivolatile organic acid
TCL - Target Compound List
TCLP - Toxicity Characteristics Leachate Procedure
TCX -tetrachloro-m-xylene
TIC - tentatively identified compound

Acronyms (cont'd.)

TPO - technical project officer
VOA - volatile organic acid
VTSR - validated time of sample receipt
WAM - EPA Work Assignment Manager

Data Qualifiers

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively dienrified; the associated numerical value is the approximate concentration of the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality contrrol criteria. The presence or absence of the analyte cannot be verified.

YES NO N/

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 27064 LABORATORY: COMPU

SITE NAME: Amenia LF SDG Number(s): B4F54

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the WAM to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the WAM to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ___ [✓] ___

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment and the Organic Regional Data Assessment Summary form.

2.2 Was CLASS CCS checklist included with package? [✓] ___ ___

2.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags? ___ [✓] ___

	YES	NO	N/A

ACTION: If yes, contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory.

3.0 Cover Letter SDG Narrative

3.1	Is the Narrative or Cover Letter Present?	[✓]	___	___
3.2	Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)?	[✓]	___	___
3.3	Does the narrative contain the following information:			
	VOA: description of trap and columns used during sample analyses?	[✓]	___	___
	BNA: description of columns used during sample analyses?	[✓]	___	___
	Pest: description of columns used during sample analyses?	[✓]	___	___

NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest, Packed columns are not permitted.

3.4	Does the narrative, VOA and BNA sections, contain a list of all TICs identified as alkanes and their estimated concentrations?	[✓]	___	___
3.5	Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]	___	___
3.6	Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[✓]	___	___
3.7	Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]	___	___

ACTION: If "No", to any question in this section, contact the WAM to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.

	YES	NO	N/A

4.0 Data Validation Checklist

4.1 Check the package for the following discrepancies:

	YES	NO	N/A
a. Is the package paginated in ascending order starting from the SDG narrative?	✓		
b. Are all forms and copies legible?	✓		
c. Is each fraction assembled in the order set forth in the SOW?	✓		
d. Is a Sample Data Summary Package submitted immediately preceding the Sample Data Package?		✓	

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNAs and Part C is Pesticide/PCBs.

Does this package contain:

	YES	NO
VOA Data?	✓	
BNA Data?	✓	
Pesticide/PCB data?	✓	

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART A: VOA ANALYSES

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records, Sampling Report or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data? ___ [✓] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be flagged as estimated (J). If a soil sample other than TCLP contains more than 90% water, all data should be qualified as unusable (R).

ACTION: If samples were not iced or the ice was melted upon arrival at the laboratory and the cooler temperature was elevated (> 10° C), then flag all positive results with a "J" and all non-detects "UJ".

ACTION: If both VOA vials for a sample have air bubbles or the VOA vial analyzed had air bubbles, flag all positive results "J" and all non-detects "R".

ACTION: The smallest soil size permitted is 0.5g. If any soil sample is smaller than 0.5g, document in the Data Assessment under Contract Problems/Non-Compliance.

2.0 Holding Times

2.1 Have any VOA technical holding times, determined from date of collection to date of analysis, been exceeded? ___ [ ] ___

Technical Holding Times: If unpreserved, aqueous samples, maintained at 4° C for aromatic hydrocarbons analysis must be analyzed within 7 days of collection. If preserved with HCl (pH < 2) and stored at 4° C, then aqueous samples must be analyzed within 14 days of collection. If uncertain about preservation, contact sampler to determine whether or not samples were preserved. The holding time for soils is 10 days from date of collection.

YES NO N/A

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample ID	Sample Matrix	Was Sample Preserved?	Date Sampled	Date Lab Received	Date Analyzed
	See CADRE HT Report.				

ACTION: If technical holding times are exceeded, flag all positive results as estimated "J" and sample quantitation limits as estimated "UJ", and document in the Data Assessment that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. At a minimum, all results must be qualified "J", but the reviewer may determine that non-detect data are unusable "R". If holding times are exceeded by more than 28 days, all non detect data are unusable "R".

NOTE: Contractual Holding Times: Analysis of water and soil/sediment samples must be completed within 10 days of Validated Time of Sample Receipt (VTSR). This requirement does not apply to Performance Evaluation (PE) samples.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and on the Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not technical and contractual holding times were met.

	YES	NO	N/A

3.0 System Monitoring Compound (SMC) Recovery (Form II)

3.1 Are the VOA SMC Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water?	[ ]	___	___
b. Low Soil?	[ ]	___	___
c. Med Soil?	[ ]	___	___

3.2 Are all the VOA samples listed on the appropriate System Monitoring Compound Recovery Summary for each of the following matrices:

a. Low Water?	[ ]	___	___
b. Low Soil?	[ ]	___	___
c. Med Soil?	[ ]	___	___

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[ ]	___	___

ACTION: Circle all outliers with red pencil.

3.4 Was one or more VOA system monitoring compound recovery outside of contract specifications for any sample or method blank?	___	[ ]	___
If yes, were samples re-analyzed?	[ ]	___	___
Were method blanks re-analyzed?	[ ]	___	___

ACTION: If recoveries are ≥ 10%, but 1 or more compounds fail to meet SOW specifications:

1. All positive results are qualified as estimated "J".

2. Flag all non-detects as estimated detection limits "UJ" where recovery is less than the lower acceptance limit.

YES NO N/A

3. If SMC recoveries are above allowable levels, do not qualify non-detects.

If any system monitoring compound recovery is < 10%:

1. Flag all positive results as estimated "J".

2. Flag all non-detects as unusable "R".

Professional judgement should be used to qualify data that only have method blank SMC recoveries out of specification in both original and re-analyses. Check the internal standard areas.

NOTE: Contractual requirements state that if any SMC fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance and in the Organic Regional Data Assessment Summary.

NOTE: The laboratory must submit the following data:

1. If SMC recoveries and internal standard responses meet the acceptance criteria in the re-analyzed sample, then the laboratory must submit only the re-analysis.

2. If an SMC recovery and/or internal standard response fails to meet the acceptance criteria upon re-analysis, then submit data from both analyses.

(Refer to section 11.4.3.2, page D-46/VOA of the SOW for more information.)

3.5 Are there any transcription/calculation errors between raw data and Form II? ___ ✓ ___

ACTION: If large errors exist, contact the WAM to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and note the effect in the Data Assessment.

YES NO N/A

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [✓] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water? [ ] ___ [✓]

b. Low Soil? [✓] ___ ___

c. Med Soil? [ ] ___ ___

ACTION: If any matrix spike data are missing, take the action specified in section 3.2 above.

4.3 How many VOA spike recoveries are outside QC limits?

Water	Soils
NA out of 10	_____ out of 10

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
_____ out of 5	_____ out of 5

ACTION: No action is taken based upon MS/MSD data alone. However, using informed professional judgement, the MS/MSD results may be used in conjunction with other QC criteria to determine the need for qualification of the data.

ACTION: Circle all outliers with red pencil.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [✓] ___ ___

5.2 Frequency of Analysis: for the analysis of VOA TCL compounds, has a reagent/method blank been analyzed for each SDG or every 20 samples of similar matrix (low water, low soil or medium soil), whichever is more frequent? [✓] ___ ___

YES NO N/

5.3 Has a VOA method blank been analyzed at least once every twelve hours for each concentration level and GC/MS system used? ✓ ___ ___

5.4 Was a VOA instrument blank analyzed after each sample/dilution which contained a target compound that exceeded the initial calibration range? ✓ ___ ___

5.5 Was a VOA storage blank analyzed at the end of all samples for each SDG in a case? ✓ ___ ___

ACTION: If any method/instrument blank data are missing, contact the WAM to obtain any missing deliverables from the laboratory. If method blank data are not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank or trip blank data for missing method blank data.

If any instrument blank analyzed after a sample with high concentration is missing, contact the WAM to obtain any missing deliverables from the laboratory. If the instrument blank was not analyzed or not available, inspect the chromatogram of the sample analyzed immediately after this analysis for possible carryover. Use professional judgement to determine if any contamination occurred and qualify analyte(s) accordingly.

If storage blank data is missing, contact the WAM to obtain any missing deliverables from the laboratory. If unavailable, note in the Contract Problems/Non-Compliance section of the Data Assessment.

5.6 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-33, section 3.3.7.3 of the SOW for further information.

Was the correct identification scheme used for all VOA blanks? ✓ ___ ___

ACTION: Contact the WAM to obtain missing deliverables from the lab, or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-compliance if corrections were made by the validator.

	YES	NO	N/A
5.7 Chromatography: review the blank raw data-chromatograms (RICs), quant. reports or data system printouts and spectra. Is the chromatographic performance (baseline stability) for each instrument acceptable for VOAs?	[✓]	___	___

ACTION: Use professional judgement to determine the effect on the data.

5.8 Are all detected hits for target compounds in method, instrument and storage blanks less than the CRQL for that analyte?	[✓]	___	___

Exception: Acetone and 2-butanone must be less than 5 times the CRQL, and methylene chloride must be less than 2.5 times its CRQL.

ACTION: If no, an explanation and laboratory's corrective actions must be addressed in the case narrative. If the narrative contains no explanation, then make a note in the Contract Problems/Non-Compliance section of the Data Assessment.

6.0 Contamination

NOTE: "Water blanks", "drill blanks", and "distilled water blanks" are validated like any other sample, and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/instrument/reagent/storage blanks have positive results (TCL and/or TIC) for VOAs?	___	[✓]	___

NOTE: When applied as directed in the table below, the contaminant concentration in these blanks are multiplied by the sample dilution factor and corrected for %moisture when necessary.

NOTE: A contaminated instrument blank is not allowable under this SOW. See page D-48/VOA, section 12.1.2.4 for additional information. Document in the Data Assessment under Contract Problems/Non-Compliance if contaminated instrument blank was submitted.

6.2 Do any field/trip/rinse blanks have positive VOA results (TCL and/or TIC)?	___	[✓]	___

YES NO N/

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

NOTE: All field blank results associated with a particular group of samples (may exceed one per case) must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Blanks may not be qualified because of contamination in another blank. Field Blanks & Trip Blanks must be qualified for system monitoring compound, instrument performance criteria, spectral or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If any blanks are grossly contaminated, all associated data should be qualified as unusable "R".

For:	Flag sample result with a "U" when:	Report CRQL & qualify "U" when:	No qualification is needed when:
Methylene Chloride Acetone Toluene 2-Butanone	Sample conc. is > CRQL, but ≤ 10× blank value.	Sample conc. is < CRQL and ≤ 10× blank value.	Sample conc. is > CRQL and > 10× blank value.
Other Conta-minants	Sample conc. is > CRQL, but ≤ 5× blank value.	Sample conc. is < CRQL and ≤ 5× blank value.	Sample conc. is > CRQL and > 5× blank value.

NOTE: Analytes qualified "U" for blank contamination are still considered as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R".

	YES	NO	N/A
6.3 Are there field/rinse/equipment blanks associated with every sample?	✓		

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For samples with high concentrations of suspected blank contaminants, use professional judgement to qualify these values and make a note in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 GC/MS Instrument Performance Check (Form V)

	YES	NO	N/A
7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Bromofluorobenzene (BFB)?	✓		
7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the BFB provided for each twelve hour shift?	✓		
7.3 Has an instrument performance check been analyzed for every analytical sequence on each instrument?	✓		

ACTION: List date, time, instrument ID, and sample numbers for which associated GC/MS tuning data are unavailable.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS
See CADRE HT Report			

ACTION: Notify the WAM to obtain missing data, if possible. If the lab cannot provide the missing data, reject, "R", all data generated outside an acceptable twelve hour calibration interval.

	YES	NO	N/A
7.4 Have the ion abundances been normalized to m/z 95 as specified in Exhibit D, page D-56/VOA?	✓		

NOTE: All ion abundance ratios must be normalized to m/z 96, the nominal base peak, even though the

YES NO N/

ion abundance of m/z 174 may be up to 120% that of m/z 95.

ACTION: If mass assignment is in error, qualify all associated data as unusable "R".

7.5 Have the ion abundance criteria been met for each instrument used? ☑ ___ ___

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.6 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values, but if errors are found check more.) ___ ☑ ___

7.7 Is the number of significant figures for the reported relative abundances consistent with the number given for each ion in the ion abundance criteria column? ☑ ___ ___

ACTION: If large errors exist, take action as specified in section 3.5 above.

7.8 Are the spectra of the mass calibration compound acceptable? ☑ ___ ___

ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.

8.0 Target Compound List (TCL) Analytes (FORM I VOA)

8.1 Are the Organic Analysis Data Sheets (Form I VOA) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? ☑ ___ ___

b. Matrix spikes and matrix spike duplicates? ☑ ___ ___

c. Blanks? ☑ ___ ___

8.2 Are the VOA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (quant. reports) included in the sample package for each of the

	YES	NO	N/A
following:			
a. Samples and/or fractions as appropriate?	[✓]	___	___
b. Matrix spikes and matrix spike duplicates (mass spectra not required)?	[✓]	___	___
c. Blanks?	[✓]	___	___

ACTION: If any data are missing, take action specified in 3.2 above.

8.3 Are the response factors shown in the quant. report?	[✓]	___	___
8.4 Is chromatographic performance acceptable with respect to:			
a. Baseline stability?	[✓]	___	___
b. Resolution?	[✓]	___	___
c. Peak shape?	[✓]	___	___
d. Full-scale graph (attenuation)?	[✓]	___	___
e. Other: _____?	[ ]	___	___

ACTION: Use professional judgement to determine the acceptability of the data.

8.5 Are the lab-generated standard mass spectra of the identified VOA compounds present for each sample?	[✓]	___	___

ACTION: If any mass spectra are missing, take action as specified in 3.2 above. If the lab does not generate its own standard spectra, document in the Contract Problems/Non-compliance section of the Data Assessment and the Organic Regional Data Assessment Summary.

8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]	___	___
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]	___	___

YES NO N/

8.8 Do sample and standard relative ion intensities agree within ±20%? ✓

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected "R", flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected "U" at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.6, 8.7, and 8.8.

ACTION: When sample carry-over is suspected, use professional judgement determine if instrument cross-contamination has affected positive compound identifications.

9.0 Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier? ✓

9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:

a. Samples and/or fractions as appropriate? ✓

b. Blanks? ✓

c. Alkanes listed for each sample? ✓

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "JN" qualifier to all chemically named TICs, if missing.

9.3 Are any TCL compounds (from any fraction) listed as TIC compounds? (Example: 1,2- dimethylbenzene is xylene, a VOA TCL analyte, and should not be reported as a TIC.) ✓

ACTION: Flag with "R" any TCL compound listed as a TIC.

9.4 Are all ions present in the reference mass

	YES	NO	N/A
spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	[ ]	___	___
9.5 Do TIC and "best match" standard relative ion intensities agree within ±20%?	[ ]	___	___

ACTION: Use professional judgement to determine the acceptability of TIC identifications. If it is determined an incorrect identification was made, change the identification to "unknown," or to some less specific identification as appropriate. (Example: "C3 substituted benzene.")

Also, when a compound is not found in any blank, but is detected in a sample and is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable "R". (E.g., Common Lab Contaminants: CO_2 (M/E 44), siloxanes (M/E 73) hexane, aldol condensation products, solvent preservatives, and related by-products - see the National Functional Guidelines for further guidance.)

9.6 Are TICs with responses < 10% of the internal standard (as determined by inspection of the peak areas or height) reported?	___	[ ]	___

ACTION: If yes, cross out questionable TIC(s).

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? (Check at least two positive values. Verify that the correct internal standards, quantitation ions, and RRF were used to calculate Form I results.)	___	[ ]	___
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	[ ]	___	___

ACTION: If errors are large, take action as specified in section 3.5 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample). Replace concentrations that exceeded the calibration range in the original analysis by crossing out

YES NO N/

the "E" and its corresponding value on the original Form I and substituting the data from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form Is not to be used, including any in the data summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (quant. reports) present for each initial and continuing calibration?

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete at concentrations of 10, 20, 50, 100, 200ng for separate calibrations of low water/med soils (unheated purge) and low soils (heated purge)?

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Were all low level soil standards, blanks and samples analyzed by heated purge?

ACTION: If low level soil samples were not heated during purge, qualify positive hits "J" (estimated) and non-detects "R".

12.3 Are the % relative standard deviation (%RSD) values for VOAs ≤ 30% over the concentration range of the calibration?

NOTE: Although 11 VOA compounds have a contractual minimum RRF and no maximum %RSD, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: If %RSD is > 30.0%, qualify associated positive results for that analyte "J" (estimated) and non-detects using professional judgement. When %RSD is > 90%, flag all non-detects for that analyte "R" (unusable) and positive hits "J".

YES NO N/A

NOTE: Analytes previously qualified "U" for blank contamination are still considered as "hits" when qualifying for initial calibration criteria.

12.4 Are any average RRFs < 0.05? ___ [ ] ___

ACTION: Circle all outliers with red pencil.

ACTION: If the average RRF is < 0.05, then qualify associated non-detects with an "R" and flag associated positive data as estimated "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %RSD or RRF criteria, provided the %RSD is ≤ 40% and RRF is ≥ 0.010. (See Table 5, page D-59/VOA and analytes marked with a "*" on Form VI for required analytes and contractual criteria.) Technical criteria, however, are the same for all analytes.

ACTION: If more than two analytes failed %RSD or RRF criteria, document in the Data Assessment under Contract Problems/Non-Compliance and the Organic Regional Data Assessment Summary.

12.5 Are there any transcription/calculation errors in the reporting of average relative response factors (RRF) or %RSD? (Check at least 2 values, but if errors are found, check more.) ___ [ ] ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the WAM to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance and in the Organic Regional Data Assessment Summary.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for separate calibration of low water/med soil and low soil samples? [ ] ___ ___

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? [ ] ___ ___

YES NO N/

ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, contact the WAM to request an explanation/resubmittal from the lab. If continuing calibration data are not available, flag all associated sample data as unusable "R".

ACTION: List below all sample(s) that were not analyzed within twelve hours of the previous continuing calibration.

_____

_____

_____

13.3 Do any volatile compounds have a percent difference (%D) between the initial and continuing RRF which exceeds the ±25% criteria? ___ [ ] ___

NOTE: Although 11 VOA compounds have a contractual minimum RRF and no maximum %D, the technical acceptance criteria are the same for all analytes.

ACTION: Circle all outliers with red pencil.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated. When %D is > 90%, qualify all non-detects for that analyte unusable (R) and positive results estimated (J).

13.4 Are any continuing calibration RRFs < 0.05? ___ [ ] ___

ACTION: Circle all outliers with red pencil.

ACTION: If the RRF is < 0.05, qualify the associated non-detects as unusable "R" and the associated positive values "J".

NOTE: Contract Requirement: The SOW allows up to two of the required analytes to fail contractual %D and RRF criteria, provided that the %D is ≤ 40% and the RRF is ≥ 0.010. (See Table 5 pg. D-59/VOA or analytes marked with a "*" on Form VI for required analytes.) Technical criteria, however, are the same for all analytes.

YES NO N/A

ACTION: If more than two analytes failed %D and RRF, criteria document in the Data Assessment under contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

13.5 Are there any transcription/calculation errors in the reporting of RRF or %D between initial and continuing RRFs? (Check at least two values, but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, contact the WAM to obtain an explanation/resubmittal from the lab, document in the Data Assessment under Contract Problems/Non-Compliance.

14.0 Internal Standard (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to +100%) for each continuing calibration? [✓] ___ ___

If no, was the sample re-analyzed? [-] ___ ___

ACTION: 1. Circle all outliers with red pencil.

2. List all the outliers below.

Sample #	Internal Std.	Area	Lower/Upper Limit
			/
			/
			/
			/

(Attach additional sheets if necessary, or attach copies of Form VIIIs.)

ACTION: If any sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

ACTION: 1. If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results quantitated with this

YES NO N/

internal standard.

2. Do not qualify non-detects when associated IS area counts are > 100%.

3. If the IS area in the sample is below the "lower limit," < 50%, qualify all analytes associated with that IS estimated, "J". If the area counts are extremely low, < 25% of the area in the 12 hour standard, or if performance exhibits a major abrupt drop- off, flag all associated non-detects as unusable, "R", and positive hits estimated, "J".

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? ✓ ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

NOTE: Contractual requirements state that if any internal standard fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

NOTE: See Notes in section 3.4, page 7 for a description of sample data the laboratory must submit.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for VOA analysis? ✓ ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

YES NO N/A

PART B: BNA ANALYSES

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody records or laboratory SDG Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data? ___ [✓] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be flagged as estimated "J". If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable "R".

ACTION: If samples were not iced or if the ice was melted upon arrival at the laboratory and the temperature of the cooler was elevated (> 10° C), flag all positive results "J" and all non-detects "UJ".

2.0 Holding Times

2.1 Have any BNA technical holding times, determined from date of collection to date of extraction, been exceeded? ___ [ ] ___

Technical Holding Time: Continuous extraction of water samples for BNA analysis must be started within seven days of the date of collection. Soil/sediment samples must be extracted within 7 days of collection. Extracts must be analyzed within 40 days of the date of extraction.

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample Analyzed	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed
	See CADRE H.T. Report				

YES NO N/A

ACTION: If technical holding times were exceeded, flag all positive results as estimated (J) and sample quantitation limits as estimated (UJ), and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon reanalysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on sample results. At a minimum, all results should be qualified "J", but the reviewer may determine that non-detect data are unusable "R". If holding times were exceeded by more than 28 days, all non-detect data must be qualified "R", unusable.

NOTE: Contractual Holding Times: Extraction of water samples must be started within 5 days VTSR. Soil/sediment samples must be extracted within 10 days of VTSR. This requirement does not apply to Performance Evaluation (PE) samples. Water and soil/sediment extracts must be analyzed within 40 days following extraction.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and on the Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not technical and contractual holding times were met.

3.0 Surrogate Recovery (Form II)

3.1 Are BNA Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water? [ ] ___ ___

b. Low Soil? [✓] ___ ___

c. Med Soil? [✓] ___ ___

3.2 Are all the BNA samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:

a. Low Water? [ ] ___ ___

b. Low Soil? [✓] ___ ___

	YES	NO	N/A
c. Med Soil?	[✓]	___	___

ACTION: Contact the WAM to request an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[✓]	___	___

ACTION: Circle all outliers with red pencil.

3.4 Were two or more base-neutral OR acid surrogate recoveries out of specification for any sample or method blank?	___	[✓]	___
If yes, were samples reanalyzed?	[✓]	___	___
Were method blanks reanalyzed?	[✓]	___	___

ACTION: If all BNA surrogate recoveries are ≥ 10%, but two within the base-neutral or acid fraction do not meet SOW specifications, for the affected fraction only (i.e. acid or base-neutral compounds):

1. Flag all positive results as estimated (J).

2. Flag all non-detects as estimated detection limits ("UJ") when recoveries are less than the lower acceptance limit.

3. Do not qualify non-detects if recoveries are greater than the upper acceptance limit.

If any base-neutral or acid surrogate has a recovery of < 10%:

1. Qualify positive results for that fraction as estimated (J).

2. Qualify non-detects for that fraction as unusable (R).

Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and reanalyses. Check the internal standard areas.

YES NO N/A

NOTE: Contractual requirements state that if any surrogate fails acceptance criteria, the sample must be re-analyzed. If sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

NOTE: The laboratory must submit the following data:

1. If surrogate recoveries and internal standard responses meet the acceptance criteria in the re-analyzed sample, then the laboratory must submit only the re-analysis.

2. If surrogate recoveries and/or internal standard responses fail to meet the acceptance criteria upon re-analysis, then submit data from both analyses.

3.5 Are there any transcription/calculation errors between raw data and Form II? [ ] ___ ___

ACTION: If large errors exist, contact the WAM to request an explanation or resubmittal of corrected deliverables from the laboratory. Make necessary corrections and note errors in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [✓] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:

a. Low Water? [ ] ___ ✓

b. Low Soil? [✓] ___ ___

c. Med Soil? [✓] ___ ___

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
NA out of 22	_____ out of 22

YES NO N/A

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
NA out of 11	_____ out of 11

ACTION: No action is taken based upon MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

ACTION: Circle all outliers with red pencil.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? ☑ ___ ___

5.2 Frequency of Analysis: Has a reagent/method blank analysis been reported per 20 samples of similar matrix, or concentration level, and for each extraction batch? ☑ ___ ___

5.3 Has a BNA method blank been analyzed for each GC/MS system used? (See SOW pg. D-54/SVOA, Section 12.1.2.) ☑ ___ ___

ACTION: If any method blank data are missing, contact the WAM to obtain an explanation/resubmittal from the lab. If resubmittals are unavailable, use professional judgement to determine if the associated sample data should be qualified.

5.4 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-33, sec. 3.3.7.3 of the SOW for further information.

Was the correct identification scheme used for all BNA blanks? ☑ ___ ___

ACTION: Contact the WAM to obtain resubmittals from the lab or make the required corrections on the forms. Document all corrections made by the validator in the Data Assessment under Contract Problems/Non-Compliance.

YES NO N/A

5.5 Chromatography: review the blank raw data - chromatograms (RICs), quant. reports or data system printouts and spectra. Is the chromatographic performance (baseline stability) acceptable for each instrument? ✓

ACTION: Use professional judgement to determine the effect on the data.

5.6 Are all detected hits for target compounds less than the CRQL for that analyte in all method blanks? ✓

Exception: Phthalate esters must be less than five times (5×) the CRQL.

6.0 Contamination

NOTE: "Water blanks", "drill blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/reagent blanks have positive results (TCL and/or TIC)? ✓

NOTE: Water: When applied as directed in the table below (page 29), the contaminant concentration in method/instrument/reagent blanks is multiplied by the sample dilution factor, where necessary.

Soil: If the lab has not already done so, the contaminant concentration in soil blanks is multiplied by 33 times the sample dilution factor and corrected for %moisture (fraction of solid) where necessary. 30 grams of sodium sulfate (1 gram for medium level soils) are used to prepare the soil reagent/method blank as instructed on page D-54/SVOA, section 12.1.3. Contact the WAM to obtain resubmittals if the soil blanks are not reported in soil units (µg/kg).

6.2 Do any field/rinse blanks have positive BNA results (TCL and/or TIC)? ✓

ACTION: Prepare a list of samples associated with each contaminated blank. (Attach a separate sheet.)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case) must be

YES NO N/A

used to qualify sample data. Do not convert field blank results to account for the difference in soil CRQLs. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, spectral, instrument performance or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks. If gross contamination exists, all data in the associated samples should be qualified as unusable "R".

For:	Flag sample result with a "U" when:	Report CRQL & qualify "U" when:	No qualification is needed when:
Common Phthalate-Esters	Sample conc. is > CRQL, but ≤ 10× blank value.	Sample conc. is < CRQL and ≤ 10× blank value.	Sample conc. is > CRQL and > 10× blank value.
Other Conta-minants	Sample conc. is > CRQL, but ≤ 5× blank value.	Sample conc. is < CRQL and ≤ 5× blank value.	Sample conc. is > CRQL and > 5× blank value.

NOTE: Analytes qualified "U" for blank contamination are still treated as "hits" when qualifying for calibration criteria.

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [ ]

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For analytes with high concentration, use professional judgement on qualification of these values and make a note in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

YES NO N/

7.0 GC/MS Instrument Performance Check

7.1 Are the GC/MS Instrument Performance Check Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has an instrument performance check solution been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: List date, time, instrument ID, and sample number for which no associated GC/MS tuning data are valid.

SAMPLE NUMBERS	DATE	TIME	INSTRUMENT ID

ACTION: If the WAM cannot obtain missing data from the lab, reject "R" all data generated outside an acceptable twelve hour calibration interval.

7.4 Have the ion abundances been normalized to m/z 198 (see SOW, page D-61/SVOA)? [✓] ___ ___

NOTE: All ion abundance ratios must be normalized to m/z 198, the nominal base peak, even though the ion abundance of m/z 442 may up to 110% that of m/z 198.

ACTION: If mass assignment is in error, flag all associated sample data as unusable "R".

7.5 Have the ion abundance criteria been met for each instrument used? [✓] ___ ___

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

	YES	NO	N/A

ACTION: If ion abundance criteria are not met, the Region II TPO must be notified.

7.6 Are there any transcription/calculation errors between mass lists and Form Vs? (Check at least two values, but if errors are found check more.) [ ] [✓] [ ]

7.7 Is the number of significant figures for the reported relative abundances consistent with the number given for each ion in the ion abundance criteria column? [✓] [ ] [ ]

ACTION: If large errors exist, take action as specified in section 3.5 above.

7.8 Are the spectra of the mass calibration compound acceptable? [✓] [ ] [ ]

ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.

8.0 Target Compound List (TCL) Analytes (FORM I SV)

8.1 Are the Organic Analysis Data Sheets (Form I SV) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? [✓] [ ] [ ]

b. Matrix spikes and matrix spike duplicates? [✓] [ ] [ ]

c. Blanks? [✓] [ ] [ ]

8.2 Has GPC cleanup been performed on all soil/ sediment sample extracts? [✓] [ ] [ ]

ACTION: If data suggests that GPC was not performed, use professional judgement. Make note in Contract Problems/Non-Compliance section of the Data Assessment and the Organic Regional Data Assessment Summary.

8.3 Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (quant. reports) included in the sample package for each of the following:

a. Samples and/or fractions as appropriate? [✓] [ ] [ ]

	YES	NO	N/A
b. Matrix spikes and matrix spike duplicates (mass spectra not required)?	✓		
c. Blanks?	✓		

ACTION: If any data are missing, take action specified in 3.2 above.

8.4 Are the response factors shown in the quant. report?		✓	
8.5 Is chromatographic performance acceptable with respect to:			
Baseline stability?	✓		
Resolution?		✓	
Peak shape?	✓		
Full-scale graph (attenuation)?	✓		
Other:_____?			

ACTION: Use professional judgement to determine the acceptability of the data.

8.6 Are lab-generated standard mass spectra of identified BNA compounds present for each sample?	✓		

ACTION: If any mass spectra are missing, take action specified in 3.2 above. Note under Contract Non-compliance if lab does not generate their own standard spectra. If spectra are missing, reject all positive data.

8.7 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	✓		
8.8 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	✓		
8.9 Do sample and standard relative ion intensities agree within ±20%?	✓		

ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all

YES NO N/

such data should be rejected "R", flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected "U" at the calculated detection limit. In order to be positively identified, the data must comply with the criteria listed in 8.7, 8.8, and 8.9.

ACTION: When sample carry-over is a possibility, professional judgement should be used to determine if instrument cross-contamination has affected any positive compound identification.

9.0 Tentatively Identified Compounds (TIC)

9.1 Are all Tentatively Identified Compound Forms (Form I, Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "JN" qualifier? [✓] ___ ___

9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:

a. Samples and/or fractions as appropriate? [✓] ___ ___

b. Blanks? [✓] ___ ___

c. Alkanes listed for each sample? [✓] ___ ___

ACTION: If any TIC data are missing, take action specified in 3.2 above.

ACTION: Add "N" qualifier to all chemically named TICs, if missing.

9.3 Are any TCL compounds (from any fraction) listed as TIC compounds? (Example: 1,2-dimethylbenzene is xylene - a VOA TCL - and should not be reported as a TIC.) ___ [✓] ___

ACTION: Flag with "R" any TCL compound listed as a TIC.

9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum? [✓] ___ ___

9.5 Do TIC and "best match" standard relative ion intensities agree within ±20%? [✓] ___ ___

YES NO N/

ACTION: Use professional judgement to determine the acceptability of TIC identifications. If it is determined that an incorrect identification was made, change the identification to "unknown," or to some less specific identification (example: "C3 substituted benzene") as appropriate. Also, when a compound is not found in any blank, but is a suspected artifact of a common laboratory contaminant, the result should be qualified as unusable, "R".

9.6 Are any TICs with responses < 10% of the internal standard (as determined by inspection of the peak areas or height) reported? — ✓ —

ACTION: If yes, cross out questionable TIC(s).

10.0 Compound Quantitation and Reported Detection Limits

10.1 Are there any transcription/calculation errors in Form I results? (Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result.) — ✓ —

10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture? ✓ — —

ACTION: If errors are large, take action as specified in section 3.5 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" and its associated value on the original Form I and substituting the data from the analysis of the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form Is that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (quant. reports) present for initial and continuing calibration? ✓ — —

YES NO N/A

ACTION: If any calibration standard data are missing, take action specified in 3.2 above.

12.0 GC/MS Initial Calibration (Form VI)

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction? [✓] ___ ___

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are the % relative standard deviation (%RSD) values for BNAs ≤ 30% over the concentration range of the calibration? [ ] [✓] ___

ACTION: Circle all outliers with red pencil.

NOTE: Although 21 BNA compounds have a contractual minimum RRF and no maximum %RSD, the technical criteria are the same for all analytes.

NOTE: Eight BNA compounds do not require a 20ng standard. Refer to SOW section 7.2.4.5.1, page D-15/SVOA for a list of required compounds and contractual criteria.

ACTION: If the %RSD is > 30.0%, qualify positive results for that analyte "J" and non-detects using professional judgement. When %RSD is > 90%, flag all non-detect results for that analyte "R" (unusable) and all positive results "J" (estimated).

NOTE: Analytes previously qualified "U" due to blank contamination are still considered as "hits" when qualifying for calibration criteria.

12.3 Are any average RRFs < 0.05? [✓] [ ] ___

ACTION: Circle all outliers with red pencil.

ACTION: If the average RRF is < 0.05 then:

1. "R" all non-detects.

2. "J" all positive results.

12.4 Are there any transcription/calculation errors in the reporting of RRFs and/or %RSDs? (Check at least two values; if errors are found check more.) ___ [✓] ___

YES NO N/

ACTION: Circle errors with red pencil.

ACTION: If errors are large, take action as specified in section 3.5 above.

NOTE: Contract Requirement: The SOW allows up to four of the required analytes to fail contractual %RSD or RRF criteria provided the %RSD is ≤ 40% or RRF is ≥ 0.010. (See Table 5, page D-66/SVOA and analytes marked with a "*" on Form VI for a list of required analytes and contractual criteria.) Technical criteria, however, are the same for all analytes.

ACTION: If more than four analytes fail %RSD or RRF criteria, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction? [ ] ___ ___

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument? [ ] ___ ___

ACTION: List below all sample analyses that were not analyzed within twelve hours of a continuing calibration standard for each instrument used.

_____

_____

_____

ACTION: If any forms are missing, or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, contact the WAM to obtain an explanation/resubmittal from the lab. If continuing calibration data are unavailable, flag all associated sample data as unusable "R".

13.3 Does any BNA compound have a percent difference (%D) between the initial and continuing calibration RRFs which exceeds the ±25.0% criteria? ___ [ ] ___

YES NO N/A

ACTION: Circle all outliers with red pencil.

ACTION: Qualify both positive results and non-detects for the outlier compound(s) as estimated "J". When %D is > 90%, reject all non-detects for that analyte, "R", and qualify positive results "J" (estimated).

13.4 Are any continuing RRFs < 0.05? ___ [ ] ___

ACTION: Circle all outliers with red pencil.

ACTION: If the RRF is < 0.05, qualify as unusable (R) associated non-detects and "J" associated positive values.

NOTE: Contract Requirement: The SOW allows up to four of the required analytes to fail contractual %D and RRF criteria, provided that the %D is ≤ 40% and the RRF is ≥ 0.010. (See Table 5 page D-66/SVOA or analytes marked with a "*" on Form VI for a list of the required analytes.) Technical criteria, however, are the same for all analytes.

ACTION: If more than four analytes failed %D and RRF criteria, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Summary Form.

13.5 Are there any transcription/calculation errors in the reporting of average relative response factors (RRF) or %difference (%D) between initial and continuing RRFs? (Check at least two values, but if errors are found, check more.) ___ [ ] ___

ACTION: Circle errors with red pencil.

ACTION: If errors are large, take action as specified in section 3.5 above.

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits (-50% to +100%) for each continuing calibration? [ ] ___ ___

If no, was sample re-analyzed? [ ] ___ ___

YES NO N/A

ACTION: 1. Circle all outliers with red pencil.

2. List all the outliers below.

ACTION: If sample was not reanalyzed, document in Data Assessment in Contract Problems/Non-Compliance.

Sample #	Internal Std.	Area	Lower/Upper Limit
04F59	6		/
			/
			/
			/

(Attach additional sheets if necessary.)
(or attach copies of Form VIIIs)

ACTION: 1. If the internal standard area count is outside the "upper" or "lower" limit, flag with "J" all positive results and non-detects quantitated with this internal standard.

2. Do not qualify non-detects associated with IS area > 100%.

3. If the IS area in the sample is < 50%, qualify all analytes associated with that IS estimated (J). If area counts are extremely low (< 25% of the area in the 12 hour standard), or if performance exhibits a major abrupt drop-off, flag all associated non-detects as unusable (R) and positive hits estimated (J).

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? ✓ ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

NOTE: Contractual requirements state that if any internal standard fails the acceptance criteria, the sample must be re-analyzed. If the affected sample was not re-analyzed, document in the Data Assessment under Contract Problems/Non-Compliance.

YES NO N/

NOTE: See Notes in section 3.4, page 24 for a description of sample data the laboratory must submit.

15.0 Field Duplicates

15.1 Were any field duplicates submitted for BNA analysis? ☑ ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

YES NO N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records or SDG Narrative indicate any problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? — ✓ —

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be qualified as estimated "J". If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable "R".

ACTION: If samples were not iced, or if the ice was melted upon arrival at the laboratory, and the temperature of the cooler was elevated > 10^0 C, flag all positive results "J" and all non-detects "UJ".

ACTION: Check aqueous extraction log for sample pH, if adjustment was needed, it should have been noted in the SDG Narrative. If more information is needed, notify the WAM to contact the lab.

2.0 Holding Times

2.1 Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded? — ✓ —

NOTE: Technical Holding Times: Water and soil samples for PEST/PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

ACTION: If technical holding times are exceeded, flag all positive results as estimated "J" and sample quantitation limits "UJ" and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of

YES NO N/A

additional storage on the sample results. At a minimum, all the data should at least be qualified "J", but the reviewer may determine that non-detects are unusable "R".

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample Analyzed	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed

NOTE: Contractual Holding Times: Extraction of water samples must be completed within 5 days VTSR. Soil/sediment samples must be extracted within 10 days of VTSR. This requirement does not apply to Performance Evaluation (PE) samples. Extracts of water and soil/sediment samples must be analyzed within 40 days following start of extraction.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not technical and contractual holding times were met.

3.0 Surrogate Recovery (Form II)

3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water? [ ] ___ ___

b. Soil? [ ] ___ ___

3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices:

	YES	NO	N/
a. Low Water?	[ ]		✓
b. Soil?	[ ]		

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[ ]		

ACTION: Circle all outliers with red pencil.

3.4 Were surrogate recoveries of TCX or DCB outside of the contract specification for any sample, method blank or sulfur clean-up blank (30-150%)?		[ ]	

ACTION: In the absence of matrix interference, qualification of the data is not required in the following three situations:

1. When surrogates on both columns are diluted out.

2. When one surrogate on one column was outside (either above or below) the contract limits but above 10%.

3. When the same surrogate on both columns is above the contract limit.

If the same surrogate on both columns is below the contract limit but above 10%, check chromatograms for interference. The reviewer may use professional judgement, and qualify only those analytes which elute in the region of the GC chromatogram where interference was observed.

If the same surrogate on both columns is below the contract limit but above 10% (with no interference), qualify non-detects and positive hits "J" (estimated).

If recoveries for both surrogates on both columns are below the contract limit but above 10%, flag positive results and non-detects for that sample "J".

YES NO N/A

If recoveries are above the contract limit for both surrogates on both columns, then qualify positive values "J".

If both surrogates on one column are below the contract limit but above 10%, then use the data from the other column, providing both surrogates on that column are within contract limits. The validator must check from which column the concentration is reported for each analyte. If the value is reported from the failed column, then cross it out and use the value from the other column. Document this change in the Data Assessment.

If recovery is below 10% for either surrogate on any column, qualify positive results "J" and flag non-detects "R".

3.5 Were surrogate retention times (RT) within the windows established during the initial 3-point analysis of Individual Standard Mixture A (see Form VI Pest-1)? [ ] ___ ___

ACTION: If the RT limits are not met, positive results and non-detects for that sample may be qualified unusable, "R", based on professional judgement.

3.6 Are there any transcription/calculation errors between raw data and Form II? ___ [ ] ___

ACTION: If large errors exist, contact the WAM to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and document the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [ ] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices (one MS/MSD must be performed for every 20 samples of similar matrix or concentration level):

a. Low Water? [ ] ___ ___

YES NO N/

b. Soil? [ ] ___ ___

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

ACTION: Circle all outliers with red pencil.

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soil
_____ out of 12	_____ out of 12

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soil
_____ out of 6	_____ out of 6

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present? [ ] ___ ___

5.2 Frequency of Analysis: Has a reagent/method blank been analyzed for each SDG, every 20 samples of similar matrix and concentration level or each extraction batch, whichever is more frequent? [ ] ___ ___

ACTION: If any blank data are missing, take action as specified above in section 3.2. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method

	YES	NO	N/A
blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?	[✓]	___	___

ACTION: If sulfur clean-up blank data and Form IV are missing, take action as specified in 3.2 above.

5.4 Has a PEST/PCB instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?	[✓]	___	___

ACTION: If any blank data are missing, take action as specified in section 3.2 above.

5.5 Was the correct identification scheme used for all Pest/PCB blanks? (See page B-33, sec. 3.3.7.3 of the SOW for further information.)	[✓]	___	___

ACTION: Contact the WAM to obtain resubmittals or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.

5.6 Chromatography: review the blank raw data - chromatograms, quant. reports and data system printouts. Is the chromatographic performance (baseline stability) for each instrument acceptable?	[✓]	___	___

ACTION: Use professional judgement to determine the effect on the data.

6.0 Contamination

NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are not used to qualify the data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/reagent, instrument, or cleanup blanks show positive hits for pest/PCBs?	___	[✓]	___
6.2 If any method blanks and/or sulfur clean-up blanks contain "hits" for target compounds, are these hits greater than the CRQL for that			

	YES	NO	N/A
analyte?		[✓]	
6.3 In any instrument blanks, is the concentration of any target hit > 0.5 times CRQL for that analyte (see SOW, section 12.1.4.4.2, page D-77/PEST)?		[✓]	

NOTE: Most labs will report 0.5 times CRQLs on the instrument blank Form I instead of the actual method CRQLs. If the lab reported the actual CRQLs, then check if any detected hits are above 0.5 times the CRQLs reported on the Form I.

ACTION: If yes to any of the above questions: note in the Data Assessment under Contract Problems/Non-Compliance if any method or clean-up blanks contain hits > the CRQL, or of instrument blank contained hits > 0.5 times CRQL for that analyte.

6.4 Do any field/rinse blanks have positive pest/PCB results?		[✓]	

ACTION: Prepare a list of the samples associated with each contaminated blank. (Attach a separate sheet)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case or one per day) may be used to qualify data. Do not convert <u>field blank</u> results to account for the difference in soil CRQLs. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, and/or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

NOTE: When applied as directed in the table below, the contaminant concentration in method/instrument/reagent/cleanup blanks is multiplied by the sample dilution factor, where necessary.

If the laboratory has not already done so, the contaminant concentration in <u>soil</u> blanks is multiplied by 33 times the sample dilution factor and corrected for %moisture (fraction of solid) where necessary. 30 grams of sodium sulfate are used to prepare each soil reagent/method blank as instructed on page D-72/PEST, section 12.1.2.3.1. Ask the WAM

YES NO N/A

to contact the laboratory if the soil blanks are not reported in soil units (µg/kg).

Flag sample result with a "U":	Report CRQL & qualify "U":	No qualification is needed:
Sample conc. > CRQL, but ≤ 5× blank.	Sample conc. < CRQL & is ≤ 5× blank value.	Sample conc. > CRQL & > 5× blank value.

NOTE: If gross blank contamination exists, all data in the associated samples should be qualified as "R", unusable.

6.5 Are there field/rinse/equipment blanks associated with every sample? [ ] ___ ___

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For analytes with high concentrations, use professional judgement to qualify these values and document in the Data Assessment.

Exception: samples taken from a drinking water tap do not have associated field blanks.

7.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data Systems Printouts for both columns present for all samples, blanks and MS/MSD:

a. Peak resolution check? [✓] ___ ___

b. Performance evaluation mixtures? [✓] ___ ___

c. Aroclor 1016/1260? [✓] ___ ___

d. Aroclors 1221, 1232, 1242, 1248, 1254? [✓] ___ ___

e. Toxaphene? [✓] ___ ___

f. Low points individual mixtures A & B? [✓] ___ ___

g. Med points individual mixtures A & B? [✓] ___ ___

h. High points individual mixtures A & B? [✓] ___ ___

	YES	NO	N/A
i. Instrument blanks?	[✓]	___	___
j. Were the appropriate GC columns used as specified on pg. D-11/PEST, sections 6.23.3.1 to 6.23.3.7, in the SOW?	[✓]	___	___
7.2 Do the chromatograms for all Individual Standard Mixtures and PEM analyses display single component analytes at > 10% but < 100% of full scale (see sections 9.3.5.8.1 thru 9.3.5.8.4, pages D-32 & 33/PEST)?	[✓]	___	___
Have chromatograms for Individual Standard Mixtures and PEM analyses been replotted, showing scaling factor(s), to meet the above requirements when necessary?	[✓]	___	___

NOTE: All standard chromatograms must clearly display all peaks at > 10% but < 100% of full scale, and replotted if necessary to accommodate peaks not properly scaled in the initial chromatogram(s). Both the initial and replotted chromatograms must be submitted with the data package.

ACTION: If all single component peaks are not clearly displayed on chromatograms for all Individual Standard Mixtures and PEM analyses, notify the WAM to obtain resubmittal of the necessary data.

7.3 Are Forms VI PEST 1-7 present and complete for each column and each analytical sequence?	[✓]	___	___
7.4 Are there any transcription/ calculation errors between raw data and Forms VI?	___	[✓]	___
7.5 Do all standard retention times, including each pesticide in each level of Individual Mixtures A & B, fall within the windows established during the Initial Calibration (see Form VI PEST-1)?	[✓]	___	___

ACTION: If no, all samples in the entire analytical sequence are potentially affected. Check to see if the chromatograms contain peaks within an expanded window surrounding the expected

YES NO N/A

retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results "JN" and non-detects as unusable (R). For aroclors, the RT may be outside the window, but the aroclor may still be identified from its distinctive pattern.

7.6 Are the linearity criteria for the initial analyses of Individual Standards A & B within limits for both columns? (%RSD must be ≤ 25.0 for alpha and delta BHC, ≤ 30.0 for the two surrogates and ≤ 20% for all other analytes.) [ ] ___ ___

NOTE: Contractual requirements allow up to two single component TCL compounds, but not surrogates, on each column to exceed the criteria provided the %RSD is ≤ 30%. (See page D-28/Pest, sec. 9.2.5.7 in the SOW.) Technical criteria, however, are the same for all analytes.

ACTION: If technical criteria were not met, qualify all associated positive results generated during the entire analytical sequence "J" and all non-detects "UJ". When %RSD > 90%, flag all non-detect results for that analyte "R" (unusable).

ACTION: If more than two analytes failed %RSD, document in the Data Assessment Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary form.

7.7 Is the resolution between each pair of adjacent peaks in the Resolution Check Mixture ≥ 60.0% for both columns? (See Form VI PEST-4.) [✓] ___ ___

ACTION: If no, qualify positive results for compounds that were not adequately resolved "J". Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable (R).

7.8 Is Form VI PEST-5 present and complete for each Performance Evaluation Mixture (PEM) standard used for <u>both initial and continuing</u> calibrations (see SOW section 3.12.4.4, page B-52)? [ ] ___ ___

	YES	NO	N/A
ACTION: If no, take action as specified in section 3.2 above.			
7.9 For each PEM standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: Qualify positive results for compounds not adequately resolved estimated (J). Qualify non-detects based on professional judgement.			
7.10 Have Forms VI PEST-6 & PEST-7 been completed for all midpoint Individual Standards A and B used for initial calibration?	✓		
For each standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: If no, qualify positive results for compounds that were not adequately resolved estimated (J). Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable "R".			
7.11 Is Form VII Pest-1 present and complete for each PEM standard analyzed during the analytical sequence for both columns?	✓		
Was the %Breakdown of DDT and Endrin calculated using the equations given on page D-26/PEST, sec. 9.2.4.8 in the SOW?	✓		
Were all pesticides and surrogates in each PEM standard within the RT windows established during the Initial Calibration?	✓		
ACTION: If no, take action as specified in 3.2 above.			
7.12 Has the individual percent breakdown for DDT/Endrin exceeded 20.0% in any PEM on either column? (See Form VII PEST-1.)			
- for 4,4'-DDT?		✓	
- for Endrin?		✓	
Has the combined percent breakdown for DDT/Endrin			

YES NO N/A

exceeded 30.0% in any PEM on either column (required for all PEM analyses)? ___ ✓ ___

ACTION: 1. If any percent breakdown has failed the QC criteria in either PEM in steps 2 and 17 in the initial calibration sequence (page D-28/Pest, sec. 9.2.5.6 in the SOW), qualify all samples in the entire analytical sequence as described in sections 2.a, b and c below.

2. If any percent breakdown failed the QC criteria in a PEM calibration verification analysis, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described below.

a. 4,4'-DDT Breakdown: If DDT breakdown was > 20.0%:

i. Qualify all positive results for DDT with "J". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT unusable, "R".

ii. Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

b. Endrin Breakdown: If endrin breakdown was > 20.0%:

i. Qualify all positive results for endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for Endrin as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN".

c. Combined Breakdown: If the combined 4,4'-DDT and endrin breakdown is greater than 30.0%:

i. Qualify all positive results for DDT and Endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable

YES NO N/A

"R". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN". Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

7.13 Are all percent difference (%D) values for PEM analytes and surrogates on both columns ≥ -25% and ≤ +25.0%? (See Form VII PEST-1.) [✓] ___ ___

ACTION: If no, qualify all associated positive results generated during the analytical sequence "J" and sample quantitation limits "UJ".

NOTE: If the failing PEM is part of the initial calibration, all samples are potentially affected. If the offending standard is a calibration verification, the associated samples are those which followed the last in-control standard until the next passing standard.

7.14 Is Form VII Pest-2 present and complete for each INDA and INDB calibration verification analyzed? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above.

7.15 Are there any transcription/calculation errors between raw data and Form VII Pest-2? ___ [ ] ___

ACTION: If large errors exists, take action as specified in section 3.6 above.

7.16 Do all standard retention times for each INDA and INDB calibration verification fall within the RT windows established during the initial calibration sequence? (See Form VII PEST-2.) [✓] ___ ___

ACTION: If no, beginning with the samples which followed the last in-control standard, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised

YES NO N/A

RT window, qualify all positive results and non-detects as unusable (R).

7.17 Are all %D values for INDA and INDB calibration verification compounds ≥ -25.0% and ≤ +25.0%? [✓] ___ ___

ACTION: If the %D is outside the ±25.0% range for any compound(s), qualify associated positive results for that compound "J" and non-detects "UJ". The "associated samples" are those which followed the last in-control standard up to the next passing standard containing the analyte(s) in question. If the %D is > 90%, flag all non-detects for that analyte "R" (unusable).

8.0 Analytical Sequence Check (Form VIII-PEST)

8.1 Is Form VIII present and complete for each column and each period of analyses? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above.

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/EC instrument used.? (See SOW pages D-23 & D-58/PEST.) [✓] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

8.3 Were all samples analyzed within a 12 hour time period beginning with the injection of an instrument blank and bracketed by acceptable analyses of the proper standards? [✓] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Document in the Data Assessment under Contract Problems/Non-Compliance and Organic Regional Data Assessment Summary.

8.4 If a multi-component analyte was detected in a sample, was a matching multi-component standard analyzed within 72 hours of the injection of the

	YES	NO	N/A
sample and within a valid 12 hour sequence?	☑		

NOTE: This additional standard is for identification purposes only. Positive results for Aroclors and Toxaphene are quantitated from the initial calibration.

ACTION: If no, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

9.0 Cleanup Efficiency Verification (Form IX)

	YES	NO	N/A
9.1 Is Form IX PEST-1 present and complete for each lot of Florisil Cartridges used? (Florisil Cleanup is required for all Pest/PCB extracts.)	☑		
Are all samples listed on the Pesticide Florisil Cartridge Check Form?	☑		

ACTION: If no, take action specified in 3.2 above. If data suggests florisil clean-up was not performed, document in the Data Assessment under the Contract Non-compliance section.

	YES	NO	N/A
9.2 Are percent recoveries (%REC) of the pesticide and surrogate compounds used to check the efficiency of the florisil clean-up procedure within QC limits of 80 - 120%?	☑		

ACTION: Qualify only the analyte(s) which failed the recovery criteria as follows:

If %REC is < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 120%.

NOTE: Sample data should be evaluated for potential interferences if recovery of 2,4,5-trichlorophenol was > 5% in the Florisil Cartridge Performance Check analysis. Document any problems found in the Data Assessment under the Contract Problems/Non-Compliance section.

	YES	NO	N/A

9.3 If GPC Cleanup was performed (mandatory for all soil sample extracts), is Form IX Pest-2 present? [✓] ___ ___

Are all soil samples listed on Form IX Pest-2? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above. If data suggests GPC clean-up was not performed when required, document in the Data Assessment under the Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary.

Are the %REC values for all pesticides in the GPC calibration solution between 80 - 110%? [ ] ✓ ___ ___

ACTION: Qualify only those analytes which failed the recovery criteria as follows:

If %REC are < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 110%.

NOTE: An Aroclor mixture containing Aroclors 1016 and 1260 is also analyzed during GPC calibration; however, Aroclor data is not listed on Form IX PEST-2. The raw GPC data for Aroclors 1016/1260 must be evaluated for pattern similarity with previously analyzed Aroclor standards.

9.4 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-35, sec. 3.3.7.8 and 3.3.7.9 of the SOW for further information.

Was the correct identification scheme used for GPC and Florisil blanks? [✓] ___ ___

10.0 Pesticide/PCB Identification

10.1 Is Form X complete for every sample in which a pesticide or PCB was detected? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above.

YES NO N/

10.2 Are all sample chromatograms properly scaled, attenuated, etc. as required for proper identification of single and multi-component analytes? (Refer to SOW sections 11.3.7.1 thru 11.3.7.8, page D-70/Pest for specific details.) [✓] ___ ___

NOTE: Proper verification of Pest/PCB results depends on clear, legible presentation of the raw data. Single component pesticides and all peaks chosen for quantitation of multi-component analytes must appear at less than full scale. Toxaphene and PCB patterns must be clearly visible to enable comparison with standard chromatograms.

ACTION: If retention times or apex of peaks cannot be verified, or if multi-component peak patterns cannot be discerned, contact the WAM to obtain rescaled chromatograms from the lab.

10.3 Are there any transcription/calculation errors between raw data and Forms 10A and 10B? ✓ [ ] ___

ACTION: If large errors exist, take action as specified in section 3.6 above.

10.4 Are RTs of sample compounds within the established RT windows for analyses on both columns? [✓] ___ ___

Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/mℓ in the final extract)? [✓] ___ ___

ACTION: Use professional judgement to qualify positive results which were not confirmed by GC/MS analysis. Qualify as unusable (R) all positive results which were not confirmed on a second GC column. Also qualify as unusable (R) all positive results which do not meet RT window criteria, unless associated standard compounds are similarly biased. Use professional judgement to assign an appropriate quantitation limit.

10.5 Is the percent difference (%D) calculated for the positive sample results on both columns > 25.0%? ✓ [ ] ___

ACTION: If the reviewer finds neither column shows interference for the positive hits, the data should be flagged as follows:

YES NO N/A

% Difference	Qualifier
0 - 25%	None
25 - 70%	"J"
70 - 100%	"JN"
> 100% (No interference)	"R"
100 - 200% (Interference detected)*	"JN"
> 50% (Pesticide value is < CRQL)**	"U"
> 200%	"R"

* When the reported %D is 100 - 200%, but interference is detected on either column, qualify the data with "J".

** When the reported pesticide value is lower than the CRQL, and the %D is > 50%, raise the value to the CRQL and qualify "U", undetected.

NOTE: For Aroclors, if the %D is > 50%, but the pattern of GC peaks on both columns indicates a specific Aroclor is present, qualify that Aroclor "J".

NOTE: The lower of the two values is reported on Form I. If using professional judgement, the reviewer determines that the higher result was more acceptable, the reviewer should replace the value and indicate the reason for the change in the Data Assessment.

10.6 Check chromatograms for false negatives, especially the multiple-peak compounds (Toxaphene and the PCBs). Were there any false negatives? ___ [✓] ___

ACTION: Use professional judgement to decide if the compound should be reported. If the appropriate PCB standards were not analyzed within 72 hrs. of the sample(s) in question, qualify the data unusable "R".

Also note in Data Assessment under Contract Problems/Non-Compliance if the lab failed to analyze Aroclor standards when required.

11.0 Target Compound List (TCL) Analytes

11.1 Are the Organic Analysis Data Sheets (Form I Pest) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? [✓] ___ ___

b. Matrix spikes and matrix spike duplicates? [✓] ___ ___

	YES	NO	N/
c. Blanks?	[ ]	___	___
d. Instrument Blanks (per column & analysis)?	[ ]	___	___
11.2 Are the Pest chromatograms and quant. reports included in the sample data package for each of the following:			
a. Samples and/or fractions as appropriate?	[✓]	___	___
b. Matrix spikes and matrix spike duplicates?	[✓]	___	___
c. Blanks?	[✓]	___	___
d. Instrument Blanks (per column & analysis)?	[✓]	___	___
ACTION: If any data are missing, take action specified in 3.2 above.			
11.3 Are the calibration factors shown in the quant. reports?	[ ]	✓	___
11.4 Is chromatographic performance acceptable with respect to:			
a. Baseline stability?	[✓]	___	___
b. Resolution?	[✓]	___	___
c. Peak shape?	[✓]	___	___
d. Full-scale graph attenuation?	[✓]	___	___
e. Other: _____?	[ ]	___	___
11.5 Were any electropositive displacement (negative peaks) or unusual peaks seen?	___	[ ]	___
ACTION: Use professional judgement to determine the acceptability of the data. Address comments under System Performance section of the Data Assessment.			

12.0 Compound Quantitation and Reported Detection Limits

12.1 Are there any transcription/calculation errors in Form I results? Check at least two positive results. Were any errors found?	✓	[ ]	___

YES NO N/A

NOTE: Single-peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. Use professional judgement to decide whether a large discrepancy indicates the presence of an interfering compound. If an interfering compound is visible on the chromatogram, the lower of the two values should be reported and qualified as presumptively present at an approximated quantity "JN". This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has interfered with the evaluation of the second column confirmation.

12.2 Are the CRQLs adjusted to reflect sample dilutions? [ ] ___ ___

ACTION: If large errors exist, take action as specified in section 3.6 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQLs from the diluted sample). Replace concentrations which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

ACTION: Quantitation limits affected by large, off-scale peaks should be qualified as unusable (R). If the interference is on-scale, the reviewer may offer an approximated quantitation limit (UJ) for each affected compound.

NOTE: If a sample required greater than a 10 times dilution, then a 10 times more concentrated analysis must also be performed and submitted (see SOW, page D-60/PEST, section 10.2.3.5).

ACTION: If a more concentrated analysis is unavailable, document in the Contract Problems/Non-Compliance section of the Data Assessment. Use professional judgement to qualify non-detects and positive hits below the CRQL.

	YES	NO	N/A

13.0 Field Duplicates

13.1 Were any field duplicates submitted? ☑ ___ ___

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

DPO: [ ]ACTION [X]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO.: 27064 LABORATORY: COMPU

SDG NO.: BYF54 DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 7/23/99

NO. OF SAMPLES: ___ WATER 8 SOIL ___ OTHER

REVIEWER: [ ] ESD [X] ESAT [ ] OTHER, CONTRACTOR: _____

QC ITEM	VOA	BNA	PEST	
HOLDING TIMES	M	M	O	
GC-MS PERFORMANCE	O	O	NA	
INITIAL CALIBRATIONS	O	O	O	
CONTINUING CALIBRATIONS	O	O	O	
FIELD BLANKS(F = N/A)	NA	NA	NA	
LABORATORY BLANKS	M	X	O	
SURROGATES	O	O	Z	
MATRIX SPIKE/DUPLICATES	O	O	O	
QC SAMPLES(LCS, PVS)	NA	NA	NA	
INTERNAL STANDARDS	O	X	NA	
COMPOUND IDENTIFICATION	O	O	M	
COMPOUND QUANTITATION	O	O	O	
SYSTEM PERFORMANCE	O	O	O	
OVERALL ASSESSMENT	M	M	Z	

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

CADRE reports, especially for the pesticide fraction, were extremely inaccurate and required numerous corrections.

DATA REJECTION SUMMARY

Type of Review: Organic **Date:** 7/23/99 **Case/SDG No.:** 27064/BYF54

Site Name: Amenia Landfill **Lab Name:** COMPU

Reviewer's Initials: [signature] **Number of Samples, including REs, DLs and QC:** 18

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples		
VOA(33)								11	0 / 363	=	0.0 %
ACID(14)			4					14	4 / 196	=	2.0 %
B/N(50)						7		14	7 / 700	=	1.0 %
PEST(21)	26				8			18	34 / 378	=	9.0 %
PCB(7)	13							18	13 / 126	=	10.3 %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples		
VOA(33)		363		22				11	385 / 363	=	106.1 %
ACID(14)		84	4					14	88 / 196	=	44.9 %
B/N(50)		300	22	1				14	323 / 700	=	46.1 %
PEST(21)					112			18	112 / 378	=	29.6 %
PCB(7)	2							18	2 / 126	=	1.6 %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

COMPUCHEM
a division of Liberty Analytical Corp.

10/JUL/99

Ms. Jennifer Feranda
USEPA Region II, DESA
2890 Woodbrige Avenue
Building 10, MS 103
Edison, NJ 08837

REPORT OF DATA FOR - EPA CASE# 27064 SDG# BYF54

CC#	SMO OTR #	MATRIX	RECEIPT DATE
944753	BYF54	SO	6/11/99
944762	BYF55	SO	6/11/99
944763	BYF56	SO	6/11/99
944764	BYF57	SO	6/11/99
944765	BYF58	SO	6/11/99
944766	BYF59	SO	6/11/99
944767	BYF60	SO	6/11/99
944768	BYF61	SO	6/11/99

TOTAL NUMBER OF SAMPLES = 8

501 Madison Avenue ■ Cary, N.C. 27513 ■ Tel: 919-379-4100 ■ Fax: 919-379-4050

a Division of Liberty Analytical
501 N. Madison Avenue
Cary, NC 27513

JUL 12 1999

SDG NARRATIVE
CASE:27064
SDG:BYF54
CONTRACT:68D50009

SAMPLE IDENTIFICATIONS: BYF54 BYF55 BYF56 BYF57 BYF58 BYF59 BYF60 BYF61

The eight(8) soil samples listed above were received intact, with proper chain of custody(COC) documentation on June 11 1999. The samples were received at 2 degrees C. All of these samples were submitted for volatile, semivolatile,and pesticide analysis. The samples were prepared and analyzed following Contract Laboratory Protocol (CLP) Statement of Work(SOW),document OLM03.2 protocol.

VOLATILES:
Percent moisture ranged from 3 to 13 percent.
Analysis holding time requirements were met for all of the submitted samples, with the exception of the matrix spike of BYF54.
The volatile Target Compound List(TCL)analytes methylene chloride, acetone, 2-butanone, and tetrachloroethene the most frequently identified. Methylene chloride was the only TCL analyte identified above the Contract Required Quantitation Limit(CRQL) with any frequency.
The bromofluorobenzene SMC compound failed high for recovery in BYF55. This was documented as matrix interference by reanalysis. We have reported and billed for both analyses. This same SMC failed high in the matrix spike duplicate.

Other than laboratory artifact peaks, Tentatively Identified Compounds(TICs) were identified in BYF59 and BYF60.These TICs were generally chracterized as substituted benzenes.

All of the system monitoring compounds(SMC) met recovery criteria(except as noted above), and all of the internal standards met response and retention time criteria in the analyses of these samples.

The associated method blanks met all quality control criteria, and did not contain any TCL analytes above the CRQL.

The associated storage blank also met all quality control criteria and contained acetone and methylene chloride below the CRQL.

Manual quantitiations were performed on one or more process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of this SDG.

BYF54 was used as the original to prepare duplicate matrix spikes as requested. The associated duplicate matrix spikes met all spike compound QC accuracy and precision criteria without exception.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee,as verified by the following signature.

Roy M. Sutton
Development Chemist
June 25, 1999

COMPUCHEM
A division of Liberty Analytical Corporation
501 Madison Ave.
Cary, NC 27513

SDG NARRATIVE

CASE #27064
SDG #BYF54
CONTRACT #68D50009

SAMPLES: BYF54, BYF55, BYF56, BYF57, BYF58, BYF59, BYF60, BYF61

This portion of the SDG narrative deals with the semivolatile fractions for the eight samples above only. For the receiving information associated with these samples, please refer to the volatile SDG narrative.

