Results Letter Report

for

Air Sparging/Soil Vapor Extraction System System at Site 1 - Former Drum Marshalling Area

Naval Weapons Industrial Reserve Plant

Bethpage, New York

Volume I - Text

Northern Division
Naval Facilities Engineering Command

Contract Number N62472-90-D-1298

Contract Task Order 0213

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C F BRAUN ENGINEERING CORPORATION

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1.0 INTRODUCTION

1.1 AUTHORIZATION

The Northern Division of the Naval Facilities Engineering Command has issued Contract Task Order (CTO) 0213 to CF Braun Engineering Corporation (CF Braun) under a master agreement with Brown & Root Environmental under Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62472-90-D-1298. Under CTO 0213, CF Braun installed a Pilot Scale Air Sparging/Soil Vapor Extraction (AS/SVE) System and is conducting a physical and chemical evaluation of the system. This work is part of the Remedial Design, Phase II, for Site 1 at the Naval Weapons Industrial Reserve Plant (NWIRP) located in Bethpage, New York.

1.2 OPERATION AND CONSTRUCTION SUMMARY

Construction of the pilot-scale AS/SVE system was started in mid-March 1997 and completed in April 1997. Startup and checkout of the system occurred the week of April 14, 1997. Radius of influence tests were conducted the weeks of April 21 and April 28, 1997. With the exception of maintenance and several power outages, the system operated continuously from May 2 to July 15, 1997. Because the vapor phase carbon units were not yet saturated with VOCs, the operation of the AS/SVE system was extended to September 17, 1997.

The AS/SVE pilot system was constructed in accordance with the "Pilot-Scale Air Sparging/Soil Vapor Extraction System Work Plan" for the NWIRP Bethpage, New York (CF Braun 1997). The AS/SVE system consisted of an air injection system, a soil vapor extraction system, a vapor phase carbon treatment system, one air injection well, five soil vapor extraction wells, and eight monitoring wells (soil vapor pressure and/or groundwater monitoring).

1.3 PURPOSE AND OBJECTIVES

The purpose of this letter report is to present the results of the physical parameter testing and thereby achieve the first objective. As stated in the project Work Plan, the specific objectives of the pilot study are as follows.

- Determine the physical parameters required for a full scale system design (well spacing, extraction/injection rates, and well depths).

- Evaluate the effectiveness of air sparging/soil vapor extraction in removing VOCs from site soils, cesspools, and shallow groundwater.

- Estimate the time required for cleanup of soils, groundwater, and cesspool contents.

- Determine the requirements for offgas treatment.

1.4 BACKGROUND INFORMATION

Site 1 - Former Drum Marshaling Area occupies an area of approximately 4 acres. It is surrounded on three sides by a fence and on the fourth side by Plant No. 3. The site is relatively flat, with the eastern portion covered with bare sandy soils, gravel, grass, and one concrete pad. The western portion of the site is predominantly covered with concrete. A vegetated wind row (pine) and fence are present along the eastern edge of the site to reduce community visibility.

The original basis for the work conducted at the Navy's Site 1 resulted from pubic water supply wells being impacted by VOC contamination. In response to this impact, a regional groundwater quality study was conducted in the 1980s. The results of this study indicated the Navy's Site 1 to be one of several potential sources of a relatively large groundwater VOC plume originating near this area and extending for several thousand feet to the south (hydraulic downgradient direction).

The Navy conducted a Remedial Investigation in the early 1990s to investigate potential sources of the VOC contamination, (Halliburton NUS, May 1992 and Halliburton NUS July, 1993). Based on this investigation, the source of the groundwater contamination at Site 1 was determined to originate near the former drum marshaling pads. All shallow groundwater samples collected south of the Former Cinder Drum Marshaling Pad, and a few shallow groundwater samples collected north of the pad, exhibited VOC contamination. However, this area of groundwater contamination also coincides with the location of cesspools at the site. The cesspools could also be a source of the VOC contamination.

Soil testing during the Remedial Investigation determined that Site 1 soils contained VOC, PCB, and arsenic contamination. Subsequent soil testing at the site confirmed the presence of PCB and VOC contamination; however, the arsenic contamination could not be confirmed. In addition, testing of the cesspool contents revealed even higher concentrations of VOCs and PCBs in the cesspools than in the surrounding soils, and revealed the presence of cadmium contamination.

1.5 REPORT FORMAT

This report is divided into four sections. Section 1.0 is this Introduction. Section 2.0 provides a brief description of the system construction. Results are presented in Section 3.0 and Conclusions and Recommendations are provided in Section 4.0.

2.0 SYSTEM CONSTRUCTION

Construction details for the AS/SVE pilot system at NWIRP Bethpage are summarized in this section. Complete details will be provided in the Results Report, scheduled for submittal in October 1997. Soil boring log sheets are provided in Appendix A. Well construction sheets for the air injection/soil vapor extraction wells and groundwater/soil vapor pressure monitoring wells are provided in Appendix B.

The layout of the AS/SVE pilot study is presented in Figure 1. Process flow schematics for the air injection and soil vapor extraction systems are presented in Figures 2 and 3, respectively.

2.1 PILOT SCALE CONSTRUCTION

The AS/SVE pilot scale system was constructed during the period of March 26 to April 16, 1997. The pilot scale system consisted of an air injection system, a soil vapor extraction system, an offgas treatment system consisting of vapor phase carbon units, and soil vapor/groundwater monitoring points. During construction, subsurface soil and groundwater samples were collected to evaluate environmental conditions prior to the study to establish a baseline for comparison to future samples.

Subsurface Soil Samples

Two rounds of subsurface soils samples were collected during the pilot study. The first round was collected on March 26, 1997 and represents soil conditions prior to the trial. The second round was collected on July 15, 1997 and represents soil conditions at the end of the pilot trial (July 15, 1997). Since the vapor phase carbon was not yet saturated with VOCs, the AS/SVE system continued to operate from July 15 to September 17, 1997.

Each round of subsurface soil samples consisted of seven split spoon soil boring samples, including one duplicate. These samples were analyzed at Kemron for Volatile Organic Compound (VOC) analysis. The soil samples were collected at the three soil boring locations shown on Figure 1.

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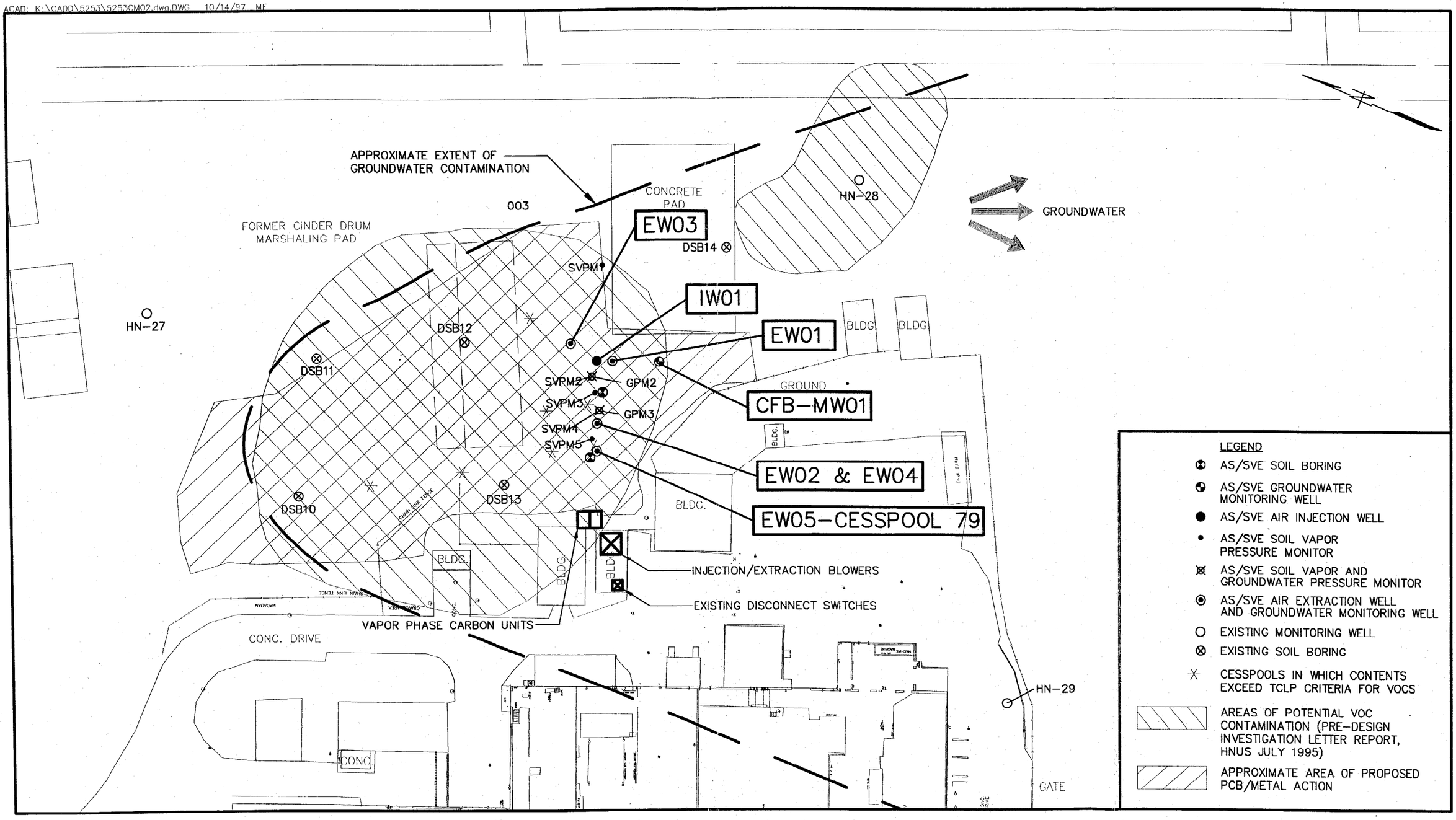

LAYOUT
SITE 1 – FORMER DRUM MARSHALLING AREA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

0 60 120
SCALE IN FEET

FIGURE 1

C.F. BRAUN

0075 B012

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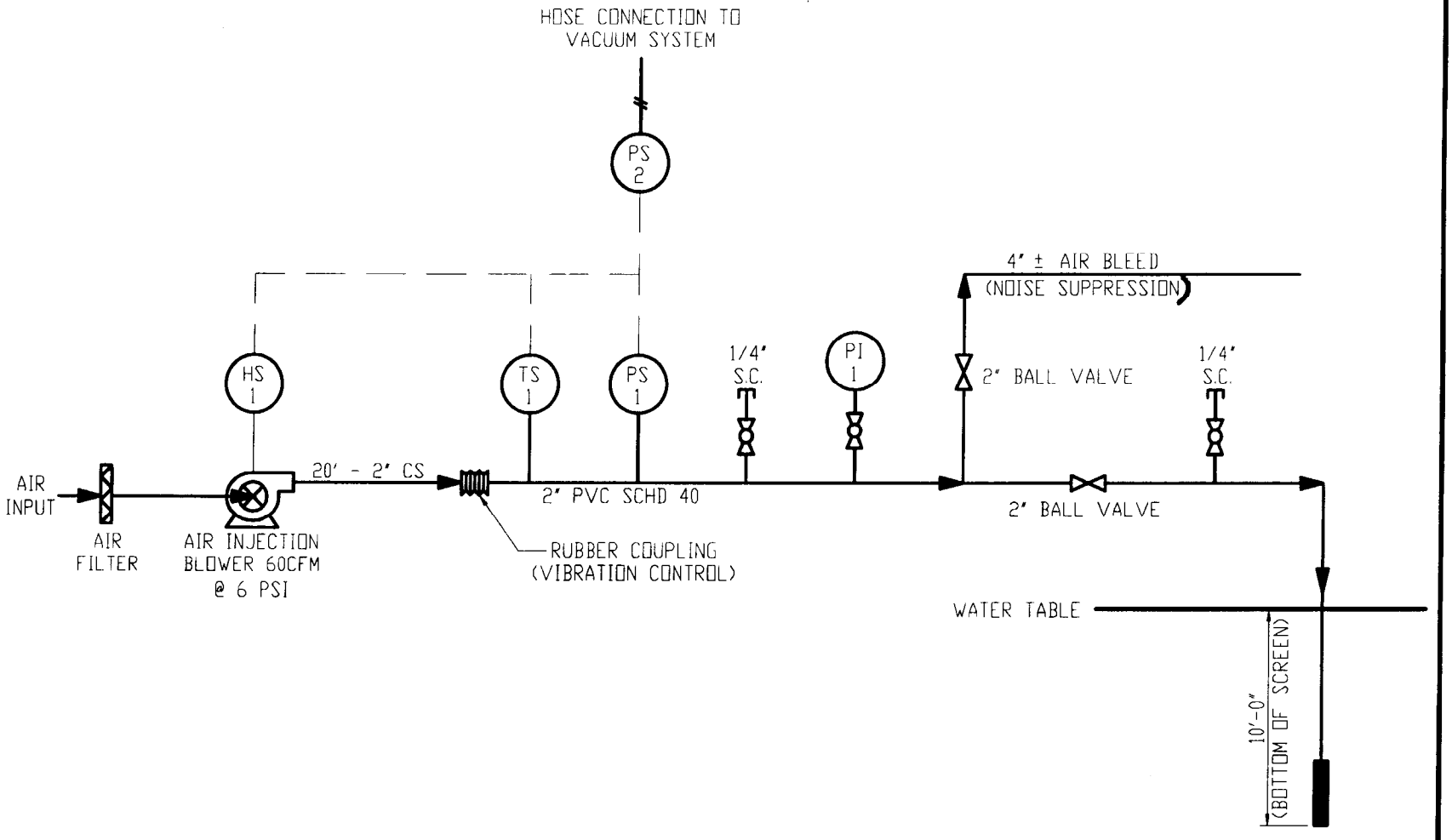

DRAWN BY MF DATE 10/10/97	C.F. BRAUN	CONTRACT NO. 5253	OWNER NO.
CHECKED BY DATE	PROCESS FLOW SCHEMATIC AIR INJECTION SYSTEM SITE 1 – FORMER DRUM MARHALLING AREA AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY NWIRP BETHPAGE, NEW YORK	APPROVED BY	DATE
COST/SCHED–AREA		APPROVED BY	DATE
NONE NONE		DRAWING NO. FIGURE 2	REV. 0

FORM CADD NO. SOUTH_AV.DWG - REV 0 - 02/07/97

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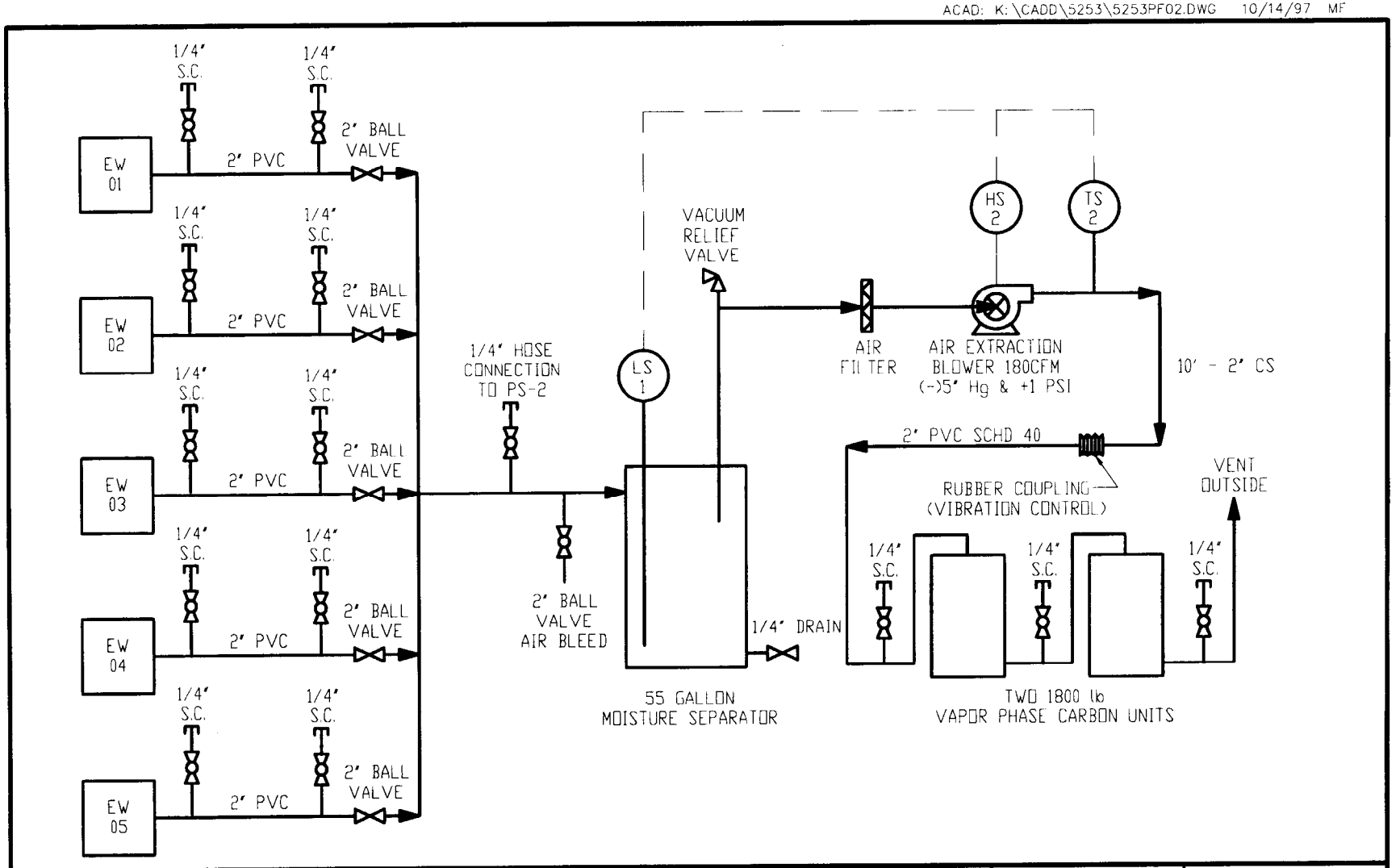


DRAWN BY DATE MF 10/10/97	C.F. BRAUN	CONTRACT NO. 5253	OWNER NO.
CHECKED BY DATE	PROCESS FLOW SCHEMATIC SOIL VAPOR EXTRACTION SYSTEM SITE 1 – FORMER DRUM MARHALLING AREA AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY NWIRP BETHPAGE, NEW YORK	APPROVED BY	DATE
COST/SCHED-AREA		APPROVED BY	DATE
NONE NONE		DRAWING NO. FIGURE 3	REV. 0

FORM CADD NO. SOUTH_AV.DWG - REV 0 - 02/07/97

One soil boring (SB02) was placed inside cesspool number 79. Split spoon samples were collected at depths of 10 and 40 feet below ground surface (bgs) and correspond to cesspool contents and soil underlying the cesspool, respectively. This cesspool also corresponds to the location of extraction well EW-05.

The other two soil borings were located outside the cesspools. The location and depth of these soil samples were based on field measurements conducted during the installation of the extraction wells, injection well, and monitoring wells. Three split spoon samples including one duplicate sample were collected from soil boring SB03 at depths of 20 and 40 feet bgs. Soil boring SB03 was installed at a location where a moderate concentration of VOCs was expected, (as determined during by PID readings during well installation). This location was near the edge of the suspected VOC-contaminated soils.

Split spoon samples were collected at depths of 30 and 40 feet bgs from soil boring SB04 and correspond to the location of the highest PID readings observed during well installation. This soil boring is also near the location of the two former drum marshalling pads. The same soil boring locations and sampling depths will be used for the final sampling event at the end of the pilot study.

In addition, three split spoon soil boring samples were collected for geotechnical parameters during the installation of two of the monitoring points. Samples were collected at 10 to 12 feet bgs and 28 to 29 feet bgs during the installation of SVPM 3 and 66 to 68 feet bgs during the installation of GPM 3. A grain size distribution geotechnical analysis was performed on each to provide data representative of conditions throughout the site, (see Appendix C).

A clay layer (approximately 2 feet thick) was encountered at approximately 50 to 52 feet bgs during the installation of the injection well, extraction wells, and monitoring points. A perched water layer of approximately one foot thick was encountered during the installation of EW-01 and EW-02. The area-wide water table was encountered at a depth of approximately 57 bgs. The presence of this clay layer requires consideration to ensure capture of all injected air.

Air Injection System

The air injection system consists of an injection well, a blower, and conveyance piping, (see Figures 1 and 2).

The air injection well is a 2-inch PVC riser pipe and screen installed to a total depth of 66.5 feet bgs. This well was installed on March 18, 1997. A 2-feet long 0.020 inch slot size well screen was installed 8 feet below the water table (between 64.5 to 66.5 feet bgs).

The blower is a rotary lobe-type Frame 32 Universal RAI Blower rated for 35 to 60 standard cubic feet per minute (SCFM) at a pressure of 6 pounds per square inch (PSI). The blower was manufactured by the Roots Division of Dresser Industries Inc.. The blower, an associated control panel, and a 7.5 horsepower (HP) motor were pre-assembled and mounted on a skid by Airtek Inc. Temperature and pressure cutoff switches were set at approximately 240 degrees Fahrenheit and 8 psi, respectively. The temperature set point is used to protect the plastic piping. The pressure set point is based on protecting the motor from overload.

In addition, a vacuum switch was installed on the soil vapor extraction suction line to provide an interlock between the injection blower and the extraction blower. As currently set, the injection blower will only operate when a vacuum is present in the soil vapor extraction piping. The exact set point was not measured, but was estimated to be in the range of 1 to 2 inches of water column. Based on the relatively low vacuum required for the soil vapor extraction system and the magnitude of the switch dead band, the injection blower shutdown switch must be manually reset prior to re-starting the injection blower. To simplify full scale operation, a more sensitive switch is required.

Conveyance piping for the injection line consists of a 40 foot length of 2-inch carbon steel pipe adjacent to the blower to dissipate heat, a rubber coupling for vibration control, 2-inch schedule 40 PVC pipe, two 2-inch ball valves to control air flow to the injection well and provide a manual pressure/air flow bleed off, and a 4-inch noise suppresser on the pressure bleed off. An automatic pressure relief valve is also present on the blower.

Soil Vapor Extraction System

The soil vapor extraction system consists of soil vapor extraction wells, a moisture separator, a blower, and conveyance piping, (see Figures 1 and 3).

There are five soil vapor extraction wells. Each well consists of a 2-inch PVC riser pipe and a 0.020 slot size screen. Total depth and screened intervals are summarized as follows.

Extraction Well	Installation Date	Total Depth (feet bgs)	Screen Length and Interval
EW-01	3/18/97	61.5	15 feet long, 10 feet above water table to 5 feet below water table (46 to 61 feet bgs)
EW-02	3/24/97	62	15 feet long, 10 feet above water table to 5 feet below water table (47 to 62 feet bgs)
EW-03	3/19/97	61	15 feet long, 10 feet above water table to 5 feet below water table (46 to 61 feet bgs)
EW-04	3/25/97	30	10 feet long, located at middle of unsaturated zone (20 to 30 feet bgs)
EW-05	3/25/97	20	5 feet long, located near the bottom of the cesspool (15 to 20 feet bgs)

The extraction blower is a positive displacement rotary lobe-type blower. The blower is a Frame 36 Universal RAI Blower rated for 100 to 150 scfm at +1 psi/-5 inches of mercury, manufactured by the Roots Division of Dresser Industries Inc. The blower, an associated control panel, a 55-gallon moisture separator, and a 7.5 HP motor were pre-assembled and mounted to a skid by Airtek Inc.

Temperature and vacuum pressure cutoff switches were set at approximately 250 degrees Fahrenheit and (-)5 inches of mercury, respectively. The temperature set point is used to protect the plastic piping. The pressure switch set point is based on protecting the motor from overload. An automatic vacuum relief valve is also present on the inlet to the blower.

Conveyance piping for the extraction lines consists of a flexible rubber coupling for vibration control, a 4-inch PVC header, five 2-inch schedule 40 PVC lines (one to each well), and one vacuum bleed valve. Each extraction line has a 2-inch ball valve to control air flow.

Offgas Treatment System

VOCs removed by the soil vapor extraction system were treated prior to discharge with two 1,800-pound vapor phase activated carbon units connected in series. The carbon units were provided by General Carbon Corporation. Pressure piping consisted of a 20 foot length of 3-inch carbon steel at the blower outlet, a rubber coupling for vibration control, and 4-inch schedule 40 PVC pipe leading to, between, and after the carbon unit. The 3-inch carbon steel pipe is used to dissipate heat from the blower.

Monitoring Points

A series of monitoring points was used to determine the effective radius of influence and monitor groundwater quality. The monitor points consist of one water table groundwater monitoring well, 5 soil vapor pressure monitors (SVPM), and 2 groundwater pressure monitors (GPM), as well as the 5 soil vapor extraction wells. The monitoring point locations are presented in Figure 1.

Groundwater monitoring well CFB-MW-01 consists of a 2-inch PVC riser pipe and screen installed to a total depth of 64 feet bgs on March 20, 1997. A 10-feet long 0.020 inch slot size well screen was installed from 2 feet above the water table to 8 feet below the water table (54 to 64 feet bgs). The monitoring well is located 30 feet hydraulically downgradient from the injection well.

Two dedicated groundwater pressure monitors (GPM 2 and GPM 3) were installed. Each monitor consists of 2-inch riser pipe and screen with total depth and screened interval as follows. A 0.020 slot screen size was used.

Groundwater Pressure Monitors	Installation Date	Total Depth (feet bgs)	Screened Interval
GPM 2	3/20/97	62	2 feet long, 4 feet below the water table (60 to 62 feet bgs)
GPM 3	3/21/97	66	2 feet long, 4 feet below the water table (61 to 63 feet bgs)

These wells were used in junction with water table wells to determine if vertical groundwater flow gradients exist as a result of air injection.

There are five soil vapor pressure monitoring wells, (see Figure 1). Each well consists of a 2-inch PVC riser pipe and a 0.020 slot size screen. Total depth and screened intervals are summarized as follows.

Soil Vapor Pressure Monitors	Installation Date	Total Depth (feet bgs)	Screened Interval
SVPM 1	3/19/97	30	5 feet long, located at middle of unsaturated zone (25 to 30 feet bgs)
SVPM 2	3/21/97	30	5 feet long at middle of unsaturated zone (25 to 30 feet bgs)
SVPM 3	3/21/97	30	5 feet long at middle of unsaturated zone (25 to 30 feet bgs)
SVPM 4	3/24/97	30	5 feet long at middle of unsaturated zone (25 to 30 feet bgs)
SVPM 5	3/25/97	20	5 feet long at middle of unsaturated zone (15 to 20 feet bgs)

The soil vapor extraction wells were also used to supplement the soil vapor pressure monitors during the air injection and extraction system testing. In addition, the three air extraction wells located at the water table (EW-01, EW-02, and EW-03), were used to monitor groundwater table fluctuations during testing.

3.0 TEST RESULTS

3.1 PHYSICAL PARAMETERS

Stratification Testing

The purpose of the stratification tests was to determine whether the presence of a denser than air gas (such as trichloroethane and tetrachloroethene) would cause contaminant stratification to occur within the screened interval of the soil vapor extraction well. The implication being that stratification within the unsaturated zone may prevent or inhibit the primary chemicals of concern from being extracted from the contaminated soils. If stratification was observed, then a second test would be conducted during operation of the system to determine whether the stratification could be minimized or eliminated by adjusting soil vapor extraction rates or by the injection of air. A second objective of the test was to confirm that excessive LEL or low oxygen conditions were not present in the system prior to the startup of the test.

Soil stratification testing of the soil vapor extraction wells was conducted on April 9, 1997. The test consisted of using a low-flow air pump to withdraw soil vapor from the top, middle, and bottom of the 10-foot section of screen located above the water table. The tests were conducted a minimum of 5 days after well development to allow static conditions to develop.

To conduct the test, a weighted 1/4-inch ID tube was lowered into the Extraction Well (EW01, EW02, or EW03) to appropriate depth relative to the screen position. The well was sealed with a cap to minimize air intrusion from the surface. A positive displacement air pump (operating at approximately 0.044 CFM (1.3 liter per minute) was used to extract the soil vapor from the tube. The pump discharged into a 0.017 CF flow through cell, where PID and LEL/O_2 probes were mounted. PID and LEL/O_2 readings were then taken every 5 to 10 minutes to confirm that the readings had stabilized.

The results of this testing are provided in Table 1. To conduct the evaluation, a comparison of the PID readings in each well with the average PID reading across the well was conducted. This comparison found an individual variance of only 19% to 55% from the mean. If stratification was present, a variance of several hundred to several thousand percent would be expected, with highest PID readings near at the bottom of the well screen. Since this is not the case, stratification within the wells is not expected to be significant.

Radius of Influence Testing

The radius of influence of the AS/SVE system describes the distance through which a well can obtain a measurable flow rate of groundwater or soil vapor. The radius depends on several factors including the soil type (e.g. sand or clay), soil homogeneity, depth of injection below the water table, injection/extraction air pressure and flow rate.

Since soil vapor and groundwater flow rates cannot be measured reliability insitu, soil vapor pressure and groundwater level/pressure differences are used as a positive indication of flow. The assumption is generally valid as long as there is no continuous barrier to flow between the points monitored. Based on the behavior of the monitoring wells during testing, this assumption is believed to be reasonably valid at this site. However, as indicated previously, there is a thin horizontal clay layer approximately 5 feet above the water table which requires consideration. Monitoring wells above this clay layer did not respond conclusively during all air injection tests, indicating that a continuous flow path may not exist.

During the radius of influence tests, water level measurements and soil vapor pressures/ vacuums were obtained at the start of each test. Flow rates were controlled by a 2-inch ball valve on the injection and extraction lines and measured with a Dwyer Thermal Anemometer Series 470 instrument. The Dwyer Magnehelic pressure gauges allowed pressure/vacuum readings from 0.02 to 1.00, 0.2 to 10, and 2 to 100 inches of water column (gauge).

TABLE 1

SOIL GAS STRATIFICATION TESTING
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

1.0 Extraction Well EW-01

Time (minutes)	PID (ppm)	LEL (%)	O_2 (%)
Test Location - Top of Well Screen			
0.0	300	0.0	20.9
15	353	-	-
30	338	0.0	20.9
Test Location - Middle of Well Screen			
0.0	439	3.0	18.2
15	435	3.0	20.2
Test Location - Bottom of Well Screen			
0.0	388	2.0	20.9
15	239	0.0	20.9
37	150	0.0	20.9

2.0 Extraction Well EW-02

Time (minutes)	PID (ppm)	LEL (%)	O_2 (%)
Test Location - Top of Well Screen			
0.0	32	0.0	20.7
15	25	0.0	20.6
35	35	0.0	20.6
50	26	0.0	20.6
Test Location - Middle of Well Screen			
0.0	35	0.0	20.6
15	26	0.0	20.6
Test Location - Bottom of Well Screen			
0.0	44	0.0	20.6
15	43	0.0	20.4

TABLE 1 (CONTINUED) - PAGE 2
SOIL GAS STRATIFICATION TESTING
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

3.0 Extraction Well EW-03

Time (minutes)	PID (ppm)	LEL (%)	O_2 (%)
Test Location - Top of Well Screen			
0.0	64	0.0	20.9
20	43	0.0	20.9
Test Location - Middle of Well Screen			
0.0	73	0.0	20.9
15	71	0.0	20.9
Test Location - Bottom of Well Screen			
0.0	80	0.0	20.7
15	73	0.0	20.7

PID: Photoionization Detector measures in parts per million (ppm).
LEL: Lower Explosive (flammable) Limit in air.

Soil Vapor Extraction Tests

The radius of influence testing consisted of measuring pressures/vacuums and/or water levels while operating one extraction well or injection well at a time at varied flow rates. The soil vapor extraction rates were generally conducted at 5, 20, and 80 scfm. During each of the extraction well tests, soil vapor pressures readings were recorded from all extraction wells, groundwater monitoring well MW-01, and the soil vapor pressure monitoring points. The readings were collected over time until they were stable, (less than 10% change over three consecutive readings).

Table 2 presents the results of the radius of influence testing for the soil vapor extraction well testing. An evaluation of the measurable vacuum as a function of distance was performed using statistical analysis. The analysis included linear regressions on the data as received, as well as on semi-logarithmic plots. The regressions generally found correlation coefficients of greater than 0.8, and in most cases, the semi-logarithmic evaluation resulted in a better correlation than analysis of the non-logarithmic evaluation. These correlation coefficients are considered to be reasonable and the semi-logarithmic correlations are typical for flow in radial directions. Linear regression calculations are presented in Appendix D.

The soil vapor extraction tests conducted are summarized as follows.

