1 of 2

**Sampling and Analyses Report for December 1992 Semiannual
Postburn Sampling at the RMI UCG Site, Hanna, Wyoming**

Topical Report

Steven R. Lindblom

March 1993

Work Performed Under Contract No.: DE-FG21-88MC25038

**For
U.S. Department of Energy
Office of Fossil Energy
Morgantown Energy Technology Center
Morgantown, West Virginia**

**By
The University of Wyoming Research Corporation
Western Research Institute
Laramie, Wyoming**

MASTER

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SUMMARY

During December 1992, groundwater was sampled at the site of the November 1987-February 1988 Rocky Mountain 1 underground coal gasification test near Hanna, Wyoming. The groundwater is near baseline condition. Data from the field measurements and analyses of samples are presented. Benzene concentrations in the groundwater are below analytical detection limits (<0.01 mg/L) for all wells, except concentrations of 0.016 mg/L and 0.013 mg/L in coal seam wells EMW-3 and EMW-1, respectively.

INTRODUCTION

The Rocky Mountain 1 (RM1) underground coal gasification (UCG) test was conducted from November 16, 1987, through February 26, 1988 (United Engineers and Constructors 1989), at a site approximately one mile south of Hanna, Wyoming (Figure 1). The test consisted of a dual-module operation to evaluate the controlled retracting injection point (CRIP) technology, the elongated linked well (ELW) technology, and the interaction of closely spaced modules operating simultaneously. The test caused two cavities to form in the Hanna No. 1 coal seam and associated overburden. The Hanna No. 1 coal seam is approximately 30 ft thick and occurs at depths between 350 and 365 ft below the surface in the test area. The coal seam is overlain by sandstones, siltstones, and claystones deposited by various fluvial environments. Details of the geology and hydrology were reported by Oliver (1987) and Mason et al. (1987).

Groundwater monitoring was designed to satisfy the requirements of the Wyoming Department of Environmental Quality (WDEQ) in addition to providing research data toward the development of UCG technology that minimizes environmental impacts. Further background material and the sampling and analytical procedures associated with the sampling task are described in the Rocky Mountain 1 Postburn Groundwater Monitoring Quality Assurance Plan (Mason and Johnson 1988).

SAMPLING ACTIVITIES

The December 1992 semiannual groundwater sampling took place from December 3 through December 10, 1992. Samples were collected for analyses of a full-suite set of parameters (Table 1) following the schedule in Table 2. (Tables are located in Appendix A.) Adverse weather conditions caused several problems during this sampling event. Temperatures as low as -40°F (-40°C) caused sample lines and preservatives to freeze, and several volatile organic samples were lost (TW16-A, TW16-Adup, TW15-Adup, and TW17-Adup). Wind speeds up to 75 mph combined with 6-7 inches of snow caused significant drifting and prevented site access on December 5 and 6.

Water levels were measured across the site before any sampling activities were begun. Water table elevations in the coal seam aquifer rose approximately 2 ft since June 1992. Water level elevations measured on December 3, 1992, are listed in Table 3. A map of the potentiometric surface of the Hanna No. 1 coal seam (Figure 2) shows a hydraulic gradient from the southeast corner of the site to the northwest corner with a maximum elevation change of about 6 ft.

A total of 20 of the specified 22 wells were sampled during the December 1992 semiannual sampling. No sample was collected from unit C overburden well EMW-4 because of an obstruction in the well bore at a depth of approximately 115 ft. This obstruction was first encountered during the December 1990 quarterly sampling. This deletion was discussed with WDEQ at the May 23, 1991, Technical Advisory Subcommittee (TASC) meeting. CRIP cavity well CCW-1 was sampled in place of cavity

Figure 1. Location of Rocky Mountain 1 Underground Coal Gasification Site

Figure 2. Potentiometric Surface Map of the Hanna No. 1 Coal Seam on December 3, 1992

well CPW-2 because roof collapse in the CRIP cavity caused the casing to shift in CPW-2 (Lindblom 1990). This substitution was approved by WDEQ at the November 28, 1990, TASC meeting. An obstruction was encountered at a depth of 240 ft when lowering the sampling pump in well CCW-1. After several attempts, the sampling pump was successfully lowered to 285 ft. This depth is approximately 20 ft less than the depth that was attained in previous sampling events, possibly indicating further borehole collapse.

Three quality assurance/quality control samples were submitted to check sampling and analytical accuracy. All wells were sampled for the full suite (FS) of parameters, which are listed in Table 1.

The sampling activities performed by Western Research Institute (WRI) at the RM1 site during December 1992 are summarized in Table 4. This list shows the wells sampled, sampling date, sampling method, sample parameter suite, and observations made during sampling.

The wells were purged before sample collection to ensure that the samples were obtained from the hydrostratigraphic unit and not from the well bore. Stabilization of purging parameters (purge time, temperature, conductivity, pH, Eh, water level, and pump discharge rate) was used to indicate formation water recovery. As required by WDEQ, wells were purged a minimum of 80 minutes at approximately 1.0 gal/min to ensure sampling of formation water. Flow rates were reduced only after 80 minutes of pumping to obtain a sample. An exception was well EMW-10, where the water level in the well bore dropped below the pump after only 60 minutes. The flow rate was reduced immediately after the water level dropped below the pump intake. Data were collected at 20-minute intervals during well purging and recorded. Well purging data are listed in Appendix C.

Also included in Appendix C is the WRI groundwater sampling record form. This form includes general sampling information, stabilized purging parameter data, field alkalinity titration data, and analytical submissions. Appendix C contains these data for each well sampled.

DISCUSSION OF ANALYSES AND RESULTS

Evaluation of the analytical data shows that most parameters are consistent with concentrations detected in previous sampling events. Results from the full-suite analysis of cavity, coal seam, and overburden wells are listed in Tables 5, 6 and 7, respectively. A comparison of these analytical results with baseline data (Table 8) shows that groundwater at the site is at or near baseline conditions. Analytical methods are listed in Table 9.

Benzene concentrations at the RM1 site in December 1992 were below detection limits (<0.01 mg/L), except in coal seam wells EMW-1 and EMW-3. Well EMW-1 has shown benzene concentrations that range from below detection limits to a high in recent years of 0.044 mg/L. Over the past year, benzene concentrations in EMW-1 have decreased slightly from 0.021 mg/L in June 1992 to 0.013 mg/L in December 1992. Benzene

concentrations in EMW-3 have remained relatively stable. Results from June 1992 and December 1992 show benzene concentrations in EMW-3 of 0.019 mg/L and 0.016 mg/L, respectively. Volatile organics analysis data sheets are included in Appendix B.

The acetone detected in volatile organics analysis (VOA) samples from coal seam wells TW-15 and TW-17 has not been measured at the site in recent years. Discussions with analysts at WRI suggest that the source of the acetone is probably something other than UCG contaminants. Acetone is a very common and pervasive solvent with a very high background detection limit set by the U.S. Environmental Protection Agency (EPA) (0.050 mg/L). The acetone concentrations measured in samples from TW-15 and TW-17 (0.038 and 0.015 mg/L, respectively) may be the result of something as insignificant as a heater turning on in the laboratory during the analyses.

The highest baseline concentration (HBC) was established for some constituents prior to gasification operations at the RM1 site. These baseline concentrations are based on the highest concentrations measured in four sampling events over one year. Concentrations greater than the HBC of total organic carbon (TOC), total dissolved solids (TDS), and ammonia have been measured consistently in coal seam wells in the eastern section of the RM1 site. These high concentrations probably result from an influx of water from off-site rather than from UCG operations (Lindblom and Covell 1991). In December 1992, coal seam groundwater exceeded HBC levels of TOC only in well TW-2. HBCs for ammonia were not exceeded in any coal seam wells. HBCs for TDS in coal seam wells were only exceeded in cavity well VIW-1. Of the overburden wells, EMW-2 and EMW-8 exceeded overburden HBCs for TDS, EMW-2 exceeded HBCs for ammonia, and EMW-2 exceeded HBCs for TOC (Table 10).

Boron concentrations in the CRIP and the ELW cavities have also exceeded baseline levels consistently. Table 10 shows boron concentrations in the two cavity wells, VIW-1 and CCW-1. However, boron concentrations have exceeded the HBC in noncavity coal seam wells on only four occasions since postburn sampling started. Boron concentrations have not exceeded the HBC by more than 0.01 mg/L in any of the noncavity coal seam wells at any time during the RM1 study.

The values obtained for the full-suite parameters in December 1992 are comparable to baseline values (Table 8) obtained prior to gasification operations. Except for the instances noted above, the groundwater is near baseline conditions.

QUALITY ASSURANCE AND QUALITY CONTROL

The results of the quality assurance and quality control (QA/QC) standard, duplicate, and blank samples are listed in Table 11. Table 11 also lists the expected results for each sample as determined by WRI's QA/QC officer, Dr. John McKay. The expected results for the duplicate sample were the results obtained from the regular sample of well EMW-1. Expected results for the blank sample were below analytical detection limits.

Acceptable variations from expected values are specific to each parameter. When the actual result is near or outside the acceptable limit, the parameter is reexamined to determine the cause.

Concentrated stock solutions were supplied by the WRI QA/QC officer and submitted as field standard samples. Field standards were designed to check analytical accuracy and the effects of transportation and storage on samples of known concentrations. Standards of each element or compound to be analyzed were submitted anonymously within the regular sample set according to the instructions of the QA/QC officer. The sample preparation and analytical procedures were also supplied by the QA/QC officer.

Thirty-nine reported analyses for field standards were within acceptable limits. Only the analysis of the selenium standard was questionable. A value of less than 0.1 mg/L was reported, and the expected value was 0.120 mg/L. The analyst informed the QA Officer that a value of 0.1 mg/L is the detection limit for the method. The reported value is therefore within acceptable limits.

A field duplicate sample was collected from well EMW-1, which has been one of the most contaminated wells at the RMI site. The regular and duplicate samples were prepared and preserved in an identical manner. The duplicate sample was submitted anonymously using a predetermined name. Field duplicates were designed to check analytical accuracy and precision. All values for the duplicate sample fell within an acceptable range of accuracy and precision.

Rinsate sampling is intended to simulate the rinsing that occurs while purging each well before sampling. For this reason, the amount of rinsate water pumped through the sampling system for rinsate sampling represents an average amount of water pumped from each well.

Seventy-five gallons of local tap water was pumped through the sampling system. The line was then evacuated using compressed air. Finally, 10 gallons of Type I water was pumped through the line and sampled. Type I water is high-purity, deionized, distilled water prepared in WRI's analytical laboratory using distilled water as a feedstock and processing it through a Millipore water purification system. The Millipore system recirculates water through four cartridges (one carbon adsorption, one particulate trap, and two ion exchanges) and has a conductivity of less than 2 μ S/cm. The Type I water is, thus, assumed to be blank, and any level of parameters detected in the blank samples is assumed to be the result of cross-contamination from the sample line. The small concentrations of some parameters detected in the rinsate samples may be due to incomplete rinsing of the tap water in the sample line by the Type I water.

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DISCLAIMER

Mention of specific brand names or models of equipment is for information only and does not imply endorsement of any particular brand.

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APPENDIX A

Tables

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Table 1. Rocky Mountain 1 Groundwater Analysis Suites

Compliance Suite	Limited Suite	Full Suite	Field Measurements
Ammonia	Ammonia	Alkalinity	Alkalinity
Boron	Bicarbonate	Aluminum	Conductivity
Cyanide	Boron	Ammonia	Discharge Rate
Phenols	Cyanide	Arsenic	Eh
Sulfate	Fluoride	Barium	pH
Sulfide	Manganese	Bicarbonate	Pumping Time
TDS	Nitrate	BNA	Temperature
TOC	Nitrite	Boron	Water Level
	Phenols	Bromide	
	Sodium	Cadmium	
	Sulfate	Calcium	
	Sulfide	Carbonate	
	TDS	Chemical Oxygen Demand	
	TKN	Chloride	
	TOC	Chromium	
		Copper	
		Cyanide	
		Fluoride	
		Iron	
		Lead	
		Lithium	
		Magnesium	
		Manganese	
		Mercury	
		Molybdenum	
		Nickel	
		Nitrate	
		Nitrite	
		pH	
		Phenols	
		Potassium	
		Selenium	
		Silver	
		Sodium	
		Sulfate	
		Sulfide	
		TDS	
		TKN	
		Thiocyanate	
		TOC	
		Volatile Organics	
		Vanadium	
		Zinc	

Table 2. Rocky Mountain 1 Groundwater Restoration Monitoring Schedule

Year	Quarter	Inner-Ring	Outer-Ring	Cavity
		Wells	Wells	Wells
1988	1. March	FS	LS	FS
	2. June	CS	CS	FS
	3. September	CS	CS	CS
	4. December	CS	CS	CS
1989	1. March	CS	CS	CS
	2. June	CS, VOA	CS	CS, VOA
	3. September	CS, VOA	CS	CS, VOA
	4. December	FS	FS	FS
1990	1. March	CS, VOA	CS	CS, VOA
	2. June	LS, VOA	LS	LS, VOA
	3. September	CS, VOA	CS	CS, VOA
	4. December	FS	FS	FS
1991	2. June	LS, Benzene	LS, Benzene	LS, Benzene
	4. December	FS	FS	FS
1992	2. June	LS, Benzene	LS, Benzene	LS, Benzene
	4. December	FS	FS	FS

CS - Compliance Suite

LS - Limited Suite

FS - Full Suite

VOA - Volatile Organic Analysis

Table 3. Water Level Elevations at the RM1 Site on December 3, 1992

Well Name	Well Casing Elevation, ft	Water Level Depth, ft	Water Level Elevation, ft	Pretest Water Level Elevation^a, ft
EMW-1	6984.8	81.55	6903.25	6898.8
EMW-2	6986.3	77.33	6908.97	--
EMW-3	7006.0	101.65	6904.35	6899.3
EMW-4	6981.4	106.83	6874.57	--
EMW-6	6960.7	31.60	6929.10	--
EMW-8	6964.6	149.64	6815.16	--
EMW-9	6961.7	59.68	6902.02	6897.2
EMW-10	6964.2	91.93	6872.27	--
EMW-11a	6980.8	78.90	6901.90	6897.1
TW-2	6993.9	93.61	6902.79	6899.2
TW-3	6998.2	94.28	6903.92	6899.6
TW-4	6964.8	61.97	6902.83	6897.2
TW-5	6968.6	66.55	6902.05	6895.9
TW-11	7007.6	102.49	6905.11	6902.0
TW-12	7009.2	103.05	6906.15	6903.9
TW-13	6978.8	74.06	6904.74	6900.5
TW-14	6950.7	71.35	6879.35	6867.0
TW-14a	6956.4	53.50	6902.90	--
TW-15	6967.4	65.64	6901.76	6895.8
TW-16	6986.4	85.54	6900.86	6893.3
TW-17	6973.6	72.40	6901.50	6898.1
TW-18	6995.1	n.m.	n.m.	6900.4
VIW-1	6968.0	65.50	6905.00	--
CCW-1	6994.16	90.25	6903.95	--

^a From November 13, 1987, Hanna No. 1 coal seam measurements

Table 4. RM1 Sampling Summary for December 1992

Well Name	Date Sampled	Sample Method	Parameter Suite	Comments
EMW-1	12/9/92	Bennett pump	FS	Water is clear, slight sulfur odor.
EMW-2	12/9/92	Teflon bailer	FS	Water is clear and odor free.
EMW-3	12/9/92	Bennett pump	FC	Water is clear, slight hydrocarbon odor.
EMW-8	12/8/92	Teflon bailer	FS	Water is clear and odor free.
EMW-9	12/8/92	Bennett pump	FS	Water is clear and odor free.
EMW-10	12/8/92	Bennett pump	FS	Water is clear and odor free.
EMW-11a	12/9/92	Bennett pump	FS	Water is clear, slight sulfur odor.
TW-2	12/9/92	Bennett pump	FS	Water is clear, slight sulfur odor.
TW-3	12/8/92	Bennett pump	FS	Water is clear and odor free.
TW-4	12/8/92	Bennett pump	FS	Water is clear and odor free.
TW-5	12/8/92	Bennett pump	FS	Water is clear and odor free.

