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NAWC WARMINSTER
5090.3a

Brown & Root Environmental

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C-49-11-6-088

November 11, 1996

Project Number 1412

Mr. Lonnie Monaco, Code 1823
U.S. Department of the Navy
Naval Facilities Engineering Command
Northern Division, Mail Stop 82
10 Industrial Highway
Lester, Pennsylvania 19113-2090

SUBJECT: Technical Memorandum
Site 4 Removal Action
Trench 0, Trench 1, and Trench 4 Verification Sampling Results

Dear Mr. Monaco:

The following summarizes the results of the third round of verification sampling performed for Trench 0, the second round of verification sampling performed for Trench 1, and the Trench 4 verification sampling performed for the Site 4 Removal Action. All of the samples were obtained during the same sampling event and were analyzed together.

TRENCH 0 RESULTS

A total of 5 additional samples were taken from the western portion of the trench, as shown in the attached sketch map (samples TR00-14 through TR00-018). Samples TR00-15, TR00-16, and TR00-17 were analyzed for the indicator parameters, including purgeable halocarbons, PAHs, PCBs, and thallium. The remaining Trench 0 samples taken were analyzed for the full suite of analytical parameters (TCL volatiles and semivolatiles, TAL metals, and pesticides/PCBs). Raw analytical data from the lab is attached to this memo.

For the volatile organics analyses (purgeable halocarbons and TCL volatiles), there were no positive detections of any VOCs, thus no actions are required based on the VOC results.

Low levels of PAHs were detected in 3 of the samples. Bis(2-ethylhexyl) phthalate was detected in samples TR00-14 and TR00-18 at concentrations of 1.2 and 2.6 mg/kg, respectively. Target concentrations for this compound were developed - the risk-based concentration is 900 mg/kg, the groundwater protection concentration is 3,620 mg/kg, and the PADEP standard for soils is 300 mg/kg. Based on a comparison with the target levels, the bis(2-ethylhexyl) phthalate concentrations are well below the minimum target concentration for this compund.

The remaining semivolatile detections were all well below the applicable target concentrations (provided in Table 1), thus no actions are needed due to PAH's/semivolatiles.

There were no positive detections of any PCBs, thus no actions are needed due to PCB levels. One pesticide, methoxychlor, was detected at a level of 0.003 mg/kg in sample TR00-18. Calculated target concentrations for this compound are: PADEP standard 300 mg/kg, risk-based concentration 6,300 mg/kg, and groundwater protection level 156 mg/kg. Since the detected concentration is well below the minimum target level, no actions are needed due to the pesticide detection.

Thallium detections ranged up to 2.5 mg/kg, below the target concentration of 2.9 mg/kg for this compound, thus no actions are required due to thallium levels. For the remaining metals, the only detection above both background (Table 2) and the target concentration was aluminum in sample TR00-18 (background 18,100 mg/kg, target concentration 3,400 mg/kg, detected concentration 19,700 mg/kg). This aluminum level is likely a background outlier rather than an indicator of residual contamination, based on a lack of other metals at elevated levels in the sample.

Based on these Trench 0 analytical results, the only detection above a target concentration is aluminum at sample location TR00-18 (a trench end sample). If the Navy decides to excavate this area, followup sampling for aluminum is needed. The remaining areas of the trench that have been sampled should be suitable for backfilling without any additional soils removal.

TRENCH 1 RESULTS

A total of 5 additional samples were taken from the trench, as shown in the attached sketch map (samples TR01-18 through TR01-22). No potential hot spot areas were identified, however 3 of the samples taken were analyzed for the full suite of analytical parameters (TCL volatiles and semivolatiles, TAL metals, and pesticides/PCBs). The remaining samples were analyzed for the indicator parameters, including purgeable halocarbons, PAHs, PCBs, and thallium. Raw analytical data from the lab is attached to this memo.

For the volatile organics analyses (purgeable halocarbons and TCL volatiles), the only positive detection of any VOC was one hit of methylene chloride (a common lab artifact) at 6 ug/kg. The target concentration for this compound is 300 ug/kg, thus no actions are required based on the VOC results.

PAHs were detected at low levels in 2 of the samples (TR01-18 and TR01-20). The concentrations were more than 2 orders of magnitude below the applicable target concentrations, thus no actions are required due to PAHs.

There were no positive detections of any pesticides or PCBs, thus no actions are needed due to pesticide or PCB levels.

Thallium detections ranged up to 2.0 mg/kg, well below the target concentration of 2.9 mg/kg for this compound. For the remaining metals, the only detection above both background (Table 2) and the target concentration was aluminum in sample TR01-19 (background 18,100 mg/kg, target concentration 3,400 mg/kg, detected concentration 21,500 mg/kg). This aluminum level is likely a background outlier rather than an indicator of residual contamination, based on a lack of other metals at elevated levels in the sample.

Based on these Trench 1 analytical results, the only detection above a target concentration is aluminum at sample location TR01-19 (a trench sidewall sample). If the Navy decides to excavate this area, followup sampling for aluminum is needed. The remaining areas of the trench that have been sampled should be suitable for backfilling without any additional soils removal.

TRENCH 4 RESULTS

A total of 4 samples, samples TR04-00 through TR04-03 (including a duplicate - TR04-00 is a duplicate of TR04-01) were taken from the trench, as shown in the attached sketch map No potential hot spot areas were identified, however 3 of the samples taken were analyzed for the full suite of analytical parameters (TCL volatiles and semivolatiles, TAL metals, and pesticides/PCBs). The remaining sample was analyzed for the indicator parameters, including purgeable halocarbons, PAHs, PCBs, and thallium. Raw analytical data from the lab is attached to this memo.

For the volatile organics analyses (purgeable halocarbons and TCL volatiles), there were no positive detections of any VOCs, thus no actions are required based on the VOC results.

PAHs were detected at low levels in 2 of the samples (TR04-00 and TR04-03). The concentrations were well below the applicable target concentrations, thus no actions are required due to PAHs.

The only positive detection of any pesticides or PCBs was methoxychlor at 0.003 mg/kg (target concentration 156 mg/kg), thus no actions are needed due to pesticide or PCB levels.

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Thallium detections ranged up to 2.3 mg/kg, well below the target concentration of 2.9 mg/kg for this compound. For the remaining metals, the only detection above both background and the target concentration was aluminum in sample TR04-00 (background 18,100 mg/kg, target concentration 3,400 mg/kg, detected concentration 18,700 mg/kg). Sample TR04-00 is a duplicate of sample TR04-01, which had an aluminum concentration of 17,700 mg/kg. The average aluminum concentration between these two samples is 18,200 mg/kg, still slightly above background and above the target level. This aluminum level is likely a background outlier rather than an indicator of residual contamination, based on a lack of other compounds at elevated levels in the samples.

Based on these Trench 4 analytical results, the only detection above a target concentration is aluminum at sample location TR04-00 (a trench sidewall sample). If the Navy decides to excavate this area, followup sampling for aluminum is needed. The remaining areas of the trench that have been sampled should be suitable for backfilling without any additional soils removal.

If you have any questions regarding the above information or would like to discuss it further, please call me at (412) 921-8778.

Sincerely yours,

Jeffrey P. Orient, P.G.
Project Manager

JPO/sic

Attachments

c: T. Ames
J. Dale
S. Lehman
D. Kennedy
D. Ostrauskas
G. Glenn
N. Teamerson
File: 1412

TABLES

TABLE 1

TARGET CLEAN-UP CONCENTRATIONS

		PADEP (1)	RISK-BASED (2)(4)	GROUNDWATER PROTECTION (3)(4)	MINIMUM (4)
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Benzo(a)anthracene		6	17	1.5	1.5
Benzo(b)fluoranthene		6	17	4.5	4.5
Benzo(k)fluoranthene		NA	170	45	45
Benzo(ghi)perylene		500	NA	96000	500
Benzo(a)pyrene		0.6	1.7	82	0.6
Acenaphthene		30	76000	630	30
Acenaphthylene		NA	NA	160	160
Anthracene		70	380000	13000	70
Chrysene		500	1700	150	150
Dibenzo(a,h)anthracene		0.6	1.7	1.4	0.6
Fluoranthene		400	50400	6400	400
Fluorene		40	50400	830	40
Indeno(1,2,3,-cd)pyrene		6	17	13	6
2-Methylnaphthalene		NA	NA	140	140
Naphthalene		8	50400	140	8
Phenanthrene		80	NA	850	80
Pyrene		300	38000	4600	300
Acetone		0.03	130000	340	0.03
Chlorobenzene		10	25000	3.6	3.6
Methylene chloride		0.3	1700	0.46	0.3
Aluminum		NA	1300000	3400	3400
Antimony		30	504	5.4	5.4
Arsenic		3	8.4	29	3
Barium		5000	88000	1700	1700
Beryllium		1	2.9	63	1
Cadmium		20	630	7.5	7.5
Calcium		NA	NA	NA	NA
Chromium		10	6300	38	10
Cobalt		NA	76000	202	202
Copper		100	50400	120	100
Iron		NA	380000	1010	1010
Lead		200	NA	1.4	1.4
Magnesium		NA	NA	NA	NA
Manganese		400	29000	77	77
Mercury		20	380	2.1	2.1
Nickel		200	25000	130	130
Potassium		NA	NA	NA	NA
Selenium		50	6300	5.2	5.2
Silver		400	6300	31	31
Sodium		NA	NA	NA	NA
Thallium		6	101	2.9	2.9
Vanadium		NA	8800	5200	5200
Zinc		1000	380000	14000	1000

FOOTNOTES:

(1) Values presented are from the "Technical Manual , Pennsylvania's Land Recycling, Revison 1 to Appendix B2 (Statewide Human Health Standards for Soils)," 4/26/96.