All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for Case #27064, SDG #BYF54 are included in the sample data sections.

SEMIVOLATILE

The semivolatile fractions were extracted and analyzed within the required holding time, with the exceptions of samples BYF54 and BYF55. Due to the results of Low Level screen analyses, Medium Level Soil extractions were required for these two samples and the duplicate matrix spikes prepared from sample BYF54. The medium level extractions, however, were performed outside of the required holding time.

The percent moisture values for the samples ranged from 3% to 13% and the pH values ranged from 3.2 to 7.9.

Bis(2-ethylhexyl)phthalate was detected at concentrations above the Contract Required Quantitation Limit (CRQL) in seven of the samples.

Three to thirty-one Tentatively Identified Compounds (TIC) were detected in the samples. Many of these TICs were assessed as unknowns, amides, aldehydes, substituted benzenes, substituted phenols, pesticide compounds, PCBs, carboxylic acids, acid esters, atrazines, phosphoric acids and phthalates. Other TICs were detected and assessed as unknown alkanes in some of the samples. The TICs that were characterized as alkanes have been summarized on the Form 1FAs that are located in the narrative section of the data package. The TIC spectra for the alkanes are located in the data section for the individual samples.

Samples BYF56 and BYF57 were initially analyzed undiluted. In these analyses, the amounts of bis(2-ethylhexyl)phthalate exceeded the instrument's upper analytical range as defined by the highest level standard in the Initial Calibration. The samples were reanalyzed diluted in order to bring the amounts within the range. The undiluted and diluted analyses of each of the samples have been reported and billed for.

Due to the results of diluted screen analyses, samples BYF58, BYF59 and BF60 were analyzed diluted. The chromatograms from the diluted screen analyses have been included with the sample data.

QC SUMMARY

The surrogates met recovery criteria for the semivolatile fractions.

The internal standards met area response and retention time criteria, with one exception. In the 10x dilution analysis of sample BYF59, the area response of d12-perylene varied considerably from the response in the associated Continuing Calibration. The sample was reanalyzed at a higher dilution. In this analysis, the detected target analytes were present at concentration levels which precluded accurate quantitation. The internal standard d12-perylene, however, failed response criteria in this analysis. Only the results for the 10x dilution analysis has been reported for sample BYF59.

The Low Level soil duplicate matrix spikes met accuracy and precision criteria, with some exceptions. The recoveries of 1,2,4-trichlorobenzene and pyrene failed acceptance criteria in the MS and MSD. The relative percent difference values for acenaphthene and pyrene failed acceptance criteria in the comparison of the duplicate matrix spikes.

The associated blanks, Initial Calibrations and Continuing Calibrations met Quality Control criteria.

In the analyses of the Initial and Continuing Calibration standards and samples BYF54, BYF56, BYF57, BYF58, BYF59, BYF60 and BYF61, manual quantitations were performed. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature:

Patricia B. Hopkins

Patricia B. Hopkins
Final Technical Review
9 July 1999

Note: This report is paginated for reference and accountability in numerical sequence.

ALKANE NARRATIVE REPORT
Report date : 07/09/1999
SDG: BYF54

Client Sample ID: BYF56 Lab Sample ID: 944763 File ID: GH044763B66

Compound	RT	Est. Conc.	Q
Unknown Alkane	20.82	297.6	J

Client Sample ID: BYF61 Lab Sample ID: 944768 File ID: GJ044768B66

Compound	RT	Est. Conc.	Q
Unknown Alkane	21.23	76.06	J
Unknown Alkane	21.92	101.6	J
Unknown Alkane	22.67	306.3	J
Unknown Alkane	24.48	460.0	J
Unknown Alkane	26.98	133.8	J

CompuChem
A division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG Narrative
Case: 27064
SDG: BYF54
Contract: 68D50009

Sample Identifications: **BYF54, BYF55, BYF56, BYF57, BYF58, BYF59, BYF60, BYF61**

This portion of the SDG narrative covers only the pesticide fractions of the 8 (8) samples listed above. For the receiving information pertaining to these samples, please refer to the portion of the SDG narrative that covers to the volatile fractions.

PESTICIDE

Extraction and analytical holding time requirements were met for each sample. Target analytes were present above the reporting limits in each of the samples. Samples BYF54, BYF55, BYF56, BYF57, BYF58, BYF59, and BYF60 were each analyzed at a dilution as well as neat due to target compounds that exceeded the calibration range. Samples BYF56 required GCMS confirmation for gamma-BHC and sample BYF57 required GCMS confirmation for gamma-BHC, Aldrin and Dieldrin. An aliquot of each of these two samples and the corresponding method blank were concentrated and analyzed by GCMS. No target compounds were present in the blank. The compounds requiring confirmation in the samples confirmed as positive hits.

The surrogate, Decachlorobiphenyl, was outside the method limits for BYF54, BYF55, BYF54MSD, BYF59, BYF60, BYF57 due to sample matrix interference. The surrogates for the dilute analyses (BYF56DL, BYF57DL, BYF54DL, BYF55DL, BYF60DL, BYF59DL) did not meet the method limits due to sample dilution and matrix interference. The retention time criteria met method requirements for all analyses.

The associated method blank met all quality control criteria. Sample BYF54 was used for the matrix spike/matrix spike duplicate extraction and analysis. Both matrix spikes exhibited recoveries outside the method limits due to matrix interference.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Katrina L. Travis
GC/HPLC Supervisor
June 25, 1999

ORIGINAL

COMPUCHEM
a division of Liberty Analytical
501 Madison Avenue
Cary, NC 27513

SAMPLE DELIVERY GROUP(SDG)
TRAFFIC REPORT COVER SHEET

Lab Name: CompuChem Contract: 68 D50009

Lab Code: **COMPU** Case No. 27064

Full Sample Analysis Price in Contract:

SDG No./ First Sample in SDG: BYF54 Sample Receipt Date 6/11/99
(Lowest EPA Sample Number in first shipment of samples received under SDG)
month DAY Year

Last Sample in SDG: BYF61 Sample Receipt Date 6/11/99
(Highest EPA Sample Number in last shipment of samples received under SDG)
Month Day Year

EPA Sample Numbers in the SDG (listed in alphanumeric order):

1.)	BYF54	11.)	
2.)	BYF55	12.)	
3.)	BYF56	13.)	
4.)	BYF57	14.)	
5.)	BYF58	15.)	
6.)	BYF59	16.)	
7.)	BYF60	17.)	
8.)	BYF61 Last Sample in SDG M.S. 6/11/99	18.)	
9.)		19.)	
10.)		20.)	

M.S. 6/11/99

NOTE: There is a maximum of 20 field samples in one SDG.

Signature: Melissa Stein Date: 6-11-99

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF54

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GH044753A57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 12 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	~~9~~	~~JBU~~
67-64-1	Acetone	~~5~~	~~J~~ U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF54

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GRO44753B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	7800	U
111-44-4	bis(2-Chloroethyl)ether	11000	U
95-57-8	2-Chlorophenol	11000	U
541-73-1	1,3-Dichlorobenzene	11000	U
106-46-7	1,4-Dichlorobenzene	11000	U
95-50-1	1,2-Dichlorobenzene	11000	U
95-48-7	2-Methylphenol	11000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11000	U
106-44-5	4-Methylphenol	11000	U
621-64-7	N-Nitroso-di-n-propylamine	11000	U
67-72-1	Hexachloroethane	11000	U
98-95-3	Nitrobenzene	11000	U
78-59-1	Isophorone	11000	U
88-75-5	2-Nitrophenol	11000	U
105-67-9	2,4-Dimethylphenol	11000	U
111-91-1	bis(2-Chloroethoxy)methane	11000	U
120-83-2	2,4-Dichlorophenol	11000	U
120-82-1	1,2,4-Trichlorobenzene	11000	U
91-20-3	Naphthalene	11000	U
106-47-8	4-Chloroaniline	11000	U
87-68-3	Hexachlorobutadiene	11000	U
59-50-7	4-Chloro-3-methylphenol	11000	U
91-57-6	2-Methylnaphthalene	11000	U
77-47-4	Hexachlorocyclopentadiene	11000	U
88-06-2	2,4,6-Trichlorophenol	11000	U
95-95-4	2,4,5-Trichlorophenol	28000	U
91-58-7	2-Chloronaphthalene	11000	U
88-74-4	2-Nitroaniline	28000	U
131-11-3	Dimethylphthalate	11000	U
208-96-8	Acenaphthylene	11000	U
606-20-2	2,6-Dinitrotoluene	11000	U
99-09-2	3-Nitroaniline	28000	U
83-32-9	Acenaphthene	11000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF54

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GRO44753B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	28000	U
100-02-7	4-Nitrophenol	28000	U
132-64-9	Dibenzofuran	11000	U
121-14-2	2,4-Dinitrotoluene	11000	U
84-66-2	Diethylphthalate	11000	U
7005-72-3	4-Chlorophenyl-phenylether	11000	U
86-73-7	Fluorene	11000	U
100-01-6	4-Nitroaniline	28000	U
534-52-1	4,6-Dinitro-2-methylphenol	28000	U
86-30-6	N-nitrosodiphenylamine (1)	11000	U
101-55-3	4-Bromophenyl-phenylether	11000	U
118-74-1	Hexachlorobenzene	11000	U
87-86-5	Pentachlorophenol	28000	U
85-01-8	Phenanthrene	11000	U
120-12-7	Anthracene	11000	U
86-74-8	Carbazole	11000	U
84-74-2	Di-n-butylphthalate	11000	U
206-44-0	Fluoranthene	11000	U
129-00-0	Pyrene	11000	U
85-68-7	Butylbenzylphthalate	11000	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	11000	U
218-01-9	Chrysene	11000	U
117-81-7	bis(2-Ethylhexyl)phthalate	54000	B
117-84-0	Di-n-octylphthalate	11000	U
205-99-2	Benzo(b)fluoranthene	11000	U
207-08-9	Benzo(k)fluoranthene	11000	U
50-32-8	Benzo(a)pyrene	11000	U
193-39-5	Indeno(1,2,3-cd)pyrene	11000	U
53-70-3	Dibenzo(a,h)anthracene	11000	U
191-24-2	Benzo(g,h,i)perylene	11000	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF54

Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 12 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/21/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.9	RNJ
319-85-7	beta-BHC	25	RJ
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	~~220~~ 140	ERJ
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	~~57*~~ 38	EJ
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	33	RNJ
72-55-9	4,4'-DDE	~~5.6~~	PR
72-20-8	Endrin	3.8 ~~1.6~~	JPU
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8 ~~2.3~~	JPU
50-29-3	4,4'-DDT	~~20~~	PR
72-43-5	Methoxychlor	58	
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	1.9 ~~0.41~~	JPU
5103-74-2	gamma-Chlordane	2.2	
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

*Result transferred from BYF54

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF54

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gh044753a57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 12 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF54

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944753

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GRO44753B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.21	3200	J
2.		UNKNOWN	10.94	3500	J
3.		UNKNOWN	11.10	4800	J
4.		UNKNOWN	13.38	3500	J
5.	1912-24-9	ATRAZINE	13.98	87000	NJB
6.	5915-41-3	TERBUTHYLAZINE	14.19	18000	NJ
7.	102-54-5	FERROCENE	14.35	3400	NJ
8.		UNKNOWN	15.19	15000	J
9.	80-05-7	PHENOL, 4,4'-(1-METHYLETHYLI	17.38	17000	NJ
10.	5836-10-2	CHLOROPROPYLATE	17.99	3400	NJ
11.		UNKNOWN	21.13	2500	J
12.		UNKNOWN	21.38	3100	J
13.		UNKNOWN	21.66	2400	J
14.		UNKNOWN	22.04	4000	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GR044762B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	21	U
67-64-1	Acetone	5	J U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	2	J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	6	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GR044762B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	11000	U J
111-44-4	bis(2-Chloroethyl)ether	11000	U
95-57-8	2-Chlorophenol	11000	U
541-73-1	1,3-Dichlorobenzene	11000	U
106-46-7	1,4-Dichlorobenzene	11000	U
95-50-1	1,2-Dichlorobenzene	11000	U
95-48-7	2-Methylphenol	11000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	11000	U
106-44-5	4-Methylphenol	11000	U
621-64-7	N-Nitroso-di-n-propylamine	11000	U
67-72-1	Hexachloroethane	11000	U
98-95-3	Nitrobenzene	11000	U
78-59-1	Isophorone	11000	U
88-75-5	2-Nitrophenol	11000	U
105-67-9	2,4-Dimethylphenol	11000	U
111-91-1	bis(2-Chloroethoxy)methane	11000	U
120-83-2	2,4-Dichlorophenol	11000	U
120-82-1	1,2,4-Trichlorobenzene	11000	U
91-20-3	Naphthalene	11000	U
106-47-8	4-Chloroaniline	11000	U
87-68-3	Hexachlorobutadiene	11000	U
59-50-7	4-Chloro-3-methylphenol	11000	U
91-57-6	2-Methylnaphthalene	11000	U
77-47-4	Hexachlorocyclopentadiene	11000	U
88-06-2	2,4,6-Trichlorophenol	11000	U
95-95-4	2,4,5-Trichlorophenol	29000	U
91-58-7	2-Chloronaphthalene	11000	U
88-74-4	2-Nitroaniline	29000	U
131-11-3	Dimethylphthalate	11000	U
208-96-8	Acenaphthylene	11000	U
606-20-2	2,6-Dinitrotoluene	11000	U
99-09-2	3-Nitroaniline	29000	U
83-32-9	Acenaphthene	11000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GR044762B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	29000	U
100-02-7	4-Nitrophenol	29000	U
132-64-9	Dibenzofuran	11000	U
121-14-2	2,4-Dinitrotoluene	11000	U
84-66-2	Diethylphthalate	11000	U
7005-72-3	4-Chlorophenyl-phenylether	11000	U
86-73-7	Fluorene	11000	U
100-01-6	4-Nitroaniline	29000	U
534-52-1	4,6-Dinitro-2-methylphenol	29000	U
86-30-6	N-nitrosodiphenylamine (1)	11000	U
101-55-3	4-Bromophenyl-phenylether	11000	U
118-74-1	Hexachlorobenzene	11000	U
87-86-5	Pentachlorophenol	29000	U
85-01-8	Phenanthrene	11000	U
120-12-7	Anthracene	11000	U
86-74-8	Carbazole	11000	U
84-74-2	Di-n-butylphthalate	11000	U
206-44-0	Fluoranthene	11000	U
129-00-0	Pyrene	11000	U
85-68-7	Butylbenzylphthalate	11000	U
91-94-1	3,3'-Dichlorobenzidine	11000	U
56-55-3	Benzo(a)anthracene	11000	U
218-01-9	Chrysene	11000	U
117-81-7	bis(2-Ethylhexyl)phthalate	46000	B
117-84-0	Di-n-octylphthalate	11000	U
205-99-2	Benzo(b)fluoranthene	11000	U
207-08-9	Benzo(k)fluoranthene	11000	U
50-32-8	Benzo(a)pyrene	11000	U
193-39-5	Indeno(1,2,3-cd)pyrene	11000	U
53-70-3	Dibenzo(a,h)anthracene	11000	U
191-24-2	Benzo(g,h,i)perylene	11000	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	~~BR~~
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	160* ~~110~~	~~ER~~
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	15	RJ
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	21	RJ
72-55-9	4,4'-DDE	6.1	
72-20-8	Endrin	3.8 ~~2.2~~	~~JP~~ U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8	U
1031-07-8	Endosulfan sulfate	3.8	U
50-29-3	4,4'-DDT	~~21~~	~~PR~~
72-43-5	Methoxychlor	180	RJ
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	3.0	RNJ
5103-74-2	gamma-Chlordane	~~2.3~~	~~PR~~
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

* Result transferred from BYF55DL.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gr044762b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF55

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944762

Sample wt/vol: 1.0 (g/mL) G Lab File ID: GR044762B66

Level: (low/med) MED Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/29/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.4

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.85	7600	J
2.	70-55-3	BENZENESULFONAMIDE, 4-METHYL	13.40	3200	NJ
3.	1912-24-9	ATRAZINE	13.98	57000	NJB
4.	5915-41-3	TERBUTHYLAZINE	14.19	19000	NJ
5.		UNKNOWN	15.20	3500	J
6.	834-12-8	1,3,5-TRIAZINE-2,4-DIAMINE,	15.27	180000	NJ
7.	510-15-6	CHLOROBENZILATE	17.99	2700	NJ
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF56

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GH044763A57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	21	B U
67-64-1	Acetone	3	J U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	4	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF56

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044763B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/25/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	950	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	950	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF56

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044763B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/25/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	950	U
100-02-7	4-Nitrophenol	950	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	950	U
534-52-1	4,6-Dinitro-2-methylphenol	950	U
86-30-6	N-nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	950	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	110	J
85-68-7	Butylbenzylphthalate	55	J
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	3700 → ~~32000~~	EB
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

* Result transferred from dilution analysis.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF56

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/22/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	590* ~~300~~	~~EPCJ~~
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	170* ~~110~~	~~EPJ~~
1024-57-3	Heptachlor epoxide	2.8	
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	120* ~~74~~	~~E~~
72-55-9	4,4'-DDE	5.1	
72-20-8	Endrin	3.8	U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8 ~~1.4~~	~~JP~~ U
1031-07-8	Endosulfan sulfate	3.8 ~~1.3~~	~~JP~~ U
50-29-3	4,4'-DDT	24	~~P~~ NJ
72-43-5	Methoxychlor	85	~~P~~ J
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	2.0	U
5103-74-2	gamma-Chlordane	2.0 ~~0.45~~	~~JP~~ U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

* Result transferred from BYF56DL.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF56

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gh044763a57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		LABORATORY ARTIFACT	21.99	~~14~~	~~J~~ R
2.					
3.					
4.					
5.					
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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF56

[redacted] Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944763

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044763B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/25/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 4.0

Number TICs found: 27

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		TRIMETHYLBENZENE	4.57	180	J
2.	70-55-3	BENZENESULFONAMIDE, 4-METHYL	11.09	660	NJ
3.		UNKNOWN	11.22	280	J
4.	1912-24-9	ATRAZINE	11.41	630	NJ
[redacted]	1912-24-9	ATRAZINE	11.90	83000	NJ
[redacted]	5915-41-3	TERBUTHYLAZINE	11.99	10000	NJ
[redacted]		UNKNOWN	12.06	660	J
8.	26259-45-0	SECBUMETON	12.16	370	NJ
9.		UNKNOWN PHTHALATE	12.39	340	J
10.		UNKNOWN	12.72	1300	J
11.	834-12-8	1,3,5-TRIAZINE-2,4-DIAMINE,	12.78	290	NJ
12.	7287-19-6	1,3,5-TRIAZINE-2,4-DIAMINE,	12.81	390	NJ
13.		UNKNOWN	14.44	140	J
14.	510-15-6	CHLOROBENZILATE	15.06	660	NJ
15.		UNKNOWN	15.55	130	J
16.		UNKNOWN	16.48	120	J
17.		METHYLPHENYLPHOSPHORIC ACID	17.79	210	J
18.		METHYLPHENYLPHOSPHORIC ACID	18.02	410	J
19.		METHYLPHENYLPHOSPHORIC ACID	18.23	390	J
20.		UNKNOWN	18.28	200	J
21.		UNKNOWN	18.42	210	J
22.		UNKNOWN	18.51	260	J
23.		UNKNOWN	18.93	180	J
24.		UNKNOWN	19.53	380	J
25.		UNKNOWN	19.61	270	J
26.		UNKNOWN	20.98	320	J
27.		UNKNOWN	22.09	230	J
28.					
29.					
30.					

[redacted]

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF57

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GR044764B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	29	U
67-64-1	Acetone	5	J U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF57

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044764B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/25/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	76	J
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	950	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	950	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF57

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044764B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/25/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	950	U
100-02-7	4-Nitrophenol	950	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	950	U
534-52-1	4,6-Dinitro-2-methylphenol	950	U
86-30-6	N-nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	950	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	42	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	14000* ~~17000~~	~~EB~~
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

* Result transferred from dilution analysis.

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF57

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 13 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/22/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
319-85-7	beta-BHC	36	ERJ
319-86-8	delta-BHC	2.0	U
58-89-9	gamma-BHC (Lindane)	450* ~~250~~	~~ERCJ~~
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	500 * ~~280~~	~~EC~~ J
1024-57-3	Heptachlor epoxide	2.0	U
959-98-8	Endosulfan I	2.0	U
60-57-1	Dieldrin	300 NJ* ~~180~~	~~ERCNJ~~
72-55-9	4,4'-DDE	4.2	
72-20-8	Endrin	4.5	
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	3.8 ~~0.78~~	~~JP~~ U
1031-07-8	Endosulfan sulfate	1.4	J
50-29-3	4,4'-DDT	30	RNJ
72-43-5	Methoxychlor	20 ~~19~~	~~JP~~ U
53494-70-5	Endrin ketone	16	RJ
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	2.0 ~~0.25~~	~~JP~~ U
5103-74-2	gamma-Chlordane	2.0	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	77	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

+ Reanalyzed from BYF57DL

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF57

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gr044764b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 13 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1F

EPA SAMPLE NO.

BYF57

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944764

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GH044764B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 06/25/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.7

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2953-29-9	PHOSPHORODITHIOIC ACID, O,O,	6.26	450	NJ
2.		UNKNOWN	7.20	200	J
3.	103-90-2	ACETAMINOPHEN	8.66	270	NJ
4.	70-55-3	BENZENESULFONAMIDE, 4-METHYL	11.20	12	NJ
5.		UNKNOWN	11.36	14	J
6.	1912-24-9	ATRAZINE	11.45	29	NJ
7.	1610-18-0	PROMETON	11.64	280	NJ
8.	1912-24-9	ATRAZINE	11.81	770	NJ
9.	1912-24-9	ATRAZINE	12.16	3800	NJ
10.	5915-41-3	TERBUTHYLAZINE	12.22	230	NJ
11.		UNKNOWN	12.27	40	J
12.	26259-45-0	SECBUMETON	12.30	12	NJ
13.		UNKNOWN PHTHALATE	12.46	8	J
14.		UNKNOWN	12.76	11	J
15.	7287-19-6	1,3,5-TRIAZINE-2,4-DIAMINE,	12.87	16	NJ
16.	886-50-0	TERBUTRYN	13.02	14	NJ
17.	950-37-8	METHIDATHION	14.08	15	NJ
18.	0-00-0	2-HYDROXYMANDELIC ACID, ETHY	14.20	390	NJ
19.		DIELDRIN	14.60	110	J
20.	5836-10-2	CHLOROPROPYLATE	15.06	470	NJ
21.		UNKNOWN	15.55	150	J
22.		UNKNOWN	15.65	150	J
23.	115-86-6	PHOSPHORIC ACID, TRIPHENYL E	16.06	280	NJ
24.	1330-78-5	PHOSPHORIC ACID, TRIS(METHYL	17.79	200	NJ
25.	563-04-2	PHOSPHORIC ACID, TRIS(3-METH	18.00	670	NJ
26.		UNKNOWN	18.07	400	J
27.	1330-78-5	PHOSPHORIC ACID, TRIS(METHYL	18.23	610	NJ
28.		PCB	18.34	260	J
29.		UNKNOWN	18.49	380	J
30.	87048-84-8	1-METHYL-1-(P-TERT-BUTYLPHEN	19.51	3000	NJ

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF58

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GR044765B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 12 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	14	U
67-64-1	Acetone	11 3	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	4	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF58

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G3D44765A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/08/99

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	7500	U
111-44-4	bis(2-Chloroethyl)ether	7500	U
95-57-8	2-Chlorophenol	7500	U
541-73-1	1,3-Dichlorobenzene	7500	U
106-46-7	1,4-Dichlorobenzene	7500	U
95-50-1	1,2-Dichlorobenzene	7500	U
95-48-7	2-Methylphenol	7500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	7500	U
106-44-5	4-Methylphenol	7500	UJ
621-64-7	N-Nitroso-di-n-propylamine	7500	U
67-72-1	Hexachloroethane	7500	U
98-95-3	Nitrobenzene	7500	U
78-59-1	Isophorone	7500	U
88-75-5	2-Nitrophenol	7500	U
105-67-9	2,4-Dimethylphenol	7500	U
111-91-1	bis(2-Chloroethoxy)methane	7500	U
120-83-2	2,4-Dichlorophenol	7500	U
120-82-1	1,2,4-Trichlorobenzene	7500	U
91-20-3	Naphthalene	7500	U
106-47-8	4-Chloroaniline	7500	U
87-68-3	Hexachlorobutadiene	7500	U
59-50-7	4-Chloro-3-methylphenol	7500	U
91-57-6	2-Methylnaphthalene	7500	U
77-47-4	Hexachlorocyclopentadiene	7500	U
88-06-2	2,4,6-Trichlorophenol	7500	U
95-95-4	2,4,5-Trichlorophenol	19000	U
91-58-7	2-Chloronaphthalene	7500	U
88-74-4	2-Nitroaniline	19000	U
131-11-3	Dimethylphthalate	7500	U
208-96-8	Acenaphthylene	7500	U
606-20-2	2,6-Dinitrotoluene	7500	U
99-09-2	3-Nitroaniline	19000	U
83-32-9	Acenaphthene	7500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF58

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G3D44765A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/08/99

Injection Volume: 2.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	19000	U
100-02-7	4-Nitrophenol	19000	UJ
132-64-9	Dibenzofuran	7500	U
121-14-2	2,4-Dinitrotoluene	7500	U
84-66-2	Diethylphthalate	7500	U
7005-72-3	4-Chlorophenyl-phenylether	7500	U
86-73-7	Fluorene	7500	U
100-01-6	4-Nitroaniline	19000	UJ
534-52-1	4,6-Dinitro-2-methylphenol	19000	U
86-30-6	N-nitrosodiphenylamine (1)	7500	U
101-55-3	4-Bromophenyl-phenylether	7500	U
118-74-1	Hexachlorobenzene	7500	U
87-86-5	Pentachlorophenol	19000	U
85-01-8	Phenanthrene	7500	U
120-12-7	Anthracene	7500	U
86-74-8	Carbazole	7500	UJ
84-74-2	Di-n-butylphthalate	7500	U
206-44-0	Fluoranthene	7500	U
129-00-0	Pyrene	7500	U
85-68-7	Butylbenzylphthalate	7500	U
91-94-1	3,3'-Dichlorobenzidine	7500	U
56-55-3	Benzo(a)anthracene	7500	U
218-01-9	Chrysene	7500	U
117-81-7	bis(2-Ethylhexyl)phthalate	47000	B
117-84-0	Di-n-octylphthalate	7500	U
205-99-2	Benzo(b)fluoranthene	7500	U
207-08-9	Benzo(k)fluoranthene	7500	U
50-32-8	Benzo(a)pyrene	7500	U
193-39-5	Indeno(1,2,3-cd)pyrene	7500	UJ
53-70-3	Dibenzo(a,h)anthracene	7500	U
191-24-2	Benzo(g,h,i)perylene	7500	UJ

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF58

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 12 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/21/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	41 NJ* ~~35~~	~~ER NJ~~
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	~~5.0~~	~~RJ~~
1024-57-3	Heptachlor epoxide	1.6	JRJ
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	13	
72-55-9	4,4'-DDE	3.8 ~~3.5~~	~~JP~~ U
72-20-8	Endrin	3.8 ~~1.8~~	~~JP~~ U
33213-65-9	Endosulfan II	3.8	U
72-54-8	4,4'-DDD	2.3	~~JR~~ J
1031-07-8	Endosulfan sulfate	3.8 ~~1.1~~	~~JP~~ U
50-29-3	4,4'-DDT	84	ER NJ
72-43-5	Methoxychlor	7.9	~~JRJ~~
53494-70-5	Endrin ketone	3.8	U
7421-93-4	Endrin aldehyde	3.8	U
5103-71-9	alpha-Chlordane	1.9	U
5103-74-2	gamma-Chlordane	1.9 ~~0.38~~	~~JP~~ U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	76	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

* Result transferred from BYF58DL.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF58

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gr044765b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 12 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		LABORATORY ARTIFACT	22.01		~~J~~ R
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1F

EPA SAMPLE NO.

BYF58

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944765

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G3D44765A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 12 decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/08/99

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 6.5

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1912-24-9	ATRAZINE	13.77	78000	NJB
2.	5915-41-3	TERBUTHYLAZINE	13.94	8000	NJ
3.		UNKNOWN	18.38	2300	J
4.		UNKNOWN ACID ESTER	18.60	1700	J
		UNKNOWN	20.02	2100	J
		UNKNOWN PHTHALATE	20.08	1700	J
7.		UNKNOWN PHTHALATE	20.48	3000	J
8.		METHYLPHENYLPHOSPHORIC ACID	20.59	2000	J
9.		METHYLPHENYLPHOSPHORIC ACID	20.81	2400	J
10.		METHYLPHENYLPHOSPHORIC ACID	21.04	2300	J
11.		UNKNOWN	21.11	1600	J
12.		UNKNOWN	21.34	1800	J
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF59

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GR044766B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 10 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	~~10~~	~~J~~ U
67-64-1	Acetone	32	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	8	J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF59

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJD44766A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/08/99

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 3.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	910	J
111-44-4	bis(2-Chloroethyl)ether	3700	U
95-57-8	2-Chlorophenol	3700	U
541-73-1	1,3-Dichlorobenzene	3700	U
106-46-7	1,4-Dichlorobenzene	3700	U
95-50-1	1,2-Dichlorobenzene	3700	U
95-48-7	2-Methylphenol	3700	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3700	U
106-44-5	4-Methylphenol	3700	UJ
621-64-7	N-Nitroso-di-n-propylamine	3700	U
67-72-1	Hexachloroethane	3700	U
98-95-3	Nitrobenzene	3700	U
78-59-1	Isophorone	3700	U
88-75-5	2-Nitrophenol	3700	U
105-67-9	2,4-Dimethylphenol	3700	U
111-91-1	bis(2-Chloroethoxy)methane	3700	U
120-83-2	2,4-Dichlorophenol	3700	U
120-82-1	1,2,4-Trichlorobenzene	3700	U
91-20-3	Naphthalene	3700	U
106-47-8	4-Chloroaniline	3700	U
87-68-3	Hexachlorobutadiene	3700	U
59-50-7	4-Chloro-3-methylphenol	3700	U
91-57-6	2-Methylnaphthalene	3700	U
77-47-4	Hexachlorocyclopentadiene	3700	U
88-06-2	2,4,6-Trichlorophenol	3700	U
95-95-4	2,4,5-Trichlorophenol	9200	U
91-58-7	2-Chloronaphthalene	3700	U
88-74-4	2-Nitroaniline	9200	U
131-11-3	Dimethylphthalate	3700	U
208-96-8	Acenaphthylene	3700	U
606-20-2	2,6-Dinitrotoluene	3700	U
99-09-2	3-Nitroaniline	9200	U
83-32-9	Acenaphthene	3700	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF59

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJD44766A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/08/99

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 3.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	9200	U
100-02-7	4-Nitrophenol	9200	UJ
132-64-9	Dibenzofuran	3700	U
121-14-2	2,4-Dinitrotoluene	3700	U
84-66-2	Diethylphthalate	3700	U
7005-72-3	4-Chlorophenyl-phenylether	3700	U
86-73-7	Fluorene	3700	U
100-01-6	4-Nitroaniline	9200	UJ
534-52-1	4,6-Dinitro-2-methylphenol	9200	U
86-30-6	N-nitrosodiphenylamine (1)	3700	U
101-55-3	4-Bromophenyl-phenylether	3700	U
118-74-1	Hexachlorobenzene	3700	U
87-86-5	Pentachlorophenol	9200	U
85-01-8	Phenanthrene	3700	U
120-12-7	Anthracene	3700	U
86-74-8	Carbazole	3700	UJ
84-74-2	Di-n-butylphthalate	3700	U
206-44-0	Fluoranthene	3700	U
129-00-0	Pyrene	3700	U
85-68-7	Butylbenzylphthalate	3700	U
91-94-1	3,3'-Dichlorobenzidine	3700	U
56-55-3	Benzo(a)anthracene	3700	U
218-01-9	Chrysene	3700	U
117-81-7	bis(2-Ethylhexyl)phthalate	26000	B
117-84-0	Di-n-octylphthalate	3700	UR
205-99-2	Benzo(b)fluoranthene	3700	U
207-08-9	Benzo(k)fluoranthene	3700	U
50-32-8	Benzo(a)pyrene	3700	U
193-39-5	Indeno(1,2,3-cd)pyrene	3700	U
53-70-3	Dibenzo(a,h)anthracene	3700	U
191-24-2	Benzo(g,h,i)perylene	3700	U

(1) - Cannot be separated from Diphenylamine

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF59DL

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/23/99

Injection Volume: 2.0 (uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 3.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.4	U
319-85-7	beta-BHC	9.4	U
319-86-8	delta-BHC	9.4	U
58-89-9	gamma-BHC (Lindane)	58	DRNJ
76-44-8	Heptachlor	9.4	U
309-00-2	Aldrin	120	D
1024-57-3	Heptachlor epoxide	9.4	U
959-98-8	Endosulfan I	9.4 ~~3.7~~	~~DJP~~ U
60-57-1	Dieldrin	18	U
72-55-9	4,4'-DDE	17	DJ
72-20-8	Endrin	~~186.2~~	~~DJP~~ U
33213-65-9	Endosulfan II	18	U
72-54-8	4,4'-DDD	18	U
1031-07-8	Endosulfan sulfate	18	U
50-29-3	4,4'-DDT	59	DRNJ
72-43-5	Methoxychlor	12	DJ
53494-70-5	Endrin ketone	18	U
7421-93-4	Endrin aldehyde	18	U
5103-71-9	alpha-Chlordane	9.4	U
5103-74-2	gamma-Chlordane	9.4	U
8001-35-2	Toxaphene	940	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	370	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	180	U
11096-82-5	Aroclor-1260	180	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF59

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gr044766b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 10 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	624-92-0	DISULFIDE, DIMETHYL	15.85	43	NJ
2.		SUBSTITUTED BENZENE	20.36	8	J
3.		SUBSTITUTED BENZENE	20.73	15	J
4.		SUBSTITUTED BENZENE	21.16	22	J
5.		SUBSTITUTED BENZENE	21.37	6	J
6.		SUBSTITUTED BENZENE	21.44	7	J
7.		SUBSTITUTED BENZENE	21.85	7	J
8.		SUBSTITUTED BENZENE	22.30	6	J
9.		SUBSTITUTED BENZENE	22.36	12	J
10.		SUBSTITUTED BENZENE	22.90	12	J
11.					
12.					
13.					
14.					
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16.					
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1F

EPA SAMPLE NO.

BYF59

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJD44766A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/08/99

Injection Volume: 2.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 3.2

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	100-52-7	BENZALDEHYDE	5.91	870	NJ
2.		UNKNOWN	6.14	800	J
3.		UNKNOWN	7.61	980	J
4.	65-85-0	BENZOIC ACID	8.24	760	NJ
5.	2953-29-9	PHOSPHORODITHIOIC ACID, O,O,	8.35	1300	NJ
6.		UNKNOWN	9.17	980	J
7.		UNKNOWN AMIDE	12.01	4500	J
8.		UNKNOWN AMIDE	12.19	52000	J
9.	1007-28-9	1,3,5-TRIAZINE-2,4-DIAMINE,	12.96	11000	NJ
10.		UNKNOWN	13.38	2400	J
11.	1912-24-9	ATRAZINE	13.66	9400	NJB
12.	1912-24-9	ATRAZINE	13.82	97000	NJB
13.		UNKNOWN	13.87	2600	J
14.	5915-41-3	TERBUTHYLAZINE	14.01	68000	NJ
15.		UNKNOWN	14.15	27000	J
16.		UNKNOWN	14.62	2200	J
17.		UNKNOWN	14.96	1800	J
18.		UNKNOWN	15.06	1200	J
19.		UNKNOWN	16.12	1500	J
20.		UNKNOWN	16.19	950	J
21.		UNKNOWN	16.55	840	J
22.		UNKNOWN PHTHALATE	17.59	1400	J
23.	510-15-6	CHLOROBENZILATE	17.68	1200	NJ
24.	13674-87-8	2-PROPANOL, 1,3-DICHLORO-, P	18.17	830	NJ
25.		UNKNOWN ACID ESTER	18.61	1100	J
26.		UNKNOWN	20.53	1400	J
27.		UNKNOWN	21.04	7700	J
28.		UNKNOWN	21.11	4200	J
29.		UNKNOWN	21.34	1600	J
30.		UNKNOWN	21.60	1600	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF59

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944766

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJD44766A66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/08/99

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 3.2

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.88	3100	J
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF60

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GH044767B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 10 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	Q
74-87-3	Chloromethane	11	U J
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11 3	U ~~J~~ U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	5	J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF60

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G2D44767B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 3.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	7300	U
111-44-4	bis(2-Chloroethyl)ether	7300	U
95-57-8	2-Chlorophenol	7300	U
541-73-1	1,3-Dichlorobenzene	7300	U
106-46-7	1,4-Dichlorobenzene	7300	U
95-50-1	1,2-Dichlorobenzene	7300	U
95-48-7	2-Methylphenol	7300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	7300	U
106-44-5	4-Methylphenol	7300	U
621-64-7	N-Nitroso-di-n-propylamine	7300	U
67-72-1	Hexachloroethane	7300	U
98-95-3	Nitrobenzene	7300	U
78-59-1	Isophorone	7300	U
88-75-5	2-Nitrophenol	7300	U
105-67-9	2,4-Dimethylphenol	7300	U
111-91-1	bis(2-Chloroethoxy)methane	7300	U
120-83-2	2,4-Dichlorophenol	7300	U
120-82-1	1,2,4-Trichlorobenzene	7300	U
91-20-3	Naphthalene	7300	U
106-47-8	4-Chloroaniline	7300	U
87-68-3	Hexachlorobutadiene	7300	U
59-50-7	4-Chloro-3-methylphenol	7300	U
91-57-6	2-Methylnaphthalene	7300	U
77-47-4	Hexachlorocyclopentadiene	7300	U
88-06-2	2,4,6-Trichlorophenol	7300	U
95-95-4	2,4,5-Trichlorophenol	18000	U
91-58-7	2-Chloronaphthalene	7300	U
88-74-4	2-Nitroaniline	18000	U
131-11-3	Dimethylphthalate	7300	U
208-96-8	Acenaphthylene	7300	U
606-20-2	2,6-Dinitrotoluene	7300	U
99-09-2	3-Nitroaniline	18000	U
83-32-9	Acenaphthene	7300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF60

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G2D44767B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 3.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	18000	U
100-02-7	4-Nitrophenol	18000	U
132-64-9	Dibenzofuran	7300	U
121-14-2	2,4-Dinitrotoluene	7300	UJ
84-66-2	Diethylphthalate	7300	U
7005-72-3	4-Chlorophenyl-phenylether	7300	U
86-73-7	Fluorene	7300	U
100-01-6	4-Nitroaniline	18000	UJ
534-52-1	4,6-Dinitro-2-methylphenol	18000	U
86-30-6	N-nitrosodiphenylamine (1)	7300	U
101-55-3	4-Bromophenyl-phenylether	7300	U
118-74-1	Hexachlorobenzene	7300	U
87-86-5	Pentachlorophenol	18000	U
85-01-8	Phenanthrene	7300	U
120-12-7	Anthracene	7300	U
86-74-8	Carbazole	7300	UJ
84-74-2	Di-n-butylphthalate	7300	U
206-44-0	Fluoranthene	7300	U
129-00-0	Pyrene	7300	U
85-68-7	Butylbenzylphthalate	7300	U
91-94-1	3,3'-Dichlorobenzidine	7300	U
56-55-3	Benzo(a)anthracene	7300	U
218-01-9	Chrysene	7300	U
117-81-7	bis(2-Ethylhexyl)phthalate	26000	B
117-84-0	Di-n-octylphthalate	7300	U
205-99-2	Benzo(b)fluoranthene	7300	U
207-08-9	Benzo(k)fluoranthene	7300	U
50-32-8	Benzo(a)pyrene	7300	U
193-39-5	Indeno(1,2,3-cd)pyrene	7300	U
53-70-3	Dibenzo(a,h)anthracene	7300	U
191-24-2	Benzo(g,h,i)perylene	7300	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF60DL

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 10 decanted: (Y/N) N Date Received: 06/11/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/16/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/23/99

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 3.4 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	31	DRNJ
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	190	D
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	90	D
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	19 ~~3.4~~	~~DJP~~ U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	9.5	DJPJ
72-20-8	Endrin	37 ~~2.3~~	~~DJP~~ U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37 ~~16~~	~~DJP~~ U
72-43-5	Methoxychlor	3.9	DJ
53494-70-5	Endrin ketone	37	U
7421-93-4	Endrin aldehyde	37	U
5103-71-9	alpha-Chlordane	19	U
5103-74-2	gamma-Chlordane	19	U
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	370	U
11104-28-2	Aroclor-1221	740	U
11141-16-5	Aroclor-1232	370	U
53469-21-9	Aroclor-1242	370	U
12672-29-6	Aroclor-1248	370	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF60

Lab Name: COMPUCHEM Contract: 68D50009

Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gh044767b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 10 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		SUBSTITUTED BENZENE	20.71	8	J
2.		SUBSTITUTED BENZENE	21.13	14	J
3.		SUBSTITUTED BENZENE	22.35	9	J
4.		SUBSTITUTED BENZENE	22.89	9	J
5.					
6.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF60

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944767

Sample wt/vol: 30.0 (g/mL) G Lab File ID: G2D44767B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 10 decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) Y pH: 3.4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 21

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	100-52-7	BENZALDEHYDE	6.16	7100	NJ
2.	100-52-7	BENZALDEHYDE	6.21	10000	NJ
3.		UNKNOWN	6.37	4200	J
4.	2953-29-9	PHOSPHORODITHIOIC ACID, O,O,	8.59	1600	NJ
5.		UNKNOWN AMIDE	12.33	23000	J
6.	1007-28-9	1,3,5-TRIAZINE-2,4-DIAMINE,	13.19	9400	NJ
7.		UNKNOWN	13.41	1800	J
8.		UNKNOWN	13.66	5000	J
9.	1912-24-9	ATRAZINE	14.06	310000	NJB
10.	5915-41-3	TERBUTHYLAZINE	14.26	160000	NJ
11.		UNKNOWN	14.40	84000	J
12.		UNKNOWN	14.90	4300	J
13.		UNKNOWN	15.22	7000	J
14.		UNKNOWN	15.34	2700	J
15.	950-37-8	METHIDATHION	16.85	1600	NJ
16.	5836-10-2	CHLOROPROPYLATE	17.99	1500	NJ
17.	13674-87-8	2-PROPANOL, 1,3-DICHLORO-, P	18.46	2800	NJ
18.		UNKNOWN	20.85	1500	J
19.		UNKNOWN	21.36	6000	J
20.		UNKNOWN	21.67	1500	J
21.		UNKNOWN	22.04	1500	J
22.					
23.					
24.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF61

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944768

Sample wt/vol: 5.0 (g/mL) g Lab File ID: GH044768B57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 3 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

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

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF61

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944768

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJ044768B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 3 decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	860	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	860	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	860	U
83-32-9	Acenaphthene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF61

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944768

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJ044768B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 3 decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/03/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	860	U
100-02-7	4-Nitrophenol	860	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	UJ
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	860	UJ
534-52-1	4,6-Dinitro-2-methylphenol	860	U
86-30-6	N-nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	860	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	UJ
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	340 ~~110~~	~~JB~~ U
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

BYF61

Contract: 68D50009

Name: COMPUCHEM

Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

trix: (soil/water) SOIL Lab Sample ID: 944768

mple wt/vol: 30.0 (g/mL) G Lab File ID: _____

Moisture: 3 decanted: (Y/N) N Date Received: 06/11/99

traction: (SepF/Cont/Sonc) SONC Date Extracted:06/16/99

oncentrated Extract Volume: 5000(uL) Date Analyzed: 06/22/99

njection Volume: 2.0(uL) Dilution Factor: 1.0

PC Cleanup: (Y/N) Y pH: 7.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	~~0.27~~ 1.7	~~JP~~ U
60-57-1	Dieldrin	3.4	U
72-55-9	4,4'-DDE	3.4	U
72-20-8	Endrin	3.4	U
33213-65-9	Endosulfan II	3.4	U
72-54-8	4,4'-DDD	3.4	U
1031-07-8	Endosulfan sulfate	3.4	U
50-29-3	4,4'-DDT	18	U
72-43-5	Methoxychlor	3.4	U
53494-70-5	Endrin ketone	3.4	U
7421-93-4	Endrin aldehyde	1.8	U
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	34	U
12674-11-2	Aroclor-1016	69	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF61

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944768

Sample wt/vol: 5.0 (g/mL) g Lab File ID: gh044768b57

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: not dec. 3 Date Analyzed: 06/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF61

Lab Name: COMPUCHEM Contract: 68D50009

Lab Code: COMPU Case No.: 27064 SAS No.: SDG No.: BYF54

Matrix: (soil/water) SOIL Lab Sample ID: 944768

Sample wt/vol: 30.0 (g/mL) G Lab File ID: GJ044768B66

Level: (low/med) LOW Date Received: 06/11/99

% Moisture: 3 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500 (uL) Date Analyzed: 07/03/99

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.9

Number TICs found: 26

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN (BC)	6.68	140	JB
2.		SUBSTITUTED BENZENE	6.91	140	J
3.		UNKNOWN	7.45	96	J
4.		UNKNOWN	10.89	86	J
5.		UNKNOWN	10.96	74	J
6.	475-20-7	1,4-METHANOAZULENE, DECAHYDR	11.19	71	NJ
7.		UNKNOWN	11.89	260	J
8.		UNKNOWN CARBOXYLIC ACID	15.55	200	J
9.		UNKNOWN	17.01	75	J
10.	511-15-9	2-PHENANTHRENOL, 4B,5,6,7,8,	18.52	150	NJ
11.		UNKNOWN	22.04	180	J
12.		UNKNOWN	22.79	160	J
13.		UNKNOWN	24.65	350	J
14.	57-88-5	CHOLESTEROL	24.99	320	NJ
15.		UNKNOWN	25.48	100	J
16.		UNKNOWN	26.25	440	J
17.		UNKNOWN	26.63	130	J
18.		UNKNOWN	27.32	260	J
19.		UNKNOWN	27.49	700	J
20.		UNKNOWN	27.95	130	J
21.		UNKNOWN	28.18	120	J
22.		UNKNOWN	28.72	100	J
23.		UNKNOWN	29.02	190	J
24.		UNKNOWN	29.54	83	J
25.		UNKNOWN	30.21	270	J
26.		UNKNOWN	30.33	160	J
27.					
28.					
29.					
30.					

APPENDIX D-2
Sample Data Sheets
CLP Reports
Inorganic

APPENDIX E-2
Sample Data Sheets
CLP Reports
Inorganic

RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

RECEIVED

JUL 0 1 1999

DATE: JUNE 28, 1999
SUBJECT: CLP Data Package for Quality Assurance Review
FROM: RSCC / ESAT
TO: Hanif Sheikh, Hazardous Waste Support Section

Attached is the following INORGANIC Data Package to be reviewed for Quality Assurance

SITE	AMENIA LANDFILL	CASE#	27064
CONTRACTOR	USEPA	#SAMPLES	MATRIX
PHASE	RS	8	SOIL
LAB	SWOK		
TURN-AROUND-TIME	14 DAYS	FRACTION	TAL ONLY
CERCLIS ID #	NYD980641559	SITE SPILL #	LZ

REGION II RSCC DATA TRANSFER LOG

Relinquished By		Received By	
Signature	Date/Time	Signature	Date/Time
		John Bulich	6-25-99
John Bulich	6-28-99	[illegible]	6/28/99
[illegible]	6/30/99	[illegible]	6/30/99
[illegible]	6/30/99	Hanif Sheikh	6/30/99
DCR John Bulich	7/1/99	Hanif Sheikh	7/1/99

(over for instructions) revised 3/99

HS
7/11/99

Case #	27064	Site:	Amenia Landfill	Soil:	08
SDG #	MBTA69	Lab:	SWOK	Water:	00
Contractor:	USEPA/RS	Reviewer:	C. M. Alaimo/ESAT	Other:	0

A.2.1. Validation flags- The following flags have been applied in red by the data validator and must be considered by the data user.

J - This flag indicates the result qualified as estimated.

Red-Line - A red-line drawn through a sample result indicates unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully usable.

Contractual Qualifiers- The legend of contractual qualifiers applied by the lab on Form I's is found on page B-20 of SOW ILM01.0

A.2.2. The data assessment is given below and on the attached sheets.

This package consists of eight (08) soil samples collected from the Amenia Landfill site on 06/09/99 for TAL metals analysis. All holding time were met. QC was performed on MBTA69.

MATRIX SPIKE

For Sb & Se, the matrix spike recoveries fell between 10-75% requiring estimation of all associated data.

J—>Sb & Se in MBTA69—>76.

LAB DUPLICATE

For Sb, the sample/or duplicate values were <5xCRDL and the sample-duplicate difference was greater then 2xCRDL, therefore the associated data was estimated. For Pb, the sample/or duplicate values were >5xCRDL and the RPD was greater then 100%, therefore the associated data was estimated.

J—>Sb & Pb in MBTA69—>76.

A.2.3. Contract-Problems/Non-Compliance
NONE

MMB Reviewer:_____ Date:_____
Signature

Contractor Reviewer: Chuck M Alaimo Date: 6/29/99
Signature

Verified by:_____ Date:_____
Signature

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.3: Contract Non-Compliance (SMO Report)

Date: Jan. 1992
Number: HW-2
Revision: 11

CONTRACT NON-COMPLIANCE (SMO REPORT)

Regional Review of Uncontrolled Hazardous Waste Site Contract Laboratory Data Package

CASE NO. 27064

The hardcopied (laboratory name)_____ Inorganic data package received at Region II has been reviewed and the quality assurance and performance data summarized. The data reviewed included:

SMO Sample No.:_____

Conc. & Matrix:_____

Contract No.(_____) requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Matrix Spike Results
- Calibration Standards Results
- Duplicate Analysis Results
- Blank Analysis Results
- MSA Results

Items of non-compliance with the above contract are described below.

Comments: N/A

CMA
Reviewer's Initial

6/29/99
Date

DPO MAILING LIST FOR DATA REVIEWERS

1. USEPA Region I (ESD)
60 Westview Street
Lexington, MA 02173
Deb Szaro
(617) 861-4312
CT, ME, MA, NH, RI, VT
CAA, Resource Analysts, York,
E3I, Skinner, TMA

2. USEPA Region II ESD
Woodbridge Avenue
Edison, NJ 08837
Lisa Gattos Vidulich
(201) 321-6676
NJ, NY, PR, VI
Century, Chemtech, US Test, Nanco
ETC, Gadson, EMS, Galson, ICM

3. USEPA Region III (CRL)
839 Bestgate Road
Annapolis, MD 21401
Chuck Sands
(301) 266-9180
DE, MD, PA, VA, WV, DC
Centec, Hitman, JTC, MACK, VERSAR,
ITAS, Weston, MMES, EA Engineering,
Subject Tech., KEYPA

4. USEPA Region IV (ESD)
Analytical Support Branch
College Station Road
Athens, GA 30613
Tom Bennett, Jr.
(404) 546-3112
AL, FL, GA, KY, MS, NC, SC, TN
CompuChem, EPS, ESE, PBS&J,
Triangle Labs

5. USEPA Region V (ESD)
536 South Clark Street
Tenth Floor, CRL
Chicago, IL 60605
Pat Churilla
(312) 353-9087
IL, IN, MI, MN, OH, WI
NLE, TAI/ENG

6. USEPA Region VI (ESD)
Monterey Park Plaza, Bldg. C
6608 Hornwood Drive
Houston, TX 77074
David Stockton
(713) 953-3425
AR, LA, NM, TX, OK
ANACON, RADIAN, SPECS, EIS, Glochem
Research, Inc., SPL Inc., SWRI,
Allied, KEYTX, EIRA

7. USEPA Region VII Laboratory
25 Funston Road
Kansas City, KS 66115
Debra Morey
(913) 236-3881
IO, KS, NB, MO
Wilson, Kansas City Scientific
Enterprises, Eagle Picher

8. USEPA Region VIII Laboratory
Box 25366
Denver Federal Center
Lakewood, CO 80225
Eva Hoffman
(303) 236-7371
CO, ND, SD, UT, WY, MT
ACCU, CSMRI, RMAL, Data Chem., Centef

9. USEPA Region XI (ESD)
QA Management Section
215 Fremont Street
San Francisco, CA 94105
Kent Kitchingman
(415) 974-0924
AZ, CA, HI, NV, American Samoa,
Guam Trust Territories of Pacific
Islands, Wake Island
ALI, CAL Weston, S-Cubed, IT_CA,
Vegas

10. USEPA Region X Laboratory
P.O. Box 549
Manchester, WA 98353
Gerald Muth
(206) 442-0370
AK, ID, OR, WA
Laucks Testing Labs, Century Testing
Labs (For VOA Only), Weyerhauser Co.,
Columbia Testing, Silver Valley

11. Carla Dempsey - (OS-230)
USEPA
401 'M' Street S.W.
Washington, DC 20460
FTS 382-5746

12. Edward Kantor
USEPA
EMSL-LV
944 E. Harmon Avenue
Box 93478
Las Vegas, NV 89119

13. Sample Management Office
Viar and Company
P.O. Box 818
Alexandria, VA 22313

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.6: CLP Data Assessment Checklist

Inorganic Analysis

Date: Jan. 1992
Number: HW-2
Revision: 11

INORGANIC REGIONAL DATA ASSESSMENT Region ~~II~~

CASE NO. 27064 SITE Amenia Landfill

LABORATORY SWOK NO. OF SAMPLES/ MATRIX 8S

SDG# MBTA69 REVIEWER (IF NOT ESD)

SOW# ILM4.0 REVIEWER'S NAME CMAlaimo

DPO: ACTION ✓ FYI COMPLETION DATE

DATA ASSESSMENT SUMMARY

		ICP	AA	Hg	CYANIDE
1.	HOLDING TIMES	O		O	M
2.	CALIBRATIONS				
3.	BLANKS				
4.	ICS				
5.	LCS				
6.	DUPLICATE ANALYSIS				
7.	MATRIX SPIKE				
8.	MSA				
9.	SERIAL DILUTION				
10.	SAMPLE VERIFICATION				
11.	OTHER QC				
12.	OVERALL ASSESSMENT				

O = Data has no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS:

AREAS OF CONCERN:

NOTABLE PERFORMANCE:

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.6: CLP Data Assessment Summary Form (Inorganics)

Date: Feb. 1990
Number: HW-2
Revision: 10

CLP DATA ASSESSMENT SUMMARY FORM (INORGANICS)

Type of Review: TAL Date: _____ Case #: 27064

Site: Amenia Landfill Lab Name: SWOK

Reviewer's Initials: CMA Number of Samples: 8 soil

Analytes Rejected Due to Exceeding Review Criteria:*

	Holding Times	Calibration	Prep Blank	Field Blank	Inter-ferences	Spike Recovery	Duplicates Lab	Duplicates Field	Detection Limits	LCS	Serial Dilution	MSA	Total Analytes	Rejection
ICP													176	0
Flame AA														
Furnace AA														
Mercury													8	0
Total													—	
Other													184	0

Analytes Flagged as Estimated (J) Due to Exceeding Criteria For:*

ICP						16	8/8*						176	24/8*
Flame AA														
Furnace AA														
Mercury													8	0
Total						16	8/8*							
Other													184	24/8*

Note:
Asterisk (*) Indicates additional exceedances of review criteria.

Percent Moisture Report

SDG NO: MBTA69 LABORATORY: SOUTHWESTLABO

CASE NO: 27064 AGENCY INPUT FILE: MBTA69.ASF

PERCENT MOISTURE LIMITS

	Primary	Expanded
INORG	50%	90%

No problems found for this qualification.

Holding Time Report

SDG NO: MBTA69
CASE NO: 27064
LABORATORY: SOUTHWESTLABO
AGENCY INPUT FILE: MBTA69.ASF

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	16704	2.0	2.6
Mercury	28	0	2.0	50.0
Cyanide	14	0	12.0	1.0

DC-280: The following inorganic soil samples were reviewed for holding time violations using criteria developed for water samples.

MBTA69, MBTA69D, MBTA69S, MBTA70, MBTA71, MBTA72
MBTA73, MBTA74, MBTA75, MBTA76

Calibration Report

SDG NO: MBTA69 LABORATORY: SOUTHWESTLABO

CASE NO: 27064 AGENCY INPUT FILE: MBTA69.ASF

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems found for this qualification.

LCS Report

SDG NO: MBTA69
CASE NO: 27064

LABORATORY: SOUTHWESTLABO
AGENCY INPUT FILE: MBTA69.ASF

No problems found for this qualification.

Sample Result Verification Report

SDG NO: MBTA69 LABORATORY: SOUTHWESTLABO

CASE NO: 27064 AGENCY INPUT FILE: MBTA69.ASF

No problems found for this qualification.

Case# 27064

SDG: MBTA69

Evaluation of Metals Data for the Contract Laboratory Program (CLP)

based on

SOW. 3/90

(SOP Revision XI)

PREPARED BY: _____ DATE: 1-30-92
Hanif Sheikh, Quality Assurance Chemist
Toxic and Hazardous Waste Section

APPROVED BY: _____ DATE: 1-30-92
Kevin Kubik, Chief
Toxic and Hazardous Waste Section

APPROVED BY: _____ DATE: 1/30/92
Robert Runyon, Chief
Monitoring Management Branch

Title: Evaluation of Metals Data for the Contract Laboratory Program

Date: Jan. 1992
Number: HW-2
Revision: 11

1.0 Scope

1.1 This procedure is applicable to inorganic data obtained from contractor laboratories working for Hazardous Waste Site Contract Laboratory Program (CLP).

1.2 The data validation is based upon analytical and quality assurance requirements specified in Statement of Work (SOW) 3/90 .

2.0 Responsibilities - Data reviewers will complete the following tasks as assigned by the Data Review Coordinator:

2.1. For a total review:

2.1.1 Data Assessment - "Total Review-Inorganics" Checklist Appendix (A.1).
The reviewer must answer every question on the checklist.

2.1.2 Data Assessment - Data Assessment Narrative (Appendix A.2)
The answer on the checklist must match the action in the narrative (appendix A.2) and on Form I's. Do not use pencil to write the narrative.

2.1.3 Contract Non-Compliance - SMO Report (Appendix A.3)
This report is to be completed only when a serious contract violation is encountered, or upon the request of the Data Validation Task Monitor, or Technical Project Officer (TPO). Forward 5 copies: one each for internal files, appropriate Regional TPO, Sample Management Office (SMO) and last two addresses of Mailing List for Data Reviewers (Appendix A.4). In other cases, all contract violations should be appended to the end of the Data Assessment Narrative (Sec. A.2.2).

2.1.4 CLP Data Assessment Summary Forms

2.1.4.1 Appendix A.5
Fill in the total number of analytes analyzed by different analyses and the number of analytes rejected or flagged as estimated due to corresponding quality control criteria. Place an "X" in boxes where analyses were not performed, or criteria do not apply.

2.1.4.2 Appendix A.6
Data reviewer is also required to fill out Inorganic Regional Data Assessment form (Appendix A.7) provided by EPA Headquarters. Codes listed on the form will be used to describe the Data Assessment Summary.

2.1.5 Data Review Log: It is recommended that each data reviewer should maintain a log of the reviews completed to include: a. date of start of case review

b. date of completion of case review
c. site
d. case number
e. contract laboratory
f. number of samples
g. matrix
h. hours worked
i. reviewer's initials

2.1.6 Telephone Record Log - the data reviewer should enter the bare facts of inquiry, before initiating any phone conversation with CLP laboratory. After the case review has been completed, mail white copy of Telephone Record Log to the laboratory and pink copy to SMO. File yellow copy in the Telephone Record Log folder, and attach a xerox copy of the Telephone Record Log to the completed Data Assessment Narrative (Appendix A.2).

2.1.7 Forwarded Paperwork

2.1.7.1 Upon completion of review, the following are to be forwarded to the Regional Sample Control Center (RSCC) located in the Surveillance and Monitoring Branch:
a. data package
b. completed data assessment checklist (Appendix A.1,original)
c. SMO Contract Compliance Screening (CCS)
d. Record of Communication (copy)
e. CLP Reanalysis Request/Approval Record (original + 3 copies)
f. Appendix A.6 (original).

2.1.7.2 Forward 2 copies of completed Data Assessment Narrative (Appendix A.2) along with 2 copies of the Inorganic Data Assessment Form (Appendix A.6) and Telephone Record Log , if any,: one each for appropriate Regional TPO, and the other one to EPA EMSL office in Las Vegas. The addresses of TPOs and EPA office in Las Vegas are given in Appendix A-4.

2.1.8 Filed Paperwork - Upon completion of review, the following are to be filed within MMB files:
a. Two copies of completed Data Assessment Narrative (Appendix A.2) each carrying Appendix A.6.
b. Telephone Record Log (copy)
c. SMO Report (copy Appendix A-3)
d. CLP Reanalysis Request/Approval Record (copy)

3.0 Data Completeness
Each data package is checked by a Regional Sample Control Coordinator (RSSC) for completeness. A data package is assumed to be complete when all the deliverables required under the contract are present. If a data package is incomplete, the RSSC would call the laboratory for missing document(s). If the laboratory does not respond within a week, SMO and MMB coordinator of Region II will be notified.

4.0 Rejection of Data - All values determined to be unacceptable on the Inorganic Analysis Data Sheet (Form I) must be lined over with a red pencil. As soon as any review criteria causes data to be rejected, that data can be eliminated from any further review or consideration.

5.0 Acceptance Criteria - In order that reviews be consistent among reviewers, acceptance criteria as stated in Appendix A.1 (pages 4-25) should be used. Additional guidance can be found in the National Inorganic Functional Guidelines of October 1, 1989.

6.0 SMO Contract Compliance Screening (CCS) - This is intended to aid reviewer in locating any problems, both corrected and uncorrected. However, the validation should be carried out even if CCS is not present. Resubmittals received from laboratory in response to CCS must be used by the reviewer.

7.0 Request for Reanalysis - Data reviewers must note all items of contract non-compliance within Data Assessment Narrative. If holding times and sample storage times have not been exceeded, TPO may request reanalysis if items of non-compliance are critical to data assessment. Requests are to be made on "CLP Re-Analysis Request/Approval Record".

8.0 Record of Communication - Provided by the Regional Sample Control Center (RSCC) to indicate which data packages have been received and are ready to be reviewed.

9.0 Rounding off numbers - The data reviewer will follow the standard practice.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

	YES	NO	N/A
A.1.1 Contract Compliance Screening Report (CCS) - Present?	[✓]	—	—
ACTION: If no, contact RSCC.			
A.1.2 Record of Communication (from RSCC) - Present?	[✓]	—	—
ACTION: If no, request from RSCC.			
A.1.3 Trip Report - Present and complete?	[✓]	—	—
ACTION: If no, contact RSCC for trip report.			
A.1.4 Sample Traffic Report - Present?	[✓]	—	—
Legible?	[✓]	—	—
ACTION: If no, request from Regional Sample Control Center (RSCC).			
A.1.5 Cover Page - Present?	[✓]	—	—
Is cover page properly filled in and signed by the lab manager or the manager's designee?	[✓]	—	—
ACTION: If no, prepare Telephone Record Log, and contact laboratory.			
Do numbers of samples correspond to numbers on Record of Communication?	[✓]	—	—
Do sample numbers on cover page agree with sample numbers on:			
(a) Traffic Report Sheet?	[✓]	—	—
(b) Form I's?	[✓]	—	—
ACTION: If no for any of the above, contact RSCC for clarification.			

		Yes	No	N/A
A.1.6	Form I to IX			
A.1.6.1	Are all the Form I through Form IX labeled with:			
	Laboratory name?	[/]	—	—
	Case/SAS number?	[/]	—	—
	EPA sample No.?	[/]	—	—
	SDG No.?	[/]	—	—
	Contract No.?	[/]	—	—
	Correct units?	[/]	—	—
	Matrix?	[/]	—	—

ACTION: If no for any of the above, note under Contract Problem/Non-Compliance section of the "Data Assessment Narrative".