Table 4. RMI Sampling Summary for December 1992 (continued)

Well Name	Date Sampled	Sample Method	Parameter Suite	Comments
TW-11	12/7/92	Bennett pump	FS	Water is clear, slight sulfur odor.
TW-12	12/7/92	Bennett pump	FS	Water is clear, slight sulfur odor.
TW-13	12/7/92	Bennett pump	FS	Water is cloudy, gray with slight sulfur odor.
TW-15	12/3/92	Bennett pump	FS	Water is clear and odor free.
TW-16	12/4/92	Bennett pump	FS	Water is clear and odor free.
TW-17	12/4/92	Bennett pump	FS	Water is clear, slight sulfur odor.
TW-18	12/7/92	Bennett pump	FS	Water is clear, slight sulfur odor.
VIW-1	12/9/92	Bennett pump	FS	Water is clear, slight sulfur odor.
CCW-1	12/9/92	Bennett pump	FS	Water is slightly cloudy, slight sulfur odor. Well bore obstructed at 240 ft, pump lowered to 285 ft.

Table 5. Analyses for Samples Obtained from Cavity Wells

Well Name	VIW-1	CCW-1
<u>Parameter</u>		
Benzene, $\mu\text{g/L}$	2 ^a	<10
Phenolics, mg/L	<0.02	<0.02
Chemical Oxygen Demand, mg/L	41	38
Ammonia, mg/L	4.5	6.7
Nitrite, mg/L	<0.1	<0.1
Nitrate, mg/L	<0.1	<0.1
Total Kjeldahl Nitrogen, mg/L	5.0	6.6
Total Organic Carbon, mg/L	<10	<10
Sulfide, mg/L	<1	<1
Cyanide, mg/L	<0.020	<0.020
Alkalinity (lab), meq CaCO_3	500	312
Bicarbonate, meq CaCO_3	438	292
Bromide, mg/L	0.2	0.3
Carbonate, meq CaCO_3	7	9
Chloride, mg/L	20	26
Fluoride, mg/L	3.3	6.7
pH (lab)	8.0	8.5
Sulfate, mg/L	2300	1140
Total Dissolved Solids, mg/L	3500	1900
Thiocyanate, mg/L	<1	<1
Total Suspended Solids, mg/L	<10	<10
Aluminum, mg/L	<0.045	<0.045
Arsenic, mg/L	<0.005	<0.005
Barium, mg/L	0.045	0.022
Boron, mg/L	0.561	0.586
Cadmium, mg/L	<0.010	<0.010
Calcium, mg/L	244	20.6
Chromium, mg/L	<0.008	<0.008
Copper, mg/L	<0.006	<0.006
Iron, mg/L	1.30	0.175
Lead, mg/L	<0.050	<0.050
Lithium, mg/L	0.564	0.415
Magnesium, mg/L	28.3	5.21
Manganese, mg/L	0.301	0.070
Mercury, mg/L	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	0.018
Nickel, mg/L	<0.020	<0.020
Potassium, mg/L	62.8	26.8
Selenium, mg/L	<0.1	<0.1
Silver, mg/L	<0.007	<0.007
Sodium, mg/L	638	553
Vanadium, mg/L	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003
Sample Temperature, $^{\circ}\text{C}$	14.1	16.9
Corrected Conductivity, mmhos/cm (field)	2650	1750
pH (field)	8.03	8.55
Eh, mV (field) ^b	-49.86	-66.91
Sample Discharge Rate, gpm	1.2	1.1
Alkalinity, meq CaCO_3 (field)	467.06	297.22

^a Concentration below detection limit^b Corrected to standard H^+ electrode

Table 6. Analyses for Samples Obtained from Coal Seam Wells

Well Name	EMW-1	EMW-3	EMW-9	EMW-11a
Parameter				
Benzene, µg/L	13	16	<10	2 ^a
Phenolics, mg/L	<0.02	<0.02	<0.02	<0.02
Chemical Oxygen Demand, mg/L	65	93	97	76
Ammonia, mg/L	3.5	2.6	3.0	3.6
Nitrite, mg/L	<0.1	<0.1	<0.1	<0.1
Nitrate, mg/L	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen, mg/L	4.5	3.3	3.4	4.1
Total Organic Carbon, mg/L	17	20	27	21
Sulfide, mg/L	<1	<1	<1	<1
Cyanide, mg/L	<0.02	<0.02	<0.02	<0.02
Alkalinity (lab), meq CaCO ₃	936	785	654	1124
Bicarbonate, meq CaCO ₃	917	767	634	1108
Bromide, mg/L	0.1	<0.1	<0.1	0.2
Carbonate, meq CaCO ₃	19	18	20	16
Chloride, mg/L	10	4.7	11	3.8
Fluoride, mg/L	1.5	1.2	1.7	1.3
pH (lab)	8.3	8.4	8.5	8.2
Sulfate, mg/L	590	540	880	770
Total Dissolved Solids, mg/L	1890	1600	1890	2180
Thiocyanate, mg/L	<1	<1	<1	<1
Total Suspended Solids, mg/L	<10	<10	<10	<10
Aluminum, mg/L	<0.045	<0.045	<0.045	<0.045
Arsenic, mg/L	<0.005	<0.005	<0.005	<0.005
Barium, mg/L	0.069	0.078	0.045	0.053
Boron, mg/L	0.023	0.023	0.023	<0.020
Cadmium, mg/L	<0.010	<0.010	<0.010	<0.010
Calcium, mg/L	14.0	9.44	10.3	21.4
Chromium, mg/L	<0.008	<0.008	<0.008	<0.008
Copper, mg/L	<0.006	<0.006	<0.006	<0.006
Iron, mg/L	0.066	0.106	0.042	0.095
Lead, mg/L	<0.050	<0.050	<0.050	<0.050
Lithium, mg/L	0.096	0.075	0.081	0.126
Magnesium, mg/L	7.05	5.33	5.31	16.0
Manganese, mg/L	<0.003	<0.003	0.004	0.005
Mercury, mg/L	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	<0.010	<0.010	<0.010
Nickel, mg/L	<0.020	<0.020	<0.020	<0.020
Potassium, mg/L	6.48	<5.0	5.59	7.15
Selenium, mg/L	<0.1	<0.1	<0.1	<0.1
Silver, mg/L	<0.007	<0.007	<0.007	<0.007
Sodium, mg/L	602	528	615	648
Vanadium, mg/L	<0.008	<0.008	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003	<0.003	<0.003
Sample Temperature, °C	9.0	9.6	8.2	7.6
Corrected Conductivity, mmhos/cm (field)	2480	2180	2620	2960
pH (field)	8.64	8.90	8.63	8.14
Eh, mV (field) ^b	-71.00	-25.24	64.92	-36.61
Sample Discharge Rate, gpm	1.1	0.75	1.2	1.1
Alkalinity, meq CaCO ₃ (field)	949.56	764.29	648.48	1080.80

^a Concentration below detection limit

^b Corrected to standard H⁺ electrode

Table 6. Analyses for Samples Obtained from Coal Seam Wells (cont'd)

Well Name	TW-2	TW-3	TW-4	TW-5
Parameter				
Benzene, µg/L	<10	2 ^a	<10	<10
Phenolics, mg/L	<0.02	<0.02	<0.02	<0.02
Chemical Oxygen Demand, mg/L	89	58	67	79
Ammonia, mg/L	3.4	2.5	2.1	3.3
Nitrite, mg/L	<0.1	<0.1	<0.1	<0.1
Nitrate, mg/L	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen, mg/L	4.8	3.3	3.1	4.4
Total Organic Carbon, mg/L	53	27	44	34
Sulfide, mg/L	<1	<1	<1	<1
Cyanide, mg/L	<0.02	<0.02	<0.02	<0.02
Alkalinity (lab), meq CaCO ₃	891	691	758	667
Bicarbonate, meq CaCO ₃	877	676	735	651
Bromide, mg/L	<0.01	<0.01	<0.01	0.10
Carbonate, meq CaCO ₃	14	15	21	15
Chloride, mg/L	7.7	3.5	4.8	16
Fluoride, mg/L	0.9	1.4	2.2	1.4
pH (lab)	8.2	8.4	8.5	8.4
Sulfate, mg/L	750	600	370	1200
Total Dissolved Solids, mg/L	2080	1610	1420	2320
Thiocyanate, mg/L	<1	<1	<1	<1
Total Suspended Solids, mg/L	<10	<10	<10	<10
Aluminum, mg/L	<0.045	<0.045	<0.045	<0.045
Arsenic, mg/L	<0.005	<0.005	<0.005	<0.005
Barium, mg/L	0.051	0.105	0.032	0.061
Boron, mg/L	<0.020	<0.020	<0.020	<0.020
Cadmium, mg/L	<0.010	<0.010	<0.010	<0.010
Calcium, mg/L	19.6	9.85	6.13	15.4
Chromium, mg/L	<0.008	<0.008	<0.008	<0.008
Copper, mg/L	<0.006	<0.006	<0.006	<0.006
Iron, mg/L	0.093	0.073	0.040	0.062
Lead, mg/L	<0.050	<0.050	<0.050	<0.050
Lithium, mg/L	0.114	0.079	0.059	0.114
Magnesium, mg/L	15.4	4.80	3.11	8.88
Manganese, mg/L	<0.003	<0.003	<0.003	0.004
Mercury, mg/L	<0.0002	<0.0002	<0.0002	<0.000
2				
Molybdenum, mg/L	<0.01	<0.01	<0.01	<0.01
Nickel, mg/L	<0.020	<0.020	<0.020	<0.020
Potassium, mg/L	6.48	5.14	<5.0	6.48
Selenium, mg/L	<0.1	<0.1	<0.1	<0.1
Silver, mg/L	<0.007	<0.007	<0.007	<0.007
Sodium, mg/L	628	559	480	714
Vanadium, mg/L	<0.008	<0.008	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003	<0.003	<0.003
Sample Temperature, °C	8.3	11.6	10.6	10.0
Corrected Conductivity, mmhos/cm (field)	2200	2030	1800	3060
pH (field)	8.35	8.37	8.41	8.45
Eh, mV (field) ^b	-35.27	-57.44	-1.64	56.50
Sample Discharge Rate, gpm	1.1	1.0	1.2	1.2
Alkalinity, meq CaCO ₃ (field)	891.66	690.94	748.84	644.62

^a Concentration below detection limit^b Corrected to standard H⁺ electrode

Table 6. Analyses for Samples Obtained from Coal Seam Wells (cont'd)

Well Name	TW-11	TW-12	TW-13	TW-15
Parameter				
Benzene, µg/L	<10	<10	<10	<10
Phenolics, mg/L	<0.02	<0.02	<0.02	<0.02
Chemical Oxygen Demand, mg/L	77	56	75	69
Ammonia, mg/L	3.0	2.8	2.3	2.3
Nitrite, mg/L	<0.1	<0.1	<0.1	<0.1
Nitrate, mg/L	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen, mg/L	3.9	3.4	3.0	3.3
Total Organic Carbon, mg/L	32	15	21	27
Sulfide, mg/L	<1	<1	<1	<1
Cyanide, mg/L	<0.02	<0.02	<0.02	<0.02
Alkalinity (lab), meq CaCO ₃	810	713	672	740
Bicarbonate, meq CaCO ₃	790	698	652	717
Bromide, mg/L	<0.1	<0.1	<0.1	<0.1
Carbonate, meq CaCO ₃	19	15	20	23
Chloride, mg/L	4.7	4.4	3.1	6.2
Fluoride, mg/L	1.3	1.6	1.9	2.7
pH (lab)	8.4	8.4	8.5	8.5
Sulfate, mg/L	470	600	420	420
Total Dissolved Solids, mg/L	1550	1620	1460	1460
Thiocyanate, mg/L	<1	<1	<1	<1
Total Suspended Solids, mg/L	<10	<10	<10	<10
Aluminum, mg/L	<0.045	<0.045	0.081	<0.045
Arsenic, mg/L	<0.005	<0.005	<0.005	<0.005
Barium, mg/L	0.093	0.056	0.127	0.038
Boron, mg/L	<0.020	<0.020	<0.020	<0.020
Cadmium, mg/L	<0.010	<0.010	<0.010	<0.010
Calcium, mg/L	20.5	12.3	6.31	6.24
Chromium, mg/L	<0.008	<0.008	<0.008	<0.008
Copper, mg/L	<0.006	<0.006	<0.006	<0.006
Iron, mg/L	0.071	0.057	0.090	0.078
Lead, mg/L	<0.050	<0.050	<0.050	<0.050
Lithium, mg/L	0.096	0.075	0.059	0.061
Magnesium, mg/L	18.4	9.05	3.41	3.17
Manganese, mg/L	0.004	<0.003	<0.003	<0.003
Mercury, mg/L	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	<0.010	<0.010	<0.010
Nickel, mg/L	<0.020	<0.020	<0.020	<0.020
Potassium, mg/L	6.03	<5.0	<5.0	<5.0
Selenium, mg/L	<0.1	<0.1	<0.1	<0.1
Silver, mg/L	<0.007	<0.007	<0.007	<0.007
Sodium, mg/L	494	540	476	495
Vanadium, mg/L	<0.008	<0.008	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003	<0.003	<0.003
Sample Temperature, °C	8.0	8.9	8.9	6.9
Corrected Conductivity, mmhos/cm (field)	2110	1970	1910	2070
pH (field)	8.42	8.38	8.40	8.51
Eh, mV (field) ^a	6.70	71.69	13.90	49.09
Sample Discharge Rate, gpm	1.1	1.1	0.50	0.4
Alkalinity, meq CaCO ₃ (field)	752.70	698.66	679.36	729.54