(2) USEPA Region III Risk-Based Concentration Table, January-June 1996.

(3) Three references: "Soil Screening Guidance: User's Guide", April 1996, "Aquatic Fate Process Data for Organic Priority Pollutants" , USEPA, 1982 and the " Drinking Water Regulations and Health Advisories", February 1996 were used to obtain groundwater protection values.

(4) Values were presented with two significant figures.

TABLE 2
BACKGROUND SOIL SAMPLING RESULTS

ANALYTE	AREA B/SITE 4 RANGE	ENERAL BACKGROUN RANGE	COMBINED RANGES
ALUMINUM	4780 - 17500	11200 - 18100	4780 - 18100
ANTIMONY	13.6 - 13.6	NA	13.6
ARSENIC	0.28 - 6.1	3.7 - 12.1	0.28 - 12.1
BARIUM	34.6 - 225	34.1 - 115	34.1 - 225
BERYLLIUM	0.31 - 1.7	0.64 - 1.1	0.31 - 1.7
CADMIUM	NOT DETECTED	NOT DETECTED	NA
CALCIUM	240 - 1910	520 - 1100	240 - 1910
CHROMIUM	7.9 - 25	12 - 35.3	7.9 - 35.3
COBALT	1.6 - 21.1	6.2 - 14.4	1.6 - 21.1
COPPER	3.6 - 30.6	6.5 - 22.7	3.6 - 30.6
IRON	6980 - 28900	14400 - 39900	6980 - 39900
LEAD	1.6 - 23.5	6.7 - 96.5	1.6 - 96.5
MAGNESIUM	518 - 4960	1810 - 3080	518 - 4960
MANGANESE	30.9 - 2010	124 - 718	30.9 - 2010
MERCURY	0.25 - 0.25	NOT DETECTED	0.25 - 0.25
NICKEL	4.1 - 19.1	8.1 - 17.5	4.1 - 19.1
POTASSIUM	89.1 - 3050	465 - 1240	89.1 - 3050
SELENIUM	NOT DETECTED	NOT DETECTED	NA
SILVER	NOT DETECTED	NA	NA
SODIUM	55.2 - 86.7	NOT DETECTED	55.2 - 86.7
THALLIUM	0.42 - 0.42	NA	0.42 - 0.42
VANADIUM	15.7 - 37.9	18.1 - 45	15.7 - 45
ZINC	9.0 - 48.6	19.6 - 60	9.0 - 60
CYANIDE	NOT DETECTED	NA	NA

SAMPLE LOCATION MAP

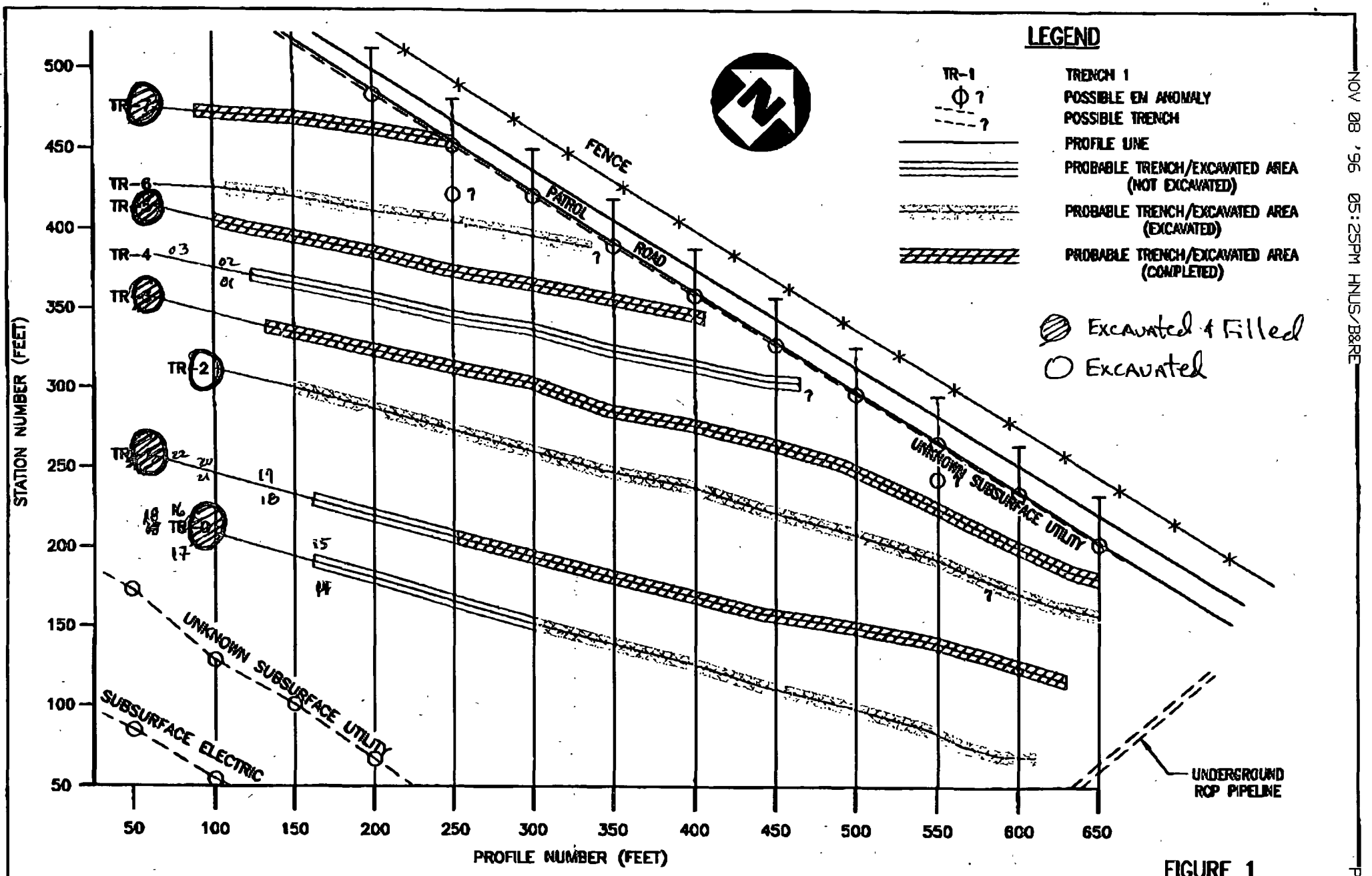

FIGURE 1

STATUS OF SITE 4 REMOVAL ACTION
NAWC WARMINSTER, PA
AS OF 10/8/96

Brown & Root Environmental

CALCULATION WORKSHEET Order No. 19116 (01-91) PAGE ____ OF ____

CLIENT	JOB NUMBER
SUBJECT: Samples taken on 10/30/96	
BASED ON	DRAWING NUMBER

BY	CHECKED BY	APPROVED BY	DATE

TRench 00

SAMPLE		PROFILE	STATION (approx.)
W-TR00-14		165	190
W-TR00-15	north	165	200
W-TR00-16		85	212
W-TR00-17	south	85	202
W-TR00-18	endwall	72	217

TRENCH 01

Sample		Profile	Station (approx.)
W-TR01-18		135	240
W-TR01-19	north	135	250
W-TR01-20		95	250
W-TR01-21	south	95	240
W-TR01-22	end wall	80	255

TRENCH 04

Sample		Profile	Station (approx.)
W-TR04-01	(dup. = 00) south	108	363
W-TR04-02		108	373
W-TR04-03	end wall	72	380

ANALYTICAL RESULTS
TRENCH SAMPLES

ANALYTICAL RESULTS

Client Sample ID:		W-TR00-14		W-TR00-15	W-TR00-16	W-TR00-17	W-TR00-18	
Job Number & Lab Sample ID:		A96-5277 A6527706		A96-5277 A6527707	A96-5277 A6527708	A96-5277 A6527709	A96-5277 A6527710	
Sample Date:		10/30/96		10/30/96	10/30/96	10/30/96	10/30/96	
Analyte (UG/KG)	RL	Result		Result	Result	Result	Result	
METHOD 8260 - TCL VOLATILE ORGANICS								
Acetone	10	10	U	NA	NA	NA	10	U
Benzene	5	5	U	NA	NA	NA	5	U
Bromodichloromethane	5	5	U	NA	NA	NA	5	U
Bromoform	5	5	U	NA	NA	NA	5	U
Bromomethane	10	10	U	NA	NA	NA	10	U
2-Butanone	10	10	U	NA	NA	NA	10	U
Carbon Disulfide	5	5	U	NA	NA	NA	5	U
Carbon Tetrachloride	5	5	U	NA	NA	NA	5	U
Chlorobenzene	5	5	U	NA	NA	NA	5	U
Chloroethane	10	10	U	NA	NA	NA	10	U
Chloroform	5	5	U	NA	NA	NA	5	U
Chloromethane	10	10	U	NA	NA	NA	10	U
Dibromochloromethane	5	5	U	NA	NA	NA	5	U
1,1-Dichloroethane	5	5	U	NA	NA	NA	5	U
1,2-Dichloroethane	5	5	U	NA	NA	NA	5	U
1,1-Dichloroethene	5	5	U	NA	NA	NA	5	U
cis-1,2-Dichloroethene	5	5	U	NA	NA	NA	5	U
trans-1,2-Dichloroethene	5	5	U	NA	NA	NA	5	U
1,2-Dichloropropane	5	5	U	NA	NA	NA	5	U
cis-1,3-Dichloropropene	5	5	U	NA	NA	NA	5	U
trans-1,3-Dichloropropene	5	5	U	NA	NA	NA	5	U
Ethylbenzene	5	5	U	NA	NA	NA	5	U
2-Hexanone	10	10	U	NA	NA	NA	10	U
Methylene chloride	5	5	U	NA	NA	NA	5	U
4-Methyl-2-pentanone	10	10	U	NA	NA	NA	10	U
Styrene	5	5	U	NA	NA	NA	5	U
1,1,2,2-Tetrachloroethane	5	5	U	NA	NA	NA	5	U
Tetrachloroethene	5	5	U	NA	NA	NA	5	U
Toluene	5	5	U	NA	NA	NA	5	U
1,1,1-Trichloroethane	5	5	U	NA	NA	NA	5	U
1,1,2-Trichloroethane	5	5	U	NA	NA	NA	5	U
Trichloroethene	5	5	U	NA	NA	NA	5	U
Vinyl acetate	10	10	U	NA	NA	NA	10	U
Vinyl chloride	10	10	U	NA	NA	NA	10	U
Total Xylenes	15	15	U	NA	NA	NA	15	U
INTERNAL STANDARDS								
Bromochloromethane	50-200	92		NA	NA	NA	87	
1,4-Difluorobenzene	50-200	80		NA	NA	NA	82	
Chlorobenzene-D5	50-200	66		NA	NA	NA	67	
SURROGATES								
Toluene-D8	81-117	98		NA	NA	NA	97	
p-Bromofluorobenzene	74-121	83		NA	NA	NA	90	