A.1.6.2	Do any computation/transcription errors exceed 10% of reported values on Forms I-IX for:			
	(NOTE: Check all forms against raw data.)			
	(a) all analytes analyzed by ICP?	[/]	—	—
	(b) all analytes analyzed by GFAA?	[ ]	—	[/]
	(c) all analytes analyzed by AA Flame?	[ ]	—	[/]
	(d) Mercury?	[/]	—	[/]
	(e) Cyanide?	[ ]	—	—

ACTION: If yes, prepare Telephone Log, contact laboratory for corrected data and correct errors with red pencil and initial.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

Date: Jan. 1992
Number: HW-2
Revision: 11

		YES	NO	N/A
A.1.7	Raw Data			
A.1.7.1	Digestion Log* for flame AA/ICP (Form XIII) present?	[✓]	—	—
	Digestion Log for furnace AA Form XIII present?	[ ]	—	✓
	Distillation Log for mercury Form XIII present?	[✓]	—	—
	Distillation Log for cyanides Form XIII present?	[ ]	—	✓
	Are pH values (pH<2 for all metals, pH>12 for cyanide) present?	[✓]	—	—
	*Weights, dilutions and volumes used to obtain values.			
	Percent solids calculation present for soils/sediments?	[ ]	—	—
	Are preparation dates present on sample preparation logs/bench sheets?	[✓]	—	—
A.1.7.2	Measurement read out record present? ICP	[ ]	—	✓
	Flame AA	[ ]	—	✓
	Furnace AA	[ ]	—	—
	Mercury	[✓]	—	—
	Cyanides	[ ]	—	✓
A.1.7.3	Are all raw data to support all sample analyses and QC operations present?	[✓]	—	—
	Legible?	[ ]	—	—
	Properly Labeled?	[✓]	—	—

ACTION: If no for any of the above questions in sections A.1.7.1 through A.1.7.3, write Telephone Record Log and contact laboratory for resubmittals.

Title: Evaluation of Metals for the Contract Laboratory Program
Appendix A.1: Data Assessment - Contract Compliance (Total Review)

		YES	NO	N/A
A.1.8	**Holding Times** - (aqueous and soil samples) (Examine sample traffic reports and digestion/distillation logs.)			
	Mercury analysis (28 days) . . . . . exceeded?	—	[✓]	—
	Cyanide distillation (14 days) . . . . . exceeded?	—	[ ]	—
	Other Metals analysis (6 months) . . . . exceeded?	—	[ ]	—
	NOTE: Prepare a list of all samples and analytes for which holding times have been exceeded. Specify the number of days from date of collection to the date of preparation (from raw data). Attach to checklist.			
	ACTION: If yes, reject (red-line) values less than Instrument Detection Limit (IDL) and flag as estimated (J) the values above IDL even though sample(s) was preserved properly.			
A.1.8.2	Is pH of aqueous samples for: Metals Analysis >2?	—	[ ]	—
	Cyanides Analysis <12?	—	[ ]	—
	Action: If yes, flag the associated metals and cyanides data as estimated.			
A.1.9	**Form I (Final Data)**			
A.1.9.1	Are all Form I's present and complete?	[ ]	—	—
	ACTION: If no, prepare telephone record log and contact laboratory for submittal.			
A.1.9.2	Are correct units (ug/l for waters and mg/kg for soils) indicated on Form I's?	[ ]	—	—
	Are soil sample results for each parameter corrected for percent solids?	[ ]	—	—
	Are all "less than IDL" values properly coded with "U"?	[ ]	—	—

		YES	NO	N/A
	Are the correct concentration qualifiers used with final data?	[✓]		

ACTION: If no for any of the above, prepare Telephone Record Log, and contact laboratory for corrected data.

A.1.9.3	Are EPA sample # s and corresponding laboratory sample ID # s the same as on the Cover Page, Form I's and in the raw data?	[✓]		
	Was a brief physical description of samples given on Form I's?	[✓]		
	Was the dilution of any sample diluted beyond the requirements of the contract noted on Form I or Form XIV?		[✓]	

ACTION: If no for any of the above, note under Contract-Problem/Non-Compliance of the "Data Assessment Narrative".

A.1.10 Calibration

A.1.10.1	Is record of at least 2 point calibration present for ICP analysis?	[✓]		
	Is record of 5 point calibration present for Hg analysis?	[✓]		
	Is record of 4 point calibration present for:			
	Flame AA?	[ ]		✓
	Furnace AA?	[ ]		✓
	Cyanides?	[ ]		✓
	Is one calibration standard at the CRDL level for all AA and cyanides analyses?	[✓]		

ACTION: If no for any of the above, write in the Contract Problem/Non-Compliance section of the "Data Assessment Narrative".

	YES	NO	N/A
A.1.10.2 Is correlation coefficient less than 0.995 for:			
Mercury Analysis?	___	[✓]	___
Cyanide Analysis?	___	[ ]	✓
Atomic Absorption Analysis?	___	[ ]	___

ACTION: If yes, flag the associated data as estimated.

NOTE: The data validator shall calculate the correlation coefficient using concentrations of the standards and the corresponding instrument response (e.g. absorbance, peak area, peak height, etc.).

A.1.10.3 In the instance where less than 4 standards are measured in absorbance (or peak area, peak height, etc.) mode, are the remaining standards analyzed in concentration mode immediately after calibration within ±10% of the true values? [ ] ___ ___

ACTION: If no, flag the associated data as estimated if standards are not within ±10% of true values. Do not flag the data as estimated in linear range indicated by good recovery of standard(s).

A.1.11 Form II A (Initial and Continuing Calibration Verification)-

A.1.11.1 Present and complete for every metal and cyanide? [ ] ___ ___

Present and complete for AA and ICP when both are used for the same analyte? [ ] ___ ___

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.

A.1.11.2 Circle on each Form IIA all percent recoveries that are outside the contract windows.
Are all calibration standards (initial and continuing) within control limits?

Metals- 90-110%R? [ ] ___ ___

Hg - 80-120%R? [ ] ___ ___

Cyanides- 85-115%R? [ ] ___ ___

	YES	NO	N/A
ACTION: Flag as estimated (J) all positive data (not flagged with a "U") analyzed between a calibration standard with %R between 75-89% (65-79% for Hg; 70-84% for CN) or 111-125% (121-135% for Hg; 116-130% for CN) recovery and nearest good calibration standard. Qualify results <IDL as estimated (UJ) if the ICV or CCV %R is 75-89% (CN, 70-84% ; HG, 65-79%). Reject (red-line) as unacceptable data if recovery of the ICV or CCV is outside the range 75-125% (CN, 70-130%; Hg, 65-135%). Qualify five samples on either side of verification standard out of control limits.			
A.1.11.3 Was continuing calibration performed every 10 samples or every 2 hours?	[✓]	—	—
Was ICV for cyanides distilled?	[✓]	—	—
ACTION: If no for any of the above, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
A.1.12 Form II B (CRDL Standards for AA and ICP) -			
A.1.12.1 Was a CRDL standard (CRA) analyzed after initial calibration for all AA metals?	[✓]	—	—
Was a mid-range calib. verification standard distilled and analyzed for cyanide analysis?	[ ]	—	✓
Was a 2xCRDL (or 2xIDL when IDL>CRDL) analyzed (CRI) for each ICP run? (Note: CRI for AL,Ba,Ca,Fe,Mg,Na,or K is not required.)	[✓]	—	—
ACTION: If no for any of the above, flag as estimated all data falling within the affected ranges. The affected ranges are: AA Analysis - **True Value ± CRDL; ICP Analysis - **True Value ± 2CRDL; CN Analysis - **True Value ± 0.5 x True Value.			

**True value of CRA, CRI or mid-range standard. Substitute IDL for CRDL when IDL > CRDL. Compute the concentration of the missing mid-range standard from the calibration range.

		YES	NO	N/A
A.1.12.2	Was CRI analyzed after ICV/ICB and before the final CCV/CCB, and twice every eight hours of ICP run?	[✓]	—	—
	ACTION: If no, write in Contract Problem/Non-Compliance Section of the "Data Assessment Narrative".			
A.1.12.3	Circle on each Form IIB all the percent recoveries that are outside the acceptance windows.			
	Are CRA and CRI standards within control limits:			
	Metals 80 - 120%R?	[✓]	—	—
	Is mid-range standard within control limits:			
	Cyanide 80 - 120%R?	[ ]	—	✓
	ACTION: Flag as estimated all sample results within the affected range if the recovery of the standard is between 50-79%; flag only positive data within the affected range if the recovery is between 121-150%; reject all data within the affected range if the recovery is less than 50%; reject only positive data within the affected range if the recovery is greater than 150%. Qualify 50% of the samples on either side of CRI standard outside the control limits.			
	Note: Flag or reject the final results only when sample raw data are within the affected ranges and the CRDL standards are outside the acceptance windows.			
A.1.13	Form III (Initial and Continuing Calibration Blanks)	[✓]	—	—
A.1.13.1	Present and complete?			✓
	For both AA and ICP when both are used for the same analyte?	[✓]	—	✓
	Was an initial calibration blank analyzed?	[✓]	—	—
	Was a continuing calibration blank analyzed after every 10 samples or every 2 hours (which ever is more frequent)?	[✓]	—	—

		YES	NO	N/A
	ACTION: If no, prepare Telephone Record Log, contact laboratory and write in the Contract-Problems/ Non-Compliance section of the "Data Assessment Narrative".			
A.1.13.2	Circle on each Form III all calibration blank values that are above CRDL (or 2 x IDL when IDL > CRDL).			
	Are all calibration blanks (when IDL<CRDL) less than or equal to the Contract Required Detection Limits (CRDLs)?	[✓]	—	—
	Are all calibration blanks less than two times Instrument Detection Limit (when IDL>CRDL)?	[✓]	—	—
	ACTION: If no for any of the above, flag as estimated (J) positive sample results when raw sample value is less than or equal to calibration blank value analyzed between calibration blank with value over CRDL (or 2xIDL) and nearest good calibration blank. Flag five samples on either side of the calibration blank outside the control limits.			
A.1.14	FORM III (Preparation Blank) - (Note: The preparation blank for mercury is the same as the calibration blank.)			
A.1.14.1	Was one prep. blank analyzed for:			
	each Sample Delivery Group (SDG)?	[✓]	—	—
	each batch of digested samples?	[✓]	—	—
	each matrix type?	[✓]	—	—
	both AA and ICP when both are used for the same analyte?	[ ]	—	✓
	ACTION: If no for any of the above, flag as estimated (J) all the associated positive data <10 x IDLs for which prep. blank was not analyzed.			
	NOTE: If only one blank was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			

		YES	NO	N/A
A.1.14.2	Is concentration of prep. blank value greater than the CRDL when IDL is less than or equal to CRDL?	___	[/]	___
	If yes, is the concentration of the sample with the least concentrated analyte less than 10 times the prep.blank?	___	[ ]	___/
	ACTION: If yes, reject (red-line) all associated data greater than CRDL concentration but less than ten times the prep. blank value.			
A.1.14.3	Is concentration of prep. blank value (Form III) less than two times IDL, when IDL is greater than CRDL?	[/]	___	___
	ACTION: If no, reject (red-line) all positive sample results when sample raw data are less than 10 times the prep. blank value.			
A.1.14.4	Is concentration of prep. blank below the negative CRDL?	___	[/]	___
	ACTION: If yes, reject (red-line) all associated sample results less than 10xCRDL.			
A.1.15	Form IV (ICP Interference Check Sample)	[/]	___	___
A.1.15.1	Present and complete?			
	(NOTE: Not required for furnace AA, flame AA, mercury, cyanide and Ca, Mg, K and Na.)			
	Was ICS analyzed at beginning and end of run (or at least twice every 8 hours)?	[/]	___	___
	ACTION: If no, flag as estimated (J) all the samples for which AL, Ca, Fe, or Mg is higher than in ICS.			
A.1.15.2	Circle all values on each Form IV that are more than ± 20% of true or established mean value.			
	Are all Interference Check Sample results inside the control limits (± 20%)?	[/]	___	___
	If no, is concentration of Al, Ca, Fe, or Mg lower than the respective concentration in ICS?	[ ]	___	___

		YES	NO	N/A
	ACTION: If no, flag as estimated (J) those positive results for which ICS recovery is between 121-150%; flag all sample results as estimated if ICS recovery falls within 50-79%; reject (red-line) those sample results for which ICS recovery is less than 50%; if ICS recovery is above 150%, reject positive results only (not flagged with a "U").			
A.1.16	Form V A (Spiked Sample Recovery - Pre-Digestion/Pre-Distillation)- (Note: Not required for Ca, Mg, K, and Na (both matrices), Al, and Fe (soil only.)			
A.1.16.1	Present and complete for: each SDG?	[ ]	—	—
	each matrix type?	[ ]	—	—
	each conc. range (i.e. low, med., high)?	[ ]	—	—
	For both AA and ICP when both are used for the same analyte?	[ ]	—	✓
	ACTION: If no for any of the above, flag as estimated (J) all the positive data less than four times the spiking levels specified in SOW for which spiked sample was not analyzed.			
	NOTE: If one spiked sample was analyzed for more than 20 samples, then first 20 samples analyzed do not have to be flagged as estimated (J).			
A.1.16.2	Was field blank used for spiked sample?	—	[ ]	—
	ACTION: If yes, flag all positive data less than 4 x spike added as estimated (J) for which field blank was used as spiked sample.			
A.1.16.3	Circle on each Form VA all spike recoveries that are outside control limits (75% to 125%).			
	Are all recoveries within control limits?	[ ]	✓	—
	If no, is sample concentration greater than or equal to four times spike concentration?	[ ]	✓	—

	YES	NO	N/A

ACTION: If yes, disregard spike recoveries for analytes whose concentrations are greater than or equal to four times spike added. If no, circle those analytes on Form V for which sample concentration is less than four times the spike concentration.

Are results outside the control limits (75-125%) flagged with "N" on Form I's and Form VA? [ ] — —

ACTION: If no, write in the Contract - Problem/Non - Compliance section of "Data Assessment Narrative".

A.1.16.4 Aqueous
Are any spike recoveries:

(a) less than 30%? — [ ] —

(b) between 30-74%? — [ ] —

(c) between 126-150%? — [ ] —

(d) greater than 150%? — [ ] —

ACTION: If less than 30%, reject all associated aqueous data; if between 30-74%, flag all associated aqueous data as estimated (J); if between 126-150%, flag as estimated (J) all associated aqueous data not flagged with a "U"; if greater than 150%, reject (red-line) all associated aqueous data not flagged with a "U".

A.1.16.5 Soil/Sediment
Are any spike recoveries:

(a) less than 10%? — [ ] —

(b) between 10-74%? — [ ] —

(c) between 126-200%? — [ ] —

(d) greater than 200%? — [ ] —

		YES	NO	N/A
	ACTION: If less than 10%, reject all associated data; if between 10-74%, flag all associated data as estimated; if between 126-200%, flag as estimated all associated data was not flagged with a "U"; if greater than 200%, reject all associated data not flagged with a "U".			
A.1.17	Form VI (Lab Duplicates)			
A.1.17.1	Present and complete for: each SDG?	[✓]	—	—
	each matrix type?	[✓]	—	—
	each concentration range (i.e. low, med., high)?	[✓]	—	—
	both AA and ICP when both are used for the same analyte?	[ ]	—	✓
	ACTION: If no for any the above, flag as estimated (J) all the data ≥CRDL* for which duplicate sample was not analyzed.			
	Note: 1. If one duplicate sample was analyzed for more than 20 samples, then first 20 samples do not have to be flagged as estimated.			
	2. If percent solids for soil sample and its duplicate differ by more than 1%, prepare a Form VI for each duplicate pair, report concentrations in ug/L on wet weight basis and calculate RPD or Difference for each analyte.			
A.1.17.2	Was field blank used for duplicate analysis?	—	[✓]	—
	ACTION: If yes, flag all data ≥CRDL* as estimated (J) for which field blank was used as duplicate.			
A.1.17.3	Are all values within control limits (RPD 20% or difference ≤ ±CRDL)?	[ ]	✓	—
	If no, are all results outside the control limits flagged with an * on Form I's and VI?	[✓]	—	—
	ACTION: If no, write in the Contract - Problems/Non-Compliance section of "Data Assessment Narrative".			

* Substitute IDL for CRDL when IDL > CRDL.

	YES	NO	N/A

NOTE: 1. RPD is not calculable for an analyte of the sample - duplicate pair when both values are less than IDL.
2. If the result of lab duplicate analyzed by GFAA is rejectable due to coefficient of correlation of MSA, analytical spike recovery, or duplicate injections criteria, do not apply precision criteria to metals analyzed by GFAA.

A.1.17.4 Aqueous

Circle on each Form VI all values that are:

RPD > 50%, or
Difference > CRDL*

Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CRDL?	___	[ ]	___
Is any difference** between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL?	___	[ ]	___

ACTION: If yes, flag the associated data as estimated.

A.1.17.5 Soil/Sediment

Circle on each Form VI all values that are:

RPD > 100%, or

Difference > 2 x CRDL*

Is any RPD (where sample and duplicate are both greater than or equal to 5 times *CRDL) : > 100%?	___	[ ]	___
Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x*CRDL) : > 2x*CRDL?	___	[ ]	___

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A

ACTION: If yes, flag the associated data as estimated.

A.1.18 Field Duplicates

A.1.18.1 Were field duplicates analyzed? [ ] ✓ —

ACTION: If yes, prepare a Form VI for each aqueous field duplicate pair. Prepare a Form VI for each soil duplicate pair, if percent solids for sample and its duplicate differ by more than 1%; report concentrations of soils in ug/l on wet weight basis and calculate RPDs or Difference for each analyte.

NOTE: 1. Do not calculate RPD when both values are less than IDL.
2. Flag all associated data only for field duplicate pair.

A.1.18.2 Aqueous

Circle all values on self prepared Form VI for field duplicates that are:

RPD > 50%, or
Difference > CRDL*

Is any RPD greater than 50% where sample and duplicate are both greater than or equal to 5 times *CRDL? — [ ] ✓

Is any **difference between sample and duplicate greater than *CRDL where sample and/or duplicate is less than 5 times *CRDL? — [ ] ✓

ACTION: If yes, flag the associated data as estimated.

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

		YES	NO	N/A
A.1.18.3	Soil/Sediment Circle all values on self prepared Form VI for field duplicates that are: RPD >100%, or Difference > 2 x CRDL* Is any RPD (where sample and duplicate are both greater than 5 times *CRDL) : >100%?	___	[___]	___
	Is any **difference between sample and duplicate (where sample and/or duplicate is less than 5x *CRDL): >2x *CRDL?	___	[___]	___
	ACTION: If yes, flag the associated data as estimated.			
A.1.19	Form VII (Laboratory Control Sample) (Note: LCS - not required for aqueous Hg and cyanide analyses.)			
A.1.19.1	Was one LCS prepared and analyzed for: each SDG?	[___]	___	___
	each batch samples digested/distilled?	[___]	___	___
	both AA and ICP when both are used for the same analyte?	[___]	___	___
	ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory for submittal of results of LCS. Flag as estimated (J) all the data for which LCS was not analyzed.			
	NOTE: If only one LCS was analyzed for more than 20 samples, then first 20 samples close to LCS do not have to be flagged as estimated.			

* Substitute IDL for CRDL when IDL > CRDL.
** Use absolute values of sample and duplicate to calculate the difference.

	YES	NO	N/A

A.1.19.2 Aqueous LCS

Circle on each Form VII the LCS percent recoveries outside control limits (80 - 120%) except for aqueous Ag and Sb.

Is any LCS recovery:				
less than 50%?	___	[✓]	___
between 50% and 79%?	___	[✓]	___
between 121% and 150%?	___	[✓]	___
greater than 150%?	___	[✓]	___

ACTION: Less than 50%, reject (red-line) all data; between 50% and 79%, flag all associated data as estimated (J); between 121% and 150%, flag all positive (not flagged with a "U") results as estimated; greater than 150%, reject all positive results.

A.1.19.3 Solid LCS

NOTE: 1. If "Found" value of LCS is rejectable due to duplicate injections or analytical spike recovery criteria, regardless of LCS recovery, flag the associated data as estimated (J).
2. If IDL of an analyte is equal to or greater than true value of LCS, disregard the "Action" below even though LCS is out of control limits.

Is LCS "Found" value higher than the control limits on Form VII?	___	[✓]	___

ACTION: If yes, qualify all associated positive data as estimated.

Is LCS "Found" value lower than the Control limits on Form VII?	___	[✓]	___

ACTION: If yes, qualify all associated data as estimated.

		YES	NO	N/A
A.1.20	Form IX (ICP Serial Dilution) -			
	NOTE: Serial dilution analysis is required only for initial concentrations equal to or greater than 10 x IDL.			
A.1.20.1	Was Serial Dilution analysis performed for: each SDG?	[/]	—	—
	each matrix type?	[/]	—	—
	each concentration range (i.e. low, med.)?	[/]	—	—
	ACTION: If no for any of the above, flag as estimated all the positive data ≥ 10xIDLs or ≥ CRDL when 10xIDL ≤ CRDL for which Serial Dilution Analysis was not performed.			
A.1.20.2	Was field blank(s) used for Serial Dilution Analysis?	—	[/]	—
	ACTION: If yes, flag all associated data ≥ 10 x IDL as estimated (J). If 10xIDL ≤ CRDL, flag all data ≥ CRDL.			
A.1.20.3	Are results outside control limit flagged with an "E" on Form I's and Form IX when initial concentration on Form IX is equal to 50 times IDL or greater.	[/]	—	—
	ACTION: If no, write in the Contract-Problem/Non-Compliance section of the "Data Assessment Narrative".			
A.1.20.4	Circle on each Form IX all percent difference that are outside the control limits for initial concentrations equal to or greater than 10 x IDLs only.			
	Are any % difference values:			
	> 10%?	—	[/]	—
	≥ 100%?	—	[/]	—

		YES	NO	N/A
	ACTION: Flag as estimated (J) all the associated sample data ≥ 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which percent difference is greater than 10% but less than 100%. Reject (red-line) all the associated sample results equal to or greater than 10xIDLs (or ≥ CRDL when 10xIDL ≤ CRDL) for which PD is greater than or equal to 100%.			
	Note: Flag or reject on Form I's only the sample results whose associated raw data are ≥ 10xIDL (or ≥ CRDL when 10xIDL≤ CRDL)			
A.1.21	Furnace Atomic Absorbtion (AA) QC Analysis			
A.1.21.1	Are duplicate injections present in furnace raw data (except during full Method of Standard Addition) for each sample analyzed by GFAA?	[ ]	—	✓
	ACTION: If no, reject the data on Form I's for which duplicate injections were not performed.			
A.1.21.2	Do the duplicate injection readings agree within 20% Relative Standard Deviation (RSD) or Coefficient of Variation (CV) for concentration greater than CRDL?	[ ]	—	✓
	Was a dilution analyzed for sample with analytical spike recovery less than 40%?	[ ]	—	✓
	ACTION: If no for any of the above, flag all the associated data as estimated.			
A.1.21.3	Is *analytical spike recovery outside the control limits (85-115%) for any sample?	—	[ ]	✓
	ACTION: If yes, flag as estimated the affected sample results if the recovery is between 10-84%; if the recovery is between 115-200%, flag the associated positive sample results as estimated; reject the associated sample results if the recovery is less than 10%; reject positive sample results if the recovery is greater than 200%.			

* Analytical spike is not required on the pre-digestion spiked sample.

		YES	NO	N/A
	NOTE: Reject or flag the data only when the affected sample(s) was not subsequently analyzed by Method of Standard Addition.			
A.1.22	Form VIII (Method of Standard Addition Results)	[ ]	___	
A.1.22.1	Present?			
	If no, is any Form I result coded with "S" or a "+"?	___	[ ]	
	ACTION: If yes, write request on Telephone Record Log and contact laboratory for submittal of Form VIII.			
A.1.22.2	Is coefficient of correlation for MSA less than 0.990 for any sample?	___	[ ]	
	ACTION: If yes, reject (red-line) the affected data.			
A.1.22.3	Was *MSA required for any sample but not performed?	___	[ ]	
	Is coefficient of correlation for MSA less than 0.995?	___	[ ]	
	Are MSA calculations outside the linear range of the calibration curve generated at the beginning of the analytical run?	___	[ ]	
	ACTION: If yes for any of the above, flag all the associated data as estimated (J).			
A.1.22.4	Was proper quantitation procedure followed correctly as outlined in the SOW on page E-23?	[ ]	___	
	ACTION: If no, note exception under Contract Problem/ Non-Compliance section of the "Data Assessment Narrative", and prepare a separate list.			

* MSA is not required on LCS and prep. blank.

		YES	NO	N/A
A.1.23	Dissolved/Total or Inorganic/Total Analytes -			
A.1.23.1	Were any analyses performed for dissolved as well as total analytes on the same sample(s).	___	[✓]	___
	Were any analyses performed for inorganic as well as total (organic + inorganic) analytes on the same sample(s)?	___	[✓]	___
	NOTE: 1. If yes, prepare a list comparing differences between all dissolved (or inorganic) and total analytes. Compute the differences as a percent of the total analyte only when dissolved concentration is greater than CRDL as well as total concentration. 2. Apply the following questions only if inorganic (or dissolved) results are (i) above CRDL, and (ii) greater than total constituents. 3. At least one preparation blank, ICS, and LCS should be analyzed in each analytical run.			
A.1.23.2	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 10%?	___	[___]	___ ✓
A.1.23.3	Is the concentration of any dissolved (or inorganic) analyte greater than its total concentration by more than 50%?	___	[___]	___ ✓
	ACTION: If more than 10%, flag both dissolved (or inorganic) and total values as estimated (J); if more than 50%, reject (red-line) the data for both values.			
A.1.24	Form I (Field Blank) -			
	(Note: Designate "Field Blank" as such on Form I.)			
A.1.24.1	Circle all field blank values on Form I that are greater than CRDL, (or 2 x IDL when IDL > CRDL).			
	Is field blank concentration less than CRDL (or 2 x IDL when IDL > CRDL) for all parameters of associated aqueous and soil samples?	[___]	___	___ ✓

	YES	NO	N/A
If no, was field blank value already rejected due to other QC criteria?	[ ]		

ACTION: If no, reject (except field blank results) all associated positive sample data less than or equal to five times the field blank value. Reject on Form I's the soil sample results that when converted to ug/L on wet basis are less than or equal to five times the field blank value in ug/L.

A.1.25 Form X, XI, XII (Verification of Instrumental Parameters).

A.1.25.1	Is verification report present for: Instrument Detection Limits (quarterly)?	[ ]		
	ICP Interelement Correction Factors (annually)?	[ ]		
	ICP Linear Ranges (quarterly)?	[ ]		

ACTION: If no, contact TPO of the lab.

A.1.25.2	Form X (Instrument Detection Limits) - (Note: IDL is not required for Cyanide.)			
A.1.25.2.1	Are IDLs present for: all the analytes?	[ ]		
	all the instruments used?	[ ]		
	For both AA and ICP when both are used for the same analyte?	[ ]		

ACTION: If no for any of the above, prepare Telephone Record Log and contact laboratory.

A.1.25.2.2 Is IDL greater than CRDL for any analyte?		[ ]	
If yes, is the concentration on Form I of the sample analyzed on the instrument whose IDL exceeds CRDL, greater than 5 x IDL.	[ ]		

	YES	NO	N/A
Action : If no, flag as estimated all values less than five times IDL of the instrument whose IDL exceeds CRDL.			
A.1.25.3 Form XI (Linear Ranges)			
A.1.25.3.1 Was any sample result higher than high linear range of ICP.	___	[✓]	___
Was any sample result higher than the highest calibration standard for non-ICP parameters?	___	[✓]	___
If yes for any of the above, was the sample diluted to obtain the result on Form I?	[___]	___	✓
ACTION: If no, flag the result reported on Form I as estimated (J).			
A.1.26 Percent Solids of Sediments			
A.1.26.1 Are percent solids in sediment (s): < 50%?	___	[✓]	___
< 10%?	___	[✓]	___
ACTION: If yes, qualify as estimated all the results of a sample that has per cent solids between 10%-50% (i.e. moisture content between 50%-90%). Reject all the results of a sample that has per cent solids less than 10% (i.e. moisture content greater than 90%).			
NOTE: Reject or flag (J) only the sample results that were not previously rejected or flaged due to other QC criteria.			

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

0164

SDG NARRATIVE

CONTRACT:68-D5-0137 **DATE:JUNE 23, 1999**
CASE:27064 **SOW NO.: ILM04**
SDG:MBTA69 **EPISODE NO.:38979**

INORGANIC METAL FRACTION:

Eight soil samples were submitted for ICP, GFAA, CN and Hg analysis. One prep blank, one lab control and one matrix spike. No major problems occurred during the digestion or analysis of these samples. Please see the DC-1 (Sample Log-In Sheet) for sample conditions and cooler temperatures at receipt. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (digestion for ICP analysis)
SWL-IN-203	ILM03.0/04.0 (analysis by ICP)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Al, Sb, Mg. No action required.

Linearity near the CRDL (CRA & CRI): The CRI standard was outside of our in-house warning limits of 70 - 130%R for the following elements: No problem. No action required.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Sb, Ca, Zn. No action required.

Lab Control Spikes: No problems.

Matrix Spike(s) (and MSD): The following elements were outside the control limits of 75-125% recovery: Sb, Pb. All associated samples were flagged with a "N" on Form I's. No action required.

Duplicate(s) (LCSD and MSD): The following elements were outside the control limits of 0-20% RPD: Sb, Pb. All associated samples were flagged with a "*" on Form I's. No action required.

Serial Dilution (ICP): The soil/water serial dilution was/were outside the control limits of 10% for the following elements: No problem. All associated samples were flagged with an "E" on Form I's. No action required.

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

Sincerely,

Susan S. Turner for.....
Deborah J. Inman
Inorganic Program Manager

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET

LAB NAME: Southwest Laboratory of Oklahoma, Inc.

LAB CODE: SWOK CONTRACT No.: 68-D5-0137

SAMPLE ANALYSIS PRICE:

SDG 1 of 1 RAS No.: 27064

SDG No. / First Sample in SDG: MBTA69
(Lowest EPA Sample Number in first shipment of samples) RECEIPT DATE: 11-Jun-99

LastSample in SDG: MBTA76
(Highest EPA Sample Number in last shipment of samples) RECEIPT DATE: 11-Jun-99

EPA Sample Numbers in the SDG (listed in alphanumeric order by Rec'd date)

1.	MBTA69	38979.01	11.	
2.	MBTA70	38979.02	12.	
3.	MBTA71	38979.03	13.	
4.	MBTA72	38979.04	14.	
5	MBTA73	38979.05	15.	
6.	MBTA74	38979.06	16.	
7.	MBTA75	38979.07	17.	
8.	MBTA76	38979.08	18.	
9.			19.	
10.			20.	

NOTE: There are a maximun of 20 field samples in SDG. Attach Traffic Reports to this form in alphanumeric order (i.e., th order listed on this form)

Deborah J. Inman
Inorganic Program Manager

June 16, 1999
Date

RECEIVED
JUN 25 1999
0001

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract: 68-D5-0137

Lab Code: SWOK__ Case No.: 27064 SAS No.: _____ SDG No.:MBTA69

SOW No.: ILM04

EPA Sample No.	Lab Sample ID
MBTA69	38979.01
MBTA69D	38979.01D
MBTA69S	38979.01S
MBTA70	38979.02
MBTA71	38979.03
MBTA72	38979.04
MBTA73	38979.05
MBTA74	38979.06
MBTA75	38979.07
MBTA76	38979.08

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Susan S. Turner for... Deborah J. Inman

Date: June 23, 1999 Title: Inorganic Program Manager

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA69

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: _____ SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 88.4
Lab Sample ID: 38979.01
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	17400			P	
7440-36-0	Antimony	63.2		N*	P	J
7440-38-2	Arsenic	11.1			P	
7440-39-3	Barium	48.4			P	
7440-41-7	Beryllium	0.65	B		P	
7440-43-9	Cadmium	1.5			P	
7440-70-2	Calcium	2810			P	
7440-47-3	Chromium	49.7			P	
7440-48-4	Cobalt	50.7			P	
7440-50-8	Copper	48.1			P	
7439-89-6	Iron	40000			P	
7439-92-1	Lead	505		*	P	J
7439-95-4	Magnesium	9160			P	
7439-96-5	Manganese	1110			P	
7439-97-6	Mercury	0.07	B		CV	
7440-02-0	Nickel	98.3			P	
7440-09-7	Potassium	1080	B		P	
7782-49-2	Selenium	0.84	B	N	P	J
7440-22-4	Silver	0.22	U		P	
7440-23-5	Sodium	285	B		P	
7440-28-0	Thallium	2.7			P	
7440-62-2	Vanadium	23.2			P	
7440-66-6	Zinc	128			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA70

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: _____ SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 86.8
Lab Sample ID: 38979.02
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	17300			P	
7440-36-0	Antimony	2.1	B	N*	P	J
7440-38-2	Arsenic	12.3			P	
7440-39-3	Barium	48.8			P	
7440-41-7	Beryllium	0.60	B		P	
7440-43-9	Cadmium	2.4			P	
7440-70-2	Calcium	2460			P	
7440-47-3	Chromium	46.2			P	
7440-48-4	Cobalt	71.6			P	
7440-50-8	Copper	52.1			P	
7439-89-6	Iron	43100			P	
7439-92-1	Lead	138		*	P	J
7439-95-4	Magnesium	9170			P	
7439-96-5	Manganese	1060			P	
7439-97-6	Mercury	0.15			CV	
7440-02-0	Nickel	118			P	
7440-09-7	Potassium	1330			P	
7782-49-2	Selenium	0.69	U	N	P	J
7440-22-4	Silver	0.23	U		P	
7440-23-5	Sodium	261	B		P	
7440-28-0	Thallium	2.9			P	
7440-62-2	Vanadium	22.9			P	
7440-66-6	Zinc	114			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA71

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 86.4
Lab Sample ID: 38979.03
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	18800			P	
7440-36-0	Antimony	9.7	B	N*	P	J
7440-38-2	Arsenic	13.4			P	
7440-39-3	Barium	52.4			P	
7440-41-7	Beryllium	0.67	B		P	
7440-43-9	Cadmium	4.9			P	
7440-70-2	Calcium	1730			P	
7440-47-3	Chromium	38.6			P	
7440-48-4	Cobalt	35.3			P	
7440-50-8	Copper	57.0			P	
7439-89-6	Iron	46900			P	
7439-92-1	Lead	90.8		*	P	J
7439-95-4	Magnesium	10300			P	
7439-96-5	Manganese	1100			P	
7439-97-6	Mercury	0.12			CV	
7440-02-0	Nickel	67.3			P	
7440-09-7	Potassium	1290			P	
7782-49-2	Selenium	0.69	U	N	P	J
7440-22-4	Silver	0.23	U		P	
7440-23-5	Sodium	256	B		P	
7440-28-0	Thallium	3.1			P	
7440-62-2	Vanadium	24.6			P	
7440-66-6	Zinc	105			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA72

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 83.4
Lab Sample ID: 38979.04
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17300			P
7440-36-0	Antimony	2.2	B	N*	P
7440-38-2	Arsenic	12.4			P
7440-39-3	Barium	44.9	B		P
7440-41-7	Beryllium	0.68	B		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	5960			P
7440-47-3	Chromium	57.8			P
7440-48-4	Cobalt	43.5			P
7440-50-8	Copper	43.8			P
7439-89-6	Iron	43100			P
7439-92-1	Lead	128		*	P
7439-95-4	Magnesium	11000			P
7439-96-5	Manganese	1120			P
7439-97-6	Mercury	0.11	B		CV
7440-02-0	Nickel	79.1			P
7440-09-7	Potassium	1250			P
7782-49-2	Selenium	0.73	B	N	P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	466	B		P
7440-28-0	Thallium	3.0			P
7440-62-2	Vanadium	26.2			P
7440-66-6	Zinc	132			P

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA73

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 85.9
Lab Sample ID: 38979.05
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16900			P
7440-36-0	Antimony	2.6	B	N*	P
7440-38-2	Arsenic	10.2			P
7440-39-3	Barium	46.1	B		P
7440-41-7	Beryllium	0.54	B		P
7440-43-9	Cadmium	1.7			P
7440-70-2	Calcium	1380			P
7440-47-3	Chromium	62.6			P
7440-48-4	Cobalt	28.8			P
7440-50-8	Copper	213			P
7439-89-6	Iron	39300			P
7439-92-1	Lead	195		*	P
7439-95-4	Magnesium	8950			P
7439-96-5	Manganese	1040			P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	59.7			P
7440-09-7	Potassium	1050	B		P
7782-49-2	Selenium	0.69	U	N	P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	229	B		P
7440-28-0	Thallium	3.0			P
7440-62-2	Vanadium	22.2			P
7440-66-6	Zinc	105			P

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA74

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK__ Case No.: 27064 SAS No.: _____ SDG No.: MBTA69
Matrix (soil/water): SOIL_ Lab Sample ID: 38979.06
Level (low/med): LOW__ Date Received: 06/11/99
% Solids: _90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17600			P
7440-36-0	Antimony	1.9	B	N*	P
7440-38-2	Arsenic	10.6			P
7440-39-3	Barium	43.5	B		P
7440-41-7	Beryllium	0.56	B		P
7440-43-9	Cadmium	1.7			P
7440-70-2	Calcium	2310			P
7440-47-3	Chromium	35.7			P
7440-48-4	Cobalt	270			P
7440-50-8	Copper	54.0			P
7439-89-6	Iron	47700			P
7439-92-1	Lead	69.3		*	P
7439-95-4	Magnesium	10000			P
7439-96-5	Manganese	970			P
7439-97-6	Mercury	0.06	B		CV
7440-02-0	Nickel	490			P
7440-09-7	Potassium	1290			P
7782-49-2	Selenium	0.66	U	N	P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	257	B		P
7440-28-0	Thallium	3.3			P
7440-62-2	Vanadium	23.3			P
7440-66-6	Zinc	338			P

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID 0008

MBTA75

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 88.4

Lab Sample ID: 38979.07
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	17500			P	
7440-36-0	Antimony	2.4	B	N*	P	J
7440-38-2	Arsenic	10.9			P	
7440-39-3	Barium	42.9	B		P	
7440-41-7	Beryllium	0.67	B		P	
7440-43-9	Cadmium	1.7			P	
7440-70-2	Calcium	2610			P	
7440-47-3	Chromium	36.8			P	
7440-48-4	Cobalt	281			P	
7440-50-8	Copper	58.4			P	
7439-89-6	Iron	48900			P	
7439-92-1	Lead	88.1		*	P	J
7439-95-4	Magnesium	10300			P	
7439-96-5	Manganese	1120			P	
7439-97-6	Mercury	0.09	B		CV	
7440-02-0	Nickel	507			P	
7440-09-7	Potassium	1220			P	
7782-49-2	Selenium	0.68	U	N	P	J
7440-22-4	Silver	0.23	U		P	
7440-23-5	Sodium	304	B		P	
7440-28-0	Thallium	3.0			P	
7440-62-2	Vanadium	23.9			P	
7440-66-6	Zinc	366			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA76

Lab Name: SOUTHWEST_LAB_OF_OKLAHOMA Contract:68-D5-0137
Lab Code: SWOK Case No.: 27064 SAS No.: _____ SDG No.: MBTA69
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 96.4
Lab Sample ID: 38979.08
Date Received: 06/11/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	11100			P	
7440-36-0	Antimony	1.3	B	N*	P	J
7440-38-2	Arsenic	8.7			P	
7440-39-3	Barium	22.6	B		P	
7440-41-7	Beryllium	0.35	B		P	
7440-43-9	Cadmium	1.0			P	
7440-70-2	Calcium	26400			P	
7440-47-3	Chromium	12.5			P	
7440-48-4	Cobalt	17.1			P	
7440-50-8	Copper	37.5			P	
7439-89-6	Iron	30500			P	
7439-92-1	Lead	22.9		*	P	J
7439-95-4	Magnesium	20000			P	
7439-96-5	Manganese	757			P	
7439-97-6	Mercury	0.05	U		CV	
7440-02-0	Nickel	28.5			P	
7440-09-7	Potassium	1410			P	
7782-49-2	Selenium	0.61	U	N	P	J
7440-22-4	Silver	0.20	U		P	
7440-23-5	Sodium	195	B		P	
7440-28-0	Thallium	1.6	B		P	
7440-62-2	Vanadium	15.2			P	
7440-66-6	Zinc	72.8			P	

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments:

APPENDIX F
Sample Data Sheets
Southwest Lab of OK

APPENDIX F-1
Sample Data Sheets
Southwest Lab of OK
Organic

Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-225-6116 • Fax 732-225-7037

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-03819

TRANSMITTAL MEMO

To: Irmee Huhn, OSC
Response and Prevention Branch, U.S. EPA Region II

From: David Rosenberg, Data Reviewer
START Region II

Subject: Amenia Land Fill Site, Amenia, New York
Data Validation Assessment

Date: October 8, 1999

The purpose of this memo is to transmit the following information:

Data validation results for the following parameters:

TCL -Voa, BNA, Pest/PCB	27 samples
Matrices and Number of Samples	
Soil/Sediment	22 samples
Water	5 samples
Sampling date:	June 2 through 9, 1999.

The final data assessment narrative and original analytical data package are attached.

cc: START PM Dave Adams
START FILE TDD #: 02-99-06-0013B
TDD #: 02-99-06-0016
PCS #: 4820

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: October 8, 1999

TO: Irmee Huhn, OSC
USEPA Region II

FROM: David Rosenberg
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I VOA	II BNA	III PEST/PCB	IV HERB
Acceptable as Submitted				
Acceptable with Comments	X	X	X	
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: D Rosenberg Date: 10-7-99

Approved By: John Soyk Date: 10/8/99

Area Code/Phone No.: (732) 225-6116

NARRATIVE

CASE No. 4820

SITE NAME: Amenia Land Fill Site
Amenia, New York

Laboratory Name: SWOK

INTRODUCTION:

On 01 June 1999 through 11 June 1999, START personnel collected 10 soils and 12 liquids plus 4 trip blanks and 1 rinse blank, at the Amenia LF site, located in Amenia, New York, and shipped these to Compuchem who reshipped them to SWOK. These samples were submitted for full TCL analysis.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of samples for VOA, BNA, Pest.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the forms followed.

Evaluation by Fraction:

I. Volatile (VOAs) -

_Y_ Holding Time	_Y_ MS/MSD
_Y_ GC/MS Tuning	_Y_ Compound ID (HSL, TIC)
_Y_ Calibration, Initial	_Y_ Spectra Quality
_Y_ Calibration, Continuing	_Y_ Standards
_Y_ Blank	_Y_ Chromatography
_Y_ Surrogate Recovery	_Y_ Data Completeness
_Y_ Laboratory Fortified Blank	_Y_ Laboratory Storage Blank

Comments:

1. Refer to Data Assessment Narrative.

II. Base Neutral/Acids (BNAs) -

_Y_ Holding Time	_Y_ MS/MSD
_Y_ GC/MS Tuning	_Y_ Compound ID (HSL, TIC)
_Y_ Calibration, Initial	_Y_ Spectra Quality
_Y_ Calibration, Continuing	_Y_ Standards
_Y_ Blank	_Y_ Chromatography
_Y_ Surrogate Recovery	_Y_ Data Completeness

Comments:

1. Refer to Data Assessment Narrative.

III. Pesticides/PCB -

_Y_ Holding Times	_Y_ Calibration Linearity
_Y_ Instrument Performance	_Y_ Blank
_Y_ Surrogate Recovery	_Y_ Retention Time Window
_Y_ MS/MSD	_Y_ Analytical Sequence
_Y_ Compound ID (HSL, TIC)	_Y_ RT Check for TCX and DCB
_Y_ Chromatography	

Comments:

1. Refer to Data Assessment Narrative.

EPA — Organic Traffic Report & Chain of Custody Record (For Organic CLP Analysis)

United States Environmental Protection Agency
Contract Laboratory Program

Case No.: 27064

1133

1. Matrix (Enter In Column A)	2. Preservative (Enter In Column D)
1. Surface Water	1. HCl
2. Ground Water	2. HNO3
3. Leachate	3. NaHSO4
4. Field QC	4. H2SO4
5. Soil/Sediment	5. Ice only
6. Oil (High only)	6. Other (Specify In Column D)
7. Waste (High only)	N. Not preserved
8. Other (Specify In Column A)	

2. Region No.: 2	Sampling Co.: US EPA	4. Date Shipped: Jun 3, 1999	Carrier: Federal Express
Sampler (Name): N. Hercado		Airbill Number: 804708001600	
Sampler Signature:		5. Ship To: CompuChem Environmental Corporation, 501 Meadowview Drive, Cary, NC 27513, ATTN: Alice Evans	
3. Purpose* — Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action: [ ] CLEM, [ ] PA, [X] REM, [ ] RI, [ ] SI, [ ] ESI; Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD			

6. Date Received -- Received by	Laboratory Contract Number	Unit Price
6/4/99 Alice Boyle 6/4/99	68D50009	805.-
7. Transfer to:		Date Received
Received by		
Contract Number		Price

CLP Sample Numbers (from labels)	A Matrix (from Box 1) / Other:	B Conc.: Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 2) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF27	8	L-M	G	5		✓				DL135	06/01/99 1145	MBTA46				
BYF28	8	L-M	G	5		✓				DL105	06/01/99 1515	MBTA47				

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
N/A	1 of 1	BYF27 is MS/MSD		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/4/99 1200	FEDEX AIRBILL # 804708001600			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature) Alice Evans	Date / Time 6/9/99 4:00	Received by: (Signature) S. Hedden 6/9/99 1210
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Alice Evans	Date / Time 6/4/99 9:10	Remarks: 4°	Is custody seal intact? Y/N/none 3834 6/4/99 EBB

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLP

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3838 78

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27064

1. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)

2. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved

2. Region No.: 2 Sampling Co.: BY USEPA

Sampler (Name): M. Mercado

Sampler Signature:

3. Purpose*: Lead: SF, PRP, ST, FED; Early Action: CLEM, PA, REM, RI, SI, ESI; Long-Term Action: FS, RD, RA, O&M, NPLD

4. Date Shipped: Carrier: Federal Express

Airbill Number: 8047080015 85

5. Ship To: Compuchem Environmental Corp, 501 Madison Avenue, Cary, NC 27513
ATTN: Alice Evans

6. Date Received -- Received by: 6/4/99 Alice Evans 6/12/99

Laboratory Contract Number: 68D50009 Unit Price: 8.05-

7. Transfer to: Date Received:

Received by:

Contract Number: Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF29	8	L-M	G	5/1	✓	✓				DL 144/145	06/01/99 @0950	MBTA 48	[illegible]			
BYF30	8	L-M	G	5/1	✓	✓				DL 201	06/01/99 @1000	MBTA 49	[illegible]			
BYF27	8	L-M	G	5/1	✓					DL 135	06/01/99 @1445	MBTA 46	[illegible]			
BYF28	8	L-M	G	5/1	✓					DL 105	06/01/99 @1510	MBTA 47	[illegible]			
BYF31	8	L-M	G	5/1	✓	✓				DL 93/94	06/03/99 @[illegible]	MBTA 50	[illegible]			
BYF32	4	L	G	5/1	✓					Trip Blank	06/[illegible]/99	—	[illegible]			

Shipment for Case Complete? (Y/N): No

Page: 1 of 1

Sample(s) to be Used for Laboratory QC: BYF 28 (MS/MSD) BYF 32 (Trip Blank)

Additional Sampler Signatures: 6/4/99

Chain of Custody Seal Number(s):

Incorrect ID - Should be BYF 29

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/3/99 1200	[illegible] 8047080015 85			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
			Alice Evans	6/9/99 4:00	S. Hadbon 6/12/99 930
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? (Y)/N/none
		Alice Evans	6/4/99 9:10	40	3,3,6,6,6,8,8

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1134

EPA Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

Case No. 27064 (4/17/99)

1135

1. Matrix (Enter In Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify In Column A)

2. Preservative (Enter In Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify In Column D)
N. Not preserved

2. Region No.	Sampling Co.	4. Date Shipped	Carrier
2	USEPA	6/4/99	Federal Express

Sampler (Name): M. Mercado

Sampler Signature:

Airbill Number: 806493167549

5. Ship To: CompuChem Environmental Corp. 501 Meadowland Avenue Cary NC 27513
ATTN: Alice Evans

6. Date Received -- Received by: 6-7-99 S. Hodson

Laboratory Contract Number | Unit Price

7. Transfer to: | Date Received

Received by

Contract Number | Price

3. Purpose*
Lead: [x] SF [ ] PRP [ ] ST [ ] FED
Early Action: [ ] CLEM [ ] PA [x] REM [ ] RI [ ] SI [ ] ESI
Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) / Other:	B Conc.: Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 2) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only: ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF33	S	L-M	G	S/L	✓	✓				DL124	06/04/99 0800	MBTA51				
BYF34	S	L-M	G	S/L	✓	✓				DL157	06/04/99 0015	MBTA52				
BYF35	S	L-M	G	S/L	✓	✓				DL97	06/04/99 0750	MBTA53				
BYF36	S	L-M	G	S/L	✓					trip blank	06/04/99 0000					
BYF37	S	L-M	G	S/L	✓					DL122	06/03/99 1740	MBTA54				
BYF38	S	L-M	G	S/L	✓					DL137	06/03/99 1800	MBTA55				
BYF39	S	L-M	G	S/L	✓					DL130	06/03/99 1740	MBTA56				

Shipment for Case Complete? (Y/N)

Page: 1 of 1

Sample(s) to be Used for Laboratory QC: BYF36 trip blank

Additional Sampler Signatures

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/4/99 1730	Fedex airbill # 806493167549			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
			Alice Evans	6/9/99 4:00	S. Hodson 6/12/99 9:30
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none
		Alice Evans	6/7/99 9:10	14°	3,3,4,4,4 8,8

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383279

EPA — Organic Traffic Report & Chain of Custody Record

United States Environmental Protection Agency
Contract Laboratory Program

(For Organic CLP Analysis)

1136

1. Matrix (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Field QC 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify in Column A)	2. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. NaHSO4 4. H2SO4 5. Ice only 6. Other (Specify in Column D) N. Not preserved	2. Region No.: 2	Sampling Co.: USEPA	4. Date Shipped: 6/4/99	Carrier: Federal Express
		Sampler (Name): M. Mercado		Airbill Number: 806493167550	
		Sampler Signature:		5. Ship To: Compuchem Environmental Corp. 501 Madison Avenue Cary, NC 27513 ATTN: Alice Evans	
		3. Purpose* Lead: [X] SF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [X] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD			

Case No.	
27064	
6. Date Received -- Received by: 6/7/99	S. Hodson
Laboratory Contract Number	Unit Price
7. Transfer to:	Date Received
Received by	
Contract Number	Price

CLP Sample Numbers (from labels)	A Matrix (from Box 1) / Other:	B Conc.: Low Med High	C Sample Type: Comp. / Grab	D Preservative (from Box 2) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BJF37	S	L M H	G	5		✓				DL122	06/03/99 0745	MBIA54				
BJF38	S	L M H	G	5		✓				DL127	06/03/99 0800	MBIA55				
BJF39	S	L M H	G	5		✓				DL130	06/03/99 0740	MBIA56				

Shipment for Case Complete? (Y/N)	Page	Sample(s) to be Used for Laboratory QC	Additional Sampler Signatures	Chain of Custody Seal Number(s)
No	1 of 1	—		

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	6/4/99 1730	Fedex airbill # 806493167550			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature) Alice Evans	Date / Time 6/7/99 4:00	Received by: (Signature) S Hodson 6/12/99 930
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) Alice Evans	Date / Time 6/7/99 9:10	Remarks: Is custody seal intact? Y/N/none 140	3,3,6,6,6 8,8

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EPA United States Environmental Protection Agency Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27064

1. Matrix (Enter In Column A): 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Field QC, 5. Soil/Sediment, 6. Oil (High only), 7. Waste (High only), 8. Other (Specify In Column A) –

2. Preservative (Enter In Column D): 1. HCl, 2. HNO3, 3. NaHSO4, 4. H2SO4, 5. Ice only, 6. Other (Specify In Column D), N. Not preserved

2. Region No.: 2 | Sampling Co.: USEPA

4. Date Shipped: 6/8/99 | Carrier: Fed Ex

Sampler (Name): Mark Denno

Airbill Number: 804708001520

Sampler Signature: Mark Denno

3. Purpose* — Lead: [X] SF, [ ] PRP, [ ] ST, [ ] FED; Early Action: [ ] CLEM, [ ] PA, [X] REM, [ ] RI, [ ] SI, [ ] ESI; Long-Term Action: [ ] FS, [ ] RD, [ ] RA, [ ] O&M, [ ] NPLD

5. Ship To: Compu Chem Environmental Corp.
501 Madison Avenue
Cary, N.C. 27513
ATTN: Alice Evans

6. Date Received -- Received by: 6/9/99 S. Hodson

Laboratory Contract Number | Unit Price

7. Transfer to: | Date Received

Received by

Contract Number | Price

CLP Sample Numbers (from labels)	A Matrix (from Box 1) / Other:	B Conc.: Low Med High	C Sample Type: Comp. Grab	D Preservative (from Box 2) / Other:	E RAS Analysis: VOA	BNA	Pest/PCB	High only: ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF40	5	L/M	Grab	5	✓	✓	✓			DS-40	6/7/99 @ 1545	MBTA57	WG			
BYF41	8	L/M	Grab	5	✓	✓	✓			DS-125	6/7/99 @ 1545	MBTA58	MD			
BYF42	8	L/M	Grab	5	✓	✓	✓			DS-157	6/7/99 @ 1545	MBTA59	MM			
BYF43	5	L/M	Grab	5	✓	✓	✓			DS-202	6/7/99 @ 1545	MBTA60	WG			

Shipment for Case Complete? (Y/N): Y

Page 1 of 2

Sample(s) to be Used for Laboratory QC: BYF41 (MS/MSD)

Additional Sampler Signatures: William Glynn, Michael Mercado

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	6/8/99 1400	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature) [Alice Evans]	Date / Time 6/9/99 4:00	Received by: (Signature) S. Hodson 6/12/99
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) [Alice Evans]	Date / Time 6/9/99 8:45	Remarks: Is custody seal intact? Y/N/none	3, 3, 6, 6, 4, 8, 8

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2027

392882

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. 27064

1. Matrix (Enter in Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify in Column A)

2. Preservative (Enter in Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify in Column D)
N. Not preserved

2. Region No.: 2
Sampling Co.: USEPA
Sampler (Name): Mark Denno
Sampler Signature: Mark Denno
3. Purpose*: Lead: [X] BF [ ] PRP [ ] ST [ ] FED; Early Action: [ ] CLEM [ ] PA [X] REM [ ] RI [ ] SI [ ] ESI; Long-Term Action: [ ] FS [ ] RD [ ] RA [ ] O&M [ ] NPLD

4. Date Shipped: 6/8/99
Carrier: Fed Ex
Airbill Number: 804708001520 ~~804708001438~~ am
5. Ship To: Compu Chem Environmental Corp. 501 Madison Avenue Cary, N.C. 27513
ATTN: Alice Evans

6. Date Received -- Received by: 6/9/99 S. Hodson
Laboratory Contract Number:
Unit Price:
7. Transfer to:
Date Received:
Received by:
Contract Number:
Price:

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./Grab	D Preservative (from Box 2) Other:	E RAS Analysis VOA	BNA	Pest/PCB	High only ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF 44	4	Low	Grab	1/5	✓	✓	✓			RB-01	6/8/99 @ 0600	MBTA 61	MD			
BYF 45	4	Low	Grab	1/5	✓					TB-02	6/8/99 @ 0630	N/A	MD			
BYF 48	8	L/M	Grab	5	✓	✓	✓			DL-48	6/8/99 @ 0745	MBTA 64	MM			
BYF 46	8	L/M	G	5	✓	✓	✓			DS-115	6/8/99 @ 0745	MBTA 62	MD			
BYF 47	8	L/M	G	5	✓	✓	✓			DS-161	6/8/99 @ 0745	MBTA 63	WG			
BYF 49	8	L/M	G	5	✓	✓	✓			DS-122	6/8/99 @ 1030	MBTA 65	MD			
BYF 50	8	L/M	G	5	✓	✓	✓			DS-108	6/8/99 @ 1045	MBTA 66	MD			
[illegible]		Nothing			Follow											

Shipment for Case Complete? (Y/N): 0
Page: 2 of 2
Sample(s) to be Used for Laboratory QC:
Additional Sampler Signatures: William Glynn + Michael Mercado
Chain of Custody Seal Number(s):

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Michael Mercado	6/8/99 1400	Fed Ex			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
			Alice Evans	6/9/99 4:00	S. Hodson 6/11/99 9:30
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none
		Alice Evans	6/9/99 8:45	6°	BYF48 REC. 3 A.L. INSTEAD OF 4-

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2028

EPA United States Environmental Protection Agency
Contract Laboratory Program

Organic Traffic Report & Chain of Custody Record
(For Organic CLP Analysis)

Case No. R6-RFP 4820 (Weston)

1. Matrix (Enter In Column A)
1. Surface Water
2. Ground Water
3. Leachate
4. Field QC
5. Soil/Sediment
6. Oil (High only)
7. Waste (High only)
8. Other (Specify In Column A)

2. Preservative (Enter In Column D)
1. HCl
2. HNO3
3. NaHSO4
4. H2SO4
5. Ice only
6. Other (Specify In Column D)
N. Not preserved

2. Region No. 7 | Sampling Co. USEPA

4. Date Shipped 6/11/99 | Carrier FED EX

Sampler (Name) M. Hooton

Airbill Number 8[illegible]

Sampler Signature

5. Ship To
Environmental Science & Engineering
1700 Broadway, Suite C
Oklahoma Norman, OK 73072
ATTN: David L. Hooton

6. Date Received -- Received by: 6/12/99 S. Hooton

Laboratory Contract Number | Unit Price

7. Transfer to: | Date Received

Received by

Contract Number | Price

3. Purpose*
Lead: SF, PRP, ST, FED
Early Action: CLEM, PA, REM, RI, SI, ESI
Long-Term Action: FS, RD, RA, O&M, NPLD

CLP Sample Numbers (from labels)	A Matrix (from Box 1) Other:	B Conc.: Low Med High	C Sample Type: Comp./ Grab	D Preservative (from Box 2) Other:	E RAS Analysis: VOA	BNA	Pest/ PCB	High only ARO/ TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Identifier	H Mo/Day/ Year/Time Sample Collection	I Corresponding CLP Inorganic Sample No.	J Sampler Initials	K High Phases: Solids	Water-Miscible Liq.	Water-Immis. Liq.
BYF51	4	L	G	1/5	V					TRIP BLANK	6/9/99 0545	[illegible]	[illegible]			
BYF52	8	M	G	5	V	V	V			DS-155	6/9/99 0620	[illegible]	[illegible]			
BYF53	8	M	G	5	V	V	V			DS-150	6/9/99 0600	[illegible]	[illegible]			

Shipment for Case Complete? (Y/N) Y

Page 1 of 1

Sample(s) to be Used for Laboratory QC

Additional Sampler Signatures: William Glynn, Mark Round

Chain of Custody Seal Number(s)

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	1600 6/11/99	FEDEX # 807816430357			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	
		[signature]	6/12/99 0730		

DISTRIBUTION: Blue - Region Copy; White - Lab Copy for Return to Region; Pink - CLASS Copy; Yellow - Lab Copy for Return to CLASS

EPA Form 9110-2 (2/98)

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS
*SEE REVERSE FOR PURPOSE CODE DEFINITIONS

A21-012-16 REV.

2029

383885

SOUTHWEST LABORATORY OF OKLAHOMA
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

July 2, 1999

CONTRACT NO.: WESTON

PROJECT NO.: RFP NO. 4820 REVISED

SDG NO.: 38993

VOLATILE FRACTION

Two water samples and eleven "other" matrix samples plus MS/MSD were submitted for Volatile Organic Analysis. The samples were analyzed by GC/MS following the OLM03.2 CLP Statement of Work.

Alternate columns used for the analysis of volatile compounds by Method OLM03.2 are the Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 1um film thickness (Restek #12253) and the DB624, 75m, 0.53mmID Megabore, 3um film thickness (J&W 125-1374).

An alternate trap used for the analysis of volatile compounds by method OLM03.2 is the Vocarb 3000 (Carbopack B/Carboxen 1000 & 1001; Tekmar #2-1066).

No major problems occurred during the analyses of these samples. All the "other" matrix samples had to be run medium level due to high-level target compounds and / or TICs.

Blanks: No problems.

Surrogates: No problems.

Matrix Spikes: There were no problems with BYF27MS/MSD.

Internal Standards: No problems.

Laboratory Control Spikes: No problems.

NOTE: All manual integrations in this data package for GC/MS Volatiles have been performed for one of the following reasons:

a. Data system missed peak during acquisition.
b. Data system improperly integrated peak.

If water samples are contained in this case, their pH data is included on the page accompanying this SDG narrative.

Harry M. Borg
Organic Program Manager

July 2, 1999

SOUTHWEST LABORATORY OF OKLAHOMA
(SWL-TULSA)
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

July 18, 1999

CONTRACT NO.: WESTON

CASE NO.: RFP NO. 4820

SAMPLE NOS.: BYF27, BYF27MS, BYF27MSD, BYF28, BYF28DL, BYF29, BYF30, BYF31, BYF31DL, BYF33, BYF34, BYF35, BYF35RE, BYF37, BYF38 and BYF37.

SDG NO.: 38993

SEMIVOLATILE FRACTION

Thirteen waste samples and one set of MS/MSD samples were submitted for semivolatile organic analyses. The samples were analyzed by GC/MS following the OLM03.2 CLP Organic Statement of Work.

The following column is used for the semivolatile analysis: Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 0.25um film thickness (Restek #12223).

Several sample related problems occurred during the analyses of these samples. (1)These samples were extracted as medium levels (1-gram) extracts, due to the organic nature of this waste material. (2)When these samples were GPC'ed the extracts caused extreme deterioration of the GPC column rendering the column unusable and causing the GPC ending calibration check to fail peak separation. (3) These extracts when concentrated to 0.5mL final volume were extremely sticky in nature and caused autosamplers to seize-up and extreme deterioration of the analytical column, due to this problem the samples were diluted 200 fold in an attempt to inject into GC/MS system. (4) At the 200 fold dilution samples (BYF28 & BYF31) needed secondary dilution to get target analyte (phenol) within instruments linear range.

The following samples had alkanes reported and the reports are included at the end of this SDG Narrative:BYF29, BYF33, BYF37, BYF38, BYF39 and SBLK1.

Blanks: SBLK1 had low level phthalate contamination below CRQL.

Surrogates: All surrogates were considered diluted out, with the exception of SBLK1.

Matrix Spike: All matrix spikes were considered diluted out.

Internal standards: The following samples had internal standard areas outside of QC limits: BYF35 and BYF35RE.

NOTE: All manual integrations in this data package for GC/MS Volatiles/Semivolatiles have been performed for one of the following reasons:

a. Data system missed peak during acquisition.
b. Data system improperly integrated peak.

If water samples are contained in this case, their pH data is included on the page accompanying this SDG narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager, or his designee, as verified by the following signature.

Harry M. Borg

Harry M. Borg
Organic Program Manager

July 18, 1999

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Drew Cowan
GC Supervisor
Dc

July 21, 1999

SOUTHWEST LABORATORY OF OKLAHOMA
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

July 2, 1999

CONTRACT NO.: WESTON

PROJECT NO.: RFP NO. 4820 REVISED

SDG NO.: 38992

VOLATILE FRACTION

Two soil samples, three water samples and nine "other" samples plus MS/MSD were submitted for Volatile Organic Analysis. The samples were analyzed by GC/MS following the OLM03.2 CLP Statement of Work.

Alternate columns used for the analysis of volatile compounds by Method OLM03.2 are the Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 1um film thickness (Restek #12253) and the DB624, 75m, 0.53mmID Megabore, 3um film thickness (J&W 125-1374).

An alternate trap used for the analysis of volatile compounds by method OLM03.2 is the Vocarb 3000 (Carbopack B/Carboxen 1000 & 1001; Tekmar #2-1066).

No major problems occurred during the analyses of these samples. All the "other" matrix samples had to be run medium level due to high-level target compounds.

Blanks: VBLK2 and VBLK4 each contained low level methylene chloride contamination less than the PQL.

Surrogates: Samples BYF41, BYF42, BYF46 and BYF50 contained surrogates outside QC recovery limits. Each reanalysis duplicated its original result verifying a matrix effect. Both sets of data are submitted. Sample BYF41 was duplicated by its MS and MSD.

Matrix Spikes: There were no problems with BYF41MS/MSD (client requested). There were no problems with BYF40MS/MSD.

Internal Standards: Samples BYF41, BYF42, BYF46 and BYF50 contained internal standard areas outside QC recovery limits. Each reanalysis duplicated its original result verifying a matrix effect. Both sets of data are submitted. Sample BYF41 was duplicated by its MS and MSD. Sample BYF40MSD contained internal standard areas outside QC recovery limits. They were within limits in the sample analysis and MSD. No reanalysis was done per protocol.

Laboratory Control Spikes: LCS2, LCS3 and LCSD3 each contained one compound outside QC recovery limits (high).

NOTE: All manual integrations in this data package for GC/MS Volatiles have been performed for one of the following reasons:

a. Data system missed peak during acquisition.
b. Data system improperly integrated peak.

If water samples are contained in this case, their pH data is included on the page accompanying this SDG narrative.

Harry M. Borg
Organic Program Manager

July 2, 1999

SOUTHWEST LABORATORY OF OKLAHOMA
(SWL-TULSA)
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

July 18, 1999

CONTRACT NO.: WESTON

CASE NO.: RFP NO. 4820

SAMPLE NOS.: BYF40, BYF40DL, BYF40MS, BYF40MSD, BYF41, BYF42, BYF43, BYF43DL, BYF44, BYF46, BYF47, BYF47DL, BYF47MS, BYF47MSD, BYF48, BYF48RE, BYF49, BYF50, BYF52, BYF53 and BYF53DL.