^a Corrected to standard H⁺ electrode

Table 6. Analyses for Samples Obtained from Coal Seam Wells (cont'd)

Well Name	TW-16	TW-17	TW-18
<u>Parameter</u>			
Benzene, µg/L	^a	<10	<10
Phenolics, mg/L	<0.02	<0.02	<0.02
Chemical Oxygen Demand, mg/L	99	113	105
Ammonia, mg/L	2.8	3.2	7.5
Nitrite, mg/L	<0.1	<0.1	<0.1
Nitrate, mg/L	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen, mg/L	4.2	4.3	7.4
Total Organic Carbon, mg/L	34	35	37
Sulfide, mg/L	<1	<1	<1
Cyanide, mg/L	<0.02	<0.02	<0.02
Alkalinity (lab), meq CaCO ₃	654	791	785
Bicarbonate, meq CaCO ₃	641	772	772
Bromide, mg/L	<0.1	<0.1	<0.1
Carbonate, meq CaCO ₃	13	19	13
Chloride, mg/L	9.3	10	12
Fluoride, mg/L	1.9	1.4	0.75
pH (lab)	8.3	8.4	8.2
Sulfate, mg/L	820	960	1100
Total Dissolved Solids, mg/L	1840	2130	2240
Thiocyanate, mg/L	<1	<1	<1
Total Suspended Solids, mg/L	<10	<10	<10
Aluminum, mg/L	<0.045	<0.045	<0.045
Arsenic, mg/L	<0.005	<0.005	<0.005
Barium, mg/L	0.036	0.068	0.050
Boron, mg/L	<0.020	<0.020	<0.020
Cadmium, mg/L	<0.010	<0.010	<0.010
Calcium, mg/L	9.63	21.2	74.3
Chromium, mg/L	<0.008	<0.008	<0.008
Copper, mg/L	<0.006	<0.006	<0.006
Iron, mg/L	0.117	0.065	0.166
Lead, mg/L	<0.050	<0.050	<0.050
Lithium, mg/L	0.079	0.104	0.163
Magnesium, mg/L	5.78	15.9	67.1
Manganese, mg/L	0.004	0.005	0.013
Mercury, mg/L	<0.0002	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	<0.010	<0.010
Nickel, mg/L	<0.020	<0.020	<0.020
Potassium, mg/L	5.36	6.48	11.2
Selenium, mg/L	<0.1	<0.1	<0.1
Silver, mg/L	<0.007	<0.007	<0.007
Sodium, mg/L	621	675	561
Vanadium, mg/L	<0.008	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003	<0.003
Sample Temperature, °C	10.3	9.0	10.5
Corrected Conductivity, mmhos/cm (field)	2320	2420	2770
pH (field)	8.38	8.31	8.10
Eh, mV (field) ^b	58.03	-6.0	93.05
Sample Discharge Rate, gpm	1.1	1.3	1.1
Alkalinity, meq CaCO ₃ (field)	644.62	768.14	775.85

^a Value not determined^b Corrected to standard H⁺ electrode

Table 7. Analyses for Samples Obtained from Overburden Wells

Well Name	EMW-2	EMW-8	EMW-10
Parameter			
Benzene, µg/L	<10	<10	<10
Phenolics, mg/L	<0.02	<0.02	<0.02
Chemical Oxygen Demand, mg/L	52	54	<20
Ammonia, mg/L	7.2	2.5	3.7
Nitrite, mg/L	<0.1	<0.1	<0.1
Nitrate, mg/L	0.2	<0.1	0.5
Total Kjeldahl Nitrogen, mg/L	7.6	3.0	3.6
Total Organic Carbon, mg/L	11	<10	<10
Sulfide, mg/L	<1	<1	<1
Cyanide, mg/L	<0.02	<0.02	<0.02
Alkalinity (lab), meq CaCO ₃	1163	1062	443
Bicarbonate, meq CaCO ₃	900	1024	440
Bromide, mg/L	0.1	0.2	<0.1
Carbonate, meq CaCO ₃	261	38	3
Chloride, mg/L	53	53	2.1
Fluoride, mg/L	1.4	2.2	0.12
pH (lab)	9.5	8.6	7.8
Sulfate, mg/L	4.5	95	94
Total Dissolved Solids, mg/L	1360	1370	550
Thiocyanate, mg/L	<1	<1	<1
Total Suspended Solids, mg/L	<10	<10	<10
Aluminum, mg/L	<0.045	<0.045	<0.045
Arsenic, mg/L	<0.005	<0.005	<0.005
Barium, mg/L	0.081	0.188	0.080
Boron, mg/L	0.063	0.060	0.033
Cadmium, mg/L	<0.010	<0.010	<0.010
Calcium, mg/L	2.15	6.66	59.3
Chromium, mg/L	<0.008	<0.008	<0.008
Copper, mg/L	<0.006	<0.006	<0.006
Iron, mg/L	0.027	0.045	0.461
Lead, mg/L	<0.050	<0.050	<0.050
Lithium, mg/L	0.112	0.094	0.049
Magnesium, mg/L	2.33	4.26	29.3
Manganese, mg/L	<0.003	<0.003	0.052
Mercury, mg/L	<0.0002	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	<0.010	<0.010
Nickel, mg/L	<0.020	<0.020	<0.020
Potassium, mg/L	17.0	8.27	8.49
Selenium, mg/L	<0.1	<0.1	<0.1
Silver, mg/L	<0.007	<0.007	<0.007
Sodium, mg/L	535	504	100
Vanadium, mg/L	<0.008	<0.008	<0.008
Zinc, mg/L	<0.003	<0.003	<0.003
Sample Temperature, °C	6.3	5.9	4.3
Corrected Conductivity, mmhos/cm (field)	1910	2020	850
pH (field)	9.61	8.77	7.43
Eh, mV (field) ^a	-34.97	11.69	195.63
Sample Discharge Rate, gpm	b	b	0.6
Alkalinity, meq CaCO ₃ (field)	c	c	502.00

^a Corrected to standard H⁺ electrode^b Well was bailed^c Value not determined

Table 8. Baseline Groundwater Parameters RM1 UCG Project, Hanna, Wyoming^a

Parameters	Range of Concentrations RM1 Baseline Coal Aquifer Wells, mg/L ^b
TOC	11-45
PNAs	Trace
Volatile Organics	Trace
Phenols	<0.020 ^c
Ammonia	2.4 - 7.9
Alkalinity (Field)	638 - 855
pH	7.7 - 9.24
Sulfates	300 - 1400
TDS	1360 - 2750
Cyanide	<0.02
Boron	<0.01 - 0.037
Aluminum	<0.03 - 0.0253
Cadmium	<0.01
Chromium	<0.01
Copper	<0.01
Lead	<0.05
Mercury	<0.00005
Nickel	<0.01
Selenium	<0.005
Arsenic	<0.005
Barium	0.016 - 0.162
Iron	0.042 - 1.060
Manganese	<0.005 - 0.024
Zinc	<0.015

^a From Covell et al. 1992

^b The baseline analyses are for October and December 1986 (WRI 1986a and 1986b) and March and August 1987 (WRI 1987a and 1987b)

^c Less than (<) indicates that the concentrations are below detection limits

Table 9. Summary of Methods and Accuracy, Precision, and Detection-Limit Objectives

Parameter	Method	Accuracy, % Bias	Precision, RSD ^a	Detection Limits
<u>Anions</u>				
Alkalinity	EPA 310.1	25	5	10 mg/L
HCO ₃ ⁻ , CO ₃ ²⁻	SM 406C	NA ^b	NA ^b	NA ^b
Br ⁻ , Cl ⁻	EPA 300.0	NA	NA	0./mg/L
F ⁻	EPA 340.2	5	5	0.2 mg/L
	SM 429, modified			
S ²⁻	EPA 376.1	NA ^b	NA ^b	1 mg/L
SO ₄ ²⁻	EPA 300.0	NA	NA	0.1 mg/L
<u>Cyanides</u>				
CN ⁻	EPA 335.2 or EPA 335.3			
SCN ⁻	SM 412L	15	10	0.5 mg/L
<u>Nitrogen</u>				
Free NH ₃ -N	EPA 351.2, modified	5	10	0.2 mg/L
Total Kjeldahl NH ₃ -N				
NO ₂ /NO ₃ -N	EPA 300.0	NA	NA	0.10 mg/L
<u>Organics</u>				
Phenol	EPA 420.2	10	10	20 µg/L
Volatiles	CLP modified	40	25	Sample and analyte dependent
Semivolatiles ^c	TCLP modified	40	25	Sample and analyte dependent, typically 10 µg/L
<u>Other</u>				
COD	EPA 410.4	NA ^b	NA ^b	50 mg/L
Conductivity	EPA 120.1	5	10	
Eh	USGS (1976)	NA ^b	NA ^b	
pH	EPA 150.2	1	5	
Temperature	SM 212	NA ^b	NA ^b	
TOC	SM 505	15	15	10 mg/L
	(combustion, coulometric titration)			

Table 9. Summary of Methods and Accuracy, Precision, and Detection-Limit Objectives (continued)

Parameter	Method	Accuracy, % Bias	Precision, RSD ^a	Detection Limits
TDS	EPA 160.1	NA ^b	NA ^b	10 mg/L
TSS	EPA 160.2	NA ^b	NA ^b	4 mg/L
<u>Trace Elements</u>				
As	EPA 260.2	20	20	5 µg/L
Se	EPA 270.2	20	20	5 µg/L
Hg	EPA 245.1	20	20	0.5 µg/L
B, Ba, Ca, Cd, Cr, Cu, Fe, Li, Mo, Ni, V, Zn	EPA 200.7	20	20	0.01 mg/L
Al	EPA 200.7	20	20	0.03 mg/L
K	EPA 200.7	20	20	5 mg/L
Mg, Mn	EPA 200.7	20	20	0.005 mg/L
Na	EPA 200.7	20	20	0.5 mg/L
Pb	EPA 200.7	20	20	0.05 mg/L

^a RSD = Relative Standard Deviation (or coefficient of variation) = $s/m \times 100$, where s is the standard deviation and m is the mean

^b NA = Not available

^c Includes acid extractables, base/neutral extractables, heterocyclics, and PNAs

References: EPA analyses (U.S. EPA 1983), SM analyses (AWWA 1985), CLP methods (U.S. EPA 1985), USGS method (Wood 1976)

Table 10. Wells Exceeding Highest Baseline Concentrations of Indicator Constituents, December 1992, mg/L

Coal Seam Wells	Overburden Wells
<u>TDS</u>	<u>TDS</u>
VIW-1 = 3500	EMW-2 = 1360
HBC = 2750	EMW-8 = 1370
	HBC = 1040
<u>TOC</u>	<u>TOC</u>
TW-2 = 53	EMW-2 = 11
HBC = 45	HBC = 10
<u>Boron</u>	<u>Ammonia</u>
VIW-1 = 0.561	EMW-2 = 7.2
CCW-1 = 0.586	HBC = 4.7
HBC = 0.037	

Baseline concentrations listed in Table 8.

Table 11. Analyses for Quality Assurance/Quality Control Samples

Sample Type:	Rinsate ^a	Standard		Duplicate	
Result Type:	Actual	Actual	Expected	Actual	Expected
<u>Parameter</u>					
Benzene, µg/L	<10	120	100	13	13
Phenolics, mg/L	<0.020	0.164	0.172	<0.020	<0.020
COD, mg/L	<20	142	146	65	65
Ammonia, mg/L	<0.2	6.9	7.2	3.2	3.1
Nitrate, mg/L	<0.1	5.3	5.2	<0.1	<0.1
Nitrite, mg/L	<0.1	1.95	1.88	<0.1	<0.1
TKN, mg/L	<0.5	5.9	6.6	4.3	4.5
TOC, mg/L	<10	50	57	15	17
Sulfide, mg/L	<1	n.m.	4.2	<1	<1
Cyanide, mg/L	<0.020	0.220	0.245	<0.02	<0.02
Alk. (lab), meq CaCO ₃	<10	125	119	930	936
Bicarb., meq CaCO ₃	<1	111	106	910	917
Carbonate, meq CaCO ₃	<10	14	12.5	20	19
Bromide, mg/L	<0.1	10.8	12.0	<0.1	0.10
Chloride, mg/L	0.2	232	231	11	10
Fluoride, mg/L	<0.1	9.2	8.6	1.5	1.5
pH (lab)	6.2	9.1	9.1	8.4	8.3
Sulfate, mg/L	0.4	215	205	620	590
TDS, mg/L	<10	1020	1060	1840	1890
Thiocyanate, mg/L	<1	n.m.	8.39	<1	<1
TSS, mg/L	<10	n.m.	26	<10	<10
Aluminum, mg/L	<0.045	2.38	2.50	<0.045	<0.045
Arsenic, mg/L	<0.005	0.119	0.120	<0.005	<0.005
Barium, mg/L	<0.010	2.50	2.50	0.075	0.069
Boron, mg/L	<0.020	2.48	2.50	<0.020	0.023
Cadmium, mg/L	<0.010	0.113	0.120	<0.010	<0.010
Calcium, mg/L	0.341	0.142	0.120	14.5	14.0
Chromium, mg/L	<0.008	0.117	0.120	<0.008	<0.008
Copper, mg/L	<0.006	0.126	0.120	<0.006	<0.006
Iron, mg/L	0.006	0.117	0.120	0.068	0.066
Lead, mg/L	<0.050	0.125	0.120	<0.050	<0.050
Lithium, mg/L	<0.010	0.297	0.300	0.098	0.096
Magnesium, mg/L	0.015	0.141	0.120	7.35	7.05
Manganese, mg/L	<0.003	0.121	0.120	<0.003	<0.003
Mercury, mg/L	<0.0002	0.0014	0.0015	<0.0002	<0.0002
Molybdenum, mg/L	<0.010	0.122	0.120	<0.010	<0.010
Nickel, mg/L	<0.020	0.121	0.120	<0.020	<0.020
Potassium, mg/L	<5.0	22.8	25.0	5.81	6.48
Selenium, mg/L	<0.1	<0.10	0.120	<0.100	<0.1
Silver, mg/L	<0.007	2.46	2.50	<0.007	<0.007
Sodium, mg/L	0.103	2.40	2.50	634	602
Vanadium, mg/L	0.009	0.134	0.120	<0.008	<0.008
Zinc, mg/L	<0.003	0.122	0.120	<0.003	<0.003

^a Expected results for rinsate sample parameters are below detection limit.