* Indicates Result is Outside QC Limits
NA = Not Applicable

Client Sample ID: / Job Number & Lab Sample ID: / Sample Date:		W-TR00-14 A96-5277 A6527706 10/30/96	W-TR00-15 A96-5277 A6527707 10/30/96	W-TR00-16 A96-5277 A6527708 10/30/96	W-TR00-17 A96-5277 A6527709 10/30/96	W-TR00-18 A96-5277 A6527710 10/30/96
Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8260 - TCL VOLATILE ORGANICS						
1,2-Dichloroethane-D4	80-120	105	NA	NA	NA	108

Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8260 - PURGEABLE HALOCARBONS						
Bromodichloromethane	5	NA	5 U	5 U	5 U	NA
Bromoform	5	NA	5 U	5 U	5 U	NA
Bromomethane	10	NA	10 U	10 U	10 U	NA
Carbon Tetrachloride	5	NA	5 U	5 U	5 U	NA
Chlorobenzene	5	NA	5 U	5 U	5 U	NA
Chloroethane	10	NA	10 U	10 U	10 U	NA
2-Chloroethylvinyl ether	10	NA	10 U	10 U	10 U	NA
Chloroform	5	NA	5 U	5 U	5 U	NA
Chloromethane	10	NA	10 U	10 U	10 U	NA
Dibromochloromethane	5	NA	5 U	5 U	5 U	NA
1,2-Dichlorobenzene	5	NA	5 U	5 U	5 U	NA
1,3-Dichlorobenzene	5	NA	5 U	5 U	5 U	NA
1,4-Dichlorobenzene	5	NA	5 U	5 U	5 U	NA
1,1-Dichloroethane	5	NA	5 U	5 U	5 U	NA
1,2-Dichloroethane	5	NA	5 U	5 U	5 U	NA
1,1-Dichloroethene	5	NA	5 U	5 U	5 U	NA
cis-1,2-Dichloroethene	5	NA	5 U	5 U	5 U	NA
trans-1,2-Dichloroethene	5	NA	5 U	5 U	5 U	NA
1,2-Dichloropropane	5	NA	5 U	5 U	5 U	NA
cis-1,3-Dichloropropene	5	NA	5 U	5 U	5 U	NA
trans-1,3-Dichloropropene	5	NA	5 U	5 U	5 U	NA
Methylene chloride	5	NA	5 U	5 U	5 U	NA
1,1,2,2-Tetrachloroethane	5	NA	5 U	5 U	5 U	NA
Tetrachloroethene	5	NA	5 U	5 U	5 U	NA
1,1,1-Trichloroethane	5	NA	5 U	5 U	5 U	NA
1,1,2-Trichloroethane	5	NA	5 U	5 U	5 U	NA
Trichloroethene	5	NA	5 U	5 U	5 U	NA
Trichlorofluoromethane	5	NA	5 U	5 U	5 U	NA
Vinyl chloride	10	NA	10 U	10 U	10 U	NA
INTERNAL STANDARDS						
Bromochloromethane	50-200	NA	92	92	111	NA
1,4-Difluorobenzene	50-200	NA	94	92	111	NA
Chlorobenzene-D5	50-200	NA	78	82	96	NA
SURROGATES						
Toluene-D8	81-117	NA	96	93	95	NA

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:16 005/023

Client Sample ID: / Job Number & Lab Sample ID: / Sample Date:		W-TR01-18 A96-5277 A6527701 10/30/96	W-TR01-19 A96-5277 A6527702 10/30/96	W-TR01-20 A96-5277 A6527703 10/30/96	W-TR01-21 A96-5277 A6527704 10/30/96	W-TR01-22 A96-5277 A6527705 10/30/96
Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8260 - TCL VOLATILE ORGANICS						
1,2-Dichloroethane-D4	80-120	NA	116	110	NA	112

Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8260 - PURGEABLE HALOCARBONS						
Bromodichloromethane	5	5 U	NA	NA	5 U	NA
Bromoform	5	5 U	NA	NA	5 U	NA
Bromomethane	10	10 U	NA	NA	10 U	NA
Carbon Tetrachloride	5	5 U	NA	NA	5 U	NA
Chlorobenzene	5	5 U	NA	NA	5 U	NA
Chloroethane	10	10 U	NA	NA	10 U	NA
2-Chloroethylvinyl ether	10	10 U	NA	NA	10 U	NA
Chloroform	5	5 U	NA	NA	5 U	NA
Chloromethane	10	10 U	NA	NA	10 U	NA
Dibromochloromethane	5	5 U	NA	NA	5 U	NA
1,2-Dichlorobenzene	5	5 U	NA	NA	5 U	NA
1,3-Dichlorobenzene	5	5 U	NA	NA	5 U	NA
1,4-Dichlorobenzene	5	5 U	NA	NA	5 U	NA
1,1-Dichloroethane	5	5 U	NA	NA	5 U	NA
1,2-Dichloroethane	5	5 U	NA	NA	5 U	NA
1,1-Dichloroethene	5	5 U	NA	NA	5 U	NA
cis-1,2-Dichloroethene	5	5 U	NA	NA	5 U	NA
trans-1,2-Dichloroethene	5	5 U	NA	NA	5 U	NA
1,2-Dichloropropane	5	5 U	NA	NA	5 U	NA
cis-1,3-Dichloropropene	5	5 U	NA	NA	5 U	NA
trans-1,3-Dichloropropene	5	5 U	NA	NA	5 U	NA
Methylene chloride	5	5 U	NA	NA	5 U	NA
1,1,2,2-Tetrachloroethane	5	5 U	NA	NA	5 U	NA
Tetrachloroethene	5	5 U	NA	NA	5 U	NA
1,1,1-Trichloroethane	5	5 U	NA	NA	5 U	NA
1,1,2-Trichloroethane	5	5 U	NA	NA	5 U	NA
Trichloroethene	5	5 U	NA	NA	5 U	NA
Trichlorofluoromethane	5	5 U	NA	NA	5 U	NA
Vinyl chloride	10	10 U	NA	NA	10 U	NA
INTERNAL STANDARDS						
Bromochloromethane	50-200	74	NA	NA	92	NA
1,4-Difluorobenzene	50-200	84	NA	NA	92	NA
Chlorobenzene-D5	50-200	70	NA	NA	82	NA
SURROGATES						
Toluene-D8	81-117	96	NA	NA	92	NA

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:18 007/023

Client Sample ID:		W-TR01-18		W-TR01-19		W-TR01-20		W-TR01-21		W-TR01-22	
Job Number & Lab Sample ID:		A96-5277 A6527701		A96-5277 A6527702		A96-5277 A6527703		A96-5277 A6527704		A96-5277 A6527705	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result		Result	
METHOD 8260 - TCL VOLATILE ORGANICS											
Acetone	10	NA		10	U	10	U	NA		10	U
Benzene	5	NA		5	U	5	U	NA		5	U
Bromodichloromethane	5	NA		5	U	5	U	NA		5	U
Bromoform	5	NA		5	U	5	U	NA		5	U
Bromomethane	10	NA		10	U	10	U	NA		10	U
2-Butanone	10	NA		10	U	10	U	NA		10	U
Carbon Disulfide	5	NA		5	U	5	U	NA		5	U
Carbon Tetrachloride	5	NA		5	U	5	U	NA		5	U
Chlorobenzene	5	NA		5	U	5	U	NA		5	U
Chloroethane	10	NA		10	U	10	U	NA		10	U
Chloroform	5	NA		5	U	5	U	NA		5	U
Chloromethane	10	NA		10	U	10	U	NA		10	U
Dibromochloromethane	5	NA		5	U	5	U	NA		5	U
1,1-Dichloroethane	5	NA		5	U	5	U	NA		5	U
1,2-Dichloroethane	5	NA		5	U	5	U	NA		5	U
1,1-Dichloroethene	5	NA		5	U	5	U	NA		5	U
cis-1,2-Dichloroethene	5	NA		5	U	5	U	NA		5	U
trans-1,2-Dichloroethene	5	NA		5	U	5	U	NA		5	U
1,2-Dichloropropane	5	NA		5	U	5	U	NA		5	U
cis-1,3-Dichloropropene	5	NA		5	U	5	U	NA		5	U
trans-1,3-Dichloropropene	5	NA		5	U	5	U	NA		5	U
Ethylbenzene	5	NA		5	U	5	U	NA		5	U
2-Hexanone	10	NA		10	U	10	U	NA		10	U
Methylene chloride	5	NA		6		5	U	NA		5	U
4-Methyl-2-pentanone	10	NA		10	U	10	U	NA		10	U
Styrene	5	NA		5	U	5	U	NA		5	U
1,1,2,2-Tetrachloroethane	5	NA		5	U	5	U	NA		5	U
Tetrachloroethene	5	NA		5	U	5	U	NA		5	U
Toluene	5	NA		5	U	5	U	NA		5	U
1,1,1-Trichloroethane	5	NA		5	U	5	U	NA		5	U
1,1,2-Trichloroethane	5	NA		5	U	5	U	NA		5	U
Trichloroethene	5	NA		5	U	5	U	NA		5	U
Vinyl acetate	10	NA		10	U	10	U	NA		10	U
Vinyl chloride	10	NA		10	U	10	U	NA		10	U
Total Xylenes	15	NA		15	U	15	U	NA		15	U
INTERNAL STANDARDS											
Bromochloromethane	50-200	NA		72		100		NA		97	
1,4-Difluorobenzene	50-200	NA		80		93		NA		100	
Chlorobenzene-D5	50-200	NA		73		79		NA		90	
SURROGATES											
Toluene-D8	81-117	NA		91		92		NA		91	
p-Bromofluorobenzene	74-121	NA		96		95		NA		101	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:17 ☎ 006/023