Soil Vapor Extraction Point	Monitoring Location
EW01 (water table)	Pressure at water table
	Pressure at middle of unsaturated zone
EW02 (water table)	Pressure at water table
	Pressure at middle of unsaturated zone
EW04 (middle of unsaturated zone)	Pressure at water table
	Pressure at middle of unsaturated zone
EW05 (middle of unsaturated zone)	Pressure at water table
	Pressure at middle of unsaturated zone

TABLE 2

RADIUS OF INFLUENCE TEST RESULTS
SOIL VAPOR EXTRACTION WELLS
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

EW-01 tests (SVE and monitoring performed at water table)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)				
		5 cfm	10 cfm	20 cfm	40 cfm	80 cfm
EW-01	0	-0.86	-1.5	-4.7	-14	-25
MW-01	21.3	-0.2	-0.36	-0.88	-1.6	-3.2
EW-03	27.5	-0.11	-0.18	-0.48	-0.96	-1.5
EW-02	44	-0.11	-0.15	-0.35	-0.82	-1.3

EW-01 tests (SVE performed at water table, monitoring points at middle of unsaturated zone)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)				
		5 cfm	10 cfm	20 cfm	40 cfm	80 cfm
SVPM 2	16.8	-0.007	-0.02	-0.03	-0.06	-0.07
SVPM 3	25.9	-0.007	-0.02	-0.03	-0.05	-0.06
SVPM 1	61	-0.007	-0.01	-0.02	-0.08	-0.11
SVPM 4	35.1	-	-0.02	-0.03	-0.06	-0.05
EW-04	45	-	-0.01	-0.03	-0.06	-0.06
SVPM 5	53.3	-	-0.02	-0.03	-0.05	-0.05
EW-05	64	-	-0.02	-0.03	-0.05	-0.05

TABLE 2 (CONTINUED) - PAGE 2
RADIUS OF INFLUENCE TEST RESULTS
SOIL VAPOR EXTRACTION WELLS

EW-02 tests (SVE performed and monitoring performed at water table)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-02	0	-0.06	-2.4	-13
EW-01	44	-0.06	-0.46	-1.3
EW-03	55.6	-0.06	-0.41	-1.2
MW-01	56.1	-0.02	-0.3	-0.98
27-S3	98		-0.04	

EW-02 tests (SVE performed at water table, monitoring at middle of unsaturated zone)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-04	3.7	0.003	-0.05	-0.09
SVPM 4	10.1	-0.01	-0.03	-0.09
SVPM 5	10.5	-0.003	-0.04	-0.07
SVPM 3	19.3	0.003	-0.03	-0.09
EW-05	21.2	-0.02	-0.04	-0.07
SVPM 2	31.7	0.003	-0.03	-0.07
SVPM 1	98.1	0.01	-0.03	-0.12

EW-04 tests (SVE performed at middle of unsaturated zone, monitoring at water table)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-02	3.7	-0.11	-0.07	-0.08
EW-01	55.3	-0.11	-0.03	-0.06
MW-01	74.6	-0.11	-0.06	-0.06
EW-03	75	-0.1	-0.06	-0.06

TABLE 2 (CONTINUED) - PAGE 3
RADIUS OF INFLUENCE TEST RESULTS
SOIL VAPOR EXTRACTION WELLS

EW-04 tests (SVE and monitoring performed at middle of unsaturated zone)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-04	0	-0.11	-0.75	-4.8
SVPM-5	10.1	-0.06	-0.11	-0.43
SVPM-4	10.9	-0.05	-0.14	-0.47
SVPM-3	20.1	-0.05	-0.07	-0.33
EW-05	20.7	-0.06	-0.08	-0.31
SVPM-2	31.2	-0.07	-0.06	-0.23
SVPM-1	98	-0.05	-0.02	-0.06

EW-05 tests (SVE performed at middle of unsaturated zone, monitoring at water table)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-02	21.2	0.02	0.07	0.04
EW-01	64	0.02	0.05	0.01
MW-01	74.6	0.003	0.03	0.01
EW-03	75	0.02	0.05	0.02

EW-05 tests (SVE and monitoring performed at middle of unsaturated zone, monitoring at water table)

Well ID	Distance from SVE Well (ft)	Soil Vapor Pressure (inches of water column)		
		5 cfm	20 cfm	80 cfm
EW-05	0	-0.25	-1.4	-8.3
SVPM 5	11.7	-0.04	-0.11	-0.43
EW-04	20.7	-0.01	-0.08	-0.28
SVPM 4	30.4	-0.02	-0.04	-0.21
SVPM 3	39.6	-0.01	-0.04	-0.17
SVPM 2	50.9	-0.01	-0.03	-0.13
SVPM 1	117.6	-0.01	-0.02	-0.03

cfm: cubic feet per minute SVE: Soil Vapor Extraction
A negative pressure (e.g. -1.4) indicates that the monitoring are reading a vacuum relative to atmospheric pressure.

Figure 4 provides a graphic presentation of the natural log of the soil vapor pressures at the water table as a function of distance from the operating extraction well EW-01, (which is screened at the water table, see also Table 2 - page 1). Based on this data, the significant findings are as follows.

- For each monitoring point, as the soil vapor extraction rate increases, the soil vapor vacuum pressure also increases. This finding indicates a flow path between the extraction point and the monitoring point.

- For each soil vapor extraction rate, the soil vapor vacuum pressure decreases with distance from the extraction well. This finding is consistent with radial horizontal flow from the perimeter into the extraction well.

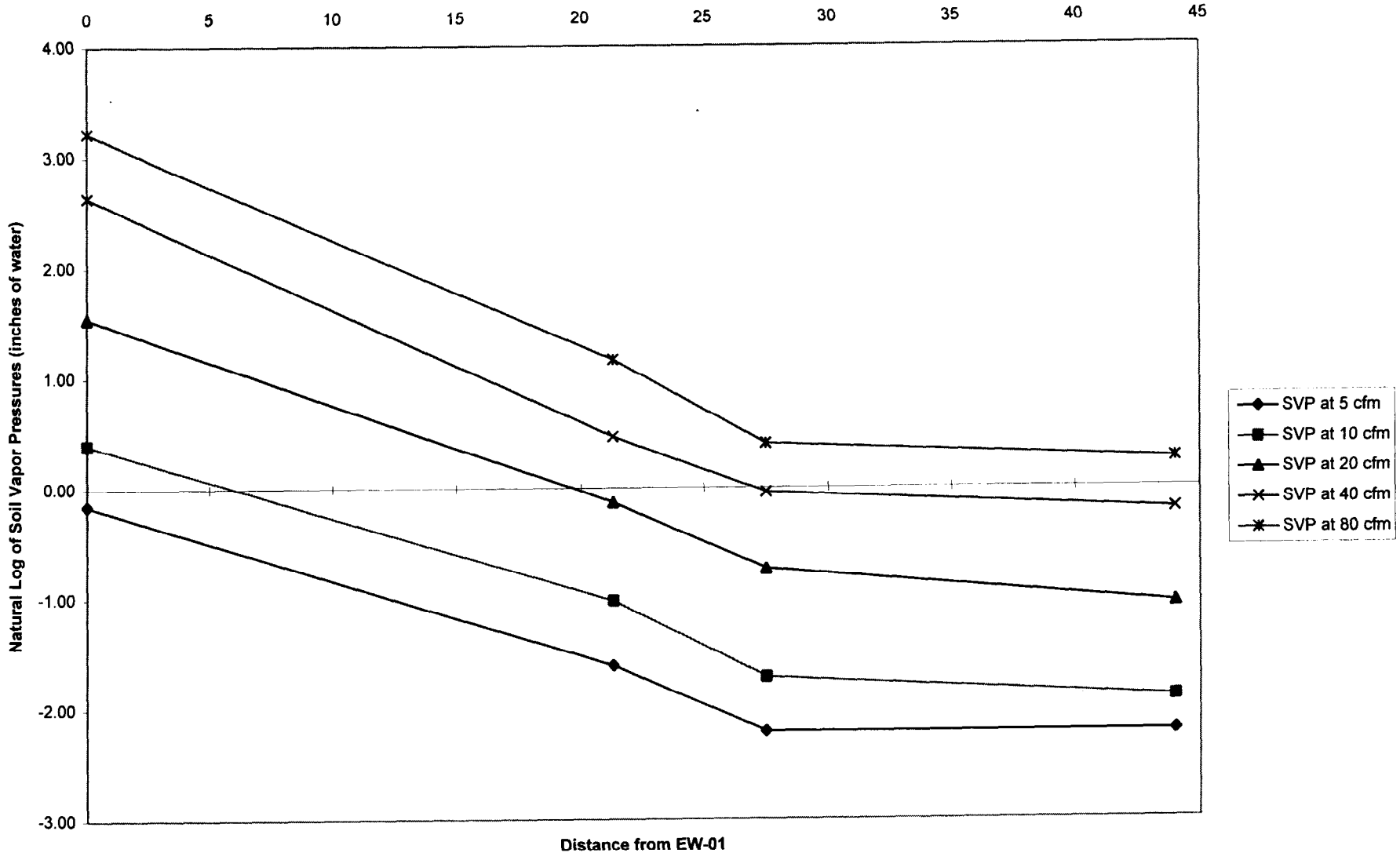
- The change in soil vapor vacuum pressure as a function of distance and flow is relatively uniform. This finding indicates that the soil is relatively homogeneous at the location tested.

Figure 5 provides a graphic presentation of the natural log of the soil vapor pressures at the middle of the unsaturated zone as a function of distance from the operating extraction well EW-01, (which is screened at the water table, see also Table 2 - page 1). Based on these data, the significant findings are as follows.

- For each monitoring point, as the soil vapor extraction rate increases, the soil vapor vacuum pressure also increases. This finding indicates a flow path between the extraction well and the monitoring point.

- For each soil vapor extraction rate, the soil vapor vacuum pressure is <u>not</u> a function of horizontal distance from the extraction well. This lack of correlation is likely an indication that horizontal conductivity is much higher than vertical conductivity, as is common for this area.

FIGURE 4
SOIL VAPOR PRESSURES AT WATER TABLE AS A FUNCTION OF DISTANCE FROM EXTRACTION WELL EW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP9701W AS.CH Chart 1

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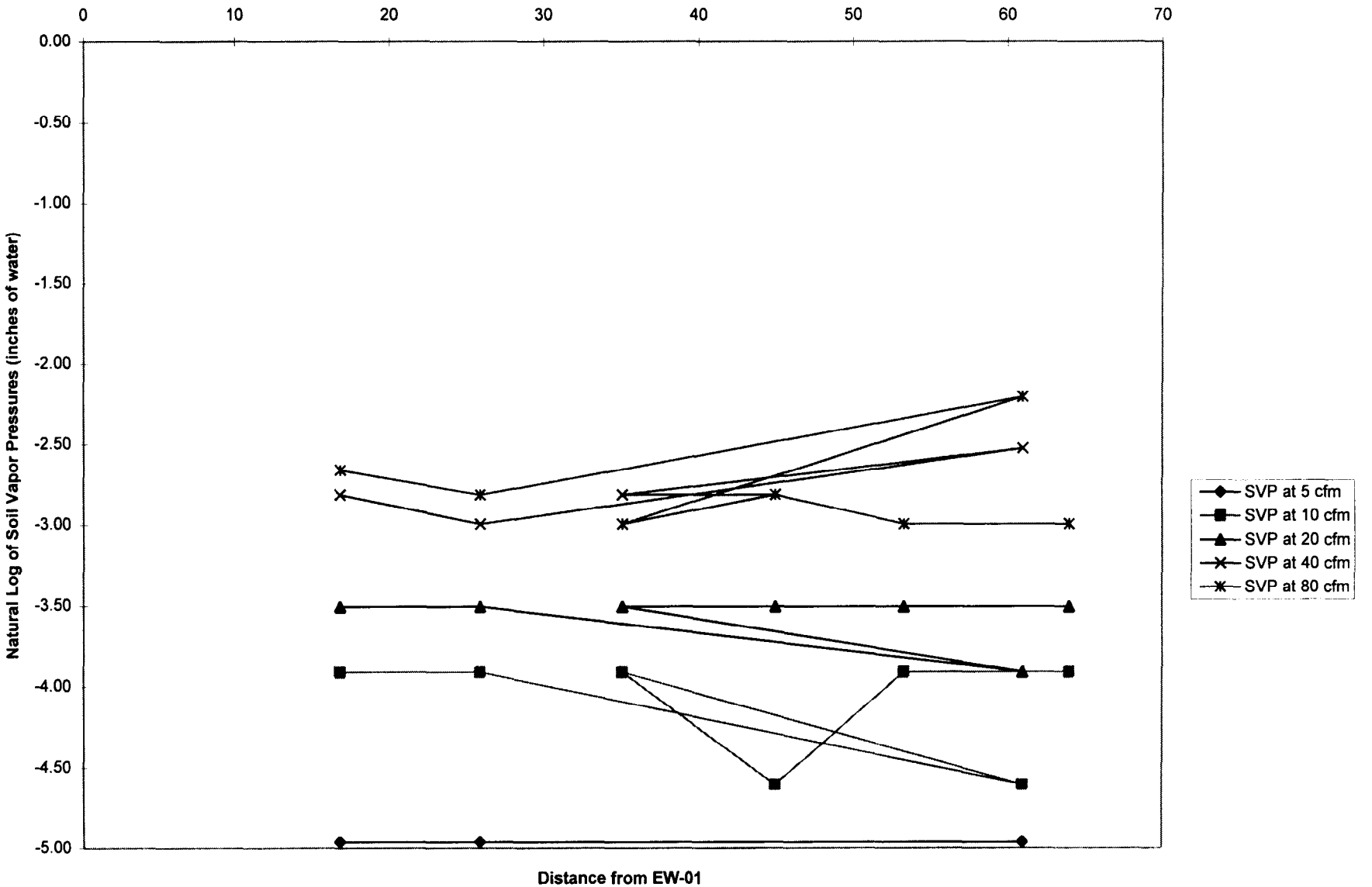
FIGURE 5
SOIL VAPOR PRESSURES AT MIDDLE OF UNSATURATED ZONE AS A FUNCTION OF DISTANCE FROM EXTRACTION WELL EW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP9701M AS.CH Chart 1

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- For each soil vapor extraction rate, the soil vapor vacuum pressure is relatively uniform. This finding indicates that the soil is relatively homogeneous at the location tested, and that significant barriers or conduits to vertical flow are not present.

Trends for the EW-02 tests are very similar to those for EW-01, with on the magnitude and slope of the trends being different, (see Table 2 - page 2). This finding again indicates that the site soils are relatively homogeneous.

Figure 6 presents the natural log of soil vapor pressures at the water table as a function of distance from EW-05 (which is screened at the middle of the unsaturated zone and in a cesspool, (see also Table 2 - page 3). The findings of these tests are summarized as follows.

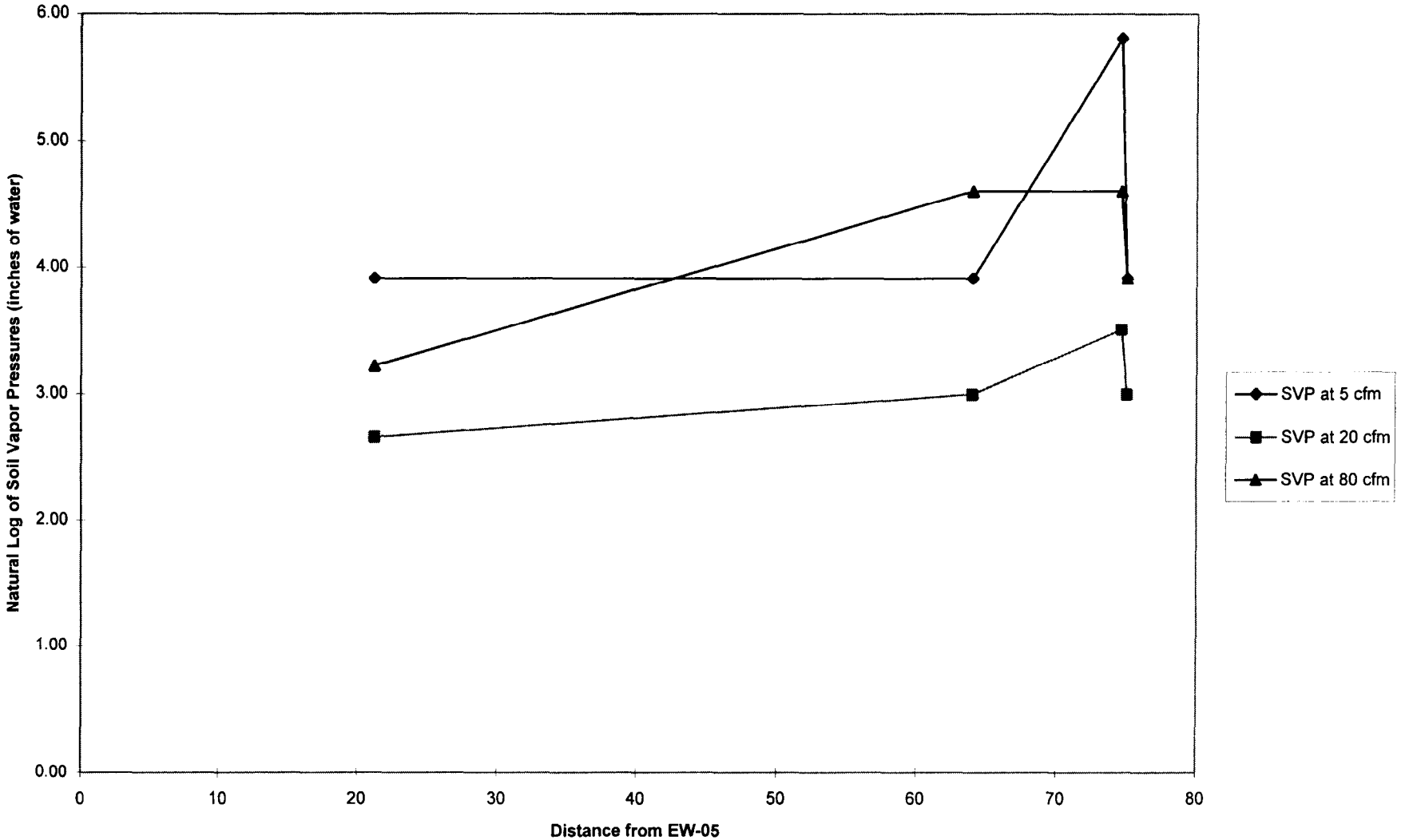
- The operation of extraction well EW-05 did not cause of significant vacuum to form at the water table (Figure 6). In fact, during this test, only positive pressures were noted at the water table.

- The pressure readings were not dependent on either distance or soil vapor extraction rates. These findings indicate that soil vapor extraction at the middle of the unsaturated zone will not cause significant soil vapor flow at the water table.

Figure 7 presents the natural log of soil vapor pressures at the middle of the unsaturated zone as a function of distance from EW-05 (which is screened at the middle of the unsaturated zone and in a cesspool, (see also Table 2 - page 3). The findings of these tests are summarized as follows.

- For each monitoring point, as the soil vapor extraction rate increases, the soil vapor vacuum pressure also increases. This finding indicates a direct flow path between the extraction point and the monitoring point.

FIGURE 6
SOIL VAPOR PRESSURES AT WATER TABLE AS A FUNCTION OF
DISTANCE FROM EXTRACTION WELL EW-05
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP9705W AS.CH Chart 1

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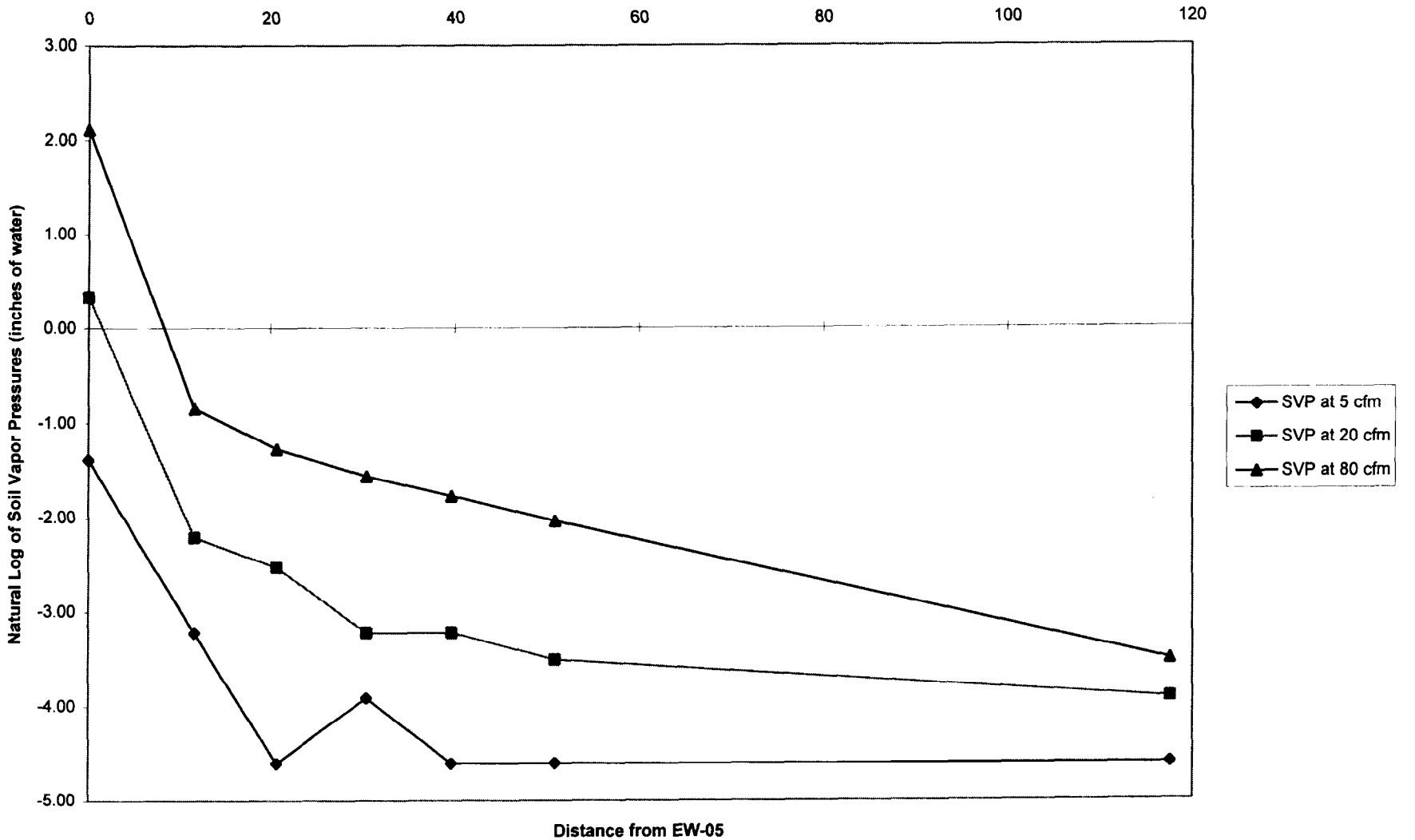
FIGURE 7
SOIL VAPOR PRESSURES AT MIDDLE OF UNSATURATED ZONE AS A FUNCTION OF DISTANCE FROM EXTRACTION WELL EW-05
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



- For each soil vapor extraction rate, the soil vapor vacuum pressure decreases with distance from the extraction well. This finding is consistent with radial horizontal flow from the perimeter into the extraction well.

- The relationship between soil vapor extraction rate, distance, and soil vapor vacuum pressure is relatively uniform. This finding indicates that the soil is relatively homogeneous at the location tested.

The test results for soil vapor extraction at extraction well EW-04 are very similar to that for EW-05. Based on this similarity, one can conclude that the cesspool structure does not appreciably inhibit air flow rate, or serve as a preferred pathway for air flow.

Air Injection Tests

The injection well was evaluated at flow rates of 10, 20, 30, and 60 scfm. During the testing, it was noted that air injection rates of 10 to 20 cfm could routinely be achieved. However, injection rates of 30 and 60 scfm could not be consistently achieved. The higher flow rates were only achieved after a consistent air injection rate of 10 to 20 cfm for a period of several days. After a system shutdown, it took as long as one or more days to again establish a flow rate of 30 cfm. If the air injection rate was increased to rapidly, then the high pressure switch on the blower would trip.

Monitoring points consisted of water level measurements at EW-01, EW-02, EW-03, MW-01, GPM 2, GPM 3, and HN-27-S3 (background monitoring well) over time until a change of less than 10% was noted over three consecutive readings. Soil vapor pressures were also monitored during the testing. The results of this testing are presented in Table 3 and are graphed in Figure 8.

TABLE 3

INJECTION WELL TEST RESULTS AND INJECTION TO EXTRACTION FLOW RATIOS AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY NWIRP BETHPAGE, NEW YORK

Injection Well IW-01 Tests

Well ID	Distance from AS Well (ft)	Hydrostatic Head (feet of water column)[1]			
		10 cfm	20 cfm	30 cfm	60 cfm
EW-01	8	1.97	3.61	3.61	4.3
EW-03	20	0.07	0.05	0.05	0.19
MW-01	30	0.13	0.22	0.22	0.44
EW-02	40	0.06	0.09	0.09	0.11
27-S3	98	-0.02	0.01	0.09	0.11

Injection Well IW-01/Extraction Well EW-02 Tests (Monitoring at water table)

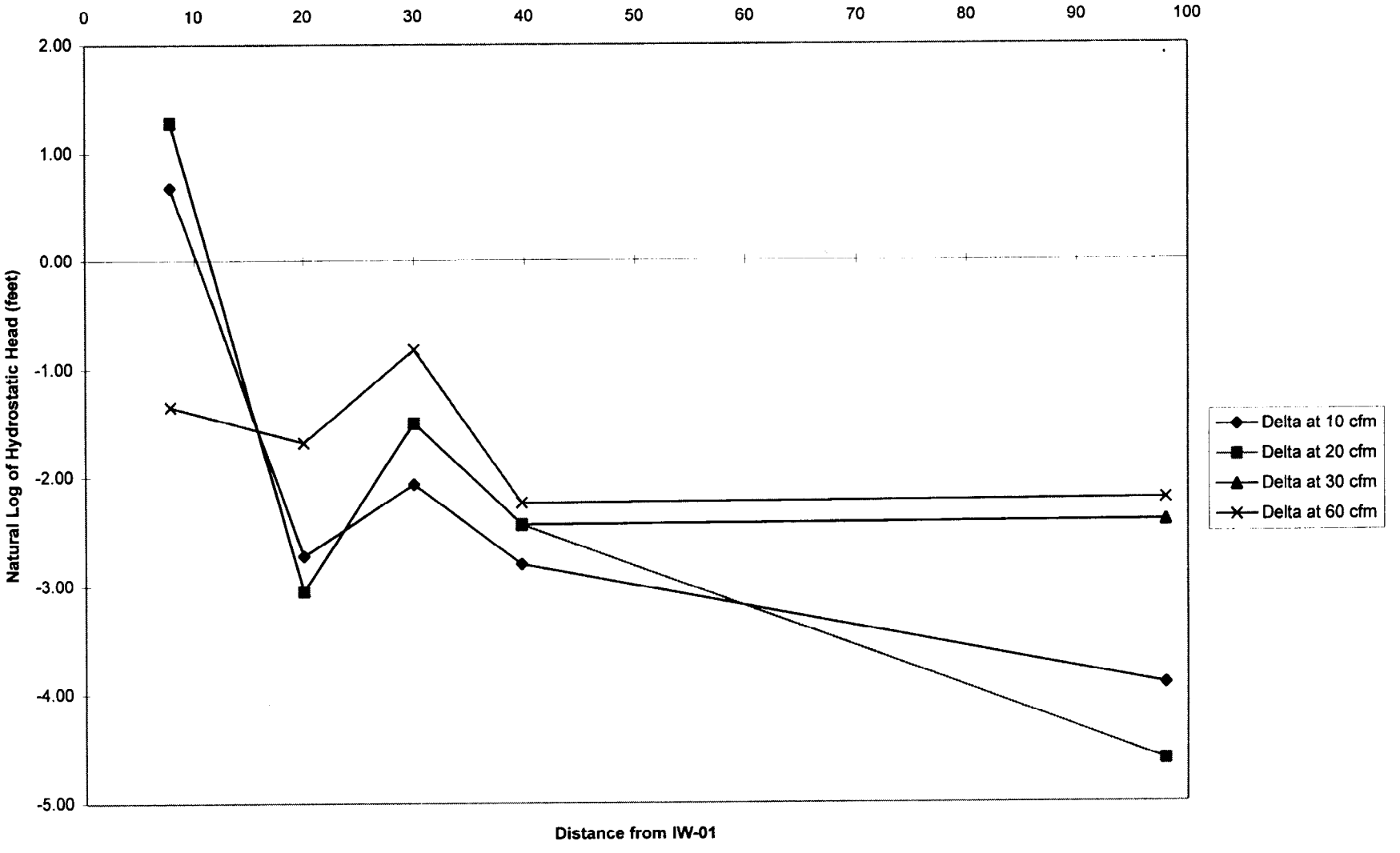
Well ID	Distance from AS Well (ft)	Soil Vapor Pressure[2] (inches of water column)		
		SVE/AS Ratio: 1.5	SVE/AS Ratio: 2.0	SVE/AS Ratio: 3.0
EW-01	8	0.21	0.17	-0.33
EW-03	20	0.05	0.03	-0.38
MW-01	30	1.0	1.2	1.0
EW-02	40	-4.3	-5.9	-12

Injection Well IW-01/Extraction Well EW-02 Tests (Monitoring at middle of unsaturated zone)

Well ID	Distance from AS Well (ft)	Soil Vapor Pressure[2] (inches of water column)		
		SVE/AS Ratio: 1.5	SVE/AS Ratio: 2.0	SVE/AS Ratio: 3.0
SVPM 2	10	0.02	0.03	-0.03
SVPM 3	21	-0.01	0.03	-0.03
SVPM 4	29	-0.01	0.03	-0.03
EW-04	41	-0.03	0.04	-0.04
SVPM 1	48.5	0.03	-0.003	-0.03
SVPM 5	49	-0.04	0.03	-0.04
EW-05	59.5	-0.04	0.03	-0.03

1. A positive increase in hydrostatic head indicates that the water level increased by that height, with the change adjusted for soil vapor pressure.
2. A negative soil vapor pressure reading indicates a vacuum.

FIGURE 8
HYDROSTATIC HEAD AS A FUNCTION OF DISTANCE FROM INJECTION WELL IW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP97IW AS.CH Chart 3

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These data were analyzed similar to the soil vapor extraction data, except that pressure gradients in the water were evaluated. Also, linear regressions were calculated for both the normal (non-log) and semi-log plots. Correlation coefficients of only 0.4 to 0.6 were obtained with this analysis, indicating a correlation did exist, but that is was relatively weak. Again the correlation was better for the semi-log analysis, which would be expected for radial flow outward, (see Appendix D).

Qualitative analysis of the results found a significant impact in the wells at a distance of 8 feet (EW01) and 30 feet (MW01) hydraulically downgradient from the air injection well. The water table was measured to rise by 1.97 to 4.3 feet and 0.13 to 0.44 feet, respectively. Also, as the air flow rate to the injection well increased, the water level in these two wells increased. Groundwater monitoring wells located 20 feet upgradient (EW03) and 40 feet side-gradient (EW02) of the air injection well may have been effected. However, consistent changes in water level were not observed as a function of flowrate.

Based on analytical data presented in Section 3.2, the groundwater VOC concentration in well EW03 remained relatively constant throughout the trial, indicating that air injection did not affect the groundwater at a distance of 20 feet upgradient of the injection well. However, the groundwater VOC concentration in well EW04, which is located 40 feet side-gradient of the air injection well, decreased by approximately 75% during the trial. This decrease indicates that the air injection well may have affected the groundwater at this well. For comparison, the groundwater VOC concentration in wells EW01 (which is located 10 feet upgradient of the injection well) and MW01 (which is located 30 feet downgradient of the injection well) decreased by 97% and 89%, respectively.

Air Injection/Soil Vapor Extraction Tests

A test was conducted in which air was injected in well IW01 and extracted from well EW-02. The test was conducted with a fixed air injection rate of 20 scfm. The soil vapor extraction rate was then set at 1.5, 2.0, and 3.0 times the injection rate. Water levels and soil vapor pressures/vacuums were measured during this test.

Table 3 presents the results of the injection well testing and simultaneous injection/extraction testing. Qualitative analysis of these results indicates that an extraction ratio of 2 to 3 times the air injection rates is needed to assure capture of all injected air.

RADIUS OF INFLUENCE AS A FUNCTION OF FLOW RATE

Soil Vapor Extraction

Table 4 presents the data representing the calculated radius of influence as a function of flow rate for extraction tests performed at the water table and the middle of the unsaturated zone. The radius of influence is calculated based on a linear regression analysis of soil vapor pressures, (see Appendix D). The baseline for declaring a vacuum present was 0.05 inches of water column for measurements at the water table and 0.02 inches of water column at the middle of the unsaturated zone. These values were selected based on the accuracy of the instrument (detection limit equal to 0.02 inches water column), the observed effects of atmospheric disturbances (weather systems), and the time for the soil vapor system to respond to changes.