SDG NO.: 38992

SEMIVOLATILE FRACTION

Eleven organic waste, two soil and one water samples and one set of MS/MSD samples were submitted for semivolatile organic analyses. The samples were analyzed by GC/MS following the OLM03.2 CLP Organic Statement of Work.

The following column is used for the semivolatile analysis: Restek XTI-5 (bonded 5% phenyl-95% dimethyl polysiloxane), 30m, 0.25mm ID, 0.25um film thickness (Restek #12223).

Several sample related problems occurred during the analyses of these samples. (1)The majority of these samples were extracted as medium levels (1-gram) extracts, due to the organic nature of this waste material. (2)When these samples were GPC'ed the extracts caused extreme deterioration of the GPC column rendering the column unusable and causing the GPC ending calibration check to fail peak separation. (3) These extracts when concentrated to 0.5mL final volume were extremely sticky in nature and caused autosamplers to seize-up and extreme deterioration of the analytical column, due to this problem the majority of these samples were diluted 200 fold in an attempt to inject into GC/MS system. (4) At the 200 fold dilution samples (BYF47 & BYF53) needed secondary dilution to get target analyte (phenol) within instruments linear range.

Sample BYF41 was requested to be used for MS/MSD, this sample was not used for the MS/MSD since at a 200-fold dilution all matrix spikes were diluted out and there was no other target compounds to be used to compare duplication. Therefore for the medium level MS/MSD sample BYF47 was used since this sample had extremely high levels of

phenol found and could be used for duplicate results. Also sample BYF40 was used for low level MS/MSD.

The following samples had alkanes reported and the reports are included at the end of this SDG Narrative: BYF40, BYF40DL, BYF43, BYF43DL, BYF44, BYF46, BYF49, BYF50, BYF52, SBLK1, SBLK3, SBLK4 and SBLK5.

Blanks: SBLK1, SBLK2, SBLK3 and SBLK5 had low level phthalate contamination below CRQL.

Surrogates: All medium level extracts had the surrogates considered diluted out, with the exception of SBLK3, SBLK4 and SBLK5. All low level extracts and water extracts had surrogates within QC limits.

Matrix Spike: There was insufficient sample sent to do a water matrix spike and matrix spike duplicate. Low level extract BYF40MSD had low spike recovery for N-nitroso-di-n-propylamine at 40%. BYF40MS/MSD had a high RPD for 1,2,4-trichlorobenzene at 31%. Medium Level extract BYF47MS/MSD had all spike compounds diluted out. This set of MS/MSD had phenol found in the sample at ~250X the amount spiked into the matrix spike and matrix spike duplicate.

Internal standards: The following samples had internal standard areas outside of QC limits: BYF48, BYF48RE, BYF47 and BYF47DL.

NOTE: All manual integrations in this data package for GC/MS Volatiles/Semivolatiles have been performed for one of the following reasons:

a. Data system missed peak during acquisition.
b. Data system improperly integrated peak.

If water samples are contained in this case, their pH data is included on the page accompanying this SDG narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager, or his designee, as verified by the following signature.

Harry M. Borg
Organic Program Manager

July 18, 1999

SOUTHWEST LABORATORY OF OKLAHOMA
1700 West Albany, Suite A/ Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

CLIENT: WESTON

PROJECT: RFP NO. 4820 REVISED

SDG NO: 38992

FRACTION: Pesticide/PCB

This SDG consisted of 14 samples (1 water, 2 soil, and 11 "other") that were analyzed for pesticide/PCBs, by EPA SOW OLM03.2. The samples were analyzed on J&W Scientific dual analytical columns DB-17MS and DB-XLB. The DB-17MS phase consists of (50%-Phenyl) Methylpolysiloxane and the DB-XLB is a proprietary phase. These columns were specifically designed for pesticide/PCB separation as required by the EPA's SOW. All applicable manufacturer's instructions were followed for the analysis of pesticides/PCBs. Manufacturer provided information on the performance characteristics of the columns are kept on site. Hydrogen was used as the carrier gas.

The matrix of the "other" samples caused problems during their extraction and analysis. Most of the extraction related problems were encountered during the BNA extraction and are described in detail in the BNA case narrative. The end result of the extraction problems are listed below:

1. Some of the samples were extracted using 1 gram (30 grams is normally used).
2. The sample extracts were concentrated to a 200 ml final volume (10 ml is the normal final volume).
3. The sample extracts were not GPC cleaned.

These samples caused problems with their analysis by introducing interference peaks in the sample chromatograms and degrading instrument performance. It should be noted that when large numbers of "interference" peaks are present in a sample, false positives of single response compounds are common. Since ECD detection is not a definitive means of detection, single-response analytes in the presence of multi-responders or interference will be reported, per the method, if a peak is within a target analyte's retention time window on both columns, then it is reported as that target analyte). This alleviates the possibility that false negative results will be reported. However, this may lead to false positives. The end data user should be aware of the limitations of the method and take appropriate care. Samples BYF48, BYF52, BYF53, BYF41, and BYF42 caused breakdown of pesticides in the calibration verification standards following their injection.

Blanks: No corrective action required.

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Drew Cowan
GC Supervisor
Dc

July 21, 1999

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE # 4820 SDG # 38992, 38993
LAB: SWOK SITE: AMENIA LF

The current Functional Guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a J (estimated), N (presumptive evidence for the presence of the material), U (non-detects), R (unusable), or JN (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the R flag means that the associated value is unusable. In other words, due to significant QC problems, the analysis is invalid and provides no information as to whether the compound is present or not. R values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Analytical data qualified as JN or R may not be used to demonstrate compliance with Toxicity Characteristic or Land Ban Regulations.

Reviewer's Signature: D Rosenberg Date: 10/6/1999

Verified By: _____ Date: __/__/19__

CLP DATA ASSESSMENT

On 01 June 1999 through 11 June 1999, START personnel collected 10 soils and 12 liquids plus 4 trip blanks and 1 rinse blank, at the Amenia LF site, located in Amenia, New York, and shipped these to Compuchem who reshipped them to SWOK. These samples were submitted for full TCL analysis.

Client identification (ID) and laboratory ID numbers:

Client ID No.	Laboratory ID No.	Matrix
SDG# 38992		
BYF40	38992.01	SOIL
BYF41	38992.02	SOIL
BYF42	38992.06	SOIL
BYF43	38992.07	SOIL
BYF44	38992.08	WATER, RINSE BLANK
BYF45	38992.09	WATER, TRIP BLANK
BYF46	38992.10	SOIL
BYF47	38992.11	SOIL
BYF48	38992.12	SOIL
BYF49	38992.13	SOIL
BYF50	38992.14	SOIL
BYF51	38992.15	WATER, TRIP BLANK
BYF52	38992.16	SOIL
BYF53	38992.17	SOIL
SDG# 38993		
BYF27	38993.01	SOIL
BYF28	38993.05	SOIL
BYF29	38993.06	SOIL
BYF30	38993.07	SOIL
BYF32	38993.09	WATER, TRIP BLANK
BYF31	38993.08	SOIL
BYF33	38993.10	SOIL
BYF34	38993.11	SOIL
BYF35	38993.12	SOIL
BYF36	38993.13	WATER, TRIPBLANK
BYF37	38993.14	SOIL
BYF38	38993.15	SOIL
BYF39	38993.16	SOIL

CLP DATA ASSESSMENT

1. HOLDING TIMES:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, J . The non-detects (sample quantitation limits) will be flagged as estimated, J , or unusable, R , if the holding times are grossly exceeded.

The following analytes in the samples shown were qualified because of holding time:

TCL Data

VOA - The following data were qualified as estimated J or rejected R due to exceeding holding time criteria:

Sample ID	Matrix	Date Sampled	Date Extracted	Qualifier	Compounds
BYF27	SOIL	6/2/99	6/19/99	J	4-Methyl-2-Pentanone
BYF28	SOIL	6/2/99	6/19/99	J	4-Methyl-2-Pentanone
				J	Toluene
BYF29	SOIL	6/2/99	6/19/99	J	2-Butanone
BYF30	SOIL	6/2/99	6/19/99	J	2-Butanone
BYF31	SOIL	6/3/99	6/19/99	J	4-Methyl-2-Pentanone
BYF33	SOIL	6/4/99	6/19/99	J	Toluene
				J	Ethylbenzene
				J	Xylene(total)
BYF34	SOIL	6/4/99	6/19/99	J	Vinyl chloride
BYF35	SOIL	6/4/99	6/19/99	J	4-Methyl-2-Pentanone
				J	2-Butanone
				J	Toluene
				J	Xylene(total)
BYF37	SOIL	6/3/99	6/19/99	J	Ethylbenzene
				J	Toluene
				J	Xylene(total)
BYF38	SOIL	6/3/99	6/19/99	J	Toluene
				J	Ethylbenzene
				J	Xylene(total)
BYF39	SOIL	6/3/99	6/19/99	J	Benzene
				J	Toluene
				J	Ethylbenzene
				J	Xylene(total)
BYF41	SOIL	6/7/99	6/21/99	J	Chloromethane
				J	Bromomethane
BYF42	SOIL	6/7/99	6/21/99	J	1,2-Dichloroethane

CLP DATA ASSESSMENT

				J	Benzene
				J	Toluene
BYF42RE	SOIL	6/7/99	6/21/99	J	Bromomethane
				J	1,2-Dichloroethane
				J	Toluene
BYF46RE	SOIL	6/8/99	6/21/99	J	Bromomethane
BYF47	SOIL	6/8/99	6/21/99	J	4-Methyl-2-Pentanone
BYF48	SOIL	6/8/99	6/21/99	J	Vinyl chloride
				J	Benzene
BYF50	SOIL	6/8/99	6/21/99	J	Carbon disulfide
BYF50RE	SOIL	6/8/99	6/21/99	J	Carbon disulfide
				J	Bromomethane
				J	4-Methyl-2-Pentanone
BYF52	SOIL	6/9/99	6/21/99	J	Acetone
				J	Ethylbenzene
				J	Xylene(total)
BYF53	SOIL	6/9/99	6/21/99	J	Acetone
				J	4-Methyl-2-Pentanone
				J	Ethylbenzene
				J	Xylene(total)

Note: If properly preserved, aqueous samples maintained at 4°C must be analyzed within fourteen (14) days of collection. If unpreserved, aqueous samples must be analyzed within seven (7) days for aromatic hydrocarbons. Soil/Solid samples must be analyzed within ten (10) days of collection.

BNA - The following data were qualified as estimated J or rejected R due to exceeding holding time criteria:

Sample ID	Matrix	Date Sampled	Date Extracted	Qualifier	# Compounds
BYF27	SOIL	6/2/99	6/16/99	J	Phenol
BYF28	SOIL	6/2/99	6/16/99	J	Phenol
BYF29	SOIL	6/2/99	6/16/99	J	Phenol
BYF30	SOIL	6/2/99	6/16/99	J	Phenol
BYF31	SOIL	6/3/99	6/16/99	J	Phenol
BYF40	SOIL	6/7/99	6/16/99	J	Phenol
				J	bis(2-Ethylhexyl)phthalate
BYF43	SOIL	6/7/99	6/16/99	J	bis(2-Ethylhexyl)phthalate
BYF46	SOIL	6/7/99	6/16/99	J	Phenol
BYF49	SOIL	6/7/99	6/16/99	J	Phenol
BYF50	SOIL	6/7/99	6/16/99	J	Phenol

CLP DATA ASSESSMENT

Pest/PCBs - The following data were qualified as estimated J or rejected R due to exceeding holding time criteria:

Sample ID	Matrix	Date Sampled	Date Extracted	Qualifier	# Compounds
BYF40	SOIL	6/7/99	6/16/99	J	Aldrin, alpha-chlordane, 4,4-DDT, Aroclor-1254
BYF43	SOIL	6/7/99	6/16/99	J	gamma-BHC, Aldrin, alpha-chlordane, Aroclor-1254
BYF47	SOIL	6/8/99	6/21/99	J	Endrin

Note: Continuous extraction of water samples must be started within seven (7) days of the date of collection. Soil/Sediment/Solid samples must be extracted within seven (7) days of collection. Extracts must be analyzed within forty (40) days of extraction.

2. BLANK CONTAMINATION:

Quality Assurance (QA) blanks [i.e., method, trip, field or rinse blanks] are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, U . The following analytes in the samples shown were qualified with U for these reasons:

A) Method Blank Contamination

VOA - The following compounds were qualified as non-detected U in the associated samples due to method blank contamination:

Compound	Associated Sample(s)
Methylene Chloride	BYF41, BYF42, BYF42RE, BYF46, BYF46RE, BYF47, BYF49, BYF50, BYF50RE, BYF52

CLP DATA ASSESSMENT

2. BLANK CONTAMINATION (continued):

A) Method Blank Contamination

BNA - The following compounds were qualified as non-detected U in the associated samples due to method blank contamination:

Compound	Associated Samples
bis(2-Ethylhexyl)phthalate	BYF46, BYF49, BYF50

TICs: VOA/ BNA - All the TICs detected in the associated method blanks were rejected R .

Pest/PCBs - The following compounds were qualified as non-detected U in the associated samples due to method blank contamination:

Compound	Associated Samples
No problems were found.	

2. BLANK CONTAMINATION (continued):

B) Field or Rinse Blank Contamination (water blanks or distilled water blanks are validated like any other sample)

VOA - The following compounds were qualified as non-detected U in the associated samples due to rinse blank contamination:

Compound	Associated Samples
No problems were found.	

BNA - The following compounds were qualified as non-detected U in the associated samples due to rinse blank contamination:

Compound	Associated Samples
No problems were found.	

Pest/PCBs - The following compounds were qualified as non-detected U in the associated samples due to rinse blank contamination:

Compound	Associated Samples
No problems were found.	

C) Trip Blank Contamination

VOA - The following compounds were qualified as non-detected U in the associated samples due to trip blank contamination:

Compound	Associated Samples
No Trip Blanks Were Taken.	

D) TIC Blank Contamination

VOA/BNA - The following TIC common laboratory contaminants were rejected R in the associated samples because the levels detected are either < 100 *ug*/L for aqueous samples or < 4000 *ug*/Kg for soil/sediment samples:

Fraction	TIC	Associated Samples
No problems were found.		

VOA/BNA - The following TIC contaminants were rejected R in the indicated samples because these compounds are target TCL compounds also present in the associated volatile or semi-volatile fraction analyses:

Fraction	TIC	Samples
All TIC compounds detected in the blanks		

Note: TIC compounds associated with a best match spectra and CAS number were qualified as presumptive evidence of a compound at an estimated value JN by the data reviewer. TICs not associated with a CAS number were qualified as estimated J by the data reviewer in the sample data.

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these

criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error or missing, all associated data will be classified as unusable R. The following samples shown were qualified with R because of tuning:

No problems were found.

4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

Response Factor:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the VOA/BNA Target Compound List (TCL) must be $\geq$ 0.05 in both the initial and continuing calibrations. A value $\leq$ 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean RRF of the initial calibration or the continuing calibration has a response factor $<$ 0.05 for any analyte, those analytes detected in environmental samples will be qualified as estimated J. All non-detects for those compounds will be rejected R. The following analytes in the samples shown were qualified because of response factor:

Initial Calibration

VOA - The following compounds were either qualified as estimated J (positive values only) or rejected R (non-detected U values only) in the associated samples because the Initial Calibration Mean RRF value is $<$ 0.05:

Compound	Qualifier	Associated Sample(s)

No problems were found.

BNA - The following compounds were either qualified as estimated J (positive values only) or rejected R (non-detected U values only) in the associated samples because the Initial Calibration Mean RRF value is $<$ 0.05:

Compound	Qualifier	Associated Sample(s)

No problems were found.

CLP DATA ASSESSMENT

Continuing Calibration

VOA - The following compounds were either qualified as estimated J (positive values only) or rejected R (non-detected U values only) in the associated samples because the Continuing Calibration RRF50 is < 0.05:

Compound	Qualifier	Associated Sample(s)
No problems were found.		

BNA - The following compounds were either qualified as estimated J (positive values only) or rejected R (non-detected U values only) in the associated samples because the Continuing Calibration RRF50 is < 0.05:

Compound	Qualifier	Associated Sample(s)
No problems were found.		

5. CALIBRATION:

PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < 25%. A value outside of these QC limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, J ; and non-detects are flagged UJ . If %RSD and/or %D grossly exceed QC criteria, non-detect data may be qualified R .

For the PESTICIDE/PCB fraction, if %RSD exceeds 20% for all analytes except for the 2 surrogates (which must not exceed 30% RSD), qualify all associated positive results J and non-detects UJ .

The following analytes in the samples shown were qualified for %RSD and %D:

Initial Calibration

VOA - Positive values of the following compounds were qualified as estimated J in the associated samples because the Initial Calibration %RSD is between 30-90% when the mean RRF is > 0.05:

Compound	Associated Sample(s)

CLP DATA ASSESSMENT

No problems were found.

BNA - Positive values of the following compounds were qualified as estimated J in the associated samples because the Initial Calibration %RSD is between 30-90% when the mean RRF is > 0.05:

Compound	Associated Sample(s)
No problems were found.	

Note: According to the SOW, 2,4-Dinitrophenol, 2,4,5-Trichlorophenol, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, 4-Nitrophenol, 4,6-Dinitro-2-Methylphenol, and Pentachlorophenol only require a four-point initial calibration at 50, 80, 120, and 160 total nanograms because detection at < 50 nanograms per injection is difficult. Due to professional judgement, no action was taken with associated non-detected U sample data or positive results determined near the low end of the Initial Calibration curve sequence.

Pest/PCBs - The following compounds were qualified as estimated J or rejected R in the associated samples because the linearity criteria or the percent relative standard deviation (%RSD) of the Initial Calibration is > 20% for either one or both GC columns:

Compound	Percent Recovery	Qualifier	Associated Sample(s)
No problems were found.			

Continuing Calibration:

VOA - The following compounds were qualified as estimated J because the Continuing Calibration %D is between 25-90% when the RRF50 is > 0.05:

Compound	Associated Sample(s)
No problems were found.	

Continuing Calibration (continued):

BNA - The following compounds were qualified as estimated J because the Continuing Calibration %D is between 25-90% when the RRF50 is > 0.05:

Compound	Associated Sample(s)
No problems were found.	

Pest/PCBs - The Percent Difference (%D) for PEM compound amounts in the continuing calibration

verification analyses and/or the %D amounts in the Individual Standard Mixes of the continuing calibration verification analyses are $\geq$ 25% for either one or both GC columns. The following compounds were either qualified as estimated J or rejected R due to exceeding Continuing Calibration QC criteria:

Compound	RPD	Qualifier	Associated Sample(s)

No problems were found.

Pest/PCBs - The following compounds were qualified as estimated J in the associated samples because the Continuing Calibration %D is between 25-90% for these compounds on the primary GC column:

Compound	Associated Samples

No problems were found.

Pest/PCBs - All positive results for DDT and Endrin were qualified as estimated J in the associated samples because the combined breakdown for these compounds is greater than 30%. Qualify all positive results for endrin ketone, endrin aldehyde, DDD, and DDE as an approximated quantity, JN .

Compound	Associated Samples

No problems were found.

6. SURROGATES/SYSTEM MONITORING COMPOUNDS (SMC):

All samples are spiked with surrogate/SMC compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate/SMC concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below. The following analytes for the samples shown were qualified because of surrogate/SMC recovery:

VOA - The following compounds were either qualified as estimated J or rejected R due to surrogate recovery outside specified QC limits:

Surrogate	Recovery	Qualifier	Compounds	Sample(s)

No problems were found.

BNA The following compounds were either qualified as estimated J or rejected R due to surrogate recovery outside specified QC limits:

CLP DATA ASSESSMENT

Surrogate	Recovery	Qualifier	Compounds	Sample(s)
No problems were found.				

Pest/PCBs - The following compounds were either qualified as estimated J or rejected R due to Tetrachloro-m-xylene (TCX) and Decachlorobiphenyl (DCB) surrogate recoveries are both outside specified advisory QC limits (30-150%):

Surrogate	Recovery	Qualifier	Compounds	Sample(s)
No problems were found.				

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to 100%) from the associated continuing calibration standard. If the area count is outside the -50% to 100% range of the associated standard, then all of the positive results for compounds quantitated using that IS are qualified as estimated J , and all non-detects as UJ . If the IS area is > 25% (a severe loss of sensitivity) then all non-detects associated with that IS are qualified as R and all positive results for compounds quantitated using that IS are qualified as estimated J .

The retention time of the internal standard must not vary more than $\pm$ 30 seconds from the associated continuing calibration standard. If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction. The following analytes in the samples shown were qualified because of internal standard performance:

VOA The following compounds were either qualified as estimated J or rejected R in the associated samples due to exceeding Internal Standard (IS) QC criteria (within -50% to +100% of the Continuing Calibration 12-hour standard):

BYF46RE All nondetects are qualified R

[1] Positive values only were qualified as estimated J in the indicated samples.

Note: The laboratory indicated in the case narrative that samples exhibited internal standard areas outside QC criteria due to a matrix effect confirmed by repeat analysis.

CLP DATA ASSESSMENT

BNA - The following compounds were either qualified as estimated J or rejected R in the associated samples due to exceeding Internal Standard (IS) QC criteria (within -50% to + 100% of the Continuing Calibration 12-hour standard):

Internal Standard	Percent IS Area Count of the 12-Hour Standard	Qualifier	Total Analytes Qualified/Sample	Associated Sample(s)
Acenaphthene-d10	between -25% to -50%	J	18	BYF35
Perylene-d12	between -25% to -50%	J	7	BYF47
	<-25%	R	7	BYF35, BYF48

[1] Positive values only were qualified as estimated J in the indicated samples.

CLP DATA ASSESSMENT

INTERNAL STANDARD AREA OUTLIERS

Sample	Internal Standard BNA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
BYF35	Acenapthene-d10	383489	611068	2444274	305534
BYF35	Perylene-d12	5730	692648	2770592	346324
BYF48	Perylene-d12	43560	692648	2770592	346324

CLP DATA ASSESSMENT

INTERNAL STANDARD AREA OUTLIERS

Sample	Internal Standard BNA Fraction	Area	Lower Limit	Upper Limit	< -25% of the 12-hour Standard
BYF35	Acenapthene-d10	383489	611068	2444274	305534
BYF35	Perylene-d12	5730	692648	2770592	346324
BYF48	Perylene-d12	43560	692648	2770592	346324

CLP DATA ASSESSMENT

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound, and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the Tentatively Identified Compounds (TICs) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. The following analytes in the samples shown were qualified for compound identification:

The following compounds were qualified as estimated J in the indicated samples because they could not be chromatographically resolved:

Fraction	Compounds	Samples
No problems were found.		

B) PESTICIDE FRACTION:

The retention time of the reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract. The percent difference (%D) of the positive results obtained on the two GC columns would be ≤25%.

The analytes in the samples shown in the following tables were qualified because of compound identification:

Note: During the initial calibration sequence, absolute retention times are determined for all single response pesticides, the surrogates, and at least three major peaks of each multi-component analyte. Windows are centered around the mean absolute retention time for the analyte established during the initial calibration. Analytes are identified when peaks are observed in the retention time window for the compound on both GC columns. The quant reports listed many potential pesticide compounds for consideration. Comparison of the sample retention times to the retention time windows established during the initial calibration revealed that no additional pesticide compounds were detected in the associated samples. In addition, no shifts for surrogate compound retention times were noted to occur that might require consideration of compounds outside respective retention time windows.

PESTICIDE/PCB DATA TABLE

PROJECT: Amenia L. F. **SDG# 4820-38992**

% D QUALIFICATIONS

Sample ID	BYF27	BYF28	BYF29	BYF30	BYF31	BYF35	BYF38	BYF39
Lab ID	38993	38993.1	38993.1	38993.1	38993.1	38993.1	38993.2	38993.2
alpha-BHC								
beta-BHC								
delta-BHC		U			U			
gamma-BHC (Lindane)		U			JN			
Heptachlor								
Aldrin			U	U				
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE								
Endrin								
Endosulfan II		U			J			
4,4'-DDD							U	
Endosulfan Sulfate								
4,4'-DDT								
Methoxychlor			U	U	J	U		
Endrin Ketone		U			J			U
Endrin Aldehyde	J		U	U	JN			
alpha-Chlordane		J						
gamma-Chlordane								
Toxaphene								
Aroclor-1016								
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260								

U - Non-detected compound.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

PESTICIDE/PCB DATA TABLE

PROJECT: Amenia L. F. **SDG# 4820-38992**

% D QUALIFICATIONS

Sample ID	BYF53	BYF40	BYF43	BYF46	BYF47	BYF49	BYF50
Lab ID	38992.2	38992.01	38992.07	38992.10	38992.11	38992.13	38992.13
alpha-BHC							
beta-BHC							
delta-BHC		U					
gamma-BHC (Lindane)		U					
Heptachlor		U					
Aldrin	U				U		
Heptachlor Epoxide			U				
Endosulfan I					U		
Dieldrin		U	R		U		
4,4'-DDE		J	JN				
Endrin				U		U	U
Endosulfan II		U	J		U		
4,4'-DDD		U	JN		R		
Endosulfan Sulfate	U				J		
4,4'-DDT			J	R		R	R
Methoxychlor					R		
Endrin Ketone							
Endrin Aldehyde	U	U	U	U	J		
alpha-Chlordane					J		
gamma-Chlordane					J		
Toxaphene							
Aroclor-1016							
Aroclor-1221							
Aroclor-1232							
Aroclor-1242							
Aroclor-1248							
Aroclor-1254							
Aroclor-1260							

U - Non-detected compound.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

CLP DATA ASSESSMENT

9. MATRIX SPIKE/SPIKE DUPLICATE (MS/MSD):

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data. The following analytes, for the samples shown, were qualified because of MS/MSD:

VOA - The following sample data were either qualified as estimated J or rejected R due to exceeding duplicate spike recovery QC criteria:

Original Sample	Spike Recovery	Qualifier	Compound(s)

No problems were found.

BNA - The following sample data were either qualified as estimated J or rejected R due to exceeding duplicate spike recovery QC criteria:

Original Sample	Spike Recovery	Qualifier	Compound(s)

No problems were found.

Pest/PCBs - The following sample data were either qualified as estimated J or rejected R due to exceeding duplicate spike recovery QC criteria:

Original Sample	Spike Recovery	Qualifier	Compound(s)

No problems were found.

10. OTHER QC DATA OUT OF SPECIFICATION:

VOA - The following compounds were qualified as estimated J in the associated aqueous and/or soil/sediment field duplicate samples because the Relative Percent Difference (RPD) between the sample and field duplicate sample is > 50% for aqueous samples, or > 100% for soil/sediment samples:

Compound	Matrix	% RPD	Associated Field Duplicate Samples

No problems were found.

BNA - The following compounds were qualified as estimated J in the associated aqueous and/or soil/sediment field duplicate samples because the Relative Percent Difference (RPD) between the sample and field duplicate sample is > 50% for aqueous samples, or > 100% for soil/sediment samples:

Compound	Matrix	% RPD	Associated Field Duplicate Samples

No problems were found.

Pest/PCBs - The following compounds were qualified as estimated J in the associated aqueous and/or soil/sediment field duplicate samples because the Relative Percent Difference (RPD) between the sample and field duplicate sample is > 50% for aqueous samples, or > 100% for soil/sediment samples:

Compound	Matrix	% RPD	Associated Field Duplicate Samples
No problems were found.			

The following soil/sediment/solid sample data (other than TCLP data) were either qualified as estimated J (% moisture between 50-90%) or rejected R (%moisture > 90%) because the sample contains more than 90% water:

Fraction	Percent Moisture	Qualifier	# Compounds	Sample(s)
VOA	No problems were found.			
BNA	No problems were found.			
Pest/PCBs	No problems were found.			

VOA - The following data were either qualified as estimated J or rejected R due to air bubbles in the VOA vial(s):

Sample(s)	Qualifier	# Compounds
No problems were found.		

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

Due to professional judgement, the following compounds were not transferred from the indicated dilution sample analyses to the undiluted sample analyses because the reported values of these compounds are either diluted out in the associated dilution sample analyses or are qualified as non-detected U due to blank contamination QC criteria:

Fraction	Compound	Dilution Sample(s)	Dilution Factor
Pest/PCB	Endrin aldehyde	BYF47DL	19

CLP DATA ASSESSMENT

Due to professional judgement, the following positive data were rejected R due to possible carryover from a previous sample analysis that contained the compound(s) at high concentration(s):

Fraction	Sample Compound Concentration	Sample Compound	Previous Sample Compound Concentration

No problems were found.

12. CONTRACT PROBLEMS/NON-COMPLIANCE:

The pesticide extracts were overdiluted and possible positive results lost. The extracts were diluted to 200 ml. volume instead of the usual 5 ml.

13. This package contain re-extraction, re-analysis or dilution results. Upon reviewing the QA results, the following Form I(s) are identified to be used:

VOA Fraction:

Use Sample(s)	Do Not Use Sample(s)
BYF42	BYF42RE
BYF46	BYF46RE
BYF50	BYF50RE

BNA Fraction:

Use Sample(s)	Do Not Use Sample(s)
BYF28	BYF28DL
BYF31	BYF31DL
BYF35	BYF35RE
BYF40	BYF40DL
BYF43	BYF43DL
BYF47	BYF47DL
BYF48	BYF48RE
BYF53	BYF53RE

Pest/PCB Fraction

Use Sample(s)	Do Not Use Sample(s)
BYF47	BYF47DL

[1] Due to professional judgement, data from the indicated sample will be used instead of

data from the associated sample re-analysis and/or dilution analysis because overall QC criteria is better met in the original sample analysis.

VOA DATA TABLE-1

PROJECT: AMENIA L. F. **CASE# 4820**
Soil: MED Concentration

Sample Concentration (ug/Kg)

Sample Date		06/02/99	06/02/99	06/02/99	06/02/99	06/03/99	06/04/99	06/04/99	06/04/99	06/03/99	06/03/99	06/03/99	06/07/99
Sample ID		BYF27	BYF28	BYF29	BYF30	BYF31	BYF33	BYF34	BYF35	BYF37	BYF38	BYF39	BYF41
Lab ID	Method	38993.01	38993.05	38993.06	38993.1	38993.1	38993.10	38993.11	38993.12	38993.14	38993.15	38993.16	38992.02
% Moisture	Detection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dilution Factor	Limit	40	20	2000	4000	20	4	1	1	1	2	2	1
Chloromethane	1200	U	U	U	U	U	U	U	U	U	U	U	3300 J
Bromomethane	1200	U	U	U	U	U	U	U	U	U	U	U	6300 J
Vinyl Chloride	1200	U	U	U	U	U	U	5800 J	U	U	U	U	U
Chloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
Methylene Chloride	1200	U	U	U	U	U	U	U	U	U	U	U	6300 UJ
Acetone	1200	U	U	U	U	U	U	U	U	U	U	U	U
Carbon Disulfide	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethene	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,1-Dichloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethene(total)	1200	U	U	U	U	U	U	U	U	U	U	U	U
Chloroform	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
2-Butanone	1200	U	U	22000000 J	25000000 J	U	U	U	17000 J	U	U	U	U
1,1,1-Trichloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
Carbon Tetrachloride	1200	U	U	U	U	U	U	U	U	U	U	U	U
Bromodichloromethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichloropropane	1200	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	1200	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	1200	U	U	U	U	U	U	U	U	U	U	U	U
Dibromochloromethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	1200	U	U	U	U	U	520 J	180 J	U	360 J	470 J	460 J	U
trans-1,3-Dichloropropene	1200	U	U	U	U	U	U	U	U	U	U	U	U
Bromoform	1200	U	U	U	U	U	U	U	U	U	U	U	U
4-Methyl-2-Pentanone	1200	79000 J	240000 J	U	U	47000 J	U	U	4000 J	U	U	U	U
2-Hexanone	1200	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	1200	U	U	U	U	U	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	1200	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	1200	22000 J	28000 J	U	U	9500 J	9100 J	U	7400 J	10000 J	15000 J	9500 J	U
Chlorobenzene	1200	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	1200	U	U	370000 J	U	U	26000 J	U	760 J	12000 J	17000 J	13000 J	U
Styrene	1200	U	U	U	U	U	U	U	U	U	U	U	U
Total Xylenes *	1200	9700 J	14000 J	1500000 J	1500000 J	4600 J	120000 J	460 J	4700 J	69000 J	100000 J	86000 J	U

* - COMBINED M+P AND O- XYLENES

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - E[redacted]d value.
JN [redacted]ptive evidence of a compound at an estimated value.
R - [redacted]d compound.

VOA DATA TABLE-2

PROJECT: AMENIA L. F.
Soil: LOW Concentration SDG#4820

Sample # /Concentration (ug/Kg)

Sample Date Sample ID Lab ID % Moisture Dilution Factor	Method Detection Limit	06/07/99 BYF40 38992.01 6% 1	06/07/99 BYF43 38992.07 6% 1
Chloromethane	10	U	U
Bromomethane	10	U	U
Vinyl Chloride	10	U	U
Chloroethane	10	U	U
Methylene Chloride	10	10 J	13 J
Acetone	10	U	U
Carbon Disulfide	10	U	U
1,1-Dichloroethene	10	U	U
1,1-Dichloroethane	10	U	U
1,2-Dichloroethene(total)	10	U	U
Chloroform	10	U	U
1,2-Dichloroethane	10	U	U
2-Butanone	10	U	U
1,1,1-Trichloroethane	10	U	U
Carbon Tetrachloride	10	U	U
Bromodichloromethane	10	U	U
1,2-Dichloropropane	10	U	U
cis-1,3-Dichloropropene	10	U	U
Trichloroethene	10	U	U
Dibromochloromethane	10	U	U
1,1,2-Trichloroethane	10	U	U
Benzene	10	U	U
trans-1,3-Dichloropropene	10	U	U
Bromoform	10	U	U
4-Methyl-2-Pentanone	10	U	U
2-Hexanone	10	U	U
Tetrachloroethene	10	U	U
1,1,2,2-Tetrachloroethane	10	U	U
Toluene	10	U	U
Chlorobenzene	10	U	U
Ethylbenzene	10	U	U
Styrene	10	U	U
Total Xylenes *	10	U	U

* - COMBINED M+P AND O- XYLENES

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF40

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L38779.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. 6 Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	10	J
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF43

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L38780.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. 6 Date Analyzed: 06/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	13	
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (Total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF43

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 5.0 (g/mL) G Lab File ID: L38780.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. 6 Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Cyclotrisiloxane	12.190	~~7~~	~~J~~ R
2.		UNKNOWN	16.766	66	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

VOA DATA TABLE

PROJECT: AMENIA L. F. CASE# 4820
WATER: LOW Concentration

Sample # /Concentration (ug/Kg)

Sample Date		06/02/99	06/04/99	06/08/99	06/08/99	06/09/99
Sample ID		BYF32 TB	BYF36 TB	BYF44 RB	BYF45 TB	BYF51 TB
Lab ID	Method Detection	38993.09	38993.13	38992.08	38992.09	38992.15
Dilution Factor	Limit	1	1	1	1	1
Chloromethane	10	U	U	U	U	U
Bromomethane	10	U	U	U	U	U
Vinyl Chloride	10	U	U	U	U	U
Chloroethane	10	U	U	U	U	U
Methylene Chloride	10	U	U	U	U	U
Acetone	10	U	U	U	U	U
Carbon Disulfide	10	U	U	U	U	U
1,1-Dichloroethene	10	U	U	U	U	U
1,1-Dichloroethane	10	U	U	U	U	U
1,2-Dichloroethene(total)	10	U	U	U	U	U
Chloroform	10	U	U	4 J	3 J	U
1,2-Dichloroethane	10	U	U	U	U	U
2-Butanone	10	U	U	U	U	U
1,1,1-Trichloroethane	10	U	U	U	U	U
Carbon Tetrachloride	10	U	U	U	U	U
Bromodichloromethane	10	U	U	U	U	U
1,2-Dichloropropane	10	U	U	U	U	U
cis-1,3-Dichloropropene	10	U	U	U	U	U
Trichloroethene	10	U	U	U	U	U
Dibromochloromethane	10	U	U	U	U	U
1,1,2-Trichloroethane	10	U	U	U	U	U
Benzene	10	U	U	U	U	U
trans-1,3-Dichloropropene	10	U	U	U	U	U
Bromoform	10	U	U	U	U	U
4-Methyl-2-Pentanone	10	U	U	U	U	U
2-Hexanone	10	U	U	U	U	U
Tetrachloroethene	10	U	U	U	U	U
1,1,2,2-Tetrachloroethane	10	U	U	U	U	U
Toluene	10	U	U	2 J	U	U
Chlorobenzene	10	U	U	U	U	U
Ethylbenzene	10	U	U	U	U	U
Styrene	10	U	U	U	U	U
Total Xylenes *	10	U	U	U	U	U

* - COMBINED M+P AND O- XYLENES

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

VOA DATA TABLE-4

PROJECT: AMENIA L. F. **CASE# 4820**
Soil: MED Concentration

Sample Concentration (ug/Kg)

Sample Date		06/07/99	06/07/99	06/08/99	06/08/99	06/08/99	06/08/99	06/08/99	06/08/99	06/08/99	06/09/99	06/09/99
Sample ID		BYF42	BYF42RE	BYF46	BYF46RE	BYF47	BYF48	BYF49	BYF50	BYF50RE	BYF52	BYF53
Lab ID	Method	38992.06	38992.06	38992.10	38992.10	38992.11	38992.12	38992.13	38992.14	38992.14	38992.16	38992.17
% Moisture	Detection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dilution Factor	Limit	1	1	1	1	10	10	1	1	1	10	10
Chloromethane	1200	U	U	U	R	U	U	U	U	U	U	U
Bromomethane	1200	930 J	1200 J	620 J	2300 J	U	U	U	1000 J	1400 J	4500 J	U
Vinyl Chloride	1200	U	U	U	R	U	220000 J	U	U	U	U	U
Chloroethane	1200	U	U	U	R	U	U	U	U	U	U	U
Methylene Chloride	1200	4400 UJ	1200 UJ	4500 UJ	1300 UJ	UJ	U	UJ	1400 UJ	UJ	UJ	U
Acetone	1200	U	U	U	U	U	U	U	U	U	25000 J	27000 J
Carbon Disulfide	1200	U	U	U	U	U	U	620 J	4900 J	4200 J	U	U
1,1-Dichloroethene	1200	U	U	U	R	U	U	U	U	U	U	U
1,1-Dichloroethane	1200	U	U	U	R	U	U	U	U	U	U	U
1,2-Dichloroethene(total)	1200	U	U	U	U	U	U	U	U	U	U	U
Chloroform	1200	U	U	U	R	U	U	U	U	U	U	U
1,2-Dichloroethane	1200	5400 J	1200 J	690 J	R	U	U	U	U	U	U	U
2-Butanone	1200	U	U	U	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	1200	U	U	U	R	U	U	U	U	U	U	U
Carbon Tetrachloride	1200	U	U	U	R	U	U	U	U	U	U	U
Bromodichloromethane	1200	U	U	U	R	U	U	U	U	U	U	U
1,2-Dichloropropane	1200	U	U	U	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	1200	U	U	U	R	U	U	U	U	U	U	U
Trichloroethene	1200	U	U	U	R	U	U	U	U	U	3400 J	4000 J
Dibromochloromethane	1200	U	U	U	R	U	U	U	U	U	U	U
1,1,2-Trichloroethane	1200	U	U	U	R	U	U	U	U	U	U	U
Benzene	1200	1700 J	1100 J	180 J	R	U	14000 J	U	U	U	U	U
trans-1,3-Dichloropropene	1200	U	U	U	R	U	U	300 J	U	U	U	U
Bromoform	1200	U	U	U	R	U	U	U	U	U	U	U
4-Methyl-2-Pentanone	1200	U	U	U	R	98000 J	U	U	1200 J	12000 J	U	34000 J
2-Hexanone	1200	U	U	U	R	U	U	U	U	U	U	U
Tetrachloroethene	1200	U	U	U	R	U	U	U	U	U	U	U
1,1,2,2-Tetrachloroethane	1200	U	U	U	R	U	U	U	U	U	U	U
Toluene	1200	1600 J	1400 J	600 J	620 J	U	U	940 J	380 J	470 J	12000 J	11000 J
Chlorobenzene	1200	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	1200	U	U	U	R	U	U	U	U	U	64000 J	62000 J
Styrene	1200	U	U	U	R	U	U	150 J	U	U	U	U
Total Xylenes *	1200	190 J	890 J	180 J	780 J	U	U	160 J	690 J	840 J	450000 J	400000 J

* - COMBINED M+P AND O- XYLENES

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compoun at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: PROJECT: AMENIA L. F.
WATER: LOW Concentration

Sample # /Concentration (ug/L)

Sample Date		06/09/99	
Sample ID		BYF44	
Lab ID	Method Detection Limit	38992.08 RINSE BLANK	
Dilution Factor		1.0	
Phenol	10	U	
bis(2-Chloroethyl)ether	10	U	
2-Chlorophenol	10	U	
1,2-Dichlorobenzene	10	U	
1,3-Dichlorobenzene	10	U	
1,4-Dichlorobenzene	10	U	
2-Methylphenol	10	U	
2,2'-oxybis(1-Chloropropane)	10	U	
4-Methylphenol	10	U	
N-Nitroso-di-n-propylamine	10	U	
Hexachloroethane	10	U	
Nitrobenzene	10	U	
Isophorone	10	U	
2-Nitrophenol	10	U	
2,4-Dimethylphenol	10	U	
bis(2-Chloroethoxy)methane	10	U	
2,4-Dichlorophenol	10	U	
1,2,4-Trichlorobenzene	10	U	
Naphthalene	10	U	
4-Chloroaniline	10	U	
Hexachlorobutadiene	10	U	
4-Chloro-3-methylphenol	10	U	
2-Methylnaphthalene	10	U	
Hexachlorocyclopentadiene	10	U	
2,4,6-Trichlorophenol	10	U	
2,4,5-Trichlorophenol	25	U	
2-Chloronaphthalene	10	U	
2-Nitroaniline	25	U	
Dimethylphthalate	10	U	
Acenaphthylene	10	U	
2,6-Dinitrotoluene	10	U	
3-Nitroaniline	25	U	
Acenaphthene	10	U	

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: PROJECT: AMENIA L. F.
WATER: LOW Concentration

Sample # /Concentration (ug/L)

Sample Date		06/09/99	
Sample ID		BYF44	
Lab ID	Method Detection Limit	38992.08	
% Moisture		RINSE BLANK	
Dilution Factor		1.0	
2,4-Dinitrophenol	25	U	
4-Nitrophenol	25	U	
Dibenzofuran	10	0.5 J	
2,4-Dinitrotoluene	10	U	
Diethylphthalate	10	0.5 J	
4-Chlorophenyl-phenylether	10	U	
Fluorene	10	U	
4-Nitroaniline	25	U	
4,6-Dinitro-2-methylphenol	25	U	
N-Nitrosodiphenylamine	10	U	
4-Bromophenyl-phenylether	10	U	
Hexachlorobenzene	10	U	
Pentachlorophenol	25	U	
Phenanthrene	10	0.8 J	
Anthracene	10	U	
Carbazole	10	U	
Di-n-butylphthalate	10	0.8 J	
Fluoranthene	10	U	
Pyrene	10	U	
Butylbenzylphthalate	10	U	
3,3-Dichlorobenzidine	10	U	
Benzo(a)anthracene	10	U	
Chrysene	10	U	
bis(2-Ethylhexyl)phthalate	10	U	
Di-n-octylphthalate	10	U	
Benzo(b)fluoranthene	10	U	
Benzo(k)fluoranthene	10	U	
Benzo(a)pyrene	10	U	
Indeno(1,2,3-cd)pyrene	10	U	
Dibenz(a,h)anthracene	10	U	
Benzo(g,h,i)perylene	10	U	

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
SOIL: LOW CONCENTRATION

Sample # /Concentration (ug/Kg)

Sample Date Sample ID Lab ID Dilution Factor	Method Detection Limit	06/07/99 BYF40 38992.01 0% 1.0	06/07/99 BYF43 38992.07 0% 1.06	06/07/99 BYF46 38992.10 0% 1.0	06/08/99 BYF49 38992.13 0% 1.0	06/08/99 BYF50 38992.14 0% 1.0
Phenol	330	1000 J	240 J	1800 J	930 J	1700 J
bis(2-Chloroethyl)ether	330	U	U	U	U	U
2-Chlorophenol	330	U	U	U	U	U
1,2-Dichlorobenzene	330	U	U	U	U	U
1,3-Dichlorobenzene	330	U	U	U	U	U
1,4-Dichlorobenzene	330	U	U	U	U	U
2-Methylphenol	330	U	U	U	U	U
2,2'-oxybis(1-Chloropropane)	330	U	U	U	U	U
4-Methylphenol	330	U	U	U	U	U
N-Nitroso-di-n-propylamine	330	U	U	U	U	U
Hexachloroethane	330	U	U	U	U	U
Nitrobenzene	330	U	U	U	U	U
Isophorone	330	U	U	U	U	U
2-Nitrophenol	330	U	U	U	U	U
2,4-Dimethylphenol	330	U	U	U	U	U
bis(2-Chloroethoxy)methane	330	U	U	U	U	U
2,4-Dichlorophenol	330	U	U	U	U	U
1,2,4-Trichlorobenzene	330	U	U	U	U	U
Naphthalene	330	U	U	U	U	U
4-Chloroaniline	330	U	U	U	U	U
Hexachlorobutadiene	330	U	U	U	U	U
4-Chloro-3-methylphenol	330	U	U	U	U	U
2-Methylnaphthalene	330	U	U	U	U	U
Hexachlorocyclopentadiene	330	U	U	U	U	U
2,4,6-Trichlorophenol	330	U	U	U	U	U
2,4,5-Trichlorophenol	800	U	U	U	U	U
2-Chloronaphthalene	330	U	U	U	U	U
2-Nitroaniline	800	U	U	U	U	U
Dimethylphthalate	330	U	U	U	U	U
Acenaphthylene	330	U	U	U	U	U
2,6-Dinitrotoluene	330	U	U	U	U	U
3-Nitroaniline	800	U	U	U	U	U
Acenaphthene	330	U	U	U	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
SOIL: LOW CONCENTRATION

Sample # /Concentration (ug/Kg)

Sample Date		06/07/99	06/07/99	06/07/99	06/08/99	06/08/99
Sample ID		BYF40	BYF43	BYF46	BYF49	BYF50
Lab ID	Method	38992.01	38992.07	38992.10	38992.13	38992.14
% Moisture	Detection	0%	0%	0%	0%	0%
Dilution Factor	Limit	1.0	1.1	1.0	1.0	1.0
2,4-Dinitrophenol	800	U	U	U	U	U
4-Nitrophenol	800	U	U	U	U	U
Dibenzofuran	330	U	U	U	U	U
2,4-Dinitrotoluene	330	U	U	U	U	U
Diethylphthalate	330	U	U	U	U	U
4-Chlorophenyl-phenylether	330	U	U	U	U	U
Fluorene	330	U	U	U	U	U
4-Nitroaniline	800	U	U	U	U	U
4,6-Dinitro-2-methylphenol	800	U	U	U	U	U
N-Nitrosodiphenylamine	330	U	U	U	U	U
4-Bromophenyl-phenylether	330	U	U	U	U	U
Hexachlorobenzene	330	U	U	U	U	U
Pentachlorophenol	800	U	U	U	U	U
Phenanthrene	330	U	U	U	U	U
Anthracene	330	U	U	U	U	U
Carbazole	330	U	U	U	U	U
Di-n-butylphthalate	330	U	U	U	U	U
Fluoranthene	330	U	U	U	U	U
Pyrene	330	U	U	U	U	U
Butylbenzylphthalate	330	U	U	U	16 J	U
3,3-Dichlorobenzidine	330	U	U	U	U	U
Benzo(a)anthracene	330	U	U	U	U	U
Chrysene	330	U	U	U	U	U
bis(2-Ethylhexyl)phthalate	330	5600 * J	6200 * J	U	U	U
Di-n-octylphthalate	330	18 J	19 J	U	U	U
Benzo(b)fluoranthene	330	U	U	U	U	U
Benzo(k)fluoranthene	330	U	U	U	U	U
Benzo(a)pyrene	330	U	U	U	U	U
Indeno(1,2,3-cd)pyrene	330	U	U	U	U	U
Dibenz(a,h)anthracene	330	U	U	U	U	U
Benzo(g,h,i)perylene	330	U	U	U	U	U

* - DF= 4 * - DF= 4.0

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
Soil: MED Concentration

Sample # /Concentration (ug/Kg)

Sample Date / Sample ID / Lab ID / % Moisture / Dilution Factor	Method Detection Limit	06/02/99 BYF27 38993.01 0% 150	06/02/99 BYF28 38993.05 0% 180	06/02/99 BYF29 38993.06 0% 200	06/02/99 BYF30 38993.07 0% 180	06/03/99 BYF31 38993.08 0% 180	06/04/99 BYF33 38993.10 0% 150	06/04/99 BYF34 38993.11 0% 140	06/04/99 BYF35 38993.12 0% 170	06/03/99 BYF37 38993.14 0% 180	06/03/99 BYF38 38993.15 0% 200	06/03/99 BYF39 38993.16 0% 170
Phenol	10000	2200000 J	24000000 * J	2000000 J	2100000 J	26000000 * J	U	U	540000 J	U	100000 J	U
bis(2-Chloroethyl)ether	10000	U	U	U	U	U	U	U	U	U	U	U
2-Chlorophenol	10000	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
2-Methylphenol	10000	U	U	U	U	U	U	U	U	U	U	U
2,2'-oxybis(1-Chloropropane)	10000	U	U	180000 J	170000 J	U	U	U	U	U	U	U
4-Methylphenol	10000	U	U	U	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine	10000	U	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	10000	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
Isophorone	10000	U	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	10000	U	U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	10000	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethoxy)methane	10000	U	U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol	10000	U	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
Naphthalene	10000	U	U	U	U	U	U	U	U	U	U	U
4-Chloroaniline	10000	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene	10000	U	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	10000	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	10000	U	U	U	U	U	97000 J	U	U	94000 J	120000 J	100000 J
Hexachlorocyclopentadiene	10000	U	U	U	U	U	U	U	UJ	U	U	U
2,4,6-Trichlorophenol	10000	U	U	U	U	U	U	U	UJ	U	U	U
2,4,5-Trichlorophenol	25000	U	U	U	U	U	U	U	UJ	U	U	U
2-Chloronaphthalene	10000	U	U	U	U	U	U	U	UJ	U	U	U
2-Nitroaniline	25000	U	U	U	U	U	U	U	UJ	U	U	U
Dimethylphthalate	10000	U	U	U	U	U	U	U	UJ	U	U	U
Acenaphthylene	10000	U	U	U	U	U	U	U	UJ	U	U	U
2,6-Dinitrotoluene	10000	U	U	U	U	U	U	U	UJ	U	U	U
3-Nitroaniline	25000	U	U	U	U	U	U	U	UJ	U	U	U
Acenaphthene	10000	U	U	U	U	U	U	U	UJ	U	U	U
			* - DF= 360			* - DF= 360						

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
Soil: MED Concentration

Sample # /Concentration (ug/Kg)

Sample Date		06/02/99	06/02/99	06/02/99	06/02/99	06/03/99	06/04/99	06/04/99	06/04/99	06/03/99	06/03/99	06/03/99
Sample ID		BYF27	BYF28	BYF29	BYF30	BYF31	BYF33	BYF34	BYF35	BYF37	BYF38	BYF39
Lab ID	Method	38993.01	38993.05	38993.06	38993.07	38993.08	38993.10	38993.11	38993.12	38993.14	38993.15	38993.16
% Moisture	Detection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dilution Factor	Limit	150	180	200	180	180	150	140	170	180	200	170
2,4-Dinitrophenol	25000	U	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	25000	U	U	U	U	U	U	U	U	U	U	U
Dibenzofuran	10000	U	U	U	U	U	U	U	U	U	U	U
2,4-Dinitrotoluene	10000	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	10000	U	U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl-phenylether	10000	U	U	U	U	U	U	U	U	U	U	U
Fluorene	10000	U	U	U	U	U	U	U	U	U	U	U
4-Nitroaniline	25000	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	25000	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	10000	U	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	10000	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	10000	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	25000	U	U	U	U	U	U	U	U	U	U	U
Phenanthrene	10000	U	U	U	U	U	U	U	U	U	U	U
Anthracene	10000	U	U	U	U	U	U	U	U	U	U	U
Carbazole	10000	U	U	U	U	U	U	U	U	U	U	U
Di-n-butylphthalate	10000	U	U	U	U	U	U	U	U	U	U	U
Fluoranthene	10000	U	U	U	U	U	U	U	U	U	U	U
Pyrene	10000	U	U	U	U	U	U	U	U	U	U	U
Butylbenzylphthalate	10000	U	U	U	U	U	U	U	U	U	U	U
3,3-Dichlorobenzidine	10000	U	U	U	U	U	U	U	U	U	U	U
Benzo(a)anthracene	10000	U	U	U	U	U	U	U	U	U	U	U
Chrysene	10000	U	U	U	U	U	U	U	U	U	U	U
bis(2-Ethylhexyl)phthalate	10000	U	U	U	U	U	U	U	U	U	U	U
Di-n-octylphthalate	10000	U	U	U	U	U	U	U	R	U	U	U
Benzo(b)fluoranthene	10000	U	U	U	U	U	U	U	R	U	U	U
Benzo(k)fluoranthene	10000	U	U	U	U	U	U	U	R	U	U	U
Benzo(a)pyrene	10000	U	U	U	U	U	U	U	R	U	U	U
Indeno(1,2,3-cd)pyrene	10000	U	U	U	U	U	U	U	R	U	U	U
Dibenz(a,h)anthracene	10000	U	U	U	U	U	U	U	R	U	U	U
Benzo(g,h,i)perylene	10000	U	U	U	U	U	U	U	R	U	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
Soil: MED Concentration

Sample # /Concentration (ug/Kg)

Sample Date / Sample ID / Lab ID / % Moisture / Dilution Factor	Method Detection Limit	06/07/99 BYF41 38992.02 0% 180	06/07/99 BYF42 38992.06 0% 200	06/07/99 BYF47 38992.11 0% 200	06/08/99 BYF48 38992.12 0% 180	06/09/99 BYF52 38992.16 0% 180	06/09/99 BYF53 38992.17 0% 150
Phenol	10000	U	U	18000000 * J	99000 J	U	35000000 * J
bis(2-Chloroethyl)ether	10000	U	U	U	U	U	U
2-Chlorophenol	10000	U	U	U	U	U	U
1,2-Dichlorobenzene	10000	U	U	U	U	U	U
1,3-Dichlorobenzene	10000	U	U	U	U	U	U
1,4-Dichlorobenzene	10000	U	U	U	U	U	U
2-Methylphenol	10000	U	U	210000 J	U	U	U
2,2'-oxybis(1-Chloropropane)	10000	U	U	U	U	U	U
4-Methylphenol	10000	U	U	U	U	U	18000000 * J
N-Nitroso-di-n-propylamine	10000	U	U	U	U	U	U
Hexachloroethane	10000	U	U	U	U	U	U
Nitrobenzene	10000	U	U	U	U	U	U
Isophorone	10000	U	U	U	U	U	U
2-Nitrophenol	10000	U	U	U	U	U	U
2,4-Dimethylphenol	10000	U	U	U	U	U	1800000 J
bis(2-Chloroethoxy)methane	10000	U	U	U	U	U	U
2,4-Dichlorophenol	10000	U	U	U	U	U	U
1,2,4-Trichlorobenzene	10000	U	U	U	U	U	U
Naphthalene	10000	U	U	U	U	U	U
4-Chloroaniline	10000	U	U	U	U	U	U
Hexachlorobutadiene	10000	U	U	U	U	U	U
4-Chloro-3-methylphenol	10000	U	U	U	U	U	U
2-Methylnaphthalene	10000	U	U	U	U	U	U
Hexachlorocyclopentadiene	10000	U	U	U	U	U	U
2,4,6-Trichlorophenol	10000	U	U	U	U	U	U
2,4,5-Trichlorophenol	25000	U	U	U	U	U	U
2-Chloronaphthalene	10000	U	U	U	U	U	U
2-Nitroaniline	25000	U	U	U	U	U	U
Dimethylphthalate	10000	U	U	U	U	U	U
Acenaphthylene	10000	U	U	U	U	U	U
2,6-Dinitrotoluene	10000	U	U	U	U	U	U
3-Nitroaniline	25000	U	U	U	U	U	U
Acenaphthene	10000	U	U	U	U	U	U
				* - DF=500			* - DF= 800

U - Non-detected compound,
B - Compound detected in the associated Method Blank.
J - Estimated value,
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

BNA DATA TABLE

PROJECT: AMENIA L. F. **SDG# 4820-38992**
Soil: MED Concentration

Sample # /Concentration (ug/Kg)

Sample Date Sample ID Lab ID % Moisture Dilution Factor	Method Detection Limit	06/07/99 BYF41 38992.02 0% 180	06/07/99 BYF42 38992.06 0% 200	06/07/99 BYF47 38992.11 0% 200	06/08/99 BYF48 38992.12 0% 180	06/09/99 BYF52 38992.16 0% 180	06/09/99 BYF53 38992.17 0% 150
2,4-Dinitrophenol	25000	U	U	U	U	U	U
4-Nitrophenol	25000	U	U	U	U	U	U
Dibenzofuran	10000	U	U	U	U	U	U
2,4-Dinitrotoluene	10000	U	U	U	U	U	U
Diethylphthalate	10000	U	U	U	U	U	U
4-Chlorophenyl-phenylether	10000	U	U	U	U	U	U
Fluorene	10000	U	U	U	U	U	U
4-Nitroaniline	25000	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	25000	U	U	U	U	U	U
N-Nitrosodiphenylamine	10000	U	U	U	U	U	U
4-Bromophenyl-phenylether	10000	U	U	U	U	U	U
Hexachlorobenzene	10000	U	U	U	U	U	U
Pentachlorophenol	25000	U	U	U	U	U	U
Phenanthrene	10000	U	U	U	U	U	U
Anthracene	10000	U	U	U	U	U	U
Carbazole	10000	U	U	U	U	U	U
Di-n-butylphthalate	10000	U	U	U	U	U	3200000 J
Fluoranthene	10000	U	U	U	U	U	U
Pyrene	10000	U	U	U	U	U	U
Butylbenzylphthalate	10000	U	U	690000 J	U	U	U
3,3-Dichlorobenzidine	10000	U	U	U	U	U	U
Benzo(a)anthracene	10000	U	U	U	U	U	U
Chrysene	10000	U	U	U	U	U	U
bis(2-Ethylhexyl)phthalate	10000	U	U	720000 J	U	U	U
Di-n-octylphthalate	10000	U	U	UJ	R	U	U
Benzo(b)fluoranthene	10000	U	U	UJ	R	U	U
Benzo(k)fluoranthene	10000	U	U	UJ	R	U	U
Benzo(a)pyrene	10000	U	U	UJ	R	U	U
Indeno(1,2,3-cd)pyrene	10000	U	U	UJ	R	U	U
Dibenz(a,h)anthracene	10000	U	U	UJ	R	U	U
Benzo(g,h,i)perylene	10000	U	U	UJ	R	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

PESTICIDE/PCB DATA TABLE

PROJECT: Amenia L. F. **SDG# 4820-38992**

Soil : Medium Concentration

Sample # /Concentration (ug/Kg)

Sampling Date		06/07/99	06/07/99	06/08/99	06/09/99	06/09/99
Sample ID		BYF41	BYF42	BYF48	BYF52	BYF53
Lab ID	Method	38992.02	38992.06	38992.12	38992.16	38992.17
Percent Moisture	Detection	0	0	0	0	0
Dilution Factor	Limit	1.1	1.1	1.0	1.3	1.0
alpha-BHC	1000	U	U	U	U	U
beta-BHC	1000	U	U	U	U	U
delta-BHC	1000	U	U	U	U	U
gamma-BHC (Lindane)	1000	U	U	U	U	U
Heptachlor	1000	U	U	U	U	U
Aldrin	1000	U	U	U	U	U
Heptachlor Epoxide	1000	U	U	U	U	U
Endosulfan I	1000	U	U	U	U	U
Dieldrin	2000	U	U	U	U	U
4,4'-DDE	2000	U	U	U	U	U
Endrin	2000	U	U	U	U	U
Endosulfan II	2000	U	U	U	U	U
4,4'-DDD	2000	U	U	U	U	U
Endosulfan Sulfate	2000	U	U	U	U	U
4,4'-DDT	2000	U	U	U	U	U
Methoxychlor	8000	U	610 J	U	U	U
Endrin Ketone	2000	U	U	U	U	U
Endrin Aldehyde	2000	U	U	U	U	U
alpha-Chlordane	1000	U	U	U	U	U
gamma-Chlordane	1000	U	U	U	U	U
Toxaphene	100000	U	U	U	U	U
Aroclor-1016	20000	U	U	U	U	U
Aroclor-1221	40000	U	U	U	U	U
Aroclor-1232	20000	U	U	U	U	U
Aroclor-1242	20000	U	U	U	U	U
Aroclor-1248	20000	U	U	U	U	U
Aroclor-1254	20000	U	U	U	U	U
Aroclor-1260	20000	U	U	U	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

PESTICIDE/PCB DATA TABLE

PROJECT: AMENIA L. F. SDG# 4820-38992

Soil: Low Concentration

Sample #/Concentration (ug/Kg)

Sampling Date Sample ID		06/07/99 BYF40	06/07/99 BYF43	06/08/99 BYF46	06/08/99 BYF47	06/08/99 BYF49	06/08/99 BYF50
Lab ID Percent Moisture Dilution Factor	Method Detection Limit	38992.01 6% 1.0	38992.07 6% 1.0	38992.10 0% 18.8	38992.11 0% 18.8	38992.13 0% 19.4	38992.13 0% 18.2
alpha-BHC	1.7	U	U	U	U	U	U
beta-BHC	1.7	U	U	U	U	U	U
delta-BHC	1.7	U	U	U	U	U	U
gamma-BHC (Lindane	1.7	U	2.5 J	U	U	U	U
Heptachlor	1.7	U	U	U	U	U	U
Aldrin	1.7	3.1J	5.3 J	U	U	U	U
Heptachlor Epoxide	1.7	U	U	U	U	U	U
Endosulfan I	1.7	U	U	U	U	U	U
Dieldrin	3.3	U	R	U	U	U	U
4,4'-DDE	3.3	3.9 J	4.7 JN	U	U	U	U
Endrin	3.3	1.5 J	2.4 J	U	190 J	U	U
Endosulfan II	3.3	U	2.7 J	U	U	U	U
4,4'-DDD	3.3	U	1.2 JN	U	R	U	U
Endosulfan Sulfate	3.3	U	U	U	100 J	U	U
4,4'-DDT	3.3	8 J	9.2 J	R	U	R	R
Methoxychlor	17.0	U	U	U	R	U	U
Endrin Ketone	3.3	U	U	U	U	U	U
Endrin Aldehyde	3.3	U	U	U	23000 J	U	U
alpha-Chlordane	1.7	3.9 J	5.5 J	U	38 J	U	U
gamma-Chlordane	1.7	U	U	U	29 J	U	U
Toxaphene	170	U	U	U	U	U	U
Aroclor-1016	33	U	U	U	U	U	U
Aroclor-1221	67	U	U	U	U	U	U
Aroclor-1232	33	U	U	U	U	U	U
Aroclor-1242	33	U	U	U	U	U	U
Aroclor-1248	33	U	U	U	U	U	U
Aroclor-1254	33	96 J	120 J	U	U	U	U
Aroclor-1260	33	U	U	U	U	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

PESTICIDE/PCB DATA TABLE

PROJECT: Amenia L. F. **SDG# 4820-38993**

Soil : HIGH Concentration

Sample # /Concentration (ug/Kg)

Sampling Date		06/02/99	06/02/99	06/02/99	06/02/99	06/03/99	06/04/99	06/04/99	06/04/99	06/03/99	06/03/99	06/03/99
Sample ID		BYF27	BYF28	BYF29	BYF30	BYF31	BYF33	BYF34	BYF35	BYF37	BYF38	BYF39
Lab ID	Method	38993.01	38993.05	38993.06	38993.07	38993.08	38993.10	38993.11	38993.12	38993.14	38993.15	38993.16
Percent Moisture	Detection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dilution Factor	Limit	0.93	0.85	1.00	0.93	1.00	0.93	1.00	1.00	1.00	0.93	0.85
alpha-BHC	1000	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	1000	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	1000	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	1000	U	U	U	U	450 JN	U	U	U	U	U	U
Heptachlor	1000	U	U	U	U	U	U	U	U	U	U	U
Aldrin	1000	U	U	U	U	U	U	U	U	U	U	U
Heptachlor Epoxide	1000	U	U	U	U	U	U	U	U	U	U	U
Endosulfan I	1000	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	2000	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDE	2000	U	U	U	U	U	U	U	U	U	U	U
Endrin	2000	U	U	U	U	U	U	U	U	U	U	U
Endosulfan II	2000	U	U	U	U	310 J	U	U	U	U	93 J	U
4,4'-DDD	2000	U	U	U	U	U	U	U	U	U	U	U
Endosulfan Sulfate	2000	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDT	2000	U	U	U	U	U	U	U	U	U	80 J	U
Methoxychlor	10000	U	U	U	U	1600 J	U	U	U	U	U	U
Endrin Ketone	2000	U	U	U	U	180 J	U	U	U	180 J	320 J	U
Endrin Aldehyde	2000	150 J	U	U	U	370 JN	U	U	U	U	U	U
alpha-Chlordane	1000	U	750 J	U	U	980 J	U	U	U	U	U	U
gamma-Chlordane	1000	U	U	U	U	U	U	U	U	U	U	U
Toxaphene	10000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1016	2000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	4000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	2000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	2000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	2000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	2000	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1260	2000	U	U	U	U	U	U	U	U	U	U	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