Client Sample ID:		W-TR04-00		W-TR04-01		W-TR04-02		W-TR04-03	
Job Number & Lab Sample ID:		A96-5277 A6527714		A96-5277 A6527711		A96-5277 A6527712		A96-5277 A6527713	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result	
METHOD 8260 - TCL VOLATILE ORGANICS									
Acetone	10	10	U	10	U	NA		10	U
Benzene	5	5	U	5	U	NA		5	U
Bromodichloromethane	5	5	U	5	U	NA		5	U
Bromoform	5	5	U	5	U	NA		5	U
Bromomethane	10	10	U	10	U	NA		10	U
2-Butanone	10	10	U	10	U	NA		10	U
Carbon Disulfide	5	5	U	5	U	NA		5	U
Carbon Tetrachloride	5	5	U	5	U	NA		5	U
Chlorobenzene	5	5	U	5	U	NA		5	U
Chloroethane	10	10	U	10	U	NA		10	U
Chloroform	5	5	U	5	U	NA		5	U
Chloromethane	10	10	U	10	U	NA		10	U
Dibromochloromethane	5	5	U	5	U	NA		5	U
1,1-Dichloroethane	5	5	U	5	U	NA		5	U
1,2-Dichloroethane	5	5	U	5	U	NA		5	U
1,1-Dichloroethene	5	5	U	5	U	NA		5	U
cis-1,2-Dichloroethene	5	5	U	5	U	NA		5	U
trans-1,2-Dichloroethene	5	5	U	5	U	NA		5	U
1,2-Dichloropropane	5	5	U	5	U	NA		5	U
cis-1,3-Dichloropropene	5	5	U	5	U	NA		5	U
trans-1,3-Dichloropropene	5	5	U	5	U	NA		5	U
Ethylbenzene	5	5	U	5	U	NA		5	U
2-Hexanone	10	10	U	10	U	NA		10	U
Methylene chloride	5	5	U	5	U	NA		5	U
4-Methyl-2-pentanone	10	10	U	10	U	NA		10	U
Styrene	5	5	U	5	U	NA		5	U
1,1,2,2-Tetrachloroethane	5	5	U	5	U	NA		5	U
Tetrachloroethene	5	5	U	5	U	NA		5	U
Toluene	5	5	U	5	U	NA		5	U
1,1,1-Trichloroethane	5	5	U	5	U	NA		5	U
1,1,2-Trichloroethane	5	5	U	5	U	NA		5	U
Trichloroethene	5	5	U	5	U	NA		5	U
Vinyl acetate	10	10	U	10	U	NA		10	U
Vinyl chloride	10	10	U	10	U	NA		10	U
Total Xylenes	15	15	U	15	U	NA		15	U
INTERNAL STANDARDS									
Bromochloromethane	50-200	104		113		NA		112	
1,4-Difluorobenzene	50-200	97		109		NA		112	
Chlorobenzene-D5	50-200	86		99		NA		99	
SURROGATES									
Toluene-D8	81-117	94		92		NA		93	
p-Bromofluorobenzene	74-121	97		96		NA		96	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:19 ☑008/023

Client Sample ID:	W-TR04-00	W-TR04-01	W-TR04-02	W-TR04-03
Job Number & Lab Sample ID:	A96-5277 A6527714	A96-5277 A6527711	A96-5277 A6527712	A96-5277 A6527713
Sample Date:	10/30/96	10/30/96	10/30/96	10/30/96

Analyte (UG/KG)	RL	Result	Result	Result	Result
METHOD 8260 - TCL VOLATILE ORGANICS					
1,2-Dichloroethane-D4	80-120	107	107	NA	107

Analyte (UG/KG)	RL	Result	Result	Result	Result
METHOD 8260 - PURGEABLE HALOCARBONS					
Bromodichloromethane	5	NA	NA	5 U	NA
Bromoform	5	NA	NA	5 U	NA
Bromomethane	10	NA	NA	10 U	NA
Carbon Tetrachloride	5	NA	NA	5 U	NA
Chlorobenzene	5	NA	NA	5 U	NA
Chloroethane	10	NA	NA	10 U	NA
2-Chloroethylvinyl ether	10	NA	NA	10 U	NA
Chloroform	5	NA	NA	5 U	NA
Chloromethane	10	NA	NA	10 U	NA
Dibromochloromethane	5	NA	NA	5 U	NA
1,2-Dichlorobenzene	5	NA	NA	5 U	NA
1,3-Dichlorobenzene	5	NA	NA	5 U	NA
1,4-Dichlorobenzene	5	NA	NA	5 U	NA
1,1-Dichloroethane	5	NA	NA	5 U	NA
1,2-Dichloroethane	5	NA	NA	5 U	NA
1,1-Dichloroethene	5	NA	NA	5 U	NA
cis-1,2-Dichloroethene	5	NA	NA	5 U	NA
trans-1,2-Dichloroethene	5	NA	NA	5 U	NA
1,2-Dichloropropane	5	NA	NA	5 U	NA
cis-1,3-Dichloropropene	5	NA	NA	5 U	NA
trans-1,3-Dichloropropene	5	NA	NA	5 U	NA
Methylene chloride	5	NA	NA	5 U	NA
1,1,2,2-Tetrachloroethane	5	NA	NA	5 U	NA
Tetrachloroethene	5	NA	NA	5 U	NA
1,1,1-Trichloroethane	5	NA	NA	5 U	NA
1,1,2-Trichloroethane	5	NA	NA	5 U	NA
Trichloroethene	5	NA	NA	5 U	NA
Trichlorofluoromethane	5	NA	NA	5 U	NA
Vinyl chloride	10	NA	NA	10 U	NA
INTERNAL STANDARDS					
Bromochloromethane	50-200	NA	NA	87	NA
1,4-Difluorobenzene	50-200	NA	NA	99	NA
Chlorobenzene-D5	50-200	NA	NA	88	NA
SURROGATES					
Toluene-D8	81-117	NA	NA	93	NA

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:20 009/023

Client Sample ID:		W-TR00-14		W-TR00-15	W-TR00-16	W-TR00-17	W-TR00-18	
Job Number & Lab Sample ID:		A96-5277 A6527706		A96-5277 A6527707	A96-5277 A6527708	A96-5277 A6527709	A96-5277 A6527710	
Sample Date:		10/30/96		10/30/96	10/30/96	10/30/96	10/30/96	
Analyte (UG/KG)	RL	Result		Result	Result	Result	Result	
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS								
Acenaphthene	330	330	U	NA	NA	NA	330	U
Acenaphthylene	330	330	U	NA	NA	NA	330	U
Anthracene	330	330	U	NA	NA	NA	330	U
Benzo(a)anthracene	330	100	J	NA	NA	NA	140	J
Benzo(b)fluoranthene	330	96	J	NA	NA	NA	190	J
Benzo(k)fluoranthene	330	36	J	NA	NA	NA	81	J
Benzo(ghi)perylene	330	34	J	NA	NA	NA	120	J
Benzo(a)pyrene	330	69	J	NA	NA	NA	170	J
Benzoic acid	1600	1600	U	NA	NA	NA	1600	U
Benzyl alcohol	330	330	U	NA	NA	NA	330	U
Bis(2-chloroethoxy) methane	330	330	U	NA	NA	NA	330	U
Bis(2-chloroethyl) ether	330	330	U	NA	NA	NA	330	U
Bis(2-chloroisopropyl) ether	330	330	U	NA	NA	NA	330	U
Bis(2-ethylhexyl) phthalate	330	1200		NA	NA	NA	2600	
4-Bromophenyl phenyl ether	330	330	U	NA	NA	NA	330	U
Butyl benzyl phthalate	330	330	U	NA	NA	NA	330	U
4-Chloroaniline	330	330	U	NA	NA	NA	330	U
4-Chloro-3-methylphenol	330	330	U	NA	NA	NA	330	U
2-Chloronaphthalene	330	330	U	NA	NA	NA	330	U
2-Chlorophenol	330	330	U	NA	NA	NA	330	U
4-Chlorodiphenylether	330	330	U	NA	NA	NA	330	U
Chrysene	330	130	J	NA	NA	NA	170	J
Dibenzo(a,h)anthracene	330	330	U	NA	NA	NA	330	U
Dibenzofuran	330	330	U	NA	NA	NA	330	U
Di-n-butyl phthalate	330	330	U	NA	NA	NA	330	U
1,2-Dichlorobenzene	330	330	U	NA	NA	NA	330	U
1,3-Dichlorobenzene	330	330	U	NA	NA	NA	330	U
1,4-Dichlorobenzene	330	330	U	NA	NA	NA	330	U
3,3'-Dichlorobenzidine	660	660	U	NA	NA	NA	660	U
2,4-Dichlorophenol	330	330	U	NA	NA	NA	330	U
Diethyl phthalate	330	330	U	NA	NA	NA	330	U
2,4-Dimethylphenol	330	330	U	NA	NA	NA	330	U
Dimethyl phthalate	330	330	U	NA	NA	NA	330	U
4,6-Dinitro-2-methylphenol	1600	1600	U	NA	NA	NA	1600	U
2,4-Dinitrophenol	1600	1600	U	NA	NA	NA	1600	U
2,4-Dinitrotoluene	330	330	U	NA	NA	NA	330	U
2,6-Dinitrotoluene	330	330	U	NA	NA	NA	330	U
Di-n-octyl phthalate	330	330	U	NA	NA	NA	330	U
Fluoranthene	330	160	J	NA	NA	NA	200	J
Fluorene	330	330	U	NA	NA	NA	330	U
Hexachlorobenzene	330	330	U	NA	NA	NA	330	U
Hexachlorobutadiene	330	330	U	NA	NA	NA	330	U