Figures 9 and 10 present the calculated radius of influence as a function of flowrate for the tests conducted at the water table and the middle of unsaturated zone, respectively. For soil vapor extraction at the water table, a similar radius of influence was noted for the shallow soils. However for extraction at the middle of the unsaturated zone, it is apparent that stagnant (no flow) zones may have developed at the water table.

Air Injection

Since there was not a direct correlation between air injection rates and observed water level fluctuations at each of the monitoring wells, radius of influence curves for air injection could not be developed. A general observation is that at an air injection rate of 10 cfm and greater, the radius of influence is not a function of the air injection rate. However, based on a qualitative evaluation, at an air injection rate of 10 cfm and greater, the radius of influence is estimated to be between 20 and 40 feet. For current purposes, the design radius of influence for air injection at 10 cfm per well will be assumed to be 30 feet.

TABLE 4

RESULTS OF
RADIUS OF INFLUENCE AS A FUNCTION OF SOIL VAPOR EXTRACTION RATES
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

EW-01 & EW-02 tests (SVE at water table, monitoring points at water table)

SVE Flow Rate (cfm)	EW-01 - Radius of Influence (feet)[1]	EW-02 - Radius of Influence (feet)[1]
5	53	48
10	59	-
20	71	98
40	79	-
80	84	121

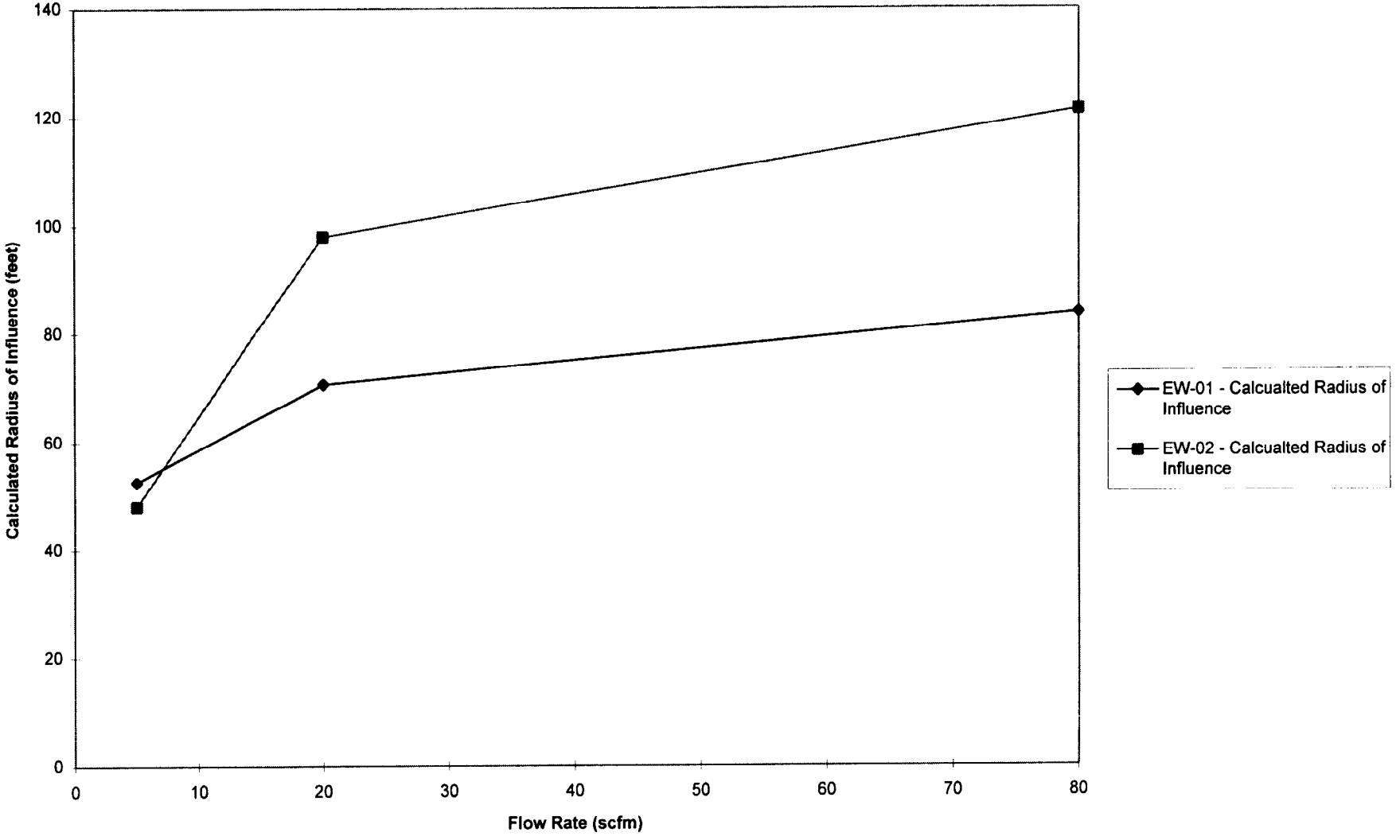
EW-04 & EW-05 tests (SVE and monitoring points at middle of unsaturated zone)

	Calculated Radius of Influence (in feet using 0.05 inches of water reference point)	
SVE Flow Rate (cfm)	EW-04 - Radius of Influence (feet)[2]	EW-05 - Radius of Influence (feet)[2]
5	-	42
20	51	88
80	91	111

1. 0.05 feet of vacuum (water) is used as the reference point.
2. 0.02 feet of vaccum (water) is used as the reference point.

cfm: cubic feet per minute.
SVE: Soil Vapor Extraction

FIGURE 9
CALCULATED RADIUS OF INFLUENCE AS A FUNCTION OF FLOW RATE FROM EXTRACTION WELLS EW-01 AND EW-02
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP970102 AS.RAD Chart 1

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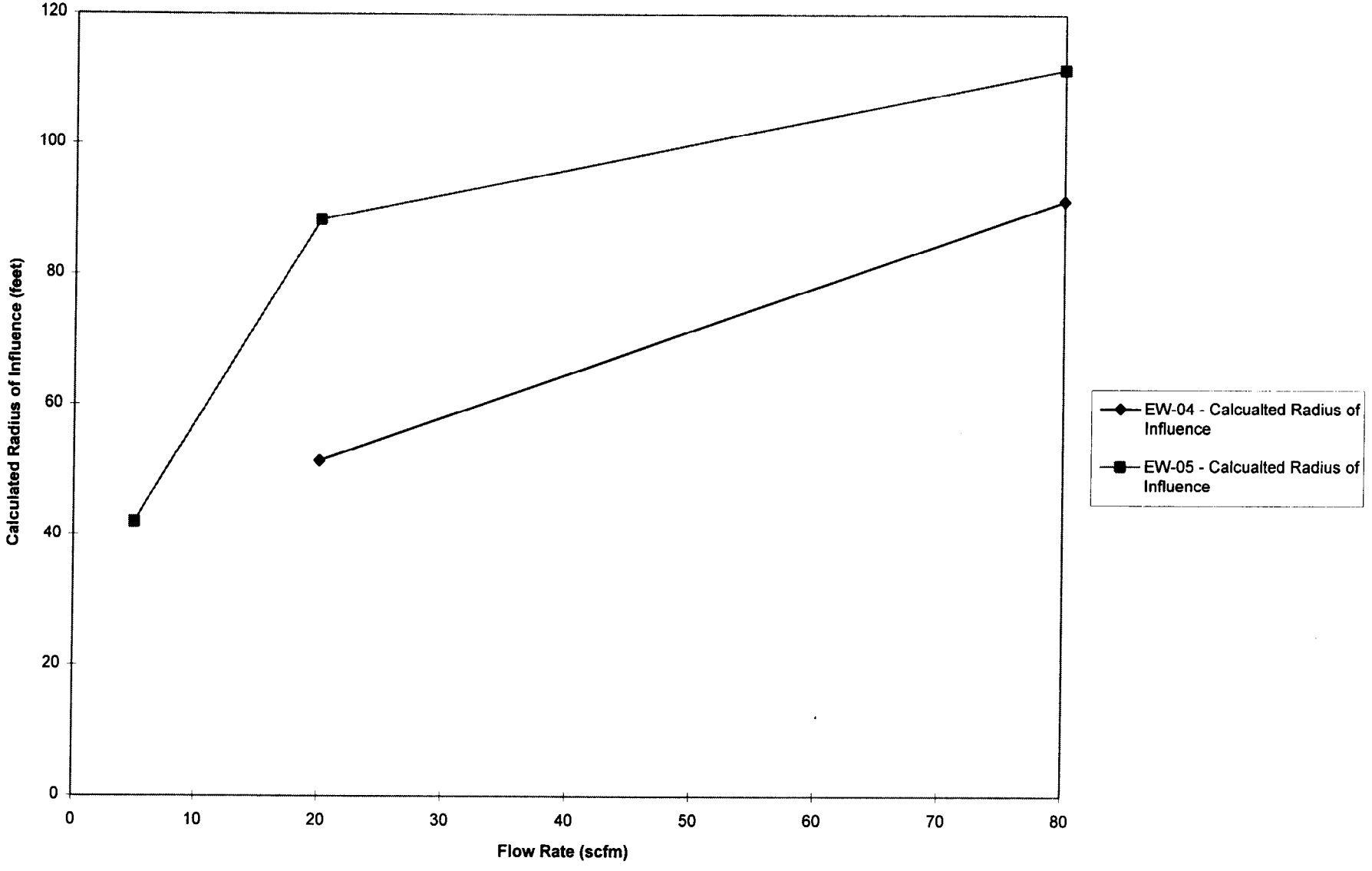
FIGURE .
CALCULATED RADIUS OF INFLUENCE AS A FUNCTION OF FLOW RATE FROM EXTRACTION WELLS EW-04 AND EW-05
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



BP970405 AS.RAD Chart 3

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3.2 CHEMICAL PARAMETERS

Carbon System Data

General operating parameters of the vapor phase activated carbon system are presented in Table 5. PID readings are used to identify breakthrough of contaminants through the carbon units. Initial breakthrough of the first carbon unit occurred approximately June 5, 1997. However, as of September 15, 1997, when the system was shut down, the first carbon unit continued to remove approximately 50% of the VOCs. VOC breakthrough on the second carbon unit was not observed during the trial.

System Operation Data

General system data collected to date is provided in Table 6. During the 4.5 months of operation, four unscheduled system outages occurred. Each outage lasted approximately 5 to 6 days. The first outage occurred while the power was shut off by Northrop Grumman personnel during the demolition of an adjacent building. The last three outages resulted from power surges during thunderstorms. The blowers are not set to automatically restart without operator attention.

Other notable findings of the study are as follows.

- SVPM-1, which is the soil vapor pressure monitor located at the middle of the unsaturated zone and nearest the residential neighborhood, was consistently maintained at a vacuum. This finding indicates that soil vapor flow in this area would be from the east toward the extraction system.

- The pressure in the monitoring well (MW-01), which is screened entirely below the clay lens, has shown both positive and negative readings. Even though it is unlikely that injected air is reaching the fence line, a negative vacuum at this location should be maintained to confirm capture. As a result, the air injection rate was decreased and the air extraction rate around the injection well was increased in July 1997.

TABLE 5

CARBON SYSTEM OPERATION DATA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

1. PRE-CARBON Treatment Units

Parameter/Date (1997)	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	7/11	7/15	9/17
Pressure (inches of H_2O)	2.9	2.3	2.7	2.4	2.7	6.2	5.7	5.7	6.3	6.0	6.2	*	*	6.3
Flow Rate (scfm)	23	104	104	108	108	152	170	170	166	166	158	166	175	166
PID Reading (ppm)	1,106	1,097	*	185	125	62	58	51	68	60	60	54	48	42

2. BETWEEN CARBON Treatment Units

Parameter/Date (1997)	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	7/11	7/15	9/17
Pressure (inches of H_2O)	1.3	1.1	1.4	1.7	1.4	3.1	2.8	3.0	3.1	2.8	3,0	*	*	3.0
Flow Rate (scfm)	21	100	100	104	104	152	170	170	156	153	153	*	*	*
PID Reading (ppm)	0	0	*	0	0	0	5.3	0	2.5	4.2	2.4	11.2	*	23

3. POST CARBON Treatment Units

Parameter/Date (1997)	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	7/11	7/15	9/17
Pressure (inches of H_2O)	0.09	0.60	0.81	0.09	0.9	0.09	0.03	0.04	0.12	0.15	0.16	*	*	0.04
Flow Rate (scfm)	20	100	100	104	104	148	148	166	156	153	153	*	*	*
PID Reading (ppm)	0	0	*	0	0	0	3.8	0	0	0	0	0	0	0

SCFM Standard Cubic Feet per Minute
PID Photoionization Detector measures in Parts Per Million.
* Reading was not obtained.

TABLE 6

1997 SYSTEM OPERATION DATA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

1. Extraction Well EW01

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Flow Rate (scfm)	24.0	21.8	22.9	22.9	22.9	36.0	38.2	15.3	21.8	28.4	32	28
PID Reading (ppm)	1,147	1,076	**	94.4	15.9	9.7	13.5	21.1	16.5	20.4	20.3	13.2
Pressure (" water)	-5.6	-2.4	-5.7	-5.9	-4.5	-9.4	-17	-9.5	-9.7	-8.9	-8.0	-9.4
Level Change (ft)*	2.92	0.08	1.52	1.67	0.35	2.5	1.8	3.3	3.9	2.0	2.7	4.2
TCA (ppm)	T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO_2 (0.5-10 Vol.%)	4.5	0.5	0.75	0.75	0.75	0.75	0.75	1.0	1.0	1.0	1.0	1.25
V. Chloride (ppm)	T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

2. Extraction Well EW02

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Flow Rate (scfm)	24.0	24.0	21.8	21.8	20.7	32.7	34.9	40	40	39	41	34
PID Reading (ppm)	789	694	**	122	152	85.8	61.8	53.7	63	75	73	43
Pressure (" water)	-3.1	-3.5	-2.8	-3.4	-3.4	-5.4	-6.2	-7.4	-7.5	-6.9	-6.7	-7.5
Level Change (ft)*	0.23	0.27	0.45	0.5	1.0	1.57	1.57	1.97	2.7	2.4	2.7	3.6
TCA (ppm)	75	ND	40	75	25	25	25	15	T	25	ND	ND
CO_2 (0.5-10 Vol.%)	1.5	2.0	2.0	3.5	3.75	1.25	1.0	1.0	0.75	1.25	1.25	1.0
V. Chloride (ppm)	T	T	T	T	T	T	ND	ND	ND	ND	ND	ND

TABLE 6 (CONTINUED) - PAGE 2
1997 SYSTEM OPERATION DATA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

3. Extraction Well EW03

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Flow Rate (scfm)	24.0	21.8	22.9	21.8	21.8	34.9	38.2	45.8	38.2	32.7	27	27
PID Reading (ppm)	1,967	1,834	**	46.1	101	64.7	48.5	52.0	95	67	73	49
Pressure (" water)	-4.9	-5.5	-4.5	-5.1	-4.9	-8.1	-8.9	-9.8	-9.8	-8.6	-8.4	-9.5
Level Change (ft)*	0.34	0.22	0.34	0.28	0.16	0.41	4.63	2.43	3.1	2.6	2.8	3.6
TCA (ppm)	50	ND	ND	T	ND	ND	ND	ND	ND	ND	ND	ND
CO_2 (0.5-10 Vol.%)	7.0	3.0	2.5	2.25	1.5	1.0	1.25	1.5	1.75	1.75	1.6	T
V. Chloride (ppm)	10	15	T	T	T	T	T	ND	T	ND	2.3	ND

4. Extraction Well EW04

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Flow Rate (scfm)	24.0	22.9	22.9	22.9	20.7	32.7	33.8	45.8	46	45	50	38
PID Reading (ppm)	878	782	**	73.7	63.3	61.8	52.0	43.2	45	46	50	27
Pressure (" water)	-0.9	-0.33	-0.82	-0.73	-0.79	-1.3	-1.6	-2.4	-2.4	-2.3	-2.1	-1.9
Level Change (ft)	-	-	-	-	-	-	-	-	-	-	-	-
TCA (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO_2 (0.5-10 Vol.%)	3.5	0.75	1.75	1.25	1.25	1.0	0.5	0.5	0.5	0.5	0.75	0.5
Vinylchloride (ppm)	T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 6 (CONTINUED) - PAGE 3
1997 SYSTEM OPERATION DATA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

5. Extraction Well EW05

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Flow Rate (scfm)	24.0	22.9	22.9	22.9	20.7	32.7	28.4	17.4	17	22	19	27
PID Reading (ppm)	274	253	**	26.6	22.4	19.2	13.2	6.7	2.1	12.2	8.2	3.9
Pressure (" water)	-1.4	-1.9	-1.4	-1.7	-1.7	-2.5	-3.1	-1.4	-1.2	-1.8	-1.5	-1.6
Level Change (ft)	-	-	-	-	-	-	-	-	-	-	-	-
TCA (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CO_2 (0.5-10 Vol.%)	2.0	0.5	0.5	0.5	T	T	0.5	0.25	T	T	T	T
Vinylchloride (ppm)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

6. Air Injection Well

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
Pressure (psi)	4.0	4.0	4.0	3.8	3.5	3.5	4.0	3.0	5.0	4.0	4.0	4.5
Flow Rate (scfm)	9.8	9.8	10.0	9.3	10.9	37.1	38.2	37.1	12	13	4	4

7.0 Soil Vapor Pressure Monitor Readings (inches of water)

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
MW01	-0.49	-0.77	0.14	0.07	-0.93	1.6	3.5	5.4	-0.01	1.7	-2.5	0
SVPM 1	-0.16	-0.10	-0.12	-0.10	-0.14	-0.15	-0.15	-0.16	-0.24	-0.25	-0.18	-0.19
SVPM 2	-0.19	-0.19	-0.13	-0.15	-0.16	-0.21	-0.25	-0.23	-0.29	-0.28	-0.25	-0.26
SVPM 3	-0.21	-0.16	-0.12	-0.10	-0.14	-0.15	-0.28	-0.32	-0.35	-0.35	-0.32	-0.33
SVPM 4	-0.29	-0.18	-0.13	-0.15	-0.16	-0.21	-0.36	-0.39	-0.43	-0.45	-0.41	-0.42
SVPM 5	-0.03	-0.22	-0.22	-0.17	-0.20	-0.26	-0.41	-0.36	-0.41	-0.43	-0.41	-0.39

TABLE 6 (CONTINUED) - PAGE 4
1997 SYSTEM OPERATION DATA
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

8. Groundwater Level Change From Start (feet)

Check List Date	4/23	5/2	5/7	5/15	5/20	5/29	6/5	6/12	6/19	6/24	7/2	9/17
GPM 2	0.02	-0.10	0.09	0.02	-0.13	-0.01	0.99	1.59	2.46	1.58	2.2	3.6
GPM 3	0.02	-0.09	0.07	0.0	-0.13	-0.04	0.89	1.55	2.37	1.76	2.2	3.5
MW01	0.02	-0.08	0.05	-0.01	-0.13	-0.03	0.83	1.51	2.28	1.68	2.2	3.5
HN27-S3	0.09	-0.15	-0.08	-0.11	-0.21	-0.11	-0.08	1.95	2.58	1.88	2.4	3.8

* Approximate water level change due to bubbling in extraction wells.
** Photoionization detector (PID) reading was not obtained.
PPM PID readings are measured in Parts Per Million.
SCFM Flow rates are measured in Standard Cubic Feet per Minute.
PSI Injection pressure is measured in Pounds-Force per Square Inch.
T Trace indicates slight color change in Drager Tube.
ND Not Detected no color change in Drager Tube

Drager Tube	Trace	Not Detected
TCA (ppm)	Less than 25 ppm color change.	Less than 10 ppm color change.
CO_2 (%)	Less than 0.25 % color change.	Less than 0.1% color change.
Vinyl Chloride (ppm)	Less than 5 ppm color change.	Less than 2 ppm color change.

Well ID	Initial Water Level (feet)
EW-01	58.10
EW-02	58.77
EW-03	58.03
GPM 2	59.16
GPM 3	59.10
MW-01	59.16
HN-27-S3	56.81

- The carbon dioxide concentration in the deep soil vapor extraction wells was generally in the range of 1% to 2% throughout the trial. This concentration is relatively high for sandy soils, in the absence of carbonate minerals. Since petroleum hydrocarbons were not identified as a concern at this site, carbon dioxide (which is associated with biodegradation) was not considered as a primary indicator parameter. The levels of carbon dioxide detected may result from the degradation of historic sanitary wastes in the drain field.

- The groundwater water level rose by approximately 3 to 4 feet from May 1997 to September 1997. This change may have resulted from either a regional water change, or may be associated with the operation of the Plant 3 - Recharge Basins.

Chemical Data - Soils

The results of the soil testing are presented in Table 7. Sample log sheets, chain of custody forms, and laboratory data sheets are provided in Appendices E, F, and G, respectively. The VOCs detected in the soil consist of acetone, tetrachloroethene (PCE), 1,1 dichloroethane (DCA), 1,2 dichloroethene (DCE), 1,1,1 trichloroethane (TCA), and trichloroethene (TCE). With the exception of acetone, each of these chemicals was detected in the site groundwater at concentrations of 34 to 2800 groundwater preliminary remediation goals. Acetone is suspected to be a laboratory contaminant and may not be a site contaminant. As a result, discussion will be limited to the other VOCs detected.

The soil VOC PRGs are 10 to 27 ug/kg. VOCs in four out of six of the initial soil samples exceeded PRGs included PCE (SB-0210, SB-0240, SB-0320, and SB-0430), TCE (SB-0430), and TCA (SB-0430). After 2.5 months of operation the VOCs in three of the four samples decreased to below the PRGs.

However, for samples SB-0320 and SB-0340, the PCE concentration increased. For SB0320, the PCE concentration increased from 47 ug/kg to 160 ug/kg. For SB0340, the PCE concentration increased from none detected to 660,000 ug/kg. This increase in PCE concentration is believed to result from one of the following.

TABLE 7

SOIL RESULTS
FORMER DRUM MARSHALLING AREA
PILOT SCALE - AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM
NWIRP BETHPAGE, NEW YORK

Sample Location	Parameter	Pre-test Result (ug/kg) (April 1997)	Post-test Result (ug/kg) (July 1997)
PS-SB-0210	Acetone	890	
	Tetrachloroethene	80	
PS-SB-0240	Acetone	18,000	
	Tetrachloroethene	59	
PS-SB-0320	Acetone	3,600	
	Tetrachloroethene	47	160
PS-SB-0340	Acetone	47	
	Tetrachloroethene		660,000
PS-SB-0430	Acetone	48	
	1,1-Dichloroethane	17	
	1,2-Dichloroethene	150	
	1,1,1-Trichloroethane	50	
	Trichloroethene	120	
	Tetrachloroethene	170	
PS-SB-0440	Acetone		15

Sample Location Description

PS-SB-xxyy

PS AS/SVE Pilot Study, NWIRP Bethpage
SB Soil boring
xx Soil boring number
yy Sample depth, in feet below ground surface.

- Chance sampling of small pockets of VOC contaminated soils. However, the samples from April and July 1997 were collected from within 3 to 6 feet of each other.

- PCE is migrating through the soils, either as a result of the AS/SVE operation, or from other disturbances at the site. These other disturbances include the demolition of site structures, removal of equipment covering the site, and/or modification of surface water flow paths.

The overall conclusion from the soil testing is that VOCs in some of the site soils respond very well to SVE, with cleanup times potentially as short as several months. However, the finding of a relatively high VOC concentration in one location indicates that pockets of VOCs may exist throughout the site. Cleanup at these locations could take approximately two years.

Chemical Data - Groundwater

The groundwater results are presented in Table 8. Sample log sheets, chain of custody forms, and laboratory data sheets are provided in Appendices E, F, and G, respectively. Based on these results, there was a general downward trend in VOC concentrations in four of the five monitoring wells. Only monitoring well PS-EW03, which is located 20 feet hydraulically upgradient of the injection well did not follow this trend.

For monitoring well PS-MW01 (which is only a groundwater monitoring well and located 30 feet downgradient of the air injection well), the total groundwater VOC concentration started at approximately 4,400 ug/l and decreased to a low of 30 ug/l, after two months of operation, (see Figure 11). At the end of the trial - one month later, the total VOC concentration had increased to 474 ug/l. This increase may have resulted from the air injection rate being decreased from approximately 12 to 38 cfm in May and June to only 4 cfm in July.

TABLE 8

GROUNDWATER RESULTS (ug/l)
FORMER DRUM MARSHALLING AREA
PILOT SCALE AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM
NWIRP BETHPAGE, NEW YORK

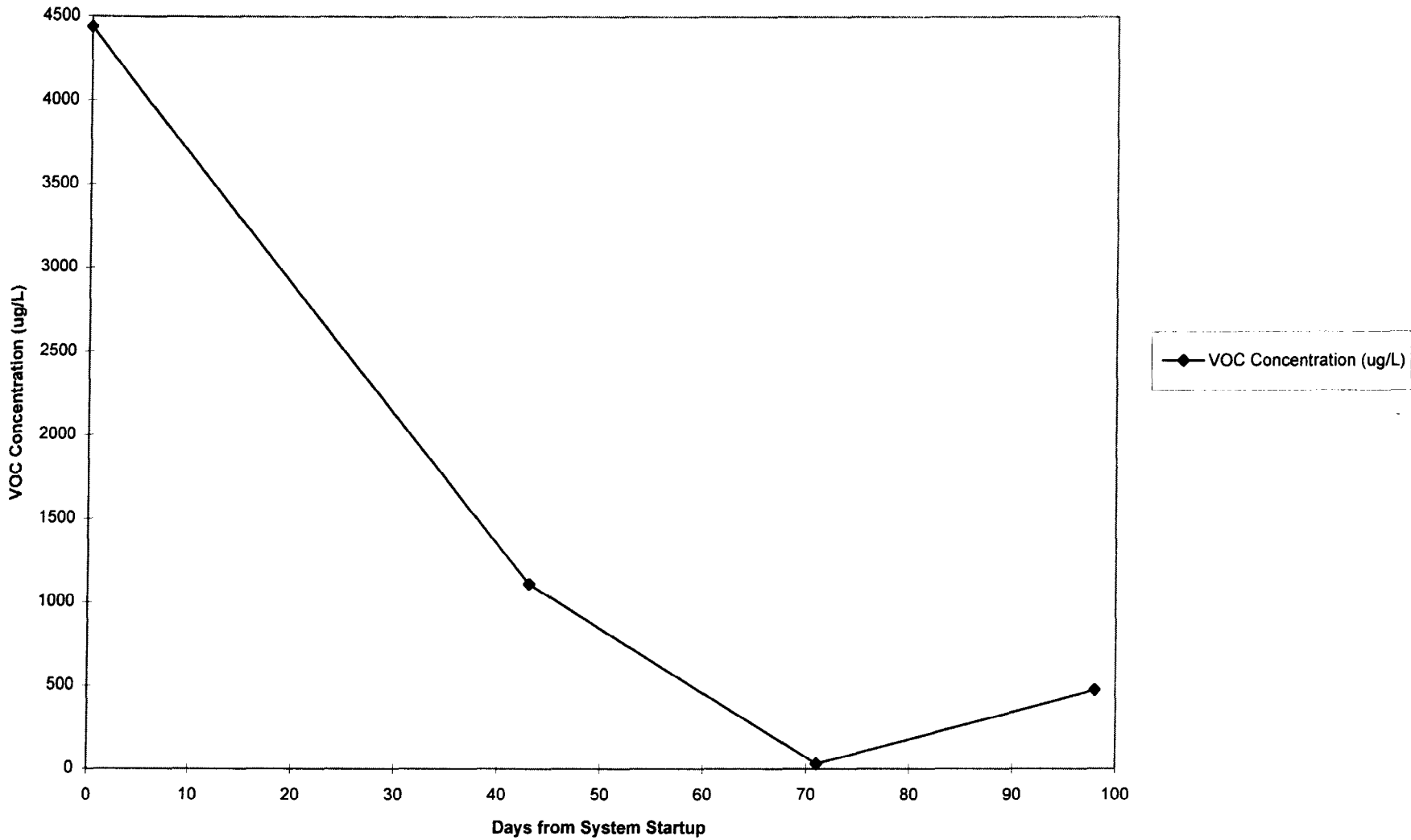
Sample Location	Parameter	Pre-test Results (04/08/97)	Mid-Test Results (One Month - 05/21/97)	Mid-Test Results (Two Months - 06/18/97)	End of Test Results (Three Months - 07/15/97)
PS-MW01	1,1-Dichloroethene	6			
	1,1-Dichloroethane	110	36		60
	c-1,2-Dichloroethene	500	110	7	77
	1,1,1-Trichloroethane	390	94	6	120
	Trichloroethene	630	160	17	47
	Tetrachloroethene	2,800	710		170
	Total	4,436	1,110	30	474
PS-IW01	Acetone	560			
	2-Butanone	1,700			
	1,1,1-Trichloroethane	7	8		
	Tetrachloroethene	19	15	4	10
	Total[1]	26	23	4	10
PS-EW01	1,1-Dichloroethene				
	1,1-Dichloroethane	80		15	7
	c-1,2-Dichloroethene	380	15	15	10
	1,1,1-Trichloroethane	220	5	50	12
	Trichloroethene	370	9	18	12
	Tetrachloroethene	1600	27	71	27
	Total	2,650	56	169	68

TABLE 8 (CONTINUED) - PAGE 2
GROUNDWATER RESULTS (ug/l)
FORMER DRUM MARSHALLING AREA
PILOT SCALE AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM
NWIRP BETHPAGE, NEW YORK

Sample Location	Parameter	Pre-test Results (04/08/97)	Mid-Test Results (One Month - 05/21/97)	Mid-Test Results (Two Months - 06/18/97)	End of Test Results (Three Months - 07/15/97)
PS-EW02	1,1-Dichloroethene	11	12		9/8
	1,1-Dichloroethane	170	160	91/74	410/490
	c-1,2-Dichloroethene	840	340	190/140	200/210
	t-1,2-Dichloroethene	6			
	Chloroform	5			
	1,1,1-Trichloroethane	1,200	770	410/340	1200/1400
	Trichloroethene	1,500	580	270/220	140/140
	Tetrachloroethene	11,000	4,500	2200/1700	1400/1300
	Total	14,732	6,362	3161/2474	3359/3548
PS-EW03	Acetone		83		
	1,1-Dichloroethane	49	51	46	57
	c-1,2-Dichloroethene	240	160	160	130
	1,1,1-Trichloroethane	200	170	250	210
	Trichloroethene	380	230	320	180
	Tetrachloroethene	1,400	920	1800	840
	Total[1]	2,269	1,531	2576	1417

1. Total does not include acetone and 2-butanone, which are believed to be laboratory contaminants.

FIGURE 11
VOC CONCENTRATION IN GROUNDWATER VERSUS TIME MONITORING WELL MW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



For monitoring well PS-IW01 (which was the air injection well), the total groundwater VOC concentration (except acetone and 2-butanone) started at 26 ug/l and decreased to a low of 4 ug/l, after two months of operation, (see Figure 12). At the end of the trial - one month later, the total VOC concentration had increased to 10 ug/l. Again, this increase may have resulted from the air injection rate being decreased from approximately 12 to 38 cfm in May and June to only 4 cfm in July.

For monitoring well PS-EW01 (which was a soil vapor extraction well located 10 feet downgradient from the air injection well), the total groundwater VOC concentration started at approximately 2,650 ug/l and then decreased to a low of 56 ug/l, after one month of operation, (see Figure 13). During the next two months of operation, the total VOC concentration first increased to 169 ug/l and then decreased to 68 ug/l at the end of the trial. Based on the relatively high initial concentration, the VOC concentration in the last three sample events could be an indication of a pseudo-steady state condition, with the range of VOCs detected (56 to 169 ug/l) accounted for by normal variability in analytical results.

For monitoring well PS-EW02 (which was a soil vapor extraction well located 40 feet side gradient of the air injection well), the total groundwater VOC concentration started at approximately 15,000 ug/l and consistently decreased to a low of approximately 3000 ug/l, after two months of operation, (see Figure 14). At the end of the trial - one month later, the total VOC concentration had increased to approximately 3400 ug/l. This increase in VOCs may have resulted from the air injection rate being decreased from approximately 12 to 38 cfm in May and June to only 4 cfm in July.