PESTICIDE/PCB DATA TABLE

SDG 4820-38992

PROJECT: Amenia L F
WATER : Low Concentration
Sample # /Concentration (ug/L)

Sample Date		06/08/99
Sample ID		BYF44 RB
Lab ID	Method	38992.08
Dilution Factor	Limit	1.0
alpha-BHC	0.05	U
beta-BHC	0.05	U
delta-BHC	0.05	U
gamma-BHC (Lindane)	0.05	U
Heptachlor	0.05	U
Aldrin	0.05	U
Heptachlor Epoxide	0.05	U
Endosulfan I	0.05	U
Dieldrin	0.10	U
4,4'-DDE	0.10	U
Endrin	0.10	U
Endosulfan II	0.10	U
4,4'-DDD	0.10	U
Endosulfan Sulfate	0.10	U
4,4'-DDT	0.10	U
Methoxychlor	0.50	U
Endrin Ketone	0.10	U
Endrin Aldehyde	0.10	U
alpha-Chlordane	0.05	U
gamma-Chlordane	0.05	U
Toxaphene	5.00	U
Aroclor-1016	1.00	U
Aroclor-1221	2.00	U
Aroclor-1232	1.00	U
Aroclor-1242	1.00	U
Aroclor-1248	1.00	U
Aroclor-1254	1.00	U
Aroclor-1260	1.00	U

U - Non-detected compound.
B - Compound detected in the associated Method Blank.
J - Estimated value.
JN - Presumptive evidence of a compound at an estimated value.
R - Rejected compound.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF27

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.01

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38760.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 2.5(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	48000	U
74-83-9	Bromomethane	48000	U
75-01-4	Vinyl Chloride	48000	U
75-00-3	Chloroethane	48000	U
75-09-2	Methylene Chloride	48000	U
67-64-1	Acetone	48000	U
75-15-0	Carbon Disulfide	48000	U
75-35-4	1,1-Dichloroethene	48000	U
75-34-3	1,1-Dichloroethane	48000	U
540-59-0	1,2-Dichloroethene (total)	48000	U
67-66-3	Chloroform	48000	U
107-06-2	1,2-Dichloroethane	48000	U
78-93-3	2-Butanone	48000	U
71-55-6	1,1,1-Trichloroethane	48000	U
56-23-5	Carbon Tetrachloride	48000	U
75-27-4	Bromodichloromethane	48000	U
78-87-5	1,2-Dichloropropane	48000	U
10061-01-5	cis-1,3-Dichloropropene	48000	U
79-01-6	Trichloroethene	48000	U
124-48-1	Dibromochloromethane	48000	U
79-00-5	1,1,2-Trichloroethane	48000	U
71-43-2	Benzene	48000	U
10061-02-6	trans-1,3-Dichloropropene	48000	U
75-25-2	Bromoform	48000	U
108-10-1	4-Methyl-2-Pentanone	79000	J
591-78-6	2-Hexanone	48000	U
127-18-4	Tetrachloroethene	48000	U
79-34-5	1,1,2,2-Tetrachloroethane	48000	U
108-88-3	Toluene	22000	J
108-90-7	Chlorobenzene	48000	U
100-41-4	Ethylbenzene	48000	U
100-42-5	Styrene	48000	U
1330-20-7	Xylene (Total)	9700	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF27

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.01

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38760.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 2.5(uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71-36-3	1-Butanol	10.429	1700000	NJ
2.		UNKNOWN	11.042	57000	J
3.	123-86-4	Acetic acid, butyl ester	12.641	58000	NJ
4.		UNKNOWN	13.465	190000	J
5.		UNKNOWN	16.050	110000	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF28

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38759.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 5 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24000	U
74-83-9	Bromomethane	24000	U
75-01-4	Vinyl Chloride	24000	U
75-00-3	Chloroethane	24000	U
75-09-2	Methylene Chloride	24000	U
67-64-1	Acetone	24000	U
75-15-0	Carbon Disulfide	24000	U
75-35-4	1,1-Dichloroethene	24000	U
75-34-3	1,1-Dichloroethane	24000	U
540-59-0	1,2-Dichloroethene (total)	24000	U
67-66-3	Chloroform	24000	U
107-06-2	1,2-Dichloroethane	24000	U
78-93-3	2-Butanone	24000	U
71-55-6	1,1,1-Trichloroethane	24000	U
56-23-5	Carbon Tetrachloride	24000	U
75-27-4	Bromodichloromethane	24000	U
78-87-5	1,2-Dichloropropane	24000	U
10061-01-5	cis-1,3-Dichloropropene	24000	U
79-01-6	Trichloroethene	24000	U
124-48-1	Dibromochloromethane	24000	U
79-00-5	1,1,2-Trichloroethane	24000	U
71-43-2	Benzene	24000	U
10061-02-6	trans-1,3-Dichloropropene	24000	U
75-25-2	Bromoform	24000	U
108-10-1	4-Methyl-2-Pentanone	240000	U
591-78-6	2-Hexanone	24000	U
127-18-4	Tetrachloroethene	24000	U
79-34-5	1,1,2,2-Tetrachloroethane	24000	U
108-88-3	Toluene	28000	U
108-90-7	Chlorobenzene	24000	U
100-41-4	Ethylbenzene	24000	U
100-42-5	Styrene	24000	U
1330-20-7	Xylene (Total)	14000	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF28

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38759.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 5 (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	64-17-5	Ethanol	5.642	37000	NJ
2.	67-63-0	Isopropyl Alcohol	6.676	21000	NJ
3.		2-Butanol	9.021	17000	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF29

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.06

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38761.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: ~~100~~ 2.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 5 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	2400000	U
74-83-9	Bromomethane	2400000	U
75-01-4	Vinyl Chloride	2400000	U
75-00-3	Chloroethane	2400000	U
75-09-2	Methylene Chloride	2400000	U
67-64-1	Acetone	2400000	U
75-15-0	Carbon Disulfide	2400000	U
75-35-4	1,1-Dichloroethene	2400000	U
75-34-3	1,1-Dichloroethane	2400000	U
540-59-0	1,2-Dichloroethene (total)	2400000	U
67-66-3	Chloroform	2400000	U
107-06-2	1,2-Dichloroethane	2400000	U
78-93-3	2-Butanone	22000000	J
71-55-6	1,1,1-Trichloroethane	2400000	U
56-23-5	Carbon Tetrachloride	2400000	U
75-27-4	Bromodichloromethane	2400000	U
78-87-5	1,2-Dichloropropane	2400000	U
10061-01-5	cis-1,3-Dichloropropene	2400000	U
79-01-6	Trichloroethene	2400000	U
124-48-1	Dibromochloromethane	2400000	U
79-00-5	1,1,2-Trichloroethane	2400000	U
71-43-2	Benzene	2400000	U
10061-02-6	trans-1,3-Dichloropropene	2400000	U
75-25-2	Bromoform	2400000	U
108-10-1	4-Methyl-2-Pentanone	2400000	U
591-78-6	2-Hexanone	2400000	U
127-18-4	Tetrachloroethene	2400000	U
79-34-5	1,1,2,2-Tetrachloroethane	2400000	U
108-88-3	Toluene	2400000	U
108-90-7	Chlorobenzene	2400000	U
100-41-4	Ethylbenzene	370000	J
100-42-5	Styrene	2400000	U
1330-20-7	Xylene (Total)	1500000	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF29

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.06

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38761.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 100.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 5 (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	Isopropyl Alcohol	6.676	2500000	NJ
2.	71-36-3	1-Butanol	10.419	39000000	NJ
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF30

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.07

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38762.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 100.0 400

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 2 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	4800000	U
74-83-9	Bromomethane	4800000	U
75-01-4	Vinyl Chloride	4800000	U
75-00-3	Chloroethane	4800000	U
75-09-2	Methylene Chloride	4800000	U
67-64-1	Acetone	4800000	U
75-15-0	Carbon Disulfide	4800000	U
75-35-4	1,1-Dichloroethene	4800000	U
75-34-3	1,1-Dichloroethane	4800000	U
540-59-0	1,2-Dichloroethene (total)	4800000	U
67-66-3	Chloroform	4800000	U
107-06-2	1,2-Dichloroethane	4800000	U
78-93-3	2-Butanone	25000000	J
71-55-6	1,1,1-Trichloroethane	4800000	U
56-23-5	Carbon Tetrachloride	4800000	U
75-27-4	Bromodichloromethane	4800000	U
78-87-5	1,2-Dichloropropane	4800000	U
10061-01-5	cis-1,3-Dichloropropene	4800000	U
79-01-6	Trichloroethene	4800000	U
124-48-1	Dibromochloromethane	4800000	U
79-00-5	1,1,2-Trichloroethane	4800000	U
71-43-2	Benzene	4800000	U
10061-02-6	trans-1,3-Dichloropropene	4800000	U
75-25-2	Bromoform	4800000	U
108-10-1	4-Methyl-2-Pentanone	4800000	U
591-78-6	2-Hexanone	4800000	U
127-18-4	Tetrachloroethene	4800000	U
79-34-5	1,1,2,2-Tetrachloroethane	4800000	U
108-88-3	Toluene	4800000	U
108-90-7	Chlorobenzene	4800000	U
100-41-4	Ethylbenzene	4800000	U
100-42-5	Styrene	4800000	U
1330-20-7	Xylene (Total)	1500000	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF30

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.07

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38762.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 100.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 2 (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	Isopropyl Alcohol	6.666	3500000	NJ
2.	71-36-3	1-Butanol	10.409	17000000	NJ
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF31

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38764.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0 2

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 5 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	24000	U
74-83-9	Bromomethane	24000	U
75-01-4	Vinyl Chloride	24000	U
75-00-3	Chloroethane	24000	U
75-09-2	Methylene Chloride	24000	U
67-64-1	Acetone	24000	U
75-15-0	Carbon Disulfide	24000	U
75-35-4	1,1-Dichloroethene	24000	U
75-34-3	1,1-Dichloroethane	24000	U
540-59-0	1,2-Dichloroethene (total)	24000	U
67-66-3	Chloroform	24000	U
107-06-2	1,2-Dichloroethane	24000	U
78-93-3	2-Butanone	24000	U
71-55-6	1,1,1-Trichloroethane	24000	U
56-23-5	Carbon Tetrachloride	24000	U
75-27-4	Bromodichloromethane	24000	U
78-87-5	1,2-Dichloropropane	24000	U
10061-01-5	cis-1,3-Dichloropropene	24000	U
79-01-6	Trichloroethene	24000	U
124-48-1	Dibromochloromethane	24000	U
79-00-5	1,1,2-Trichloroethane	24000	U
71-43-2	Benzene	24000	U
10061-02-6	trans-1,3-Dichloropropene	24000	U
75-25-2	Bromoform	24000	U
108-10-1	4-Methyl-2-Pentanone	47000	J
591-78-6	2-Hexanone	24000	U
127-18-4	Tetrachloroethene	24000	U
79-34-5	1,1,2,2-Tetrachloroethane	24000	U
108-88-3	Toluene	9500	J
108-90-7	Chlorobenzene	24000	U
100-41-4	Ethylbenzene	24000	U
100-42-5	Styrene	24000	U
1330-20-7	Xylene (Total)	4600	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF31

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38764.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 5 (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71-36-3	1-Butanol	10.438	1100000	NJ
2.	592-84-7	Formic acid, butyl ester	11.051	33000	NJ
3.	123-86-4	Acetic acid, butyl ester	12.650	35000	NJ
4.	142-96-1	n-Butyl ether	13.464	91000	NJ
5.		UNKNOWN	16.050	62000	J
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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

BYF32 TB

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) WATER Lab Sample ID: 38993.09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38757.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF32

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) WATER Lab Sample ID: 38993.09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38757.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF33

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.10

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38767.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 25 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	4800	U
74-83-9	Bromomethane	4800	U
75-01-4	Vinyl Chloride	4800	U
75-00-3	Chloroethane	4800	U
75-09-2	Methylene Chloride	4800	U
67-64-1	Acetone	4800	U
75-15-0	Carbon Disulfide	4800	U
75-35-4	1,1-Dichloroethene	4800	U
75-34-3	1,1-Dichloroethane	4800	U
540-59-0	1,2-Dichloroethene (total)	4800	U
67-66-3	Chloroform	4800	U
107-06-2	1,2-Dichloroethane	4800	U
78-93-3	2-Butanone	4800	U
71-55-6	1,1,1-Trichloroethane	4800	U
56-23-5	Carbon Tetrachloride	4800	U
75-27-4	Bromodichloromethane	4800	U
78-87-5	1,2-Dichloropropane	4800	U
10061-01-5	cis-1,3-Dichloropropene	4800	U
79-01-6	Trichloroethene	4800	U
124-48-1	Dibromochloromethane	4800	U
79-00-5	1,1,2-Trichloroethane	4800	U
71-43-2	Benzene	520	J
10061-02-6	trans-1,3-Dichloropropene	4800	U
75-25-2	Bromoform	4800	U
108-10-1	4-Methyl-2-Pentanone	4800	U
591-78-6	2-Hexanone	4800	U
127-18-4	Tetrachloroethene	4800	U
79-34-5	1,1,2,2-Tetrachloroethane	4800	U
108-88-3	Toluene	9100	J
108-90-7	Chlorobenzene	4800	U
100-41-4	Ethylbenzene	26000	J
100-42-5	Styrene	4800	U
1330-20-7	Xylene (Total)	120000	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF33

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.10

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38767.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 25 (uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71-36-3	1-Butanol	10.410	110000	NJ
2.		Cyclohexane, dimethyl	11.973	4700	J
3.	1678-91-7	Cyclohexane,ethyl	12.644	32000	NJ
4.		UNKNOWN HYDROCARBON	13.018	11000	J
5.		UNKNOWN	14.152	17000	J
6.	1678-92-8	Cyclohexane, propyl-	14.268	17000	NJ
7.	98-82-8	Benzene, (1-methylethyl)-	14.393	7400	NJ
8.	103-65-1	Benzene, propyl-	14.845	21000	NJ
9.		Benzene, 1-ethyl-methyl-	14.951	85000	J
10.		UNKNOWN HYDROCARBON	15.057	89000	J
11.		Benzene, 1-ethyl-methyl-	15.259	31000	J
12.		Benzene, trimethyl-	15.442	120000	J
13.		UNKNOWN ALKYL BENZENE	15.625	29000	J
14.		UNKNOWN ALKYL BENZENE	15.731	41000	J
15.		UNKNOWN ALKYL BENZENE	15.895	60000	J
16.		UNKNOWN HYDROCARBON	16.020	6700	J
17.		Benzene, diethyl-	16.213	120000	J
18.		UNKNOWN HYDROCARBON	16.377	62000	J
19.		UNKNOWN ALKYL BENZENE	16.522	40000	J
20.		Benzene, ethyl-dimethyl-	16.608	40000	J
21.		UNKNOWN ALKYL BENZENE	16.753	44000	J
22.		UNKNOWN ALKYL BENZENE	16.917	35000	J
23.		Benzene, tetramethyl-	17.081	98000	J
24.		UNKNOWN	17.342	14000	J
25.		UNKNOWN ALKYL BENZENE	17.535	93000	J
26.		Naphthalene, tetrahydro-	17.718	50000	J
27.		UNKNOWN ALKYL BENZENE	17.970	38000	J
28.	91-20-3	Naphthalene	18.240	31000	NJ
29.		UNKNOWN	18.385	15000	J
30.		UNKNOWN	18.501	11000	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF34

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.11

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38768.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1200	U
75-01-4	Vinyl Chloride	5800	J
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200	U
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	180	J
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	1200	U
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	460	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF34

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.11

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38768.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71-36-3	1-Butanol	10.419	5000	NJ
2.		UNKNOWN	12.991	2600	J
3.		Naphthalene, methyl-	14.357	6200	J
4.		UNKNOWN HYDROCARBON	15.080	860	J
5.		Naphthalene, methyl-	15.263	2000	J
6.		Benzene, trimethyl-	15.427	2400	J
7.		Benzene, diethyl-	16.207	3900	J
8.		UNKNOWN HYDROCARBON	16.370	1600	J
9.		UNKNOWN ALKYL BENZENE	16.765	630	J
10.		UNKNOWN	17.083	1100	J
11.		UNKNOWN	17.343	1300	J
12.		UNKNOWN	17.527	3000	J
13.		Naphthalene, tetrahydro-	17.710	2000	J
14.		UNKNOWN ALKYL BENZENE	17.951	1200	J
15.	91-20-3	Naphthalene	18.231	1300	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF35

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38773.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1200	U
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200	U
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	17000	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	4000	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	7400	U
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	760	J
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	4700	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF35

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38773.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	71-36-3	1-Butanol	10.584	380000	NJ
2.	592-84-7	Formic acid, butyl ester	11.044	6700	NJ
3.		UNKNOWN	12.128	1400	J
4.	123-86-4	Acetic acid, butyl ester	12.627	12000	NJ
5.	142-96-1	n-Butyl ether	13.443	42000	NJ
6.		UNKNOWN	13.789	680	J
7.		Naphthalene, -methyl-	14.270	2000	J
8.		UNKNOWN	15.194	740	J
9.		UNKNOWN	15.357	1300	J
10.		UNKNOWN	16.031	21000	J
11.	108-95-2	Phenol	16.368	3700	NJ
12.		UNKNOWN	16.849	890	J
13.	4265-25-2	Benzofuran, 2-methyl-	17.119	1800	NJ
14.		UNKNOWN HYDROCARBON	17.514	1500	J
15.		UNKNOWN	17.717	1300	J
16.		UNKNOWN HYDROCARBON	18.391	750	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF36 TD

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) WATER Lab Sample ID: 38993.13

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38758.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

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

IE

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF36

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) WATER Lab Sample ID: 38993.13

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38758.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF37

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.14

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38769.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1200	U
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200	U
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	360	J
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	10000	
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	12000	
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	69000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF37

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.14

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38769.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-87-2	Cyclohexane, methyl-	10.469	11000	NJ
2.		UNKNOWN HYDROCARBON	11.236	4900	J
3.	111-65-9	Octane	11.870	2400	NJ
4.		Cyclohexane, dimethyl	11.975	2900	J
5.	1678-91-7	Cyclohexane, ethyl-	12.647	16000	NJ
6.		UNKNOWN HYDROCARBON	13.022	6000	J
7.		UNKNOWN	14.167	7100	J
8.		UNKNOWN CYCLOALKANE	14.273	7100	J
9.		UNKNOWN HYDROCARBON	14.726	4700	J
10.	103-65-1	Benzene, propyl-	14.851	6600	NJ
11.		Benzene, ethyl-methyl-	14.957	31000	J
12.		Benzene, trimethyl-	15.053	44000	J
13.		Benzene, ethyl-methyl-	15.265	14000	J
14.		Benzene, trimethyl-	15.449	56000	J
15.		UNKNOWN	15.632	10000	J
16.		UNKNOWN	15.738	17000	J
17.		Benzene, trimethyl-	15.902	30000	J
18.		Benzene, diethyl-	16.211	44000	J
19.	1120-21-4	Undecane	16.385	25000	NJ
20.		UNKNOWN ALKYL BENZENE	16.539	30000	J
21.		UNKNOWN ALKYL BENZENE	16.761	13000	J
22.		UNKNOWN	16.897	12000	J
23.		UNKNOWN	17.032	12000	J
24.		UNKNOWN	17.090	25000	J
25.		UNKNOWN	17.351	4300	J
26.		UNKNOWN ALKYL BENZENE	17.534	26000	J
27.		Naphthalene, tetrahydro-	17.718	15000	J
28.		UNKNOWN ALKYL BENZENE	17.970	6200	J
29.	91-20-3	Naphthalene	18.241	7300	NJ
30.		UNKNOWN	18.395	2300	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF38

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.15

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38770.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 50 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	2400	U
74-83-9	Bromomethane	2400	U
75-01-4	Vinyl Chloride	2400	U
75-00-3	Chloroethane	2400	U
75-09-2	Methylene Chloride	2400	U
67-64-1	Acetone	2400	U
75-15-0	Carbon Disulfide	2400	U
75-35-4	1,1-Dichloroethene	2400	U
75-34-3	1,1-Dichloroethane	2400	U
540-59-0	1,2-Dichloroethene (total)	2400	U
67-66-3	Chloroform	2400	U
107-06-2	1,2-Dichloroethane	2400	U
78-93-3	2-Butanone	2400	U
71-55-6	1,1,1-Trichloroethane	2400	U
56-23-5	Carbon Tetrachloride	2400	U
75-27-4	Bromodichloromethane	2400	U
78-87-5	1,2-Dichloropropane	2400	U
10061-01-5	cis-1,3-Dichloropropene	2400	U
79-01-6	Trichloroethene	2400	U
124-48-1	Dibromochloromethane	2400	U
79-00-5	1,1,2-Trichloroethane	2400	U
71-43-2	Benzene	470	J
10061-02-6	trans-1,3-Dichloropropene	2400	U
75-25-2	Bromoform	2400	U
108-10-1	4-Methyl-2-Pentanone	2400	U
591-78-6	2-Hexanone	2400	U
127-18-4	Tetrachloroethene	2400	U
79-34-5	1,1,2,2-Tetrachloroethane	2400	U
108-88-3	Toluene	15000	
108-90-7	Chlorobenzene	2400	U
100-41-4	Ethylbenzene	17000	
100-42-5	Styrene	2400	U
1330-20-7	Xylene (Total)	100000	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF38

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.15

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38770.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 50 (uL)

Number TICs found: 29

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109-66-0	Pentane	4.810	6300	NJ
2.	108-87-2	Cyclohexane, methyl-	10.471	15000	NJ
3.		UNKNOWN HYDROCARBON	11.240	11000	J
4.	111-65-9	Octane	11.865	8200	NJ
5.		Cyclohexane, dimethyl	11.971	5200	J
6.	66-25-1	Hexanal	12.577	46000	NJ
7.		UNKNOWN	13.020	18000	J
8.		UNKNOWN	14.158	18000	J
9.		UNKNOWN CYCLOALKANE	14.264	24000	J
10.		UNKNOWN	14.563	27000	J
11.		UNKNOWN ALKYL BENZENE	14.853	5800	J
12.		Benzene, ethyl-methyl-	14.959	40000	J
13.	124-18-5	Decane	15.085	100000	NJ
14.		Benzene, ethyl-methyl-	15.268	25000	J
15.		UNKNOWN ALKYL BENZENE	15.442	96000	J
16.		UNKNOWN	15.635	18000	J
17.		UNKNOWN CYCLOALKANE	15.722	43000	J
18.		Benzene, trimethyl-	15.896	59000	J
19.		UNKNOWN HYDROCARBON	16.031	10000	J
20.		Benzene, diethyl-	16.215	70000	J
21.	1120-21-4	Undecane	16.379	82000	NJ
22.		UNKNOWN ALKYL BENZENE	16.534	60000	J
23.		UNKNOWN ALKYL BENZENE	16.766	29000	J
24.		UNKNOWN	16.882	24000	J
25.		UNKNOWN ALKYL BENZENE	17.094	96000	J
26.		UNKNOWN	17.540	73000	J
27.		UNKNOWN	17.723	45000	J
28.		UNKNOWN ALKYL BENZENE	17.975	12000	J
29.	91-20-3	Naphthalene	18.236	18000	NJ
30.					

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF39

ab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.16

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38771.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 50 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	2400	U
74-83-9	Bromomethane	2400	U
75-01-4	Vinyl Chloride	2400	U
75-00-3	Chloroethane	2400	U
75-09-2	Methylene Chloride	2400	U
67-64-1	Acetone	2400	U
75-15-0	Carbon Disulfide	2400	U
75-35-4	1,1-Dichloroethene	2400	U
75-34-3	1,1-Dichloroethane	2400	U
540-59-0	1,2-Dichloroethene (total)	2400	U
67-66-3	Chloroform	2400	U
107-06-2	1,2-Dichloroethane	2400	U
78-93-3	2-Butanone	2400	U
71-55-6	1,1,1-Trichloroethane	2400	U
56-23-5	Carbon Tetrachloride	2400	U
75-27-4	Bromodichloromethane	2400	U
78-87-5	1,2-Dichloropropane	2400	U
10061-01-5	cis-1,3-Dichloropropene	2400	U
79-01-6	Trichloroethene	2400	U
124-48-1	Dibromochloromethane	2400	U
79-00-5	1,1,2-Trichloroethane	2400	U
71-43-2	Benzene	460	J
10061-02-6	trans-1,3-Dichloropropene	2400	U
75-25-2	Bromoform	2400	U
108-10-1	4-Methyl-2-Pentanone	2400	U
591-78-6	2-Hexanone	2400	U
127-18-4	Tetrachloroethene	2400	U
79-34-5	1,1,2,2-Tetrachloroethane	2400	U
108-88-3	Toluene	9500	
108-90-7	Chlorobenzene	2400	U
100-41-4	Ethylbenzene	13000	
100-42-5	Styrene	2400	U
1330-20-7	Xylene (Total)	86000	

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF39

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.16

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38771.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 50 (uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-87-2	Cyclohexane, methyl-	10.472	14000	NJ
2.	592-27-8	Heptane, 2-methyl-	11.231	7000	NJ
3.		UNKNOWN HYDROCARBON	11.395	2800	J
4.	111-65-9	Octane	11.876	6700	NJ
5.		Cyclohexane, dimethyl	11.972	4600	J
6.		Cyclohexane, dimethyl	12.117	2400	J
7.	1678-91-7	Cyclohexane, ethyl-	12.646	30000	NJ
8.		UNKNOWN HYDROCARBON	13.022	14000	J
9.		UNKNOWN	14.160	14000	J
10.		UNKNOWN CYCLOALKANE	14.266	16000	J
11.		UNKNOWN CYCLOALKANE	14.856	4600	J
12.		UNKNOWN ALKYL BENZENE	14.952	34000	J
13.	124-18-5	Decane	15.078	74000	NJ
14.		UNKNOWN ALKYL BENZENE	15.261	19000	J
15.		Benzene, trimethyl-	15.445	75000	J
16.		UNKNOWN ALKYL BENZENE	15.629	13000	J
17.		UNKNOWN CYCLOALKANE	15.725	28000	J
18.		UNKNOWN ALKYL BENZENE	15.899	42000	J
19.		UNKNOWN HDYROCARBON	16.025	6300	J
20.		UNKNOWN ALKYL BENZENE	16.208	62000	J
21.		UNKNOWN HYDROCARBON	16.382	60000	J
22.		UNKNOWN ALKYL BENZENE	16.537	45000	J
23.		UNKNOWN ALKYL BENZENE	16.759	20000	J
24.		UNKNOWN	16.885	20000	J
25.		UNKNOWN	17.030	23000	J
26.		UNKNOWN ALKYL BENZENE	17.088	54000	J
27.		UNKNOWN	17.533	60000	J
28.		UNKNOWN	17.717	36000	J
29.		UNKNOWN ALKYL BENZENE	17.968	10000	J
30.		UNKNOWN	18.239	15000	J

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF41

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.02

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28679.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	3300	U
74-83-9	Bromomethane	6300	U
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	6300	B UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	1200	U
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	1200	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF41

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.02

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28679.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.107	1500	J
2.	109-87-5	Methane, dimethoxy-	7.211	16000	NJ
3.		Cyclotrisiloxane	12.765	2700	~~JB~~
4.		Cyclotetrasiloxane	14.935	1700	J
5.		UNKNOWN	16.757	1300	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF42

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28682.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	930	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	4400	~~B~~ UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	5400	J
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1700	J
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	1600	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	190	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF42

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28682.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Cyclotrisiloxane	12.814	~~1300~~	~~JB~~
2.		Cyclotetrasiloxane	14.974	650	J
3.		UNKNOWN	16.932	980	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF42RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28688.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1200	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200	~~JB~~ 4J
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1100	J
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	1400	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	890	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF42RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28688.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Cyclotrisiloxane	12.843	~~1900~~	J
2.		Cyclotetrasiloxane	14.989	1500	J
3.		UNKNOWN	15.222	1000	J
4.		UNKNOWN	15.783	770	J
5.		UNKNOWN HYDROCARBON	16.403	4100	J
6.		UNKNOWN	16.538	1800	J
7.		UNKNOWN	16.810	990	J
8.		UNKNOWN	16.955	2100	J
9.		UNKNOWN	17.101	3900	J
10.		UNKNOWN HYDROCARBON	17.498	2100	J
11.		UNKNOWN	17.712	750	J
12.		UNKNOWN	18.051	930	J
13.		UNKNOWN	18.090	1800	J
14.		UNKNOWN HYDROCARBON	18.226	840	J
15.		UNKNOWN HYDROCARBON	18.507	3300	J
16.		UNKNOWN	18.749	680	J
17.		UNKNOWN	19.089	920	J
18.		Naphthalene, methyl-	19.263	2300	J
19.		UNKNOWN HYDROCARBON	19.399	7100	J
20.		UNKNOWN	19.846	2500	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF44 [illegible]

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38754.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF44

ab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.08

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38754.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF45 [illegible]

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38755.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF45

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.09

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38755.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF46

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28683.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	620	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	4500	~~B~~ UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	690	J
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	180	J
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	600	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	180	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF46

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28683.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.326	630	J
2.		Cyclotrisiloxane	12.822	~~1700~~	~~JB~~
3.		UNKNOWN	16.796	750	J
4.		UNKNOWN	17.085	15000	J
5.		UNKNOWN	18.089	7700	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF46RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28689.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	2300	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1300	B
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	1200	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	620	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	780	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF46RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28689.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Cyclotrisiloxane	12.821	~~5200~~	~~JB~~
2.		Cyclotetrasiloxane	14.982	2400	J
3.		UNKNOWN	16.391	800	J
4.		UNKNOWN	16.796	3500	J
5.		UNKNOWN	17.087	41000	J
6.		Propane, tribromo-	18.082	26000	J
7.		UNKNOWN	19.222	960	J
8.		UNKNOWN HYDROCARBON	19.377	1200	J
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF47

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.11

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38794.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
74-87-3	Chloromethane		12000	U
74-83-9	Bromomethane		12000	U
75-01-4	Vinyl Chloride		12000	U
75-00-3	Chloroethane		12000	U
75-09-2	Methylene Chloride	12000	~~6500~~	~~JB~~ U J
67-64-1	Acetone		12000	U
75-15-0	Carbon Disulfide		12000	U
75-35-4	1,1-Dichloroethene		12000	U
75-34-3	1,1-Dichloroethane		12000	U
540-59-0	1,2-Dichloroethene (total)		12000	U
67-66-3	Chloroform		12000	U
107-06-2	1,2-Dichloroethane		12000	U
78-93-3	2-Butanone		12000	U
71-55-6	1,1,1-Trichloroethane		12000	U
56-23-5	Carbon Tetrachloride		12000	U
75-27-4	Bromodichloromethane		12000	U
78-87-5	1,2-Dichloropropane		12000	U
10061-01-5	cis-1,3-Dichloropropene		12000	U
79-01-6	Trichloroethene		12000	U
124-48-1	Dibromochloromethane		12000	U
79-00-5	1,1,2-Trichloroethane		12000	U
71-43-2	Benzene		12000	U
10061-02-6	trans-1,3-Dichloropropene		12000	U
75-25-2	Bromoform		12000	U
108-10-1	4-Methyl-2-Pentanone		98000	J
591-78-6	2-Hexanone		12000	U
127-18-4	Tetrachloroethene		12000	U
79-34-5	1,1,2,2-Tetrachloroethane		12000	U
108-88-3	Toluene		12000	U
108-90-7	Chlorobenzene		12000	U
100-41-4	Ethylbenzene		12000	U
100-42-5	Styrene		12000	U
1330-20-7	Xylene (Total)		12000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF47

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.11

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38794.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	Isopropyl Alcohol	6.599	23000	NJ
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF48

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.12

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38830.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/24/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12000	U
74-83-9	Bromomethane	12000	U
75-01-4	Vinyl Chloride	220000	J
75-00-3	Chloroethane	12000	U
75-09-2	Methylene Chloride	12000	U
67-64-1	Acetone	12000	U
75-15-0	Carbon Disulfide	12000	U
75-35-4	1,1-Dichloroethene	12000	U
75-34-3	1,1-Dichloroethane	12000	U
540-59-0	1,2-Dichloroethene (total)	12000	U
67-66-3	Chloroform	12000	U
107-06-2	1,2-Dichloroethane	12000	U
78-93-3	2-Butanone	12000	U
71-55-6	1,1,1-Trichloroethane	12000	U
56-23-5	Carbon Tetrachloride	12000	U
75-27-4	Bromodichloromethane	12000	U
78-87-5	1,2-Dichloropropane	12000	U
10061-01-5	cis-1,3-Dichloropropene	12000	U
79-01-6	Trichloroethene	12000	U
124-48-1	Dibromochloromethane	12000	U
79-00-5	1,1,2-Trichloroethane	12000	U
71-43-2	Benzene	14000	J
10061-02-6	trans-1,3-Dichloropropene	12000	U
75-25-2	Bromoform	12000	U
108-10-1	4-Methyl-2-Pentanone	12000	U
591-78-6	2-Hexanone	12000	U
127-18-4	Tetrachloroethene	12000	U
79-34-5	1,1,2,2-Tetrachloroethane	12000	U
108-88-3	Toluene	12000	U
108-90-7	Chlorobenzene	12000	U
100-41-4	Ethylbenzene	12000	U
100-42-5	Styrene	12000	U
1330-20-7	Xylene (Total)	12000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF48

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.12

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38830.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/24/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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10.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF49

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38796.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1200	U
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200 ~~340~~	~~JB~~ UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	620	J
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	300	J
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	940	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	150	J
1330-20-7	Xylene (Total)	160	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF49

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38796.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.808	1200	J
2.		UNKNOWN	13.733	1100	J
3.	96-12-8	Propane, 1,2-dibromo-3-chlor	16.950	14000	NJ
4.		Propane, tribromo-	18.042	4600	J
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF50

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28685.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1000	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1400	~~B~~ UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	4900	U
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	1200	U
591-78-6	2-Hexanone	1200	J
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	1200	U
108-90-7	Chlorobenzene	380	J
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	1200	U
		690	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF50

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28685.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Cyclotrisiloxane	12.852	~~1300~~	~~J~~ R
2.		UNKNOWN	17.115	12000	J
3.		UNKNOWN	18.129	5700	J
4.					
5.					
6.					
7.					
8.					
9.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF50RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28690.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1200	U
74-83-9	Bromomethane	1400	J
75-01-4	Vinyl Chloride	1200	U
75-00-3	Chloroethane	1200	U
75-09-2	Methylene Chloride	1200 ~~1100~~	~~JB~~ UJ
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	4200	J
75-35-4	1,1-Dichloroethene	1200	U
75-34-3	1,1-Dichloroethane	1200	U
540-59-0	1,2-Dichloroethene (total)	1200	U
67-66-3	Chloroform	1200	U
107-06-2	1,2-Dichloroethane	1200	U
78-93-3	2-Butanone	1200	U
71-55-6	1,1,1-Trichloroethane	1200	U
56-23-5	Carbon Tetrachloride	1200	U
75-27-4	Bromodichloromethane	1200	U
78-87-5	1,2-Dichloropropane	1200	U
10061-01-5	cis-1,3-Dichloropropene	1200	U
79-01-6	Trichloroethene	1200	U
124-48-1	Dibromochloromethane	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
71-43-2	Benzene	1200	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
75-25-2	Bromoform	1200	U
108-10-1	4-Methyl-2-Pentanone	12000	J
591-78-6	2-Hexanone	1200	U
127-18-4	Tetrachloroethene	1200	U
79-34-5	1,1,2,2-Tetrachloroethane	1200	U
108-88-3	Toluene	470	J
108-90-7	Chlorobenzene	1200	U
100-41-4	Ethylbenzene	1200	U
100-42-5	Styrene	1200	U
1330-20-7	Xylene (Total)	840	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF50RE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14RA

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28690.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 100 (uL)

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.278	880	J
2.	67-63-0	Isopropyl Alcohol	8.155	4200	NJ
3.		Cyclotrisiloxane	12.764	~~1600~~	~~JB~~
4.		Cyclotetrasiloxane	14.935	640	J
5.	108-95-2	Phenol	16.323	720	NJ
6.		UNKNOWN	17.028	17000	J
7.		UNKNOWN	18.041	7700	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF51 TE

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.15

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38753.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF51

ab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.15

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: L38753.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: not dec. _____ Date Analyzed: 06/19/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF52

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.16

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28686.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
74-87-3	Chloromethane		12000	U
74-83-9	Bromomethane		4500	J
75-01-4	Vinyl Chloride		12000	U
75-00-3	Chloroethane		12000	U
75-09-2	Methylene Chloride	12000	~~10000~~	~~JB~~ U I
67-64-1	Acetone		25000	J
75-15-0	Carbon Disulfide		12000	U
75-35-4	1,1-Dichloroethene		12000	U
75-34-3	1,1-Dichloroethane		12000	U
540-59-0	1,2-Dichloroethene (total)		12000	U
67-66-3	Chloroform		12000	U
107-06-2	1,2-Dichloroethane		12000	U
78-93-3	2-Butanone		12000	U
71-55-6	1,1,1-Trichloroethane		12000	U
56-23-5	Carbon Tetrachloride		12000	U
75-27-4	Bromodichloromethane		12000	U
78-87-5	1,2-Dichloropropane		12000	U
10061-01-5	cis-1,3-Dichloropropene		12000	U
79-01-6	Trichloroethene		3400	J
124-48-1	Dibromochloromethane		12000	U
79-00-5	1,1,2-Trichloroethane		12000	U
71-43-2	Benzene		12000	U
10061-02-6	trans-1,3-Dichloropropene		12000	U
75-25-2	Bromoform		12000	U
108-10-1	4-Methyl-2-Pentanone		12000	U
591-78-6	2-Hexanone		12000	U
127-18-4	Tetrachloroethene		12000	U
79-34-5	1,1,2,2-Tetrachloroethane		12000	U
108-88-3	Toluene		12000	J
108-90-7	Chlorobenzene		12000	U
100-41-4	Ethylbenzene		64000	J
100-42-5	Styrene		12000	U
1330-20-7	Xylene (Total)		450000	J

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF52

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.16

Sample wt/vol: 4.0 (g/mL) G Lab File ID: C28686.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/21/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL)

Number TICs found: 27

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	111-65-9	Octane	12.553	12000	NJ
2.		UNKNOWN	13.239	38000	J
3.		UNKNOWN	13.481	18000	J
4.		UNKNOWN CYCLOALKANE	14.556	40000	J
5.		UNKNOWN ALKYL BENZENE	15.234	260000	J
6.		Benzene, ethyl-methyl-	15.448	52000	J
7.		Benzene, -trimethyl-	15.603	140000	J
8.		UNKNOWN ALKYL BENZENE	15.768	20000	J
9.		UNKNOWN CYCLOALKANE	15.846	40000	J
10.	98-82-8	Benzene, (1-methylethyl)-	16.011	110000	NJ
11.		Benzene, -diethyl-	16.302	200000	J
12.	1120-21-4	Undecane	16.409	92000	NJ
13.		UNKNOWN ALKYL BENZENE	16.594	110000	J
14.		UNKNOWN ALKYL BENZENE	16.808	76000	J
15.		UNKNOWN ALKYL BENZENE	17.119	210000	J
16.		UNKNOWN	17.353	56000	J
17.		UNKNOWN ALKYL BENZENE	17.538	310000	J
18.		Naphthalene, tetrahydro-	17.723	160000	J
19.		UNKNOWN ALKYL BENZENE	17.947	260000	J
20.		UNKNOWN ALKYL BENZENE	18.268	76000	J
21.		UNKNOWN ALKYL BENZENE	18.385	73000	J
22.	629-50-5	Tridecane	18.512	140000	NJ
23.		Naphthalene, -tetrahydro-5-m	18.775	140000	J
24.		Naphthalene, -tetrahydro-5-m	19.096	70000	J
25.		UNKNOWN	19.271	120000	J
26.		Naphthalene, methyl-	19.427	130000	J
27.		UNKNOWN	19.865	28000	J
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
BYF53

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.17

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38797.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12000	U
74-83-9	Bromomethane	12000	U
75-01-4	Vinyl Chloride	12000	U
75-00-3	Chloroethane	12000	U
75-09-2	Methylene Chloride	12000	U
67-64-1	Acetone	27000	J
75-15-0	Carbon Disulfide	12000	U
75-35-4	1,1-Dichloroethene	12000	U
75-34-3	1,1-Dichloroethane	12000	U
540-59-0	1,2-Dichloroethene (total)	12000	U
67-66-3	Chloroform	12000	U
107-06-2	1,2-Dichloroethane	12000	U
78-93-3	2-Butanone	12000	U
71-55-6	1,1,1-Trichloroethane	12000	U
56-23-5	Carbon Tetrachloride	12000	U
75-27-4	Bromodichloromethane	12000	U
78-87-5	1,2-Dichloropropane	12000	U
10061-01-5	cis-1,3-Dichloropropene	12000	U
79-01-6	Trichloroethene	4000	J
124-48-1	Dibromochloromethane	12000	U
79-00-5	1,1,2-Trichloroethane	12000	U
71-43-2	Benzene	12000	U
10061-02-6	trans-1,3-Dichloropropene	12000	U
75-25-2	Bromoform	12000	U
108-10-1	4-Methyl-2-Pentanone	34000	J
591-78-6	2-Hexanone	12000	U
127-18-4	Tetrachloroethene	12000	U
79-34-5	1,1,2,2-Tetrachloroethane	12000	U
108-88-3	Toluene	11000	J
108-90-7	Chlorobenzene	12000	U
100-41-4	Ethylbenzene	62000	J
100-42-5	Styrene	12000	U
1330-20-7	Xylene (Total)	400000	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF53

Lab Name: SWL-TULSA Contract: RFP 4820 RE

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.17

Sample wt/vol: 4.0 (g/mL) G Lab File ID: L38797.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: not dec. Date Analyzed: 06/22/99

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 10000(uL) Soil Aliquot Volume: 10 (uL)

Number TICs found: 28

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN HYDROCARBON	11.780	7600	J
2.		UNKNOWN CYCLOALKANE	12.556	33000	J
3.		UNKNOWN HYDROCARBON	12.911	12000	J
4.		UNKNOWN	14.074	12000	J
5.		UNKNOWN CYCLOALKANE	14.179	20000	J
6.		UNKNOWN HYDROCARBON	14.631	12000	J
7.		UNKNOWN ALKYL BENZENE	14.766	7100	J
8.		UNKNOWN ALKYL BENZENE	14.862	57000	J
9.		Benzene, trimethyl-	14.958	78000	J
10.		Benzene, ethyl-methyl-	15.170	25000	J
11.		Benzene, -trimethyl-	15.353	100000	J
12.		UNKNOWN	15.536	19000	J
13.		UNKNOWN ALKYL BENZENE	15.641	41000	J
14.		Benzene, trimethyl-	15.805	56000	J
15.		Benzene, diethyl-	16.123	120000	J
16.		UNKNOWN HYDROCARBON	16.296	51000	J
17.		UNKNOWN ALKYL BENZENE	16.441	46000	J
18.		Benzene, ethyl-dimethyl-	16.518	38000	J
19.		UNKNOWN ALKYL BENZENE	16.672	44000	J
20.		UNKNOWN ALKYL BENZENE	16.788	43000	J
21.		UNKNOWN ALKYL BENZENE	16.990	130000	J
22.		UNKNOWN	17.260	21000	J
23.		UNKNOWN ALKYL BENZENE	17.444	100000	J
24.		UNKNOWN	17.627	65000	J
25.		UNKNOWN ALKYL BENZENE	17.878	58000	J
26.	91-20-3	Naphthalene	18.129	30000	NJ
27.		UNKNOWN	18.273	23000	J
28.		UNKNOWN	18.399	17000	J
29.					
30.					

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF44

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V26724.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:06/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/16/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	0.5	J
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	0.5	J
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	0.8	J
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butylphthalate	0.8	J
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10 ~~2~~	~~JB~~ U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF44

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V26724.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:06/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/16/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.9

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	1.747	~~3~~	JB
2.		UNKNOWN	2.415	5	JB
3.	0-00-0	4-Ethyl-1-hexene	2.490	2	NJ
4.		UNKNOWN PHTHALATE	8.992	2	J
5.		UNKNOWN AMIDE	15.311	21	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF44 RE

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) WATER Lab Sample ID: 38992.08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V26724.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:06/14/99

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/16/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.9

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF40

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26783.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000	J
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF40

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26783.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	5600 ~~5800~~	~~EB~~ * J
117-84-0	Di-n-octylphthalate	18	J
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 OLM0

* Value from sample BYF40DL (DF=4)

1F

EPA SAMPLE NO.

BYF40

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26783.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	141-79-7	3-Penten-2-one, 4-methyl-	1.778	~~6500~~	~~NJB~~
2.		UNKNOWN	1.886	~~110~~	~~JB~~
3.	123-42-2	2-Pentanone, 4-hydroxy-4-met	2.015	~~3400~~	~~NJAB~~
4.		UNKNOWN	2.165	150	J
5.		UNKNOWN	2.596	450	J
6.		UNKNOWN	2.650	160	J
7.		UNKNOWN	3.167	220	J
8.	105-59-9	Ethanol, 2,2'-(methylimino)b	3.436	1500	NJ
9.		UNKNOWN	3.500	180	J
10.	541-02-6	Cyclopentasiloxane, decameth	3.543	140	NJ
11.		UNKNOWN ALDEHYDE	3.877	69	J
12.	2288-13-3	2,8,9-Trioxa-5-aza-1-silabic	5.180	270	NJ
13.		UNKNOWN	5.524	1100	J
14.		UNKNOWN	7.365	340	J
15.	70-55-3	Benzenesulfonamide, 4-methyl	7.419	200	NJ
16.		UNKNOWN	8.710	120	J
17.		UNKNOWN	8.850	150	J
18.	57-10-3	Hexadecanoic acid	9.593	160	NJ
19.		UNKNOWN AMIDE	9.701	170	J
20.		UNKNOWN AMIDE	11.132	340	J
21.		UNKNOWN AMIDE	11.272	350	J
22.		UNKNOWN	11.434	83	J
23.		UNKNOWN AMIDE	11.843	79	J
24.	4614-69-1	1-Phenanthrenecarboxylic aci	12.316	87	NJ
25.		UNKNOWN AMIDE	12.629	~~3700~~	~~JB~~
26.		UNKNOWN AMIDE	12.736	160	J
27.	5155-70-4	1-Phenanthrenecarboxylic aci	13.188	74	NJ
28.	6971-40-0	17-Pentatriacontene	13.361	150	NJ
29.	6624-79-9	1-Dotriacontanol	14.631	400	NJ
30.		UNKNOWN AMIDE	15.191	140	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF40

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26783.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	502-62-5	.Psi.,.psi.-Carotene, 7,7',8	15.417	140	NJ
2.	36653-82-4	1-Hexadecanol	15.815	360	NJ
3.	629-76-5	1-Pentadecanol	16.924	110	NJ
4.		UNKNOWN	17.139	130	J
5.		UNKNOWN	19.475	~~810~~	JB
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF40DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01DL

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26844.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	500	JD
111-44-4	bis(2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1,3-Dichlorobenzene	1300	U
106-46-7	1,4-Dichlorobenzene	1300	U
95-50-1	1,2-Dichlorobenzene	1300	U
95-48-7	2-Methylphenol	1300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-di-n-propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
111-91-1	bis(2-Chloroethoxy)methane	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
120-82-1	1,2,4-Trichlorobenzene	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	1300	U
95-95-4	2,4,5-Trichlorophenol	3300	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	3300	U
131-11-3	Dimethylphthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	3300	U
83-32-9	Acenaphthene	1300	U

DO NOT USE

709A

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF40DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01DL

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26844.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3300	U
100-02-7	4-Nitrophenol	3300	U
132-64-9	Dibenzofuran	1300	U
121-14-2	2,4-Dinitrotoluene	1300	U
84-66-2	Diethylphthalate	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
86-73-7	Fluorene	1300	U
100-01-6	4-Nitroaniline	3300	U
534-52-1	4,6-Dinitro-2-methylphenol	3300	U
86-30-6	N-Nitrosodiphenylamine (1)	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	1300	U
87-86-5	Pentachlorophenol	3300	U
85-01-8	Phenanthrene	1300	U
120-12-7	Anthracene	1300	U
86-74-8	Carbazole	1300	U
84-74-2	Di-n-butylphthalate	1300	U
206-44-0	Fluoranthene	1300	U
129-00-0	Pyrene	1300	U
85-68-7	Butylbenzylphthalate	1300	U
91-94-1	3,3'-Dichlorobenzidine	1300	U
56-55-3	Benzo(a)anthracene	1300	U
218-01-9	Chrysene	1300	U
117-81-7	bis(2-Ethylhexyl)phthalate	5600	BD
117-84-0	Di-n-octylphthalate	1300	U
205-99-2	Benzo(b)fluoranthene	1300	U
207-08-9	Benzo(k)fluoranthene	1300	U
50-32-8	Benzo(a)pyrene	1300	U
193-39-5	Indeno(1,2,3-cd)pyrene	1300	U
53-70-3	Dibenz(a,h)anthracene	1300	U
191-24-2	Benzo(g,h,i)perylene	1300	U

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF40DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.01DL

Sample wt/vol: 32.0 (g/mL) G Lab File ID: V26844.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	1.864	3300	NJAD
2.		UNKNOWN	2.973	390	JD
3.		UNKNOWN	3.048	930	JD
4.		UNKNOWN	7.192	880	JD
5.		UNKNOWN AMIDE	10.906	310	JD
6.		UNKNOWN AMIDE	11.057	330	JD
7.		UNKNOWN AMIDE	12.370	3100	JD
8.		UNKNOWN	19.260	700	JD
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DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF43

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26784.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.06

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	240	J
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF43

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26784.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	6200 ~~6400~~ *	EB ~~U~~ * I
117-84-0	Di-n-octylphthalate	19	J
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

* Value taken from sample BYF43DL (DF=4)

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF43

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26784.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 34 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	141-79-7	3-Penten-2-one, 4-methyl-	1.736	570	~~NJAB~~
2.		UNKNOWN	1.865	93	~~JB~~
3.	123-42-2	2-Pentanone, 4-hydroxy-4-met	2.005	3000	~~NJAB~~
4.		UNKNOWN	2.586	350	~~JB~~
5.		UNKNOWN	2.651	100	J
6.		UNKNOWN	3.146	430	J
7.		UNKNOWN	3.211	1200	J
8.		UNKNOWN	3.362	170	J
9.		UNKNOWN	3.448	80	
10.	103-69-5	Benzenamine, N-ethyl-	3.523	190	NJ
11.	95-16-9	Benzothiazole	4.072	73	NJ
12.	2288-13-3	2,8,9-Trioxa-5-aza-1-silabic	5.181	77	NJ
13.		UNKNOWN	5.493	79	J
14.	88-19-7	Benzenesulfonamide, 2-methyl	7.021	230	NJ
15.	70-55-3	Benzenesulfonamide, 4-methyl	7.377	580	NJ
16.	57-10-3	Hexadecanoic acid	9.583	120	NJ
17.		UNKNOWN AMIDE	9.702	150	J
18.		UNKNOWN	9.756	180	J
19.		UNKNOWN AMIDE	11.123	430	J
20.		UNKNOWN AMIDE	11.273	330	J
21.		UNKNOWN AMIDE	11.844	80	J
22.		UNKNOWN	12.318	110	J
23.		UNKNOWN AMIDE	12.619	3500	~~JB~~
24.		UNKNOWN AMIDE	12.737	150	J
25.	78-51-3	Ethanol, 2-butoxy-, phosphat	12.942	1400	NJ
26.	5155-70-4	1-Phenanthrenecarboxylic aci	13.200	85	NJ
27.	6971-40-0	17-Pentatriacontene	13.362	130	NJ
28.	6624-79-9	1-Dotriacontanol	14.632	320	NJ
29.		UNKNOWN	14.761	320	J
30.		UNKNOWN AMIDE	15.181	130	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF43

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26784.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 34

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	18.174	210	J
2.	1058-61-3	Stigmast-4-en-3-one	18.863	110	NJ
3.		UNKNOWN	19.304	120	J
4.		UNKNOWN	19.476	1100	~~JB~~ R
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF43DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26845.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	U
111-44-4	bis(2-Chloroethyl)Ether	1400	U
95-57-8	2-Chlorophenol	1400	U
541-73-1	1,3-Dichlorobenzene	1400	U
106-46-7	1,4-Dichlorobenzene	1400	U
95-50-1	1,2-Dichlorobenzene	1400	U
95-48-7	2-Methylphenol	1400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1400	U
106-44-5	4-Methylphenol	1400	U
621-64-7	N-Nitroso-di-n-propylamine	1400	U
67-72-1	Hexachloroethane	1400	U
98-95-3	Nitrobenzene	1400	U
78-59-1	Isophorone	1400	U
88-75-5	2-Nitrophenol	1400	U
105-67-9	2,4-Dimethylphenol	1400	U
111-91-1	bis(2-Chloroethoxy)methane	1400	U
120-83-2	2,4-Dichlorophenol	1400	U
120-82-1	1,2,4-Trichlorobenzene	1400	U
91-20-3	Naphthalene	1400	U
106-47-8	4-Chloroaniline	1400	U
87-68-3	Hexachlorobutadiene	1400	U
59-50-7	4-Chloro-3-Methylphenol	1400	U
91-57-6	2-Methylnaphthalene	1400	U
77-47-4	Hexachlorocyclopentadiene	1400	U
88-06-2	2,4,6-Trichlorophenol	1400	U
95-95-4	2,4,5-Trichlorophenol	3500	U
91-58-7	2-Chloronaphthalene	1400	U
88-74-4	2-Nitroaniline	3500	U
131-11-3	Dimethylphthalate	1400	U
208-96-8	Acenaphthylene	1400	U
606-20-2	2,6-Dinitrotoluene	1400	U
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	1400	U

DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF43DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26845.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	1400	U
121-14-2	2,4-Dinitrotoluene	1400	U
84-66-2	Diethylphthalate	1400	U
7005-72-3	4-Chlorophenyl-phenylether	1400	U
86-73-7	Fluorene	1400	U
100-01-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	1400	U
101-55-3	4-Bromophenyl-phenylether	1400	U
118-74-1	Hexachlorobenzene	1400	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	1400	U
120-12-7	Anthracene	1400	U
86-74-8	Carbazole	1400	U
84-74-2	Di-n-butylphthalate	1400	U
206-44-0	Fluoranthene	1400	U
129-00-0	Pyrene	1400	U
85-68-7	Butylbenzylphthalate	1400	U
91-94-1	3,3'-Dichlorobenzidine	1400	U
56-55-3	Benzo(a)anthracene	1400	U
218-01-9	Chrysene	1400	U
117-81-7	bis(2-Ethylhexyl)phthalate	6200	BD
117-84-0	Di-n-octylphthalate	1400	U
205-99-2	Benzo(b)fluoranthene	1400	U
207-08-9	Benzo(k)fluoranthene	1400	U
50-32-8	Benzo(a)pyrene	1400	U
193-39-5	Indeno(1,2,3-cd)pyrene	1400	U
53-70-3	Dibenz(a,h)anthracene	1400	U
191-24-2	Benzo(g,h,i)perylene	1400	U

(1) - Cannot be separated from Diphenylamine

DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF43DL

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.07DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: V26845.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: 6 decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/24/99

Injection Volume: 2.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) Y pH: 8.4

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	123-42-2	2-Pentanone, 4-hydroxy-4-met	1.865	3600	NJAD
2.		UNKNOWN	2.479	310	JBD
3.	111-46-6	Ethanol, 2,2'-oxybis-	2.640	1200	NJD
4.		UNKNOWN	3.049	860	JD
5.	112-42-5	1-Undecanol	5.461	370	NJD
6.	70-55-3	Benzenesulfonamide, 4-methyl	7.151	340	NJD
7.		UNKNOWN	7.183	440	JD
8.		UNKNOWN AMIDE	10.908	370	JD
9.		UNKNOWN AMIDE	11.048	310	JD
10.		UNKNOWN AMIDE	12.372	3100	JD
11.	78-51-3	Ethanol, 2-butoxy-, phosphat	12.716	1200	NJD
12.	2461-18-9	Oxirane, [(dodecyloxy)methyl	14.428	340	NJD
13.		UNKNOWN	19.261	1000	JD
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DO NOT USE

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF46

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 35.4 (g/mL) G Lab File ID: V26785.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1800	J
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

830H

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF46

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 35.4 (g/mL) G Lab File ID: V26785.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	~~330~~ 230	JB U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF46

Lab Name: SWL-TULSA Contract: RFP NO. 482

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 35.4 (g/mL) G Lab File ID: V26785.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	141-79-7	3-Penten-2-one, 4-methyl-	1.746	550	~~NJAB~~
2.	78-88-6	1-Propene, 2,3-dichloro-	2.048	290	NJ
3.	123-42-2	2-Pentanone, 4-hydroxy-4-met	2.091	1400	~~NJAB~~
4.		UNKNOWN	2.295	320	J
5.		UNKNOWN	2.403	1500	~~JB~~
6.		Unknown	2.435	530	~~JB~~
7.		UNKNOWN	2.554	1500	~~JB~~
8.		UNKNOWN	2.608	140	J
9.		UNKNOWN	3.253	1700	J
10.	96-13-9	1-Propanol, 2,3-dibromo-	3.469	8500	NJ
11.		UNKNOWN	3.566	410	J
12.		UNKNOWN	3.587	130	J
13.	96-11-7	Propane, 1,2,3-tribromo-	3.802	2600	NJ
14.		UNKNOWN	3.953	550	J
15.		UNKNOWN	4.212	820	J
16.	2288-13-3	2,8,9-Trioxa-5-aza-1-silabic	5.202	340	NJ
17.		UNKNOWN	5.417	370	J
18.		UNKNOWN	5.536	89	J
19.		UNKNOWN	6.860	140	J
20.		UNKNOWN	7.613	130	J
21.		UNKNOWN	7.775	460	J
22.		UNKNOWN	7.861	320	J
23.		UNKNOWN	7.947	550	J
24.		UNKNOWN	8.614	920	J
25.		UNKNOWN	8.668	400	J
26.		UNKNOWN	8.808	1400	J
27.		UNKNOWN	8.926	1400	J
28.	57-10-3	Hexadecanoic acid	9.605	280	NJ
29.		UNKNOWN	10.175	110	J
30.		UNKNOWN	10.756	690	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF46

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.10

Sample wt/vol: 35.4 (g/mL) G Lab File ID: V26785.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.875	200	J
2.		UNKNOWN	10.929	650	J
3.	57-11-4	Octadecanoic acid	11.133	150	NJ
4.		UNKNOWN	11.607	3800	J
5.		UNKNOWN	11.661	1000	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF49

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 31.2 (g/mL) G Lab File ID: V26786.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	930	J
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF49

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 31.2 (g/mL) G Lab File ID: V26786.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	16	J
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330 ~~71~~	JB
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF49

Lab Name: SWL-TULSA Contract: RFP NO. 482

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 31.2 (g/mL) G Lab File ID: V26786.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-88-6	1-Propene, 2,3-dichloro-	1.671	370	NJ
2.	141-79-7	3-Penten-2-one, 4-methyl-	1.757	620	~~NJAB~~
3.	109-02-4	Morpholine, 4-methyl-	1.929	2200	NJ
4.	123-42-2	2-Pentanone, 4-hydroxy-4-met	2.133	1600	NJA
5.		UNKNOWN	2.316	380	J
6.		UNKNOWN	2.424	2300	~~JB~~
7.		Unknown	2.456	740	~~JB~~
8.		UNKNOWN	2.564	1800	~~JB~~
9.		UNKNOWN	2.682	630	J
10.		UNKNOWN	2.984	730	J
11.		UNKNOWN	3.124	230	J
12.	96-13-9	1-Propanol, 2,3-dibromo-	3.468	5000	NJ
13.	96-13-9	1-Propanol, 2,3-dibromo-	3.511	4600	NJ
14.		UNKNOWN	3.608	500	J
15.		UNKNOWN	3.673	260	J
16.	96-11-7	Propane, 1,2,3-tribromo-	3.802	2200	NJ
17.		UNKNOWN	3.899	160	J
18.		UNKNOWN	3.963	730	J
19.		UNKNOWN	4.006	200	J
20.		UNKNOWN	4.222	760	J
21.		UNKNOWN	4.319	120	J
22.	2288-13-3	2,8,9-Trioxa-5-aza-1-silabic	5.234	1200	NJ
23.		UNKNOWN	5.417	580	J
24.		UNKNOWN	5.621	340	J
25.		UNKNOWN	6.848	230	J
26.		UNKNOWN	7.774	300	J
27.		UNKNOWN	8.614	690	J
28.		UNKNOWN	8.668	360	J
29.		UNKNOWN	8.807	1700	J
30.		UNKNOWN	8.926	1600	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF49

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.13

Sample wt/vol: 31.2 (g/mL) G Lab File ID: V26786.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.745	600	J
2.		UNKNOWN	10.917	380	J
3.		UNKNOWN	11.596	3500	J
4.		UNKNOWN	11.660	1000	J
5.		UNKNOWN AMIDE	12.564	410	~~JB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF50

Lab Name: SWL-TULSA | Contract: RFP NO. 482

Lab Code: SWOK | Case No.: WESTON | SAS No.: | SDG No.: 38992

Matrix: (soil/water) SOIL | Lab Sample ID: 38992.14

Sample wt/vol: 30.7 (g/mL) G | Lab File ID: V26787.D

Level: (low/med) LOW | Date Received: 06/12/99

% Moisture: | decanted: (Y/N) N | Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) | Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) | Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y | pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1700	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF50

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14

Sample wt/vol: 30.7 (g/mL) G Lab File ID: V26787.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330 ~~84~~	JB ~~U~~
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenz(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF50

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14

Sample wt/vol: 30.7 (g/mL) G Lab File ID: V26787.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	141-79-7	3-Penten-2-one, 4-methyl-	1.749	680	NJAB
2.		UNKNOWN	2.115	1900	JB
3.		UNKNOWN	2.244	16000	J
4.		UNKNOWN	2.309	560	J
5.		UNKNOWN	2.416	2500	JB
6.		Unknown	2.459	850	JB
7.		UNKNOWN	2.556	2000	JB
8.		UNKNOWN	2.675	700	J
9.		UNKNOWN	2.976	610	J
10.	111-46-6	Ethanol, 2,2'-oxybis-	3.105	480	NJ
11.		UNKNOWN	3.331	6700	J
12.	96-13-9	1-Propanol, 2,3-dibromo-	3.450	6200	NJ
13.	96-13-9	1-Propanol, 2,3-dibromo-	3.503	5900	NJ
14.		UNKNOWN	3.622	480	J
15.		UNKNOWN	3.665	200	J
16.		UNKNOWN	3.956	820	J
17.		UNKNOWN	4.214	940	J
18.	2288-13-3	2,8,9-Trioxa-5-aza-1-silabic	5.237	1600	NJ
19.		UNKNOWN	5.312	220	J
20.		UNKNOWN	5.420	540	J
21.		UNKNOWN	6.851	220	J
22.		UNKNOWN	8.617	670	J
23.		UNKNOWN	8.670	440	J
24.		UNKNOWN	8.810	1600	J
25.		UNKNOWN	8.929	1500	J
26.	57-10-3	Hexadecanoic acid	9.618	220	NJ
27.		UNKNOWN	10.759	660	J
28.		UNKNOWN	10.920	160	J
29.		UNKNOWN AMIDE	11.146	250	J
30.		UNKNOWN AMIDE	11.297	270	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF50

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.14

Sample wt/vol: 30.7 (g/mL) G Lab File ID: V26787.D

Level: (low/med) LOW Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/21/99

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 35

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.577	2500	J
2.		UNKNOWN	11.642	720	J
3.		UNKNOWN AMIDE	12.621	2500	~~JB~~
4.		UNKNOWN	12.922	390	J
5.		UNKNOWN	19.489	2400	~~JB~~
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF27