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:21 ☎ 010/023

Client Sample ID:		W-TR00-14		W-TR00-15	W-TR00-16	W-TR00-17	W-TR00-18	
Job Number & Lab Sample ID:		A96-5277 A6527706		A96-5277 A6527707	A96-5277 A6527708	A96-5277 A6527709	A96-5277 A6527710	
Sample Date:		10/30/96		10/30/96	10/30/96	10/30/96	10/30/96	
Analyte (UG/KG)	RL	Result		Result	Result	Result	Result	
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS								
Hexachlorocyclopentadiene	330	330	U	NA	NA	NA	330	U
Hexachloroethane	330	330	U	NA	NA	NA	330	U
Indeno(1,2,3-cd)pyrene	330	29	J	NA	NA	NA	130	J
Isophorone	330	330	U	NA	NA	NA	330	U
2-Methylnaphthalene	330	330	U	NA	NA	NA	330	U
2-Methylphenol	330	330	U	NA	NA	NA	330	U
4-Methylphenol	330	330	U	NA	NA	NA	330	U
Naphthalene	330	330	U	NA	NA	NA	330	U
2-Nitroaniline	1600	1600	U	NA	NA	NA	1600	U
3-Nitroaniline	1600	1600	U	NA	NA	NA	1600	U
4-Nitroaniline	1600	1600	U	NA	NA	NA	1600	U
Nitrobenzene	330	330	U	NA	NA	NA	330	U
2-Nitrophenol	330	330	U	NA	NA	NA	330	U
4-Nitrophenol	1600	1600	U	NA	NA	NA	1600	U
N-nitrosodiphenylamine	330	330	U	NA	NA	NA	330	U
N-Nitroso-Di-n-propylamine	330	330	U	NA	NA	NA	330	U
Pentachlorophenol	1600	1600	U	NA	NA	NA	1600	U
Phenanthrene	330	120	J	NA	NA	NA	73	J
Phenol	330	330	U	NA	NA	NA	330	U
Pyrene	330	130	J	NA	NA	NA	240	J
1,2,4-Trichlorobenzene	330	330	U	NA	NA	NA	330	U
2,4,5-Trichlorophenol	800	800	U	NA	NA	NA	800	U
2,4,6-Trichlorophenol	330	330	U	NA	NA	NA	330	U
INTERNAL STANDARDS								
1,4-Dichlorobenzene-D4	50-200	77		NA	NA	NA	80	
Naphthalene-D8	50-200	80		NA	NA	NA	82	
Acenaphthene-D10	50-200	79		NA	NA	NA	86	
Phenanthrene-D10	50-200	97		NA	NA	NA	104	
Chrysene-D12	50-200	84		NA	NA	NA	86	
Perylene-D12	50-200	91		NA	NA	NA	96	
SURROGATES								
Nitrobenzene-D5	23-120	64		NA	NA	NA	74	
2-Fluorobiphenyl	30-115	78		NA	NA	NA	82	
Terphenyl-D14	18-137	112		NA	NA	NA	118	
Phenol-D5	24-113	64		NA	NA	NA	70	
2-Fluorophenol	25-121	57		NA	NA	NA	62	
2,4,6-Tribromophenol	19-122	79		NA	NA	NA	84	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:22 ☑011/023

Client Sample ID:		W-TR00-14	W-TR00-15	W-TR00-16	W-TR00-17	W-TR00-18
Job Number & Lab Sample ID:		A96-5277 A6527706	A96-5277 A6527707	A96-5277 A6527708	A96-5277 A6527709	A96-5277 A6527710
Sample Date:		10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8270-HSL POLYNUCLEAR AROMATIC HYDROCARBONS						
Acenaphthene	330	NA	330 U	49 J	330 U	NA
Acenaphthylene	330	NA	330 U	330 U	330 U	NA
Anthracene	330	NA	330 U	90 J	330 U	NA
Benzo(a)anthracene	330	NA	330 U	480	330 U	NA
Benzo(b)fluoranthene	330	NA	330 U	480	330 U	NA
Benzo(k)fluoranthene	330	NA	330 U	210 J	330 U	NA
Benzo(ghi)perylene	330	NA	330 U	280 J	330 U	NA
Benzo(a)pyrene	330	NA	330 U	420	330 U	NA
Chrysene	330	NA	330 U	480	330 U	NA
Dibenzo(a,h)anthracene	330	NA	330 U	69 J	330 U	NA
Fluoranthene	330	NA	330 U	660	330 U	NA
Fluorene	330	NA	330 U	330 U	330 U	NA
Indeno(1,2,3-cd)pyrene	330	NA	330 U	260 J	330 U	NA
2-Methylnaphthalene	330	NA	330 U	330 U	330 U	NA
Naphthalene	330	NA	330 U	330 U	330 U	NA
Phenanthrene	330	NA	330 U	400	330 U	NA
Pyrene	330	NA	330 U	610	330 U	NA
INTERNAL STANDARDS						
1,4-Dichlorobenzene-D4	50-200	NA	130	103	91	NA
Naphthalene-D8	50-200	NA	125	83	83	NA
Acenaphthene-D10	50-200	NA	124	89	90	NA
Phenanthrene-D10	50-200	NA	141	121	107	NA
Chrysene-D12	50-200	NA	127	106	95	NA
Perylene-D12	50-200	NA	129	108	95	NA
SURROGATES						
Nitrobenzene-D5	23-120	NA	52	79	53	NA
2-Fluorobiphenyl	30-115	NA	51	98	58	NA
Terphenyl-D14	18-137	NA	111	109	105	NA
Phenol-D5	24-113	NA	52	63	52	NA
2-Fluorophenol	25-121	NA	48	54	48	NA
2,4,6-Tribromophenol	19-122	NA	75	90	84	NA

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:23 012/023

Client Sample ID:		W-TR01-18	W-TR01-19	W-TR01-20	W-TR01-21	W-TR01-22
Job Number & Lab Sample ID:		A96-5277 A6527701	A96-5277 A6527702	A96-5277 A6527703	A96-5277 A6527704	A96-5277 A6527705
Sample Date:		10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 8270-HSL POLYNUCLEAR AROMATIC HYDROCARBONS						
Acenaphthene	330	330 U	NA	NA	330 U	NA
Acenaphthylene	330	330 U	NA	NA	330 U	NA
Anthracene	330	330 U	NA	NA	330 U	NA
Benzo(a)anthracene	330	330 U	NA	NA	330 U	NA
Benzo(b)fluoranthene	330	330 U	NA	NA	330 U	NA
Benzo(k)fluoranthene	330	330 U	NA	NA	330 U	NA
Benzo(ghi)perylene	330	330 U	NA	NA	330 U	NA
Benzo(a)pyrene	330	330 U	NA	NA	330 U	NA
Chrysene	330	330 U	NA	NA	330 U	NA
Dibenzo(a,h)anthracene	330	330 U	NA	NA	330 U	NA
Fluoranthene	330	52 J	NA	NA	330 U	NA
Fluorene	330	330 U	NA	NA	330 U	NA
Indeno(1,2,3-cd)pyrene	330	330 U	NA	NA	330 U	NA
2-Methylnaphthalene	330	330 U	NA	NA	330 U	NA
Naphthalene	330	330 U	NA	NA	330 U	NA
Phenanthrene	330	330 U	NA	NA	330 U	NA
Pyrene	330	50 J	NA	NA	330 U	NA
INTERNAL STANDARDS						
1,4-Dichlorobenzene-D4	50-200	98	NA	NA	108	NA
Naphthalene-D8	50-200	96	NA	NA	100	NA
Acenaphthene-D10	50-200	97	NA	NA	100	NA
Phenanthrene-D10	50-200	110	NA	NA	115	NA
Chrysene-D12	50-200	96	NA	NA	104	NA
Perylene-D12	50-200	99	NA	NA	107	NA
SURROGATES						
Nitrobenzene-D5	23-120	80	NA	NA	67	NA
2-Fluorobiphenyl	30-115	88	NA	NA	78	NA
Terphenyl-D14	18-137	117	NA	NA	103	NA
Phenol-D5	24-113	78	NA	NA	65	NA
2-Fluorophenol	25-121	67	NA	NA	58	NA
2,4,6-Tribromophenol	19-122	95	NA	NA	80	NA