For monitoring well PS-EW03 (which was a soil vapor extraction well located 20 feet upgradient of the air injection well), the total groundwater VOC concentration started at approximately 2,300 ug/l. During the course of the trial, the total VOC concentration first decreased to 1,531 ug/l, then increased to 2,576 ug/l, and finally decreased to 1,417 ug/l, (see Figure 15). This relatively random fluctuation in VOC concentrations is believed to be an indication that the air injection well did not influence the groundwater at that location (PS-EW03). Rather the range of VOCs detected is the result of normal variability in analytical results.

FIGURE 12
VOC CONCENTRATION IN GROUNDWATER VERSUS TIME INJECTION WELL IW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

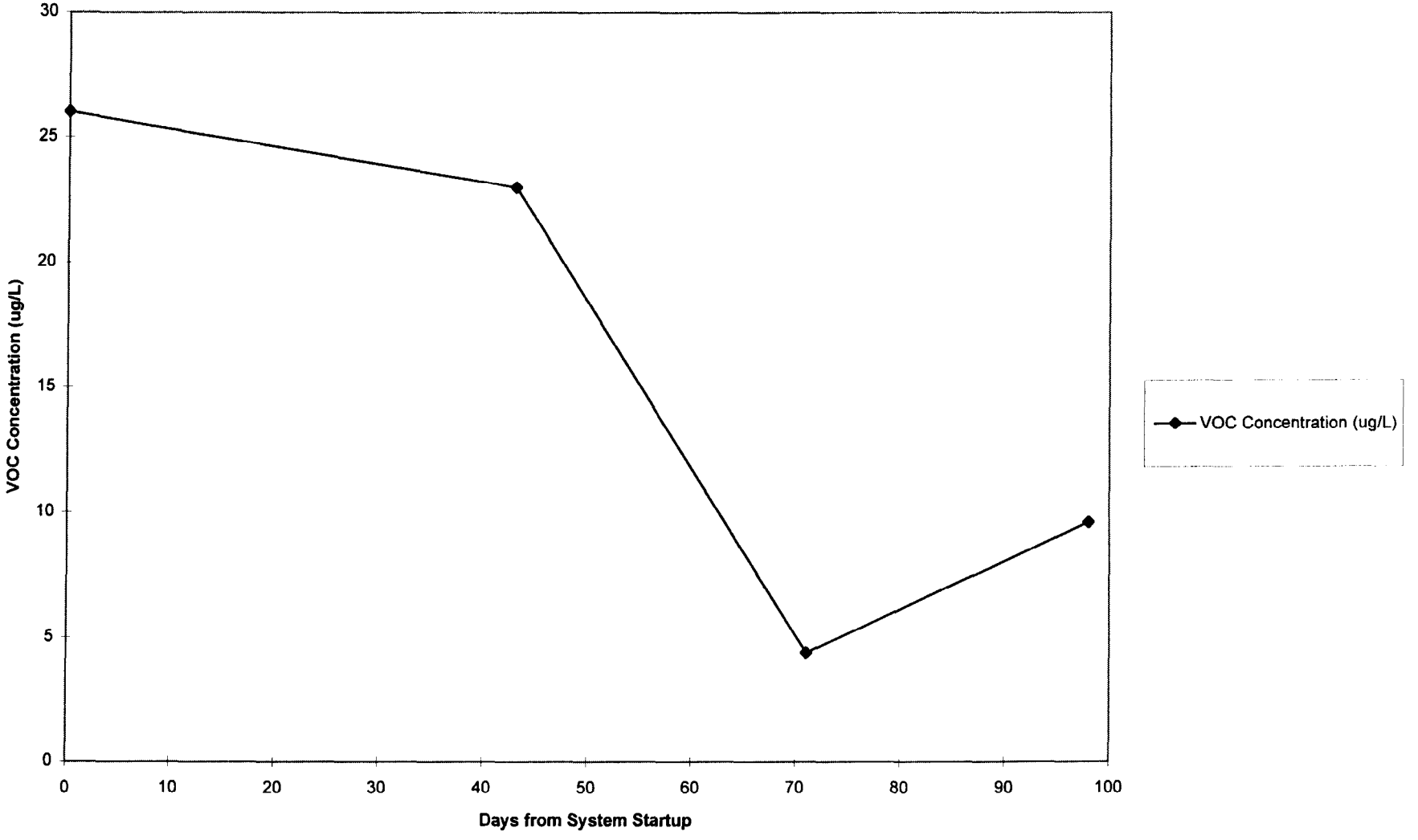


FIGURE 13
VOC CONCENTRATION IN GROUNDWATER VERSUS TIME AIR EXTRACTION WELL EW-01
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

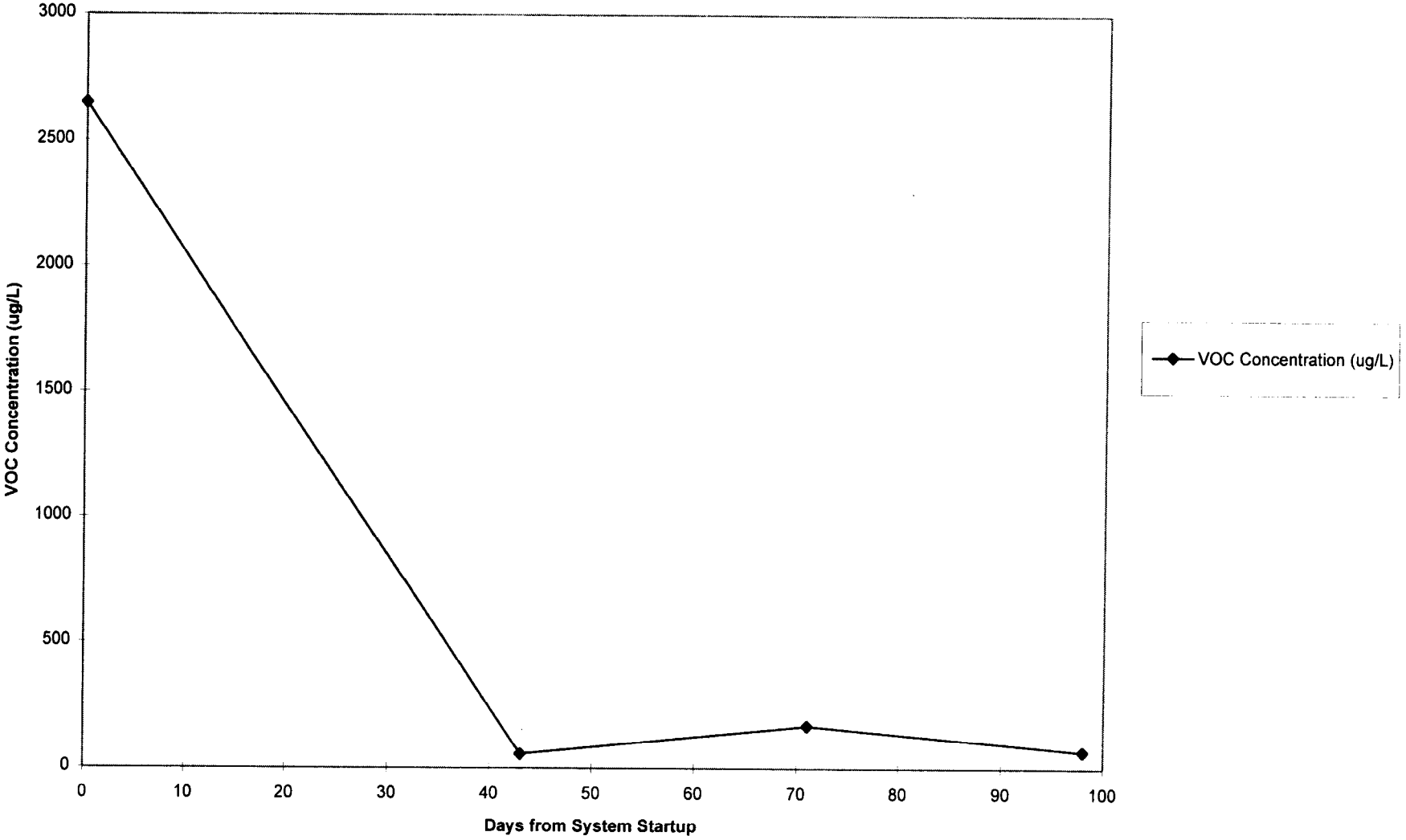


FIGURE 14
VOC CONCENTRATION IN GROUNDWATER VERSUS TIME AIR EXTRACTION WELL EW-02
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK

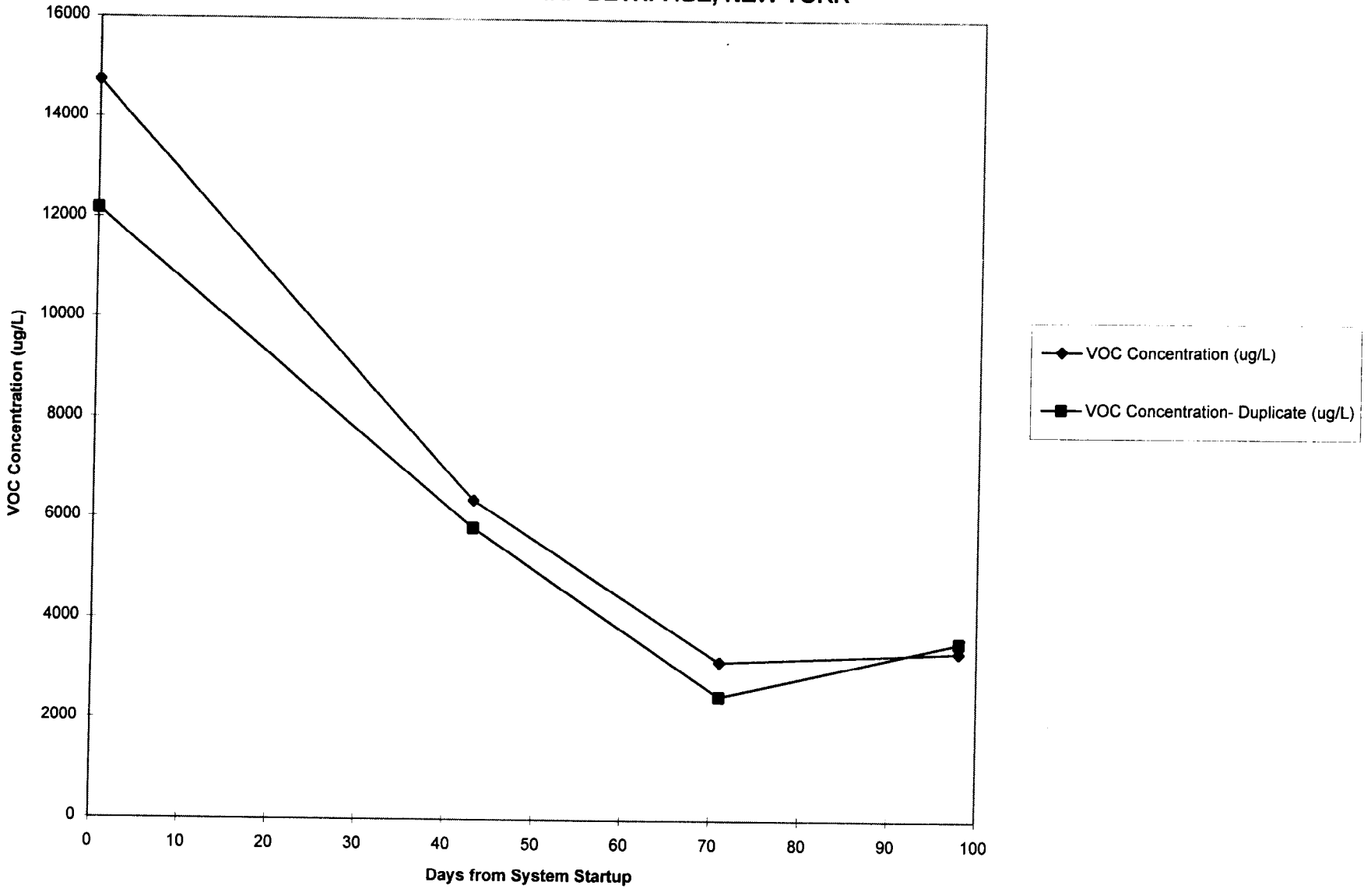
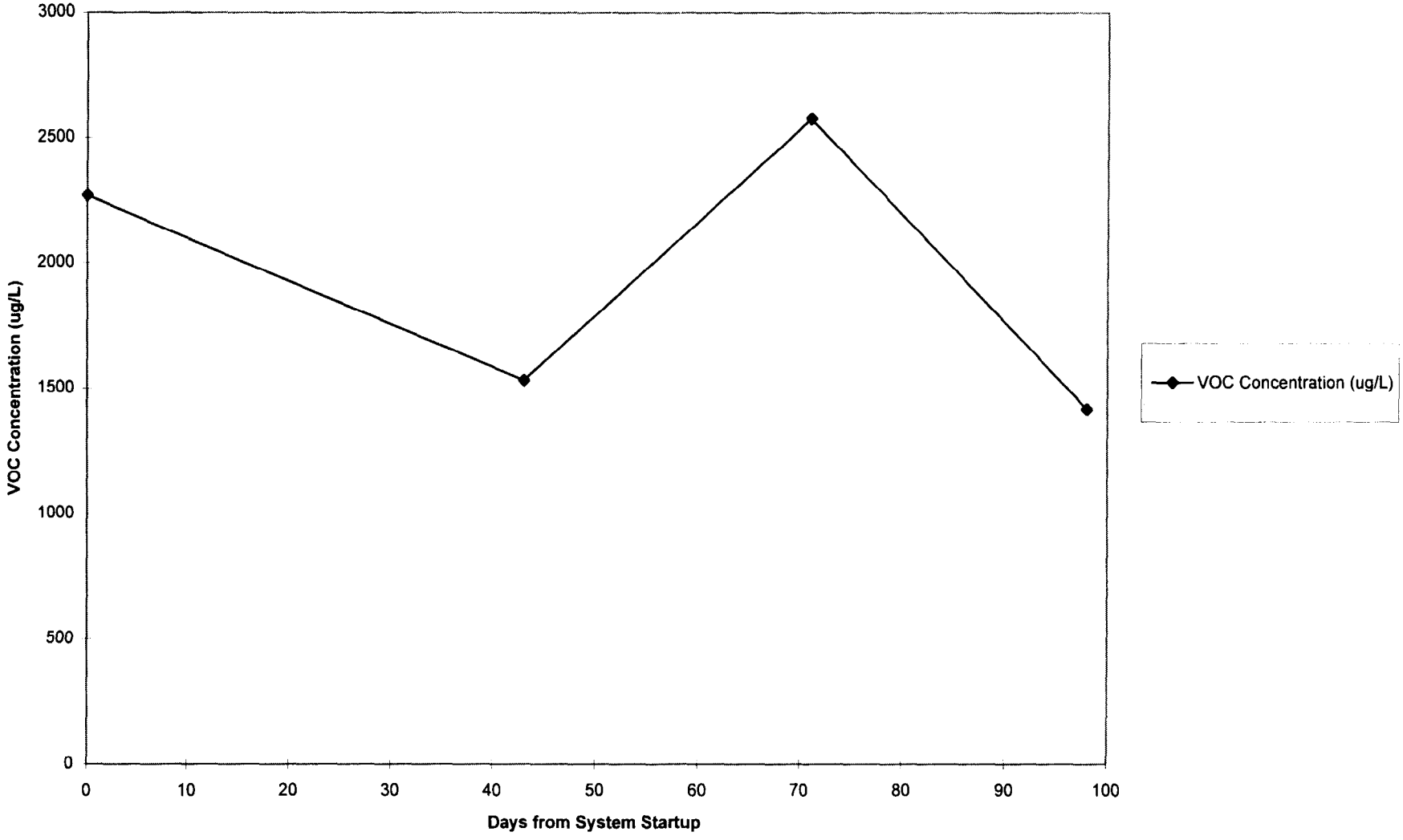


FIGURE 15
VOC CONCENTRATION IN GROUNDWATER VERSUS TIME AIR EXTRACTION WELL EW-03
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



Overall based on the groundwater VOC concentrations as a function of time and air injection rates, one can conclude that air injection affected groundwater at locations PS-MW01, PS-EW01, PS-EW02, and PS-IW01; but it did not affect the groundwater at location PS-EW03.

Chemical Data - Soil Vapor

The soil vapor data is presented in Table 9. Chain of custody forms and laboratory data sheets are provided in Appendices F and G, respectively. The pre-carbon sample represents the combined soil gas extracted from the five extraction wells and the post-carbon sample represents treated soil gas prior to discharge.

The type of VOCs detected in the extracted soil gas are consistent with those detected in the soils and groundwater. In addition, the three VOCs detected at the highest concentration in the soil gas are TCA, TCE, and PCE, which are also the three primary chemicals of concern at the site. The total soil gas VOC concentration started at a high of approximately 750 ppm during the first week of operation and then decreased to approximately 50 ppm during the second and third month of the trial.

Based on these soil gas concentrations and the measured extraction rates, relatively high quantities of VOCs were removed from the soil vapor extraction system. Near the beginning of the study, approximately 50 pounds per day of VOCs were being removed. By one month in the study, the removal had decreased to approximately 7 pounds per day and by the end of the AS/SVE operation in September 1997, approximately 6 pounds per day of VOCs were continuing to be removed. The total estimated VOC removal, from April to September 1997 is calculated to be approximately 900 pounds. The measured soil gas VOC concentration and incremental pounds of VOCs removed are presented in Figure 16, calculations are presented in Appendix H.

TABLE 9

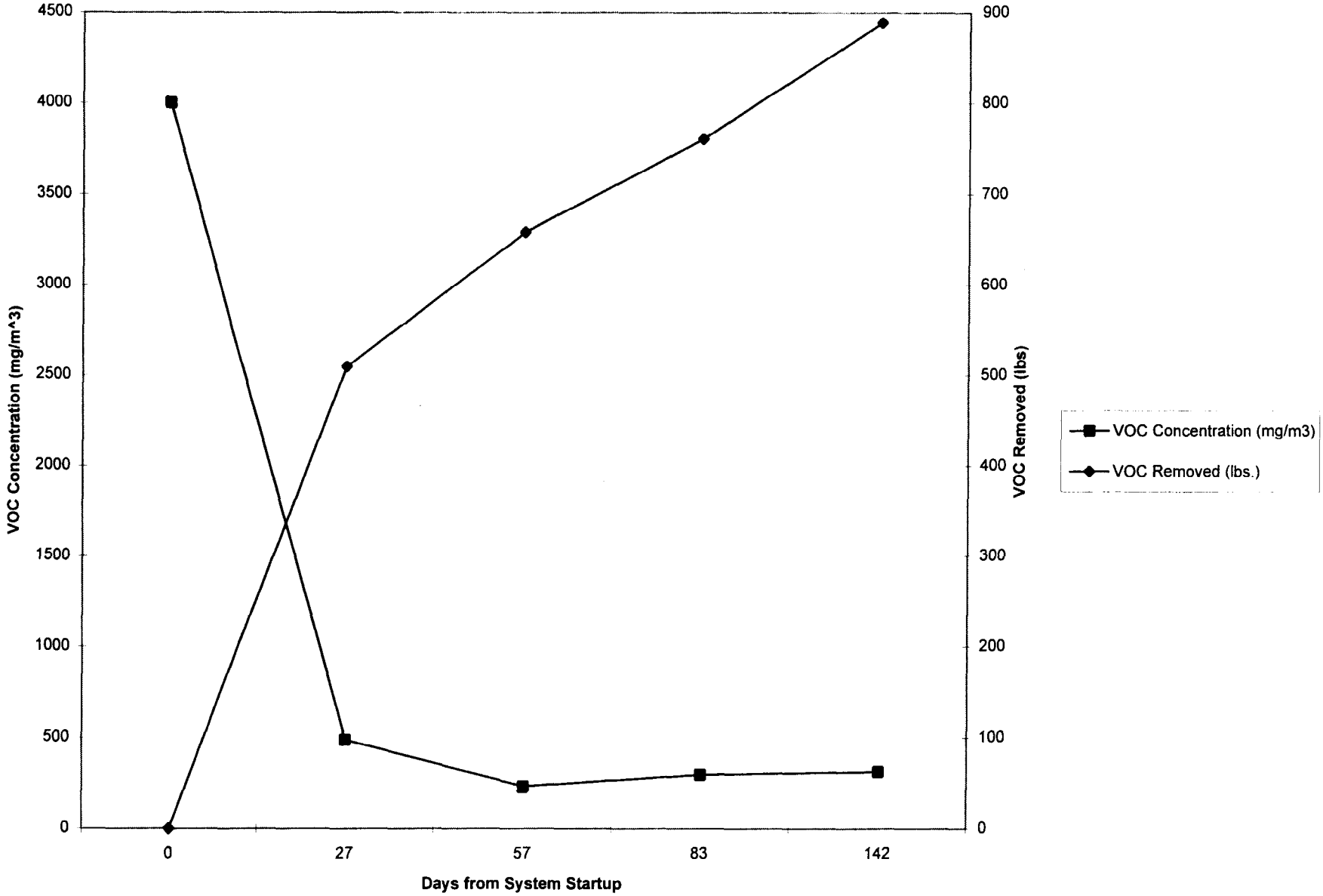
SOIL VAPOR RESULTS (PPM-V)
PILOT SCALE AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM
NWIRP BETHPAGE, NEW YORK

Sample Location	Parameter	Initial Results (April 1997)	Mid-Test Results (One Month - May 1997)	Mid-Test Results (Two Months - 06/19/97)	End of Test Results (Three Months - 07/15/97)
Pre-carbon gas	Freon 113	22	2.8	1.1	1.1
	1,1-Dichloroethane	5.2	2.5	0.96	2.3
	1,1-Dichloroethene		0.41	0.14	0.3
	1,2-Dichlorothene	20	2.6	1.0	1.4
	1,1,1 Trichloroethane	75	27	14	26
	Trichloroethene	51	4.6	3.4	3.8
	Tetrachloroethene	580	52	23	21
	Total	753.2	91.9	43.6	55.8
Lab Blank					

TABLE 9 (CONTINUED) - PAGE 2
SOIL VAPOR RESULTS (PPM-V)
PILOT SCALE AIR SPARGE/SOIL VAPOR EXTRACTION SYSTEM
NWIRP BETHPAGE, NEW YORK

Sample Location	Parameter	Initial Results (April 1997)	Mid-Test Results (One Month - May 1997)	Mid-Test Results (Two Months - 06/19/97)	End of Test Results (Three Months - 07/15/97)
Post-carbon gas sample	Freon 113				0.0086
	2-Butanone	0.013			0.0043
	Tetrahydrofuran	0.015	0.019		
	Acetone	0.006	0.019	0.0051	0.0068
	Chloroethane			0.024	0.019
	Methylene Chloride	0.004	0.005	0.0074	0.011
	Vinyl Chloride		0.012	0.0016	0.0051
	1,1-Dichloroethane				0.014
	1,1-Dichloroethene				0.0014
	1,2-Dichlorothene				0.024
	1,1,1 Trichloroethane				0.23
	Propylene			0.013	
	2-Propanol			0.0041	0.0053
	1,2,4-Trimethylbenzene			0.0012	
	Toluene	0.002		0.003	0.0035
	Trichloroethene				0.05
	Tetrachloroethene		0.006		0.038
	Total	0.040	0.061	0.0594	0.421

FIGURE 16
VOC CONCENTRATION IN LOADING IN AIR VERSUS TIME AIR EXTRACTION SYSTEM
AIR SPARGING/SOIL VAPOR EXTRACTION PILOT STUDY
NWIRP BETHPAGE, NEW YORK



4.0 CONCLUSIONS

The conclusions derived from the pilot study are summarized as follows.

1. Stratification testing results indicate that dense VOCs do not preferentially accumulate near the bottom of an extraction well.

2. Soil vapor extraction radius of influence testing found that the site soils are highly permeable, with extraction rates of 80 cfm per well achievable. Measured radius of influences ranged from 50 feet at 5 cfm to approximately 100 feet at 80 cfm. A reasonable correlation was developed between flow rate and radius of influence.

3. Soil vapor extraction at the water table resulted in flow through both the upper and lower soil zones. Soil vapor extraction at the middle of the unsaturated zone resulted in flow through the middle of the unsaturated zone, but may have created stagnant conditions near the water table.

4. The cesspool structures do not appear to restrict air flow through them.

5. Air injection rates as high as 60 cfm were achieved. However, rates greater than 20 cfm were difficult to consistently achieve and maintain.

6. The air injection tests were partially successful. An estimated radius of influence for air injection of 10 to 40 feet was obtained. Based on the testing data, at air injection rates of 10 cfm and greater, the radius of influence for air injection is not a strong function of air flow rate. Based on chemical test results, air injection had a measurable effect on the groundwater at distances of 10, 30 and 40 feet side-gradient and downgradient of the injection well. One groundwater well located 20 feet upgradient of the injection point was not affected by air injection.

7. The presence of a clay lens within approximately 5 feet of the water table at the site requires special consideration for the design of air injection wells. To ensure capture of

injected air, soil vapor extraction must be implemented between clay lens and air injection points. Soil boring samples will be required during installation for confirm location of clay lens.

8. Based on the testing, a soil vapor extraction to air injection ratio of approximately 2 to 3 is required to capture all of the injected air.

9. Preliminary design criteria for the full scale system are summarized as follows.

- Two to three lines of air injection wells located near the center of the groundwater contamination and near the downgradient border of the site to treat the most contaminated groundwater and soil contamination along the interface between groundwater and soil.

- The preliminary design injection wells should be on 50 foot centers. Each line of wells will contain 3 to 4 air injections wells (total of approximately 11).

- Air injection rates for each well will be approximately 10 cfm (110 cfm total air injection).

- Soil vapor extraction wells should be on approximately 100 foot centers. Approximately 4 lines of soil vapor extraction wells should be located near the northern and southeast soil contaminant zones. These wells will be used to extract soil vapors and injected air.

- Each line of wells will contain approximately 3 to 4 wells, (total of approximately 14 wells).

- Soil vapor extraction rates will be approximately 20 to 30 cfm per well (300 cfm total soil vapor extraction). This rate includes criteria for both radius of influence and a SVE to AS ratio of greater than 2.0.

10. Based on the soil data, some soils at Site 1 can possibly be cleaned up in as little as three months. However, because of the presence of pockets of contamination at the site, and potential interferences to uniform flow (i.e. sludges or clay lenses), the total site remediation schedule for VOCs is expected to be approximately two years.

11. Air sparging system can effectively remove VOCs from groundwater. The time to comply with groundwater PRGs is uncertain at this time.

Results Letter Report

for

Air Sparging/Soil Vapor Extraction System System at Site 1 - Former Drum Marshalling Area

Naval Weapons Industrial Reserve Plant

Bethpage, New York

Volume II - Appendices

Northern Division
Naval Facilities Engineering Command
Contract Number N62472-90-D-1298
Contract Task Order 0213

October 1997

C F BRAUN ENGINEERING CORPORATION

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C F BRAUN ENGINEERING CORPORATION

APPENDICES

APPENDIX	
A	BORING LOG SHEETS
B	WELL CONSTRUCTION SHEETS
C	GEOTECHNICAL ANALYSIS
D	LINEAR REGRESSION ANALYSIS
E	SAMPLE LOG SHEETS
F	CHAIN OF CUSTODY FORMS
G	LABORATORY DATA SHEETS
H	VOC LOADING CALCULATIONS

APPENDIX A

BORING LOG SHEETS

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: CFBMW01
DATE: 3-20-97
GEOLOGIST: FRED W. RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample*	Sampler BZ	Borehole**	Driller BZ**
							DK BRN GRAVEL						
							+ SAND						
							TURNING YEL BRN ~4'						
	10												
S-1 0830		29/24			LOOSE		YEL ORN MED SAND + GRAVEL	SP		0.3			
	12	22/30	1.0/2.0				YEL ORN MED SAND	SP					
	20												
S-2 0845		15/15			LOOSE		YEL ORN MED SAND + GRA.	SP		0.3			
	22	17/19	1.0/2.0										
	30												
S-3 0900		21/14			LOOSE		YEL ORN MED-C SAND + GRA.	GW		3.0			
	32	18/18	1.0/2.0				BRN SAND + GRA.	GW	MED-FINE SAND @ END OF SPOON				
	40												
S-4 0915		10/11			LOOSE		VERY PALE TO YEL ORG MED SAND LAYERING	SP		2.0			
	42	15/19	1.8/2.0		MED DENSE								

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks: DOWN HOLE 140 lb HAMMER ATTACHED TO CABLE TOOL
* STEADY DRIZZLE QUESTION PID READINGS

Converted to Well: Yes ✓ No _____ Well I.D. #: CFBMW01

BORING LOG

PROJECT NAME: VWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: CFBMW1
DATE: 3-20-97
GEOLOGIST: FRED W RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	50												
S-5 0930							YELOR GREY CLAY + F-G SAND	ML		2.0			
	52		1.8 / 2.0				YELORN MED SAND	SP	DRY	2.0			
	54												
S-6 0945		19 / 18											
	56	20 / 36	1.8 / 2.0	▽			RED SAND 55-55.5 YELBRN TO YELORN	SP	S-6 55L57' SATURATED				
							MED TO COARSE SAND	SP	@ 54	55			
	58												
	60												
S-7 1000		11 / 16					MED TO COARSE SAND AND GRAVEL ~2mm dia	SP	SAT.	05			
		20 / 22	2.0 / 2.0				YELORANGE						
				TD=64									
							PLACE SCREEN @						
							54' - 64'						
							SAND @ 51-64						
							BENT @ 51-49						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): ____

Remarks: _____

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

BORING LOG

PROJECT NAME: NWIRP BETHPAGE SITE 1 SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: EW01
DATE: 3-18-97
GEOLOGIST: FRED W RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							MED BRN SAND & GRA						
							INCREASING AMOUNT						
							OF FINES DOWN		GRAVEL - WELL				
							TO 8' TURNING		ROUNDED TO ANGULAR			0.0	
							LIGHT YEL BRN.		TERRA-COTTA ~5-6' (FILL)				
	10												
S-1 0925		17/26			MED LOOSE		DK-YEL ORANGE	GW	GRAVELS WELL ROUNDED	0.8		0.0	
		25/25	1.0/2.0				GRAVELLY C-MED SAND		TO ANGULAR.				
									GRAVELS @ CUTTINGS				
									3mm → 20mm dia				
	20												
S-2 0935		9/11					AS ABOVE FEWER GRAVELS	GW		8.0		0.0	
		9/15	1.2/2.0										
	30												
S-3 0950		9/11			MED LOOSE		DK-YEL ORANGE M-F SAND CLAYEY SAND @ ~ ENDOF	SW	MOTTLED IRON STAIN MOIST AT CLAY LAYER	15		0.0	
		15/12	1.2/2.0				SPOON ~ 3" THICK SOFT CLAYEY						
												14	

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks: B-61 R16, 4 1/4 HSA, 140 lb. HAMER CUTTINGS ARE NOT BEING CONTAINERIZED

Converted to Well: Yes ✓ No _____ Well I.D. #: EW01

BORING LOG

PROJECT NAME: NWRIP, BETHPAGE SVE/AS
PROJECT NUMBER:
DRILLING COMPANY:
DRILLING RIG:
BORING NUMBER: EW01
DATE: 3-18-97
GEOLOGIST: FRED L. RAMSER
DRILLER: S. WELLS

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40												
S-4 1002		8/7			DENSE		VERY PALE ORANGE TO DK. YELLOWISH ORANGE MED G SAND	SP	LAYERING	25			
	42	30/26	1.3/2.0										
S-5 1020	50			3									
		15/14			STIFF		MED GREY CLAY W/TR SAND	ML	MOTTLED YELLOWISH BRN SPOON WET MAT	1.0			
	52	28/24	1.2/2.0						BE PERCH H2O ON THIS CLAY (INT)				
S-6 1015	53						@ END OF SPOON		S-6 52-53				
							M-CG SAND WITH CHIPS MOIST (THROUGH CLAY)		WENT THROUGH CLAY LAYER				
S-7 1100		17/20					MED-COARSE SAND DRY	SP		4.0			
	54	20/17	1.2/2.0			DUSKY	REDDISH PURPLE M-CG SAND	SP					
S-8 1115		24/21					COARSE SAND W/SOME GRA 4-2 mm-d. m WET	SP	MEASURED H2O IN RISERS @ 56.8-56	0.0			
	58	27/34	1.2/2.0				SATURATED GRA		46 61 SCREEN				
									SAND 45-61				
									BENT - 43-45				
									4-5 BAG, 100#				
									BAG, SAND				
									1 BAG (100#) BENT.				
									HYDRATED W/20 GAL				
							MEASURED H2O @						
							56.4 @ 1320						
							56.X @ 1345						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): C

Remarks: CLAY LAYER HIT @ ~50, WILL DRIVE ANOTHER @ 52
1) 55 > 45-60 2) 60 > 45-65 3) 65 > 5 IN, 15 OUT
5' SCREEN ABOVE CLAY LENS