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.01

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32722.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200000	U
111-44-4	bis(2-Chloroethyl)Ether	1500000	U
95-57-8	2-Chlorophenol	1500000	U
541-73-1	1,3-Dichlorobenzene	1500000	U
106-46-7	1,4-Dichlorobenzene	1500000	U
95-50-1	1,2-Dichlorobenzene	1500000	U
95-48-7	2-Methylphenol	1500000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1500000	U
106-44-5	4-Methylphenol	1500000	U
621-64-7	N-Nitroso-di-n-propylamine	1500000	U
67-72-1	Hexachloroethane	1500000	U
98-95-3	Nitrobenzene	1500000	U
78-59-1	Isophorone	1500000	U
88-75-5	2-Nitrophenol	1500000	U
105-67-9	2,4-Dimethylphenol	1500000	U
111-91-1	bis(2-Chloroethoxy)methane	1500000	U
120-83-2	2,4-Dichlorophenol	1500000	U
120-82-1	1,2,4-Trichlorobenzene	1500000	U
91-20-3	Naphthalene	1500000	U
106-47-8	4-Chloroaniline	1500000	U
87-68-3	Hexachlorobutadiene	1500000	U
59-50-7	4-Chloro-3-Methylphenol	1500000	U
91-57-6	2-Methylnaphthalene	1500000	U
77-47-4	Hexachlorocyclopentadiene	1500000	U
88-06-2	2,4,6-Trichlorophenol	1500000	U
95-95-4	2,4,5-Trichlorophenol	3800000	U
91-58-7	2-Chloronaphthalene	1500000	U
88-74-4	2-Nitroaniline	3800000	U
131-11-3	Dimethylphthalate	1500000	U
208-96-8	Acenaphthylene	1500000	U
606-20-2	2,6-Dinitrotoluene	1500000	U
99-09-2	3-Nitroaniline	3800000	U
83-32-9	Acenaphthene	1500000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF27

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.01

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32722.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3800000	U
100-02-7	4-Nitrophenol	3800000	U
132-64-9	Dibenzofuran	1500000	U
121-14-2	2,4-Dinitrotoluene	1500000	U
84-66-2	Diethylphthalate	1500000	U
7005-72-3	4-Chlorophenyl-phenylether	1500000	U
86-73-7	Fluorene	1500000	U
100-01-6	4-Nitroaniline	3800000	U
534-52-1	4,6-Dinitro-2-methylphenol	3800000	U
86-30-6	N-Nitrosodiphenylamine (1)	1500000	U
101-55-3	4-Bromophenyl-phenylether	1500000	U
118-74-1	Hexachlorobenzene	1500000	U
87-86-5	Pentachlorophenol	3800000	U
85-01-8	Phenanthrene	1500000	U
120-12-7	Anthracene	1500000	U
86-74-8	Carbazole	1500000	U
84-74-2	Di-n-butylphthalate	1500000	U
206-44-0	Fluoranthene	1500000	U
129-00-0	Pyrene	1500000	U
85-68-7	Butylbenzylphthalate	1500000	U
91-94-1	3,3'-Dichlorobenzidine	1500000	U
56-55-3	Benzo(a)anthracene	1500000	U
218-01-9	Chrysene	1500000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1500000	U
117-84-0	Di-n-octylphthalate	1500000	U
205-99-2	Benzo(b)fluoranthene	1500000	U
207-08-9	Benzo(k)fluoranthene	1500000	U
50-32-8	Benzo(a)pyrene	1500000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1500000	U
53-70-3	Dibenz(a,h)anthracene	1500000	U
191-24-2	Benzo(g,h,i)perylene	1500000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

BYF27

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.01

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32722.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	107-41-5	Hexylene Glycol	4.285	14000000	NJ
2.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF28

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32729.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	~~22000000~~ 24000000	E *J
111-44-4	bis(2-Chloroethyl)Ether	1800000	U
95-57-8	2-Chlorophenol	1800000	U
541-73-1	1,3-Dichlorobenzene	1800000	U
106-46-7	1,4-Dichlorobenzene	1800000	U
95-50-1	1,2-Dichlorobenzene	1800000	U
95-48-7	2-Methylphenol	1800000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800000	U
106-44-5	4-Methylphenol	1800000	U
621-64-7	N-Nitroso-di-n-propylamine	1800000	U
67-72-1	Hexachloroethane	1800000	U
98-95-3	Nitrobenzene	1800000	U
78-59-1	Isophorone	1800000	U
88-75-5	2-Nitrophenol	1800000	U
105-67-9	2,4-Dimethylphenol	1800000	U
111-91-1	bis(2-Chloroethoxy)methane	1800000	U
120-83-2	2,4-Dichlorophenol	1800000	U
120-82-1	1,2,4-Trichlorobenzene	1800000	U
91-20-3	Naphthalene	1800000	U
106-47-8	4-Chloroaniline	1800000	U
87-68-3	Hexachlorobutadiene	1800000	U
59-50-7	4-Chloro-3-Methylphenol	1800000	U
91-57-6	2-Methylnaphthalene	1800000	U
77-47-4	Hexachlorocyclopentadiene	1800000	U
88-06-2	2,4,6-Trichlorophenol	1800000	U
95-95-4	2,4,5-Trichlorophenol	4500000	U
91-58-7	2-Chloronaphthalene	1800000	U
88-74-4	2-Nitroaniline	4500000	U
131-11-3	Dimethylphthalate	1800000	U
208-96-8	Acenaphthylene	1800000	U
606-20-2	2,6-Dinitrotoluene	1800000	U
99-09-2	3-Nitroaniline	4500000	U
83-32-9	Acenaphthene	1800000	U

*Value from sample BYF28DL

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF28

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32729.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500000	U
100-02-7	4-Nitrophenol	4500000	U
132-64-9	Dibenzofuran	1800000	U
121-14-2	2,4-Dinitrotoluene	1800000	U
84-66-2	Diethylphthalate	1800000	U
7005-72-3	4-Chlorophenyl-phenylether	1800000	U
86-73-7	Fluorene	1800000	U
100-01-6	4-Nitroaniline	4500000	U
534-52-1	4,6-Dinitro-2-methylphenol	4500000	U
86-30-6	N-Nitrosodiphenylamine (1)	1800000	U
101-55-3	4-Bromophenyl-phenylether	1800000	U
118-74-1	Hexachlorobenzene	1800000	U
87-86-5	Pentachlorophenol	4500000	U
85-01-8	Phenanthrene	1800000	U
120-12-7	Anthracene	1800000	U
86-74-8	Carbazole	1800000	U
84-74-2	Di-n-butylphthalate	1800000	U
206-44-0	Fluoranthene	1800000	U
129-00-0	Pyrene	1800000	U
85-68-7	Butylbenzylphthalate	1800000	U
91-94-1	3,3'-Dichlorobenzidine	1800000	U
56-55-3	Benzo(a)anthracene	1800000	U
218-01-9	Chrysene	1800000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1800000	U
117-84-0	Di-n-octylphthalate	1800000	U
205-99-2	Benzo(b)fluoranthene	1800000	U
207-08-9	Benzo(k)fluoranthene	1800000	U
50-32-8	Benzo(a)pyrene	1800000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800000	U
53-70-3	Dibenz(a,h)anthracene	1800000	U
191-24-2	Benzo(g,h,i)perylene	1800000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF28

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32729.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	90-01-7	Salicyl Alcohol	6.691	1600000	NJ
2.	620-24-6	Benzenemethanol, 3-hydroxy-	7.259	420000	NJ
3.		UNKNOWN	7.914	3600000	J
4.		UNKNOWN	12.744	1000000	~~JB~~ R
5.	2467-02-9	Phenol, 2,2'-methylenebis-	13.012	580000	NJ
6.	620-92-8	Phenol, 4,4'-methylenebis-	13.517	500000	NJ
7.	80-05-7	Phenol, 4,4'-(1-methylethyli	14.375	3600000	NJ
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF28DL

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32760.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 400.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	24000000	D
111-44-4	bis(2-Chloroethyl)Ether	3600000	U
95-57-8	2-Chlorophenol	3600000	U
541-73-1	1,3-Dichlorobenzene	3600000	U
106-46-7	1,4-Dichlorobenzene	3600000	U
95-50-1	1,2-Dichlorobenzene	3600000	U
95-48-7	2-Methylphenol	3600000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3600000	U
106-44-5	4-Methylphenol	3600000	U
621-64-7	N-Nitroso-di-n-propylamine	3600000	U
67-72-1	Hexachloroethane	3600000	U
98-95-3	Nitrobenzene	3600000	U
78-59-1	Isophorone	3600000	U
88-75-5	2-Nitrophenol	3600000	U
105-67-9	2,4-Dimethylphenol	3600000	U
111-91-1	bis(2-Chloroethoxy)methane	3600000	U
120-83-2	2,4-Dichlorophenol	3600000	U
120-82-1	1,2,4-Trichlorobenzene	3600000	U
91-20-3	Naphthalene	3600000	U
106-47-8	4-Chloroaniline	3600000	U
87-68-3	Hexachlorobutadiene	3600000	U
59-50-7	4-Chloro-3-Methylphenol	3600000	U
91-57-6	2-Methylnaphthalene	3600000	U
77-47-4	Hexachlorocyclopentadiene	3600000	U
88-06-2	2,4,6-Trichlorophenol	3600000	U
95-95-4	2,4,5-Trichlorophenol	9100000	U
91-58-7	2-Chloronaphthalene	3600000	U
88-74-4	2-Nitroaniline	9100000	U
131-11-3	Dimethylphthalate	3600000	U
208-96-8	Acenaphthylene	3600000	U
606-20-2	2,6-Dinitrotoluene	3600000	U
99-09-2	3-Nitroaniline	9100000	U
83-32-9	Acenaphthene	3600000	U

DO NOT USE

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF28DL

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32760.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 400.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	9100000	U
100-02-7	4-Nitrophenol	9100000	U
132-64-9	Dibenzofuran	3600000	U
121-14-2	2,4-Dinitrotoluene	3600000	U
84-66-2	Diethylphthalate	3600000	U
7005-72-3	4-Chlorophenyl-phenylether	3600000	U
86-73-7	Fluorene	3600000	U
100-01-6	4-Nitroaniline	9100000	U
534-52-1	4,6-Dinitro-2-methylphenol	9100000	U
86-30-6	N-Nitrosodiphenylamine (1)	3600000	U
101-55-3	4-Bromophenyl-phenylether	3600000	U
118-74-1	Hexachlorobenzene	3600000	U
87-86-5	Pentachlorophenol	9100000	U
85-01-8	Phenanthrene	3600000	U
120-12-7	Anthracene	3600000	U
86-74-8	Carbazole	3600000	U
84-74-2	Di-n-butylphthalate	3600000	U
206-44-0	Fluoranthene	3600000	U
129-00-0	Pyrene	3600000	U
85-68-7	Butylbenzylphthalate	3600000	U
91-94-1	3,3'-Dichlorobenzidine	3600000	U
56-55-3	Benzo(a)anthracene	3600000	U
218-01-9	Chrysene	3600000	U
117-81-7	bis(2-Ethylhexyl)phthalate	3600000	U
117-84-0	Di-n-octylphthalate	3600000	U
205-99-2	Benzo(b)fluoranthene	3600000	U
207-08-9	Benzo(k)fluoranthene	3600000	U
50-32-8	Benzo(a)pyrene	3600000	U
193-39-5	Indeno(1,2,3-cd)pyrene	3600000	U
53-70-3	Dibenz(a,h)anthracene	3600000	U
191-24-2	Benzo(g,h,i)perylene	3600000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

BYF28DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.05DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32760.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 400.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	90-01-7	Salicyl Alcohol	6.658	1300000	NJD
2.		UNKNOWN	7.882	3300000	JD
3.		UNKNOWN	12.701	840000	JBD
4.	80-05-7	Phenol, 4,4'-(1-methylethyli	14.333	--- 3300000	NJD
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DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF29

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32730.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000000	U
111-44-4	bis(2-Chloroethyl)Ether	2000000	U
95-57-8	2-Chlorophenol	2000000	U
541-73-1	1,3-Dichlorobenzene	2000000	U
106-46-7	1,4-Dichlorobenzene	2000000	U
95-50-1	1,2-Dichlorobenzene	2000000	U
95-48-7	2-Methylphenol	180000	J
108-60-1	2,2'-oxybis(1-Chloropropane)	2000000	U
106-44-5	4-Methylphenol	2000000	U
621-64-7	N-Nitroso-di-n-propylamine	2000000	U
67-72-1	Hexachloroethane	2000000	U
98-95-3	Nitrobenzene	2000000	U
78-59-1	Isophorone	2000000	U
88-75-5	2-Nitrophenol	2000000	U
105-67-9	2,4-Dimethylphenol	2000000	U
111-91-1	bis(2-Chloroethoxy)methane	2000000	U
120-83-2	2,4-Dichlorophenol	2000000	U
120-82-1	1,2,4-Trichlorobenzene	2000000	U
91-20-3	Naphthalene	2000000	U
106-47-8	4-Chloroaniline	2000000	U
87-68-3	Hexachlorobutadiene	2000000	U
59-50-7	4-Chloro-3-Methylphenol	2000000	U
91-57-6	2-Methylnaphthalene	2000000	U
77-47-4	Hexachlorocyclopentadiene	2000000	U
88-06-2	2,4,6-Trichlorophenol	2000000	U
95-95-4	2,4,5-Trichlorophenol	5000000	U
91-58-7	2-Chloronaphthalene	2000000	U
88-74-4	2-Nitroaniline	5000000	U
131-11-3	Dimethylphthalate	2000000	U
208-96-8	Acenaphthylene	2000000	U
606-20-2	2,6-Dinitrotoluene	2000000	U
99-09-2	3-Nitroaniline	5000000	U
83-32-9	Acenaphthene	2000000	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF29

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32730.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5000000	U
100-02-7	4-Nitrophenol	5000000	U
132-64-9	Dibenzofuran	2000000	U
121-14-2	2,4-Dinitrotoluene	2000000	U
84-66-2	Diethylphthalate	2000000	U
7005-72-3	4-Chlorophenyl-phenylether	2000000	U
86-73-7	Fluorene	2000000	U
100-01-6	4-Nitroaniline	5000000	U
534-52-1	4,6-Dinitro-2-methylphenol	5000000	U
86-30-6	N-Nitrosodiphenylamine (1)	2000000	U
101-55-3	4-Bromophenyl-phenylether	2000000	U
118-74-1	Hexachlorobenzene	2000000	U
87-86-5	Pentachlorophenol	5000000	U
85-01-8	Phenanthrene	2000000	U
120-12-7	Anthracene	2000000	U
86-74-8	Carbazole	2000000	U
84-74-2	Di-n-butylphthalate	2000000	U
206-44-0	Fluoranthene	2000000	U
129-00-0	Pyrene	2000000	U
85-68-7	Butylbenzylphthalate	2000000	U
91-94-1	3,3'-Dichlorobenzidine	2000000	U
56-55-3	Benzo(a)anthracene	2000000	U
218-01-9	Chrysene	2000000	U
117-81-7	bis(2-Ethylhexyl)phthalate	2000000	U
117-84-0	Di-n-octylphthalate	2000000	U
205-99-2	Benzo(b)fluoranthene	2000000	U
207-08-9	Benzo(k)fluoranthene	2000000	U
50-32-8	Benzo(a)pyrene	2000000	U
193-39-5	Indeno(1,2,3-cd)pyrene	2000000	U
53-70-3	Dibenz(a,h)anthracene	2000000	U
191-24-2	Benzo(g,h,i)perylene	2000000	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF29

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32730.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	98-54-4	Phenol, p-tert-butyl-	6.871	400000	NJ
2.		UNKNOWN	11.819	800000	J
3.		UNKNOWN	11.947	1100000	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF30

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.07

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32731.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2100000	J
111-44-4	bis(2-Chloroethyl)Ether	1800000	U
95-57-8	2-Chlorophenol	1800000	U
541-73-1	1,3-Dichlorobenzene	1800000	U
106-46-7	1,4-Dichlorobenzene	1800000	U
95-50-1	1,2-Dichlorobenzene	1800000	U
95-48-7	2-Methylphenol	170000	J
108-60-1	2,2'-oxybis(1-Chloropropane)	1800000	U
106-44-5	4-Methylphenol	1800000	U
621-64-7	N-Nitroso-di-n-propylamine	1800000	U
67-72-1	Hexachloroethane	1800000	U
98-95-3	Nitrobenzene	1800000	U
78-59-1	Isophorone	1800000	U
88-75-5	2-Nitrophenol	1800000	U
105-67-9	2,4-Dimethylphenol	1800000	U
111-91-1	bis(2-Chloroethoxy)methane	1800000	U
120-83-2	2,4-Dichlorophenol	1800000	U
120-82-1	1,2,4-Trichlorobenzene	1800000	U
91-20-3	Naphthalene	1800000	U
106-47-8	4-Chloroaniline	1800000	U
87-68-3	Hexachlorobutadiene	1800000	U
59-50-7	4-Chloro-3-Methylphenol	1800000	U
91-57-6	2-Methylnaphthalene	1800000	U
77-47-4	Hexachlorocyclopentadiene	1800000	U
88-06-2	2,4,6-Trichlorophenol	1800000	U
95-95-4	2,4,5-Trichlorophenol	4500000	U
91-58-7	2-Chloronaphthalene	1800000	U
88-74-4	2-Nitroaniline	4500000	U
131-11-3	Dimethylphthalate	1800000	U
208-96-8	Acenaphthylene	1800000	U
606-20-2	2,6-Dinitrotoluene	1800000	U
99-09-2	3-Nitroaniline	4500000	U
83-32-9	Acenaphthene	1800000	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF30

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.07

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32731.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500000	U
100-02-7	4-Nitrophenol	4500000	U
132-64-9	Dibenzofuran	1800000	U
121-14-2	2,4-Dinitrotoluene	1800000	U
84-66-2	Diethylphthalate	1800000	U
7005-72-3	4-Chlorophenyl-phenylether	1800000	U
86-73-7	Fluorene	1800000	U
100-01-6	4-Nitroaniline	4500000	U
534-52-1	4,6-Dinitro-2-methylphenol	4500000	U
86-30-6	N-Nitrosodiphenylamine (1)	1800000	U
101-55-3	4-Bromophenyl-phenylether	1800000	U
118-74-1	Hexachlorobenzene	1800000	U
87-86-5	Pentachlorophenol	4500000	U
85-01-8	Phenanthrene	1800000	U
120-12-7	Anthracene	1800000	U
86-74-8	Carbazole	1800000	U
84-74-2	Di-n-butylphthalate	1800000	U
206-44-0	Fluoranthene	1800000	U
129-00-0	Pyrene	1800000	U
85-68-7	Butylbenzylphthalate	1800000	U
91-94-1	3,3'-Dichlorobenzidine	1800000	U
56-55-3	Benzo(a)anthracene	1800000	U
218-01-9	Chrysene	1800000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1800000	U
117-84-0	Di-n-octylphthalate	1800000	U
205-99-2	Benzo(b)fluoranthene	1800000	U
207-08-9	Benzo(k)fluoranthene	1800000	U
50-32-8	Benzo(a)pyrene	1800000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800000	U
53-70-3	Dibenz(a,h)anthracene	1800000	U
191-24-2	Benzo(g,h,i)perylene	1800000	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF30

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.07

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32731.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.820	820000	J
2.		UNKNOWN	11.938	1100000	J
3.					
4.					
5.					
6.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF31

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32732.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	~~2400000~~	E * J
111-44-4	bis(2-Chloroethyl)Ether	1800000	U
95-57-8	2-Chlorophenol	1800000	U
541-73-1	1,3-Dichlorobenzene	1800000	U
106-46-7	1,4-Dichlorobenzene	1800000	U
95-50-1	1,2-Dichlorobenzene	1800000	U
95-48-7	2-Methylphenol	1800000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800000	U
106-44-5	4-Methylphenol	1800000	U
621-64-7	N-Nitroso-di-n-propylamine	1800000	U
67-72-1	Hexachloroethane	1800000	U
98-95-3	Nitrobenzene	1800000	U
78-59-1	Isophorone	1800000	U
88-75-5	2-Nitrophenol	1800000	U
105-67-9	2,4-Dimethylphenol	1800000	U
111-91-1	bis(2-Chloroethoxy)methane	1800000	U
120-83-2	2,4-Dichlorophenol	1800000	U
120-82-1	1,2,4-Trichlorobenzene	1800000	U
91-20-3	Naphthalene	1800000	U
106-47-8	4-Chloroaniline	1800000	U
87-68-3	Hexachlorobutadiene	1800000	U
59-50-7	4-Chloro-3-Methylphenol	1800000	U
91-57-6	2-Methylnaphthalene	1800000	U
77-47-4	Hexachlorocyclopentadiene	1800000	U
88-06-2	2,4,6-Trichlorophenol	1800000	U
95-95-4	2,4,5-Trichlorophenol	4500000	U
91-58-7	2-Chloronaphthalene	1800000	U
88-74-4	2-Nitroaniline	4500000	U
131-11-3	Dimethylphthalate	1800000	U
208-96-8	Acenaphthylene	1800000	U
606-20-2	2,6-Dinitrotoluene	1800000	U
99-09-2	3-Nitroaniline	4500000	U
83-32-9	Acenaphthene	1800000	U

* Value from BYF31DL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF31

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32732.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500000	U
100-02-7	4-Nitrophenol	4500000	U
132-64-9	Dibenzofuran	1800000	U
121-14-2	2,4-Dinitrotoluene	1800000	U
84-66-2	Diethylphthalate	1800000	U
7005-72-3	4-Chlorophenyl-phenylether	1800000	U
86-73-7	Fluorene	1800000	U
100-01-6	4-Nitroaniline	4500000	U
534-52-1	4,6-Dinitro-2-methylphenol	4500000	U
86-30-6	N-Nitrosodiphenylamine (1)	1800000	U
101-55-3	4-Bromophenyl-phenylether	1800000	U
118-74-1	Hexachlorobenzene	1800000	U
87-86-5	Pentachlorophenol	4500000	U
85-01-8	Phenanthrene	1800000	U
120-12-7	Anthracene	1800000	U
86-74-8	Carbazole	1800000	U
84-74-2	Di-n-butylphthalate	1800000	U
206-44-0	Fluoranthene	1800000	U
129-00-0	Pyrene	1800000	U
85-68-7	Butylbenzylphthalate	1800000	U
91-94-1	3,3'-Dichlorobenzidine	1800000	U
56-55-3	Benzo(a)anthracene	1800000	U
218-01-9	Chrysene	1800000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1800000	U
117-84-0	Di-n-octylphthalate	1800000	U
205-99-2	Benzo(b)fluoranthene	1800000	U
207-08-9	Benzo(k)fluoranthene	1800000	U
50-32-8	Benzo(a)pyrene	1800000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800000	U
53-70-3	Dibenz(a,h)anthracene	1800000	U
191-24-2	Benzo(g,h,i)perylene	1800000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF31

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32732.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	90-01-7	Salicyl Alcohol	6.690	2100000	NJ
2.	620-24-6	Benzenemethanol, 3-hydroxy-	7.269	500000	NJ
3.		UNKNOWN	7.913	4200000	J
4.		UNKNOWN	12.486	430000	J
5.		UNKNOWN	12.743	~~1500000~~	~~JB~~ R
6.	2467-02-9	Phenol, 2,2'-methylenebis-	13.011	780000	NJ
7.	620-92-8	Phenol, 4,4'-methylenebis-	13.516	710000	NJ
8.	80-05-7	Phenol, 4,4'-(1-methylethyli	14.385	4400000	NJ
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF31DL

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32761.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 800.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	26000000	D
111-44-4	bis(2-Chloroethyl)Ether	7300000	U
95-57-8	2-Chlorophenol	7300000	U
541-73-1	1,3-Dichlorobenzene	7300000	U
106-46-7	1,4-Dichlorobenzene	7300000	U
95-50-1	1,2-Dichlorobenzene	7300000	U
95-48-7	2-Methylphenol	7300000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	7300000	U
106-44-5	4-Methylphenol	7300000	U
621-64-7	N-Nitroso-di-n-propylamine	7300000	U
67-72-1	Hexachloroethane	7300000	U
98-95-3	Nitrobenzene	7300000	U
78-59-1	Isophorone	7300000	U
88-75-5	2-Nitrophenol	7300000	U
105-67-9	2,4-Dimethylphenol	7300000	U
111-91-1	bis(2-Chloroethoxy)methane	7300000	U
120-83-2	2,4-Dichlorophenol	7300000	U
120-82-1	1,2,4-Trichlorobenzene	7300000	U
91-20-3	Naphthalene	7300000	U
106-47-8	4-Chloroaniline	7300000	U
87-68-3	Hexachlorobutadiene	7300000	U
59-50-7	4-Chloro-3-Methylphenol	7300000	U
91-57-6	2-Methylnaphthalene	7300000	U
77-47-4	Hexachlorocyclopentadiene	7300000	U
88-06-2	2,4,6-Trichlorophenol	7300000	U
95-95-4	2,4,5-Trichlorophenol	18000000	U
91-58-7	2-Chloronaphthalene	7300000	U
88-74-4	2-Nitroaniline	18000000	U
131-11-3	Dimethylphthalate	7300000	U
208-96-8	Acenaphthylene	7300000	U
606-20-2	2,6-Dinitrotoluene	7300000	U
99-09-2	3-Nitroaniline	18000000	U
83-32-9	Acenaphthene	7300000	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF31DL

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32761.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 800.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	18000000	U
100-02-7	4-Nitrophenol	18000000	U
132-64-9	Dibenzofuran	7300000	U
121-14-2	2,4-Dinitrotoluene	7300000	U
84-66-2	Diethylphthalate	7300000	U
7005-72-3	4-Chlorophenyl-phenylether	7300000	U
86-73-7	Fluorene	7300000	U
100-01-6	4-Nitroaniline	18000000	U
534-52-1	4,6-Dinitro-2-methylphenol	18000000	U
86-30-6	N-Nitrosodiphenylamine (1)	7300000	U
101-55-3	4-Bromophenyl-phenylether	7300000	U
118-74-1	Hexachlorobenzene	7300000	U
87-86-5	Pentachlorophenol	18000000	U
85-01-8	Phenanthrene	7300000	U
120-12-7	Anthracene	7300000	U
86-74-8	Carbazole	7300000	U
84-74-2	Di-n-butylphthalate	7300000	U
206-44-0	Fluoranthene	7300000	U
129-00-0	Pyrene	7300000	U
85-68-7	Butylbenzylphthalate	7300000	U
91-94-1	3,3'-Dichlorobenzidine	7300000	U
56-55-3	Benzo(a)anthracene	7300000	U
218-01-9	Chrysene	7300000	U
117-81-7	bis(2-Ethylhexyl)phthalate	7300000	U
117-84-0	Di-n-octylphthalate	7300000	U
205-99-2	Benzo(b)fluoranthene	7300000	U
207-08-9	Benzo(k)fluoranthene	7300000	U
50-32-8	Benzo(a)pyrene	7300000	U
193-39-5	Indeno(1,2,3-cd)pyrene	7300000	U
53-70-3	Dibenz(a,h)anthracene	7300000	U
191-24-2	Benzo(g,h,i)perylene	7300000	U

(1) - Cannot be separated from Diphenylamine

DO NOT USE

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF31DL

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.08DL

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32761.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/01/99

Injection Volume: 2.0(uL) Dilution Factor: 800.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.883	3500000	JD
2.	80-05-7	Phenol, 4,4'-(1-methylethyli	14.333	2800000	NJD
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DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF33

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.10

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32733.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1500000	U
111-44-4	bis(2-Chloroethyl)Ether	1500000	U
95-57-8	2-Chlorophenol	1500000	U
541-73-1	1,3-Dichlorobenzene	1500000	U
106-46-7	1,4-Dichlorobenzene	1500000	U
95-50-1	1,2-Dichlorobenzene	1500000	U
95-48-7	2-Methylphenol	1500000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1500000	U
106-44-5	4-Methylphenol	1500000	U
621-64-7	N-Nitroso-di-n-propylamine	1500000	U
67-72-1	Hexachloroethane	1500000	U
98-95-3	Nitrobenzene	1500000	U
78-59-1	Isophorone	1500000	U
88-75-5	2-Nitrophenol	1500000	U
105-67-9	2,4-Dimethylphenol	1500000	U
111-91-1	bis(2-Chloroethoxy)methane	1500000	U
120-83-2	2,4-Dichlorophenol	1500000	U
120-82-1	1,2,4-Trichlorobenzene	1500000	U
91-20-3	Naphthalene	1500000	U
106-47-8	4-Chloroaniline	1500000	U
87-68-3	Hexachlorobutadiene	1500000	U
59-50-7	4-Chloro-3-Methylphenol	1500000	U
91-57-6	2-Methylnaphthalene	97000	J
77-47-4	Hexachlorocyclopentadiene	1500000	U
88-06-2	2,4,6-Trichlorophenol	1500000	U
95-95-4	2,4,5-Trichlorophenol	3800000	U
91-58-7	2-Chloronaphthalene	1500000	U
88-74-4	2-Nitroaniline	3800000	U
131-11-3	Dimethylphthalate	1500000	U
208-96-8	Acenaphthylene	1500000	U
606-20-2	2,6-Dinitrotoluene	1500000	U
99-09-2	3-Nitroaniline	3800000	U
83-32-9	Acenaphthene	1500000	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF33

Lab Name: SWL-TULSA Contract: REP NO. 482

Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.10

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32733.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3800000	U
100-02-7	4-Nitrophenol	3800000	U
132-64-9	Dibenzofuran	1500000	U
121-14-2	2,4-Dinitrotoluene	1500000	U
84-66-2	Diethylphthalate	1500000	U
7005-72-3	4-Chlorophenyl-phenylether	1500000	U
86-73-7	Fluorene	1500000	U
100-01-6	4-Nitroaniline	3800000	U
534-52-1	4,6-Dinitro-2-methylphenol	3800000	U
86-30-6	N-Nitrosodiphenylamine (1)	1500000	U
101-55-3	4-Bromophenyl-phenylether	1500000	U
118-74-1	Hexachlorobenzene	1500000	U
87-86-5	Pentachlorophenol	3800000	U
85-01-8	Phenanthrene	1500000	U
120-12-7	Anthracene	1500000	U
86-74-8	Carbazole	1500000	U
84-74-2	Di-n-butylphthalate	1500000	U
206-44-0	Fluoranthene	1500000	U
129-00-0	Pyrene	1500000	U
85-68-7	Butylbenzylphthalate	1500000	U
91-94-1	3,3'-Dichlorobenzidine	1500000	U
56-55-3	Benzo(a)anthracene	1500000	U
218-01-9	Chrysene	1500000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1500000	U
117-84-0	Di-n-octylphthalate	1500000	U
205-99-2	Benzo(b)fluoranthene	1500000	U
207-08-9	Benzo(k)fluoranthene	1500000	U
50-32-8	Benzo(a)pyrene	1500000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1500000	U
53-70-3	Dibenz(a,h)anthracene	1500000	U
191-24-2	Benzo(g,h,i)perylene	1500000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF33

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.10

Sample wt/vol: 1.3 (g/mL) G Lab File ID: T32733.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 5

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2958-76-1	Naphthalene, decahydro-2-met	5.737	330000	NJ
2.	3178-24-3	Cyclohexane, 1,1'-(1,3-propa	10.009	480000	NJ
3.		UNKNOWN	10.449	430000	
4.		UNKNOWN	10.524	450000	
5.		UNKNOWN	19.154	310000	
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF34

Lab Name: SWL-TULSA Contract: REP NO. 482 SDG No.: 38993

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38993.11

Matrix: (soil/water) SOIL Lab File ID: T32723.D

Sample wt/vol: 1.4 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/16/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/30/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400000	U
111-44-4	bis(2-Chloroethyl)Ether	1400000	U
95-57-8	2-Chlorophenol	1400000	U
541-73-1	1,3-Dichlorobenzene	1400000	U
106-46-7	1,4-Dichlorobenzene	1400000	U
95-50-1	1,2-Dichlorobenzene	1400000	U
95-48-7	2-Methylphenol	1400000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1400000	U
106-44-5	4-Methylphenol	1400000	U
621-64-7	N-Nitroso-di-n-propylamine	1400000	U
67-72-1	Hexachloroethane	1400000	U
98-95-3	Nitrobenzene	1400000	U
78-59-1	Isophorone	1400000	U
88-75-5	2-Nitrophenol	1400000	U
105-67-9	2,4-Dimethylphenol	1400000	U
111-91-1	bis(2-Chloroethoxy)methane	1400000	U
120-83-2	2,4-Dichlorophenol	1400000	U
120-82-1	1,2,4-Trichlorobenzene	1400000	U
91-20-3	Naphthalene	1400000	U
106-47-8	4-Chloroaniline	1400000	U
87-68-3	Hexachlorobutadiene	1400000	U
59-50-7	4-Chloro-3-Methylphenol	1400000	U
91-57-6	2-Methylnaphthalene	1400000	U
77-47-4	Hexachlorocyclopentadiene	1400000	U
88-06-2	2,4,6-Trichlorophenol	3600000	U
95-95-4	2,4,5-Trichlorophenol	1400000	U
91-58-7	2-Chloronaphthalene	3600000	U
88-74-4	2-Nitroaniline	1400000	U
131-11-3	Dimethylphthalate	1400000	U
208-96-8	Acenaphthylene	1400000	U
606-20-2	2,6-Dinitrotoluene	3600000	U
99-09-2	3-Nitroaniline	1400000	U
83-32-9	Acenaphthene		

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF34

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.11

Sample wt/vol: 1.4 (g/mL) G Lab File ID: T32723.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3600000	U
100-02-7	4-Nitrophenol	3600000	U
132-64-9	Dibenzofuran	1400000	U
121-14-2	2,4-Dinitrotoluene	1400000	U
84-66-2	Diethylphthalate	1400000	U
7005-72-3	4-Chlorophenyl-phenylether	1400000	U
86-73-7	Fluorene	1400000	U
100-01-6	4-Nitroaniline	3600000	U
534-52-1	4,6-Dinitro-2-methylphenol	3600000	U
86-30-6	N-Nitrosodiphenylamine (1)	1400000	U
101-55-3	4-Bromophenyl-phenylether	1400000	U
118-74-1	Hexachlorobenzene	1400000	U
87-86-5	Pentachlorophenol	3600000	U
85-01-8	Phenanthrene	1400000	U
120-12-7	Anthracene	1400000	U
86-74-8	Carbazole	1400000	U
84-74-2	Di-n-butylphthalate	1400000	U
206-44-0	Fluoranthene	1400000	U
129-00-0	Pyrene	1400000	U
85-68-7	Butylbenzylphthalate	1400000	U
91-94-1	3,3'-Dichlorobenzidine	1400000	U
56-55-3	Benzo(a)anthracene	1400000	U
218-01-9	Chrysene	1400000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1400000	U
117-84-0	Di-n-octylphthalate	1400000	U
205-99-2	Benzo(b)fluoranthene	1400000	U
207-08-9	Benzo(k)fluoranthene	1400000	U
50-32-8	Benzo(a)pyrene	1400000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1400000	U
53-70-3	Dibenz(a,h)anthracene	1400000	U
191-24-2	Benzo(g,h,i)perylene	1400000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BYF34

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.11

Sample wt/vol: 1.4 (g/mL) G Lab File ID: T32723.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF35

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32739.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	540000	U
111-44-4	bis(2-Chloroethyl)Ether	1700000	U
95-57-8	2-Chlorophenol	1700000	U
541-73-1	1,3-Dichlorobenzene	1700000	U
106-46-7	1,4-Dichlorobenzene	1700000	U
95-50-1	1,2-Dichlorobenzene	1700000	U
95-48-7	2-Methylphenol	1700000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1700000	U
106-44-5	4-Methylphenol	1700000	U
621-64-7	N-Nitroso-di-n-propylamine	1700000	U
67-72-1	Hexachloroethane	1700000	U
98-95-3	Nitrobenzene	1700000	U
78-59-1	Isophorone	1700000	U
88-75-5	2-Nitrophenol	1700000	U
105-67-9	2,4-Dimethylphenol	1700000	U
111-91-1	bis(2-Chloroethoxy)methane	1700000	U
120-83-2	2,4-Dichlorophenol	1700000	U
120-82-1	1,2,4-Trichlorobenzene	1700000	U
91-20-3	Naphthalene	1700000	U
106-47-8	4-Chloroaniline	1700000	U
87-68-3	Hexachlorobutadiene	1700000	U
59-50-7	4-Chloro-3-Methylphenol	1700000	U
91-57-6	2-Methylnaphthalene	1700000	U
77-47-4	Hexachlorocyclopentadiene	1700000	U
88-06-2	2,4,6-Trichlorophenol	4200000	U
95-95-4	2,4,5-Trichlorophenol	1700000	U
91-58-7	2-Chloronaphthalene	4200000	U
88-74-4	2-Nitroaniline	1700000	U
131-11-3	Dimethylphthalate	1700000	U
208-96-8	Acenaphthylene	1700000	U
606-20-2	2,6-Dinitrotoluene	4200000	U
99-09-2	3-Nitroaniline	1700000	U
83-32-9	Acenaphthene		

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF35

Lab Name: SWL-TULSA Contract: REP NO. 482 SDG No.: 38993

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38993.12

Matrix: (soil/water) SOIL Lab File ID: T32739.D

Sample wt/vol: 1.2 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/16/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/30/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4200000	U
100-02-7	4-Nitrophenol	4200000	U
132-64-9	Dibenzofuran	1700000	U
121-14-2	2,4-Dinitrotoluene	1700000	U
84-66-2	Diethylphthalate	1700000	U
7005-72-3	4-Chlorophenyl-phenylether	1700000	U
86-73-7	Fluorene	1700000	U
100-01-6	4-Nitroaniline	4200000	U
534-52-1	4,6-Dinitro-2-methylphenol	4200000	U
86-30-6	N-Nitrosodiphenylamine (1)	1700000	U
101-55-3	4-Bromophenyl-phenylether	1700000	U
118-74-1	Hexachlorobenzene	1700000	U
87-86-5	Pentachlorophenol	4200000	U
85-01-8	Phenanthrene	1700000	U
120-12-7	Anthracene	1700000	U
86-74-8	Carbazole	1700000	U
84-74-2	Di-n-butylphthalate	1700000	U
206-44-0	Fluoranthene	1700000	U
129-00-0	Pyrene	1700000	U
85-68-7	Butylbenzylphthalate	1700000	U
91-94-1	3,3'-Dichlorobenzidine	1700000	U
56-55-3	Benzo(a)anthracene	1700000	U
218-01-9	Chrysene	1700000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1700000	U
117-84-0	Di-n-octylphthalate	1700000	U
205-99-2	Benzo(b)fluoranthene	1700000	U
207-08-9	Benzo(k)fluoranthene	1700000	U
50-32-8	Benzo(a)pyrene	1700000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1700000	U
53-70-3	Dibenz(a,h)anthracene	1700000	U
191-24-2	Benzo(g,h,i)perylene	1700000	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF35

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32739.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.704	710000	J
2.	98-86-2	Acetophenone	5.283	1000000	NJ
3.	1896-62-4	3-Buten-2-one, 4-phenyl-, (E	7.484	2400000	NJ
4.		UNKNOWN	8.868	2600000	J
5.		UNKNOWN	9.201	800000	J
6.	14002-85-8	1,2,4,6-Tetramethyl-1,4-dihy	9.630	630000	NJ
7.		UNKNOWN	18.657	8400000	J
8.	612-71-5	1,1':3',1''-Terphenyl, 5'-ph	19.322	7600000	NJ
9.		UNKNOWN	20.342	12000000	
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EPA SAMPLE NO.

ORGANICS ANALYSIS DATA SHEET

BYF35RE

Lab Name: Contract: REP NO. 482

Lab Code: Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: SOIL Lab Sample ID: 38993.12RA

Sample wt: 1.2 (g/mL) G Lab File ID: T32801.D

Level: MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Volume: 500(uL) Date Analyzed: 07/02/99

Injection: 2.0(uL) Dilution Factor: 200.0

170X

GPC Cleanup: pH: 7.0

CAS	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Phenol	480000	J
	bis(2-Chloroethyl)Ether	1700000	U
	2-Chlorophenol	1700000	U
	1,3-Dichlorobenzene	1700000	U
	1,4-Dichlorobenzene	1700000	U
	1,2-Dichlorobenzene	1700000	U
	2-Methylphenol	1700000	U
	2,2'-oxybis(1-Chloropropane)	1700000	U
	4-Methylphenol	1700000	U
	N-Nitroso-di-n-propylamine	1700000	U
	Hexachloroethane	1700000	U
	Nitrobenzene	1700000	U
	Isophorone	1700000	U
	2-Nitrophenol	1700000	U
	2,4-Dimethylphenol	1700000	U
	bis(2-Chloroethoxy)methane	1700000	U
	2,4-Dichlorophenol	1700000	U
	1,2,4-Trichlorobenzene	1700000	U
	Naphthalene	1700000	U
	4-Chloroaniline	1700000	U
	Hexachlorobutadiene	1700000	U
	4-Chloro-3-Methylphenol	1700000	U
	2-Methylnaphthalene	1700000	U
	Hexachlorocyclopentadiene	1700000	U
	2,4,6-Trichlorophenol	1700000	U
	2,4,5-Trichlorophenol	4200000	U
	2-Chloronaphthalene	1700000	U
	2-Nitroaniline	4200000	U
	Dimethylphthalate	1700000	U
	Acenaphthylene	1700000	U
	2,6-Dinitrotoluene	1700000	U
	3-Nitroaniline	4200000	U
	Acenaphthene	1700000	U

DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF35RE

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12RA

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32801.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/02/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4200000	U
100-02-7	4-Nitrophenol	4200000	U
132-64-9	Dibenzofuran	1700000	U
121-14-2	2,4-Dinitrotoluene	1700000	U
84-66-2	Diethylphthalate	1700000	U
7005-72-3	4-Chlorophenyl-phenylether	1700000	U
86-73-7	Fluorene	4200000	U
100-01-6	4-Nitroaniline	4200000	U
534-52-1	4,6-Dinitro-2-methylphenol	1700000	U
86-30-6	N-Nitrosodiphenylamine (1)	1700000	U
101-55-3	4-Bromophenyl-phenylether	1700000	U
118-74-1	Hexachlorobenzene	4200000	U
87-86-5	Pentachlorophenol	1700000	U
85-01-8	Phenanthrene	1700000	U
120-12-7	Anthracene	1700000	U
86-74-8	Carbazole	1700000	U
84-74-2	Di-n-butylphthalate	1700000	U
206-44-0	Fluoranthene	1700000	U
129-00-0	Pyrene	1700000	U
85-68-7	Butylbenzylphthalate	1700000	U
91-94-1	3,3'-Dichlorobenzidine	1700000	U
56-55-3	Benzo(a)anthracene	1700000	U
218-01-9	Chrysene	1700000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1700000	U
117-84-0	Di-n-octylphthalate	1700000	U
205-99-2	Benzo(b)fluoranthene	1700000	U
207-08-9	Benzo(k)fluoranthene	1700000	U
50-32-8	Benzo(a)pyrene	1700000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1700000	U
53-70-3	Dibenz(a,h)anthracene	1700000	U
191-24-2	Benzo(g,h,i)perylene	1700000	U

(1) - Cannot be separated from Diphenylamine

DO NOT USE

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF35RE

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.12RA

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32801.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/02/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 4

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	98-86-2	Acetophenone	5.241	990000	NJ
2.	65-85-0	Benzoic Acid	5.832	400000	NJ
3.	1896-62-4	3-Buten-2-one, 4-phenyl-, (E	7.420	3600000	NJ
4.	491-36-1	4(1H)-Quinazolinone	8.783	3800000	NJ
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DO NOT USE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF37

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.14

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32736.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1800000	U
111-44-4	bis(2-Chloroethyl)Ether	1800000	U
95-57-8	2-Chlorophenol	1800000	U
541-73-1	1,3-Dichlorobenzene	1800000	U
106-46-7	1,4-Dichlorobenzene	1800000	U
95-50-1	1,2-Dichlorobenzene	1800000	U
95-48-7	2-Methylphenol	1800000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800000	U
106-44-5	4-Methylphenol	1800000	U
621-64-7	N-Nitroso-di-n-propylamine	1800000	U
67-72-1	Hexachloroethane	1800000	U
98-95-3	Nitrobenzene	1800000	U
78-59-1	Isophorone	1800000	U
88-75-5	2-Nitrophenol	1800000	U
105-67-9	2,4-Dimethylphenol	1800000	U
111-91-1	bis(2-Chloroethoxy)methane	1800000	U
120-83-2	2,4-Dichlorophenol	1800000	U
120-82-1	1,2,4-Trichlorobenzene	1800000	U
91-20-3	Naphthalene	1800000	U
106-47-8	4-Chloroaniline	1800000	U
87-68-3	Hexachlorobutadiene	1800000	U
59-50-7	4-Chloro-3-Methylphenol	1800000	U
91-57-6	2-Methylnaphthalene	94000	J
77-47-4	Hexachlorocyclopentadiene	1800000	U
88-06-2	2,4,6-Trichlorophenol	1800000	U
95-95-4	2,4,5-Trichlorophenol	4500000	U
91-58-7	2-Chloronaphthalene	1800000	U
88-74-4	2-Nitroaniline	4500000	U
131-11-3	Dimethylphthalate	1800000	U
208-96-8	Acenaphthylene	1800000	U
606-20-2	2,6-Dinitrotoluene	1800000	U
99-09-2	3-Nitroaniline	4500000	U
83-32-9	Acenaphthene	1800000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF37

Contract: REP NO. 482

Lab Name: SWL-TULSA SDG No.: 38993

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38993.14

Matrix: (soil/water) SOIL Lab File ID: T32736.D

Sample wt/vol: 1.1 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/16/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/30/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500000	U
100-02-7	4-Nitrophenol	4500000	U
132-64-9	Dibenzofuran	1800000	U
121-14-2	2,4-Dinitrotoluene	1800000	U
84-66-2	Diethylphthalate	1800000	U
7005-72-3	4-Chlorophenyl-phenylether	1800000	U
86-73-7	Fluorene	1800000	U
100-01-6	4-Nitroaniline	4500000	U
534-52-1	4,6-Dinitro-2-methylphenol	4500000	U
86-30-6	N-Nitrosodiphenylamine (1)	1800000	U
101-55-3	4-Bromophenyl-phenylether	1800000	U
118-74-1	Hexachlorobenzene	1800000	U
87-86-5	Pentachlorophenol	4500000	U
85-01-8	Phenanthrene	1800000	U
120-12-7	Anthracene	1800000	U
86-74-8	Carbazole	1800000	U
84-74-2	Di-n-butylphthalate	1800000	U
206-44-0	Fluoranthene	1800000	U
129-00-0	Pyrene	1800000	U
85-68-7	Butylbenzylphthalate	1800000	U
91-94-1	3,3'-Dichlorobenzidine	1800000	U
56-55-3	Benzo(a)anthracene	1800000	U
218-01-9	Chrysene	1800000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1800000	U
117-84-0	Di-n-octylphthalate	1800000	U
205-99-2	Benzo(b)fluoranthene	1800000	U
207-08-9	Benzo(k)fluoranthene	1800000	U
50-32-8	Benzo(a)pyrene	1800000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800000	U
53-70-3	Dibenz(a,h)anthracene	1800000	U
191-24-2	Benzo(g,h,i)perylene	1800000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF37

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.14

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32736.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted:06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4176-01-6	Bicyclo[4.1.0]heptan-3-one,	5.733	390000	NJ
2.		UNKNOWN	19.386	430000	J
3.					
4.					
5.					
6.					
7.					
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24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BYF38

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.15

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32735.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	100000	J
111-44-4	bis(2-Chloroethyl)Ether	2000000	U
95-57-8	2-Chlorophenol	2000000	U
541-73-1	1,3-Dichlorobenzene	2000000	U
106-46-7	1,4-Dichlorobenzene	2000000	U
95-50-1	1,2-Dichlorobenzene	2000000	U
95-48-7	2-Methylphenol	2000000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000000	U
106-44-5	4-Methylphenol	2000000	U
621-64-7	N-Nitroso-di-n-propylamine	2000000	U
67-72-1	Hexachloroethane	2000000	U
98-95-3	Nitrobenzene	2000000	U
78-59-1	Isophorone	2000000	U
88-75-5	2-Nitrophenol	2000000	U
105-67-9	2,4-Dimethylphenol	2000000	U
111-91-1	bis(2-Chloroethoxy)methane	2000000	U
120-83-2	2,4-Dichlorophenol	2000000	U
120-82-1	1,2,4-Trichlorobenzene	2000000	U
91-20-3	Naphthalene	2000000	U
106-47-8	4-Chloroaniline	2000000	U
87-68-3	Hexachlorobutadiene	2000000	U
59-50-7	4-Chloro-3-Methylphenol	120000	J
91-57-6	2-Methylnaphthalene	2000000	U
77-47-4	Hexachlorocyclopentadiene	2000000	U
88-06-2	2,4,6-Trichlorophenol	5000000	U
95-95-4	2,4,5-Trichlorophenol	2000000	U
91-58-7	2-Chloronaphthalene	5000000	U
88-74-4	2-Nitroaniline	2000000	U
131-11-3	Dimethylphthalate	2000000	U
208-96-8	Acenaphthylene	2000000	U
606-20-2	2,6-Dinitrotoluene	5000000	U
99-09-2	3-Nitroaniline	2000000	U
83-32-9	Acenaphthene		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.: BYF38

Contract: REP NO. 482

Lab Name: SWL-TULSA

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.15

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32735.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5000000	U
100-02-7	4-Nitrophenol	5000000	U
132-64-9	Dibenzofuran	2000000	U
121-14-2	2,4-Dinitrotoluene	2000000	U
84-66-2	Diethylphthalate	2000000	U
7005-72-3	4-Chlorophenyl-phenylether	2000000	U
86-73-7	Fluorene	2000000	U
100-01-6	4-Nitroaniline	5000000	U
534-52-1	4,6-Dinitro-2-methylphenol	5000000	U
86-30-6	N-Nitrosodiphenylamine (1)	2000000	U
101-55-3	4-Bromophenyl-phenylether	2000000	U
118-74-1	Hexachlorobenzene	2000000	U
87-86-5	Pentachlorophenol	5000000	U
85-01-8	Phenanthrene	2000000	U
120-12-7	Anthracene	2000000	U
86-74-8	Carbazole	2000000	U
84-74-2	Di-n-butylphthalate	2000000	U
206-44-0	Fluoranthene	2000000	U
129-00-0	Pyrene	2000000	U
85-68-7	Butylbenzylphthalate	2000000	U
91-94-1	3,3'-Dichlorobenzidine	2000000	U
56-55-3	Benzo(a)anthracene	2000000	U
218-01-9	Chrysene	2000000	U
117-81-7	bis(2-Ethylhexyl)phthalate	2000000	U
117-84-0	Di-n-octylphthalate	2000000	U
205-99-2	Benzo(b)fluoranthene	2000000	U
207-08-9	Benzo(k)fluoranthene	2000000	U
50-32-8	Benzo(a)pyrene	2000000	U
193-39-5	Indeno(1,2,3-cd)pyrene	2000000	U
53-70-3	Dibenz(a,h)anthracene	2000000	U
191-24-2	Benzo(g,h,i)perylene	2000000	U

(1) - Cannot be separated from Diphenylamine

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF39

Lab Name: SWL-TULSA Contract: REP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.16

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32734.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1700000	U
111-44-4	bis(2-Chloroethyl)Ether	1700000	U
95-57-8	2-Chlorophenol	1700000	U
541-73-1	1,3-Dichlorobenzene	1700000	U
106-46-7	1,4-Dichlorobenzene	1700000	U
95-50-1	1,2-Dichlorobenzene	1700000	U
95-48-7	2-Methylphenol	1700000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1700000	U
106-44-5	4-Methylphenol	1700000	U
621-64-7	N-Nitroso-di-n-propylamine	1700000	U
67-72-1	Hexachloroethane	1700000	U
98-95-3	Nitrobenzene	1700000	U
78-59-1	Isophorone	1700000	U
88-75-5	2-Nitrophenol	1700000	U
105-67-9	2,4-Dimethylphenol	1700000	U
111-91-1	bis(2-Chloroethoxy)methane	1700000	U
120-83-2	2,4-Dichlorophenol	1700000	U
120-82-1	1,2,4-Trichlorobenzene	1700000	U
91-20-3	Naphthalene	1700000	U
106-47-8	4-Chloroaniline	1700000	U
87-68-3	Hexachlorobutadiene	1700000	U
59-50-7	4-Chloro-3-Methylphenol	1700000	U
91-57-6	2-Methylnaphthalene	100000	J
77-47-4	Hexachlorocyclopentadiene	1700000	U
88-06-2	2,4,6-Trichlorophenol	1700000	U
95-95-4	2,4,5-Trichlorophenol	4200000	U
91-58-7	2-Chloronaphthalene	1700000	U
88-74-4	2-Nitroaniline	4200000	U
131-11-3	Dimethylphthalate	1700000	U
208-96-8	Acenaphthylene	1700000	U
606-20-2	2,6-Dinitrotoluene	1700000	U
99-09-2	3-Nitroaniline	4200000	U
83-32-9	Acenaphthene	1700000	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF39

Contract: REP NO. 482

Lab Name: SWL-TULSA SDG No.: 38993

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38993.16

Matrix: (soil/water) SOIL Lab File ID: T32734.D

Sample wt/vol: 1.2 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/16/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/30/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4200000	U
100-02-7	4-Nitrophenol	4200000	U
132-64-9	Dibenzofuran	1700000	U
121-14-2	2,4-Dinitrotoluene	1700000	U
84-66-2	Diethylphthalate	1700000	U
7005-72-3	4-Chlorophenyl-phenylether	1700000	U
86-73-7	Fluorene	4200000	U
100-01-6	4-Nitroaniline	4200000	U
534-52-1	4,6-Dinitro-2-methylphenol	1700000	U
86-30-6	N-Nitrosodiphenylamine (1)	1700000	U
101-55-3	4-Bromophenyl-phenylether	1700000	U
118-74-1	Hexachlorobenzene	4200000	U
87-86-5	Pentachlorophenol	1700000	U
85-01-8	Phenanthrene	1700000	U
120-12-7	Anthracene	1700000	U
86-74-8	Carbazole	1700000	U
84-74-2	Di-n-butylphthalate	1700000	U
206-44-0	Fluoranthene	1700000	U
129-00-0	Pyrene	1700000	U
85-68-7	Butylbenzylphthalate	1700000	U
91-94-1	3,3'-Dichlorobenzidine	1700000	U
56-55-3	Benzo(a)anthracene	1700000	U
218-01-9	Chrysene	1700000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1700000	U
117-84-0	Di-n-octylphthalate	1700000	U
205-99-2	Benzo(b)fluoranthene	1700000	U
207-08-9	Benzo(k)fluoranthene	1700000	U
50-32-8	Benzo(a)pyrene	1700000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1700000	U
53-70-3	Dibenz(a,h)anthracene	1700000	U
191-24-2	Benzo(g,h,i)perylene	1700000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA [illegible]

BYF39

Contract: REP NO. 482

Lab Name: SWL-TULSA

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38993

Matrix: (soil/water) SOIL Lab Sample ID: 38993.16

Sample wt/vol: 1.2 (g/mL) G Lab File ID: T32734.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 3

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.534	390000	J
2.		UNKNOWN	10.532	350000	J
3.	483-65-8	Phenanthrene, 1-methyl-7-(1-	14.793	420000	NJ
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF41

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.02

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32720.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	1800000	U
111-44-4	bis(2-Chloroethyl)Ether	1800000	U
95-57-8	2-Chlorophenol	1800000	U
541-73-1	1,3-Dichlorobenzene	1800000	U
106-46-7	1,4-Dichlorobenzene	1800000	U
95-50-1	1,2-Dichlorobenzene	1800000	U
95-48-7	2-Methylphenol	1800000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1800000	U
106-44-5	4-Methylphenol	1800000	U
621-64-7	N-Nitroso-di-n-propylamine	1800000	U
67-72-1	Hexachloroethane	1800000	U
98-95-3	Nitrobenzene	1800000	U
78-59-1	Isophorone	1800000	U
88-75-5	2-Nitrophenol	1800000	U
105-67-9	2,4-Dimethylphenol	1800000	U
111-91-1	bis(2-Chloroethoxy)methane	1800000	U
120-83-2	2,4-Dichlorophenol	1800000	U
120-82-1	1,2,4-Trichlorobenzene	1800000	U
91-20-3	Naphthalene	1800000	U
106-47-8	4-Chloroaniline	1800000	U
87-68-3	Hexachlorobutadiene	1800000	U
59-50-7	4-Chloro-3-Methylphenol	1800000	U
91-57-6	2-Methylnaphthalene	1800000	U
77-47-4	Hexachlorocyclopentadiene	1800000	U
88-06-2	2,4,6-Trichlorophenol	4500000	U
95-95-4	2,4,5-Trichlorophenol	1800000	U
91-58-7	2-Chloronaphthalene	4500000	U
88-74-4	2-Nitroaniline	1800000	U
131-11-3	Dimethylphthalate	1800000	U
208-96-8	Acenaphthylene	1800000	U
606-20-2	2,6-Dinitrotoluene	4500000	U
99-09-2	3-Nitroaniline	1800000	U
83-32-9	Acenaphthene		

OL

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF41

Contract: RFP NO. 482

Lab Name: SWL-TULSA SDG No.: 38992

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38992.02

Matrix: (soil/water) SOIL Lab File ID: T32720.D

Sample wt/vol: 1.1 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/16/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/30/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	4500000	U
100-02-7	4-Nitrophenol	4500000	U
132-64-9	Dibenzofuran	1800000	U
121-14-2	2,4-Dinitrotoluene	1800000	U
84-66-2	Diethylphthalate	1800000	U
7005-72-3	4-Chlorophenyl-phenylether	1800000	U
86-73-7	Fluorene	4500000	U
100-01-6	4-Nitroaniline	4500000	U
534-52-1	4,6-Dinitro-2-methylphenol	1800000	U
86-30-6	N-Nitrosodiphenylamine (1)	1800000	U
101-55-3	4-Bromophenyl-phenylether	1800000	U
118-74-1	Hexachlorobenzene	4500000	U
87-86-5	Pentachlorophenol	1800000	U
85-01-8	Phenanthrene	1800000	U
120-12-7	Anthracene	1800000	U
86-74-8	Carbazole	1800000	U
84-74-2	Di-n-butylphthalate	1800000	U
206-44-0	Fluoranthene	1800000	U
129-00-0	Pyrene	1800000	U
85-68-7	Butylbenzylphthalate	1800000	U
91-94-1	3,3'-Dichlorobenzidine	1800000	U
56-55-3	Benzo(a)anthracene	1800000	U
218-01-9	Chrysene	1800000	U
117-81-7	bis(2-Ethylhexyl)phthalate	1800000	U
117-84-0	Di-n-octylphthalate	1800000	U
205-99-2	Benzo(b)fluoranthene	1800000	U
207-08-9	Benzo(k)fluoranthene	1800000	U
50-32-8	Benzo(a)pyrene	1800000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1800000	U
53-70-3	Dibenz(a,h)anthracene	1800000	U
191-24-2	Benzo(g,h,i)perylene	1800000	U

(1) - Cannot be separated from Diphenylamine

OI

731

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BYF41

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.02

Sample wt/vol: 1.1 (g/mL) G Lab File ID: T32720.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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18.					
19.					
20.					
21.					
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30.					

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF42

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32721.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2000000	U
111-44-4	bis(2-Chloroethyl)Ether	2000000	U
95-57-8	2-Chlorophenol	2000000	U
541-73-1	1,3-Dichlorobenzene	2000000	U
106-46-7	1,4-Dichlorobenzene	2000000	U
95-50-1	1,2-Dichlorobenzene	2000000	U
95-48-7	2-Methylphenol	2000000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000000	U
106-44-5	4-Methylphenol	2000000	U
621-64-7	N-Nitroso-di-n-propylamine	2000000	U
67-72-1	Hexachloroethane	2000000	U
98-95-3	Nitrobenzene	2000000	U
78-59-1	Isophorone	2000000	U
88-75-5	2-Nitrophenol	2000000	U
105-67-9	2,4-Dimethylphenol	2000000	U
111-91-1	bis(2-Chloroethoxy)methane	2000000	U
120-83-2	2,4-Dichlorophenol	2000000	U
120-82-1	1,2,4-Trichlorobenzene	2000000	U
91-20-3	Naphthalene	2000000	U
106-47-8	4-Chloroaniline	2000000	U
87-68-3	Hexachlorobutadiene	2000000	U
59-50-7	4-Chloro-3-Methylphenol	2000000	U
91-57-6	2-Methylnaphthalene	2000000	U
77-47-4	Hexachlorocyclopentadiene	2000000	U
88-06-2	2,4,6-Trichlorophenol	5000000	U
95-95-4	2,4,5-Trichlorophenol	2000000	U
91-58-7	2-Chloronaphthalene	5000000	U
88-74-4	2-Nitroaniline	2000000	U
131-11-3	Dimethylphthalate	2000000	U
208-96-8	Acenaphthylene	2000000	U
606-20-2	2,6-Dinitrotoluene	5000000	U
99-09-2	3-Nitroaniline	2000000	U
83-32-9	Acenaphthene		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF42

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32721.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5000000	U
100-02-7	4-Nitrophenol	5000000	U
132-64-9	Dibenzofuran	2000000	U
121-14-2	2,4-Dinitrotoluene	2000000	U
84-66-2	Diethylphthalate	2000000	U
7005-72-3	4-Chlorophenyl-phenylether	2000000	U
86-73-7	Fluorene	2000000	U
100-01-6	4-Nitroaniline	5000000	U
534-52-1	4,6-Dinitro-2-methylphenol	5000000	U
86-30-6	N-Nitrosodiphenylamine (1)	2000000	U
101-55-3	4-Bromophenyl-phenylether	2000000	U
118-74-1	Hexachlorobenzene	2000000	U
87-86-5	Pentachlorophenol	5000000	U
85-01-8	Phenanthrene	2000000	U
120-12-7	Anthracene	2000000	U
86-74-8	Carbazole	2000000	U
84-74-2	Di-n-butylphthalate	2000000	U
206-44-0	Fluoranthene	2000000	U
129-00-0	Pyrene	2000000	U
85-68-7	Butylbenzylphthalate	2000000	U
91-94-1	3,3'-Dichlorobenzidine	2000000	U
56-55-3	Benzo(a)anthracene	2000000	U
218-01-9	Chrysene	2000000	U
117-81-7	bis(2-Ethylhexyl)phthalate	2000000	U
117-84-0	Di-n-octylphthalate	2000000	U
205-99-2	Benzo(b)fluoranthene	2000000	U
207-08-9	Benzo(k)fluoranthene	2000000	U
50-32-8	Benzo(a)pyrene	2000000	U
193-39-5	Indeno(1,2,3-cd)pyrene	2000000	U
53-70-3	Dibenz(a,h)anthracene	2000000	U
191-24-2	Benzo(g,h,i)perylene	2000000	U

(1) - Cannot be separated from Diphenylamine

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.: BYF42

Lab Name: SWL-TULSA Contract: RFP NO. 482

Lab Code: SWOK Case No.: WESTON SAS No.: SDG No.: 38992

Matrix: (soil/water) SOIL Lab Sample ID: 38992.06

Sample wt/vol: 1.0 (g/mL) G Lab File ID: T32721.D

Level: (low/med) MED Date Received: 06/12/99

% Moisture: decanted: (Y/N) N Date Extracted: 06/16/99

Concentrated Extract Volume: 500(uL) Date Analyzed: 06/30/99

Injection Volume: 2.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

BYF47

Contract: RFP NO. 482

Lab Name: SWL-TULSA SDG No.: 38992

Lab Code: SWOK Case No.: WESTON SAS No.: Lab Sample ID: 38992.11

Matrix: (soil/water) SOIL Lab File ID: V26954.D

Sample wt/vol: 1.0 (g/mL) G Date Received: 06/12/99

Level: (low/med) MED Date Extracted: 06/22/99

% Moisture: decanted: (Y/N) N Date Analyzed: 06/29/99

Concentrated Extract Volume: 500(uL) Dilution Factor: 200.0

Injection Volume: 2.0(uL)

GPC Cleanup: (Y/N) Y pH: 8.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	26000000	E
111-44-4	bis(2-Chloroethyl)Ether	2000000	U
95-57-8	2-Chlorophenol	2000000	U
541-73-1	1,3-Dichlorobenzene	2000000	U
106-46-7	1,4-Dichlorobenzene	2000000	U
95-50-1	1,2-Dichlorobenzene	2000000	U
95-48-7	2-Methylphenol	210000	J
108-60-1	2,2'-oxybis(1-Chloropropane)	2000000	U
106-44-5	4-Methylphenol	2000000	U
621-64-7	N-Nitroso-di-n-propylamine	2000000	U
67-72-1	Hexachloroethane	2000000	U
98-95-3	Nitrobenzene	2000000	U
78-59-1	Isophorone	2000000	U
88-75-5	2-Nitrophenol	2000000	U
105-67-9	2,4-Dimethylphenol	2000000	U
111-91-1	bis(2-Chloroethoxy)methane	2000000	U
120-83-2	2,4-Dichlorophenol	2000000	U
120-82-1	1,2,4-Trichlorobenzene	2000000	U
91-20-3	Naphthalene	2000000	U
106-47-8	4-Chloroaniline	2000000	U
87-68-3	Hexachlorobutadiene	2000000	U
59-50-7	4-Chloro-3-Methylphenol	2000000	U
91-57-6	2-Methylnaphthalene	2000000	U
77-47-4	Hexachlorocyclopentadiene	2000000	U
88-06-2	2,4,6-Trichlorophenol	5000000	U
95-95-4	2,4,5-Trichlorophenol	2000000	U
91-58-7	2-Chloronaphthalene	5000000	U
88-74-4	2-Nitroaniline	2000000	U
131-11-3	Dimethylphthalate	2000000	U
208-96-8	Acenaphthylene	2000000	U
606-20-2	2,6-Dinitrotoluene	5000000	U
99-09-2	3-Nitroaniline	2000000	U
83-32-9	Acenaphthene		

* Value taken from sample BYF47L (DF=50)

APPENDIX F-2
Sample Data Sheets
Southwest Lab of OK
Inorganic

WESTON®
MANAGERS DESIGNERS/CONSULTANTS
Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-225-6116 • Fax 732-225-7037
SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-03829

TRANSMITTAL MEMO

To: Irmee Huhn, OSC
Removal Action Branch, U.S. EPA Region II

From: Smita Sumbaly, Inorganic Data Reviewer
START Region II

Subject: Amenia Landfill Site
Data Validation Assessment

Date: October 04, 1999

The purpose of this memo is to transmit the following information:

☐ Data validation results for the following parameters:

TAL + CN	23 samples
RCRA parameters	23 samples

☐ Matrices and Number of Samples

Drum	22 samples
Water	01 sample

☐ Sampling dates: June 1 thru' 11, 1999

The final data assessment narrative and original analytical data package are attached.

cc: START PM: David L. Adams
START SITE FILE TDD #: 02-99-08-0013C
ANALYTICAL TDD #: 02-99-06-0016
PCS# 4820

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: October 04, 1999

TO: Irmee Huhn, OSC
USEPA Region II

FROM: Smita Sumbaly
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Total Metals & Cyanide	II RCRA	III
Acceptable as Submitted			
Acceptable with Comments	X	X	
Unacceptable, Action Pending			
Unacceptable			

Data Reviewed by: Smita Sumbaly Date: 10/04/99

Approved By: [signature] Date: 10/5/99

Area Code/Phone No.: (732) 225-6116

NARRATIVE

CASE No. 4820

SITE NAME: Amenia Landfill Site

Amenia, Dutchess County, New York.