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APPENDIX B
VOA Analytical Results

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: VB268

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-08-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-83-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMWI

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM118

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/15/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethane	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethane (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropane	10.1	U
79-01-6	Trichloroethane	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	13.1	
10061-02-6	trans-1,3-Dichloropropane	10.1	U
75-25-2	Bromoform	10.1	U
100-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethane	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
100-88-3	Toluene	10.1	U
100-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Western Research Institut Contract: 68-D2-0017

EMW2

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM119

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/15/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor:

1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	2.1	J
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
74-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Western Research Institut Contract: 68-D2-0017

EMW3

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM117

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/15/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor:

1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	15.	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-80-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW3-DUP

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM128

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/17/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) U6/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	13.1	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW8

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM110

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethene	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethene (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethene	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethene	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW9

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM109

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	-----Chloromethane	10.1U	
74-83-9	-----Bromomethane	10.1U	
75-01-4	-----Vinyl Chloride	10.1U	
75-00-3	-----Chloroethane	10.1U	
75-09-2	-----Methylene Chloride	10.1U	
67-64-1	-----Acetone	10.1U	
75-15-0	-----Carbon Disulfide	10.1U	
75-35-4	-----1,1-Dichloroethene	10.1U	
75-34-3	-----1,1-Dichloroethane	10.1U	
540-59-0	-----1,2-Dichloroethene (total)	10.1U	
67-66-3	-----Chloroform	10.1U	
107-06-2	-----1,2-Dichloroethane	10.1U	
78-93-3	-----2-Butanone	10.1U	
71-55-6	-----1,1,1-Trichloroethane	10.1U	
56-23-5	-----Carbon Tetrachloride	10.1U	
75-27-4	-----Bromodichloromethane	10.1U	
78-87-5	-----1,2-Dichloropropane	10.1U	
10061-01-5	-----cis-1,3-Dichloropropene	10.1U	
79-01-6	-----Trichloroethene	10.1U	
124-48-1	-----Dibromochloromethane	10.1U	
79-00-5	-----1,1,2-Trichloroethane	10.1U	
71-43-2	-----Benzene	10.1U	
10061-02-6	-----trans-1,3-Dichloropropene	10.1U	
75-25-2	-----Bromoform	10.1U	
108-10-1	-----4-Methyl-2-Pentanone	10.1U	
591-78-6	-----2-Hexanone	10.1U	
127-18-4	-----Tetrachloroethene	10.1U	
79-34-5	-----1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	-----Toluene	10.1U	
108-90-7	-----Chlorobenzene	10.1U	
100-41-4	-----Ethylbenzene	10.1U	
100-42-5	-----Styrene	10.1U	
1330-20-7	-----Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW10

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM108

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethene	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethene	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW11A

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM116

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/15/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethene	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethene (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethene	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	2.1J	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethene	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EMW11A-DUP

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM125

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/17/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	3.1J	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW2

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM115

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/15/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

CAS NO.	COMPOUND	Q
74-87-3	-----Chloromethane	10.1U
74-83-9	-----Bromomethane	10.1U
75-01-4	-----Vinyl Chloride	10.1U
75-00-3	-----Chloroethane	10.1U
75-03-2	-----Methylene Chloride	10.1U
67-64-1	-----Acetone	10.1U
75-15-0	-----Carbon Disulfide	10.1U
75-35-4	-----1,1-Dichloroethene	10.1U
75-34-3	-----1,1-Dichloroethane	10.1U
540-59-0	-----1,2-Dichloroethene (total)	10.1U
67-66-3	-----Chloroform	10.1U
107-06-2	-----1,2-Dichloroethane	10.1U
78-93-3	-----2-Butanone	10.1U
71-55-6	-----1,1,1-Trichloroethane	10.1U
56-23-5	-----Carbon Tetrachloride	10.1U
75-27-4	-----Bromodichloromethane	10.1U
78-87-5	-----1,2-Dichloropropane	10.1U
10061-01-5	-----cis-1,3-Dichloropropene	10.1U
79-01-6	-----Trichloroethene	10.1U
124-48-1	-----Dibromochloromethane	10.1U
79-00-5	-----1,1,2-Trichloroethane	10.1U
71-43-2	-----Benzene	10.1U
10061-02-6	-----trans-1,3-Dichloropropene	10.1U
75-25-2	-----Bromoform	10.1U
108-10-1	-----4-Methyl-2-Pentanone	10.1U
591-78-6	-----2-Hexanone	10.1U
127-18-4	-----Tetrachloroethene	10.1U
79-34-5	-----1,1,2,2-Tetrachloroethane	10.1U
108-88-3	-----Toluene	10.1U
108-90-7	-----Chlorobenzene	10.1U
100-41-4	-----Ethylbenzene	10.1U
100-42-5	-----Styrene	10.1U
1330-20-7	-----Xylene (total)	10.1U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW3

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM113

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethene	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethene (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropene	10.1	U
79-01-6	Trichloroethene	10.1	U
174-48-1	Dibromochloromethane	10.1	U
71-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	2.1	J
10061-02-6	trans-1,3-Dichloropropene	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethane	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW4

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM112

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	-----Chloromethane	10.1U	
74-83-9	-----Bromomethane	10.1U	
75-01-4	-----Vinyl Chloride	10.1U	
75-00-3	-----Chloroethane	10.1U	
75-09-2	-----Methylene Chloride	10.1U	
67-64-1	-----Acetone	10.1U	
75-15-0	-----Carbon Disulfide	10.1U	
75-35-4	-----1,1-Dichloroethene	10.1U	
75-34-3	-----1,1-Dichloroethane	10.1U	
540-59-0	-----1,2-Dichloroethene (total)	10.1U	
67-66-3	-----Chloroform	10.1U	
107-06-2	-----1,2-Dichloroethane	10.1U	
79-93-3	-----2-Butanone	10.1U	
71-55-6	-----1,1,1-Trichloroethane	10.1U	
56-23-5	-----Carbon Tetrachloride	10.1U	
75-27-4	-----Bromodichloromethane	10.1U	
78-87-5	-----1,2-Dichloropropane	10.1U	
10061-01-5	-----cis-1,3-Dichloropropene	10.1U	
79-01-6	-----Trichloroethene	10.1U	
124-48-1	-----Dibromochloromethane	10.1U	
79-00-5	-----1,1,2-Trichloroethane	10.1U	
71-43-2	-----Benzene	10.1U	
10061-02-6	-----trans-1,3-Dichloropropene	10.1U	
75-25-2	-----Bromoform	10.1U	
108-10-1	-----4-Methyl-2-Pentanone	10.1U	
591-78-6	-----2-Hexanone	10.1U	
127-18-4	-----Tetrachloroethene	10.1U	
79-34-5	-----1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	-----Toluene	10.1U	
108-90-7	-----Chlorobenzene	10.1U	
100-41-4	-----Ethylbenzene	10.1U	
100-42-5	-----Styrene	10.1U	
1330-20-7	-----Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW5

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM111

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW11

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM105

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-09-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW12

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM106

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-08-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-83-3	2-Butanone	10.1U	
71-55-5	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropane	10.1U	
79-01-6	Trichloroethane	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	10.1U	
10061-02-6	trans-1,3-Dichloropropane	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethane	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW13

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM107

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	1.1	J
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethane	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethane (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-83-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropane	10.1	U
79-01-6	Trichloroethane	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	10.1	U
10061-02-6	trans-1,3-Dichloropropane	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethane	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TWIS

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM101

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

CONCENTRATION UNITS:

CAS NO.

COMPOUND

(ug/L or ug/Kg) UG/L

Q

74-87-3-----	Chloromethane	10.1	U
74-83-9-----	Bromomethane	10.1	U
75-01-4-----	Vinyl Chloride	10.1	U
75-00-3-----	Chloroethane	10.1	U
75-09-2-----	Methylene Chloride	10.1	U
67-64-1-----	Acetone	38.1	
75-15-0-----	Carbon Disulfide	10.1	U
75-35-4-----	1,1-Dichloroethane	10.1	U
75-34-3-----	1,1-Dichloroethane	10.1	U
540-59-0-----	1,2-Dichloroethane (total)	10.1	U
67-66-3-----	Chloroform	10.1	U
107-06-2-----	1,2-Dichloroethane	10.1	U
78-93-3-----	2-Butanone	10.1	U
71-55-6-----	1,1,1-Trichloroethane	10.1	U
56-23-5-----	Carbon Tetrachloride	10.1	U
75-27-4-----	Bromodichloromethane	10.1	U
78-07-5-----	1,2-Dichloropropane	10.1	U
10061-01-5-----	cis-1,3-Dichloropropene	10.1	U
79-01-6-----	Trichloroethane	10.1	U
124-48-1-----	Dibromochloromethane	10.1	U
79-00-5-----	1,1,2-Trichloroethane	10.1	U
71-43-2-----	Benzene	10.1	U
10061-02-6-----	trans-1,3-Dichloropropene	10.1	U
75-25-2-----	Bromoform	10.1	U
108-10-1-----	4-Methyl-2-Pentanone	10.1	U
591-78-6-----	2-Hexanone	10.1	U
127-18-4-----	Tetrachloroethane	10.1	U
79-34-5-----	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3-----	Toluene	10.1	U
108-90-7-----	Chlorobenzene	10.1	U
100-41-4-----	Ethylbenzene	10.1	U
100-42-5-----	Styrene	10.1	U
1330-20-7-----	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW17

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM102

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/14/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	15.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethane	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethane (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropene	10.1	U
79-01-6	Trichloroethane	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	10.1	U
10061-02-6	trans-1,3-Dichloropropene	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethane	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW18

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM103

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/L
74-87-3	Chloromethane	10.10	
74-83-9	Bromomethane	10.10	
75-01-4	Vinyl Chloride	10.10	
75-00-3	Chloroethane	10.10	
75-09-2	Methylene Chloride	10.10	
67-64-1	Acetone	10.10	
75-15-0	Carbon Disulfide	10.10	
75-35-4	1,1-Dichloroethene	10.10	
75-34-3	1,1-Dichloroethane	10.10	
540-59-0	1,2-Dichloroethene (total)	10.10	
67-66-3	Chloroform	10.10	
107-06-2	1,2-Dichloroethane	10.10	
78-93-3	2-Butanone	10.10	
71-55-6	1,1,1-Trichloroethane	10.10	
56-23-5	Carbon Tetrachloride	10.10	
75-27-4	Bromodichloromethane	10.10	
78-87-5	1,2-Dichloropropane	10.10	
10061-01-5	cis-1,3-Dichloropropene	10.10	
79-01-6	Trichloroethene	10.10	
124-48-1	Dibromochloromethane	10.10	
79-00-5	1,1,2-Trichloroethane	10.10	
71-43-2	Benzene	10.10	
10061-02-6	trans-1,3-Dichloropropene	10.10	
75-25-2	Bromoform	10.10	
108-10-1	4-Methyl-2-Pentanone	10.10	
591-78-6	2-Hexanone	10.10	
127-18-4	Tetrachloroethene	10.10	
79-34-5	1,1,2,2-Tetrachloroethane	10.10	
108-88-3	Toluene	10.10	
108-90-7	Chlorobenzene	10.10	
100-41-4	Ethylbenzene	10.10	
100-42-5	Styrene	10.10	
1330-20-7	Xylene (total)	10.10	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Western Research Institut Contract: 68-D2-0017

CCW1

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM121

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/15/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0 (uL)

Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethene	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethene (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropene	10.1	U
79-01-6	Trichloroethene	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	10.1	U
10061-02-6	trans-1,3-Dichloropropene	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethene	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: Western Research Institut Contract: 68-D2-0017

VIWI

Lab Code: WRI

Case No.: 10201

SAS No.:

SDG No.: RM-1

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML

Lab File ID: RM122

Level: (low/med) LOW

Date Received: 12/10/92

% Moisture: not dec.

Date Analyzed: 12/15/92

GC Column: DB-624

ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: 0

(uL)

Soil Aliquot Volume: 0

(uL)

		CONCENTRATION UNITS:	
CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethene	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethane (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropene	10.1	U
79-01-6	Trichloroethene	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	2.1	J
10061-02-6	trans-1,3-Dichloropropene	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethene	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW30

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM104

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/14/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1U	
74-83-9	Bromomethane	10.1U	
75-01-4	Vinyl Chloride	10.1U	
75-00-3	Chloroethane	10.1U	
75-08-2	Methylene Chloride	10.1U	
67-64-1	Acetone	10.1U	
75-15-0	Carbon Disulfide	10.1U	
75-35-4	1,1-Dichloroethane	10.1U	
75-34-3	1,1-Dichloroethane	10.1U	
540-59-0	1,2-Dichloroethane (total)	10.1U	
67-66-3	Chloroform	10.1U	
107-06-2	1,2-Dichloroethane	10.1U	
78-93-3	2-Butanone	10.1U	
71-55-6	1,1,1-Trichloroethane	10.1U	
56-23-5	Carbon Tetrachloride	10.1U	
75-27-4	Bromodichloromethane	10.1U	
78-87-5	1,2-Dichloropropane	10.1U	
10061-01-5	cis-1,3-Dichloropropene	10.1U	
79-01-6	Trichloroethene	10.1U	
124-48-1	Dibromochloromethane	10.1U	
79-00-5	1,1,2-Trichloroethane	10.1U	
71-43-2	Benzene	120.1	
10061-02-6	trans-1,3-Dichloropropene	10.1U	
75-25-2	Bromoform	10.1U	
108-10-1	4-Methyl-2-Pentanone	10.1U	
591-78-6	2-Hexanone	10.1U	
127-18-4	Tetrachloroethene	10.1U	
79-34-5	1,1,2,2-Tetrachloroethane	10.1U	
108-88-3	Toluene	10.1U	
108-90-7	Chlorobenzene	10.1U	
100-41-4	Ethylbenzene	10.1U	
100-42-5	Styrene	10.1U	
1330-20-7	Xylene (total)	10.1U	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW31

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SDG No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM120

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/15/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.1	U
74-83-9	Bromomethane	10.1	U
75-01-4	Vinyl Chloride	10.1	U
75-00-3	Chloroethane	10.1	U
75-09-2	Methylene Chloride	10.1	U
67-64-1	Acetone	10.1	U
75-15-0	Carbon Disulfide	10.1	U
75-35-4	1,1-Dichloroethene	10.1	U
75-34-3	1,1-Dichloroethane	10.1	U
540-59-0	1,2-Dichloroethene (total)	10.1	U
67-66-3	Chloroform	10.1	U
107-06-2	1,2-Dichloroethane	10.1	U
78-93-3	2-Butanone	10.1	U
71-55-6	1,1,1-Trichloroethane	10.1	U
56-23-5	Carbon Tetrachloride	10.1	U
75-27-4	Bromodichloromethane	10.1	U
78-87-5	1,2-Dichloropropane	10.1	U
10061-01-5	cis-1,3-Dichloropropene	10.1	U
79-01-6	Trichloroethene	10.1	U
124-48-1	Dibromochloromethane	10.1	U
79-00-5	1,1,2-Trichloroethane	10.1	U
71-43-2	Benzene	13.1	
10061-02-6	trans-1,3-Dichloropropene	10.1	U
75-25-2	Bromoform	10.1	U
108-10-1	4-Methyl-2-Pentanone	10.1	U
591-78-6	2-Hexanone	10.1	U
127-18-4	Tetrachloroethene	10.1	U
79-34-5	1,1,2,2-Tetrachloroethane	10.1	U
108-88-3	Toluene	10.1	U
108-90-7	Chlorobenzene	10.1	U
100-41-4	Ethylbenzene	10.1	U
100-42-5	Styrene	10.1	U
1330-20-7	Xylene (total)	10.1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TW32