Converted to Well: Yes ✓ No ____ Well I.D. #: EW01

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: EW02
DATE: 3-24-97
GEOLOGIST: FRED WRAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN GRA + SAND						
							TO ~3' TURNING						
							YEL BRN GRA+SAND						
	10												
S-1 1209		9/11			DENSE		DK YEL ORG, MED-COARSE SAND AND SUM GRA. ≤ 10mm	SW	GRA. ROUNDED TO SUBANGL. MOIST	80			
		20/21	1.8/2.0									0.0	
	20												
S-2 1225		14/12			DENSE		NO RECOVERY, TRY 3" SPLIT SPOON 3" - AS ABOVE	SW	S-3 (3" SPLIT SPOON)	600		0	
S-3 1230		22/28	1.2/2.0										
	30												
S-4 1242		20/17			MED. DENSE		DK YEL ORG F-MG SAND &	SP		26		0	
		14/26	0.2/2.0										
	40												
S-5 1256		12/11			MED DENSE		VERY PALE TO DK YEL ORG F-G SAND	SP		129			
		18/18	1.8/2.0										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks: CONTAINERIZING CUTTINGS TO 30'

Converted to Well: Yes ✓ No _____ Well I.D. #: EW02

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: EW02
DATE: 3-24-97
GEOLOGIST: FRED W. RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	50												
S-6 1312	51	7/10			DENSE		DK YEL ORG COARSE SAND W/TRACE GRA.	SP	GRA ≤ 3mm WET	23			
	52	23/24	1.5/2.0						PERCH WATER				
	55												
	58												
S-7 1320		13/13			DENSE		DK YEL ORG MED SAND	SP	SATURATED	30			
	60	21/32	1.5/2.0										
							MEASURED WATER IN AUGERS @ 57						
							TD = 62						
							SCREEN: 47' – 62'						
							SAND =						
							BENT =						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: EW02

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: EW03
DATE: 3-19-97
GEOLOGIST: FRED W RAMSER
DRILLER: S. WOLF

Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						BRN	GRAVELS W/SOME SAND						
							INCREASING AMOUNT OF					0	
							SAND TO 5' N TURNS YEL ORANGE SAND+SILT						
							W/SOME GRAVEL						
	10						HIT THICK GRA. @ ~8' DK BRN					0	
S-1 1110		19/17			MED DENSE		YEL ORN GRAVELLY COARSE SAND	GP	MOIST	1.5			
		23/22	1.2/2.0						BLOW COUNTS MAY BE HIGH DUE TO GRA. CONT.			3.0	0
	20												
S-2 1120		11/11			MED DENSE		YEL ORG GRAVELLY COARSE SAND W/SOME M-F SAND	GW	MOIST	15		1.0	0
		15/18	1.2/2.0										
												16	0
	30												
S-3 1135		18/11			MED DENSE		MODERATE BRN SAND+GRAV	GW	MOIST	35			
		10/20	1.2/2.0				FINE SAND W/SOME MED SAND DK YEL ORG SOME SILT	SP/SM	MOIST				
	40												
S-4 1147		13/19			MED DENSE		VERY PALE, TO GRADUAL TO DK YEL ORANGE MED SAND	SP		275			
		24/31	1.2/2.0										
	50												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 6.0

Remarks:

Converted to Well: Yes ✓ No ____ Well I.D. #: EW03

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61

BORING NUMBER: EW03
DATE: 3-19-97
GEOLOGIST: FRED W RAMSIER
DRILLER: S. WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Sample	Sampler BZ	Borehole**	Driller BZ**
	50												
S-5 1200		5/6					SILTY F-M SAND	SM		40			
	52	5/8	1.5/2.0			GREY	CLAYEY FINE SAND	SC					
	54												
S-6 1210		11/12			DUSKY	RED	FINE TO COARSE SAND W/TR GRA. 2-3mm [illegible]	SW	MOIST TO WET	10			
	56	17/22	1.2/2.0	▽					TIP OF SPOON				
S-7 1225		9/14					YEL ORG MED SAND	SP	SATURATED	10			
	58	16/23	1.5/2.0										

HIT H_2O @ 56 TO 56.5
PLACE SCREEN @
~~46-61.5~~ 46-61

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ✓ No ____ Well I.D. #: EW03

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: EWØ4
DATE: 3-25-97
GEOLOGIST: FRED WRANSEK
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	PID/FID Reading (ppm): Sampler BZ	PID/FID Reading (ppm): Borehole**	PID/FID Reading (ppm): Driller BZ**
							DK BRN GRAVEL +						
							SAND TO ~3'						
							CHANGING TO YEL						
							BRN GRAVEL + SAND						
							BECOMING MORE						
							SAND IER TO						
							30'						
							SEE EWØ2						
							LOG FOR MORE						
							DETAIL						
							TD = 30						
							SCREEN - 20-30						
							SAND 19-30						
							BENT. 17-19						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: EWØ4

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61

BORING NUMBER: EW05
DATE: 3-25-97
GEOLOGIST: FRED WRAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
									CESSPOOL SEDIMENTS				
									TO BE FILLED WITH SAND TO 3' BELOW				
									GROUND SURFACE				
	10												
S-1 1055		10 9			DENSE		YEL ORG SAND + GRA	SW	SATURATED (WET)	1.0			
		10 8	1.2 2.0						PERCH H2O				
	18												
S-2 1105		14 19			DENSE		YEL ORG COARSE SAND	SP	MOIST	12			
	20	20 23	2.0										
							TD = 20						
							SCREEN = 15-20						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0

Remarks: CUTTINGS STAY INSIDE OF CESS POOL

Converted to Well: Yes ✓ No _____ Well I.D. #: EW05

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: GPM 2
DATE: 3-20-97
GEOLOGIST: FRED W. PAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN SAND+GRAVEL						
							↓ ~3'						
							YEL BRN SAND+GRAVEL						
	10												
S-1 1225		10/9			MED DENSE		YEL ORG MED SAND +GRAV	GW		0.0			6
		18/28	1.0/2.0										
S-2 1235	20	1"											
		12/14			DENSE		YEL ORG MED SAND + GRA	GW		2.0			0
		14/23	1.0/2.0										
	30												
S-3 ~~1300~~ 1250		13/19			DENSE		YEL BRN TO YEL ORG SILTY MED TO FINE SAN	SM		15			0
		20/36	1.8/2.0		- - -		YEL ORG MED-COARSE SAND	SP					
	40												
S-4 ~~1345~~ 1305		20/23			DENSE		VERY PALE ORG TO YEL ORG MED SAND TO FINE SAN	SP		110			0
		19/20	1.7/2.0										
	50												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes ✓ No ____ Well I.D. #: GPM 2

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: GPM 2
DATE: 3-20-97
GEOLOGIST: FRED W RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	50												
S-5 1315		20/23					YELORG COARSE SAND AND GRA.	GW	WET	10			
	52	14/20	1.5/2.0										
	54												
	56												
S-6 1330	57												
	58	20/24					YELORG COARSE SAND AND GRAVEL	GW	SATURATED	10			
	59	28/28	1.0/2.0										
							TD @ 62						
							SCREEN @ 60-62						
							SAND @ 58.7-62						
							BENTONITE @ 56.5-58.7						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): ____

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADOT
DRILLING RIG: B-61
BORING NUMBER: GPM 3
DATE: 3-21-97
GEOLOGIST: FRED
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN SANDY CRA.						
	10												
S-1 1155		9/9			MED DENSE		DK YEL ORG SAND + GRAVEL	GP		28			
		11/12	1.0/2.0										
	20												
S-2 1209		12/9					AS ABOVE	GP		131			
		9/9	1.0/2.0										
												150	0
	30												
S-3 1214		17/20			DENSE		MED TO COARSE SAND w/ SOME GRAVEL ≤ 3mm dia	SP/GP	MOIST	137			
		31/29	1.0/2.0				LIGHT BRN TO DK YEL ORG						
	40												
S-4 1230		15/19			DENSE		VERY PALE TO DK YEL ORG MED SAND	SP	LAYERING	120			
		21/28	1.5/2.0										
	50												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes ✓ No

Well I.D. #: GPM 3

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 9253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: GPM 3
DATE: 3-21-97
GEOLOGIST: FREDLWRAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	50												
S-5 1243		17/14			DENSE		COARSE SAND W/SOME GRA	GP	WET	10		50	0
	52	18/23	1.8/2.0				DK YEL ORG. GRA ≤ 4mm dia						
	54												
S-6 1300		18/A			DENSE		DK YE ORG COARSE SAND AND GRAVEL	GP	WET SATURATED?	96			
	56	18/24	1.5/2.0										
	58												
	60												
S-7 1310		20/23			DENSE		PALE YEL ORG COARSE SAND W/SOME GRA ~2mm dia	GP	(GREYISH ORG)	31			
	62	24/30	.6/2.0						SAMPLE FOR GSD				
	64												
	66												
S-8 1324		10/10			DENSE		PALE YEL ORG WELL GRADED SAND	SW	GREYISH ORG SAMPLE FOR	10			
	68	19/29	1.5/2.0						GEOTECH GSD				
							MEASURED WATER						
							IN AUGERS @ 57'		SAND 60-63				
							WILL PLACE 2' SCREEN		63-66 NATURAL MAT'L				
							@ ~~61-63~~ 61-63						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): [ ]

Remarks: _____

Converted to Well: Yes ✓ No _____ Well I.D. #: GPM 3

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61 MOBILE

BORING NUMBER: IW-01
DATE: 3-18-97
GEOLOGIST: FRED WRAMSER
DRILLER: S WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0						MED BRN SANDY GRAVELS		BORE HOLE READINGS				
							GRADING TO A YEL BRN						
							GRAVELLY SAND TO		@5'			50	0
							15' → 30' → 40'		@10'			.2	0
	40								@15'			10	6
S-1 1425		14/13			DENSE		VERY PALE ORANGE TO YEL ORN MED G SAND	SP	LAYERING @20'	80		10	0
	42	23/36	1.2/2.0						@30'			18	0
S-2 1435		25/30			DENSE		GRAYISH ORANGE TO YEL ORN MED G SAND TR FINE SAN	SW	LAYERING MOIST @35'	25		18	
	44	42/24	1.2/2.0										
S-3 1445		21/27			DENSE		AS ABOVE SLIGHTLY DKER COLOR	SW	LAYERING MOIST	76			
	46	34/22	1.3/2.0										
S-4 1450		12/12			DENSE		YEL ORANGE COARSE SAND TR MED SAND	SP	WET SILTY LAYER 3" @ ~47.5'	46			
	48	19/28	1.6/2.0				SOME F GRAVEL 2mm-4mm						
S-5 1500		27/33					YEL ORANGE COARSE SAND TR F SAND TR GRA. 2MM	SP	F SAND LAYER 2" @ ~49'	50			
	50	43/60	1.5/2.0										
S-6 1505		12/10				YEL ORN	CLAYEY COARSE SAND W/SOME GRA. 2mm	SC	WET	10			
	52	17/20	1.0/2.0			DK GRAY	GRAVELLY CLAY	CL	TO MED GREY				
S-7 1520		17/14			STIFF		CLAY SL-S	ML		2.0			
	54	43/22	45/2.0				DUSKY RED/PURPLISH MED SAND INTERLIMERED W/ YEL ORANGE	SP	DISTINCT BD	2.0			
	56												
					56.5								
									TD @ 66.5				
									SCREEN 64.5-66.5				
									SAND 63.0-66.5 BENT 61.5-63.5				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0

Remarks: 4 1/4 HSA, CABLE TOOL HAMMERING W/ 140 lb HAMMER
LOG CUTTINGS TO 40' BGS H2O @ 56.5

Converted to Well: Yes ✓ No _____ Well I.D. #: IW-01

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: STEVE WOLF, B-61
BORING NUMBER: SVPM 1
DATE: 3-19-97
GEOLOGIST: FRED W RAMSER
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller B?**
							DK BRN GRAVEL + SAND 0–3'						
							@ 3' YEL BRN GRA + SAND						
	10												
S-1 1445		4/4			LOOSE	YEL BRN	GRAVEL + SAND	GP	POOR REC. LOOSE MAY ACCOUNT FOR	1.0			
		7/8	.7/2.0				GREENISH SAND @ 11'		LOW PID READING				
							GREENISH SAND @ CUTTINGS					0	
	20												
S-2 1500		14/14			LOOSE	YEL BRN	SAND W/SOME GRAVEL	SW		13			
		17/21	1.6/2.0										
	28												
S-3 1515		12/11			LOOSE	YEL BRN	MED SAND TR GRA. YEL ORANGE	SW/SP		55			
	30	16/14	1.5/2.0										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: SVPM 1

BORING LOG

PROJECT NAME: 5253 NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: SVPM2
DATE: 3-21-97
GEOLOGIST: FRED W RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	PID/FID Reading (ppm): Sampler BZ	PID/FID Reading (ppm): Borehole**	PID/FID Reading (ppm): Driller BZ**
							DK BRN GRAVEL +						
							SAND TO ~3'						
							TURNING YEL BRN						
							GRAVEL + SAND						
							SEE BORING						
							LOG FOR GPM2						
							FOR MORE						
							LITHO. DETAIL						
							TD = 30						
							SCREEN 25-30						
							SAND - 23.5 - 30						
							SEAL - 21.5 - 23.5						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0.0

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: SVPM

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: SVPM3
DATE: 3-21-97
GEOLOGIST: FRED W RAMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN SAND +						
							GRAVEL TO ~3'						
							CHANGING TO A YEL BRN						
							SAND + GRAVEL						
	10												
S-1 1010		12/23			MED DENSE		DK YEL ORG SAND + GRA.	GP	SPL FOR GSD GEOPHYSICAL LAB	22		0	0
		19/24	1.2/2.0										
							YEL ORG SAND + GRAV.						
	20												
S-2 1025		16/29			MED DENSE		AS ABOVE	GP		0.6		0	0
		28/28	1.0/2.0										
	28												
S-3 1035		14/14					MED SAND	SP	SPL FOR GSD GEOPHYSICA LAB	30			0
	30	18/20	1.8/2.0				MED SAND + GRAVEL	GP					
							TD @ 30'						
							SCREEN 25-30						
							SAND 23.5-30						
							BENT · 21.5-23.5						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes ✓ No _____ Well I.D. #: SVPM3

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61

BORING NUMBER: SVPM4
DATE: 3-24-97
GEOLOGIST: FRED W RAMSEY
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN GRAVEL AND						
							SAND CHANGING TO						
							YEL BRN GRAVEL						
							AND SAND ~ 3'						
							GRADING TO A						
							YEL ORG SAND						
							~ 20' TO 30'						
							SEE BORING LOG						
							FOR GPM3 FOR						
							MORE DETAIL.						
							TD = 30						
							SCREEN - 25-30'						
							SAND - 23.5-30						
							BENT - 21.5-23.5						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: SVPM4

BORING LOG

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B61
BORING NUMBER: SVPM 5
DATE: 3-25-97
GEOLOGIST: FRED W RAMSIER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							DK BRN SAND + GRAVEL						
							CHANGING TO A YEL BRN SAND + GRA.						
							LESSER GRAVELS						
							DOWNWARD TO 10'						
	10											0	0
S-1 1020		14/15				DK YEL ORG.	GRA + COARSE SAND	GW		27			
		19/19	1.2/2.0										
	18											15	0
S-2 1020		10/13				DK YEL ORG.	COARSE SAND W/SOME GRAVEL AND MED. SAND	SP		60			
	20	15/18	1.5/2.0										
							TD @ 20'						
							SCREEN - 15-20'						
							SAND - 14-20'						
							BENTONITE 12'-14'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm):

Remarks:

Converted to Well: Yes ✓ No ____ Well I.D. #: SVPM 5

BORING LOG

Page ___ of ___

PROJECT NAME: NWRIP SVE/AS
PROJECT NUMBER: 5253
DRILLING COMPANY: ADT
DRILLING RIG: B-61
BORING NUMBER: AS SB01
DATE: 3-26-97
GEOLOGIST: FRED W AMMSER
DRILLER: STEVE WOLF

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20												
S-1 1400		15/16			?		NO RECOVERY		SOME MATL IN TOP OF SPOON BLK. LOOKS	10			
		18/23	1.8/2.0						LIKE (FILL)?				
												20	0
	30												
S-2 1410		26/26			DENSE		DK YEL ORG FINE TO MED SAND W/ SOME COARSE SAND	SW		50			
		29/30	1.5/2.0				TR SILT @ ~ 31'						
	40												
S-3 1425		16/16			MED DENSE		MOTTLED DK YEL ORG MED G. SAND	SP		58		20	0
		24/24	1.8/2.0										
	50												
S-4 1435		14/14			MED DENSE		AS ABOVE	SP		100			
		22/24	2.0										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated response read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No X Well I.D. #: ____

APPENDIX B

WELL CONSTRUCTION SHEETS

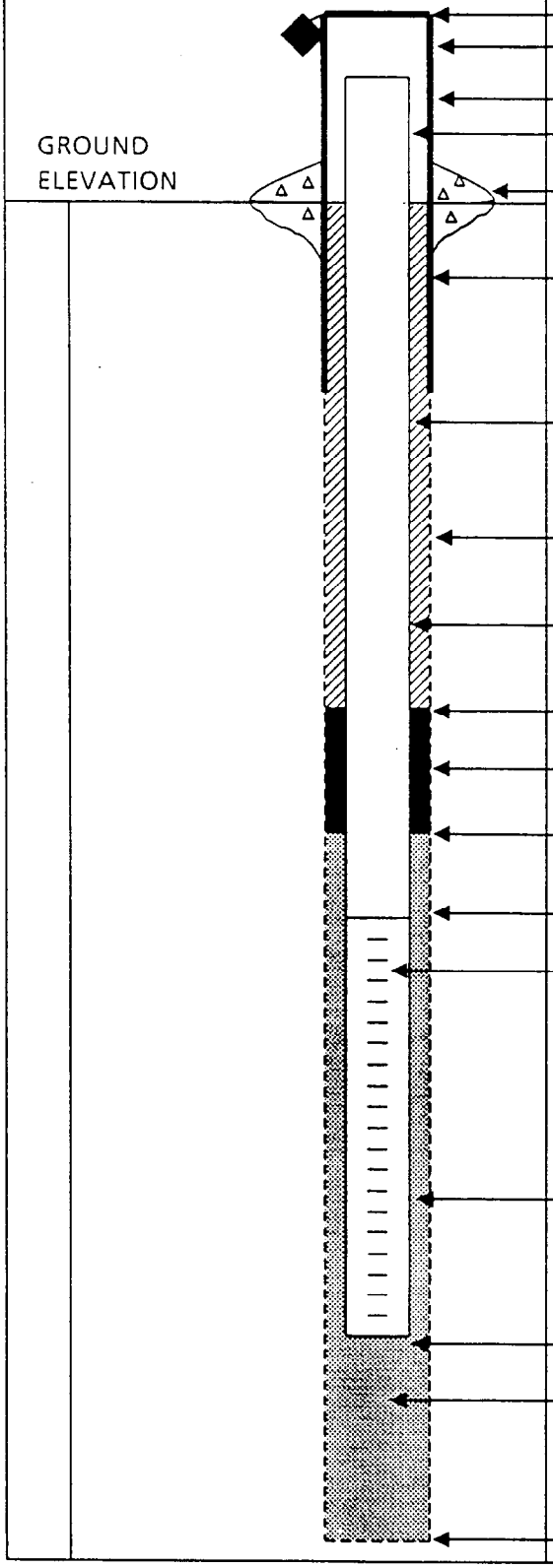
BORING NO.: CFBMW01

OVERBURDEN
MONITORING WELL SHEET

PROJECT NW IRP SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W. RAMSER

LOCATION BETHPAGE NY
BORING CFBMW01
DATE 3-20-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4¼ HSA
DEVELOPMENT METHOD SUB. PUMP



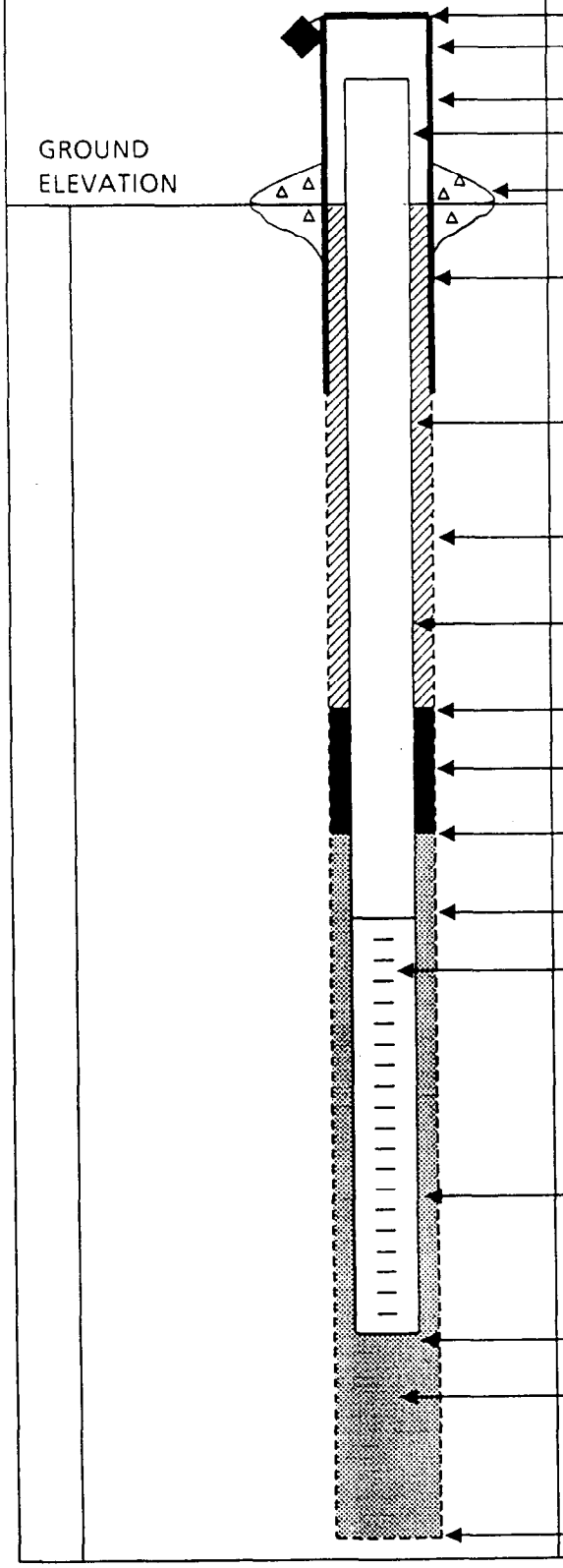
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 149
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 51
ELEVATION / DEPTH TOP OF SCREEN: 154'
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02" x 10'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 164'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 1
TYPE OF BACKFILL BELOW OBSERVATION WELL:
ELEVATION / DEPTH OF HOLE: 164

BORING NO.: EWØ1

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP, SITE 1 SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W. RAMSER
LOCATION BETHPAGE
BORING EWØ1
DATE 3-18-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD SUB. PUMP



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 143
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 45
ELEVATION / DEPTH TOP OF SCREEN: 146
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02" x 15'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 161
ELEVATION / DEPTH BOTTOM OF SAND PACK: 161.5
TYPE OF BACKFILL BELOW OBSERVATION WELL:
ELEVATION / DEPTH OF HOLE: 161.5

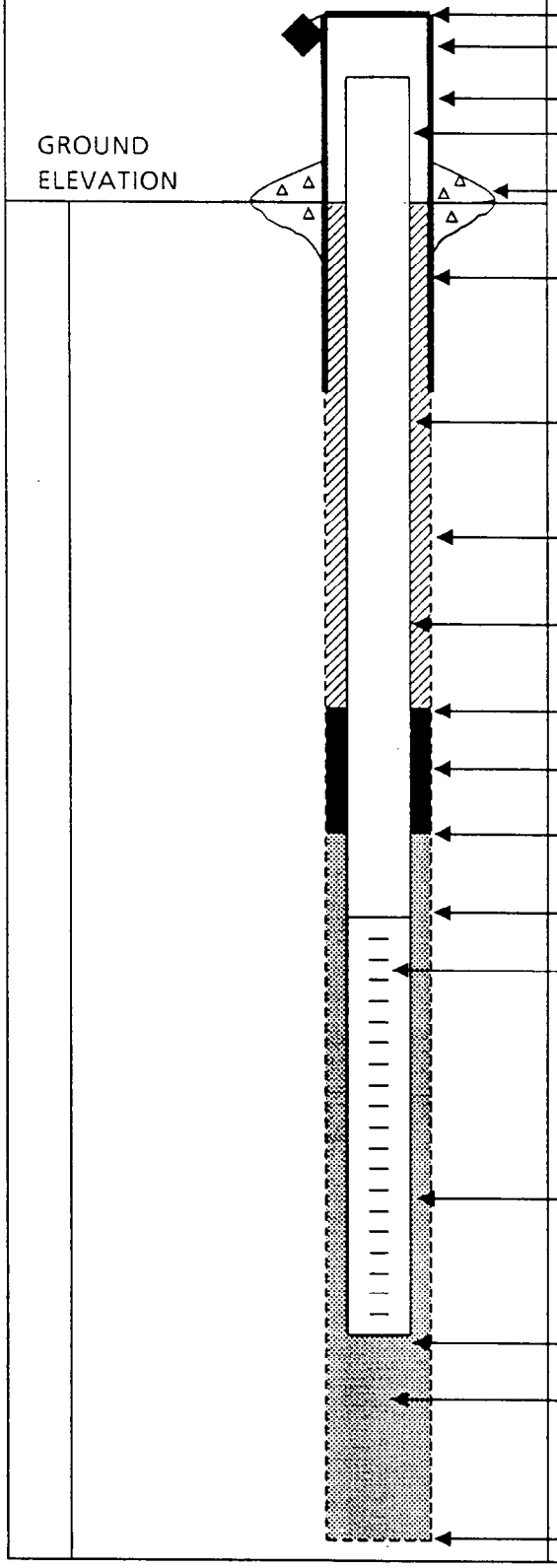
BORING NO.: EW#2

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWRIP SITE 1 SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W. RAMSER

LOCATION BETHPAGE NY
BORING EW#2
DATE 3-24-97

DRILLER S. WOLF / ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD SUB. PUMP



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 144
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 146
ELEVATION / DEPTH TOP OF SCREEN: 147
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02" x 15'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 162
ELEVATION / DEPTH BOTTOM OF SAND PACK: 1
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 162

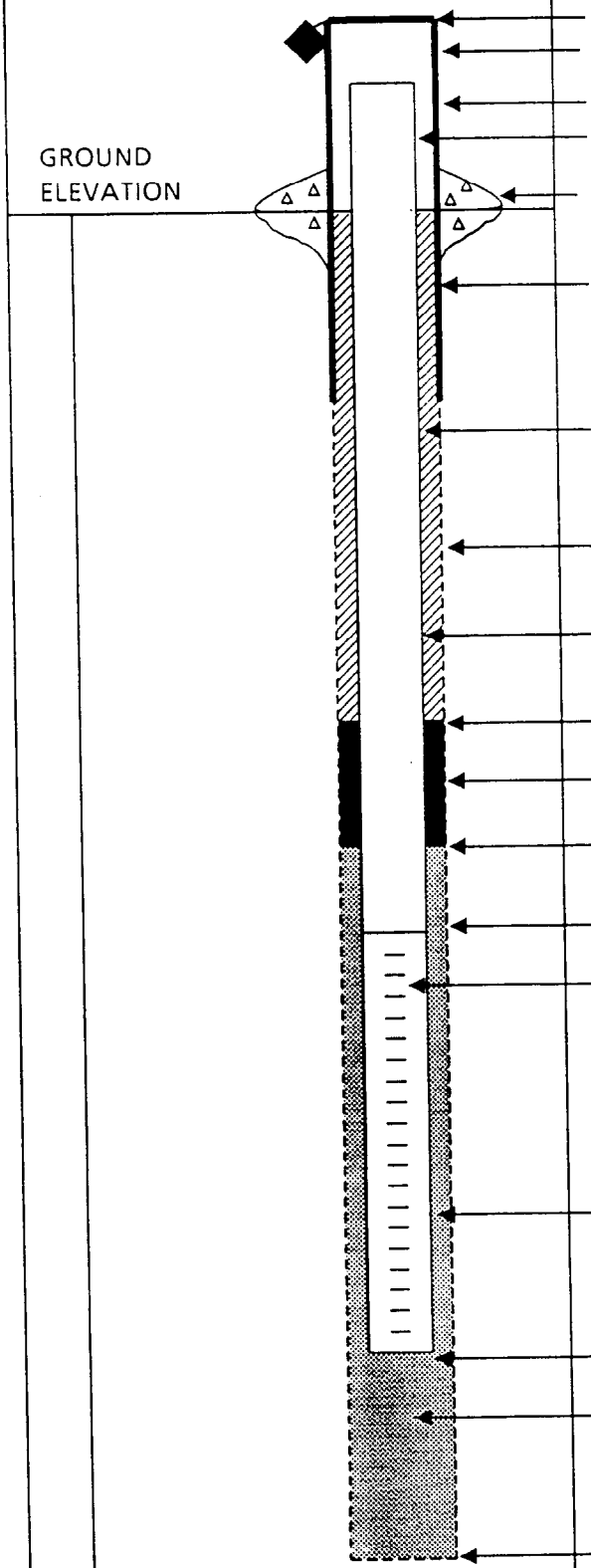
BORING NO.: EW03

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER

LOCATION SITE C
BORING EW03
DATE 3-19-97

DRILLER STEVE WOLF/AD.
DRILLING METHOD 4¼ HSA
DEVELOPMENT METHOD SUB. PUMP



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 142
TYPE OF SEAL: BENTONITE CHIPS CETCO, PURE GOLD™ NSF
DEPTH TOP OF SAND PACK:
ELEVATION / DEPTH TOP OF SCREEN: 146
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02 x 15'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 161
ELEVATION / DEPTH BOTTOM OF SAND PACK: 161
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 161

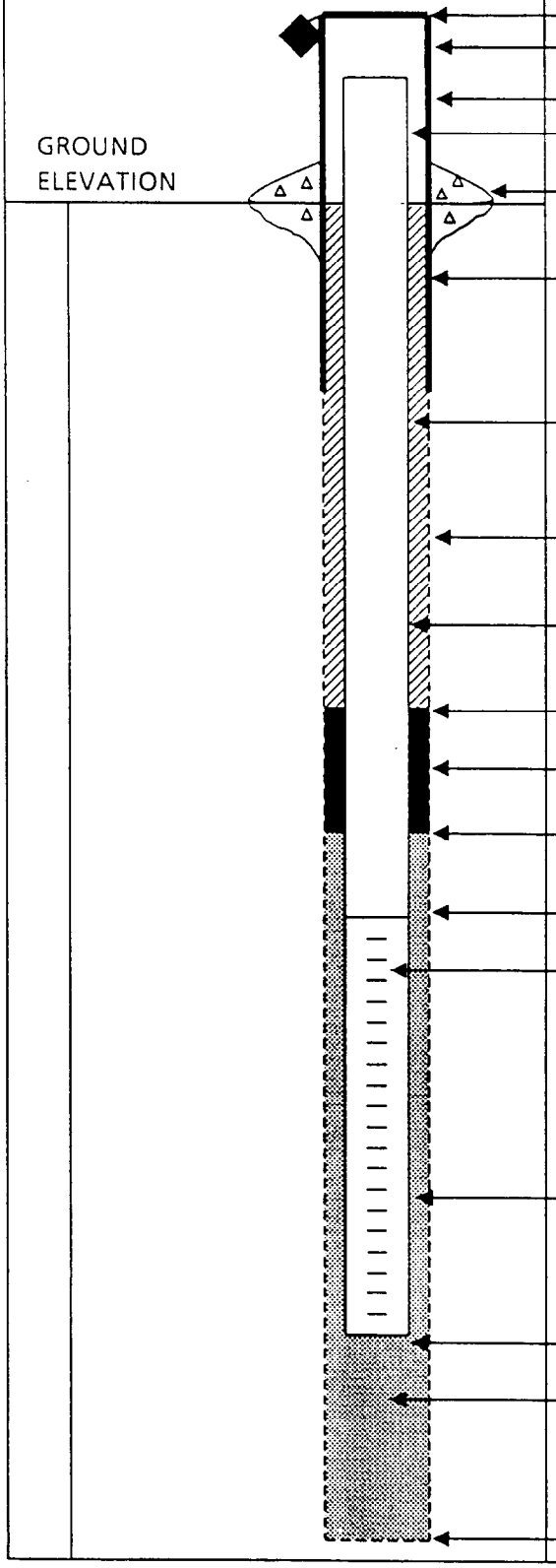
BORING NO.: EW04

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP BETHPAGE SITE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W. RAMSER