Laboratory Name: Southwest Laboratory Of Oklahoma, (SWOK), 1700 W Albany, Broken Arrow, OK.

INTRODUCTION:

The laboratory's portion of this Case consisted of 22-Soil/Waste & 1-rinse blank samples collected on June 1 thru' 11, 1999.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of Total Metals, Cyanide & RCRA (Reactivity, Corrosovity & Ignitability) - inorganic parameters.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

IV. Inorganic:- TAL& TCLP Lead/Arsenic

_Y_ Data Summary/Tabulated Results
_Y_ Initial and Continuing Calibration
_Y_ Blanks
_Y_ ICP Interference Check
_Y_ Spike Sample Recovery
_Y_ Duplicates
_Y_ Detection Limits
NA Standard Addition Results
_Y_ ICP Serial Dilutions
_Y_ Holding Times
_Y_ ICP Interelement Correction Factors
_Y_ ICP Linear Ranges
_Y_ Chain of Custody
_Y_ Raw Data
_Y_ Quantitation, Conversions, Dilutions, etc.

Comments:

1. Refer to Data Assessment Narrative.

STANDARD OPERATING PROCEDURE

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

Case #: RFP # 4820 **Site: Amenia Landfill Site**

SDG#: 38992C, 38992A, 38992B &38993 **Lab: Southwest Laboratory of Oklahoma** **Matrix:**

Waste: 22

Contractor: WESTON-START **Reviewer: Smita Sumbaly** **Water: 01**

A.2.1 Validation Flags- The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as estimated.

Red- Line- A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or a "redline" are fully usable.

Contractual Qualifiers- The legend of contractual qualifiers applied by the laboratory on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is provided below and on the attached sheets.

On June 2 - 9, 1999, USEPA Region II sampling personnel collected twenty two (22) medium/high concentration soil/waste drum samples, including one duplicate sample and one aqueous blank sample from the Amenia Landfill Site, Amenia, Dutchess County, New York. On June 11, 1999, the samples were shipped via overnight Federal Express courier to Southwest Laboratory of Oklahoma (SWOK), 1700 West Albany, Broken Arrow, Oklahoma. The laboratory verified that the samples were received intact.

The soil/waste samples were analyzed for Total metals, Cyanide and RCRA parameters. Target Analyte List (TAL) analyses were performed following the Contract Laboratory Program (CLP) Statement of Work (SOW) number ILM04.0. RCRA Characteristics were analyzed according to SW 846 Method Numbers 1010 for Ignitability, 9010 for Reactive Cyanide, 9030 for Reactive Sulfide and 9045B/9040A for Corrosivity.

A.2.2 (continuation)

Note: Originally samples were shipped to several CLP labs (Compuchem & SWOK) under CLP case # 27064. Since the CLP labs found the samples were high concentration and did not fall under the CLP program, the lab refused to do the analysis. Weston (EPAs START contractor) set-up the separate contract with SWOK to do the analysis. All organic samples sent to Compuchem were transfer to SWOK.

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	Laboratory ID No	Matrix	Client ID No.	Laboratory ID No	Matrix
SDG NO: 38992C			SDG NO: 38993		
MBTA58	38992.02	SOIL	MBTA46	38993.01	SOIL
MBTA59	38992.06	SOIL	MBTA47	38993.05	SOIL
MBTA62	38992.10	SOIL	MBTA48	38993.06	SOIL
MBTA63	38992.11	SOIL	MBTA49[1]	38993.07	SOIL
MBTA64	38992.12	SOIL	MBTA50	38993.08	SOIL
MBTA65	38992.13	SOIL	MBTA51	38993.10	SOIL
MBTA66	38992.14	SOIL	MBTA52	38993.11	SOIL
MBTA67	38992.16	SOIL	MBTA53	38993.12	SOIL
MBTA68	38992.17	SOIL	MBTA54	38993.14	SOIL
			MBTA55	38993.15	SOIL
SDG NO: 38992A			MBTA56	38993.16	SOIL
MBTA57	38992.01	SOIL			
MBTA60[2]	38992.07	SOIL			
SDG NO: 38992B					
MBTA61	38992.08	WATER			

[1]) Drum sample MBTA-49 is a field duplicate of sample MBTA- 48.
[2]) Soil sample MBTA-60 is a field duplicate of sample MBTA-57.

The results presented in the data package are acceptable, with the exception noted in the following data assessment narrative.

A.2.2 (continuation)

MATRIX SPIKE RECOVERY:

The following analytes were either qualified as estimated ("J") or rejected ("redlined") in the associated samples due % recoveries (%R) outside of specified QC limits in the corresponding spike sample and because the sample result (SR) concentrations < 4 X the spike added (SA) concentration.

ANALYTE	PERCENT RECOVERY	QC RECOVERY LIMIT	QUALIFIER	ASSOCIATED SAMPLES
SDG NO: 38992A				
Antimony	-0.8%	75-125%	"R"	MBTA-57 & MBTA-60
Copper	73.7%	75-125%	"J"	MBTA-57 & MBTA-60
Silver	0.0%	75-125%	"R"	MBTA-57 & MBTA-60
SDG NO: 38993				
[redacted]de	152.4%	75-125%	"J"	MBTA-51, MBTA-54, MBTA-55 & MBTA-56
SDG NO: 38992B				
Cyanide	50.4%	75-125%	"J"	MBTA-61

ICP SERIAL DILUTION:-

The following positive TAL inorganic data > 10 X IDL (or > MDL when the MDL is > 10 X IDL) were either qualified as estimated "J" or rejected "red-line" because the percent difference (% D) between the Initial Sample result (I) and the Serial Dilution Sample result (S) is either between 10-100% or > 100% when the concentration of I is > 10 X IDL:

ANALYTE	CONTROL LIMIT	PERCENT DIFFERENCE	QUALIFIER	ASSOCIATED SAMPLES
SDG NO: 38992C				
Aluminum	>200 ug/l	20.9%	"J"	MBTA-62, MBTA-63, MBTA-64 & MBTA-67
Calcium	>5000 ug/l	16.8%	"J"	MBTA-64 & MBTA-67

A.2.2 (continuation)

SDG NO: 38992A

Arsenic	>30 ug/l	11.2%	"J"	MBTA-57 & MBTA-60

CRDL STANDARD RECOVERY:-

The following analytes were qualified estimated "J" due to Contract Required Detection Limit (CRDL) Standard Percent recoveries (% R) outside quality control limits and because their concentration fell within "affected ranges":

ANALYTE	% RECOVERY	AFFECTED RANGE	QUALIFIER	ASSOCIATED SAMPLES
SDG NO: 38992C				
Selenium	between 120-150%	3.0-20 ug/l	"J"	MBTA-62, MBTA-63, MBTA-64, MBTA-67 & MBTA-68
Vanadium	between 120-150%	1.0-200 ug/l	"J"	MBTA-62, MBTA-63 & MBTA-67
SDG NO: 38992A				
Selenium	< 79%	0.0-20 ug/l	"J"	MBTA-57 & MBTA-60
Mercury	> 150%	0.1-0.4 ug/l	"R"	MBTA-57 & MBTA-60

LABORATORY CONTROL SAMPLES (LCS):

The following analyte was either qualified as estimated ("J") or rejected ("redlined") in the associated samples due to LCS "Found" value was higher than the control limits.

SDG NO: 38992A

ANALYTE	FOUND VALUE	CONTROL LIMIT	QUALIFIER	ASSOCIATED SAMPLES
Arsenic[1]	15.12	16 - 24	"J"	MBTA-57 & MBTA-60
Lead	15.27	16 - 24	"J"	MBTA-57 & MBTA-60
Selenium[1]	14.60	16 - 24	"J"	MBTA-57 & MBTA-60
Thallium	15.07	16 - 24	"J"	MBTA-57 & MBTA-60

[1] Arsenic & Selenium data were previously qualified as estimated "J" in the indicated samples due to exceeding the specified QC criteria:

A.2.2 (continuation)

pH: The pH values for the Cyanide was less than 12, therefore all associated samples were qualified as estimated ("J").

SDG NO: 38992B

ANALYTE	pH	LIMIT	QUALIFIER	ASSOCIATED SAMPLES
Cyanide[1]	9.0	>12	"J"	MBTA-61

[1] Cyanide data was previously qualified as estimated "J" in the indicated samples due to exceeding the specified QC criteria:

RCRA PARAMETERS: -

Laboratories provided analysis of a method blank at the beginning of the run. All analytical blank results are within QC criteria. (< MDL). QC runs for the package consists of a Lab Control Sample Recovery and Lab Control Sample Duplicate recovery. All LCS & LCS duplicate recoveries for reactive cyanide were outside the lab established QC limits (85-115%) and for reactive sulfide are within the QC limits (50-150%). All RPD values for reactive sulfide, Ignitability & Corrosivity analysis fall within ± 20% and for reactive cyanide outside the ± 20%.

Reactive Cyanide: Samples MBTA-14, -15, -16, -59 & -66 were detected between 0.089-5.5 mg/kg, above the detection limits (0.025 mg/kg). Other samples do not exhibit characteristics of reactive cyanide.

Reactive sulfide: Samples MBTA-50, -62, -63, -65 & -66 were detected between 20-24 mg/kg, above the detection limits (20 mg/kg). Other samples do not exhibit characteristics of reactive cyanide.

Corrosivity: The pH/Corrosivity values were reported between 0.0 - 7.7 pH unit.

Ignitability: All samples were ignited above 77^0 F.

LABORATORY CONTROL SAMPLE RECOVERY:

The following analyte was either qualified as estimated ("J") or rejected ("redlined") in the associated samples due to LCS & LCSD recoveries are outside the control limits.

ANALYTE	PERCENT RECOVERY	QC LIMIT	QUALIFIER	ASSOCIATED SAMPLES
Reactive Cyanide	46/23/36%	85 - 115%	"J"	MBTA-46, -47, -48, -49, -50, -51, 52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62, -63, -64, -65, -66, -67 & -68

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

A.2.2 (continuation)

A:2.3 Contract Problem/Non-Compliance:

MMB/ESAT Reviewer: _____ Signature _____ Date:

Contractor Reviewer: Signature 10/04/99 Date:

Verified by: _____ Signature _____ Date:

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 2 - 4, 1999

SAMPLE #/CONCENTRATION (MG/KG)

[redacted] Metals	Instrument Detection Limit (IDL)	SOIL MBTA46 38993.01	SOIL MBTA47 38993.05	SOIL MBTA48 38993.06	SOIL MBTA49 38993.07	SOIL MBTA50 38993.08	SOIL MBTA51 38993.10
Percent Solids		100	100	100	100	100	100
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0
Aluminum	0.90	2.9 B	5.6 B	2.8 B	2.7 B	20.6	26.8
Antimony	0.30	U	U	U	U	U	U
Arsenic	0.20	U	U	U	U	U	U
Barium	0.10	0.43 B	0.17 B	U	0.11 B	0.22 B	0.8 B
Beryllium	0.10	U	U	U	U	U	U
Cadmium	0.10	U	U	U	U	U	U
Calcium	1.90	107 B	38.1 B	23.5 B	36.5 B	39.0 B	474 B
Chromium	0.10	0.12 B	0.18 B	0.14 B	U	0.18 B	1.1
Cobalt	0.10	0.20 B	U	U	U	U	0.43 B
Copper	0.30	0.37 B	1.7 B	U	0.58 B	1.6 B	1.4 B
Iron	1.30	549	19.0	363	378	56.2	151
Lead	0.20	1.2	0.71	U	U	0.28 B	8.1
Magnesium	5.50	44.3 B	6.1 B	5.4 B	U	8.0 B	16.5 B
Manganese	0.10	29.2	0.39 B	3.5	3.7	2.2	3.4
Mercury	0.05	U	U	0.12	U	U	U
Nickel	0.10	0.26 B	0.13 B	U	U	0.20 B	13.6
Potassium	11.3	28.2 B	U	U	U	11.4 B	14.5 B
Selenium	0.30	U	0.56	U	0.69	0.51	0.64
Silver	0.20	U	U	U	U	U	U
Sodium	4.20	4640	218 B	184 B	271 B	209 B	205 B
[redacted]	0.50	U	U	U	U	U	U
[redacted]	0.10	U	U	U	U	U	U
Zinc	0.40	3.7	2.9	2.1	2.0 B	5.0	5.1
Cyanide	0.10	U	U	U	U	U	34.3 J

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

INORGANIC ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 2 - 4, 1999

SAMPLE #/CONCENTRATION (MG/KG)

Total Metals	Instrument Detection Limit (IDL)	SOIL MBTA52 38993.11	SOIL MBTA53 38993.12	SOIL MBTA54 38993.14	SOIL MBTA55 38993.15	SOIL MBTA56 38993.16	
Percent Solids		100	100	100	100	100	
Dilution Factor		1.0	1.0	1.0	1.0	1.0	
Aluminum	0.90	2.2 B	335	4.5 B	U	3.1 B	
Antimony	0.30	U	3.4 B	U	U	U	
Arsenic	0.20	U	5.0	U	0.23 B	2.0	
Barium	0.10	0.11 B	U	0.11 B	0.13 B	0.55 B	
Beryllium	0.10	U	1.2	U	U	U	
Cadmium	0.10	U	4.5	U	U	U	
Calcium	1.90	32.1 B	438 B	34.4 B	37.5 B	76.2 B	
Chromium	0.10	0.11 B	103	U	U	U	
Cobalt	0.10	U	4110	U	U	U	
Copper	0.30	0.33 B	608	0.71 B	0.73 B	1.3 B	
Iron	1.30	67.3	*139000	19.3	52.2	47.5 B	
Lead	0.20	0.61	84.8	0.23 B	U	1.6	
Magnesium	5.50	U	108 B	U	U	U	
Manganese	0.10	0.55 B	670	0.36 B	0.17 B	0.19 B	
Mercury	0.05	U	0.34	U	U	U	
Nickel	0.10	0.13 B	5380	0.13 B	U	1.2 B	
Potassium	11.3	505	24.2 B	U	U	U	
Selenium	0.30	0.40 B	1.4	0.76	0.70	0.56	
Silver	0.20	U	U	U	U	U	
Sodium	4.20	2800	263 B	235 B	232 B	207 B	
Thallium	0.50	U	15.4	U	U	U	
Vanadium	0.10	U	2.9 B	U	U	U	
Zinc	0.40	3.0	387	1.9 B	3.4	8.3	
Cyanide	0.10	U	U	27.4 J	9.0 J	5.2 J	

*10 X D/F

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 7 - 8, 1999

SAMPLE #/CONCENTRATION (MG/KG)

[redacted] Metals	Instrument Detection Limit (IDL)	SOIL MBTA58 38992.02	SOIL MBTA59 38992.06	SOIL MBTA62 38992.10	SOIL MBTA63 38992.11	SOIL MBTA64 38992.12	SOIL MBTA65 38992.13
Percent Solids		100	100	100	100	100	100
Dilution Factor		1.0	1.0	1.0	1.0	1.0	1.0
Aluminum	0.90	18.3 B	7.7 B	80.2 J	35.5 J	16900 J	10.8 B
Antimony	0.30	U	U	U	U	U	U
Arsenic	0.20	U	U	1.9	U	13.7	[illegible]
Barium	0.10	0.13 B	0.14 B	0.62 B	0.61 B	38.6	0.23 B
Beryllium	0.10	U	U	U	U	0.57	U
Cadmium	0.10	U	U	U	U	0.17 B	U
Calcium	1.90	25.4 B	22.7 B	56.4 B	102 B	1370 J	43.1 B
Chromium	0.10	0.11 B	U	0.48 B	2.1	20.2	0.32 B
Cobalt	0.10	U	U	0.26 B	0.14 B	20.3	0.19 B
Copper	0.30	0.58 B	0.40 B	2.0 B	3.2	47.6	1.7 B
Iron	1.30	1240	156	765	158	48000	106
Lead	0.20	0.89	0.21 B	0.42	19.2	33.3	U
Magnesium	5.50	12.5 B	11.8 B	107 B	54.8 B	9060	80.7 B
Manganese	0.10	4.7	1.1 B	6.9	1.7	1360	0.84 B
Mercury	0.05	U	U	U	U	U	U
Nickel	0.10	0.24 B	0.10 B	1.8 B	0.29 B	40.3	1.4 B
Potassium	11.3	11.0 B	409 B	9.6 B	28.3 B	1090	4.2 B
Selenium	0.30	U	U	0.36 BJ	0.83 J	0.76 J	U
Silver	0.20	U	U	U	U	U	U
Sodium	4.20	217 B	2190	540	2380	210 B	589
T[redacted]	0.50	U	U	U	U	1.0	U
V[redacted]m	0.10	U	U	0.13 BJ	0.20 BJ	23.4	U
Zinc	0.40	2.6	3.3	11.5	28.8	115	3.4
Cyanide	0.10	U	U	U	U	U	U

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 7 - 8, 1999

Total Metals	Instrument Detection Limit (IDL)	SAMPLE #/CONCENTRATION (MG/KG) SOIL MBTA66 38992.14		SOIL MBTA67 38992.16		SOIL MBTA68 38992.17				
Percent Solids		100		100		100				
Dilution Factor		1.0		1.0		1.0				
Aluminum	0.90	16.6	B	1890	J	10.9	B			
Antimony	0.30	U		2.8	B	U				
Arsenic	0.20	1.3		86.2		U				
Barium	0.10	0.26	B	317		0.27	B			
Beryllium	0.10	U		U		U				
Cadmium	0.10	U		U		U				
Calcium	1.90	78.8	B	3410	J	56.8	B			
Chromium	0.10	0.37	B	19.2		0.12	B			
Cobalt	0.10	0.19	B	3.0	B	U				
Copper	0.30	1.8	B	9.8		5.3				
Iron	1.30	483		3730		108				
Lead	0.20	0.77		277		0.26	B			
Magnesium	5.50	81.8	B	791		9.8	B			
Manganese	0.10	2.8		84.7		0.81	B			
Mercury	0.05	U		U		U				
Nickel	0.10	1.4	B	67.5		0.45	B			
Potassium	11.3	4.9	B	140	B	9.3	B			
Selenium	0.30	U		0.45	BJ	0.96	J			
Silver	0.20	U		U		U				
Sodium	4.20	556		388	B	190	B			
Thallium	0.50	U		U		U				
Vanadium	0.10	U		3.8	BJ	U				
Zinc	0.40	8.5		28.1		5.5				
Cyanide	0.10	U		0.49	B	U				

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 1 thru' 11, 1999

[redacted]tal Metals	Instrument Detection Limit (IDL)	SAMPLE #/CONCENTRATION (MG/KG) SOIL MBTA-57 38992.01	SOIL MBTA-60 38992.07			
Percent Solids		94.2	94.4			
Dilution Factor		1.0	1.0			
Aluminum	2.40	16100	16500			
Antimony	0.60	R	R			
Arsenic	0.60	12.0 J	11.4 J			
Barium	0.20	36.9 B	42.9			
Beryllium	0.20	0.57 B	0.57 B			
Cadmium	0.20	U	U			
Calcium	5.60	1180	1380			
Chromium	0.20	19.5	21.2			
Cobalt	0.20	22.1	19.6			
Copper	0.40	48.1 J	40.0 J			
Iron	2.20	36800	39100			
Lead	0.40	30.1 J	31.9 J			
Magnesium	3.80	8780	8850			
Manganese	0.20	1140	1140			
Mercury	0.05	0.13 J	0.10 J			
Nickel	0.40	37.6	35.3			
Potassium	22.6	1010 B	960 B			
Selenium	0.60	U J	U J			
Silver	0.20	R	R			
Sodium	5.40	225 B	276 B			
[redacted]um	1.00	2.8 J	2.9 J			
[redacted]ium	0.20	21.5	22.0			
Zinc	1.00	92.7	93.1			
Cyanide	0.10	0.19 B	0.19 B			

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

Project: Amenia Landfill Site

Sampling Date: June 1 thru' 11, 1999

SAMPLE #/CONCENTRATION (UG/L)

Total Metals	Instrument Detection Limit (IDL)	Water MBTA-61 38992.08				
Percent Solids		0.0				
Dilution Factor		1.0				
Aluminum	9.0	16.0 B				
Antimony	5.0	U				
Arsenic	2.0	U				
Barium	1.0	U				
Beryllium	1.0	U				
Cadmium	1.0	U				
Calcium	19.0	56.5 B				
Chromium	1.0	U				
Cobalt	1.0	U				
Copper	3.0	U				
Iron	13.0	35.1 B				
Lead	2.0	U				
Magnesium	55.0	58.5 B				
Manganese	1.0	1.4 B				
Mercury	0.1	U				
Nickel	1.0	U				
Potassium	19.0	26.9 B				
Selenium	3.0	U				
Silver	2.0	U				
Sodium	42.0	U				
Thallium	3.0	U				
Vanadium	1.0	U				
Zinc	4.0	U				
Cyanide	2.0	U J				

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 1 thru' 11, 1999

(Unless otherwise indicated)
SAMPLE #/CONCENTRATION (mg/Kg)

RCRA Characteristic	Method Limit	Soil MBTA46 38993.01	Soil MBTA47 38993.05	Soil MBTA48 38993.06	Soil MBTA49 38993.07	Soil MBTA50 38993.08	Soil MBTA51 38993.10
Percent Moisture		0.0	0.0	0.0	0.0	0.0	0.0
Dilution Factor		--	--	--	--		
Reactive Sulfide	20.0 mg/kg	U	U	U	U	24	U
Reactive Cyanide	0.025 mg/kg	U J	U J	U J	U J	U	U J
pH Determination	0.10 pH units	5.6	3.7	2.1	2.8	4.5	0.77
Ignitability	77°f	125	121	114	78.0	104	>200

RCRA Characteristic	Method Limit	Soil MBTA52 38993.11	Soil MBTA53 38993.12	Soil MBTA54 38993.14	Soil MBTA55 38993.15	Soil MBTA56 38992.16	
Percent Moisture		0.0	0.0	0.0	0.0	0.0	
Dilution Factor		--	--	--	--	--	
Reactive Sulfide	20.0 mg/kg	U	U	U	U	U	
Reactive Cyanide	0.025 mg/kg	U J	U J	*5.5 J	*2.3 J	0.29 J	
pH Determination	0.10 pH units	2.3	5.3	U	U	3.2	
Ignitability	77°f	114	109	>200	109	>200	

* 10 X D/F * 5 X D/F

F - sample flashed
J - estimated value
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 1 thru' 11, 1999

(Unless otherwise indicated)
SAMPLE #/CONCENTRATION (mg/Kg)

RCRA Characteristic	Method Limit	Soil MBTA57 38992.01	Soil MBTA58 38992.02	Soil MBTA59 38992.06	Soil MBTA60 38992.07	Soil MBTA62 38992.10	Soil MBTA63 38992.11
Percent Moisture		5.8	0.0	0.0	5.6	0.0	0.0
Dilution Factor		--	--	--	--		
Reactive Sulfide	20.0 mg/kg	U	U	U	U	24	20
Reactive Cyanide	0.025 mg/kg	U J	U J	0.089 J	U J	U J	J
pH Determination	0.10 pH units	7.4	2.8	7.7	7.3	5.2	5.6
Ignitability	77°f	>200	>200	>200	>200	190	176

RCRA Characteristic	Method Limit	Soil MBTA64 38992.12	Soil MBTA65 38992.13	Soil MBTA66 38992.14	Soil MBTA67 38992.16	Soil MBTA68 38992.17	
Percent Moisture		0.0	0.0	0.0	0.0	0.0	
Dilution Factor		--	--	--	--	--	
Reactive Sulfide	20.0 mg/kg	U	24	24	U	U	
Reactive Cyanide	0.025 mg/kg	U J	U J	U J	U J	U J	
pH Determination	0.10 pH units	0.10	5.2	4.6	6.8	5.2	
Ignitability	77°f	>200	172	162	>200	127	

SAMPLE #/CONCENTRATION (mg/L)

RCRA Characteristic	Method Limit	Water MBTA61 38992.08					
Percent Moisture		100					
Dilution Factor		--					
Reactive Sulfide	4.0 mg/l	U					
Reactive Cyanide	5.0 ug/l	U J					
pH Determination	0-10 pH units	1.3					
Ignitability	77°f	>200					

F - sample flashed
J - estimated value
R - rejected compound

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
MBTA 57
MBTA-60

Lab Name: Southwest Laboratory of Oklahoma Contract: WESTON-START

Lab Code: SWOK RFP Case No.: 4820 SAS No.: N/A SDG No.: 38992A

Matrix (soil/water): Soil Level (low/med):

% Solids Sample: [redacted] % Solids Duplicate: [redacted]

Concentration Units (ug/L or mg/kg dry weight): ug/L.

Analyte	Action Limit	Sample (S) MBTA 57 Concentration	C	Field Duplicate (D) MBTA 60 Concentration	C	RPD	DIFF	Q	M
Aluminum	100%	75700		81110		6.9			P
Antimony	±120	4.2	B	6.11	B		<2xCRDL		P
Arsenic	100%	56.6		55.8		1.4			F
Barium	±400	174	B	210.4			<2xCRDL		P
Beryllium	±10	2.7	B	2.8	B		<2xCRDL		P
Cadmium			U		U	NC			P
Calcium	±10,000	5557		6758		19.5	<2xCRDL		P
Chromium	100%	92.0		104		12.2			P
Cobalt	±100	104		96.3		7.7			P
Copper	100%	226.8		196.3		14.4			P
Iron	100%	173500		192100		10.2			P
Lead	100%	141.8		156.8		5.9			P
Magnesium	100%	41330		43460		5.0			P
Manganese	100%	5373		5582		3.8			P
Mercury	±0.4	0.252		0.224			<2xCRDL		CV
Nickel	±80	177		173.4			<2xCRDL		P
Potassium	±10,000	4755	B	4714	B		<2xCRDL		P
Selenium			U		U	NC			F
Silver			U		U	NC			P
Sodium	±10,000	1058	B	1354	B		<2xCRDL		P
Thallium	-	13.3		14.3			<2xCRDL		F
Vanadium		101		108			<2xCRDL		P
Zinc		436		457		4.7			P
Cyanide		3.8	B	3.4	B		<2xCRDL		NR

FORM VI – IN

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
MBTA-48
MBTA-49

Lab Name: Southwest Laboratory of Oklahoma Contract: WESTON-START

Lab Code: SWOK RFP Case No.: 4820 SAS No.: N/A SDG No.: 38993

Matrix (soil/water): Soil Level (low/med): Low

% Solids Sample: 100 % % Solids Duplicate: 100 %

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Action Limit	Sample (S) MBTA 49 Concentration	C	Field Duplicate (D) MBTA 48 Concentration	C	RPD	DIFF	Q	M
Aluminum	±400	27.2	B	29.9	B		<2xCRDL	L	P
Antimony			U		U	NC			P
Arsenic			U		U	NC			F
Barium	±400	1.07	B		U		<2xCRDL	L	P
Beryllium			U		U	NC			P
Cadmium			U		U	NC			P
Calcium	±10,000	365.1	B	246.6	B		<2xCRDL	L	P
Chromium			U	1.4	B		<2xCRDL	L	P
Cobalt			U		U	NC			P
Copper	±50	5.8	B		U		<2xCRDL	L	F
Iron	100%	3779		3809		0.8%			P
Lead			U		U	NC			P
Magnesium	±10,000		U	56.3	B		<2xCRDL	L	P
Manganese	±30	36.6		36.4			<2xCRDL	L	P
Mercury	±0.4		U	0.245			<2xCRDL	L	CV
Nickel			U		U	NC			P
Potassium			U		U	NC			P
Selenium	±20	6.9			U		<2xCRDL	L	F
Silver			U		U	NC			P
Sodium	±19600	2709	B	1934.3	B		<2xCRDL		P
Thallium	-		U		U	NC			F
Vanadium			U		U	NC			P
Zinc	±40	19.5	B	22.4			<CRDL		P
Cyanide			U		U	NC			NR

FORM VI – IN

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

001

SDG NARRATIVE

CONTRACT: WESTON
CASE: 38993
SDG: 38993

DATE: 6/28/99
SOW NO.: ILM04.0
EPISODE NO.: 38993

INORGANIC METAL FRACTION:

Thirteen soil samples were submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analyses of these samples. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (ICP digestion and analysis)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)
SWL-IN-303	ILM03.0/04.0 (Cyanide)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Al, Se, Fe, CN // No action required.

Linearity near the CRDL (CRA & CRI): No problems.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Cu, Fe, Ni, Se, Na, Zn // No action required.

Lab Control Spikes: No problems.

Matrix Spike (and MSD): The following element was outside the control limits of 75-125% recovery: CN // All associated samples were flagged with a "N" on Form I's. No action required.

Duplicates (LCSD and MSD): No problems.

Serial Dilution (ICP): No problems.

Sincerely,

Susan S. Turner for ...
Deborah J. Inman
Inorganic Program Manager

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: SOUTHWEST_LAB_OF_OK Contract: WESTON

Lab Code: SWOK Case No.: 38993 SAS No.: _____ SDG No.: 38993

SOW No.: ILM04.0

Client Sample ID	Lab Sample ID
MBTA46	38993.01
MBTA47	38993.05
MBTA48	38993.06
MBTA49	38993.07
MBTA50	38993.08
MBTA51	38993.10
MBTA52	38993.11
MBTA53	38993.12
MBTA54	38993.14
MBTA55	38993.15
MBTA56	38993.16
MBTA46S	38993.03S
MBTA46D	38993.02D

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:
BATCH_#S:_ICP=_990616I3__AV=_990620HG2__AS=_9906181202

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Susan S. Turner for... Deborah J. Inman

Date: June 28, 1999 Title: Inorganic Program Manager

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA46

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38993.01
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2.9	B		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	0.20	U		P
7440-39-3	Barium	0.43	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	107	B		P
7440-47-3	Chromium	0.12	B		P
7440-48-4	Cobalt	0.20	B		P
7440-50-8	Copper	0.37	B		P
7439-89-6	Iron	549			P
7439-92-1	Lead	1.2			P
7439-95-4	Magnesium	44.3	B		P
7439-96-5	Manganese	29.2			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.26	B		P
7440-09-7	Potassium	28.2	B		P
7782-49-2	Selenium	0.30	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	4640			P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	3.7			P
	Cyanide	0.10	U	N	AS

Color Before: BROWN Clarity Before:
Color After: YELLOW Clarity After:
Texture: MEDIUM
Artifacts:

Comments:
CLIENT_ID=_BYF27/MBTA46

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA47

b [redacted]: SOUTHWEST_LAB_OF_OK Contract: WESTON
b [redacted]: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
trix (soil/water): SOIL
vel (low/med): LOW
Solids: 100.0

Lab Sample ID: 38993.05
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5.6	B		P
7440-36-0	Antimony	0.29	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.17	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	38.1	B		P
7440-47-3	Chromium	0.18	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	1.7	B		P
7439-89-6	Iron	19.0			P
7439-92-1	Lead	0.71			P
7439-95-4	Magnesium	6.1	B		P
7439-96-5	Manganese	0.39	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.13	B		P
7440-09-7	Potassium	11.0	U		P
7782-49-2	Selenium	0.56			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	218	B		P
7440-28-0	Thallium	0.49	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	2.9			P
	Cyanide	0.10	U	N	AS

r Before: BROWN Clarity Before: Texture: MEDIUM
r After: YELLOW Clarity After: Artifacts:

ents:
LIENT_ID= BYF28/MBTA47

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA48

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38993.06
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2.8	B		P
7440-36-0	Antimony	0.29	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.10	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	23.5	B		P
7440-47-3	Chromium	0.14	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.29	U		P
7439-89-6	Iron	363			P
7439-92-1	Lead	0.19	U		P
7439-95-4	Magnesium	5.4	B		P
7439-96-5	Manganese	3.5			P
7439-97-6	Mercury	0.12			AV
7440-02-0	Nickel	0.10	U		P
7440-09-7	Potassium	10.8	U		P
7782-49-2	Selenium	0.29	U		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	184	B		P
7440-28-0	Thallium	0.48	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	2.1			P
	Cyanide	0.10	U	N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=BYF29/MBTA48

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA49

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0

Lab Sample ID: 38993.07
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2.7	B		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	0.20	U		P
7440-39-3	Barium	0.11	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	36.5	B		P
7440-47-3	Chromium	0.10	U		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.58	B		P
7439-89-6	Iron	378			P
7439-92-1	Lead	0.20	U		P
7439-95-4	Magnesium	5.5	U		P
7439-96-5	Manganese	3.7			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.10	U		P
7440-09-7	Potassium	11.3	U		P
7782-49-2	Selenium	0.69			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	271	B		P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	2.0	B		P
	Cyanide	0.10	U	N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=BYF30/MBTA49

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA50

b Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
b Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
trix (soil/water): SOIL
vel (low/med): LOW
Solids: 100.0
Lab Sample ID: 38993.08
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.6			P
7440-36-0	Antimony	0.29	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.22	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	39.0	B		P
7440-47-3	Chromium	0.18	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	1.6	B		P
7439-89-6	Iron	56.2			P
7439-92-1	Lead	0.28	U		P
7439-95-4	Magnesium	8.0	B		P
7439-96-5	Manganese	2.2			P
7439-97-6	Mercury	0.04	U		AV
7440-02-0	Nickel	0.20	B		P
7440-09-7	Potassium	11.4	B		P
7782-49-2	Selenium	0.51			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	209	B		P
7440-28-0	Thallium	0.48	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	5.0			P
	Cyanide	0.10	U	N	AS

r Before: BROWN Clarity Before: Texture: MEDIUM
r After: YELLOW Clarity After: Artifacts:

ents:
LIENT_ID=_BYF30/MBTA50

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA51

b [redacted]e: SOUTHWEST_LAB_OF_OK Contract:WESTON
b [redacted]e: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
trix (soil/water): SOIL
vel (low/med): LOW
Solids: 100.0

Lab Sample ID: 38993.10
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.8			P
7440-36-0	Antimony	0.29	U		P
7440-38-2	Arsenic	19.6			P
7440-39-3	Barium	9.8	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	474	B		P
7440-47-3	Chromium	1.1			P
7440-48-4	Cobalt	0.43	B		P
7440-50-8	Copper	1.4	B		P
7439-89-6	Iron	151			P
7439-92-1	Lead	8.1			P
7439-95-4	Magnesium	16.5	B		P
7439-96-5	Manganese	3.4			P
7439-97-6	Mercury	0.04	U		AV
7440-02-0	Nickel	13.6			P
7440-09-7	Potassium	14.5	B		P
7782-49-2	Selenium	0.64			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	205	B		P
7440-28-0	Thallium	0.49	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	5.1			P
	Cyanide	34.3		N	AS

or Before: BROWN Clarity Before: Texture: MEDIUM
or After: YELLOW Clarity After: Artifacts:

ments:
LIENT_ID=_BYF33/MBTA51

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA52

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38993.11
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2.2	B		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	0.20	U		P
7440-39-3	Barium	0.11	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	32.1	B		P
7440-47-3	Chromium	0.11	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.33	B		P
7439-89-6	Iron	67.3			P
7439-92-1	Lead	0.61			P
7439-95-4	Magnesium	5.4	U		P
7439-96-5	Manganese	0.55	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.13	B		P
7440-09-7	Potassium	505			P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	2800			P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	3.0			P
	Cyanide	0.10	U	N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID= BYF34/MBTA52

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA53

ab [redacted]: SOUTHWEST_LAB_OF_OK Contract:WESTON
ab [redacted]: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
atrix (soil/water): SOIL
evel (low/med): LOW
Solids: 100.0

Lab Sample ID: 38993.12
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	335			P
7440-36-0	Antimony	3.4	B		P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	0.10	U		P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	4.5			P
7440-70-2	Calcium	438	B		P
7440-47-3	Chromium	103			P
7440-48-4	Cobalt	4110			P
7440-50-8	Copper	608			P
7439-89-6	Iron	139000			P
7439-92-1	Lead	84.8			P
7439-95-4	Magnesium	108	B		P
7439-96-5	Manganese	670			P
7439-97-6	Mercury	0.34			AV
7440-02-0	Nickel	5380			P
7440-09-7	Potassium	24.2	B		P
7782-49-2	Selenium	1.4			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	263	B		P
7440-28-0	Thallium	15.4			P
7440-62-2	Vanadium	2.9	B		P
7440-66-6	Zinc	387			P
	Cyanide	0.10	U	N	AS

or Before: BROWN Clarity Before: Texture: MEDIUM
or After: YELLOW Clarity After: Artifacts:

ments:
LIENT_ID=_BYF35/MBTA53

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: 011

MBTA54

b Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
b Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
trix (soil/water): SOIL
vel (low/med): LOW
Solids: 100.0

Lab Sample ID: 38993.14
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4.5	B		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	0.20	U		P
7440-39-3	Barium	0.11	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	34.4	B		P
7440-47-3	Chromium	0.10	U		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.71	B		P
7439-89-6	Iron	19.3			P
7439-92-1	Lead	0.23	B		P
7439-95-4	Magnesium	5.4	U		P
7439-96-5	Manganese	0.36	B		P
7439-97-6	Mercury	0.04	U		AV
7440-02-0	Nickel	0.13	B		P
7440-09-7	Potassium	11.2	U		P
7782-49-2	Selenium	0.76			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	235	B		P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	1.9	B		P
	Cyanide	27.4		N	AS

or Before: BROWN Clarity Before: Texture: MEDIUM
or After: YELLOW Clarity After: Artifacts:

ments:
CLIENT_ID= BYF37/MBTA54

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA55

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL Lab Sample ID: 38993.15
Level (low/med): LOW Date Received: 06/12/99
% Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	0.89	U		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	0.23	B		P
7440-39-3	Barium	0.13	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	37.5	B		P
7440-47-3	Chromium	0.10	U		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.73	B		P
7439-89-6	Iron	52.2			P
7439-92-1	Lead	0.20	U		P
7439-95-4	Magnesium	5.4	U		P
7439-96-5	Manganese	0.17	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.10	U		P
7440-09-7	Potassium	11.2	U		P
7782-49-2	Selenium	0.70			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	232	B		P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	3.4			P
	Cyanide	9.0		N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=BYF38/MBTA55

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: 013

MBTA56

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38993 SAS No.: SDG No.: 38993
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38993.16
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3.1	B		P
7440-36-0	Antimony	0.30	U		P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	0.55	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	76.2	B		P
7440-47-3	Chromium	0.10	U		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	47.5			P
7439-92-1	Lead	1.6			P
7439-95-4	Magnesium	5.5	U		P
7439-96-5	Manganese	0.19	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.2	B		P
7440-09-7	Potassium	11.3	U		P
7782-49-2	Selenium	0.56			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	207	B		P
7440-28-0	Thallium	0.50	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	8.3			P
	Cyanide	5.2		N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF39/MBTA55

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

CONTRACT: WESTON
CASE: 38992
SDG: 38992C

DATE: July, 2 1999
SOW NO.: ILM04.0
EPISODE NO.:38992

INORGANIC METAL FRACTION:

Nine samples were submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analyses of these samples. Please see the DC-1 (Sample Log-In Sheet) for sample conditions and cooler temperatures at receipt. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (ICP analysis)
SWL-IN-202	ILM03.0/04.0 (Analysis of Hg be cold vapor)
SWL-IN-303	ILM03.0/04.0 (Cyanide)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: K, Al, Sb. No action required.

Linearity near the CRDL (CRA & CRI): No problem.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Ca, Cu, Fe, Na, CN. No action required.

Lab Control Spikes: No problems.

Matrix Spike(s) (and MSD): No problem.

Duplicate(s) (LCSD and MSD): No problem.

Serial Dilution (ICP): No problem.

SW846 MDLs: The IDL column on the Form 10s contain our MDLs rather than IDLs and the CRDL column on the Form 10s contain our PQLS rather than CRDLs. MDLs are done on an annual basis (SWOK SOP states between November and February) instead of requiring the quarterly change needed for IDLs.

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

Sincerely,

Deborah J. Inman
Inorganic Program Manager

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: SOUTHWEST_LAB_OF_OK_____ Contract: WESTON____

Lab Code: SWOK__ Case No.: 38992 SAS No.: _____ SDG No.:38992C

SOW No.: ILM04.0

Client Sample ID	Lab Sample ID
MBTA58	38992.02
MBTA59	38992.06
MBTA62	38992.10
MBTA63	38992.11
MBTA64	38992.12
MBTA65	38992.13
MBTA66	38992.14
MBTA67	38992.16
MBTA68	38992.17
MBTA58S	38992.03S
MBTA58D	38992.04D

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
BATCH_#S=__ICP=_990616I2__AV=_990620HG1__AS=_9906181201

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Deborah J. Inman_____

Date: July 2, 1999 Title: Inorganic Program Manager___

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA58

Lab Name: SOUTHWEST_LAB_OF_OK_____ Contract: WESTON____
Lab Code: SWOK__ Case No.: 38992 SAS No.: _____ SDG No.: 38992C
Matrix (soil/water): SOIL_
Level (low/med): LOW__ Lab Sample ID: 38992.02
% Solids: 100.0 Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	18.3	B		P
7440-36-0	Antimony	0.49	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.13	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	25.4	B		P
7440-47-3	Chromium	0.11	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.58	B		P
7439-89-6	Iron	1240			P
7439-92-1	Lead	0.89			P
7439-95-4	Magnesium	12.5	B		P
7439-96-5	Manganese	4.7			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.24	B		P
7440-09-7	Potassium	11.0	B		P
7782-49-2	Selenium	0.29	U		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	217	B		P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	2.6			P
	Cyanide	0.10	U		AS

Color Before: WHITE_____ Clarity Before: _____ Texture: MEDIUM
Color After: YELLOW___ Clarity After: _____ Artifacts: _____

Comments:
CLIENT_ID=_BYF41/MBTA58

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA59

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.06
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7.7	B		P
7440-36-0	Antimony	0.49	U		P
7440-38-2	Arsenic	0.20	U		P
7440-39-3	Barium	0.14	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	22.7	B		P
7440-47-3	Chromium	0.10	U		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	0.40	B		P
7439-89-6	Iron	156			P
7439-92-1	Lead	0.21	B		P
7439-95-4	Magnesium	11.8	B		P
7439-96-5	Manganese	1.1	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.10	B		P
7440-09-7	Potassium	409	B		P
7782-49-2	Selenium	0.29	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	2190			P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	3.3			P
	Cyanide	0.10	U		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF42/MBTA59

006

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA62

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.10
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	80.2		J	P
7440-36-0	Antimony	0.50	U		P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	0.62	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	56.4	B		P
7440-47-3	Chromium	0.48	B		P
7440-48-4	Cobalt	0.26	B		P
7440-50-8	Copper	2.0	B		P
7439-89-6	Iron	765			P
7439-92-1	Lead	0.42			P
7439-95-4	Magnesium	107	B		P
7439-96-5	Manganese	6.9			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	9.6	B		P
7782-49-2	Selenium	0.36	B	J	P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	540			P
7440-28-0	Thallium	0.30	U		P
7440-62-2	Vanadium	0.13	B	J	P
7440-66-6	Zinc	11.5			P
	Cyanide	0.10	U		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF46/MBTA62

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA63

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.11
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	35.5		J	P
7440-36-0	Antimony	0.48	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.61	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	102	B		P
7440-47-3	Chromium	2.1			P
7440-48-4	Cobalt	0.14	B		P
7440-50-8	Copper	3.2			P
7439-89-6	Iron	158			P
7439-92-1	Lead	19.2			P
7439-95-4	Magnesium	54.8	B		P
7439-96-5	Manganese	1.7			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.29	B		P
7440-09-7	Potassium	28.3	B		P
7782-49-2	Selenium	0.83		J	P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	2380			P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	0.20	B	J	P
7440-66-6	Zinc	28.8			P
	Cyanide	0.10	U		AS

Color Before: RED Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF47/MBTA63

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA64

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.12
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16900		J	P
7440-36-0	Antimony	0.49	U		P
7440-38-2	Arsenic	13.7			P
7440-39-3	Barium	38.6			P
7440-41-7	Beryllium	0.57			P
7440-43-9	Cadmium	0.17	B		P
7440-70-2	Calcium	1370		J	P
7440-47-3	Chromium	20.2			P
7440-48-4	Cobalt	20.3			P
7440-50-8	Copper	47.6			P
7439-89-6	Iron	48000			P
7439-92-1	Lead	33.3			P
7439-95-4	Magnesium	9060			P
7439-96-5	Manganese	1360			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	40.3			P
7440-09-7	Potassium	1090			P
7782-49-2	Selenium	0.76		J	P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	210	B		P
7440-28-0	Thallium	1.0			P
7440-62-2	Vanadium	23.4			P
7440-66-6	Zinc	115			P
	Cyanide	0.10	U		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF48/MBTA64

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA65

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.13
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.8	B		P
7440-36-0	Antimony	0.50	U		P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	0.23	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	43.1	B		P
7440-47-3	Chromium	0.32	B		P
7440-48-4	Cobalt	0.19	B		P
7440-50-8	Copper	1.7	B		P
7439-89-6	Iron	106			P
7439-92-1	Lead	0.20	U		P
7439-95-4	Magnesium	80.7	B		P
7439-96-5	Manganese	0.84	B		P
7439-97-6	Mercury	0.04	U		AV
7440-02-0	Nickel	1.4	B		P
7440-09-7	Potassium	4.2	B		P
7782-49-2	Selenium	0.30	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	589			P
7440-28-0	Thallium	0.30	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	3.4			P
	Cyanide	0.10	U		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF49/MBTA65

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA66

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.14
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16.6	B		P
7440-36-0	Antimony	0.47	U		P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	0.26	B		P
7440-41-7	Beryllium	0.09	U		P
7440-43-9	Cadmium	0.09	U		P
7440-70-2	Calcium	78.8	B		P
7440-47-3	Chromium	0.37	B		P
7440-48-4	Cobalt	0.19	B		P
7440-50-8	Copper	1.8	B		P
7439-89-6	Iron	483			P
7439-92-1	Lead	0.77			P
7439-95-4	Magnesium	81.8	B		P
7439-96-5	Manganese	2.8			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	1.4	B		P
7440-09-7	Potassium	4.9	B		P
7782-49-2	Selenium	0.28	U		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	556			P
7440-28-0	Thallium	0.28	U		P
7440-62-2	Vanadium	0.09	U		P
7440-66-6	Zinc	8.5			P
	Cyanide	0.10	U		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF50/MBTA66

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

MBTA67

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.16
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1890		J	P
7440-36-0	Antimony	2.8	B		P
7440-38-2	Arsenic	86.2			P
7440-39-3	Barium	317			P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	3410		J	P
7440-47-3	Chromium	19.2			P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	9.8			P
7439-89-6	Iron	3730			P
7439-92-1	Lead	277			P
7439-95-4	Magnesium	791			P
7439-96-5	Manganese	84.7			P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	67.5			P
7440-09-7	Potassium	140	B		P
7782-49-2	Selenium	0.45	B	J	P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	388	B		P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	3.8	B	J	P
7440-66-6	Zinc	28.1			P
	Cyanide	0.49	B		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF52/MBTA67

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA68

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992C
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 100.0
Lab Sample ID: 38992.17
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10.9	B		P
7440-36-0	Antimony	0.48	U		P
7440-38-2	Arsenic	0.19	U		P
7440-39-3	Barium	0.27	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.10	U		P
7440-70-2	Calcium	56.8	B		P
7440-47-3	Chromium	0.12	B		P
7440-48-4	Cobalt	0.10	U		P
7440-50-8	Copper	5.3			P
7439-89-6	Iron	108			P
7439-92-1	Lead	0.26	B		P
7439-95-4	Magnesium	9.8	B		P
7439-96-5	Manganese	0.81	B		P
7439-97-6	Mercury	0.05	U		AV
7440-02-0	Nickel	0.45	B		P
7440-09-7	Potassium	9.3	B		P
7782-49-2	Selenium	0.96		J	P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	190	B		P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	0.10	U		P
7440-66-6	Zinc	5.5			P
	Cyanide	0.10	U		AS

Color Before: WHITE Clarity Before: Texture: MEDIUM
Color After: YELLOW Clarity After: Artifacts:

Comments:
CLIENT_ID=_BYF53/MBTA68

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
AMERICAN ANALYTICAL & TECHNICAL SERVICES, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

CONTRACT: WESTON
CASE: 38992
SDG: 38992B

DATE: 6/23/99
SOW NO.: ILM04.0
EPISODE NO.: 38992

INORGANIC METAL FRACTION:

One water sample was submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analysis of this sample. The sample's analysis was completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (ICP digestion and analysis)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)
SWL-IN-303	ILM03.0/04.0 (Cyanide)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Al, Ca, CN // No action required.

Linearity near the CRDL (CRA & CRI): The CRI standard was outside of our in-house warning limits of 70 - 130%R for the following element: Hg // No action required.

Preparation Blanks: The following elements showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Ca, Z // No action required.

Lab Control Spikes: No problems.

Matrix Spike: The following element was outside the control limits of 75-125% recovery: CN // All associated samples were flagged with a "N" on Form I's. No action required.

Duplicates (LCSD and Dup): No problems.

Serial Dilution (ICP): No problems.

Sincerely,

Susan S. Turner for ...
Deborah J. Inman
Inorganic Program Manager

AA

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

0002

Name: SOUTHWEST_LAB_OF_OK_____ Contract: WESTON____

Lab Code: SWOK__ Case No.: 38992 SAS No.: _____ SDG No.:38992B

SOW No.: ILM04.0

Client Sample ID	Lab Sample ID
MBTA61	38992.08
MBTA61S	38992.08S
MBTA61D	38992.08D

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:
BATCH_#S:_ICP-_990615I4__AV-_990616HG3__AS-_9906181203

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the manager's designee, as verified by the following signature.

Signature: _____ Name: Susan S. Turner for... Deborah J. Inman

Date: June 23 1999 Title: Inorganic Program Manager

0003

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: MBTA61

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992B
Matrix (soil/water): WATER Lab Sample ID: 38992.08
Level (low/med): LOW Date Received: 06/12/99
% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16.0	B		P
7440-36-0	Antimony	5.0	U		P
7440-38-2	Arsenic	2.0	U		P
7440-39-3	Barium	1.0	U		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	1.0	U		P
7440-70-2	Calcium	56.5	B		P
7440-47-3	Chromium	1.0	U		P
7440-48-4	Cobalt	1.0	U		P
7440-50-8	Copper	3.0	U		P
7439-89-6	Iron	35.1	B		P
7439-92-1	Lead	2.0	U		P
7439-95-4	Magnesium	58.5	B		P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.10	U		AV
7440-02-0	Nickel	1.0	U		P
7440-09-7	Potassium	26.9	B		P
7782-49-2	Selenium	3.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	42.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.0	U		P
7440-66-6	Zinc	4.0	U		P
	Cyanide	2.0	U	N J	AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID=_BYF44/MBTA61

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany / Broken Arrow, Oklahoma 74012 / Office (918) 251-2858 / Fax (918) 251-2599

SDG NARRATIVE

1

CONTRACT: WESTON
CASE: 38892A
SDG: 38892A

DATE: JUNE 30, 1999
SOW NO.: ILM04.0
EPISODE NO.: 38892

INORGANIC METAL FRACTION:

Two soil samples were submitted for ICP, CN and Hg analysis. No major problems occurred during the digestion or analysis of these samples. Please see the DC-1 (Sample Log-In Sheet) for sample condition and cooler temperatures at receipt. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based
SWL-IN-200	ILM03.0/04.0 (ICP digestion & analysis)
SWL-IN-202	ILM03.0/04.0 (analysis of Hg by cold vapor)
SWL-IN-303	ILM03.0/04.0 (Cyanide)

Initial and Continuing Calibration Checks: No problems.

Initial and Continuing Calibration Blanks: The following element(s) showed low level concentrations below the Contract Required Detection Limit in the Calibration Blanks: Se, Hg // No action required.

Linearity near the CRDL (CRA & CRI): The CRI standard was outside of our in-house warning limits of 70 - 130%R for the following elements: Hg, Se // No action required.

Preparation Blanks: The following element(s) showed low level concentrations below the Contract Required Detection Limit in the Preparation Blank: Al, Ca, Hg, Se // No action required.

Lab Control Spikes: No problems.

Matrix Spike: The following elements were outside the control limits of 75-125% recovery: Sb, Cu, Ag // All associated samples were flagged with a "N" on Form I's. No action required.

Duplicates (LCSSD and DUP): The following elements were outside the control limits of 0-20% RPD: Fe, Mn // All associated samples were flagged with a "*" on Form I's. No action required.

Serial Dilution (ICP): No problems.

Sincerely,

Susan S. Turner for ...
Deborah J. Inman
Inorganic Program Manager

44

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: SOUTHWEST_LAB_OF_OK_____ Contract: WESTON____

Lab Code: SWOK__ Case No.: 38992 SAS No.: _____ SDG No.:38992A

SOW No.: ILM04.0

Client Sample ID	Lab Sample ID
BYF40MBTA57	38992.01
BYF43MBTA60	38992.07
BYF40MBTA57S	38992.01S
BYF43MBTA60S	38992.07S
BYF40MBTA57D	38992.01D
BYF43MBTA60D	38992.07D

ere ICP interelement corrections applied ? Yes/No YES

ere ICP background corrections applied ? Yes/No YES
If yes - were raw data generated before application of background corrections ? Yes/No NO

omments:
BATCH_ID_#'S:_P=990618I4_(ICP)
AV=990615HG1_(MERCURY)
AS=9906171204_(CYANIDE)

certify that this data package is in compliance with the terms and nditions of the contract, both technically and for completeness, for her than the conditions detailed above. Release of the data contained this hardcopy data package and in the computer-readable data submitted diskette has been authorized by the Laboratory Manager or the nager's designee, as verified by the following signature.

gnature: _____ Name: Susan S. Turner for... Deborah J. Inman

te: June 30, 1999 Title: Inorganic Program Manager

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INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID: BYF40MBTA57

Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992A
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 94.2
Lab Sample ID: 38992.01
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16100			P
7440-36-0	Antimony	~~0.89~~	B	~~N~~ R	P
7440-38-2	Arsenic	12.0		J	P
7440-39-3	Barium	36.9	B		P
7440-41-7	Beryllium	0.57	B		P
7440-43-9	Cadmium	0.21	U		P
7440-70-2	Calcium	1180			P
7440-47-3	Chromium	19.5			P
7440-48-4	Cobalt	22.1			P
7440-50-8	Copper	48.1		N J	P
7439-89-6	Iron	36800		*	P
7439-92-1	Lead	30.1		J	P
7439-95-4	Magnesium	8780			P
7439-96-5	Manganese	1140		*	P
7439-97-6	Mercury	0.13		J	AV
7440-02-0	Nickel	37.6			P
7440-09-7	Potassium	1010	B		P
7782-49-2	Selenium	0.64	U	J	P
7440-22-4	Silver	~~0.21~~	U	~~N~~ R	P
7440-23-5	Sodium	225	B		P
7440-28-0	Thallium	2.8		J	P
7440-62-2	Vanadium	21.5			P
7440-66-6	Zinc	92.7			P
	Cyanide	0.19	B		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID_=_BYF40/MBTA57

1

INORGANIC ANALYSES DATA SHEET

CLIENT SAMPLE ID

BYF43MBTA60

Lab Name: SOUTHWEST_LAB_OF_OK Contract: WESTON
Lab Code: SWOK Case No.: 38992 SAS No.: SDG No.: 38992A
Matrix (soil/water): SOIL
Level (low/med): LOW
% Solids: 94.4
Lab Sample ID: 38992.07
Date Received: 06/12/99

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16500			P
7440-36-0	Antimony	~~1.2~~	B	~~N~~ R	P
7440-38-2	Arsenic	11.4		J	P
7440-39-3	Barium	42.9			P
7440-41-7	Beryllium	0.57	B		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	1380			P
7440-47-3	Chromium	21.2			P
7440-48-4	Cobalt	19.6			P
7440-50-8	Copper	40.0		N J	P
7439-89-6	Iron	39100		*	P
7439-92-1	Lead	31.9		J	P
7439-95-4	Magnesium	8850			P
7439-96-5	Manganese	1140		*	P
7439-97-6	Mercury	0.10		J	AV
7440-02-0	Nickel	35.3			P
7440-09-7	Potassium	960	B		P
7782-49-2	Selenium	0.61	U	J	P
7440-22-4	Silver	~~0.20~~	U	~~N~~ R	P
7440-23-5	Sodium	276	B		P
7440-28-0	Thallium	2.9		J	P
7440-62-2	Vanadium	22.0			P
7440-66-6	Zinc	93.1			P
	Cyanide	0.19	B		AS

Color Before: BROWN Clarity Before: Texture: MEDIUM
Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT_ID_=_BYF43/MBTA60

Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

SDG NARRATIVE

CLIENT: WESTON
PROJECT: RFP NO. 4820 REVISED

DATE: July 1, 1999
EPISODE NO.: 38993

INORGANIC FRACTION:

Eleven samples were submitted for Corrosivity pH, Ignitability, Reactive Cyanide, amd Reactive Sulfide analysis. The sample analysis was completed according to the following:

SWL SOP #	Method SOP is based	Parameter
SWL-IN-309	SW846 7.3	Reactivity cyanide
SWL-IN-314	SW846 7.3	Reactivity sulfide
SWL-IN-405	SW846 9045B/9040A	pH Electrometric Measure.
SWL-IN-703	SW846 1010	Closed Cup Ignitability

Refer to Sample Receipt Notification for details of sample conditions at receipt. Explanations of the forms are the following:

Form 1 (Sample results) - will be provided by our Reporting Department.
Form 3 (Blanks) - This information is included on the QC spreadsheet.
Form 7 (Laboratory Control Sample) - Provided by the LCS/LCSD Quality Control Data Sheets.

Initial and Continuing Calibration Check: No problems.

Blanks: All blanks were below the reporting limit.

Lab Control Spikes: No problems.

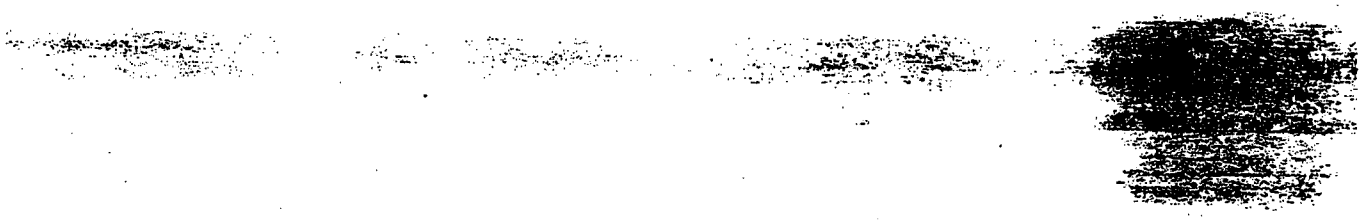
The matrix spikes and duplicate information is in package 38992

Sincerely,

Deborah J. Inman
Inorganic Program Manager

Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

Sample Results



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

[redacted] WESTON, INC.
[redacted] KING GEORGES POST ROAD
[redacted]
EDISON, NJ 08837-370

REPORT : 38993.01

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.01
SAMPLE #: BYF27/MBTA46
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.6	su		06/15/99	SW 9045
IGNITABILITY*	125	F		06/18/99	PMCC

** FOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38993.01

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.01
SAMPLE #: BYF27/MBTA46
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

[redacted] WESTON, INC.
[redacted]NG GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3703

REPORT : 38993.02

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.02 DUP
SAMPLE #: BYF27/MBTA46
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.6	su		06/15/99	SW 9045
IGNITABILITY*	125	F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.02

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.02 DUP
SAMPLE #: BYF27/MBTA46
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

WESTON, INC.
ING GEORGES POST ROAD
[illegible]
EDISON, NJ 08837-370

REPORT : 38993.[illegible]

REPORTED : [illegible]99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.05
SAMPLE #: BYF28/MBTA47
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	3.7	su		06/15/99	SW 9045
IGNITABILITY*	121	F		06/18/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.05

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.05
SAMPLE #: BYF28/MBTA47
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	UJ	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
[illegible]ING GEORGES POST ROAD
[illegible]
EDISON, NJ 08837-370

REPORT : 38993.06

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.06
SAMPLE #: BYF29/MBTA48
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	2.1	su		06/15/99	SW 9045
IGNITABILITY*	114	F		06/18/99	PMCC

[illegible] = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.06

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.06
SAMPLE #: BYF29/MBTA48
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	UJ	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

[redacted] WESTON, INC.
[redacted] KING GEORGES POST ROAD
[redacted]
EDISON, NJ 08837-370

REPORT : 38993.07

REPORTED : 07/01/99

ATTN: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.07
SAMPLE #: BYF30/MBTA49
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	2.8	su		06/15/99	SW 9045
IGNITABILITY*	78.0	F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38993.07

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.07
SAMPLE #: BYF30/MBTA49
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

RO[redacted] WESTON, INC.
[redacted]ENG GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3[illegible]

REPORT : 38993.08

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.08
SAMPLE #: BYF31/MBTA50
LOCATION:
MATRIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	4.5	su		06/15/99	SW 9045
IGNITABILITY*	104	F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38993.08

REPORTED : 09/23/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.08
SAMPLE #: BYF31/MBTA50
LOCATION:
MATRIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	24.0		mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

[redacted] WESTON, INC.
[redacted]ING GEORGES POST ROAD
[redacted] 201
EDISON, NJ 08837-370

REPORT : 38993.10

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.10
SAMPLE #: BYF33/MBTA51
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	3.77	su		06/15/99	SW 9045
IGNITABILITY*	>200	F		06/18/99	PMCC

**POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.10

REPORTED : 07/01/99

Attn: Sunita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.10
SAMPLE #: BYF33/MBTA51
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	UJ	mg/kg	06/21/99	06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY WESTON, INC.
LONG GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38993.11

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.11
SAMPLE #: BYF34/MBTA52
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	2.3	su		06/15/99	SW 9045
IGNITABILITY*	114	F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.11

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.11
SAMPLE #: BYF34/MBTA52
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY WESTON, INC.
[illegible] GEORGES POST ROAD
[illegible]
EDISON, NJ 08837-3720

REPORT : 38993.12

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.12
SAMPLE #: BYF35/MBTA53
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.3	su		06/15/99	SW 9045
IGNITABILITY*	109	F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 108
EDISON, NJ 08837-3720

REPORT : 38993.12

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.12
SAMPLE #: BYF35/MBTA53
LOCATION:
MATRIX : Other

SAMPLED : 06/04/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	UJ	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY[redacted]WESTON, INC.
109[redacted]NG GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38993.14

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.14
SAMPLE #: BYF37/MBTA54
LOCATION:
MATRIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	0.10	U	su		06/13/99	SW 9045
IGNITABILITY*	>200		F		06/18/99	PMCC

POUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

OY F. WESTON, INC.
090 KING GEORGES POST ROAD
UITE 301
DISON, NJ 08837-370

REPORT : 38993.14

REPORTED : 07/01/99

ttn: Sumita Sumbaly

ROJECT : RFP NO. 4820 REVISED
AB# : 38993.14
AMPLE #: BYF37/MBTA54
OCATION:
ATRIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

ZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

RAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
ACTIVE CYANIDE	5.5	J	mg/kg	06/21/99	06/23/99	SW 7.3.3.2
ACTIVE SULFIDE	20.0	U	mg/kg		06/15/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

DY [redacted] ESTON, INC.
190 [redacted] G GEORGES POST ROAD
[redacted]
DISON, NJ 08837-370

REPORT : 38993.15

REPORTED : [illegible]

ttn: Sumita Sumbaly

OJECT : RFP NO. 4820 REVISED
B# : 38993.15
IPLE #: BYF38/MBTA55
:ATION:
'RIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

:ARDOUS WASTE CHARACTERIZATION

RAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
RROSIVITY PH	0.10	J	su		06/13/99	SW 9045
NITABILITY*	109		F		06/18/99	PMCC

[redacted]

[redacted]

[redacted]

UND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38993.15

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.15
SAMPLE #: SYF38/MBTA55
LOCATION:
MATRIX : Other

SAMPLED : 06/03/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	2.3	J	mg/kg		06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/15/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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[redacted] WESTON, INC.
[redacted]ING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38993.16

REPORTED : 07/01.99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.16
SAMPLE #: BYF39/MBTA56
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	3.2	su		06/13/99	SW 9045
IGNITABILITY*	>200	F		06/18/99	PMCC

[redacted]POUND* = RESULTS REPORTED AS RECEIVED

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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-3720

REPORT : 38993.16

REPORTED : 07/01/99

ATTN: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38993.16
SAMPLE #: BYF39/MBTA56
LOCATION:
MATRIX : Other

SAMPLED : 06/02/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.29		mg/kg	J	06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/15/99	SW 7.3.4.2

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SDG NARRATIVE

CLIENT: WESTON
PROJECT: RFP #4820 Revised

DATE: 6/24/99
EPISODE NO.: 38992

INORGANIC FRACTION:

One water, two soil, and twelve other samples were submitted for reactive cyanide, reactive sulfide, pH electrometric, and ignitability analysis. The sample's analyses were completed according to the following:

SWL SOP #	Method SOP is based	Parameter
SWL-IN-309	SW846 7.3	Reactivity cyanide
SWL-IN-314	SW846 7.3	Reactivity sulfide
SWL-IN-405	SW846 9045B/9040A	pH Electrometric Measure.
SWL-IN-703	SW846 1010	Closed Cup Ignitability

Refer to Sample Receipt Notification for details of sample conditions at receipt. Explanations of the forms are the following:

Form 1 (Sample results) - will be provided by our Reporting Department.
Form 3 (Blanks) - This information is included on the QC spreadsheet.
Form 7 (Laboratory Control Sample) - Provided by the LCS/LCSD Quality Control Data Sheets.