Lab Name: Western Research Institut Contract: 68-D2-0017

Lab Code: WRI Case No.: 10201 SAS No.: SD6 No.: RM-1

Matrix: (soil/water) WATER Lab Sample ID:

Sample wt/vol: 5.00 (g/ml) ML Lab File ID: RM123

Level: (low/med) LOW Date Received: 12/10/92

% Moisture: not dec. Date Analyzed: 12/15/92

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: 0 (uL) Soil Aliquot Volume: 0 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	Q
74-87-3	Chloromethane	10.1U
74-83-9	Bromomethane	10.1U
75-01-4	Vinyl Chloride	10.1U
75-00-3	Chloroethane	10.1U
75-09-2	Methylene Chloride	10.1U
67-64-1	Acetone	10.1U
75-15-0	Carbon Disulfide	10.1U
75-35-4	1,1-Dichloroethane	10.1U
75-34-3	1,1-Dichloroethane	10.1U
540-59-0	1,2-Dichloroethane (total)	10.1U
67-66-3	Chloroform	10.1U
107-06-2	1,2-Dichloroethane	10.1U
78-93-3	2-Butanone	10.1U
71-55-6	1,1,1-Trichloroethane	10.1U
56-23-5	Carbon Tetrachloride	10.1U
75-27-4	Bromodichloromethane	10.1U
78-87-5	1,2-Dichloropropane	10.1U
10061-01-5	cis-1,3-Dichloropropene	10.1U
79-01-6	Trichloroethene	10.1U
124-48-1	Dibromochloromethane	10.1U
79-00-5	1,1,2-Trichloroethane	10.1U
71-43-2	Benzene	10.1U
10061-02-6	trans-1,3-Dichloropropene	10.1U
75-25-2	Bromoform	10.1U
108-10-1	4-Methyl-2-Pentanone	10.1U
591-78-6	2-Hexanone	10.1U
127-18-4	Tetrachloroethene	10.1U
79-34-5	1,1,2,2-Tetrachloroethane	10.1U
108-88-3	Toluene	10.1U
108-90-7	Chlorobenzene	10.1U
100-41-4	Ethylbenzene	10.1U
100-42-5	Styrene	10.1U
1330-20-7	Xylene (total)	10.1U

Lab Name : WESTERN RESEARCH INST
Case No : RMI

| Sample Number |
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ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 11:19
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	1 J
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane,	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	2 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

-----+
| Sample Number |
| EMP1 |
-----+

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 22:49
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup ☐ Yes ☒ No
Separatory Funnel Extraction ☐ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-12-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

| Sample Number |
CMJ2

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 23:30
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C. A. S. Number		UG/L		C. A. S. Number		UG/L	
108-95-2	Phenol	10	U	51-28-5	2,4-Dinitrophenol	25	U
111-44-4	bis(2-Chloroethyl)ether	10	U	100-02-7	4-Nitrophenol	25	U
95-57-8	2-Chlorophenol	10	U	132-64-9	Dibenzofuran	10	U
541-73-1	1,3-Dichlorobenzene	10	U	121-14-2	2,4-Dinitrotoluene	10	U
106-46-7	1,4-Dichlorobenzene	10	U	606-20-2	2,6-Dinitrotoluene	10	U
95-50-1	1,2-Dichlorobenzene	10	U	84-66-2	Diethylphthalate	10	U
95-48-7	2-Methylphenol	10	U	7005-72-3	4-Chlorophenyl-phenylether	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	86-73-7	Fluorene	10	U
106-44-5	4-Methylphenol	10	U	100-01-6	4-Nitroaniline	25	U
621-64-7	N-Nitroso-di-n-propylamine	10	U	534-52-1	4,6-Dinitro-2-methylphenol	25	U
67-72-1	Hexachloroethane	10	U	86-30-6	N-Nitrosodiphenylamine (1)	10	U
98-95-3	Nitrobenzene	10	U	101-55-3	4-Bromophenyl-phenylether	10	U
78-59-1	Isophorone	10	U	118-74-1	Hexachlorobenzene	10	U
88-75-5	2-Nitrophenol	10	U	87-86-5	Pentachlorophenol	25	U
105-67-9	2,4-Dimethylphenol	10	U	85-01-8	Phenanthrene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U	120-12-7	Anthracene	10	U
120-83-2	2,4-Dichlorophenol	10	U	86-74-8	Carbazole	10	U
120-02-1	1,2,4-Trichlorobenzene	10	U	84-74-2	Di-n-Butylphthalate	1	J
91-20-3	Naphthalene	10	U	206-44-00	Fluoranthene	10	U
106-47-8	4-Chloroaniline	10	U	129-00-00	Pyrene	10	U
87-68-3	Hexachlorobutadiene	10	U	85-68-7	Butylbenzylphthalate	10	U
59-50-7	4-Chloro-3-methylphenol	10	U	91-94-1	3,3'-Dichlorobenzidine	10	U
91-57-6	2-Methylnaphthalene	10	U	56-55-3	Benzo(a)Anthracene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U	117-81-7	bis(2-Ethylhexyl)phthalate	1	J
88-06-2	2,4,6-Trichlorophenol	10	U	218-01-9	Chrysene	10	U
95-95-4	2,4,5-Trichlorophenol	25	U	117-84-00	Di-n-octylphthalate	10	U
91-58-7	2-Chloronaphthalene	10	U	205-99-2	Benzo(b)fluoranthene	10	U
88-74-4	2-Nitroaniline	25	U	207-08-9	Benzo(k)fluoranthene	10	U
131-11-3	Dimethylphthalate	10	U	50-32-8	Benzo(a)Pyrene	10	U
208-96-8	Acenaphthylene	10	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
99-09-2	3-Nitroaniline	25	U	53-70-3	Dibenz(a,h)anthracene	10	U
83-32-9	Acenaphthene	10	U	191-24-2	Benzo(g,h,i)perylene	10	U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

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| Sample Number |
| EMU3 |
-----+

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 00:11
Conc/Dil factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes ☒ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
104-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	2 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : R01

ORGANICS ANALYSIS DATA SHEET
(Page 2)

| Sample Number |
CPM#

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 00:52
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes KH No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	1 J
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Bis-n-Butylphthalate	10 U
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	3 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

Sample Number :
CML9

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 01:32
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
100-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	10 U
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	2 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : R11

| Sample Number |
EWID

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 02:13
Conc/Dil Factor: 1.0000
Percent Moisture: 0.0

GPC Cleanup __ Yes NM No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number		UG/L		C.A.S. Number		UG/L
108-95-2	Phenol	10	U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10	U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10	U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10	U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10	U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10	U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10	U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10	U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10	U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10	U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10	U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10	U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10	U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10	U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10	U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10	U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10	U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10	U	206-44-6	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10	U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10	U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10	U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10	U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10	U	117-81-7	bis(2-Ethylhexyl)phthalate	3 J
88-06-2	2,4,6-Trichlorophenol	10	U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25	U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10	U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25	U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10	U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25	U	55-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10	U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : 0011

| Sample Number |
C0111A

ORGANICS ANALYSIS DATA SHEET

(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 02:54
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C. A. S. Number		UG/L		C. A. S. Number		UG/L	
100-95-2	Phenol	10	U	51-28-5	2,4-Dinitrophenol	25	U
111-44-4	bis(2-Chloroethyl)ether	10	U	100-02-7	4-Nitrophenol	25	U
95-57-8	2-Chlorophenol	10	U	132-64-9	Dibenzofuran	10	U
541-73-1	1,3-Dichlorobenzene	10	U	121-14-2	2,4-Dinitrotoluene	10	U
106-46-7	1,4-Dichlorobenzene	10	U	606-20-2	2,6-Dinitrotoluene	10	U
95-50-1	1,2-Dichlorobenzene	10	U	84-66-2	Diethylphthalate	10	U
95-48-7	2-Methylphenol	10	U	7005-72-3	4-Chlorophenyl-phenylether	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	86-73-7	Fluorene	10	U
106-44-5	4-Methylphenol	10	U	100-01-6	4-Nitroaniline	25	U
621-64-7	N-Nitroso-di-n-propylamine	10	U	534-52-1	4,6-Dinitro-2-methylphenol	25	U
67-72-1	Hexachloroethane	10	U	86-30-6	N-Nitrosodiphenylamine (1)	10	U
98-95-3	Nitrobenzene	10	U	101-55-3	4-Bromophenyl-phenylether	10	U
78-59-1	Isophorone	10	U	118-74-1	Hexachlorobenzene	10	U
88-75-5	2-Nitrophenol	10	U	87-86-5	Pentachlorophenol	25	U
105-67-9	2,4-Dimethylphenol	10	U	85-01-8	Phenanthrene	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U	120-12-7	Anthracene	10	U
120-83-2	2,4-Dichlorophenol	10	U	86-74-8	Carbazole	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U	84-74-2	Li-n-Butylphthalate	10	U
91-20-3	Naphthalene	10	U	206-44-00	Fluoranthene	10	U
106-47-8	4-Chloroaniline	10	U	129-00-00	Pyrene	10	U
87-68-3	Hexachlorobutadiene	10	U	85-68-7	Butylbenzylphthalate	10	U
59-50-7	4-Chloro-3-methylphenol	10	U	91-94-1	3,3'-Dichlorobenzidine	10	U
91-57-6	2-Methylnaphthalene	10	U	56-55-3	Benzo(a)Anthracene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U	117-81-7	bis(2-Ethylhexyl)phthalate	2	J
88-06-2	2,4,6-Trichlorophenol	10	U	218-01-9	Chrysene	10	U
95-95-4	2,4,5-Trichlorophenol	25	U	117-84-00	Di-n-octylphthalate	10	U
91-50-7	2-Chloronaphthalene	10	U	205-99-2	Benzo(b)fluoranthene	10	U
88-74-4	2-Nitroaniline	25	U	207-08-9	Benzo(k)fluoranthene	10	U
131-11-3	Dimethylphthalate	10	U	50-32-8	Benzo(a)Pyrene	10	U
208-96-8	Acenaphthylene	10	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
99-09-2	3-Nitroaniline	25	U	53-70-3	Dibenz(a,h)anthracene	10	U
83-32-9	Acenaphthene	10	U	191-24-2	Benzo(g,h,i)perylene	10	U

(1)-Cannot be separated from diphenylamine

Form 1

7/85

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Sample Number :
UTUI :

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 03:35
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
99-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	4 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : 8811

| Sample Number |
CDW

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921216 04:15
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes KK No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	2 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

| Sample Number |
T122

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 12:01
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes KH No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	287-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Form 1

7/85

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

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| Sample Number |
| TU3 |
-----+

Semivolatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 12:43
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes NM No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	1 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

| Sample Number |
TWA

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 13:25
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup ☐ Yes ☒ No
Separatory Funnel Extraction ☐ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

| Sample Number |
TUS

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 14:07
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	1 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name: WESTERN RESEARCH INST
Case No: RM1

Sample Number
TW11

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 14:50
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup ☐ Yes ☒ No
Separatory Funnel Extraction ☐ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
100-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	119-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	0.1 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

| Sample Number |
TW12

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 15:32
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup _ Yes ☐ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenzo(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Sample Number 1
TUI3

Semivolatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 16:15
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction Δ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	10 U
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dinethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenzo(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RMI

-----+
| Sample Number |
| TU15 |
+-----+

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentrations: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 16:57
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes XX No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number	UG/L		C.A.S. Number	UG/L
108-95-2 Phenol	10	U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10	U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10	U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10	U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10	U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10	U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10	U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10	U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10	U	160-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10	U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10	U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10	U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10	U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10	U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10	U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10	U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10	U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10	U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10	U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10	U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10	U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10	U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10	U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10	U	117-81-7 bis(2-Ethylhexyl)phthalate	4 J
88-06-2 2,4,6-Trichlorophenol	10	U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25	U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10	U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25	U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10	U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10	U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25	U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10	U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

| Sample Number |
1U16

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 17:39
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

BPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	10 U	7005-72-3 4-Chlorophenyl-phenylether	10 U
108-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	10 U	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	10 U
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-Ethylhexyl)phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	25 U	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	10 U	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RMI

| Sample Number |
TUI7

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 18:20
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number		UG/L		C.A.S. Number		UG/L
100-95-2	Phenol	10	U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10	U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10	U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10	U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10	U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10	U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10	U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U	86-73-7	Fluorene	10 U
106-44-6	4-Methylphenol	10	U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10	U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10	U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10	U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10	U	118-74-1	Hexachlorobenzene	10 U
88-75-6	2-Nitrophenol	10	U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10	U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10	U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10	U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10	U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10	U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10	U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10	U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10	U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10	U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10	U	117-81-7	bis(2-Ethylhexyl)phthalate	1 J
88-06-2	2,4,6-Trichlorophenol	10	U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25	U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10	U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25	U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10	U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25	U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10	U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : 8911

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Sample Number :
TU18 :

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 19:01
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ~~X~~ Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	2 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	2 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-94-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Form 1