LOCATION SITE 1
BORING EW04
DATE 3-25-97

DRILLER S. WOLF / ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD NONE



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 117
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 119
ELEVATION / DEPTH TOP OF SCREEN: 120
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02" x 10'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 130
ELEVATION / DEPTH BOTTOM OF SAND PACK: 130
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 130

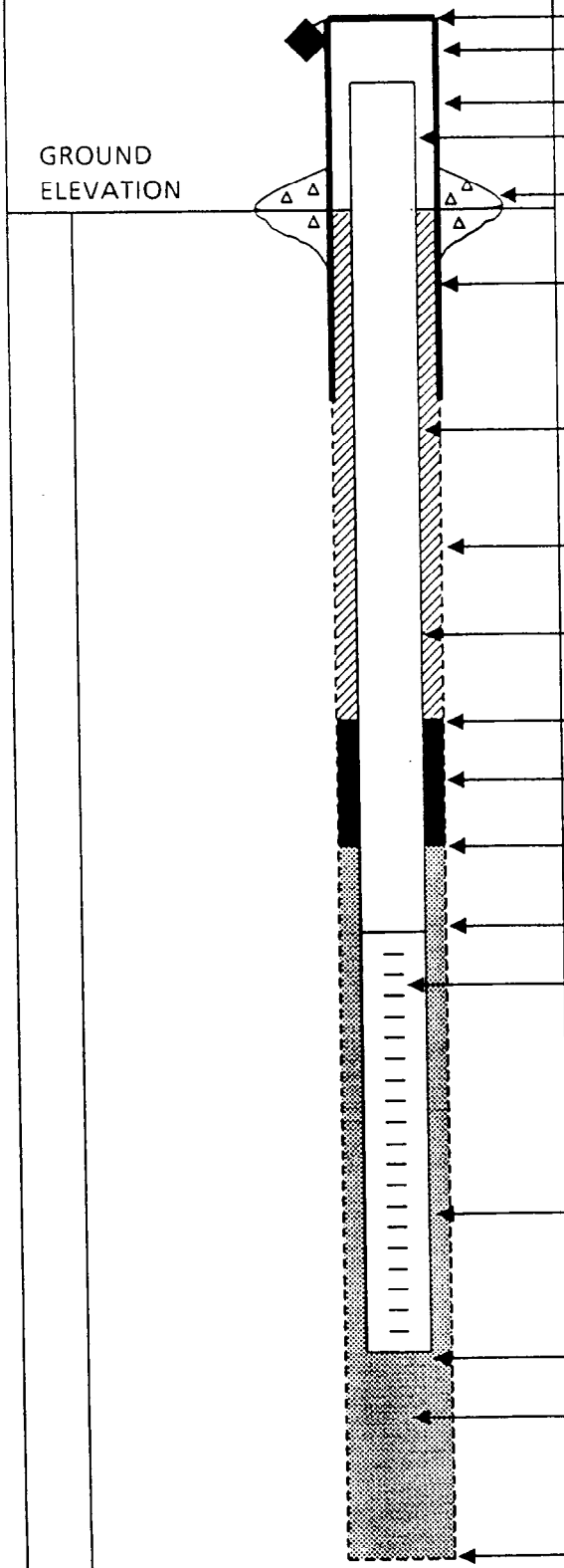
BORING NO.: EW05

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER

LOCATION SITE 1
BORING EW05
DATE 3-25-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4" HSA
DEVELOPMENT METHOD NONE



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 12
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 14
ELEVATION / DEPTH TOP OF SCREEN: 15
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 20
ELEVATION / DEPTH BOTTOM OF SAND PACK: 20
TYPE OF BACKFILL BELOW OBSERVATION WELL: SAND
ELEVATION / DEPTH OF HOLE: 20

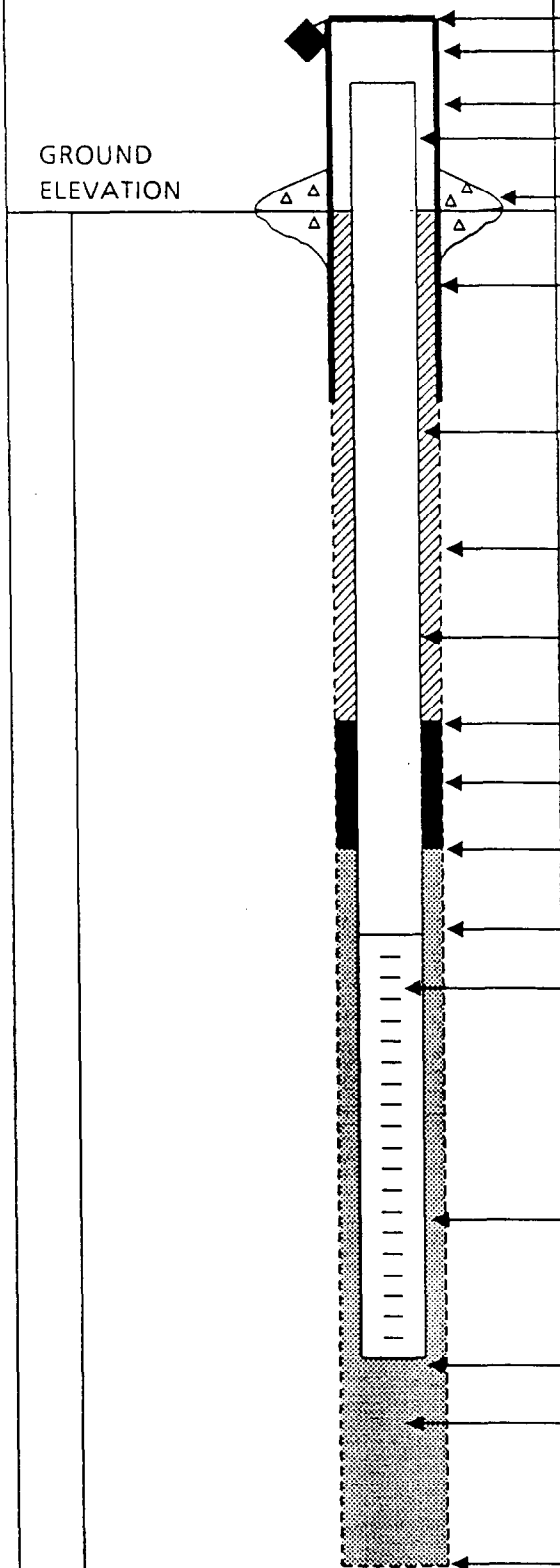
BORING NO.: 6PM 2

OVERBURDEN
MONITORING WELL SHEET

PROJECT: UWIRP BETHPAGE SVE/AS
PROJECT NO.: 5253
ELEVATION:
FIELD GEOLOGIST: FRED W PAMUSER

LOCATION: SITE 1
BORING: 6PM 2
DATE: 3-20-97

DRILLER: S. WOLF/ADT
DRILLING METHOD: 4¼ HSA
DEVELOPMENT METHOD: SUB. PUMP



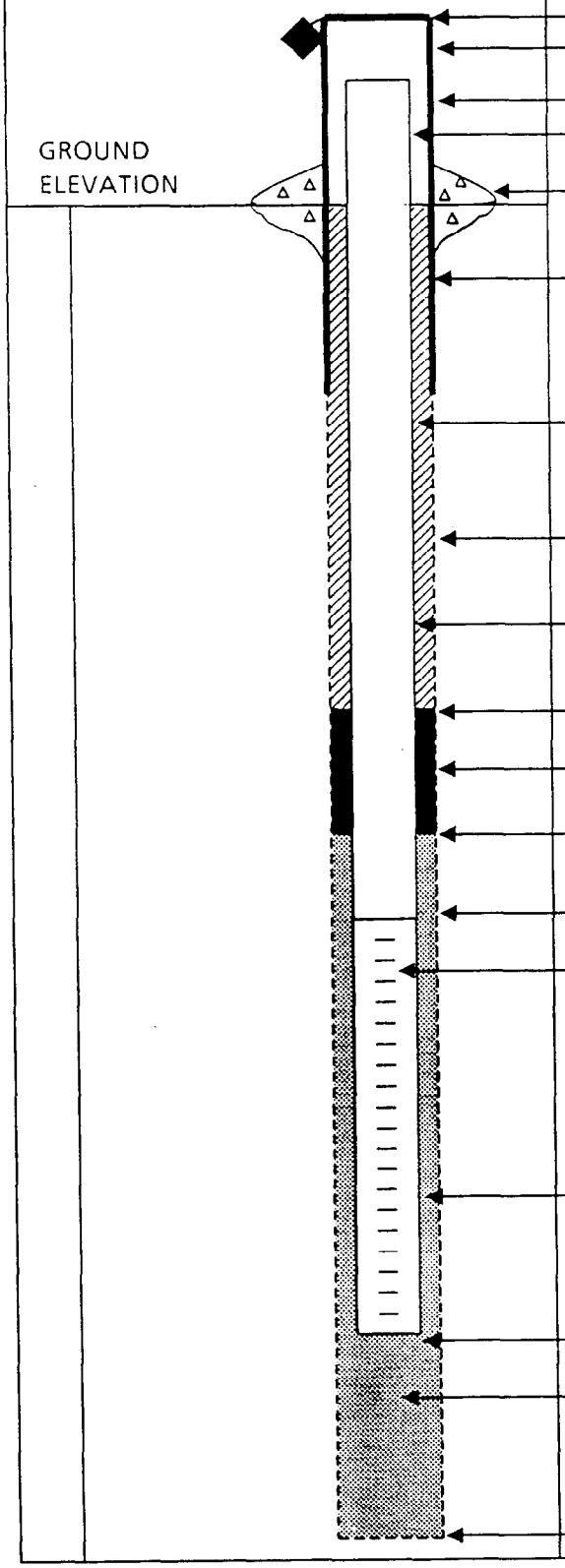
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 156.5
TYPE OF SEAL: BENTONITE SLURRY
DEPTH TOP OF SAND PACK: 58.7
ELEVATION / DEPTH TOP OF SCREEN: 160
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02" x 2'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 162
ELEVATION / DEPTH BOTTOM OF SAND PACK: 1
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 162

BORING NO.: GPM 3

OVERBURDEN
MONITORING WELL SHEET

PROJECT NW IRP/BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER
LOCATION SITE 1
BORING GPM 3
DATE 3-21-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD SUB. PUMP.



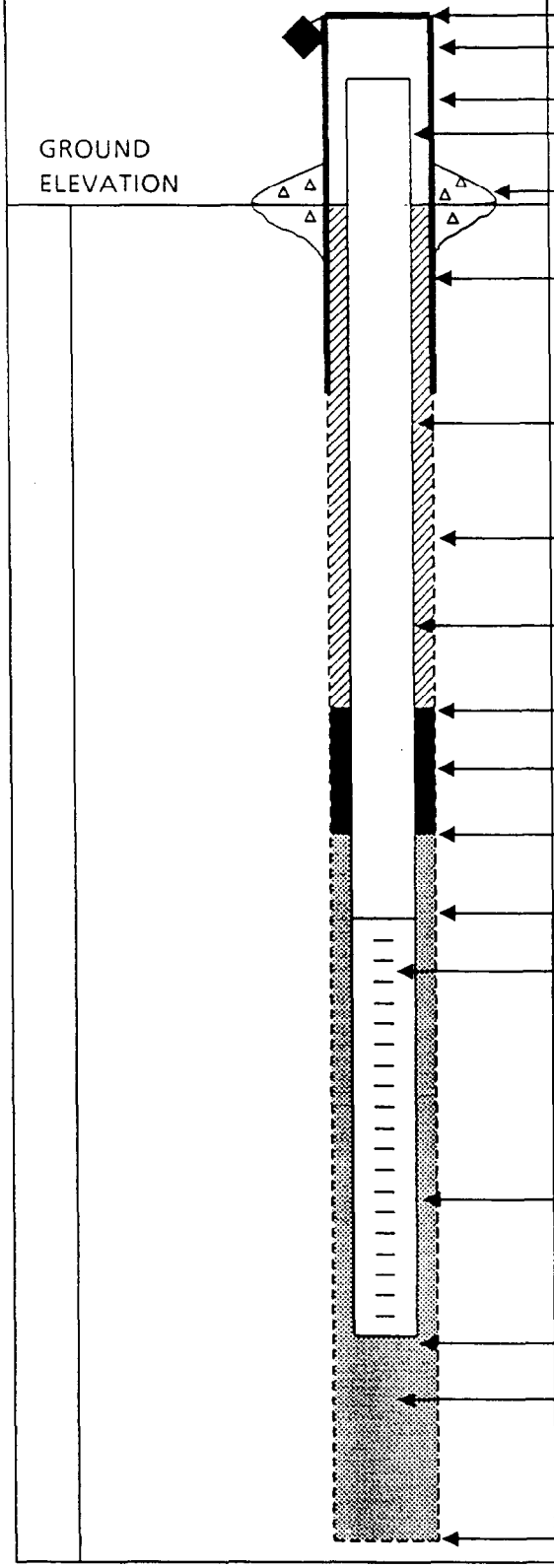
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 158
TYPE OF SEAL: BENTONITE SLURRY
DEPTH TOP OF SAND PACK: 160
ELEVATION / DEPTH TOP OF SCREEN: 161
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02 x 2'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 163
ELEVATION / DEPTH BOTTOM OF SAND PACK: 163
TYPE OF BACKFILL BELOW OBSERVATION WELL: NATURAL MATL.
ELEVATION / DEPTH OF HOLE: 166

BORING NO.: IW Ø1

OVERBURDEN
MONITORING WELL SHEET

PROJECT NW IRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER
LOCATION SITE 1
BORING IW Ø1
DATE 3-18-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD SUB PUMP



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT, TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 161.5
TYPE OF SEAL: BENTONITE SLURRY
DEPTH TOP OF SAND PACK: 63
ELEVATION / DEPTH TOP OF SCREEN: 164.5
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02 x 2'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 166.5
ELEVATION / DEPTH BOTTOM OF SAND PACK: 166.5
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 166.5

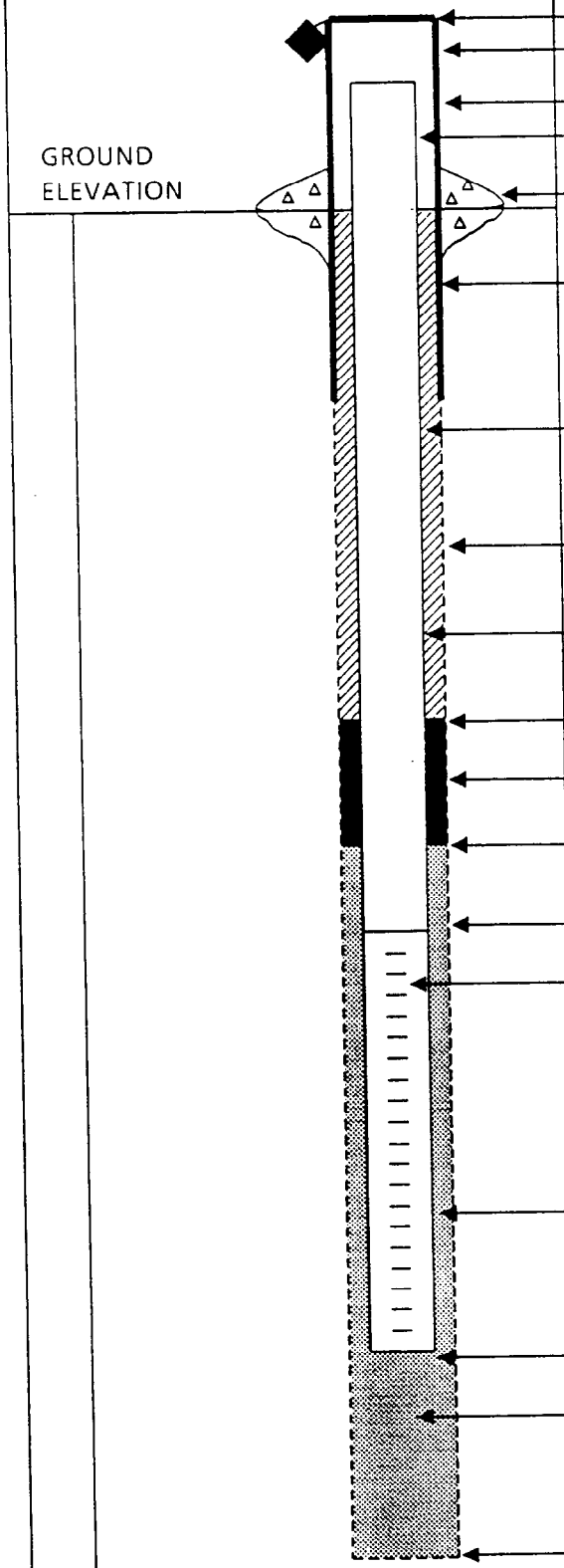
BORING NO.: SVPM 1

OVERBURDEN
MONITORING WELL SHEET

PROJECT NW IPPETHAGE SITE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER

LOCATION SITE 1
BORING SVPM 1
DATE 3-19-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4¼ HSA
DEVELOPMENT METHOD NONE



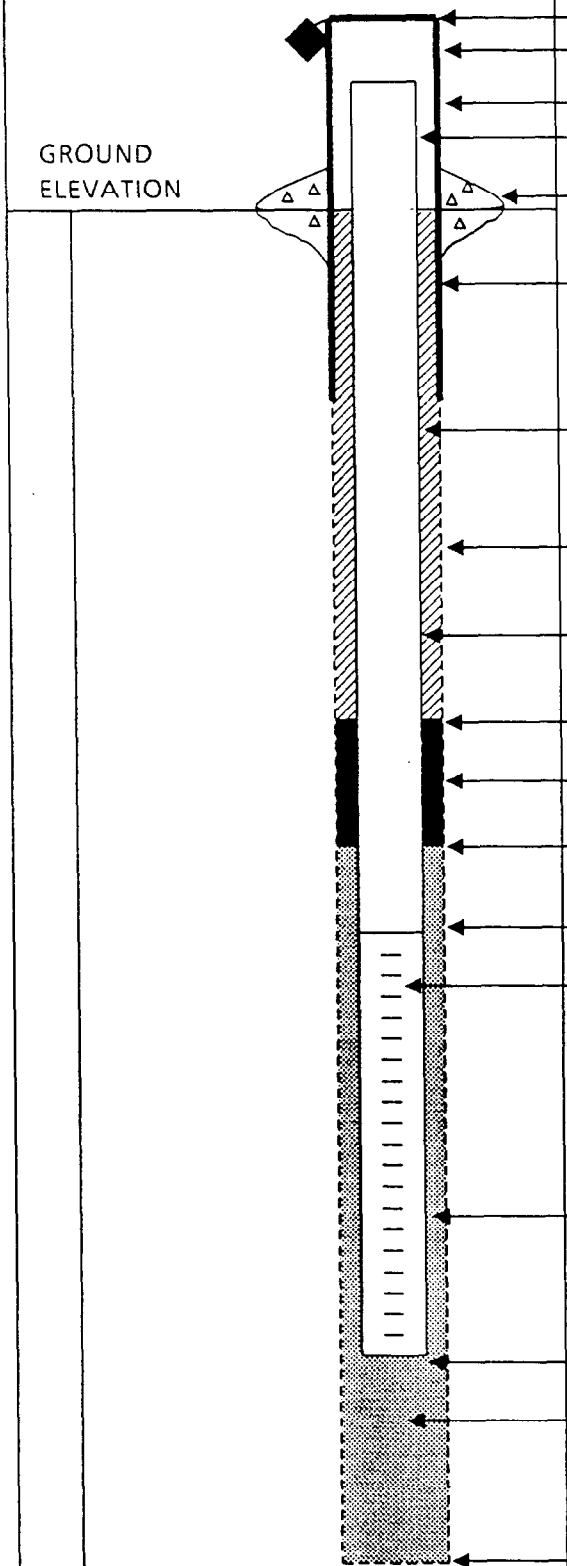
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I & BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 122'
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 24'
ELEVATION / DEPTH TOP OF SCREEN: 125'
TYPE OF SCREEN: PVC SCH. 40.
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 130'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 130
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 130'

BORING NO.: SVPM 2

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FREDLURAMSER
LOCATION SITE 1
BORING SVPM 2
DATE 3-21-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD NONE



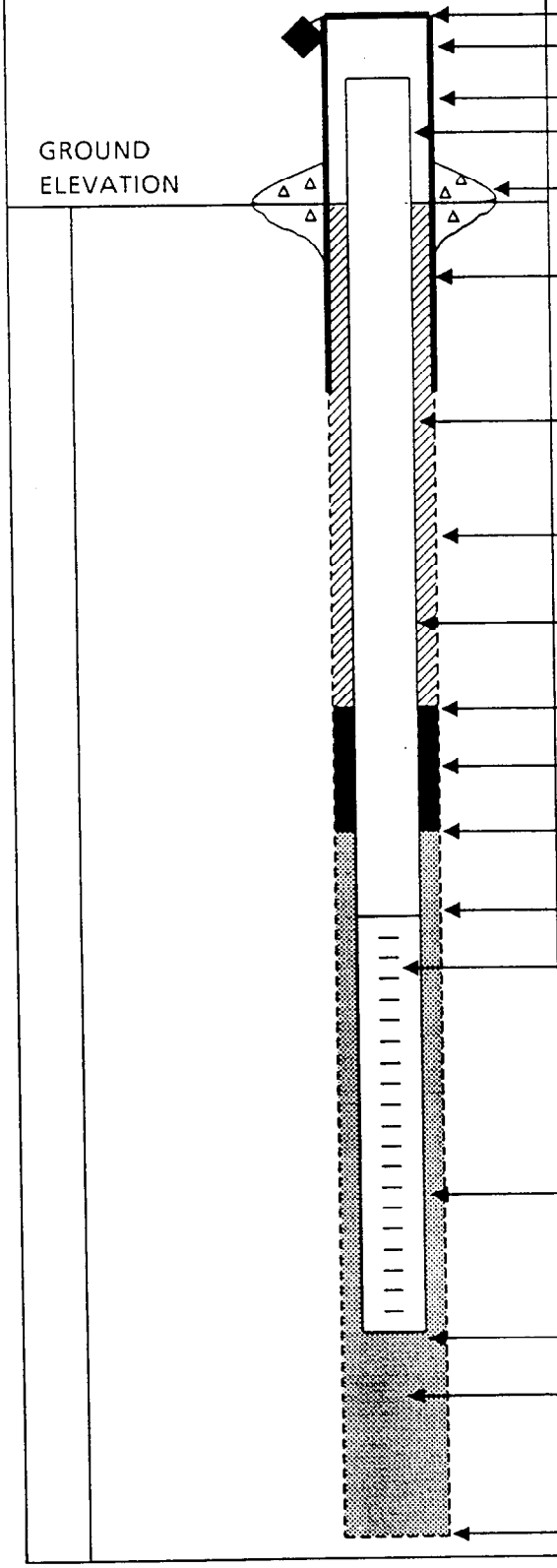
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 121.5
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 123.5'
ELEVATION / DEPTH TOP OF SCREEN: 125'
TYPE OF SCREEN: PVC SCH 40
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 130'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 130'
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 130'

BORING NO.: SVPM 3

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER
LOCATION SITE 1
BORING SVPM 3
DATE 3-21-97

DRILLER S. WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD NONE



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 121.5
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 23.5
ELEVATION / DEPTH TOP OF SCREEN: 125'
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 130'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 130
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 130'

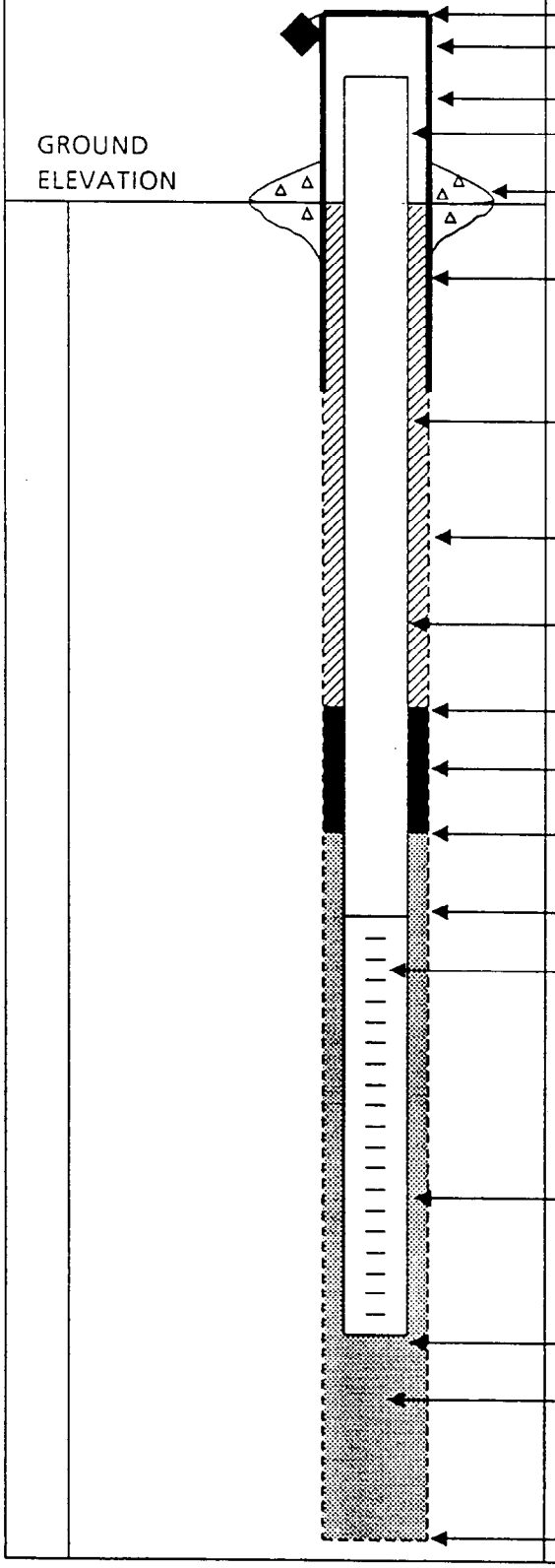
BORING NO.: SVPM 4

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP SVE/AS BETHPAGE
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER

LOCATION SITE 1
BORING SVPM 4
DATE 3-24-97

DRILLER S.WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD NONE



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH. 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 121.5
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 23.5
ELEVATION / DEPTH TOP OF SCREEN: 125'
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 130'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 130'
TYPE OF BACKFILL BELOW OBSERVATION WELL: NONE
ELEVATION / DEPTH OF HOLE: 130'

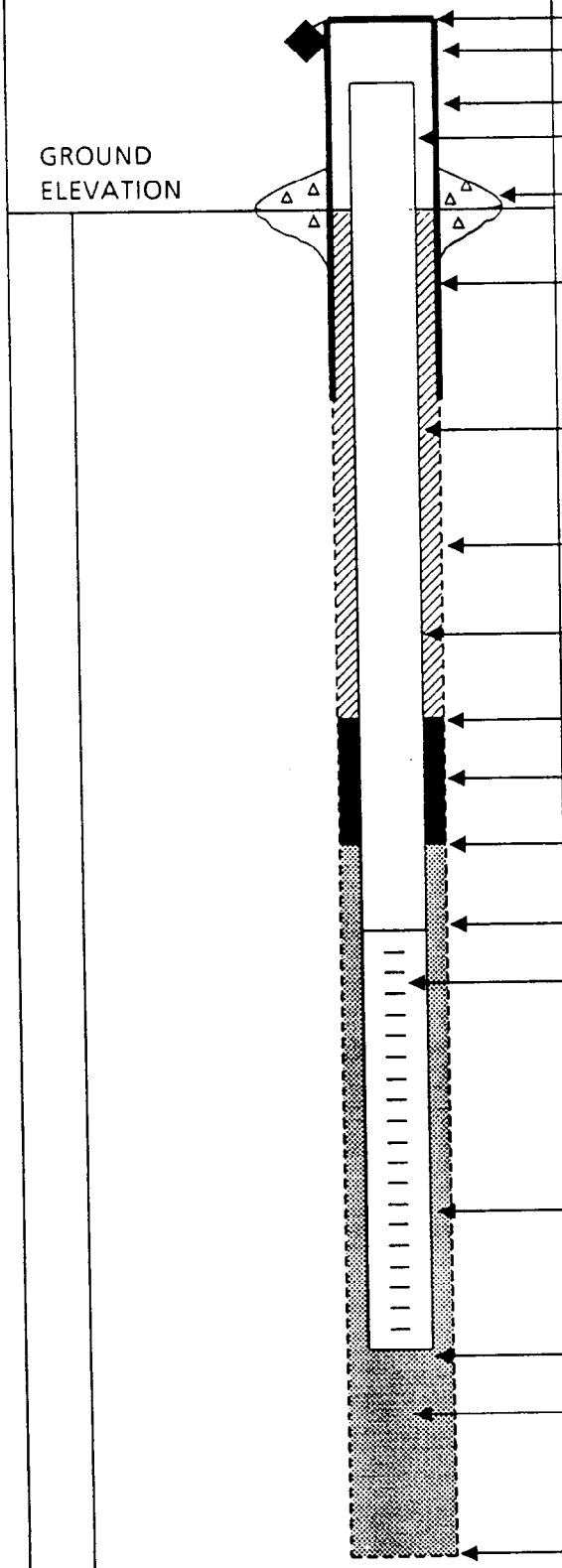
BORING NO.: SVPM 5

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP BETHPAGE SVE/AS
PROJECT NO. 5253
ELEVATION
FIELD GEOLOGIST FRED W RAMSER

LOCATION SITE 1
BORING SVPM5
DATE 3-25-97

DRILLER S.WOLF/ADT
DRILLING METHOD 4 1/4 HSA
DEVELOPMENT METHOD NONE



ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING:
STICK - UP RISER PIPE : 2'
TYPE OF SURFACE SEAL: NONE
I.D. OF SURFACE CASING: NONE
TYPE OF SURFACE CASING:
RISER PIPE I.D. 2"
TYPE OF RISER PIPE: PVC SCH 40
BOREHOLE DIAMETER: 10"
TYPE OF BACKFILL: PORTLAND CEMENT TYPE I AND BENTONITE GROUT
ELEVATION / DEPTH TOP OF SEAL: 12'
TYPE OF SEAL: BENTONITE CHIPS
DEPTH TOP OF SAND PACK: 14'
ELEVATION / DEPTH TOP OF SCREEN: 15'
TYPE OF SCREEN: PVC SCH. 40
SLOT SIZE x LENGTH: .02" x 5'
I.D. OF SCREEN: 2"
TYPE OF SAND PACK: MORIE #2
ELEVATION / DEPTH BOTTOM OF SCREEN: 120'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 120
TYPE OF BACKFILL BELOW OBSERVATION WELL:
ELEVATION / DEPTH OF HOLE: 120'