Initial and Continuing Calibration Check: No problems.

Blanks: All blanks were below the reporting limit.

CRI (Low Standard): No problems.

Lab Control Spikes: No problems.

Sincerely,

Susan Turner for...
Deborah J. Inman
Inorganic Program Manager

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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.01

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.01
SAMPLE #: BYF40/MBTA57
LOCATION:
MATRIX : Soil

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 5.8

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	7.4	su		06/16/99	SW 9045
IGNITABILITY*	>200	F		06/18/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

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OY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.01

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.01
SAMPLE #: BYF40/MBTA57
LOCATION:
MATRIX : Soil

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 5.8

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg	06/21/99	06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/16/99	SW 7.3.4.2

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ROY F. WESTON, INC.
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SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38992.02

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.02
SAMPLE #: BYF41/MBTA58
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	2.8	su		06/24/99	SW 9045
IGNITABILITY*	>200	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

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SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.02

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.02
SAMPLE #: BYF41/MBTA58
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.03

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.03 MS1
SAMPLE #: BYF41/MBTA58
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.20 J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	6.9	mg/kg		06/14/99	SW 7.3.4.2

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SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.04

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.04 DUP
SAMPLE #: BYF41/MBTA58
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	2.8	su		06/24/99	SW 9045
IGNITABILITY*	>200	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

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EDISON, NJ 08837-370

REPORT : 38992.04

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.04 DUP
SAMPLE #: BYF41/MBTA58
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

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SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.06

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.06
SAMPLE #: BYF42/MBTA59
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	7.7	su		06/24/99	SW 9045
IGNITABILITY*	>200	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

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EDISON, NJ 08837-370

REPORT : 38992.06

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.06
SAMPLE #: BYF42/MBTA59
LOCATION:
MATRIX : Other

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.089	J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

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EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38992.07

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.07
SAMPLE #: BYF43/MBTA60
LOCATION:
MATRIX : Soil

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 5.6

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	7.3	su		06/14/99	SW 9045
IGNITABILITY*	>200	F		06/18/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

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ROY F. WESTON, INC.
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SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.07

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.07
SAMPLE #: BYF43/MBTA60
LOCATION:
MATRIX : Soil

SAMPLED : 06/07/99
SUBMITTED: 06/12/99

%MOISTURE: 5.6

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg	06/21/99	06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
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OY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38992.08

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.08
SAMPLE #: BYF44/MBTA61
LOCATION:
MATRIX : Water

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	1.3	su		06/13/99	SW 9045
IGNITABILITY	>200	F		06/18/99	PMCC

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ROY F. WESTON, INC.
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EDISON, NJ 08837-370

REPORT : 38992.08

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.08
SAMPLE #: BYF44/MBTA61
LOCATION:
MATRIX : Water

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	5.0	UJ	ug/l	06/19/99	06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	4.0	U	mg/l		06/15/99	SW 7.3.4.2

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DY F. WESTON, INC.
2090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38992.10

REPORTED : 07/01/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.10
SAMPLE #: BYF46/MBTA62
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.2	su		06/24/99	SW 9045
IGNITABILITY*	190	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.10

REPORTED : 09/23/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.10
SAMPLE #: BYF46/MBTA62
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	24.0		mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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OY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.11

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.11
SAMPLE #: BYF47/MBTA63
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.6	su		06/24/99	SW 9045
IGNITABILITY*	176	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.11

REPORTED : 09/23/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.11
SAMPLE #: BYF47/MBTA63
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0		mg/kg		06/14/99	SW 7.3.4.2

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1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.12

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.12
SAMPLE #: BYF48/MBTA64
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	0.10	su		06/24/99	SW 9045
IGNITABILITY*	>200	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
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EDISON, NJ 08837-370

REPORT : 38992.12

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.12
SAMPLE #: BYF48/MBTA64
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	UJ	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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Y F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.13

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.13
SAMPLE #: BYF49/MBTA65
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.2	su		06/24/99	SW 9045
IGNITABILITY*	172	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.13

REPORTED : 09/23/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.13
SAMPLE #: BYF49/MBTA65
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	24.0		mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

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1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.14

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.14
SAMPLE #: BYF50/MBTA66
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	4.6	su		06/24/99	SW 9045
IGNITABILITY*	162	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.
1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

Attn: Sumita Sumbaly

REPORT : 38992.14

REPORTED : 09/23/99

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.14
SAMPLE #: BYF50/MBTA66
LOCATION:
MATRIX : Other

SAMPLED : 06/08/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.25	U J	mg/kg		06/23/99	SW 7.3.3.2
REACTIVE SULFIDE	24.0		mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

[redacted] F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.16

REPORTED : 07/01/99

Attn: Sumita Sumbaly

[redacted]

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.16
SAMPLE #: BYF52/MBTA67
LOCATION:
MATRIX : Other

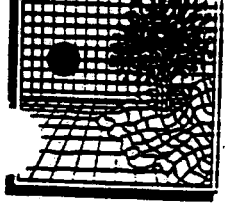
SAMPLED : 06/09/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	6.8	su		06/24/99	SW 9045
IGNITABILITY*	>200	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED



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ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.16

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.16
SAMPLE #: BYF52/MBTA67
LOCATION:
MATRIX : Other

SAMPLED : 06/09/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.17

REPORTED : 07/01/99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.17
SAMPLE #: BYF53/MBTA68
LOCATION:
MATRIX : Other

SAMPLED : 06/09/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
CORROSIVITY PH	5.2	su		06/24/99	SW 9045
IGNITABILITY*	127	f		06/17/99	PMCC

COMPOUND* = RESULTS REPORTED AS RECEIVED

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany Broken Arrow, Oklahoma 74012 Office (918) 251-2858 Fax (918) 251-2599

ROY F. WESTON, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837-370

REPORT : 38992.17

REPORTED : 07/01.99

Attn: Sumita Sumbaly

PROJECT : RFP NO. 4820 REVISED
LAB# : 38992.17
SAMPLE #: BYF53/MBTA68
LOCATION:
MATRIX : Other

SAMPLED : 06/09/99
SUBMITTED: 06/12/99

%MOISTURE: 0.0

HAZARDOUS WASTE CHARACTERIZATION REPORTED ON A DRY WEIGHT BASIS

PARAMETER	RESULTS**		UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
REACTIVE CYANIDE	0.025	U J	mg/kg		06/22/99	SW 7.3.3.2
REACTIVE SULFIDE	20.0	U	mg/kg		06/14/99	SW 7.3.4.2

APPENDIX G
Laboratory Analysis and Photo Log
Roy F. Weston, Inc

APPENDIX G-1

Laboratory Analysis
Roy F. Weston, Inc

WESTON® MANAGERS DESIGNERS/CONSULTANTS
Roy F. Weston, Inc.
Federal Programs Division
Suite 201
1090 King Georges Post Road
Edison, New Jersey 08837-3703
732-225-6116 • Fax 732-225-7037
SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019

START-02-F-03734

TRANSMITTAL MEMO

To: Irmee Huhn, OSC
Removal Action Branch, U.S. EPA Region II

From: Smita Sumbaly, Inorganic Data Reviewer
START Region II

Subject: Amenia Landfill Site
Data Validation Assessment

Date: August 02, 1999

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

TAL + CN	05 samples
RCRA parameters	05 samples
TCLP Metals	05 samples

- Matrices and Number of Samples

Drum	05 samples

- Sampling dates: June 4 & 9, 1999

The final data assessment narrative and original analytical data package are attached.

cc:	START PM:	David L. Adams
	START SITE FILE TDD #:	02-98-10-4780
	ANALYTICAL TDD #:	02-99-06-0001
	PCS#	4791

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: August 02, 1999

TO: Irmee Huhn, OSC
USEPA Region II

FROM: Smita Sumbaly
START Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Blanks
Spectra Matching Quality	DFTPP and BFB Tuning
Surrogate Spikes	Chromatography
Matrix Spikes/Duplicates	Holding Times
Calibration	Compound ID (HSL, TIC)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

	I Metals	II Cyanide	III RCRA	IV TCLP Metals
Acceptable as Submitted		X	X	X
Acceptable with Comments	X			
Unacceptable, Action Pending				
Unacceptable				

Data Reviewed by: Smita Sumbaly. Date: 08/02/99

Approved By: [signature] Date: 8/2/99

Area Code/Phone No.: (732) 225-6116

NARRATIVE

CASE No. 4791

SITE NAME: Amenia Landfill Site

Amenia, Dutchess County, New York.

Laboratory Name: Chemtech Consulting Group, (CHEM), 110 Route 4, Englewood., NJ.

INTRODUCTION:

The laboratory's portion of this Case consisted of five - drum samples collected on June 4 & 9, 1999.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with the analyses of Total Metals, Cyanide, TCLP metals & RCRA - Inorganic parameters.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

IV. Inorganic:-

_Y_ Data Summary/Tabulated Results
_Y_ Initial and Continuing Calibration
_Y_ Blanks
_Y_ ICP Interference Check
_Y_ Spike Sample Recovery
_Y_ Duplicates
_Y_ Detection Limits
_NA_ Standard Addition Results
_Y_ ICP Serial Dilutions
_Y_ Holding Times
_Y_ ICP Interelement Correction Factors
_Y_ ICP Linear Ranges
_Y_ Chain of Custody
_Y_ Raw Data
_Y_ Quantitation, Conversions, Dilutions, etc.

Comments:

1. Refer to Data Assessment Narrative.

Title: Evaluation of Inorganic Data for the Contract laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

Case #:RFP # 4791 **Site: Amenia Landfill Site**

SDG#: 12001T & 12092T **Lab: Chemtech Consulting group** **Matrix:**

Drum: 05

Contractor: WESTON-START **Reviewer: Smita Sumbaly** **Water:NA**

A.2.1 Validation Flags- The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as estimated.

Red- Line- A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully usable.

Contractual Qualifiers- The legend of contractual qualifiers applied by the laboratory on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is given below and on the attached sheets.

On 4 & 9 June 1999, USEPA Region II sampling personnel collected five (05) drum samples from the Amenia Landfill Site, Dutchess County, New York. On 4 June 1999, three samples were hand delivered and on 9 June 1999 two samples were shipped via Federal Express courier to Chemtech counsulting group; (CHEM), 110 Route 4, Englewood, NJ. The samples were analyzed for total metals, cyanide, TCLP metals & RCRA parameters. The laboratory verified that samples were received intact, properly preserved and in sealed shipping containers.

Target Analyte List (TAL + CN) inorganic analyses were performed following the Contract Laboratory Program (CLP) Statement of Work (SOW) number ILM04.0. RCRA parameters were analyzed according to EPA SW-846 method no. 1010 for ignitability; method no. 9045 for corrosivity; method no. 9010 for reactive cyanide and method no. 9030 for reactive sulfide. Toxic Compound Leaching Procedure inorganic compound analyses were performed following the SW846 Method Nos. 3010A/6010A (TCLP metals except for mercury) and 7470A (mercury).

A.2.2 (continuation)

Client identification (ID) and laboratory ID numbers are as follows:

Client ID No.	Laboratory ID No.	Matrix	Sampling Date
C-1	74601S	Drum	06/04/99
DL-119	74604S	Drum	06/04/99
DL-200[1]	74605S	Drum	06/04/99
132	74989S	Drum	06/09/99
232[2]	74992S	Drum	06/09/99

[1]) Drum sample DL-200 is a field duplicate sample of DL-119.

[2]) Drum sample 232 is a field duplicate sample of DL-132.

The results presented in the data package are acceptable with the exception noted in the following data assessment narrative.

CASE DESCRIPTION: RFP # 4791 consists of 05 drum samples from the Amenia Landfill Site.

Holding times: All samples were analyzed within holding times; holding times were not exceeded.

CALIBRATION: The correlation coefficient (r^2) of standard concentration versus absorbance readings is greater than (>) 0.995 for linear calibration curves generated in the data package.

RAW DATA: The laboratory provided the supporting raw data for this package. This data package contains summary of analytical results, blank results, initial & continuing calibration recovery, CRDL standard recovery, spike sample recovery, lab duplicate results, laboratory control sample results, serial dilution summary and analysis run log.

INITIAL/CONTINUING CALIBRATION VERIFICATION: ICV/CCV were run at appropriate intervals as noted on the Calibration Summary form. All ICV/CCV recoveries are within the acceptable range of 90 to 110%.

DUPLICATE ANALYSIS: Data met laboratory duplicate analysis QC criteria (≤ 20% RPD)

FIELD DUPLICATE ANALYSIS: Data met field duplicate analysis QC criteria (≤ 20% RPD)

LABORATORY CONTROL SAMPLES: LCS recoveries are within the acceptable range of 80-120%.

MATRIX SPIKE RECOVERY: Matrix Spike recoveries are within the acceptable range of 75-125%.

A.2.2 (continuation)

CRDL STANDARD RECOVERY: The following analytes were qualified estimated "J" due to Contract Required Detection Limit (CRDL) Standard Percent recoveries (% R) outside quality control limits and because their concentration fell within "affected ranges":

ANALYTE	% RECOVERY	AFFECTED RANGE	QUALIFIER	ASSOCIATED SAMPLES
Thallium	$76.2_{(F\ Run)}$	0.0-40 ug/l	"J"	C-1, DL-119 & DL-200

ICP SERIAL DILUTION:-

The following positive TAL inorganic data > 10 X IDL (or > CRDL when the CRDL is > 10 X IDL) were either qualified as estimated "J" or rejected "red-line" because the percent difference (% D) between the Initial Sample result (I) and the Serial dilution Sample result (S) is either between 10-100% or > 100% when the concentration of I is > 10 X IDL:

ANALYTE	CONTROL LIMIT	PERCENT DIFFERENCE	QUALIFIER	ASSOCIATED SAMPLES
Aluminum	> 200 ug/l	11.2%	"J"	C-1, DL-119 & DL-200
Copper	> 25 ug/l	12.3%	"J"	DL-119 & DL-200
Zinc	> 20 ug/l	36.3%	"J"	C-1, DL-119 & DL-200
Zinc	> 20 ug/l	37.4%	"J"	132

Resource Conservation Recovery Act (RCRA) Characteristics:

The laboratory provided analysis of a method blank at the beginning of the run. All analytical blank results are within QC criteria. (< MDL). QC runs for the package consists of a blank spike, matrix spike and matrix spike duplicate. All RPD values for blank spike duplicate analysis fall within ± 20% and no qualifications are necessary.

Reactive Cyanide: All samples do not exhibit characteristics of reactive cyanide.

Reactive sulfide: All samples do not exhibit characteristics of reactive sulfide.

Corrosivity: The pH/Corrosivity values were reported between 6.55 - 7.30 pH unit.

Ignitability: All samples ignited at > 100° C

TCLP Metals: The TCLP metals data package are acceptable with as reported.

A.2.2 (continuation)

A.2.3 Contract Problem/Non-Compliance:

The laboratory reported the % solids for metals as 100% solids because the sample was an oily phase. For the RCRA parameters, the lab reported percentage solids as the fraction of the solids remainly after filtration of the samples. No qualifications was required.

MMB/ESAT Reviewer: _____ Signature _____ Date:

Contractor Reviewer: Asmita Sunbaly Signature 08/05/99. Date:

Verified by: _____ Signature _____ Date:

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 04 & 08, 1999

SAMPLE #/CONCENTRATION (MG/KG)

Total Metals	Instrument Detection Limit (IDL)	SOIL C-1 74601S	SOIL DL-119 74604S	SOIL DL-200 74605S	SOIL 132 74989S	SOIL 232 74992S
Percent Solids		85.1	81.6	85.0	100.0	100.0
Dilution Factor		1.0	1.0	1.0	1.0	1.0
Aluminum	1.4	126 E J	217 E J	192 E J	3.9 B	6.4 B
Antimony	1.0	1.8 B	3.1 B	2.6 B	U	U
Arsenic	1.2	43.5	69.2	71.1	U	U
Barium	0.2	135	246	247	U	U
Beryllium	0.2	U	U	U	U	U
Cadmium	0.2	U	1.1 B	1.2	U	U
Calcium	2.0	978 B	1760	1820	114 B E	111 B E
Chromium	0.2	5.6	10.4	9.7	0.51 B	0.54 B
Cobalt	0.2	1.1 B	2.0 B	2.1 B	U	U
Copper	0.2	4.5 B	5.9 J	5.8 J	1.3 B	1.4 B
Iron	4.0	521	733	753	79.9	77.9
Lead	0.4	92.0	186	182	0.85	0.54 B
Magnesium	3.2	69.0 B	127 B	116 B	54.4 B	51.2 B
Manganese	0.2	10.6	18.7	19.3	25.5	25.3
Mercury	0.1	U	U	U	U	U
Nickel	0.2	29.1	48.5	50.3	U	U
Potassium	5.8	26.3 B	46.8 B	41.7 B	20.2 B	9.1 B
Selenium	0.8	1.4	1.4	1.2	U	U
Silver	0.2	U	U	U	U	U
Sodium	3.6	89.4 B	162 B	149 B	748 B	734 B
Thallium	1.4	U J	U J	U J	U	U
Vanadium	0.2	0.39 B	0.82 B	0.62 B	U	U
Zinc	0.2	10.1 J	18.0 J	18.0 J	4.8 J	3.1 B
Cyanide	0.2	U	U	U	U	U

Inorganic Qualifiers

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 04 & 08, 1999

(Unless otherwise indicated)
SAMPLE #/CONCENTRATION (mg/Kg)

RCRA Characteristic	Method Limit	Soil C-1 74601	Soil DL-119 74604	Soil DL-200 74605	Soil 132 74989	Soil 232 74992
Percent Moisture	mg/Kg	--	--	--	--	--
Dilution Factor		--	--	--	--	--
Reactive Sulfide	53.0 mg H2S/Kg	< 53.0	< 53.0	< 53.0	< 53.0	< 53.0
Reactive Cyanide	1.05 mg HCN/Kg	< 1.05	< 1.05	< 1.05	< 1.05	< 1.05
pH Determination	1-14 pH units	6.75	6.65	6.55	7.30	7.25
Ignitability	140°C (Upper Limit)	> 100°C	> 100°C	> 100°C	> 100°C	> 100°C

J - estimated value
R - rejected compound

OTHER ANALYTES WORK TABLE

Project: Amenia Landfill Site

Sampling Date: June 04 & 08, 1999 SAMPLE #/CONCENTRATION (ug/L)

TCLP Compounds	Regulatory Level	Water C-1 74601TS		Water DL-119 74604TS	Water DL-200 74605TS	Water 132 74989TS		Water 232 74992TS	
Dilution Factor		1.0		1.0	1.0	1.0		1.0	
TCLP Metals									
Arsenic	5000	34.2		372	381	U		U	
Barium	100000	5.1		27.7	30.1	U		U	
Cadmium	1000	53.9	B	443	457	3.3	B	2.7	B
Chromium	5000	1.3	B	26.9	28.6	U		U	
Lead	5000	U		U	U	U		U	
Mercury	200	U		U	U	123		128	
Selenium	1000	1.4	B	U	U	U		U	
Silver	5000	U		U	U	U		U	

U - non-detected compound
J - estimated value
B - between the instrument detection limit (IDL) and the contract required detection limit (CRDL)
R - rejected compound

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
DL-1321
DL-232

Lab Name: CHEMTECH CONSULTING GROUP Contract: Weston-START

Lab Code: CHEM RFP Case No.: 4791 SAS No.: N/A SDG No.: 12092 J

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids Sample: 100% % Solids Duplicate: 100%

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Action Limit	Sample (S) 132 Concentration	C	Field Duplicate (D) 232 Concentration	C	RPD	DIFF	Q	M
Aluminum	±200	19.4	B	31.8	B		<2xCRDL		P
Antimony			U		U	NC			P
Arsenic			U		U	NC			F
Barium			U		U	NC			P
Beryllium			U		U	NC			P
Cadmium			U		U	NC			P
Calcium	±10,000	571.9	B	553.7	B		<2xCRDL		P
Chromium	±20	2.5	B	2.7	B		<2xCRDL		P
Cobalt			U		U	NC			P
Copper	±50	6.3	B	6.9	B		<2xCRDL		F
Iron	±200	399.8		389.6			<2xCRDL		P
Lead	± 6	4.3		2.7	B		<2xCRDL		P
Magnesium	±10,000	272.1	B	256.1	B		<2xCRDL		P
Manganese		127.3		126.7		0.5			P
Mercury			U		U	NC			CV
Nickel			U		U	NC			P
Potassium	±10,000	101.0	B	45.6	B		<2xCRDL		P
Selenium			U		U	NC			F
Silver			U		U	NC			P
Sodium	±10,000	3738.6	B	3667.6	B		<2xCRDL		P
Thallium	-		U		U				F
Vanadium			U		U				P
Zinc	±40	23.8		15.7	B		<2xCRDL		P
Cyanide			U		U				NR

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
DL-119 &
DL-200

Lab Name: CHEMTECH CONSULTING GROUP Contract: WESTON-START

Lab Code: CHEM Case No.: RFP 4791 SAS No.: NIA SDG No.: 746055

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids Sample: 81.6 % Solids Duplicate: 85.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Action Limit	Sample (S) DL-200 Concentration	C	Field Duplicate (D) DL-119 Concentration	C	RPD	DIFF	Q	M
Aluminum	±400	831.59		922.61			<2xCRDL		P
Antimony	±120	11.47	B	13.11	B		<2xCRDL		P
Arsenic	100%	308.0		293.76		4.7			P
Barium	100%	1070.9		1042.4		2.7			P
Beryllium			U		U	NC			P
Cadmium	±10	5.16		4.78	B		<2xCRDL		P
Calcium	±10,000	7911.1		7481.0			<2xCRDL		P
Chromium	±20	41.99		44.13			<2xCRDL		P
Cobalt	±100	9.14	B	8.58	B		<2xCRDL		P
Copper	±50	25.09		25.18			<2xCRDL		P
Iron	100%	3264.4		3108.4		4.9			P
Lead	100%	788.07		788.15		.01			P
Magnesium	±10,000	500.98	B	537.61	B		<2xCRDL		P
Manganese	100%	83.63		79.44		5.1			P
Mercury			U		U	NC			CV
Nickel	100%	218.26		205.83		5.9			P
Potassium	±10,000	180.61	B	198.47	B		<2xCRDL		P
Selenium	±10	5.32		6.01			<2xCRDL		P
Silver			U		U	NC			P
Sodium	±10,000	644.10	B	688.8	B		<2xCRDL		P
Thallium	-		U		U	NC			F
Vanadium	±100	2.67	B	3.5	B		<2xCRDL		P
Zinc	±40	78.22		76.5			<2xCRDL		P
Cyanide			U		U	NC			NR

TCLP metals

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
132 1
232

Lab Name: CHEMTECH Consulting Group. Contract: WESTON-START

Lab Code: CHEM Case No.: 4791 SAS No.: — SDG No.: 12092I

Matrix (soil/water): Water Level (low/med): Low

% Solids Sample: N/A % Solids Duplicate: N/A

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Action Limit	Sample (S) 132 Concentration	C	Field Duplicate (D) 232 Concentration	C	RPD	DIFF	Q	M
Aluminum									P
Antimony									P
Arsenic			U		U	NC			F
Barium	200	3.3	B	2.7	B		<CRDL		P
Beryllium									P
Cadmium			U		U	NC			P
Calcium									P
Chromium			U		U	NC			P
Cobalt									P
Copper									F
Iron									P
Lead			U		U	NC			P
Magnesium									P
Manganese									P
Mercury			U		U	NC			CV
Nickel									P
Potassium									P
Selenium	50%	123		128		4.0%			F
Silver			U		U	NC			P
Sodium									P
Thallium	-								F
Vanadium									P
Zinc									P
Cyanide									NR

TCLP Metals

U.S. EPA – CLP

6
FIELD DUPLICATES

EPA SAMPLE NO.
DL-119 & DL-200.

Lab Name: CHEMTECH Consulting Group. Contract: WESTON-START

Lab Code: CHEM RFP Case No.: 4791 SAS No.: N/A SDG No.: 12001T

Matrix (soil/water): Water Level (low/med): Low.

% Solids Sample: N/A % Solids Duplicate: N/A

Concentration Units (ug/L or mg/kg dry weight): ug/L

Analyte	Action Limit	Sample (S) DL-119 Concentration	C	Field Duplicate (D) DL-200 Concentration	C	RPD	DIFF	Q	M
Aluminum									P
Antimony									P
Arsenic	50%	372		381		2.4			F
Barium	±400	443		457			<CRDL		P
Beryllium									P
Cadmium	50%	26.9		28.6		6.1			P
Calcium									P
Chromium			U		U	NC			P
Cobalt									P
Copper									P
Iron									P
Lead		27.7		30.1		8.3			P
Magnesium									P
Manganese									P
Mercury			U		U	NC			CV
Nickel									P
Potassium									P
Selenium			U		U	NC			F
Silver			U		U	NC			P
Sodium									P
Thallium									F
Vanadium									P
Zinc									P
Cyanide									NR

U.S. EPA - CLP

6
FIELD DUPLICATE

EPA SAMPLE NO.
DL-119 & DL-200
132 & 232.

LAB NAME: CHEMTECH Consulting Grp. CONTRACT: WESTON-START

LAB CODE: CHEM ~~CASE~~ RFP NO.: 4791 SAS NO.: N/A SDG.:

MATRIX (SOIL/WATER): Soil LEVEL(LOW/MED): low

% SOLIDS FOR SAMPLE: % SOLIDS FOR DUPLICATE:

CONCENTRATION UNITS (UG/L OR MG/KG DRY WEIGHT): ~~mg/kg~~ pH Units

ANALYTE	CONTROL LIMIT	SAMPLE(S) DL-119	C	DUPLICATE(S) DL-200	C	RPD	Q	M
pH		6.65		6.55		0.1		

ANALYTE	CONTROL LIMIT	SAMPLE(S) 132	C	DUPLICATE(S) 232	C	RPD	Q	M
pH		7.30		7.25		.05		

CHEMTECH

CASE NARRATIVE

Roy F. Weston, Inc.
RFP # 4791
PO # 0001771
Chemtech # 12001 LP

A. Number of Samples and Date of Sample Receipt:
3 Soil samples plus a MS/MSD were delivered to the laboratory intact on 06/04/99.

B. Parameters:
Tests requested on the Chain of Custody were Volatile Organics, TCLP Volatile Organics, Semivolatile Organics, TCLP Semivolatile Organics, Pest/PCBs, TCLP Pesticides, TCLP Herbicides, Total Metals, TCLP Metals, Cyanide & General Chemistry. This data package contains results for Total Metals & General Chemistry.

C. Analytical Techniques:
The analysis of Total Metals is based on CLP Methodology, Mercury by Method 245.1 and Cyanide by Method 335.2. Ignitibility is based on Method 1010, Corrosivity by Method Y9045, Sulfide-Reactivity by Method 9030, Cyanide-Reactivity by Method 9010 and Percent Solids by Method 160.3.

D. QA/ QC Samples
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Spike Sample recoveries were within QC limits. Serial Dilutions met requirements except for the Aluminum. Duplicate analyses and RPDs met QC requirements. Holding Times were met.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature _____ Name Divyajit Mehta

Date 6/17/99 Title Laboratory Director

CHEMTECH

COVER PAGE

Lab Name: Chemtech Consulting Group
Lab Code: CHEM Project No.: 12001LP

Client: ROY F. WESTON, INC.
Project Name: REF# 4791

Client Sample No.	Lab Sample ID
C-1	74601
C-1MS	74602
C-1MSD	74603
DL-119	74604
DL-200	74605

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designed, as verified by the following signature.

Signature: _____ Name: DIVYAJIT MEHTA

Date : 6/17/99 Title: LAB DIRECTOR

000002

CHEMTECH CONSULTING GROUP, INC.

110 ROUTE 4
ENGLEWOOD, NEW JERSEY 07631

PHONE NUMBER: (201) 567-6868
FAX NUMBER: (201) 567-1333

FAX
COVER SHEET

Date: 8/3//99

Number of Pages: 1 + 4
(Including this page)

Company: Roy F. Weston
1090 King George Post Rd.
Edison, NJ 08837

Fax No.: 732-225-7030

Phone No.: 732-225-6116

Subject: Project No. 12092LP

Attention: Smita Sumbaly

From: Lalit Raythatha

Message:

The samples we received for this projects were difficult to classify clearly as solid or liquid due to OILY phase. We reported all analysis considering SOLID matrix i.e.100% solids. We also reported percentage solids as fraction of the solids remained after filtration of this sample.

Please call me if you have any questions.

I am also faxing raw data for 11739LP project.

If you do not receive all pages, please phone the sender immediately

CHEMTECH

DATA REPORTING QUALIFIERS - - INORGANIC

For reporting results, the following "Results Qualifiers" are used:

B - If the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).

U - If the analyte was analyzed for, but not detected.

E - The reported value is estimated because of the presence of interference.

M - Duplicate injection precision not met.

N - Spiked sample recovery not within control limits.

S - The reported value was determined by the Method of Standard Additions (MSA).

W - Post-digestion spike for Furnace AA analysis is out of control limits (85 - 115%), while sample absorbance is less than 50% of spike absorbance.

*** -** Duplicate analysis not within control limits.

+ - Correlation coefficient for the MSA is less than 0.995.

***** -** Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can appear in the same field for an analyte.

M (Method) qualifier

"P" for ICP
"A" for Flame AA
"F" for Furnace AA
"PM" for ICP when Microwave Digestion is used
"AM" for flame AA when Microwave Digestion is used
"FM" for furnace AA when Microwave Digestion is used
"CV" for Manual Cold Vapor AA
"AV" for automated Cold Vapor AA
"CA" for Midi-Distillation Spectrophotometric
"AS" for Semi-Automated Spectrophotometric
"C" for Manual Spectrophotometric
"T" for Titrimetric
"NR" if the analyte is not required to be analyzed

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

C-1

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001

Matrix (soil/water): SOIL Lab Sample ID: 74601S

Level (low/med): LOW Date Received: 06/07/99

% Solids: 85.1

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	126		E 4	P
7440-36-0	Antimony	1.8	B		P
7440-38-2	Arsenic	43.5			P
7440-39-3	Barium	135			P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium	0.24	U		P
7440-70-2	Calcium	978	B		P
7440-47-3	Chromium	5.6			P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	4.5	B		P
7439-89-6	Iron	521			P
7439-92-1	Lead	92.0			P
7439-95-4	Magnesium	69.0	B		P
7439-96-5	Manganese	10.6			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	29.1			P
7440-09-7	Potassium	26.3	B		P
7782-49-2	Selenium	1.4			P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	89.4	B		P
7440-28-0	Thallium	1.6	U	4	P
7440-62-2	Vanadium	0.39	B		P
7440-66-6	Zinc	10.1		4	P
	Cyanide	0.24	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

EPA SAMPLE NO.

DL-119

INORGANIC ANALYSIS DATA SHEET

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001

Matrix (soil/water): SOIL Lab Sample ID: 74604S

Level (low/med): LOW Date Received: 06/07/99

% Solids: 81.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	217		E J	P
7440-36-0	Antimony	3.1	B		P
7440-38-2	Arsenic	69.2			P
7440-39-3	Barium	246			P
7440-41-7	Beryllium	0.24	U		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	1760			P
7440-47-3	Chromium	10.4			P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	5.9		J	P
7439-89-6	Iron	733			P
7439-92-1	Lead	186			P
7439-95-4	Magnesium	127	B		P
7439-96-5	Manganese	18.7			P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	48.5			P
7440-09-7	Potassium	46.8	B		P
7782-49-2	Selenium	1.4			P
7440-22-4	Silver	0.24	U		P
7440-23-5	Sodium	162	B		P
7440-28-0	Thallium	1.6	U	J	P
7440-62-2	Vanadium	0.82	B		P
7440-66-6	Zinc	18.0		J	P
	Cyanide	0.25	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

CHEMTECH

LABORATORY REPORT

REPORT OF ANALYSES

ROY F. WESTON, INC.
1090 KING GEORGE POST RD
EDISON, NJ 08837-3703
Attn: SMITA SUMBALY

DATE: 06/11/99

PROJECT # 12001 LP

SAMPLE NUMBER- 74604
DATE SAMPLED- 06/03/99
DATE RECEIVED- 06/04/99
DELIVERED BY- CLIENT

SAMPLE ID- DL-119
SAMPLER- CLIENT
TIME RECEIVED- 1430
RECEIVED BY- AD SAMPLE MATRIX- SO

ANALYSIS	METHOD	ANALYSIS DATE	TIME	BY	RESULT	UNITS
IGNITIBILITY	1010	06/07/99		HCP	>100	Degree C
CORROSIVITY	Y9045	06/07/99		HSP	6.65	pH Unit
SULFIDE-REACTIVITY	9030	06/08/99		PPS	< 53.0	mg/kg
CYANIDE-REACTIVITY	9010	06/08/99		PPS	<1.05	mg/Kg
SOLIDS, PERCENT	160.3	06/07/99		VP	81.65	%

LABORATORY DIRECTOR

000069

110 Route 4
Englewood, New Jersey 07631
Phone: (201) 567-6868 Fax: (201) 567-1333

515 Route 9
Barnegat, New Jersey 08005
Phone: (609) 698-0199 Fax: (609) 698-0910

NYSDOH Certification No. 10624
NJDEP Certification No. 02548

NJDEP Certification No. 15004

CHEMTECH

LABORATORY REPORT

REPORT OF ANALYSES

ROY F. WESTON, INC.
1090 KING GEORGE POST RD
EDISON, NJ 08837-3703
Attn: SMITA SUMBALY

DATE: 06/11/99

PROJECT # 12001 LP

SAMPLE NUMBER- 74601 SAMPLE ID- C-1
DATE SAMPLED- 06/03/99 SAMPLER- CLIENT
DATE RECEIVED- 06/04/99 TIME RECEIVED- 1430
DELIVERED BY- CLIENT RECEIVED BY- AD SAMPLE MATRIX- SO

ANALYSIS	METHOD	ANALYSIS DATE	TIME	BY	RESULT	UNITS
IGNITIBILITY	1010	06/07/99		HCP	>100	Degree C
CORROSIVITY	Y9045	06/07/99		HSP	6.75	pH Unit
SULFIDE-REACTIVITY	9030	06/08/99		PPS	< 53.0	mg/kg
CYANIDE-REACTIVITY	9010	06/08/99		PPS	<1.05	mg/Kg
SOLIDS, PERCENT	160.3	06/07/99		VP	85.14	%

LABORATORY DIRECTOR _____

000007

110 Route 4
Englewood, New Jersey 07631
Phone: (201) 567-6868 Fax: (201) 567-1333

515 Route 9
Barnegat, New Jersey 08005
Phone: (609) 698-0199 Fax: (609) 698-0910

NYSDOH Certification No. 10624
NJDEP Certification No. 02548

NJDEP Certification No. 15004

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DL-200

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001

Matrix (soil/water): SOIL Lab Sample ID: 74605S

Level (low/med): LOW Date Received: 06/04/99

% Solids: 85.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	192		E J	P
7440-36-0	Antimony	2.6	B		P
7440-38-2	Arsenic	71.1			P
7440-39-3	Barium	247			P
7440-41-7	Beryllium	0.23	U		P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	1820			P
7440-47-3	Chromium	9.7			P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	5.8		J	P
7439-89-6	Iron	753			P
7439-92-1	Lead	182			P
7439-95-4	Magnesium	116	B		P
7439-96-5	Manganese	19.3			P
7439-97-6	Mercury	0.11	U		CV
7440-02-0	Nickel	50.3			P
7440-09-7	Potassium	41.7	B		P
7782-49-2	Selenium	1.2			P
7440-22-4	Silver	0.23	U		P
7440-23-5	Sodium	149	B		P
7440-28-0	Thallium	1.6	U	J	P
7440-62-2	Vanadium	0.62	B		P
7440-66-6	Zinc	18.0		J	P
	Cyanide	0.24	U		CA

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

CHEMTECH

LABORATORY REPORT

REPORT OF ANALYSES

ROY F. WESTON, INC.
1090 KING GEORGE POST RD
EDISON, NJ 08837-3703
Attn: SMITA SUMBALY

DATE: 06/11/99

PROJECT # 12001 LP

SAMPLE NUMBER- 74605
DATE SAMPLED- 06/03/99
DATE RECEIVED- 06/04/99
DELIVERED BY- CLIENT

SAMPLE ID- DL-200
SAMPLER- CLIENT
TIME RECEIVED- 1430
RECEIVED BY- AD SAMPLE MATRIX- SO

Page 1 of 1

ANALYSIS	METHOD	ANALYSIS DATE	TIME	BY	RESULT	UNITS
IGNITIBILITY	1010	06/07/99		HCP	>100	Degree C
CORROSIVITY	Y9045	06/07/99		HSP	6.55	pH Unit
SULFIDE-REACTIVITY	9030	06/08/99		PPS	< 53.0	mg/kg
CYANIDE-REACTIVITY	9010	06/08/99		PPS	<1.05	mg/Kg
SOLIDS, PERCENT	160.3	06/07/99		VP	84.96	%

LABORATORY DIRECTOR

000011

110 Route 4
Englewood, New Jersey 07631
Phone: (201) 567-6868 Fax: (201) 567-1333

515 Route 9
Barnegat, New Jersey 08005
Phone: (609) 698-0199 Fax: (609) 698-0910

NYSDOH Certification No. 10624
NJDEP Certification No. 02548

NJDEP Certification No. 15004

 12001LP

CHAIN OF CUSTODY RECORD

WESTON

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019
Phone: 908-225-6116 Fax: 908-225-7037

Matrix Box No.	
1. Surface Water	1. HCl
2. Ground Water	2. HNO3
3. Leachate	3. Na2SO4
4. Rinsate	4. H2SO4
5. Soil/Sediment	5. Other (Specify)
6. Oil	6. Ice Only
7. Waste	N. Not Preserved
8. Other (Specify)	* See Comments

4791

No.

001771

Send verbal and written results to: Roy F. Weston, Inc., USEPA Region II START
Suite 201, 1090 King Georges Post Road, Edison, New Jersey 08837-3703
Attention: Smita Sumbaly, START Analytical Coordinator

Sample Number	Sample Collection MM/DD/YY/Time	Sample Matrix (Enter box #)	Conc. Low-L Med-M High-H	Sample Type Comp-C Grab-G	Sample Preserv. (Enter box #)	HAS ANALYSIS VOA	ENA	PEST	PCBs	TAL	GN	RCRA ANALYSIS KIN	COR	REAC	OTHER
1C-1	06/~~03~~ 04/99 (B)	7	M	C	6	X	X	X	X	X	X	X	X	X	MS/MSD Full TCLP (PA)
4DL-119	06/~~03~~ 04/99 (B)	7	M	G	6	X	X	X	X	X	X	X	X	X	— Full TCLP (PA)
4DL-200	06/~~03~~ 04/99 (B)	7	M	G	6	X	X	X	X	X	X	X	X	X	— Full TCLP (PA)

Comments: C1 - triple volume for MS/MSD

Person Assuming Responsibility for Sample: Michael A Mercado [signature]

Time: 1930 Date (MM/DD/YY): 6/3/99

Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody
ALL	[signature]	1139	6/4/99	David L Adams	transport to lab
ALL	David Adams	1426	6/4/99	Sunny Patel. 6/4/99 14:26.	
					000130

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION
In Association with Resource Applications, Inc., R.E. Sarriera Associates, PRC Environmental
... and CRE Environmental Services, Inc.

CHEMTECH

CASE NARRATIVE

Roy F. Weston, Inc.
RFP # 4791
PO # 0001771
Chemtech # 12001 LP

A. Number of Samples and Date of Sample Receipt:
3 Soil samples plus a MS/MSD were delivered to the laboratory intact on 06/04/99.

B. Parameters:
Tests requested on the Chain of Custody were Volatile Organics, TCLP Volatile Organics, Semivolatile Organics, TCLP Semivolatile Organics, Pest/PCBs, TCLP Pesticides, TCLP Herbicides, Total Metals, TCLP Metals, Cyanide & General Chemistry. This data package contains results for TCLP Metals.

C. Analytical Techniques:
The analysis of TCLP Metals is based on Method 6010 and Mercury by Method 7470.

D. QA/ QC Samples
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Spike Sample recoveries were within QC limits. Serial Dilutions met requirements. Duplicate analyses and RPDs met QC requirements. Holding Times were met.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature _____ Name_Divyajit Mehta_____

Date 6/17/99 Title Laboratory Director

00001

6/14/99

CHEMTECH

COVER PAGE

Lab Name: Chemtech Consulting Group
Lab Code: CHEM Project No.: 12001LP

Client: ROY F. WESTON, INC.
Project Name: REF# 4791

Client Sample No.	Lab Sample ID
C-1	74601
C-1MS	74602
C-1MSD	74603
DL-119	74604
DL-200	74605

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designed, as verified by the following signature.

Signature: _____ Name: DIVYAJIT MEHTA

Date : 6/17/94 Title: LAB DIRECTOR

EPA SAMPLE NO.

C-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001T

Matrix (soil/water): SOIL Lab Sample ID: 74601TS

Level (low/med): LOW Date Received: 06/04/99

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	34.2			P
7439-92-1	Lead	5.1			P
7440-39-3	Barium	53.9	B		P
7440-43-9	Cadmium	1.3	B		P
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.4	B		P
7440-47-3	Chromium	1.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TCLP EXTRACT

000006

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DL-119

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001T

Matrix (soil/water): SOIL Lab Sample ID: 74604TS

Level (low/med): LOW Date Received: 06/04/99

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	372			P
7439-92-1	Lead	27.7			P
7440-39-3	Barium	443			P
7440-43-9	Cadmium	26.9			P
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.0	U		P
7440-47-3	Chromium	1.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TCLP EXTRACT

000007

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

DL-200

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12001T

Matrix (soil/water): SOIL Lab Sample ID: 74605TS

Level (low/med): LOW Date Received: 06/04/99

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	381			P
7439-92-1	Lead	30.1			P
7440-39-3	Barium	457			P
7440-43-9	Cadmium	28.6			P
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	4.0	U		P
7440-22-4	Silver	1.0	U		P
7440-47-3	Chromium	1.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TCLP EXTRACT

000008

 12001LP

791

01771

CHAIN OF CUSTODY RECORD

WESTON

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019
Phone: 908-225-6116 Fax: 908-225-7037

Matrix Box No.	Preservation
1. Surface Water	1. HCl
2. Ground Water	2. HNO3
3. Leachate	3. Na2SO4
4. Rinsate	4. H2SO4
5. Soil/Sediment	5. Other (Specify)
6. Oil	6. Ice Only
7. Waste	N. Not Preserved
8. Other (Specify)	* See Comments

verbal and written results to: Roy F. Weston, Inc., USEPA Region II START
Suite 201, 1090 King Georges Post Road, Edison, New Jersey 08837-3703
Attention: Smita Sumbaly, START Analytical Coordinator

Sample Number	Sample Collection MM/DD/YY/Time	Sample Matrix (Enter box #)	Conc. Low-L Med-M High-H	Sample Type Comp-C Grab-G	Sample Preserv. (Enter box #)	EAS ANALYSIS VOA	ENA	PEST	PCBs	TAL	CN	RCRA ANALYSIS KIN	COR	RHAC	OTHER
C-1	06/~~03~~ 04/99	7	M	C	6	X	X	X	X	X	X	X	X	X	MS/MSD Full TCLP (PA)
DL-119	06/~~03~~ 04/99 (B)	7	M	G	6	X	X	X	X	X	X	X	X	X	— Full TCLP (PA)
DL-200	06/~~03~~ 04/99	7	M	G	6	X	X	X	X	X	X	X	X	X	— Full TCLP (PA)

Comments: C1 - triple volume for MS/MSD

Person Assuming Responsibility for Sample: Michael A Mercado [signature]

Time	Date (MM/DD/YY)
1930	6/3/99

Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody
ALL	[signature]	1139	6/4/99	David L Adams	transport to lab
ALL	David Adams	1426	6/4/99	Sunny Patel. 6/4/99 14:26.	
					000158

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION
[illegible] Resource Applications, Inc., R.E. Sarriera Associates, PRC Environmental

CHEMTECH

CASE NARRATIVE

Roy F. Weston, Inc.
RFP # 4791
PO # 0001771
Chemtech # 12092 LP

A. Number of Samples and Date of Sample Receipt:
2 Soil samples plus a MS/MSD were delivered to the laboratory intact on 06/10/99.

B. Parameters:
Tests requested on the Chain of Custody were Volatile Organics, TCLP Volatile Organics, Semivolatile Organics, TCLP Semivolatile Organics, Pest/PCBs, TCLP Pesticides, TCLP Herbicides, Total Metals, TCLP Metals, Cyanide & General Chemistry. This data package contains results for Total Metals & General Chemistry.

C. Analytical Techniques:
The analysis of Total Metals is based on CLP Methodology, Mercury by Method 245.1 and Cyanide by Method 335.2. Ignitibility is based on Method 1010, Corrosivity by Method Y9045, Sulfide-Reactivity by Method 9030, Cyanide-Reactivity by Method 9010 and Percent Solids by Method 160.3.

D. QA/QC Samples
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Spike Sample recoveries were within QC limits. Serial Dilutions met requirements except for the Calcium. Duplicate analyses and RPDs met QC requirements. Holding Times were met.

All Samples were reported as wet weight basis because type of samples were almost liquid where % solids found very low.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature _____ Name Divyajit Mehta

Date 6/25/99 Title Laboratory Director

C00001

CHEMTECH

COVER PAGE

Lab Name: Chemtech Consulting Group
Lab Code: CHEM Project No.: 12092LP

Client: ROY F. WESTON, INC.
Project Name: RFP # 4791

Client Sample No.	Lab Sample ID
132	74989
132MS	74990
132MSD	74991
232	74992

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designed, as verified by the following signature.

Signature: _____ Name: DIVYAJIT MEHTA

Date : 6/22/99 Title: LAB DIRECTOR

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

132

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12092

Matrix (soil/water): SOIL Lab Sample ID: 74989S

Level (low/med): LOW Date Received: 06/10/99

% Solids: 100.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3.9	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.2	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	114	B	E	P
7440-47-3	Chromium	0.51	B		P
7440-48-4	Cobalt	0.20	U		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	79.9			P
7439-92-1	Lead	0.85			P
7439-95-4	Magnesium	54.4	B		P
7439-96-5	Manganese	25.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.20	U		P
7440-09-7	Potassium	20.2	B		P
7782-49-2	Selenium	0.80	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	748	B		P
7440-28-0	Thallium	1.4	U		P
7440-62-2	Vanadium	0.20	U		P
7440-66-6	Zinc	4.8		J	P
	Cyanide	0.20	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

232

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12092

Matrix (soil/water): SOIL Lab Sample ID: 74992S

Level (low/med): LOW Date Received: 06/10/99

% Solids: 100.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6.4	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.2	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	111	B	E	P
7440-47-3	Chromium	0.54	B		P
7440-48-4	Cobalt	0.20	U		P
7440-50-8	Copper	1.4	B		P
7439-89-6	Iron	77.9			P
7439-92-1	Lead	0.54	B		P
7439-95-4	Magnesium	51.2	B		P
7439-96-5	Manganese	25.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.20	U		P
7440-09-7	Potassium	9.1	B		P
7782-49-2	Selenium	0.80	U		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	734	B		P
7440-28-0	Thallium	1.4	U		P
7440-62-2	Vanadium	0.20	U		P
7440-66-6	Zinc	3.1	B		P
	Cyanide	0.20	U		CA

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

CHEMTECH

LABORATORY REPORT

13

REPORT OF ANALYSES

ROY F. WESTON, INC.
1090 KING GEORGE POST RD
EDISON, NJ 08837-3703
Attn: SMITA SUMBALY

DATE: 06/15/99

PROJECT # 12092 LP

SAMPLE NUMBER- 74989
DATE SAMPLED- 06/08/99
DATE RECEIVED- 06/10/99
DELIVERED BY- FEDEX

SAMPLE ID- 132
TIME SAMPLED- 0830 SAMPLER- CLIENT
TIME RECEIVED- 0930
RECEIVED BY- AD SAMPLE MATRIX- SO

Page 1 of 1

ANALYSIS	METHOD	ANALYSIS DATE	TIME	BY	RESULT	UNITS
IGNITIBILITY	1010	06/14/99		HCP	>100	Degree
CORROSIVITY	Y9045	06/14/99		HSP	7.30	pH Uni
SULFIDE-REACTIVITY	9030	06/15/99		BP	<53.0	mg/kg
CYANIDE-REACTIVITY	9010	06/15/99		BP	<1.05	mg/Kg
SOLIDS, PERCENT	160.3	06/11/99		VP	.9372	%

COMMENTS: % Solid found very low because the sample was almost liquid.

LABORATORY DIRECTOR

100007

110 Route 4
Englewood, New Jersey 07631
Phone: (201) 567-6868 Fax: (201) 567-1333

515 Route 9
Barnegat, New Jersey 08005
Phone: (609) 698-0199 Fax: (609) 698-0910

NYSDOH Certification No. 10624
NJDEP Certification No. 02548

NJDEP Certification No. 15004

CHEMTECH

LABORATORY REPORT

13

REPORT OF ANALYSES

ROY F. WESTON, INC.
1090 KING GEORGE POST RD
EDISON, NJ 08837-3703
Attn: SMITA SUMBALY

DATE: 06/15/99

PROJECT # 12092 LP

SAMPLE NUMBER- 74992
DATE SAMPLED- 06/08/99
DATE RECEIVED- 06/10/99
DELIVERED BY- FEDEX

SAMPLE ID- 232
TIME SAMPLED- 0830 SAMPLER- CLIENT
TIME RECEIVED- 0930
RECEIVED BY- AD SAMPLE MATRIX- SO

Page 1 of 1

ANALYSIS	METHOD	ANALYSIS DATE	TIME	BY	RESULT	UNITS
IGNITIBILITY	1010	06/14/99		HCP	>100	Degree
CORROSIVITY	Y9045	06/14/99		HSP	7.25	pH Uni
SULFIDE-REACTIVITY	9030	06/15/99		BP	<53.0	mg/kg
CYANIDE-REACTIVITY	9010	06/15/99		BP	<1.05	mg/Kg
SOLIDS, PERCENT	160.3	06/11/99		VP	.939	%

COMMENTS: % Solid found very low because the sample was almost liquid.

LABORATORY DIRECTOR

n00009

110 Route 4
Englewood, New Jersey 07631
Phone: (201) 567-6868 Fax: (201) 567-1333

515 Route 9
Barnegat, New Jersey 08005
Phone: (609) 698-0199 Fax: (609) 698-0910

NYSDOH Certification No. 10624
NJDEP Certification No. 02548

NJDEP Certification No. 15004

CHEMTECH

CASE NARRATIVE

Roy F. Weston, Inc.
RFP # 4791
PO # 0001771
Chemtech # 12092 LP

A. Number of Samples and Date of Sample Receipt:
2 Soil samples plus a MS/MSD were delivered to the laboratory intact on 06/10/99.

B. Parameters:
Tests requested on the Chain of Custody were Volatile Organics, TCLP Volatile Organics, Semivolatile Organics, TCLP Semivolatile Organics, Pest/PCBs, TCLP Pesticides, TCLP Herbicides, Total Metals, TCLP Metals, Cyanide & General Chemistry. This data package contains results for TCLP Metals.

C. Analytical Techniques:
The analysis of TCLP Metals is based on Method 6010 and Mercury by Method 7470A.

D. QA/ QC Samples
Calibrations met requirements. Blank analyses did not indicate the presence of contamination. Spike Sample recoveries were within QC limits. Serial Dilutions met requirements. Duplicate analyses and RPDs met QC requirements. Holding Times were met.

I certify that the data package is in compliance with the terms and conditions of the contract both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature _____ Name_Divyajit Mehta_____

Date 6/23/99 Title Laboratory Director

CHEMTECH

COVER PAGE

Lab Name: Chemtech Consulting Group
Lab Code: CHEM Project No.: 12092LP

Client: ROY F. WESTON, INC.
Project Name: RFP # 4791

Client Sample No.	Lab Sample ID
132	74989
132MS	74990
132MSD	74991
232	74992

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designed, as verified by the following signature.

Signature: _____ Name: DIVYAJIT MEHTA

Date : 6/23/99 Title: LAB DIRECTOR

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

132

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12092T

Matrix (soil/water): SOIL Lab Sample ID: 74989TS

Level (low/med): LOW Date Received: 06/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	6.0	U		P
7439-92-1	Lead	2.0	U		P
7440-39-3	Barium	3.3	B		P
7440-43-9	Cadmium	1.0	U		P
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	123			P
7440-22-4	Silver	1.0	U		P
7440-47-3	Chromium	1.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TCLP EXTRACT

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

232

Lab Name: CHEMTECH CONSULTING GROUP Contract:

Lab Code: CHEM Case No.: SAS No.: SDG No.: 12092T

Matrix (soil/water): SOIL Lab Sample ID: 74992TS

Level (low/med): LOW Date Received: 06/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	6.0	U		P
7439-92-1	Lead	2.0	U		P
7440-39-3	Barium	2.7	B		P
7440-43-9	Cadmium	1.0	U		P
7439-97-6	Mercury	0.20	U		CV
7782-49-2	Selenium	128			P
7440-22-4	Silver	1.0	U		P
7440-47-3	Chromium	1.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

TCLP EXTRACT

CHAIN OF CUSTODY RECORD

RFP No.: 4791

PO No.: 0001771

WESTON

SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM
EPA CONTRACT 68-W5-0019
Phone: 908-225-6116 Fax: 908-225-7037

Matrix Box No.:	Preservative Box No.:
1. Surface Water	1. HCl
2. Ground Water	2. HNO3
3. Leachate	3. Na2SO4
4. Rinsate	4. H2SO4
5. Soil/Sediment	5. Other (Specify)
6. Oil	6. Ice Only
7. Waste	N. Not Preserved
8. Other (Specify)	* See Comments

2092

Send verbal and written results to: Roy F. Weston, Inc., USEPA Region II START
Suite 201, 1090 King Georges Post Road, Edison, New Jersey 08837-3703
Attention: Smita Sumbaly, START Analytical Coordinator

Sample Number	Sample Collection MM/DD/YY/Time	Sample Matrix (Enter box #)	Conc. Low-L Med-M High-H	Sample Type Comp-C Grab-G	Sample Preserv. (Enter box #s)	RAS ANALYSIS VOA	BNA	PEST	PCBs	TAL	CN	RCRA ANALYSIS IGN	COR	REAC	OTHER
132	06/08/99 0830	7	M	G	6	X	X	X	X	X	X	X	X	X	Full TCLP MS/MSD
232	06/08/99 0830	7	M	G	6	X	X	X	X	X	X	X	X	X	Full TCLP
															DD
															DD

Comments: 132 triple volume for MS/MSD Temp. 4°C

Person Assuming Responsibility for Sample: Michael A Mercado

Time Date (MM/DD/YY): 6/9/99

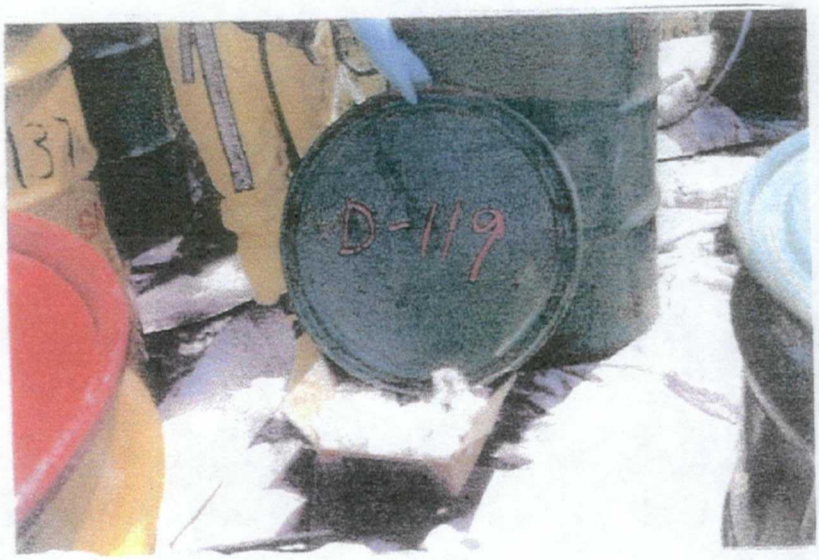
Sample Number	Relinquished By:	Time	Date	Received By:	Reason for Change of Custody
All		1242	6/9/99		Shipment to lab
All		1245	6/9/99	Fed Ex	Shipment
		0930	6/10/99		

Roy F. Weston, Inc.
FEDERAL PROGRAMS DIVISION
In Association with Resource Applications, Inc., R.E. Sarriera Associates, PRC Environmental Management, C.C. Johnson & Malhotra, P.C., and GRB Environmental Services, Inc.

000083

APPENDIX G-2
Photo Log
Roy F. Weston, Inc

These drum samples were sent out for analysis by START in addition to DESA for quick turnaround. The sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Arsenic, antimony, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in the sample. A summary of the analysis can be found in Attachment G.



Picture #9, Roll 1,
Amenia Landfill Site Drum
Samples DL-119

Picture #8, Roll 2,
Amenia Landfill Site
Drum Samples DL-132

Picture of solid drum samples sent out for analysis by START. The sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Chromium, copper, lead, manganese, sodium and zinc were detected in the sample. A summary can be found in Appendix G.

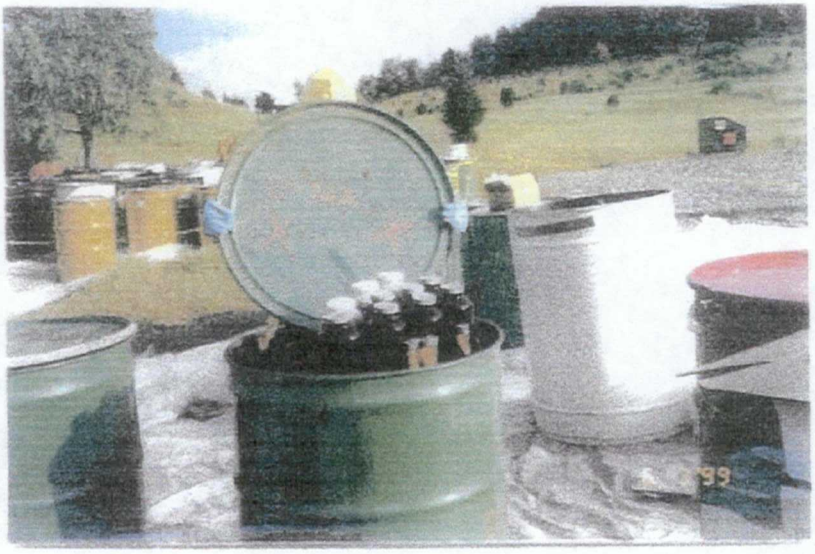
Picture of liquid drum sample to be composited with DL-122, DL-130, DL-137, and DL-166. Composite will be analyzed through START. The composite sample was analyzed for: TAL and Cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1

Picture #12, Roll1
Amenia Landfill Site
Drum # D-113

Picture # 14, Roll 1
Amenia Landfill Site
Drum Samples DL-122

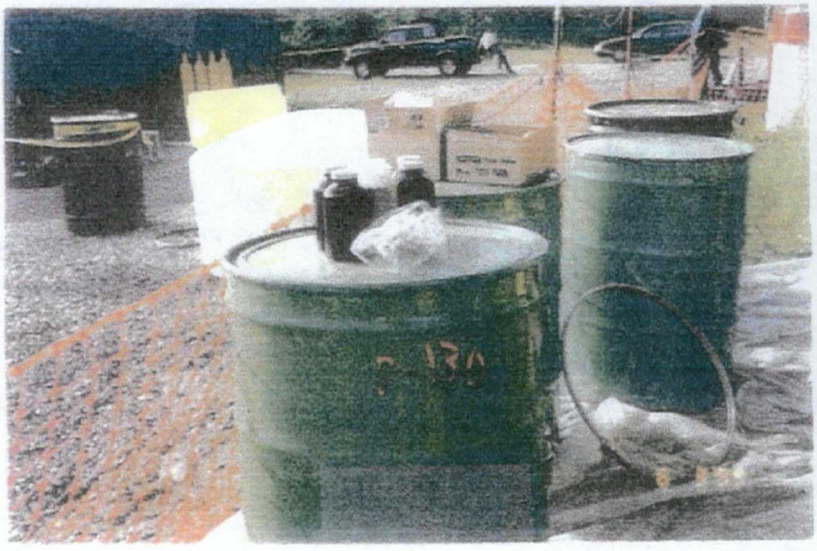
Samples were taken to be composited with DL-113, DL-130, DL-137, and DL-166 for analysis by START. The composite sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. A summary of the analysis can be found in Appendix G.

Picture #7, Roll 1a
Amenia Landfill Site Drum # D-122



Picture of D-122. The sample collected was composited with DL-113, DL-130, DL-137, and DL-166 was sent for analysis by START. The composite sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1. A summary of the analysis can be found in Appendix G

Picture #10, Roll 1
Amenia Landfill Site
Drum Samples DL-130



Picture of liquid drum samples taken for a composite with DL-113, DL-122, DL-137, and DL- 166 for analysis through START. The composite sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1. A summary of the analysis can be found in Appendix G.

Picture #5, Roll 1a
Amenia Landfill Site
Drum # D-137

Drum looking into D-137 with rags and liquid around the drum. This drum sample was composited with DL-113, DL-122, DL-130, and DL-166 for analysis by START. The composite sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1. A summary of the analysis can be found in Appendix G.

Picture #13, Roll 1
Amenia Landfill Site
Drum Samples DL-137

Picture of liquid drum samples taken for a composite with DL-113, DL-122, DL-130, and DL-166 for analysis through START. The composite sample was analyzed for: TAL and Cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1. A summary of the analysis can be found in Appendix G.

Picture of DL-166 which was composited with DL-113, DL-122, DL-130, and DL-137 which were sent for analysis through START. The composite sample was analyzed for: TAL and cyanide, RCRA parameters and TCLP metals. Aluminum, antimony, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, sodium, vanadium and zinc were detected in composite sample C-1. A summary of the analysis can be found in Appendix G

Picture #11, Roll 1
Amenia Landfill Site
Drum Sample DL-166