7/85

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

| Sample Number |
TU30

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 19:42
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup _ Yes KK No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number	UG/L	C.A.S. Number	UG/L
108-95-2 Phenol	10 U	51-28-5 2,4-Dinitrophenol	25 U
111-44-4 bis(2-Chloroethyl)ether	10 U	100-02-7 4-Nitrophenol	25 U
95-57-8 2-Chlorophenol	10 U	132-64-9 Dibenzofuran	10 U
541-73-1 1,3-Dichlorobenzene	10 U	121-14-2 2,4-Dinitrotoluene	10 U
106-46-7 1,4-Dichlorobenzene	10 U	606-20-2 2,6-Dinitrotoluene	10 U
95-50-1 1,2-Dichlorobenzene	10 U	84-66-2 Diethylphthalate	10 U
95-48-7 2-Methylphenol	55	7005-72-3 4-Chlorophenyl-phenylether	10 U
100-60-1 2,2'-oxybis(1-Chloropropane)	10 U	86-73-7 Fluorene	10 U
106-44-5 4-Methylphenol	51	100-01-6 4-Nitroaniline	25 U
621-64-7 N-Nitroso-di-n-propylamine	10 U	534-52-1 4,6-Dinitro-2-methylphenol	25 U
67-72-1 Hexachloroethane	10 U	86-30-6 N-Nitrosodiphenylamine (1)	10 U
98-95-3 Nitrobenzene	10 U	101-55-3 4-Bromophenyl-phenylether	10 U
78-59-1 Isophorone	10 U	118-74-1 Hexachlorobenzene	10 U
88-75-5 2-Nitrophenol	10 U	87-86-5 Pentachlorophenol	25 U
105-67-9 2,4-Dimethylphenol	10 U	85-01-8 Phenanthrene	10 U
111-91-1 bis(2-Chloroethoxy)methane	10 U	120-12-7 Anthracene	40
120-83-2 2,4-Dichlorophenol	10 U	86-74-8 Carbazole	10 U
120-82-1 1,2,4-Trichlorobenzene	10 U	84-74-2 Di-n-Butylphthalate	1 J
91-20-3 Naphthalene	10 U	206-44-00 Fluoranthene	10 U
106-47-8 4-Chloroaniline	10 U	129-00-00 Pyrene	10 U
87-68-3 Hexachlorobutadiene	10 U	85-68-7 Butylbenzylphthalate	10 U
59-50-7 4-Chloro-3-methylphenol	10 U	91-94-1 3,3'-Dichlorobenzidine	10 U
91-57-6 2-Methylnaphthalene	10 U	56-55-3 Benzo(a)Anthracene	10 U
77-47-4 Hexachlorocyclopentadiene	10 U	117-81-7 bis(2-[ethylhexyl]phthalate	1 J
88-06-2 2,4,6-Trichlorophenol	10 U	218-01-9 Chrysene	10 U
95-95-4 2,4,5-Trichlorophenol	60	117-84-00 Di-n-octylphthalate	10 U
91-58-7 2-Chloronaphthalene	10 U	205-99-2 Benzo(b)fluoranthene	10 U
88-74-4 2-Nitroaniline	25 U	207-08-9 Benzo(k)fluoranthene	10 U
131-11-3 Dimethylphthalate	10 U	50-32-8 Benzo(a)Pyrene	10 U
208-96-8 Acenaphthylene	10 U	193-39-5 Indeno(1,2,3-cd)Pyrene	10 U
99-09-2 3-Nitroaniline	25 U	53-70-3 Dibenz(a,h)anthracene	10 U
83-32-9 Acenaphthene	45	191-24-2 Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

Sample Number :
TU31

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 20:24
Conc/Dil Factor: 1.00000
Percent Moisture: 0.0

GPC Cleanup _ Yes XX No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ☒ Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-20-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	1 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	1 J
88-06-2	2,4,6-Trichlorophenol	10 U	218-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

Lab Name : WESTERN RESEARCH INST
Case No : RM1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

-----+
| Sample Number |
| 1W32 |
+-----+

Semi-volatile Compounds

Concentration: Low
Date Extracted: 12/11/92
Date Analyzed: 921215 21:05
Conc/Dil Factor: 1.0000U
Percent Moisture: 0.0

GPC Cleanup __ Yes ~~XX~~ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction X Yes

C.A.S. Number		UG/L	C.A.S. Number		UG/L
108-95-2	Phenol	10 U	51-28-5	2,4-Dinitrophenol	25 U
111-44-4	bis(2-Chloroethyl)ether	10 U	100-02-7	4-Nitrophenol	25 U
95-57-8	2-Chlorophenol	10 U	132-64-9	Dibenzofuran	10 U
541-73-1	1,3-Dichlorobenzene	10 U	121-14-2	2,4-Dinitrotoluene	10 U
106-46-7	1,4-Dichlorobenzene	10 U	606-20-2	2,6-Dinitrotoluene	10 U
95-50-1	1,2-Dichlorobenzene	10 U	84-66-2	Diethylphthalate	10 U
95-48-7	2-Methylphenol	10 U	7005-72-3	4-Chlorophenyl-phenylether	10 U
108-60-1	2,2'-oxybis(1-Chloropropane)	10 U	86-73-7	Fluorene	10 U
106-44-5	4-Methylphenol	10 U	100-01-6	4-Nitroaniline	25 U
621-64-7	N-Nitroso-di-n-propylamine	10 U	534-52-1	4,6-Dinitro-2-methylphenol	25 U
67-72-1	Hexachloroethane	10 U	86-30-6	N-Nitrosodiphenylamine (1)	10 U
98-95-3	Nitrobenzene	10 U	101-55-3	4-Bromophenyl-phenylether	10 U
78-59-1	Isophorone	10 U	118-74-1	Hexachlorobenzene	10 U
88-75-5	2-Nitrophenol	10 U	87-86-5	Pentachlorophenol	25 U
105-67-9	2,4-Dimethylphenol	10 U	85-01-8	Phenanthrene	10 U
111-91-1	bis(2-Chloroethoxy)methane	10 U	120-12-7	Anthracene	10 U
120-83-2	2,4-Dichlorophenol	10 U	86-74-8	Carbazole	10 U
120-82-1	1,2,4-Trichlorobenzene	10 U	84-74-2	Di-n-Butylphthalate	2 J
91-20-3	Naphthalene	10 U	206-44-00	Fluoranthene	10 U
106-47-8	4-Chloroaniline	10 U	129-00-00	Pyrene	10 U
87-68-3	Hexachlorobutadiene	10 U	85-68-7	Butylbenzylphthalate	10 U
59-50-7	4-Chloro-3-methylphenol	10 U	91-94-1	3,3'-Dichlorobenzidine	10 U
91-57-6	2-Methylnaphthalene	10 U	56-55-3	Benzo(a)Anthracene	10 U
77-47-4	Hexachlorocyclopentadiene	10 U	117-81-7	bis(2-Ethylhexyl)phthalate	1 J
88-06-2	2,4,6-Trichlorophenol	10 U	210-01-9	Chrysene	10 U
95-95-4	2,4,5-Trichlorophenol	25 U	117-84-00	Di-n-octylphthalate	10 U
91-58-7	2-Chloronaphthalene	10 U	205-99-2	Benzo(b)fluoranthene	10 U
88-74-4	2-Nitroaniline	25 U	207-08-9	Benzo(k)fluoranthene	10 U
131-11-3	Dimethylphthalate	10 U	50-32-8	Benzo(a)Pyrene	10 U
208-96-8	Acenaphthylene	10 U	193-39-5	Indeno(1,2,3-cd)Pyrene	10 U
99-09-2	3-Nitroaniline	25 U	53-70-3	Dibenz(a,h)anthracene	10 U
83-32-9	Acenaphthene	10 U	191-24-2	Benzo(g,h,i)perylene	10 U

(1)-Cannot be separated from diphenylamine

APPENDIX C
Field Sampling Data

TITLE

TLW-15

PROJECT NO. 0510300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name Tw-15

Date 12/3/92

Power Requirements

Phase

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

* mV 262.4 in Zocell at 1.7°C
pH calibrated with 7 & 10 buffers
Conductivity, 118.5 mS with 0.1 M KCl at 1.4°C
Sol 0.5 N Na₂CO₃ - Theoretical Value = 2,358.5 mg/L pH 11.23
Used 12.4 mL 0.0193 N HCl

1600 - Reduced flow rate. Pressure = 50 psig

Winter is clear and ice free

1A/S/42 - Sample 0788-0215-TW15 - Alp fide. Bottle broken.

SCIENTIFIC BINDERY PRODUCTS—CHICAGO, ILL.

SIGNATURE

PRODUCT CHARGE 0000

DATE _____

12/7/92

DISCLOSED TO AND UNDERSTOOD BY

DATE _____

WITNESS

WITNESS
Barney

DATE _____

12-7-92

TITLE

TW-15

PROJECT NO. 05110300

3

BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project IRM-1Well Name TW-15Date 12/3/92Field Crew LINDA W. LOWRYWeather SUNNY, COLDAir Temperature 9 (F°)Measuring Point TOLSampling Device Bennett PumpDepth to Water 65.62Depth of Sampling Device 392'

Field Analyses at Time of Sampling

Temperature 6.9 (°C)Corrected Conductivity 2070 (µmhos/cm at 25°C)pH 8.51Eh -163.7 (mV, Field Electrode)Eh 44.09 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 0.4 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.40mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 18.9 mlNormality of HCl 0.0193 NTotal Alkalinity 729.54 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-03-25-TW15-A; Adu	VOA	A6320, A6321
0788-03-25-TW15-B	BNA	A6322
0788-03-25-TW15-C	Total Phenols	A6323
0788-03-25-TW15-D	(TKN)(NH ₄), TOC, COP, NO ₃ , NO ₂	A6324
0788-03-25-TW15-E	(Sulfide)	A6325
0788-03-25-TW15-F	(Cyanide)	A6326
0788-03-25-TW15-G	(Sulfate), (DS), (Ba), (Cl), (F), HCO ₃ , CO ₃ , ALK	A6327
0788-03-25-TW15-H	Metals, SCN, Thiocyanate	A6328
0788-03-25-TW15-I	TSS	A6329
0788-03-25-TW15-J	ALK, pH, H ₂ O ₂ , LO ₂	A6329

SCIENTI

SIGNATURE

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

12/2/92

12-7-92

Tw-16

PROJECT NO. 05114300
BOOK NO. 0188

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name Tw-16

Date 12/14/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Conductivity 12.11 mS in 0.1 M KCl at 2.4°C

EtH meter reads 260.8 mV at 2.9 °C in 200 μ l std.

pH meter calibrated in pH 7.00 and 10.00 buffers

Water is clear and odor free

12/15/92 samples 0755-65-25-TW/b-A; Adup - ruz. Broke bottles.

Eliminate Summation

SIGNATURE

1. Name: Shirley R. H.

TRAIN

DATE 147/02

DISCLOSED TO AND UNDERSTOOD BY

DATE _____

WITNESS

WITNESS
Edna L. Lutz

DATE _____

DATE 12-7-92

TITLE

TW-16

PROJECT NO. 05710300
BOOK NO. 0158

5

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM-1
Date 12/4/92
Weather clear, sunnyWell Name TW-16
Field Crew Limelan, Lowry
Air Temperature 10 (F°)Measuring Point T.O.C.
Depth to Water 86.0Sampling Device Bennett Pump
Depth of Sampling Device 393

Field Analyses at Time of Sampling

Temperature 10.3 (°C)
Corrected Conductivity 2320 (µmhos/cm at 25°C)
pH 8.32
Eh -151.7 (mV, Field Electrode)
Eh 58.03 (mV, Corrected to Standard Hydrogen Electrode)
Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.28
mls of Sample Tested 25 ml
mls of HCl Added to Reach pH 4.5 16.7 ml
Normality of HCl 0.0143 N
Total Alkalinity 644.62 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-05-25-TW16-A	VOA	AG331, AG332
0788-05-25-TW16-B	(BNA)	AG333
0788-05-25-TW16-C	Total Phenols	AG334
0788-05-25-TW16-D	TKN, NH ₃ , DOC, COD, NO ₃ , NO ₂	AG335
0788-05-25-TW16-E	Sulfide	AG336
0788-05-25-TW16-F	Cyanide	AG337
0788-05-25-TW16-G	Sulfate, TDS, Br, Cl, F, HCO ₃ , CO ₃ , ALK	AG338
0788-05-25-TW16-H	(Metals) SCN, Thiol	AG339
0788-05-25-TW16-I	(TSS)	AG340
0788-05-25-TW16-J	ALK, pH, HClO ₂ , CO ₂	AG341
0788-05-25-TW16-K		AG342

SCIENTIFIC

SIGNATURE

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE

TITLE TW-17

PROJECT NO. 05110300
BOOK NO. 0188

WRI

WESTERN RESEARCH INSTITUTE

Project RM 1

Well Name TW-17

Date 12/7/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

weather is clear with slight surf for wave

12/5/92 Sample 0788-04-25-7417-Asp frize. Bottle base. Eliminate
26 male

SCIENTIF**SIGNATURE**

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE _____

12/7/91

DATE _____

12/7/92

TITLE

TW-17

PROJECT NO. 05710300

BOOK NO. 0788

9

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM 1 Well Name TW-17
 Date 12/4/92 Field Crew LINDALOM LOWRY
 Weather SUNNY, MILD Air Temperature 20 (F°)

Measuring Point TOC Sampling Device BENNETT PUMP

Depth to Water 71.4 Depth of Sampling Device 329

Field Analyses at Time of Sampling

Temperature 9.0 (°C)
 Corrected Conductivity 2420 (µmhos/cm at 25°C)
 pH 8.31
 Eh +26.9 (mV, Field Electrode)
 Eh -6.0 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.3 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.28
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 19.9 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 768.14 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-04-25-TW17 -A	VOA	A6343/A6344
0788-04-25-TW17 -B	BNA	A6342
0788-09-25-TW17 -C	Total Phenols	A6345
0788-09-25-TW17 -D	(TKN) NH ₃ , TOC, COD, NO ₂ , NO ₃	A6303
0788-09-25-TW17 -E	Sulfide	A6304
0788-09-25-TW17 -F	Cyanide	A6305
0788-09-25-TW17 -G	Sulfate, TD, B, Cl, HCO ₃ , CO ₃ , ALK	A6306
0788-09-25-TW17 -H	(Metal, SCN, Thiol)	A6307
0788-09-25-TW17 -J	TS	A6308
0788-09-25-TW17 -I	(Alk, H ₂ O, CO ₂)	A6308

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TITLE

PROJECT NO. 05110300
BOOK NO. 0788

WR

WESTERN RESEARCH INSTITUTE

Project RM-1

Well Name Tw-18

Date 12/7/92

Power Requirements

Phase _____

• FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Cond. meter reads 1212 $\mu\text{mhos/cm}$ in 0.1M KCl at 16.9°C
Emf meter reads 246.3 mV in Zn cell stage at 16.9°C
pH meter calibrated in pH 7.00 and 10.00 buffers

Water is clear. Slight sulfur odor

INSIGHT:

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12/7/72

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12-7-92

TITLE

TW-18

PROJECT NO. 05110300
BOOK NO. 0798

11

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM-1
Date 12/7/92
Weather CLEAR WINDYWell Name TW-18
Field Crew LINDBLUM LOWMY
Air Temperature 15 (F°)Measuring Point TOC
Depth to Water 90.81Sampling Device BENNETT PUMP
Depth of Sampling Device 294

Field Analyses at Time of Sampling

Temperature 10.5 (°C)
Corrected Conductivity 2770 (µmhos/cm at 25°C)
pH 8.12
Eh -116.5 (mV, Field Electrode)
Eh 43.05 (mV, Corrected to Standard Hydrogen Electrode)
Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.07
mls of Sample Tested 25 ml
mls of HCl Added to Reach pH 4.5 20.1 ml
Normality of HCl 0.0193 N
Total Alkalinity 775.85 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-11-25-TW18 -A, NCP	VOA	A9191, A9192
0788-11-25-TW18 -B	GNA	A9193
0788-11-25-TW18 -C	Total Phenols	A9198
0788-11-25-TW18 -D	(TKN) NH ₄ X TOC, COD, NO ₃ , NO ₂	A6310
0788-11-25-TW18 -E	Ammonia	A6311
0788-11-25-TW18 -F	Cyanide	A6312
0788-11-25-TW18 -G	Sulfate, (DS) (B) (C) P HCO ₃ , CO ₃ , ALK	A6313
0788-11-25-TW18 -H	Metals, SCK, Thiocyanate	A6314
0788-11-25-TW18 -I	ISS	A6316
0788-11-25-TW18 -J	(PH) (PH) (H ₂ O ₂) (U ₂)	A6315