APPENDIX C

GEOTECHNICAL ANALYSIS

CHAIN C USTODY RECORD

PROJECT NO.:	SITE NAME:
5253-0142	BETHPAGE NWIRP

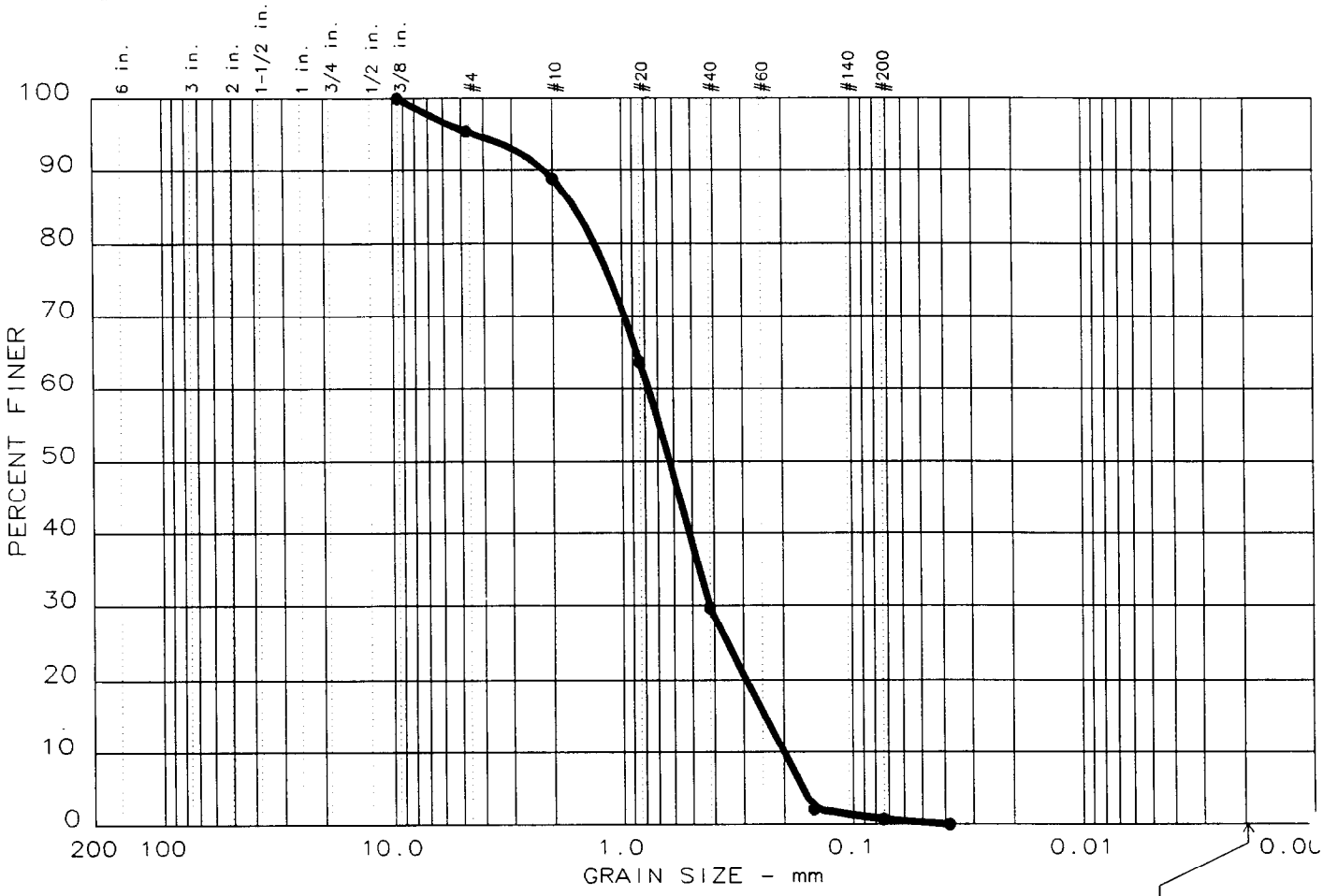
SAMPLERS (SIGNATURE): Fred W Ramsey

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	GRAIN SIZE DISTRIBUTION						REMARKS
PS	3/21	1010		X	PS-SVPM3-10	1	✓						
PS	3/21	1035		X	PS-SVPM3-28	1	✓						
PS	3/21	1324		X	PS-GPM3-66	1	✓						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Fred W Ramsey	4/4/97 1600	FEDEx			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
	4/9/97				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: SENT TO ACKENHEIL ENG, PGH FED EX ABF 459591646 3	

Order No. 70440 (0693)

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	12	0.0	4.6	94.8	0.6	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	1.62	0.77	0.62	0.421	0.2421	0.2007	1.15	3.8

MATERIAL DESCRIPTION	USCS	AASHTO
● POORLY GRADED SAND	SP	A-1-b

Project No.: 97713
Project: BETHPAGE, NWIRP
● Location: PS-SVPM3-28

Date: 4-10-97

Remarks:

MOISTURE CONTENT: 5.4%

GRAIN SIZE DISTRIBUTION TEST REPORT

ACKENHEIL ENGINEERS, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 12

Date: 4-10-97
Project No.: 97713
Project: BETHPAGE, NWIRP

Sample Data

Location of Sample: PS-SVPM3-28
Sample Description: POORLY GRADED SAND
USCS Class: SP Liquid limit: NP
AASHTO Class: A-1-b Plasticity index: NP

Notes

Remarks: MOISTURE CONTENT: 5.4%

Rig. No.:

Mechanical Analysis Data

Initial
Dry sample and tare= 280.70
Tare = 73.92
Dry sample weight = 206.78
Sample split on number 10 sieve
Split sample data:
Sample and tare = 99.7 Tare = 0 Sample weight = 99.7
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 73.92

Sieve	Cumul. Wt. retained	Percent finer
0.375 inches	73.92	100.0
# 4	83.41	95.4
# 10	97.04	88.8
# 20	28.20	63.7
# 40	66.37	29.7
# 100	97.41	2.0
# 200	98.97	0.7

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 88.8
Weight of hydrometer sample: 99.7
Calculated biased weight= 112.25
Automatic temperature correction
Composite correction at 20 deg C =-1

Meniscus correction only= 0.5
Specific gravity of solids= 2.68

Specific gravity correction factor= 0.993
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

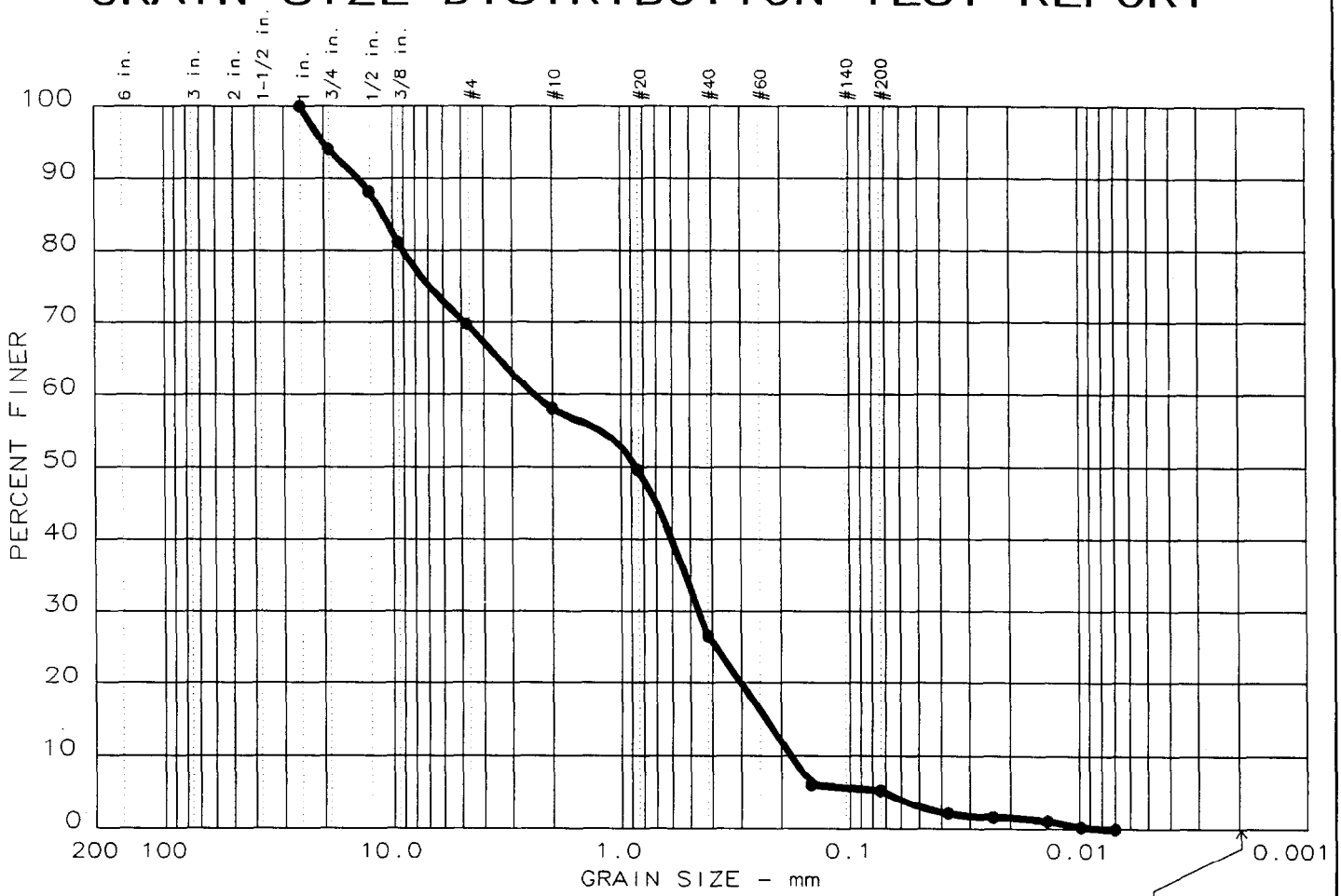
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	20.0	1.0	-0.0	0.0135	1.5	16.0	0.0383	-0.0

Fractional Components

% + 75mm. = 0.0 % GRAVEL = 4.6 % SAND = 94.8
% FINES = 0.6

D85= 1.62 D60= 0.766 D50= 0.623
D30= 0.4212 D15= 0.24210 D10= 0.20068
Cc = 1.1535 Cu = 3.8194

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	11	0.0	30.3	64.5	5.2	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	11.08	2.40	0.85	0.460	0.2333	0.1811	0.49	13.2

MATERIAL DESCRIPTION	USCS	AASHTO
● POORLY GRADED SAND WITH SILT AND GRAVEL	SP-SM	A-1-b

Project No.: 97713
Project: BETHPAGE, NWIRP
● Location: PS-SVPM3-10

Date: 4-10-97

Remarks:

MOISTURE CONTENT: 3.5%

GRAIN SIZE DISTRIBUTION TEST REPORT

ACKENHEIL ENGINEERS, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 11

Date: 4-10-97
Project No.: 97713
Project: BETHPAGE, NWIRP

Sample Data

Location of Sample: PS-SVPM3-10
Sample Description: POORLY GRADED SAND WITH SILT AND GRAVEL
USCS Class: SP-SM Liquid limit: NP
AASHTO Class: A-1-b Plasticity index: NP

Notes

Remarks: MOISTURE CONTENT: 3.5%

Fig. No.:

Mechanical Analysis Data

Initial
Dry sample and tare= 340.20
Tare = 57.08
Dry sample weight = 283.12
Sample split on number 10 sieve
Split sample data:
Sample and tare = 107.2 Tare = 0 Sample weight = 107.2
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 57.08

Sieve	Cumul. Wt. retained	Percent finer
1 inches	57.08	100.0
0.75 inches	74.00	94.0
0.5 inches	90.52	88.2
0.375 inches	110.62	81.1
# 4	142.73	69.7
# 10	175.83	58.1
# 20	15.62	49.6
# 40	58.18	26.5
# 100	96.01	6.1
# 200	97.47	5.3

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 58.1
Weight of hydrometer sample: 107.2
Calculated biased weight= 184.65
Automatic temperature correction
Composite correction at 20 deg C =-1

Meniscus correction only= 0.5
Specific gravity of solids= 2.68
Specific gravity correction factor= 0.993
Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

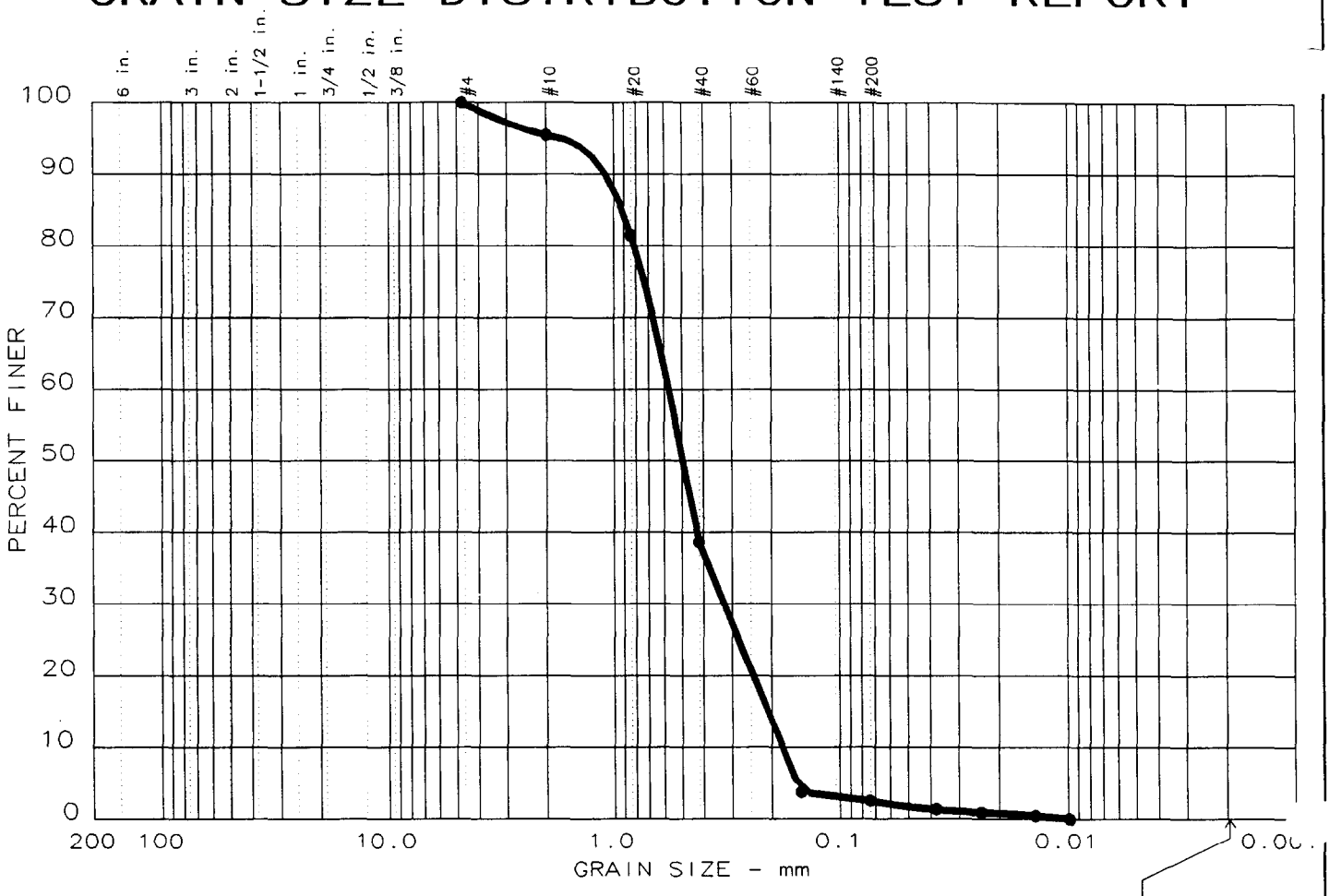
Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	20.0	5.0	4.0	0.0135	5.5	15.4	0.0375	2.1
5.0	20.0	4.0	3.0	0.0135	4.5	15.6	0.0239	1.6
15.0	20.0	3.0	2.0	0.0135	3.5	15.7	0.0138	1.1
30.0	20.0	1.5	0.5	0.0135	2.0	16.0	0.0099	0.2
60.0	20.0	1.0	-0.0	0.0135	1.5	16.0	0.0070	-0.0

Fractional Components

+ 75mm. = 0.0 % GRAVEL = 30.3 % SAND = 64.5
% FINES = 5.2

D85= 11.08 D60= 2.396 D50= 0.850
D30= 0.4603 D15= 0.23335 D10= 0.18113
Cc = 0.4881 Cu = 13.2282

GRAIN SIZE DISTRIBUTION TEST REPORT



	Test	%+75mm	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	97.5	2.5	

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●	NP	NP	0.91	0.57	0.49	0.325	0.2075	0.1786	1.04	3.2

MATERIAL DESCRIPTION	USCS	AASHTO
● POORLY GRADED SAND	SP	A-1-b

Project No.: 97713
Project: BETHPAGE, NWIRP
● Location: PS-GPM3-66

Date: 4-10-97

Remarks:

MOISTURE CONTENT: 16.9%

GRAIN SIZE DISTRIBUTION TEST REPORT

ACKENHEIL ENGINEERS, INC.

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA Test No.: 10

Date: 4-10-97
Project No.: 97713
Project: BETHPAGE, NWIRP

Sample Data

Location of Sample: PS-GPM3-66
Sample Description: POORLY GRADED SAND
USCS Class: SP Liquid limit: NP
AASHTO Class: A-1-b Plasticity index: NP

Notes

Remarks: MOISTURE CONTENT: 16.9%

Rig. No.:

Mechanical Analysis Data

Initial
Dry sample and tare= 312.87
Tare = 69.82
Dry sample weight = 243.05
Sample split on number 10 sieve
Split sample data:
Sample and tare = 104.9 Tare = 0 Sample weight = 104.9
Cumulative weight retained tare= 0
Tare for cumulative weight retained= 69.82

Sieve	Cumul. Wt. retained	Percent finer
# 4	69.82	100.0
# 10	81.04	95.4
# 20	15.30	81.5
# 40	62.45	38.6
# 100	100.84	3.7
# 200	102.20	2.5

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 95.4
Weight of hydrometer sample: 104.9
Calculated biased weight= 109.98
Automatic temperature correction
Composite correction at 20 deg C =-1

Meniscus correction only= 0.5
Specific gravity of solids= 2.68
Specific gravity correction factor= 0.993

Hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	20.0	2.5	1.5	0.0135	3.0	15.8	0.0380	1.3
5.0	20.0	2.0	1.0	0.0135	2.5	15.9	0.0241	0.9
15.0	20.0	1.5	0.5	0.0135	2.0	16.0	0.0140	0.4
30.0	20.0	1.0	-0.0	0.0135	1.5	16.0	0.0099	-0.0

Fractional Components

% + 75mm. = 0.0 % GRAVEL = 0.0 % SAND = 97.5
% FINES = 2.5

D85= 0.91 D60= 0.571 D50= 0.495
D30= 0.3251 D15= 0.20749 D10= 0.17865
Cc = 1.0351 Cu = 3.1989

APPENDIX D

LINEAR REGRESSION ANALYSIS

EW-01 tests performed at middle of unsaturated zone on 4/21, 4/22, and 4/25/97											
	Distance										
	x	at 5 cfm	ln at 5 cfm	at 10 cfm	ln at 10 cfm	at 20 cfm	ln at 20 cfm	at 40 cfm	ln at 40 cfm	80 cfm	ln at 80 cfm
SVPM 2	16.8	-0.01	-4.96	-0.02	-3.91	-0.03	-3.51	-0.06	-2.81	-0.07	-2.66
SVPM 3	25.9	-0.01	-4.96	-0.02	-3.91	-0.03	-3.51	-0.05	-3.00	-0.06	-2.81
SVPM 1	61	-0.01	-4.96	-0.01	-4.61	-0.02	-3.91	-0.08	-2.53	-0.11	-2.21
SVPM 4	35.1	-		-0.02	-3.91	-0.03	-3.51	-0.06	-2.81	-0.05	-3.00
EW-04	45	-		-0.01	-4.61	-0.03	-3.51	-0.06	-2.81	-0.06	-2.81
SVPM 5	53.3	-		-0.02	-3.91	-0.03	-3.51	-0.05	-3.00	-0.05	-3.00
EW-O5	64	-		-0.02	-3.91	-0.03	-3.51	-0.05	-3.00	-0.05	-3.00

EW-01 - 5 cfm - Unsaturated Data/Normal

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	65535
Standard Error	0
Observations	2

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	-3.912E-35	-3.91E-35	0	#NUM!
Residual	0	3.91205E-35	65535		
Total	1	0			

	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.007	0	65535	#NUM!	-0.007	-0.007	-0.007	-0.007
16.8	2.4472E-19	0	65535	#NUM!	2.44718E-19	2.447E-19	2.44718E-19	2.44718E-19
	1.1033E+17	**Calculated Radius of Influence** (0.02 inches of water reference point)						

EW-01 - 5 cfm - Unsaturated Data/Log Normal

SUMMARY OUTPUT

Regression Statistics											
lultiple R	1										
Square	1										
djusted R Square	65535										
tandard Error	0										
)bservations	2										
NOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
egression	1	-3.912E-35	-3.91E-35	0	#NUM!						
esidual	0	3.91205E-35	65535								
otal	1	0									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
ntercept	-0.007	0	65535	#NUM!	-0.007	-0.007	-0.007	-0.007			
16.8	2.4472E-19	0	65535	#NUM!	2.44718E-19	2.447E-19	2.44718E-19	2.44718E-19			
	-1.595E+19	**Calculated Radius of Influence** (0.02 inches of water reference point)									
W-01 - 10 cfm - Unsaturated Data/Normal											
UMMARY OUTPUT											
Regression Statistics											
lultiple R	0.29138973										
Square	0.08490797										
djusted R Square	-0.143865										
tandard Error	0.00552296										
)bservations	6										
NOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	1.13211E-05	1.132E-05	0.371145	0.575286063						
Residual	4	0.000122012	3.05E-05								
Total	5	0.000133333									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
ntercept	-0.021442	0.008156332	-2.628879	0.058255	-0.04408766	0.0012036	-0.04408766	0.001203649			
16.8	0.00010078	0.000165427	0.6092168	0.575286	-0.000358519	0.0005601	-0.00035852	0.000560081			
	411.208605	**Calculated Radius of Influence** (0.02 inches of water reference point)									
W-01 - 10 cfm - Unsaturated Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											

Multiple R	0.29138973										
R Square	0.08490797										
Adjusted R Square	-0.143865										
Standard Error	0.38282229										
Observations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	0.054392389	0.0543924	0.371145	0.575286063						
Residual	4	0.586211629	0.1465529								
Total	5	0.640604019									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-3.8120708	0.565353834	-6.742805	0.002521	-5.38174795	-2.2423937	-5.38174795	-2.24239367			
16.8	-0.0069856	0.011466534	-0.609217	0.575286	-0.038821874	0.0248507	-0.03882187	0.024850664			
	14.0187123	**Calculated Radius of Influence** (0.02 inches of water reference point)									
EW-01 - 20 cfm - Unsaturated Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.44678274										
R Square	0.19961482										
Adjusted R Square	-0.0004815										
Standard Error	0.00408347										
Observations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	1.66346E-05	1.663E-05	0.997594	0.374418114						
Residual	4	6.66988E-05	1.667E-05								
Total	5	8.33333E-05									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-0.0341218	0.006030482	-5.658227	0.004808	-0.050865174	-0.0173785	-0.05086517	-0.0173785			
16.8	0.00012216	0.000122311	0.9987962	0.374418	-0.000217426	0.0004618	-0.00021743	0.000461752			
	443.028641	**Calculated Radius of Influence** (0.02 inches of water reference point)									
EW-01 - 20 cfm - Unsaturated Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.44678274										

? Square	0.19961482										
ıdjusted R Square	-0.0004815										
;tandard Error	0.16557028										
)bservations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	0.027347555	0.0273476	0.997594	0.374418114						
Residual	4	0.109654073	0.0274135								
Total	5	0.137001628									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
ntercept	-3.3394318	0.244515003	-13.65737	0.000166	-4.018315664	-2.6605479	-4.01831566	-2.66054789			
16.8	-0.0049533	0.004959265	-0.998796	0.374418	-0.018722452	0.0088159	-0.01872245	0.008815861			
	115.189626	**Calculated Radius of Influence** (0.02 inches of water reference point)									
EW-01 - 40 cfm - Unsaturated Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.30001543										
R Square	0.09000926										
Adjusted R Square	-0.1374884										
Standard Error	0.01246823										
Observations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	6.15063E-05	6.151E-05	0.395649	0.563478937						
Residual	4	0.000621827	0.0001555								
Total	5	0.000683333									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-0.0472027	0.018413143	-2.563532	0.062404	-0.098325871	0.0039205	-0.09832587	0.003920501			
16.8	-0.0002349	0.000373456	-0.629006	0.563479	-0.001271789	0.000802	-0.00127179	0.000801977			
	-413.79325	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01 - 40 cfm - Unsaturated Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.26965299										
R Square	0.07271274										

Adjusted R Square	-0.1591091										
Standard Error	0.19926466										
Observations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	0.012454226	0.0124542	0.313658	0.605324117						
Residual	4	0.158825621	0.0397064								
Total	5	0.171279847									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-3.0150113	0.294275027	-10.24556	0.000512	-3.83205142	-2.1979711	-3.83205142	-2.19797112			
16.8	0.00334267	0.005968501	0.5600517	0.605324	-0.01322858	0.0199139	-0.01322858	0.019913917			
	7.48242525	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01 - 80 cfm - Unsaturated Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.33133467										
R Square	0.10978267										
Adjusted R Square	-0.1127717										
Standard Error	0.02466405										
Observations	6										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	0.000300073	0.0003001	0.493285	0.521185392						
Residual	4	0.002433261	0.0006083								
Total	5	0.002733333									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-0.0387481	0.036423984	-1.063808	0.347373	-0.139877535	0.0623813	-0.13987753	0.062381269			
16.8	-0.0005189	0.000738753	-0.702342	0.521185	-0.002569969	0.0015323	-0.00256997	0.001532254			
	-171.04527	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01 - 80 cfm - Unsaturated Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.27998476										
R Square	0.07839147										

ıdjusted R Square	-0.1520107										
;tandard Error	0.32785962										
)bservations	6										
ıNOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
?egression	1	0.036572795	0.0365728	0.340238	0.59099707						
?esidual	4	0.42996773	0.1074919								
˙otal	5	0.466540525									
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*			
ıntercept	-3.0749675	0.484184696	-6.350815	0.00315	-4.419282501	-1.7306525	-4.4192825	-1.73065247			
16.8	0.00572815	0.009820258	0.5832989	0.590997	-0.021537318	0.0329936	-0.02153732	0.032993609			
	14.8333327	**Calculated Radius of Influence** (0.05 inches of water reference point)									

EW-01 tests performed at water table on 4/21, 4/22, and 4/25/97

	Distance	Steady State Soil Vapor Pressure									
	x	at 5 cfm	ln at 5 cfm	at 10 cfm	ln at 10 cfm	at 20 cfm	ln at 20 cfm	at 40 cfm	ln at 40 cfm	80 cfm	ln at 80 cfm
EW-01	0	-0.86	-0.15	-1.50	0.41	-4.70	1.55	-14.00	2.64	-25.00	3.22
MW-01	21.3	-0.2	-1.61	-0.36	-1.02	-0.88	-0.13	-1.60	0.47	-3.20	1.16
EW-03	27.5	-0.11	-2.21	-0.18	-1.71	-0.48	-0.73	-0.96	-0.04	-1.50	0.41
EW-02	44	-0.11	-2.21	-0.15	-1.90	-0.35	-1.05	-0.82	-0.20	-1.30	0.26

EW-01- 5 cfm - Water Data/Normal

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.88811237
R Square	0.78874358
Adjusted R Square	0.68311537
Standard Error	0.20405548
Observations	4

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.310922718	0.3109227	7.467168	0.111887632
Residual	2	0.083277282	0.0416386		
Total	3	0.3942			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.7305291	0.181603094	-4.022669	0.056602	-1.511904707	0.050846	-1.51190471	0.050846478
X Variable 1	0.01769522	0.00647557	2.7326119	0.111888	-0.010166929	0.045557	-0.01016693	0.04555737

44.109601 **Calculated Radius of Influence** (0.05 inches of water reference point)

EW-01- 5 cfm - Water Data/Log Normal

SUMMARY OUTPUT

Regression Statistics											
Multiple R	0.92222893										
R Square	0.85050619										
Adjusted R Square	0.77575929										
Standard Error	0.45952893										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	2.402757776	2.4027578	11.37848	0.077771073						
Residual	2	0.422333672	0.2111668								
Total	3	2.825091448									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-0.4024738	0.408966588	-0.984124	0.428809	-2.162116269	1.357169	-2.16211627	1.357168591			
X Variable 1	-0.0491909	0.014582857	-3.3732	0.077771	-0.111935909	0.013554	-0.11193591	0.013554114			
	52.6017272	**Calculated Radius of Influence** (0.05 inches of water reference point)									

EW-01- 10 cfm - Water Data/Normal

SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.90190832										
R Square	0.81343862										
Adjusted R Square	0.72015793										
Standard Error	0.33947895										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	1.004983081	1.0049831	8.720332	0.098091678						
Residual	2	0.230491919	0.115246								
Total	3	1.235475									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-1.2855692	0.302125808	-4.255079	0.05104	-2.585512585	0.014374	-2.58551258	0.014374092			
X Variable 1	0.03181333	0.010773147	2.9530209	0.098092	-0.014539815	0.078166	-0.01453981	0.078166474			
	41.9814356	**Calculated Radius of Influence** (0.05 inches of water reference point)									

EW-01- 10 cfm - Water Data/Log Normal

SUMMARY OUTPUT											
Regression Statistics											

Multiple R	0.9516636										
R Square	0.90566362										
Adjusted R Square	0.85849542										
Standard Error	0.39324734										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	2.969267148	2.9692671	19.20073	0.048336396						
Residual	2	0.309286937	0.1546435								
Total	3	3.278554085									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	0.21162546	0.349978014	0.6046822	0.606855	-1.294209446	1.71746	-1.29420945	1.717460366			
X Variable 1	-0.0546833	0.012479453	-4.381864	0.048336	-0.108378047	-0.000988	-0.10837805	-0.00098847			
	58.5485493	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 20 cfm - Water Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.89407713										
R Square	0.79937392										
Adjusted R Square	0.69906088										
Standard Error	1.1395525										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	10.34811519	10.348115	7.968794	0.105922868						
Residual	2	2.597159807	1.2985799								
Total	3	12.945275									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-3.9708635	1.014166615	-3.915396	0.059471	-8.334473306	0.392746	-8.33447331	0.392746282			
X Variable 1	0.10208463	0.03616297	2.8229052	0.105923	-0.053512175	0.257681	-0.05351217	0.257681443			
	39.3875488	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 20 cfm - Water Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.96011431										

R Square	0.92181948										
Adjusted R Square	0.88272922										
Standard Error	0.39636282										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	3.704786054	3.7047861	23.58182	0.039885694						
Residual	2	0.314206964	0.1571035								
Total	3	4.018993018									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	1.32608055	0.352750694	3.7592571	0.064039	-0.191684239	2.843845	-0.19168424	2.843845345			
X Variable 1	-0.0610817	0.01257832	-4.856112	0.039886	-0.115201911	-0.006962	-0.11520191	-0.00696155			
	70.6607472	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 40 cfm - Water Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.87167814										
R Square	0.75982278										
Adjusted R Square	0.63973417										
Standard Error	3.86879727										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	94.7027154	94.702715	6.327184	0.128321861						
Residual	2	29.9351846	14.967592								
Total	3	124.6379									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-11.509716	3.443110366	-3.342825	0.079027	-26.32423403	3.304803	-26.324234	3.304803026			
X Variable 1	0.30882394	0.122773807	2.5153895	0.128322	-0.219429478	0.837077	-0.21942948	0.837077367			
	37.4314095	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 40 cfm - Water Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.9272522										
R Square	0.85979665										

Adjusted R Square	0.78969498										
Standard Error	0.60188146										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	4.443132795	4.4431328	12.26499	0.072747795						
Residual	2	0.724522588	0.3622613								
Total	3	5.167655383									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	2.26934217	0.535655956	4.2365667	0.051453	-0.035400992	4.574085	-0.03540099	4.574085341			
X Variable 1	-0.066892	0.019100323	-3.502141	0.072748	-0.149074148	0.01529	-0.14907415	0.015290082			
	78.6243433	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 80 cfm - Water Data/Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.87797959										
R Square	0.77084817										
Adjusted R Square	0.65627225										
Standard Error	6.76075219										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	307.5144596	307.51446	6.727838	0.122020406						
Residual	2	91.41554039	45.70777								
Total	3	398.93									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	-20.660721	6.016861144	-3.433804	0.07535	-46.54920331	5.227761	-46.5492033	5.227760783			
X Variable 1	0.55649661	0.214548146	2.5938076	0.12202	-0.366630205	1.479623	-0.3666302	1.479623417			
	37.216258	**Calculated Radius of Influence** (0.05 inches of water reference point)									
EW-01- 80 cfm - Water Data/Log Normal											
SUMMARY OUTPUT											
Regression Statistics											
Multiple R	0.93686103										
R Square	0.87770859										

Adjusted R Square	0.81656288										
Standard Error	0.58370143										
Observations	4										
ANOVA											
	df	*SS*	*MS*	*F*	*Significance F*						
Regression	1	4.890642195	4.8906422	14.35438	0.063138972						
Residual	2	0.681414725	0.3407074								
Total	3	5.57205692									
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*Lower 95.0%*	*Upper 95.0%*			
Intercept	2.89063749	0.51947629	5.5645225	0.030811	0.655509858	5.125765	0.655509858	5.125765128			
X Variable 1	-0.0701799	0.018523392	-3.788717	0.063139	-0.149879669	0.00952	-0.14987967	0.009519885			
	83.7937668	**Calculated Radius of Influence** (0.05 inches of water reference point)									

EW-02 tests performed at water table on 4/24/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5cfm	ln at 5	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm	
EW-02	0	-0.06	-2.81	-2.4	0.88	-13.00	2.56	
EW-01	44	-0.06	-2.81	-0.46	-0.78	-1.30	0.26	
EW-03	55.6	-0.06	-2.81	-0.41	-0.89	-1.20	0.18	
MW-01	56.1	-0.02	-3.91	-0.3	-1.20	-0.98	-0.02	
27-S3	98			-0.04	-3.22			
EW-02 - 5 cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.43133929							
R Square	0.18605358							
Adjusted R Square	-0.2209196							
Standard Error	0.02209905							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.000223264	2E-04	0.457164	0.568660714			
Residual	2	0.000976736	5E-04					
Total	3	0.0012						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.06265	0.021728458	-2.88	0.102181	-0.156140091	0.0308401	-0.15614009	0.030840054
X Variable 1	0.00032498	0.000480647	0.676	0.568661	-0.001743075	0.002393	-0.00174308	0.002393044
	346.63206	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 5 cfm - Water Data/Log Normal								
SUMMARY OUTPUT								