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:25 ☎ 015/023

Client Sample ID:		W-TR01-18	W-TR01-19	W-TR01-20	W-TR01-21	W-TR01-22
Job Number & Lab Sample ID:		A96-5277 A6527701	A96-5277 A6527702	A96-5277 A6527703	A96-5277 A6527704	A96-5277 A6527705
Sample Date:		10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Analyte (UG/KG)	RL	Result	Result	Result	Result	Result
METHOD 827D - TCL SEMI-VOLATILE ORGANICS						
Acenaphthene	330	NA	330 U	330 U	NA	330 U
Acenaphthylene	330	NA	330 U	330 U	NA	330 U
Anthracene	330	NA	330 U	330 U	NA	330 U
Benzo(a)anthracene	330	NA	330 U	330 U	NA	330 U
Benzo(b)fluoranthene	330	NA	330 U	330 U	NA	330 U
Benzo(k)fluoranthene	330	NA	330 U	330 U	NA	330 U
Benzo(ghi)perylene	330	NA	330 U	330 U	NA	330 U
Benzo(a)pyrene	330	NA	330 U	330 U	NA	330 U
Benzoic acid	1600	NA	1600 U	1600 U	NA	1600 U
Benzyl alcohol	330	NA	330 U	330 U	NA	330 U
Bis(2-chloroethoxy) methane	330	NA	330 U	330 U	NA	330 U
Bis(2-chloroethyl) ether	330	NA	330 U	330 U	NA	330 U
Bis(2-chloroisopropyl) ether	330	NA	330 U	330 U	NA	330 U
Bis(2-ethylhexyl) phthalate	330	NA	330 U	1800	NA	330 U
4-Bromophenyl phenyl ether	330	NA	330 U	330 U	NA	330 U
Butyl benzyl phthalate	330	NA	330 U	330 U	NA	330 U
4-Chloroaniline	330	NA	330 U	330 U	NA	330 U
4-Chloro-3-methylphenol	330	NA	330 U	330 U	NA	330 U
2-Chloronaphthalene	330	NA	330 U	330 U	NA	330 U
2-Chlorophenol	330	NA	330 U	330 U	NA	330 U
4-Chlorodiphenylether	330	NA	330 U	330 U	NA	330 U
Chrysene	330	NA	330 U	330 U	NA	330 U
Dibenzo(a,h)anthracene	330	NA	330 U	330 U	NA	330 U
Dibenzofuran	330	NA	330 U	330 U	NA	330 U
Di-n-butyl phthalate	330	NA	330 U	330 U	NA	330 U
1,2-Dichlorobenzene	330	NA	330 U	330 U	NA	330 U
1,3-Dichlorobenzene	330	NA	330 U	330 U	NA	330 U
1,4-Dichlorobenzene	330	NA	330 U	330 U	NA	330 U
3,3'-Dichlorobenzidine	660	NA	660 U	660 U	NA	660 U
2,4-Dichlorophenol	330	NA	330 U	330 U	NA	330 U
Diethyl phthalate	330	NA	330 U	330 U	NA	330 U
2,4-Dimethylphenol	330	NA	330 U	330 U	NA	330 U
Dimethyl phthalate	330	NA	330 U	330 U	NA	330 U
4,6-Dinitro-2-methylphenol	1600	NA	1600 U	1600 U	NA	1600 U
2,4-Dinitrophenol	1600	NA	1600 U	1600 U	NA	1600 U
2,4-Dinitrotoluene	330	NA	330 U	330 U	NA	330 U
2,6-Dinitrotoluene	330	NA	330 U	330 U	NA	330 U
Di-n-octyl phthalate	330	NA	330 U	330 U	NA	330 U
Fluoranthene	330	NA	330 U	330 U	NA	330 U
Fluorene	330	NA	330 U	330 U	NA	330 U
Hexachlorobenzene	330	NA	330 U	330 U	NA	330 U
Hexachlorobutadiene	330	NA	330 U	330 U	NA	330 U

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:24 013/023

Client Sample ID:		W-TR01-18		W-TR01-19		W-TR01-20		W-TR01-21		W-TR01-22	
Job Number & Lab Sample ID:		A96-5277 A6527701		A96-5277 A6527702		A96-5277 A6527703		A96-5277 A6527704		A96-5277 A6527705	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result		Result	
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS											
Hexachlorocyclopentadiene	330	NA		330	U	330	U	NA		330	U
Hexachloroethane	330	NA		330	U	330	U	NA		330	U
Indeno(1,2,3-cd)pyrene	330	NA		330	U	330	U	NA		330	U
Isophorone	330	NA		330	U	330	U	NA		330	U
2-Methylnaphthalene	330	NA		330	U	330	U	NA		330	U
2-Methylphenol	330	NA		330	U	330	U	NA		330	U
4-Methylphenol	330	NA		330	U	330	U	NA		330	U
Naphthalene	330	NA		330	U	330	U	NA		330	U
2-Nitroaniline	1600	NA		1600	U	1600	U	NA		1600	U
3-Nitroaniline	1600	NA		1600	U	1600	U	NA		1600	U
4-Nitroaniline	1600	NA		1600	U	1600	U	NA		1600	U
Nitrobenzene	330	NA		330	U	330	U	NA		330	U
2-Nitrophenol	330	NA		330	U	330	U	NA		330	U
4-Nitrophenol	1600	NA		1600	U	1600	U	NA		1600	U
N-nitrosodiphenylamine	330	NA		330	U	330	U	NA		330	U
N-Nitroso-Di-n-propylamine	330	NA		330	U	330	U	NA		330	U
Pentachlorophenol	1600	NA		1600	U	1600	U	NA		1600	U
Phenanthrene	330	NA		330	U	330	U	NA		330	U
Phenol	330	NA		330	U	330	U	NA		330	U
Pyrene	330	NA		330	U	330	U	NA		330	U
1,2,4-Trichlorobenzene	330	NA		330	U	330	U	NA		330	U
2,4,5-Trichlorophenol	800	NA		800	U	800	U	NA		800	U
2,4,6-Trichlorophenol	330	NA		330	U	330	U	NA		330	U
INTERNAL STANDARDS											
1,4-Dichlorobenzene-D4	50-200	NA		92		88		NA		91	
Naphthalene-D8	50-200	NA		91		89		NA		95	
Acenaphthene-D10	50-200	NA		95		91		NA		95	
Phenanthrene-D10	50-200	NA		110		105		NA		116	
Chrysene-D12	50-200	NA		98		93		NA		101	
Perylene-D12	50-200	NA		99		99		NA		104	
SURROGATES											
Nitrobenzene-D5	23-120	NA		74		72		NA		66	
2-Fluorobiphenyl	30-115	NA		79		77		NA		74	
Terphenyl-D14	18-137	NA		108		114		NA		106	
Phenol-D5	24-113	NA		70		66		NA		66	
2-Fluorophenol	25-121	NA		65		59		NA		60	
2,4,6-Tribromophenol	19-122	NA		80		84		NA		73	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:24 014/023

Client Sample ID:		W-TR04-00		W-TR04-01		W-TR04-02		W-TR04-03	
Job Number & Lab Sample ID:		A96-5277 A6527714		A96-5277 A6527711		A96-5277 A6527712		A96-5277 A6527713	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result	
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS									
Acenaphthene	330	330	U	330	U	NA		330	U
Acenaphthylene	330	330	U	330	U	NA		330	U
Anthracene	330	330	U	330	U	NA		330	U
Benzo(a)anthracene	330	330	U	330	U	NA		170	J
Benzo(b)fluoranthene	330	330	U	330	U	NA		210	J
Benzo(k)fluoranthene	330	330	U	330	U	NA		86	J
Benzo(ghi)perylene	330	330	U	330	U	NA		110	J
Benzo(a)pyrene	330	330	U	330	U	NA		180	J
Benzoic acid	1600	1600	U	1600	U	NA		1600	U
Benzyl alcohol	330	330	U	330	U	NA		330	U
Bis(2-chloroethoxy) methane	330	330	U	330	U	NA		330	U
Bis(2-chloroethyl) ether	330	330	U	330	U	NA		330	U
Bis(2-chloroisopropyl) ether	330	330	U	330	U	NA		330	U
Bis(2-ethylhexyl) phthalate	330	200	J	330	U	NA		460	
4-Bromophenyl phenyl ether	330	330	U	330	U	NA		330	U
Butyl benzyl phthalate	330	330	U	330	U	NA		330	U
4-Chloroaniline	330	330	U	330	U	NA		330	U
4-Chloro-3-methylphenol	330	330	U	330	U	NA		330	U
2-Chloronaphthalene	330	330	U	330	U	NA		330	U
2-Chlorophenol	330	330	U	330	U	NA		330	U
4-Chlorodiphenylether	330	330	U	330	U	NA		330	U
Chrysene	330	330	U	330	U	NA		200	J
Dibenzo(a,h)anthracene	330	330	U	330	U	NA		330	U
Dibenzofuran	330	330	U	330	U	NA		330	U
Di-n-butyl phthalate	330	330	U	330	U	NA		330	U
1,2-Dichlorobenzene	330	330	U	330	U	NA		330	U
1,3-Dichlorobenzene	330	330	U	330	U	NA		330	U
1,4-Dichlorobenzene	330	330	U	330	U	NA		330	U
3,3'-Dichlorobenzidine	660	660	U	660	U	NA		660	U
2,4-Dichlorophenol	330	330	U	330	U	NA		330	U
Diethyl phthalate	330	330	U	330	U	NA		330	U
2,4-Dimethylphenol	330	330	U	330	U	NA		330	U
Dimethyl phthalate	330	330	U	330	U	NA		330	U
4,6-Dinitro-2-methylphenol	1600	1600	U	1600	U	NA		1600	U
2,4-Dinitrophenol	1600	1600	U	1600	U	NA		1600	U
2,4-Dinitrotoluene	330	330	U	330	U	NA		330	U
2,6-Dinitrotoluene	330	330	U	330	U	NA		330	U
Di-n-octyl phthalate	330	330	U	330	U	NA		330	U
Fluoranthene	330	330	U	330	U	NA		290	J
Fluorene	330	330	U	330	U	NA		330	U
Hexachlorobenzene	330	330	U	330	U	NA		330	U
Hexachlorobutadiene	330	330	U	330	U	NA		330	U