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12/92

12-7-92

TITLE

Tw. 11

BOOK NO. 078-4

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name TW-11

Date 12/7/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water is clear. Slight sulfur water

SIGNATURE

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WITNESS

DATE _____

DATE _____

TITLE

Tw-11

PROJECT NO. 0510300
BOOK NO. 0785

13

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm-1Well Name Tw-11Date 12/7/92Field Crew LINDBLUM, LULURYWeather CLEAR, WINDYAir Temperature 20 (F°)Measuring Point TOLSampling Device BONNETT PUMPDepth to Water 103.1Depth of Sampling Device 331'

Field Analyses at Time of Sampling

Temperature 8.0 (°C)Corrected Conductivity 2110 (µmhos/cm at 25°C)pH 8.42Eh -205.1 (mV, Field Electrode)Eh 6.7 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.35mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 19.5 mlNormality of HCl 0.0148 NTotal Alkalinity 752.70 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0785-13-25-TW11 -A	VOA	A6367, A6368
0785-13-25-TW11 -B	BNA	A6369
0785-13-25-TW11 -C	Total Phenols	A6370
0785-13-25-TW11 -D	TKN (NH ₃), TOC, COD, NO ₂ , NO ₃	A6371
0785-13-25-TW11 -E	Sulfide	A6372
0785-13-25-TW11 -F	Cyanide	A6373
0785-13-25-TW11 -G	Sulfate, TDS, Br, Cl, F, HCO ₃ , CO ₃ , ALK	A6374
0785-13-25-TW11 -H	Mercury, SCN, Thiocyanate	A6375
0785-13-25-TW11 -I	SS	A6376
0785-13-25-TW11 -J	Chloride, (H ₂ O ₂), (L ₂)	A6377
0785-13-25-TW11 -K		A6378

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TW-12

BOOK NO. 5754

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name Tw-12

Date 12/7/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Water is clear. Slight sulfur odor

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DATE _____

WITNESS

DATE _____

12/11/92

DATE _____

12/11/92

2 of 2

TITLE

TW-12

PROJECT NO. 05110300
BOOK NO. 0155

15

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm-1Well Name TW-12Date 12/7/92Field Crew LINDGREN, LOWRYWeather Sunny WindyAir Temperature 20 (F°)Measuring Point TWCSampling Device Bennett PumpDepth to Water 103.5'Depth of Sampling Device 344'

Field Analyses at Time of Sampling

Temperature 2.9 (°C) 1970 (µmhos/cm at 25°C)

Corrected Conductivity

pH 8.38Eh -139.3 (mV, Field Electrode)Eh 71.69 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.33mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 18.1 mlNormality of HCl 0.0143 NTotal Alkalinity 698.66 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-15-25-TW12 -A	VOA	A6360, A6361
0788-15-25-TW12 -B	BNA	A6346
0788-15-25-TW12 -C	Total Phenols	A6347
0788-15-25-TW12 -D	TKN, NH ₃ , TOC, COD, NO ₃ , NO ₂	A6348
0788-15-25-TW12 -E	Sulfide	A6349
0788-15-25-TW12 -F	Cyanide	A6350
0788-15-25-TW12 -G	Sulfate, TDs, H ₂ O ₂ , HCO ₃ , CO ₃ , ALK	A6351
0788-15-25-TW12 -H	Metals, SCN ⁻ , Thiocyanate	A6352
0788-15-25-TW12 -I	TS	A6353
0788-15-25-TW12 -J	AK pH	A6354
0788-15-25-TW12 -K	HCL	A6355

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WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name Tw-13

Date 12/7/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water is gray, cloudy with slight sulfur odor

1515: Reduced flow rate. Pressure = 50 psig. Flow rate = 0.74 gpm

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TITLE

TW-13

PROJECT NO. 05710300
BOOK NO. 0786

17

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM-1 Well Name TW-13
 Date 12/7/92 Field Crew LINDA LOM, LOWRY
 Weather Clear, breezy Air Temperature 20 (F°)

Measuring Point TOC Sampling Device BENNETT Pump
 Depth to Water 74.55 Depth of Sampling Device 361

Field Analyses at Time of Sampling

Temperature 8.9 (°C)
 Corrected Conductivity 1910 (µmhos/cm at 25°C)
 pH 8.40
 Eh -195.3 (mV, Field Electrode)
 Eh 13.90 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 0.5 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.24
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 17.6 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 679.36 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-17-25-TW13 -A	Ad-p (VOA)	4777 AG2200, AG199
0788-17-25-TW13 -B	(BNA)	AG350
0788-17-25-TW13 -C	Total Phenols	AG351
0788-17-25-TW13 -D	(TKN), NH ₃ , TDS, COD, NO ₃ , NO ₂	AG352
0788-17-25-TW13 -E	Sulfide	AG353
0788-17-25-TW13 -F	Cyanide	AG353
0788-17-25-TW13 -G	Sulfate, TDS, BOD, COD, HCO ₃ , CO ₃ , ALK	AG354
0788-17-25-TW13 -H	Metals, SCN ⁻ , Thiocyanate	AG355
0788-17-25-TW13 -J	(TSS)	AG387
0788-17-25-TW13 -I	(Alkalinity, HCO ₃ , CO ₃)	AG386

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TE MW -10

WESTERN RESEARCH INSTITUTE

Well Name EMW-10 ..

Date 12/8/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Cond. meter reads 1190 $\mu\text{mhos/cm}$ in 0.10M KCl at 14.5°C
Eh meter reads 240.9 mV in Zubeil atnol at 14.5°C
pH meter calibrated in pH 7.00 and 10.00 buffers

0830 pump broke suction. Reduce flow rate. pressure = 40 psi.

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WITNESS

DATE

12-11/30

DATE _____

DATE 12/11/92

TITLE

EMW-10

PROJECT NO. 0510300
BOOK NO. 0788

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm-1 Well Name EMW-10
 Date 12/8/92 Field Crew LINDA M. LOWRY
 Weather CLEAR, WINDY Air Temperature 15 (F°)

Measuring Point TOL Sampling Device BENNETT PUMP
 Depth to Water 92.00 Depth of Sampling Device 147'

Field Analyses at Time of Sampling

Temperature 4.3 (°C)
 Corrected Conductivity 850 (umhos/cm at 25°C)
 pH 7.43
 Eh -19.5 (mV, Field Electrode)
 Eh 195.63 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 0.6 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 7.51
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 11.0 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 424.60 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-19-23-EMW10-A	VOA	AG499; AG400
0788-19-25-EMW10-B	BNA	AG451
0788-19-25-EMW10-C	Total Phenols	AG460
0788-19-25-EMW10-D	(TKN) (NH ₃) (TOC) (COD) NO ₃ , NO ₂	AG461
0788-19-25-EMW10-E	Sulfide	AG462
0788-19-25-EMW10-F	Cyanide	AG463
0788-19-25-EMW10-G	Sulfate (TDS) (Br) (Cl) (F) (HCO ₃) (CO ₃) ALK	AG464
0788-19-25-EMW10-H	(Metals) SCN Thioc	AG465
0788-19-25-EMW10-I	ISS	AG466
0788-19-25-EMW10-J	(Alk) (pH) (HCO ₃) (DO)	AG466

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PROJECT NO. 05110300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project RM-1

Well Name EMW-9

Date 12/8/92

Power Requirements

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water is clear and odor free

ORIENT!

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DATE _____

WITNESS

DATE

12/11/92

DATE _____

DATE 12/11/92

TITLE

EMW-9

PROJECT NO. 0510300
BOOK NO. 0788

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WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm-1 Well Name EMW-9
 Date 12/8/92 Field Crew LINDALUM, LOWRY
 Weather ptly cloudy, very windy Air Temperature 20 (F°)

Measuring Point TOC Sampling Device BENNETT Pump
 Depth to Water 60.19 Depth of Sampling Device 364'

Field Analyses at Time of Sampling

Temperature 8.2 (°C)
 Corrected Conductivity 2620 (µmhos/cm at 25°C)
 pH 8.63
 Eh -146.7 (mV, Field Electrode)
 Eh 64.91 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.7 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.59
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 16.8 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 648.48 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-21-25-EMW9-A; AUP	(VOA)	A6388; A6389
0788-21-25-EMW9-B	(BNA)	A6390
0788-21-25-EMW9-C	(Total Phenols)	A6391
0788-21-25-EMW9-D	(TKN, NH ₃ , TOC, COD, NO ₃ , NO ₂)	A6392
0788-21-25-EMW9-E	(Sulfide)	A6393
0788-21-25-EMW9-F	(Cyanide)	A6394
0788-21-25-EMW9-G	(Sulfate, TDS, B, Cl, F, HCO ₃ , CO ₃ , ALK)	A6395
0788-21-25-EMW9-H	(Metals, SCN, Thio)	A6396
0788-21-25-EMW9-I	(TSS)	A6397
0788-21-25-EMW9-J	(ALK, PH, HClO ₂ , Cl ₂)	A6397

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PROJECT NO. 05110300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Well Name ENW-8

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

10/10/19

COMMENTS

water is clear

SIGNATURE

Shirley

12/11/63

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DATE _____

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Brian Lutz

12/11/92

TITLE

Emw-8

PROJECT NO. 0510300
BOOK NO. 0788

23

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project EMW-8 PM-1 Well Name EMW-8
 Date 12/8/92 Field Crew LINDBLUM, LARRY
 Weather Partly cloudy Windy Air Temperature 20 (F°)
 Measuring Point TOC Sampling Device TERALON BAILER
Pump 12/6/92
 Depth to Water 149.40 Depth of Sampling Device 324'

Field Analyses at Time of Sampling

Temperature 5.9 (°C)
 Corrected Conductivity 2020 (µmhos/cm at 25°C)
 pH 8.77
 Eh -202.0 (mV, Field Electrode)
 Eh 11.69 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate BALL (gallons/min)
 Alkalinity Titration
 Filtered Sample pH _____
 mls of Sample Tested _____ ml
 mls of HCl Added to Reach pH 4.5 _____ ml
 Normality of HCl _____ N
 Total Alkalinity _____ (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-23-25-EMW8 -A	VOA	A6468; A6469
0788-23-25-EMW8 -B	AVA	A6470
0788-23-25-EMW8 -C	Total Phenols	A6471
0788-23-25-EMW8 -D	(TKN, NH ₃), TOC, COB, NO ₃ , NO ₂	A6472
0788-23-25-EMW8 -E	Sulfide	A6473
0788-23-25-EMW8 -F	Cyanide	A6474
0788-23-25-EMW8 -G	Sulfate, TDS, BOD, HCO ₃ , CO ₃ , ALK	A6475
0788-23-25-EMW8 -H	Metals, SCN, Thuc.	A6476
0788-23-25-EMW8 -J	TSS	A6478
0788-23-25-EMW8 -I	(ALK, pH, ALD, O ₂)	A6477

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DATE

WESTERN RESEARCH INSTITUTE

Well Name TW-5

Date 12/8/92

Power Requirements

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water 13 clear ball color fresh

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DATE _____

WITNESS

DATE _____

DATE _____

TITLE

TW-5

PROJECT NO. 051N300
BOOK NO. 0788

25

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM-1 Well Name TW-5
 Date 12/8/92 Field Crew LINDBLUM, LOWRY
 Weather ptly cloudy, windy Air Temperature 20 (F°)
 Measuring Point TOC Sampling Device BENNETT Pump
 Depth to Water 69.29 Depth of Sampling Device 359

Field Analyses at Time of Sampling

Temperature 10.0 (°C)
 Corrected Conductivity 3060 (µmhos/cm at 25°C)
 pH 8.45
 Eh -153.5 (mV, Field Electrode)
 Eh 56.50 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.2 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.39
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 16.7 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 644.62 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-25-25-TW5 -A; As ap	VOA	A6479, A6480
0788-25-25-TW5 -B	BNA	A6481
0788-25-25-TW5 -C	Total Phenols	A6482
0788-25-25-TW5 -D	TKN (NH ₃), TOC, CO ₂ , NO ₂ , NO ₃	A6483
0788-25-25-TW5 -E	Sulfide	A6484
0788-25-25-TW5 -F	Cyanide	A6485
0788-25-25-TW5 -G	Sulfate, IDS, (C), F, HCO ₃ , CO ₃ , ALK	A6486
0788-25-25-TW5 -H	Mercuric SCN (Thiol)	A6487
0788-25-25-TW5 -J	TSS	A6488
0788-25-25-TW5 -I	(AIR) OH, H ₂ O, CO ₂	A6489

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TITLE

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PROJECT NO. 5110300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project

Rm 1

Well Name

Tw-4

Date 1

12/8/92

Power Requirements

Phase

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water is clear and odor free

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■ **REPORTS** ■

DATE _____

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TITLE

TW-4

PROJECT NO. 051030
BOOK NO. 0788

27

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM 1Well Name TW-4Date 12/8/92Field Crew LINDBLUM, LARRYWeather Ptly. Cloudy, WindyAir Temperature 25 (F°)Measuring Point TOLSampling Device BENNETT PumpDepth to Water 62.40Depth of Sampling Device 372

Field Analyses at Time of Sampling

Temperature 10.6 (°C)Corrected Conductivity 1800 (umhos/cm at 25°C)pH 8.41Eh -211.1 (mV, Field Electrode)Eh -1.64 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 1.2 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.28mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 19.4 mlNormality of HCl 0.0193 NTotal Alkalinity 746.54 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-27-25-TW4 -A; H ₂ O	VOA	AG490; AG491
0788-27-25-TW4 -B	ANA	AG492
0788-27-25-TW4 -C	Total Phenol	AG493
0788-27-25-TW4 -D	(TKN) (NH ₃) (TOC) (COD) (NO ₂) (NO ₃)	AG494
0788-27-25-TW4 -E	Sulfide	AG495
0788-27-25-TW4 -F	Cyanide	AG496
0788-27-25-TW4 -G	Sulfate, TDS, Cl ⁻ , F ⁻ , HCO ₃ ⁻ , CO ₃ ⁻ , ALK	AG497
0788-27-25-TW4 -H	Metals, SCN ⁻ , Thiocyanate	AG498
0788-27-25-TW4 -I	TSS	AG500
0788-27-25-TW4 -J	(NH ₄) (PH) (H ₂ O ₂) (LO ₂)	AG499

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PROJECT NO. 05110300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name Tw-3

Date 12/8/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

center is clear and well free

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DATE _____

TITLE

TW-3

PROJECT NO. 05110322
BOOK NO. 0788

29

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm1 Well Name TW-3
 Date 12/8/92 Field Crew LINDSAY LOWMY
 Weather ptly cloudy, windy Air Temperature 25 (F°)

Measuring Point TOC Sampling Device Bennett Pump
 Depth to Water 95.05 Depth of Sampling Device 343

Field Analyses at Time of Sampling

Temperature 11.6 (°C)
 Corrected Conductivity 230 (µmhos/cm at 25°C)
 pH 8.37
 Eh -266.0 (mV, Field Electrode)
 Eh -57.44 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.0 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.27
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 17.9 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 690.94 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-24-25-TW3-A	Alp	A6201, A6202
0788-24-25-TW3-B	BNA	A6203
0788-24-25-TW3-C	Total Phenols	A6204
0788-24-25-TW3-D	TKN, NH ₃ , TOC, CO ₂ , NO ₃ , NO ₂	A6205
0788-24-25-TW3-E	Sulfide	A6206
0788-24-25-TW3-F	Cyanide, H ₂ S, H ₂ SO ₄	A6207
0788-24-25-TW3-G	Sulfate, TDS, Ba, Ca, Mg, HCO ₃ , CO ₃ , ALK	A6208
0788-24-25-TW3-H	Metals, SCN, ThioC	A6209
0788-24-25-TW3-I	TSS	A6211
0788-24-25-TW3-J	Alp, pH, H ₂ CO ₃ , H ₂ O ₂	A6210

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TITLE

PROJECT NO. 05110300

BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project Rm-1

Well Name EMW-3

Date 12/9/92

Power Requirements

Phase.