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:26 016/023

ANALYTICAL RESULTS

Client Sample ID:		W-TR04-00		W-TR04-01		W-TR04-02		W-TR04-03	
Job Number & Lab Sample ID:		A96-5277 A6527714		A96-5277 A6527711		A96-5277 A6527712		A96-5277 A6527713	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result	
METHOD 8270 - TCL SEMI-VOLATILE ORGANICS									
Hexachlorocyclopentadiene	330	330	U	330	U	NA		330	U
Hexachloroethane	330	330	U	330	U	NA		330	U
Indeno(1,2,3-cd)pyrene	330	330	U	330	U	NA		120	J
Isophorone	330	330	U	330	U	NA		330	U
2-Methylnaphthalene	330	330	U	330	U	NA		330	U
2-Methylphenol	330	330	U	330	U	NA		330	U
4-Methylphenol	330	330	U	330	U	NA		330	U
Naphthalene	330	330	U	330	U	NA		330	U
2-Nitroaniline	1600	1600	U	1600	U	NA		1600	U
3-Nitroaniline	1600	1600	U	1600	U	NA		1600	U
4-Nitroaniline	1600	1600	U	1600	U	NA		1600	U
Nitrobenzene	330	330	U	330	U	NA		330	U
2-Nitrophenol	330	330	U	330	U	NA		330	U
4-Nitrophenol	1600	1600	U	1600	U	NA		1600	U
N-nitrosodiphenylamine	330	330	U	330	U	NA		330	U
N-Nitroso-Di-n-propylamine	330	330	U	330	U	NA		330	U
Pentachlorophenol	1600	1600	U	1600	U	NA		1600	U
Phenanthrene	330	330	U	330	U	NA		93	J
Phenol	330	330	U	330	U	NA		330	U
Pyrene	330	330	U	330	U	NA		330	
1,2,4-Trichlorobenzene	330	330	U	330	U	NA		330	U
2,4,5-Trichlorophenol	800	800	U	800	U	NA		800	U
2,4,6-Trichlorophenol	330	330	U	330	U	NA		330	U
INTERNAL STANDARDS									
1,4-Dichlorobenzene-D4	50-200	108		77		NA		83	
Naphthalene-D8	50-200	103		80		NA		83	
Acenaphthene-D10	50-200	107		80		NA		86	
Phenanthrene-D10	50-200	123		94		NA		102	
Chrysene-D12	50-200	106		85		NA		92	
Perylene-D12	50-200	106		86		NA		97	
SURROGATES									
Nitrobenzene-D5	23-120	68		71		NA		74	
2-Fluorobiphenyl	30-115	74		81		NA		86	
Terphenyl-D14	18-137	107		111		NA		109	
Phenol-D5	24-113	66		68		NA		70	
2-Fluorophenol	25-121	59		61		NA		60	
2,4,6-Tribromophenol	19-122	75		82		NA		85	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:27 017/023

Client Sample ID:		W-TR04-00	W-TR04-01	W-TR04-02	W-TR04-03	
Job Number & Lab Sample ID:		A96-5277 A6527714	A96-5277 A6527711	A96-5277 A6527712	A96-5277 A6527713	
Sample Date:		10/30/96	10/30/96	10/30/96	10/30/96	
Analyte (UG/KG)	RL	Result	Result	Result	Result	
METHOD 8270-HSL POLYNUCLEAR AROMATIC HYDROCARBONS						
Acenaphthene	330	NA	NA	330 U	NA	
Acenaphthylene	330	NA	NA	330 U	NA	
Anthracene	330	NA	NA	330 U	NA	
Benzo(a)anthracene	330	NA	NA	330 U	NA	
Benzo(b)fluoranthene	330	NA	NA	330 U	NA	
Benzo(k)fluoranthene	330	NA	NA	330 U	NA	
Benzo(ghi)perylene	330	NA	NA	330 U	NA	
Benzo(a)pyrene	330	NA	NA	330 U	NA	
Chrysene	330	NA	NA	330 U	NA	
Dibenzo(a,h)anthracene	330	NA	NA	330 U	NA	
Fluoranthene	330	NA	NA	330 U	NA	
Fluorene	330	NA	NA	330 U	NA	
Indeno(1,2,3-cd)pyrene	330	NA	NA	330 U	NA	
2-Methylnaphthalene	330	NA	NA	330 U	NA	
Naphthalene	330	NA	NA	330 U	NA	
Phenanthrene	330	NA	NA	330 U	NA	
Pyrene	330	NA	NA	330 U	NA	
INTERNAL STANDARDS						
1,4-Dichlorobenzene-D4	50-200	NA	NA	139	NA	
Naphthalene-D8	50-200	NA	NA	128	NA	
Acenaphthene-D10	50-200	NA	NA	126	NA	
Phenanthrene-D10	50-200	NA	NA	150	NA	
Chrysene-D12	50-200	NA	NA	136	NA	
Perylene-D12	50-200	NA	NA	138	NA	
SURROGATES						
Nitrobenzene-D5	23-120	NA	NA	63	NA	
2-Fluorobiphenyl	30-115	NA	NA	78	NA	
Terphenyl-D14	18-137	NA	NA	102	NA	
Phenol-D5	24-113	NA	NA	58	NA	
2-Fluorophenol	25-121	NA	NA	52	NA	
2,4,6-Tribromophenol	19-122	NA	NA	85	NA	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:28 018/023

ANALYTICAL RESULTS

Client Sample ID:		W-TR00-14		W-TR00-18		W-TR01-19		W-TR01-20		W-TR01-22	
Job Number & Lab Sample ID:		A96-5277 A6527706		A96-5277 A6527710		A96-5277 A6527702		A96-5277 A6527703		A96-5277 A6527705	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result		Result	
METHOD 8080 - TCL PESTICIDES/PCBS											
Aldrin	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
alpha-BHC	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
beta-BHC	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
gamma-BHC (Lindane)	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
delta-BHC	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
Chlordane	80	80	U	80	U	80	U	80	U	80	U
4,4'-DDD	16	16	U	16	U	16	U	16	U	16	U
4,4'-DDE	16	16	U	16	U	16	U	16	U	16	U
4,4'-DDT	16	16	U	16	U	16	U	16	U	16	U
Dieldrin	16	16	U	16	U	16	U	16	U	16	U
Endosulfan I	16	16	U	16	U	16	U	16	U	16	U
Endosulfan II	16	16	U	16	U	16	U	16	U	16	U
Endosulfan Sulfate	16	16	U	16	U	16	U	16	U	16	U
Endrin	16	16	U	16	U	16	U	16	U	16	U
Endrin aldehyde	32	32	U	32	U	32	U	32	U	32	U
Heptachlor	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
Heptachlor epoxide	8.0	8.0	U	8.0	U	8.0	U	8.0	U	8.0	U
Methoxychlor	80	80	U	2.7	J	80	U	80	U	80	U
Toxaphene	160	160	U	160	U	160	U	160	U	160	U
Aroclor 1016	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1221	80	80	U	80	U	80	U	80	U	80	U
Aroclor 1232	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1242	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1248	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1254	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1260	40	40	U	40	U	40	U	40	U	40	U
SURROGATES											
Tetrachloro-m-xylene	27-132	106		96		89		82		82	
Decachlorobiphenyl	58-150	131		118		110		96		97	

* Indicates Result is Outside QC Limits
NA = Not Applicable

Date: 11/05/96
Time: 13:04:24

ANALYTICAL RESULTS

Rept: AN0353
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Client Sample ID:		W-TR00-15		W-TR00-16		W-TR00-17		W-TR01-18		W-TR01-21	
Job Number & Lab Sample ID:		A96-5277 A6527707		A96-5277 A6527708		A96-5277 A6527709		A96-5277 A6527701		A96-5277 A6527704	
Sample Date:		10/30/96		10/30/96		10/30/96		10/30/96		10/30/96	
Analyte (UG/KG)	RL	Result		Result		Result		Result		Result	
METHOD 8080 - POLYCHLORINATED BIPHENYLS											
Aroclor 1016	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1221	80	80	U	80	U	80	U	80	U	80	U
Aroclor 1232	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1242	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1248	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1254	40	40	U	40	U	40	U	40	U	40	U
Aroclor 1260	40	40	U	40	U	40	U	40	U	40	U
SURROGATES											
Tetrachloro-m-xylene	27-132	82		117		97		94		102	
Decachlorobiphenyl	58-150	98		110		104		110		98	

* Indicates Result is Outside QC Limits
NA = Not Applicable

Client Sample ID:	W-TR04-02
Job Number & Lab Sample ID:	A96-5277 A6527712
Sample Date:	10/30/96

Analyte (UG/KG)	RL	Result	
METHOD 8080 - POLYCHLORINATED BIPHENYLS			
Aroclor 1016	40	40	U
Aroclor 1221	80	80	U
Aroclor 1232	40	40	U
Aroclor 1242	40	40	U
Aroclor 1248	40	40	U
Aroclor 1254	40	40	U
Aroclor 1260	40	40	U
SURROGATES			
Tetrachloro-m-xylene	27-132	100	
Decachlorobiphenyl	58-150	104	