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Cond. meter reads 1172 $\mu\text{mhos/cm}$ in 0.10M KCl at 18.0°C

Cu meter reads 236.1 mV in Zehner stand. at 15.0°C

pH meter calibrated in pH 7.00 and 10.00 buffers

water is clear, slight hydrocarbon odor

0835 - reduced flow rate

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TITLE

EMW-3

PROJECT NO. 05110300
BOOK NO. 0588

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm1 Well Name EMW-3
 Date 12/9/92 Field Crew LINDALOM, LOWRY
 Weather CLOUDY, VERY WINDY (40mph) Air Temperature 20 (°F)

Measuring Point 70L Sampling Device BENNETT PUMP
 Depth to Water 102.5 Depth of Sampling Device 344

Field Analyses at Time of Sampling

Temperature 9.6 (°C)
 Corrected Conductivity 2150 (µmhos/cm at 25°C)
 pH 8.90
 Eh -235.6 (mV, Field Electrode)
 Eh -25.24 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 0.75 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.10
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 19.8 ml
 Normality of HCl 0.0123 N
 Total Alkalinity 764.29 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-31-25-EMW3-A; Alup	VOL	AG212, AG213
0788-31-25-EMW3-B	BNA	AG214
0788-31-25-EMW3-C	Total Phenols	AG215
0788-31-25-EMW3-D	(TKN, NH ₄ , TOC, COD, NO ₃ , NO ₂)	AG216
0788-31-25-EMW3-E	Sulfide	AG217
0788-31-25-EMW3-F	Cyanide (10, 10)	AG218
0788-31-25-EMW3-G	Sulfide, TOC, B, C, P, HCO ₃ , CO ₃ , ALK	AG219
0788-31-25-EMW3-H	Metals, SCN	AG220
0788-31-25-EMW3-I	YSS	AG221
0788-31-25-EMW3-J	(Al, Fe, Pb, H ₂ O ₂ , LD ₅₀)	AG222

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PROJECT NO. 05110300
BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project Rm 1

Well Name Tw-2

Date 12/9/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

Water is clear. Slight sulfur odor

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DATE _____

TITLE

Tw-2

PROJECT NO. 05110300
BOOK NO. 0784

33

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm 1Well Name Tw-2Date 12/1/92Field Crew LIVADIER, LOWAYWeather ptly cldy, very windyAir Temperature 20 (F°)Measuring Point 7CSampling Device BENNETT PumpDepth to Water 95.10Depth of Sampling Device 340

Field Analyses at Time of Sampling

Temperature 8.3 (°C)
Corrected Conductivity 2200 (µmhos/cm at 25°C)pH 8.35Eh -246.8 (mV, Field Electrode)Eh -35.27 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.27mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 23.1 mlNormality of HCl 0.0193 NTotal Alkalinity 891.66 (mg/L Equiv. CaCO₃)Analytical
SubmissionsAnalysis
RequestedTag
Numbers

0768-33-25-TW2-A; AWP	VOA	A6223, A6224
0768-33-25-TW2-B	BNA	A6225
0768-33-25-TW2-C	Total Phenols	A6226
0768-33-25-TW2-D	(TKN, NH ₃), TDS, COD, NO ₃ , NO ₂	A6227
0768-33-25-TW2-E	Sulfide	A6228
0768-33-25-TW2-F	Cyanide	A6229
0768-33-25-TW2-G	Sulfate, TDS, B ₅ , Cl ₂ , P, HCO ₃ , CO ₃ , ALK	A6230
0768-33-25-TW2-H	Metals, SCN, (Inoc)	A6231
0768-33-25-TW2-I	(TSS)	A6232
0768-33-25-TW2-J	(N, P, K, H ₂ O, U)	A6233
0768-33-25-TW2-K		A6234

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TITLE

Emw-11a

PROJECT NO. 510300
BOOK NO. 5744

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm1Well Name Emw-11aDate 12/9/92Field Crew LINDALOM, LAUREYWeather ptly cloudy, windyAir Temperature 20 (F°)Measuring Point TOCSampling Device Benpu-1 PumpDepth to Water 80.20Depth of Sampling Device 349

Field Analyses at Time of Sampling

Temperature 7.6 (°C)Corrected Conductivity 2960 (µmhos/cm at 25°C)pH 8.14Eh -248.5 (mV, Field Electrode)Eh -34.61 (mV, Corrected to Standard Hydrogen Electrode)Discharge Rate 1.1 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.08mls of Sample Tested 25 mlmls of HCl Added to Reach pH 4.5 28 mlNormality of HCl 0.0172 NTotal Alkalinity 1080.50 (mg/L Equiv. CaCO₃)

Analytical Submissions

Analysis Requested

Tag Numbers

0766 - 35 - 25 - Emw11a - A	Adip	VOA	AG234, AG135
0768 - 35 - 25 - Emw11a - B		DNA	AG236
0768 - 35 - 25 - Emw11a - C		Total Phenols	AG237
0768 - 35 - 25 - Emw11a - D	TKN, NH ₃ , TOC, COD, NO ₂ , NO ₃		AG238
0768 - 35 - 25 - Emw11a - E	Sulfide		AG239
0768 - 35 - 25 - Emw11a - F	Cyanide		AG140
0768 - 35 - 25 - Emw11a - G	Sulfate, TDS, Br, Cl, F, HCO ₃ , CO ₃ , ALK		AG141
0768 - 35 - 25 - Emw11a - H	Metals, SCN, Thio		AG142
0768 - 35 - 25 - Emw11a - J	TSS		AG241
0768 - 35 - 25 - Emw11a - K	Alk, pH, H ₂ O, O ₂		AG243

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TITLE

PROJECT NO. 05110300
BOOK NO. 0784

WESTERN RESEARCH INSTITUTE

Project Rm 1

Well Name Emw-1

Date 12/9/92

Power Requirements_____

Phase _____

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

ocular is clear. slight sulfur odor

CONTENT

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WITNESS

DAY

12-11-92

EMW-1

PROJECT NO. 05710300
BOOK NO. 0750

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TITLE

WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm 1 Well Name EMW-1
 Date 12/9/92 Field Crew LINDSEY LOWRY
 Weather CLOUDY, VERY WINDY (250 mph) Air Temperature 20 (F°)

Measuring Point TOL Sampling Device BENNETT PUMP
 Depth to Water 83.75 Depth of Sampling Device 354'

Field Analyses at Time of Sampling

Temperature 9.0 (°C)
 Corrected Conductivity 2480 (umhos/cm at 25°C)
 pH 8.64
 Eh -261.9 (mV, Field Electrode)
 Eh -71.0 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.1 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.65
 ml of Sample Tested 25 ml
 ml of HCl Added to Reach pH 4.5 24.6 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 949.56 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0768-37-25-EMW1-A; Aclp	VOA	A6145-A6146
0768-37-25-EMW1-B	ANA	A6147
0768-37-25-EMW1-C	Total Phenols	A6148
0768-37-25-EMW1-D	(TKN), NH ₃ , TDS, COD, NO ₂ , NO ₃	A6149
0768-37-25-EMW1-E	Sulfide	A6150
0768-37-25-EMW1-F	Cyanide	A6151
0768-37-25-EMW1-G	Sulfate, TDS, (CD), HCO ₃ , CO ₃ , ALK	A6152
0768-37-25-EMW1-H	(Metals), SCN, (Li), (AC)	A6153
0768-37-25-EMW1-I	TSS	A6155
0768-37-25-EMW1-J	(ALK), (PH), (HCO ₃), (LD)	A6154

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TITLE

Emw-2

PROJECT NO. 05110300
BOOK NO. 0768

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm 1 Well Name Emw-2
 Date 12/9/92 Field Crew LINDBLOM, LOWERY
 Weather CLOUDY VERY WINDY (>50) Air Temperature 20 (F°)

Measuring Point TOL Sampling Device TEFLON BAILER
 Depth to Water 76.95 Depth of Sampling Device 301

Field Analyses at Time of Sampling

Temperature 6.3 (°C)
 Corrected Conductivity 9.0 (µmhos/cm at 25°C)
 pH 9.61
 Eh -246.3 (mV, Field Electrode)
 Eh -34.97 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate BAIL (gallons/min)

Alkalinity Titration

Filtered Sample pH _____
 mls of Sample Tested _____ ml
 mls of HCl Added to Reach pH 4.5 _____ ml
 Normality of HCl _____ N
 Total Alkalinity _____ (mg/L Equiv. CaCO₃)

Analytical Submissions

Analysis Requested

Tag Numbers

0768-39-25-EmwL-A	Adup	VOA	A667, A668
0768-39-25-EmwL-B		BNA	A669
0768-39-25-EmwL-C		Total Phenols	A670
0768-39-25-EmwL-D	TKN, NH ₃ , DOC, COD, NO ₂ , NO ₃		A671
0768-39-25-EmwL-E		Sulfide	A672
0768-39-25-EmwL-F		Cyanide	A673
0768-39-25-EmwL-G	Fullal, (DS), (P), (F), HCO ₃ , CO ₃ , ALK		A674
0768-39-25-EmwL-H	Metal SCN (H ₂ U)		A675
0768-39-25-EmwL-I	SS		A677
0768-39-25-EmwL-J	ALK, (PH), (H ₂ O), (U ₂)		A676

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TITLE

CCW-1

PROJECT NO. 95110300
BOOK NO. 0799

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project RM-1 Well Name CCW-1
 Date 12/9/92 Field Crew LINDSEY, LARRY
 Weather Cloudy, sunny, very windy Air Temperature 20 (F°)

Measuring Point TOL Sampling Device BENNETT PUMP
 Depth to Water 17.4 Depth of Sampling Device 205'

Field Analyses at Time of Sampling

Temperature 16.9 (°C)
 Corrected Conductivity 1750 (µmhos/cm at 25°C)
 pH 8.55
 Eh -270.7 (mV, Field Electrode)
 Eh -66.91 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.1 (gallons/min)
 Alkalinity Titration
 Filtered Sample pH 8.48
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 7.7 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 297.22 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0768-41-25-CCW1-A, AU up	(VOA)	AG278, AG279
0768-41-25-CCW1-B	(BNA)	AG280
0768-41-25-CCW1-C	(Total Phenols)	AG281
0768-41-25-CCW1-D	(K ⁺ , NH ₄ ⁺ , TOC, COD, NO ₂ ⁻ , NO ₃ ⁻)	AG282
0768-41-25-CCW1-E	(Sulfide)	AG283
0768-41-25-CCW1-F	(Cyanide)	AG284
0768-41-25-CCW1-G	(Sulfate, TDS, Ba, Ca, Mg, HCO ₃ ⁻ , CO ₃ ⁻ , ALK)	AG285
0768-41-25-CCW1-H	(Metals, SCN ⁻ , Thio)	AG286
0768-41-25-CCW1-I	(TSS)	AG287
0768-41-25-CCW1-J	(Alkalinity, Hardness, Chloride)	AG288

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TITLE

vw-1

BOOK NO. 0788

WESTERN RESEARCH INSTITUTE

Project Rm 1

Well Name VIW-1

Date 12/9/93

Power Requirements

Phase

FIELD MEASUREMENTS DURING WELL PURGING

[illegible]

COMMENTS

water is clear and slight sulfur odor

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WITNESS

DATE:

12-11-92

TITLE

VIW-1

PROJECT NO. 0510300
BOOK NO 0788

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WRI WESTERN RESEARCH INSTITUTE

WRI GROUNDWATER SAMPLING RECORD

Project Rm1 Well Name VIW-1
 Date 12/9/92 Field Crew L. Hubbard, Lowry
 Weather Cloudy Very Windy Air Temperature 20 (F°)

Measuring Point TOC Sampling Device BENNETT Pump
 Depth to Water 67.55 Depth of Sampling Device 375

Field Analyses at Time of Sampling

Temperature 14.1 (°C)
 Corrected Conductivity 250 (µmhos/cm at 25°C)
 pH 8.03
 Eh -256.2 (mV, Field Electrode)
 Eh -49.89 (mV, Corrected to Standard Hydrogen Electrode)
 Discharge Rate 1.2 (gallons/min)

Alkalinity Titration

Filtered Sample pH 8.06
 mls of Sample Tested 25 ml
 mls of HCl Added to Reach pH 4.5 12.1 ml
 Normality of HCl 0.0193 N
 Total Alkalinity 467.06 (mg/L Equiv. CaCO₃)

Analytical Submissions	Analysis Requested	Tag Numbers
0788-43-25-VIW1-A; ADUP	VOA	A6289, A6290
0788-43-25-VIW1-B	BNA	A6291
0788-43-25-VIW1-C	Total Phenols	A6292
0788-43-25-VIW1-D	TKN, NH ₃ , TOC, COD, NO ₃ , NO ₂	A6293
0788-43-25-VIW1-E	Sulfide	A6294
0788-43-25-VIW1-F	Cyanide, NO ₃ , NO ₂	A6295
0788-43-25-VIW1-G	Sulfate, TDS, DB, Cl, F, HCO ₃ , CO ₃ , ALK	A6296
0788-43-25-VIW1-H	Metals, SCN, (thi) (L)	A6297
0788-43-25-VIW1-I	153	A6299
0788-43-25-VIW1-J	ALK, PH, H ₂ O ₂ , (O ₂)	A6298

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SUMMARY

During December 1992, groundwater was sampled at the site of the November 1987-February 1988 Rocky Mountain 1 underground coal gasification test near Hanna, Wyoming. The groundwater is near baseline condition. Data from the field measurements and analyses of samples are presented. Benzene concentrations in the groundwater are below analytical detection limits (<0.01 mg/L) for all wells, except concentrations of 0.016 mg/L and 0.013 mg/L in coal seam wells EMW-3 and EMW-1, respectively.

**DATE
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5/26/94

END