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 13:15 ☎ 003/023

Client Sample ID:		W-TR04-00		W-TR04-01		W-TR04-03			
Job Number & Lab Sample ID:		A96-5277 A6527714		A96-5277 A6527711		A96-5277 A6527713			
Sample Date:		10/30/96		10/30/96		10/30/96			
Analyte (UG/KG)	RL	Result		Result		Result			
METHOD 8080 - TCL PESTICIDES/PCBS									
Aldrin	8.0	8.0	U	8.0	U	8.0	U		
alpha-BHC	8.0	8.0	U	8.0	U	8.0	U		
beta-BHC	8.0	8.0	U	8.0	U	8.0	U		
gamma-BHC (Lindane)	8.0	8.0	U	8.0	U	8.0	U		
delta-BHC	8.0	8.0	U	8.0	U	8.0	U		
Chlordane	80	80	U	80	U	80	U		
4,4'-DDD	16	16	U	16	U	16	U		
4,4'-DDE	16	16	U	16	U	16	U		
4,4'-DDT	16	16	U	16	U	16	U		
Dieldrin	16	16	U	16	U	16	U		
Endosulfan I	16	16	U	16	U	16	U		
Endosulfan II	16	16	U	16	U	16	U		
Endosulfan Sulfate	16	16	U	16	U	16	U		
Endrin	16	16	U	16	U	16	U		
Endrin aldehyde	32	32	U	32	U	32	U		
Heptachlor	8.0	8.0	U	8.0	U	8.0	U		
Heptachlor epoxide	8.0	8.0	U	8.0	U	8.0	U		
Methoxychlor	80	80	U	80	U	2.6	J		
Toxaphene	160	160	U	160	U	160	U		
Aroclor 1016	40	40	U	40	U	40	U		
Aroclor 1221	80	80	U	80	U	80	U		
Aroclor 1232	40	40	U	40	U	40	U		
Aroclor 1242	40	40	U	40	U	40	U		
Aroclor 1248	40	40	U	40	U	40	U		
Aroclor 1254	40	40	U	40	U	40	U		
Aroclor 1260	40	40	U	40	U	40	U		
SURROGATES									
Tetrachloro-m-xylene	27-132	96		90		65			
Decachlorobiphenyl	58-150	120		110		64			

* Indicates Result is Outside QC Limits
NA = Not Applicable

11/05/96 15:37 ☎ 003/003

Date: 11/05/96
Time: 15:01:14

ANALYTICAL RESULTS

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Analyte	UNITS OF MEASURE	RL	W-TR00-14 A96-5277 A6527706 10/30/96 Result	W-TR00-18 A96-5277 A6527710 10/30/96 Result	W-TR01-19 A96-5277 A6527702 10/30/96 Result	W-TR01-20 A96-5277 A6527703 10/30/96 Result	W-TR01-22 A96-5277 A6527705 10/30/96 Result
TOTAL HSL METALS							
Aluminum - Total	MG/KG	0.77	8800	19700	21500	8210	9120
Antimony - Total	MG/KG	0.57	0.65 U	0.66 U	0.77 U	0.65 U	0.64 U
Arsenic - Total	MG/KG	0.28	2.3	6.0	8.5	3.6	2.9
Barium - Total	MG/KG	0.024	42.1	63.0	50.2	48.9	38.3
Beryllium - Total	MG/KG	0.010	1.1	1.2	1.4	1.1	1.1
Cadmium - Total	MG/KG	0.021	0.024 U	0.024 U	0.028 U	0.024 U	0.024 U
Calcium - Total	MG/KG	0.54	1400	2050	686	1260	526
Chromium - Total	MG/KG	0.26	9.1	22.2	29.8	5.7	5.6
Cobalt - Total	MG/KG	0.12	5.7	10.5	9.5	6.8	7.9
Copper - Total	MG/KG	0.087	56.9	5.8	14.9	79.6	91.3
Iron - Total	MG/KG	2.4	7900	23000	27800	8550	8560
Lead - Total	MG/KG	0.13	3.4	11.7	9.5	3.4	2.2
Magnesium - Total	MG/KG	0.87	2210	4160	3600	1560	2370
Manganese - Total	MG/KG	0.036	260	480	255	560	643
Mercury - Total	MG/KG	0.033	0.038 U	0.040 U	0.046 U	0.038 U	0.038 U
Nickel - Total	MG/KG	0.25	8.0	16.3	16.3	8.0	12.4
Potassium - Total	MG/KG	9.3	395	2250	1990	240	164
Selenium - Total	MG/KG	0.28	1.1	1.9	1.9	1.0	1.0
Silver - Total	MG/KG	0.25	0.28 U	0.29 U	0.34 U	0.28 U	0.28 U
Sodium - Total	MG/KG	56.8	484	410	492	609	505
Thallium - Total	MG/KG	0.36	1.1	2.3	1.4	1.1	1.1
Vanadium - Total	MG/KG	0.087	11.4	30.3	46.1	11.4	13.5
Zinc - Total	MG/KG	0.024	14.8	35.0	40.7	18.2	18.0

* Indicates Result is Outside QC Limits
NA = Not Applicable

ANALYTICAL RESULTS

Client Sample ID:			W-TR00-14	W-TR00-15	W-TR00-16	W-TR00-17	W-TR00-18
Job Number & Lab Sample ID:			A96-5277 A6527706	A96-5277 A6527707	A96-5277 A6527708	A96-5277 A6527709	A96-5277 A6527710
Sample Date:			10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Analyte	UNITS OF MEASURE	RL	Result	Result	Result	Result	Result
TOTAL METALS							
Thallium - Total	MG/KG	0.36	NA	0.69	1.8	2.5	NA
TOTAL HSL METALS							
Mercury - Total	MG/KG	0.033	0.038 U	NA	NA	NA	0.040 U

* Indicates Result is Outside QC Limits
NA = Not Applicable

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		Client Sample ID:	W-TR01-18	W-TR01-19	W-TR01-20	W-TR01-21	W-TR01-22
		Job Number & Lab Sample ID:	A96-5277 A6527701	A96-5277 A6527702	A96-5277 A6527703	A96-5277 A6527704	A96-5277 A6527705
		Sample Date:	10/30/96	10/30/96	10/30/96	10/30/96	10/30/96
Analyte	UNITS OF MEASURE	RL	Result	Result	Result	Result	Result
TOTAL METALS							
Thallium - Total	MG/KG	0.36	2.0	NA	NA	0.90	NA
TOTAL HSL METALS							
Mercury - Total	MG/KG	0.033	NA	0.046 U	0.038 U	NA	0.038 U

* Indicates Result is Outside QC Limits
NA = Not Applicable

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Client Sample ID:			W-TR04-00	W-TR04-01	W-TR04-02	W-TR04-03	
Job Number & Lab Sample ID:			A96-5277 A6527714	A96-5277 A6527711	A96-5277 A6527712	A96-5277 A6527713	
Sample Date:			10/30/96	10/30/96	10/30/96	10/30/96	
Analyte	UNITS OF MEASURE	RL	Result	Result	Result	Result	
TOTAL METALS							
Thallium - Total	MG/KG	0.36	NA	NA	1.4	NA	
TOTAL HSL METALS							
Mercury - Total	MG/KG	0.033	0.039 U	0.040 U	NA	0.037 U	

* Indicates Result is Outside QC Limits
NA = Not Applicable

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ANALYTICAL RESULTS

Client Sample ID:			W-TR04-00	W-TR04-01	W-TR04-03		
Job Number & Lab Sample ID:			A96-5277 A6527714	A96-5277 A6527711	A96-5277 A6527713		
Sample Date:			10/30/96	10/30/96	10/30/96		
Analyte	UNITS OF MEASURE	RL	Result	Result	Result		
TOTAL HSL METALS							
Aluminum - Total	MG/KG	0.77	18700	17700	11000		
Antimony - Total	MG/KG	0.57	0.65 U	0.66 U	0.63 U		
Arsenic - Total	MG/KG	0.28	7.9	9.9	4.6		
Barium - Total	MG/KG	0.024	60.7	48.7	55.6		
Beryllium - Total	MG/KG	0.010	1.1	1.2	1.1		
Cadmium - Total	MG/KG	0.021	0.024 U	0.024 U	0.023 U		
Calcium - Total	MG/KG	0.54	504	531	34500		
Chromium - Total	MG/KG	0.26	24.0	29.0	16.7		
Cobalt - Total	MG/KG	0.12	5.7	5.8	8.9		
Copper - Total	MG/KG	0.087	9.2	11.6	13.4		
Iron - Total	MG/KG	2.4	22000	26400	17600		
Lead - Total	MG/KG	0.13	9.2	9.3	8.9		
Magnesium - Total	MG/KG	0.87	2310	2460	22000		
Manganese - Total	MG/KG	0.036	149	92.8	472		
Mercury - Total	MG/KG	0.033	0.039 U	0.040 U	0.037 U		
Nickel - Total	MG/KG	0.25	12.6	11.6	12.2		
Potassium - Total	MG/KG	9.3	1020	1010	1820		
Selenium - Total	MG/KG	0.28	2.1	2.0	1.3		
Silver - Total	MG/KG	0.25	0.29 U	0.29 U	0.28 U		
Sodium - Total	MG/KG	56.8	324	314	1630		
Thallium - Total	MG/KG	0.36	2.3	2.3	1.1		
Vanadium - Total	MG/KG	0.087	36.7	42.9	25.6		
Zinc - Total	MG/KG	0.024	34.4	34.8	32.3		

* Indicates Result is Outside QC Limits
NA = Not Applicable