Regression Statistics								
Multiple R	0.53129098							
R Square	0.28227011							
Adjusted R Square	-0.4354598							
Standard Error	0.75994006							
Observations	3							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.227123743	0.227	0.393282	0.64341419			
Residual	1	0.577508898	0.578					
Total	2	0.804632641						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.6249369	4.097214457	-0.15	0.903641	-52.68475961	51.434886	-52.6847596	51.43488579
0	-0.0492231	0.078490458	-0.63	0.643414	-1.046534642	0.9480885	-1.04653464	0.94808848
	48.0478475	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 20 cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.8952577							
R Square	0.80148635							
Adjusted R Square	0.73531514							
Standard Error	0.48975781							
Observations	5							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	2.905291851	2.905	12.11231	0.040047305			
Residual	3	0.719588149	0.24					
Total	4	3.62488						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.9567784	0.416954292	-4.69	0.018294	-3.283714252	-0.6298425	-3.28371425	-0.62984247
X Variable 1	0.0243354	0.00699238	3.48	0.040047	0.002082508	0.0465883	0.002082508	0.046588299
	82.4633288	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 20 cfm - Water Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								

Multiple R	0.98766359							
R Square	0.97547937							
Adjusted R Square	0.96730582							
Standard Error	0.26412036							
Observations	5							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	8.325520842	8.326	119.3459	0.001641768			
Residual	3	0.209278688	0.07					
Total	4	8.534799529						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.04715635	0.224858314	4.657	0.018681	0.331556165	1.7627565	0.331556165	1.762756527
X Variable 1	-0.0411955	0.003770905	-10.9	0.001642	-0.053196174	-0.0291947	-0.05319617	-0.02919475
	98.0000277	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 80 cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.98096244							
R Square	0.96228731							
Adjusted R Square	0.94343096							
Standard Error	1.40838628							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	101.2256962	101.2	51.03254	0.019037561			
Residual	2	3.96710381	1.984					
Total	3	105.1928						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-12.63779	1.384768414	-9.13	0.011794	-18.59597135	-6.6796079	-18.5959714	-6.67960786
X Variable 1	0.21882568	0.030631953	7.144	0.019038	0.087026933	0.3506244	0.087026933	0.350624428
	57.9812643	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 80 cfm - Water Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								

Multiple R	0.9881974							
R Square	0.9765341							
Adjusted R Square	0.96480115							
Standard Error	0.22842861							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	4.342913631	4.343	83.23006	0.0118026			
Residual	2	0.104359256	0.052					
Total	3	4.447272888						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.51165684	0.224597984	11.18	0.007902	1.545289034	3.4780246	1.545289034	3.47802464
X Variable 1	-0.0453256	0.004968249	-9.12	0.011803	-0.06670226	-0.0239489	-0.06670226	-0.02394893
	121.380801	**Calculated Radius of Influence** (0.05 inches of water reference point)						

EW-02 tests performed at middle of unsaturated zone on 4/24/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5cfm	ln at 5	at 20 cf	ln at 20 cfm	at 80 cfm	ln at 80 cfm	
EW-04	3.7	0.003	-5.81	-0.05	-3.00	-0.09	-2.41	
SVPM 4	10.1	-0.01	-4.61	-0.03	-3.51	-0.09	-2.41	
SVPM 5	10.5	-0.003	-5.81	-0.04	-3.22	-0.07	-2.66	
SVPM 3	19.3	0.003	-5.81	-0.03	-3.51	-0.09	-2.41	
EW-05	21.2	-0.02	-3.91	-0.04	-3.22	-0.07	-2.66	
SVPM 2	31.7	0.003	-5.81	-0.03	-3.51	-0.07	-2.66	
SVPM 1	98.1	0.01	-4.61	-0.03	-3.51	-0.12	-2.12	

EW-02 - 5 cfm - Unsaturated Data/Normal

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.50094001
R Square	0.25094089
Adjusted R Square	0.10112907
Standard Error	0.00954388
Observations	7

ANOVA

	df	*SS*	*MS*	*F*	*ignificance F*
Regression	1	0.000152572	2E-04	1.675	0.2521345
Residual	5	0.000455428	9E-05		
Total	6	0.000608			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0063378	0.004923993	-1.29	0.2544	-0.018995	0.0063197	-0.01899531	0.006319703
X Variable 1	0.00015604	0.000120563	1.294	0.2521	-0.000154	0.000466	-0.00015388	0.000465951

361.05629 **Calculated Radius of Influence** (0.05 inches of water reference point)

EW-02 - 5 cfm - Unsaturated Data/Log Normal

SUMMARY OUTPUT

Regression Statistics								
Multiple R	0.32708474							
R Square	0.10698443							
Adjusted R Square	-0.0716187							
Standard Error	0.82928463							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	1	0.411944561	0.412	0.599	0.4739437			
Residual	5	3.438565023	0.688					
Total	6	3.850509584						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-5.4195325	0.427854581	-12.7	5E-05	-6.519366	-4.319699	-6.51936587	-4.31969903
X Variable 1	0.00810787	0.010475894	0.774	0.4739	-0.018821	0.035037	-0.01882123	0.035036971
	309.518029	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-02 - 20 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.47259061							
R Square	0.22334189							
Adjusted R Square	0.06801026							
Standard Error	0.0075957							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	1	8.29556E-05	8E-05	1.4378	0.2842113			
Residual	5	0.000288473	6E-05					
Total	6	0.000371429						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0389128	0.003918864	-9.93	0.0002	-0.048987	-0.0288391	-0.04898659	-0.02883911
X Variable 1	0.00011506	9.59522E-05	1.199	0.2842	-0.000132	0.0003617	-0.0001316	0.000361709
	512.035189	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-02 - 20 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.47724357							

R Square	0.22776142							
Adjusted R Square	0.07331371							
Standard Error	0.19958775							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	1	0.058744394	0.059	1.4747	0.2788277			
Residual	5	0.199176343	0.04					
Total	6	0.257920737						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-3.2662711	0.10297373	-31.7	6E-07	-3.530973	-3.0015691	-3.53097306	-3.00156912
X Variable 1	-0.0030618	0.002521282	-1.21	0.2788	-0.009543	0.0034194	-0.00954291	0.003419393
	210.248216	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-02 - 80 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.71383464							
R Square	0.50955989							
Adjusted R Square	0.41147186							
Standard Error	0.01390588							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	1	0.001004561	0.001	5.1949	0.0716063			
Residual	5	0.000966868	2E-04					
Total	6	0.001971429						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0745836	0.007174491	-10.4	0.0001	-0.093026	-0.0561411	-0.09302622	-0.05614105
X Variable 1	-0.0004004	0.000175665	-2.28	0.0716	-0.000852	5.118E-05	-0.00085194	5.11783E-05
	-236.23291	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-02 - 80 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.64950632							
R Square	0.42185846							

Adjusted R Square	0.30623015							
Standard Error	0.16699497							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*ignificance F*			
Regression	1	0.101744129	0.102	3.6484	0.1143747			
Residual	5	0.139436598	0.028					
Total	6	0.241180726						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.5865721	0.086158069	-30	8E-07	-2.808048	-2.3650961	-2.80804814	-2.36509613
X Variable 1	0.00402942	0.002109555	1.91	0.1144	-0.001393	0.0094522	-0.00139336	0.009452192
	-328.44157	**Calculated Radius of Influence** (0.02 inches of water reference point)						

EW-04 tests performed at water table on 4/28 and 4/29/97

	Distance	Steady State Soil Vapor Pressure								
	x	at 5cfm	ln at 5 cfm	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm			
EW-02	3.7	-0.11	-2.21	-0.07	-2.66	-0.08	-2.53			
EW-01	55.3	-0.11	-2.21	-0.03	-3.51	-0.06	-2.81			
MW-01	74.6	-0.11	-2.21	-0.06	-2.81	-0.06	-2.81			
EW-03	75	-0.1	-2.30	-0.06	-2.81	-0.06	-2.81			

EW-04 - 5cfm - Water Data/Normal

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.45360276
R Square	0.20575547
Adjusted R	-0.1913668
Standard Er	0.00545749
Observation	4

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1.54317E-05	1.543E-05	0.518116	0.546397237
Residual	2	5.95683E-05	2.978E-05		
Total	3	7.5E-05			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.1110219	0.005602375	-19.81694	0.002537	-0.135127021	-0.0869168	-0.13512702	-0.08691684
X Variable	6.7535E-05	9.38238E-05	0.7198029	0.546397	-0.000336157	0.0004712	-0.00033616	0.000471226

2384.28731 **Calculated Radius of Influence** (0.05 inches of water reference point)

EW-04 - 5cfm - Water Data/Log Normal

SUMMARY OUTPUT

Regression Statistics										
Multiple R	0.45360276									
R Square	0.20575547									
Adjusted R	-0.1913668									
Standard Er	0.05201541									
Observation	4									
ANOVA										
	df	*SS*	*MS*	*F*	*Significance F*					
Regression	1	0.001401817	0.0014018	0.518116	0.546397237					
Residual	2	0.005411206	0.0027056							
Total	3	0.006813023								
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*		
Intercept	-2.1975349	0.053396337	-41.15516	0.00059	-2.427280932	-1.9677888	-2.42728093	-1.96778882		
X Variable	-0.0006437	0.000894236	-0.719803	0.546397	-0.004491263	0.0032039	-0.00449126	0.003203916		
	1231.1598	**Calculated Radius of Influence** (0.05 inches of water reference point)								
EW-04 - 20cfm - Water Data/Normal										
SUMMARY OUTPUT										
Regression Statistics										
Multiple R	0.3318008									
R Square	0.11009177									
Adjusted R	-0.3348623									
Standard Er	0.02001146									
Observation	4									
ANOVA										
	df	*SS*	*MS*	*F*	*Significance F*					
Regression	1	9.90826E-05	9.908E-05	0.247423	0.668199201					
Residual	2	0.000800917	0.0004005							
Total	3	0.0009								
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*		
Intercept	-0.0639243	0.020542736	-3.11177	0.089608	-0.152312601	0.024464	-0.1523126	0.024464044		
X Variable	0.00017113	0.000344032	0.4974161	0.668199	-0.001309125	0.0016514	-0.00130912	0.001651379		
	665.729016	**Calculated Radius of Influence** (0.05 inches of water reference point)								
EW-04 - 20cfm - Water Data/ Log Normal										
SUMMARY OUTPUT										
Regression Statistics										

Multiple R	0.25258312									
R Square	0.06379823									
Adjusted R	-0.4043027									
Standard Er	0.44947286									
Observation	4									
ANOVA										
	df	*SS*	*MS*	*F*	*Significance F*					
Regression	1	0.027534432	0.0275344	0.136292	0.747416882					
Residual	2	0.404051707	0.2020259							
Total	3	0.431586139								
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*		
Intercept	-2.7993908	0.461405642	-6.067093	0.026108	-4.784660449	-0.8141212	-4.78466045	-0.8141212		
X Variable	-0.0028527	0.007727226	-0.369177	0.747417	-0.036100305	0.0303949	-0.03610031	0.030394878		
	66.816792	**Calculated Radius of Influence** (0.05 inches of water reference point)								
EW-04 - 80cfm - Water Data/Normal										
SUMMARY OUTPUT										
Regression Statistics										
Multiple R	0.96179667									
R Square	0.92505283									
Adjusted R	0.88757925									
Standard Er	0.00335292									
Observation	4									
ANOVA										
	df	*SS*	*MS*	*F*	*Significance F*					
Regression	1	0.000277516	0.0002775	24.68546	0.038203332					
Residual	2	2.24842E-05	1.124E-05							
Total	3	0.0003								
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*		
Intercept	-0.0799355	0.003441935	-23.22399	0.001849	-0.094744912	-0.065126	-0.09474491	-0.06512599		
X Variable	0.00028639	5.76426E-05	4.9684469	0.038203	3.83779E-05	0.0005344	3.83779E-05	0.00053441		
	453.694634	**Calculated Radius of Influence** (0.05 inches of water reference point)								
EW-04 - 80cfm - Water Data/Log Normal										
SUMMARY OUTPUT										
Regression Statistics										

Multiple R	0.96179667									
R Square	0.92505283									
Adjusted R	0.88757925									
Standard Er	0.04822875									
Observation	4									
ANOVA										
	df	*SS*	*MS*	*F*	*Significance F*					
Regression	1	0.057418706	0.0574187	24.68546	0.038203332					
Residual	2	0.004652026	0.002326							
Total	3	0.062070731								
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*		
Intercept	-2.5266571	0.049509151	-51.03414	0.000384	-2.739677961	-2.3136363	-2.73967796	-2.3136363		
X Variable	-0.0041195	0.000829137	-4.968447	0.038203	-0.007687012	-0.000552	-0.00768701	-0.00055203		
	112.474913	**Calculated Radius of Influence** (0.05 inches of water reference point)								

EW-04 tests performed at middle of unsaturated zone on 4/28 and 4/29/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5 cfm	ln at 5 cfm	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm	
EW-04	0	-0.11	-2.21	-0.75	-0.29	-4.80	1.57	
SVPM-5	10.1	-0.06	-2.81	-0.11	-2.21	-0.43	-0.84	
SVPM-4	10.9	-0.05	-3.00	-0.14	-1.97	-0.47	-0.76	
SVPM-3	20.1	-0.05	-3.00	-0.07	-2.66	-0.33	-1.11	
EW-05	20.7	-0.06	-2.81	-0.08	-2.53	-0.31	-1.17	
SVPM-2	31.2	-0.07	-2.66	-0.06	-2.81	-0.23	-1.47	
SVPM-1	98	-0.05	-3.00	-0.02	-3.91	-0.06	-2.81	
EW-04 - 5 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.42594407							
R Square	0.18142835							
Adjusted R Square	0.01771402							
Standard Error	0.02130076							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.000502816	0.000502816	1.1082008	0.340664865			
Residual	5	0.002268613	0.000453723					
Total	6	0.002771429						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-0.0719223	0.010837027	-6.636719502	0.001170306	-0.099779727	-0.04406	-0.0997797	-0.04406489
X Variable 1	0.00027988	0.000265861	1.052711166	0.340664865	-0.000403542	0.000963	-0.0004035	0.000963292
	435.631043	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-04 - 5 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								

Regression Statistics								
Multiple R	0.43991908							
R Square	0.1935288							
Adjusted R Square	0.03223456							
Standard Error	0.27951495							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.093742565	0.093742565	1.199849408	0.323287563			
Residual	5	0.390643044	0.078128609					
Total	6	0.48438561						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-2.6786651	0.142206683	-18.83642235	7.76758E-06	-3.044218457	-2.31311	-3.0442185	-2.31311182
X Variable 1	-0.0038215	0.003488711	-1.095376377	0.323287563	-0.012789454	0.005147	-0.0127895	0.005146551
	81.4703164	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-04 - 20 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.47819163							
R Square	0.22866723							
Adjusted R Square	0.07440068							
Standard Error	0.24634134							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.089951157	0.089951157	1.482286537	0.277736421			
Residual	5	0.303420272	0.060684054					
Total	6	0.393371429						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-0.2778549	0.125329196	-2.217000895	0.077419659	-0.600023369	0.044313	-0.6000234	0.044313489
X Variable 1	0.00374337	0.003074661	1.217491904	0.277736421	-0.00416028	0.011647	-0.0041603	0.011647029
	87.5827188	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-04 - 20 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.80886037							

R Square	0.6542551							
Adjusted R Square	0.58510612							
Standard Error	0.70565983							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	4.711423267	4.711423267	9.461529238	0.02759608			
Residual	5	2.48977895	0.49795579					
Total	6	7.201202217						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-1.5995687	0.359013148	-4.455459862	0.00666847	-2.522439837	-0.6767	-2.5224398	-0.6766975
X Variable 1	-0.0270917	0.008807554	-3.075959889	0.02759608	-0.049732186	-0.00445	-0.0497322	-0.00445118
	51.3231792	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-04 - 80 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.43451169							
R Square	0.18880041							
Adjusted R Square	0.02656049							
Standard Error	1.68150991							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.290364979	3.290364979	1.163711194	0.32996533			
Residual	5	14.13737788	2.827475576					
Total	6	17.42774286						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-1.5648993	0.855488924	-1.829245564	0.126890756	-3.764000015	0.634201	-3.764	0.634201376
X Variable 1	0.02264029	0.020987435	1.078754464	0.32996533	-0.031309542	0.07659	-0.0313095	0.07659012
	71.3285641	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-04 - 80 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.80059974							
R Square	0.64095994							

Adjusted R Square	0.56915193							
Standard Error	0.85619233							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	6.54335741	6.54335741	8.926022566	0.030529961			
Residual	5	3.6653265	0.7330653					
Total	6	10.20868391						
	Coefficients	*tandard Error*	*t Stat*	*P-value*	*Lower 95%*	*pper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	-0.070746	0.435598416	-0.162411042	0.877341761	-1.190485538	1.048994	-1.1904855	1.048993552
X Variable 1	-0.0319272	0.010686396	-2.987644987	0.030529961	-0.059397368	-0.00446	-0.0593974	-0.00445695
	91.4348234	**Calculated Radius of Influence** (0.05 inches of water reference point)						

EW-05 tests performed at water table on 4/23/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5cfm	ln at 5	at 20 cf	ln at 20 cfm	at 80 cfm	ln at 80 cfm	
EW-02	21.2	0.02	3.91	0.07	2.66	0.04	3.22	
EW-01	64	0.02	3.91	0.05	3.00	0.01	4.61	
MW-01	74.6	0.003	5.81	0.03	3.51	0.01	4.61	
EW-03	75	0.02	3.91	0.05	3.00	0.02	3.91	
EW-05 - 5cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.41546377							
R Square	0.17261015							
Adjusted R Square	-0.2410848							
Standard Error	0.00946934							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.74132E-05	4E-05	0.4172	0.584536226			
Residual	2	0.000179337	9E-05					
Total	3	0.00021675						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.02387489	0.01343996	1.776	0.2176	-0.033952631	0.0817024	-0.03395263	0.081702411
X Variable 1	-0.0001384	0.000214282	-0.65	0.5845	-0.001060397	0.0007836	-0.0010604	0.000783569
	27.9949686	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-05 - 5cfm - Water Data/Log Normal								
SUMMARY OUTPUT								

Regression Statistics								
Multiple R	0.41546377							
R Square	0.17261015							
Adjusted R Square	-0.2410848							
Standard Error	1.05673363							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.465926256	0.466	0.4172	0.584536226			
Residual	2	2.233371922	1.117					
Total	3	2.699298178						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	3.47960353	1.499836281	2.32	0.1461	-2.973675631	9.9328827	-2.97367563	9.932882692
X Variable 1	0.01544633	0.023912897	0.646	0.5845	-0.087442636	0.1183353	-0.08744264	0.118335292
	-478.40518	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-05 - 20cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.85446234							
R Square	0.7301059							
Adjusted R Square	0.59515885							
Standard Error	0.01039027							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.000584085	6E-04	5.4103	0.145537656			
Residual	2	0.000215915	1E-04					
Total	3	0.0008						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.08210278	0.014747046	5.567	0.0308	0.018651324	0.1455542	0.018651324	0.145554243
X Variable 1	-0.0005469	0.000235122	-2.33	0.1455	-0.001558545	0.0004648	-0.00155855	0.000464753
	58.7	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-05 - 20cfm - Water Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.77517805							

R Square	0.60090101							
Adjusted R Square	0.40135151							
Standard Error	0.27045552							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.220264235	0.22	3.0113	0.22482195			
Residual	2	0.146292373	0.073					
Total	3	0.366556608						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.41590632	0.38386116	6.294	0.0243	0.7642839	4.0675287	0.7642839	4.067528732
X Variable 1	0.01062035	0.006120156	1.735	0.2248	-0.01571258	0.0369533	-0.01571258	0.036953271
	-509.01415	**Calculated Radius of Influence** (0.05 inches of water reference point)						
EW-05 - 80cfm - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.88872238							
R Square	0.78982746							
Adjusted R Square	0.6847412							
Standard Error	0.00794051							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.000473896	5E-04	7.516	0.111277622			
Residual	2	0.000126104	6E-05					
Total	3	0.0006						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.04891655	0.011270078	4.34	0.0492	0.000425285	0.0974078	0.000425285	0.097407819
X Variable 1	-0.0004926	0.000179686	-2.74	0.1113	-0.001265745	0.0002805	-0.00126574	0.000280513
	58.7	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-05 - 80cfm - Water Data/ Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.8010109							
R Square	0.64161845							

Adjusted R Square	0.46242768							
Standard Error	0.48657482							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.84773568	0.848	3.5806	0.198989105			
Residual	2	0.473510108	0.237					
Total	3	1.321245788						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.86228574	0.690602198	4.145	0.0536	-0.109137762	5.8337092	-0.10913776	5.83370924
X Variable 1	0.02083516	0.011010735	1.892	0.199	-0.026540238	0.0682106	-0.02654024	0.068210564
	-325.04117	**Calculated Radius of Influence** (0.02 inches of water reference point)						

EW-05 tests performed at middle of unsaturated zone on 4/23/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5 cfm	ln at 5 cfm	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm	
EW-05	0	-0.25	-1.39	-1.40	0.34	-8.30	2.12	
SVPM 5	11.7	-0.04	-3.22	-0.11	-2.21	-0.43	-0.84	
EW-04	20.7	-0.01	-4.61	-0.08	-2.53	-0.28	-1.27	
SVPM 4	30.4	-0.02	-3.91	-0.04	-3.22	-0.21	-1.56	
SVPM 3	39.6	-0.01	-4.61	-0.04	-3.22	-0.17	-1.77	
SVPM 2	50.9	-0.01	-4.61	-0.03	-3.51	-0.13	-2.04	
SVPM 1	117.6	-0.01	-4.61	-0.02	-3.91	-0.03	-3.51	

EW-05 - 5 cfm - Unsaturated Data/Normal

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.49307638
R Square	0.24312432
Adjusted R Square	0.09174918
Standard Error	0.08470644
Observations	7

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.011524093	0.011524	1.606105	0.260857069
Residual	5	0.035875907	0.007175		
Total	6	0.0474			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.0938054	0.047114605	-1.991	0.103118	-0.214917111	0.0273064	-0.21491711	0.027306387
X Variable 1	0.00113192	0.00089316	1.267322	0.260857	-0.001164016	0.0034279	-0.00116402	0.003427859

100.541744 **Calculated Radius of Influence** (0.02 inches of water reference point)

EW-05 - 5 cfm - Unsaturated Data/Log Normal

SUMMARY OUTPUT

Regression Statistics								
Multiple R	0.59786526							
R Square	0.35744287							
Adjusted R Square	0.22893145							
Standard Error	1.0606015							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	3.128739328	3.128739	2.781409	0.156238326			
Residual	5	5.624377758	1.124876					
Total	6	8.753117086						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-3.1264815	0.589917589	-5.29986	0.003192	-4.642910438	-1.6100525	-4.64291044	-1.61005252
X Variable 1	-0.0186508	0.011183176	-1.66776	0.156238	-0.04739803	0.0100964	-0.04739803	0.010096416
	42.0098994	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-05 - 20 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.480653							
R Square	0.23102731							
Adjusted R Square	0.07723277							
Standard Error	0.48987407							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.360488409	0.360488	1.502181	0.274912241			
Residual	5	1.19988302	0.239977					
Total	6	1.560371429						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.4907162	0.272473053	-1.80097	0.131593	-1.191129378	0.2096969	-1.19112938	0.209696893
X Variable 1	0.0063308	0.005165322	1.225635	0.274912	-0.006947061	0.0196087	-0.00694706	0.019608661
	80.6716764	**Calculated Radius of Influence** (0.02 inches of water reference point)						
EW-05 - 20 cfm - Unsaturated Data/Log Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.71435345							

R Square	0.51030085							
Adjusted R Square	0.41236101							
Standard Error	1.08822701							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	6.170295196	6.170295	5.21035	0.071304152			
Residual	5	5.921190162	1.184238					
Total	6	12.09148536						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.593928	0.605283184	-2.63336	0.046345	-3.149855429	-0.0380006	-3.14985543	-0.0380006
X Variable 1	-0.0261918	0.011474465	-2.28262	0.071304	-0.055687836	0.0033042	-0.05568784	0.003304169
	88.4272557	**Calculated Radius of Influence** (0.02 inches of water reference point)						

EW-05 - 80 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.47181833							
R Square	0.22261253							
Adjusted R Square	0.06713504							
Standard Error	2.9563819							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	12.51420177	12.5142	1.431799	0.285109253			
Residual	5	43.70096965	8.740194					
Total	6	56.21517143						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.8078146	1.644370363	-1.70753	0.148429	-7.034796274	1.4191671	-7.03479627	1.419167085
X Variable 1	0.03730049	0.031172632	1.196578	0.285109	-0.042831182	0.1174322	-0.04283118	0.117432158
	75.8117321	**Calculated Radius of Influence** (0.02 inches of water reference point)						

EW-05 - 80 cfm - Unsaturated Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.82082369							
R Square	0.67375153							

Adjusted R Square	0.60850184							
Standard Error	1.07102546							
Observations	7							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	11.8446131	11.84461	10.32574	0.023639727			
Residual	5	5.73547764	1.147096					
Total	6	17.58009074						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.13579854	0.595715499	0.227959	0.828707	-1.395534403	1.6671315	-1.3955344	1.667131475
X Variable 1	-0.0362889	0.011293088	-3.21337	0.02364	-0.065318625	-0.0072591	-0.06531862	-0.0072591
	111.488707	**Calculated Radius of Influence** (0.02 inches of water reference point)						

IW-01 tests performed at water table on 4/29, 4/30, and 5/21/97									
	Initial Water Level (feet)	Steady State Water Level from three consecutive readings with less than 10% difference for each of the wells.							
		at10 cfm	at 20 cfm	at 30 cfm	at 60 cfm				
EW-01	58.21	56.28	55.77	54.6	52.2				
EW-03	58.1	58.06	58.08	58.02	58.16				
MW-01	59.28	59.21	59.21	59.13	59.24				
EW-02	58.83	58.78	58.8	58.71	58.82				
27-S3	56.91	56.93	56.9	56.81	56.94				
	Distance (feet) from IW-01	Groundwater Elevation Change (feet) = Initial Water Level - Steady State Water Level							
	x	Delta at 10 cfm	Delta at 20 cfm	Delta at 30 cfm	Delta at 60 cfm				
EW-01	7.8	1.93	2.44	3.54	0.06				
EW-03	20	0.04	0.02	-0.02	0.07				
MW-01	30	0.07	0.07	0.04	0.04				
EW-02	39.7	0.05	0.03	0.06	0.05				
27-S3	98	-0.02	0.01	0.09	0.11				
Note: A 1.93 groundwater elevation change indicates water level increased or rose 1.93 feet.									
	Distance (feet) from IW-01	Steady State Soil Vapor Pressure (inches of water)							
	x	SVP at 10 cfm	SVP at 20 cfm	SVP at 30 cfm	SVP at 60 cfm				
EW-01	7.8	0.43	0.82	0.82	2.4				
EW-03	20	0.31	0.59	0.81	1.4				
MW-01	30	0.68	1.3	2.2	4.8				
EW-02	39.7	0.13	0.21	0.33	0.68				
27-S3	98	-	-	-	-				
	Distance (feet) from IW-01	Hydrostatic Head = Groundwater Elevation Change + (Soil Vapor Pressure/12 feet)							
	x	Delta at 10 cfm	In at 10 cfm	Delta at 20 cfm	In at 20 cfm	Delta at 30 cfm	In at 30 cfm	Delta at 60	In at 60
EW-01	7.8	1.97	0.68	3.61	1.28	3.61	1.28	0.26	-1.35
EW-03	20	0.07	-2.72	0.05	-3.05	0.05	-3.05	0.19	-1.68
MW-01	30	0.13	-2.07	0.22	-1.50	0.22	-1.50	0.44	-0.82
EW-02	39.7	0.06	-2.80	0.09	-2.44	0.09	-2.44	0.11	-2.24
27-S3	98	-0.02	-3.91	0.01	-4.61	0.09	-2.41	0.11	-2.21
IW-01 - 10 cfm - Water Data/Normal									
SUMMARY OUTPUT									

Regression Statistics									
Multiple R	0.54410597								
R Square	0.296051307								
Adjusted R Square	0.061401743								
Standard Error	0.827996797								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	0.864976969	0.864976969	1.261674224	0.343112122				
Residual	3	2.056736087	0.685578696						
Total	4	2.921713056							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	0.959493345	0.592582464	1.619172694	0.203846496	-0.926370298	2.845356988	-0.9263703	2.845357	
X Variable 1	-0.013290537	0.011832293	-1.123242727	0.343112122	-0.050946211	0.024365136	-0.0509462	0.0243651	
	68.43164569	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 10 cfm - Water Data/Log Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.757744004								
R Square	0.574175975								
Adjusted R Square	0.432234634								
Standard Error	1.296599412								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	6.800608153	6.800608153	4.045163792	0.137815488				
Residual	3	5.043510104	1.681170035						
Total	4	11.84411826							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	-0.70740471	0.927952955	-0.762328204	0.501321335	-3.660567934	2.245758514	-3.6605679	2.2457585	
X Variable 1	-0.037266117	0.018528749	-2.011259255	0.137815488	-0.09623292	0.021700686	-0.0962329	0.0217007	
	61.251224	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 20 cfm - Water Data/Normal									
SUMMARY OUTPUT									
Regression Statistics									

Multiple R	0.522932034								
R Square	0.273457912								
Adjusted R Square	0.031277216								
Standard Error	1.549758227								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	2.711932478	2.711932478	1.129148264	0.365913307				
Residual	3	7.205251688	2.401750563						
Total	4	9.917184167							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	1.715478741	1.109134181	1.546682782	0.219672464	-1.814284547	5.245242028	-1.8142845	5.245242	
X Variable 1	-0.023533131	0.022146455	-1.062613883	0.365913307	-0.094013101	0.04694684	-0.0940131	0.0469468	
	70.77166092	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 20 cfm - Water Data/Log Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.788430056								
R Square	0.621621954								
Adjusted R Square	0.495495939								
Standard Error	1.551507702								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	11.86395636	11.86395636	4.928578392	0.113038958				
Residual	3	7.221528451	2.40717615						
Total	4	19.08548481							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	-0.136269708	1.110386249	-0.122722798	0.91008641	-3.670017638	3.397478223	-3.6700176	3.3974782	
X Variable 1	-0.049221522	0.022171456	-2.220040178	0.113038958	-0.119781055	0.021338011	-0.1197811	0.021338	
	57.97728657	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 30 cfm - Water Data/Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.504625868								

R Square	0.254647266								
Adjusted R Square	0.006196355								
Standard Error	1.560123978								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	2.494690355	2.494690355	1.024939958	0.385909367				
Residual	3	7.301960478	2.433986826						
Total	4	9.796650833							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	1.693854947	1.116552763	1.517039771	0.226533323	-1.859517601	5.247227496	-1.8595176	5.2472275	
X Variable 1	-0.022570885	0.022294584	-1.012393184	0.385909367	-0.09352227	0.048380499	-0.0935223	0.0483805	
	72.83076971	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 30 cfm - Water Data/Log Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.464981751								
R Square	0.216208028								
Adjusted R Square	-0.045055962								
Standard Error	1.753347917								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	2.544066525	2.544066525	0.827546222	0.430052293				
Residual	3	9.222686751	3.074228917						
Total	4	11.76675328							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	-0.730173829	1.254839672	-0.581886152	0.601484727	-4.723637453	3.263289796	-4.7236375	3.2632898	
X Variable 1	-0.022793158	0.025055806	-0.909695675	0.430052293	-0.102531989	0.056945673	-0.102532	0.0569457	
	99.14493513	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 60 cfm - Water Data/Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.474877967								
R Square	0.225509083								

Adjusted R Square	-0.032654556								
Standard Error	0.140122108								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	0.017150717	0.017150717	0.873512181	0.418930076				
Residual	3	0.058902616	0.019634205						
Total	4	0.076053333							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	0.293840899	0.100282881	2.930120231	0.060994742	-0.025304285	0.612986083	-0.0253043	0.6129861	
X Variable 1	-0.001871464	0.002002382	-0.934618736	0.418930076	-0.008243943	0.004501015	-0.0082439	0.004501	
	130.2942153	**Calculated Radius of Influence** (0.05 inches of water reference point)							
IW-01 - 60 cfm - Water Data/Log Normal									
SUMMARY OUTPUT									
Regression Statistics									
Multiple R	0.592220338								
R Square	0.350724929								
Adjusted R Square	0.134299905								
Standard Error	0.557453113								
Observations	5								
ANOVA									
	df	*SS*	*MS*	*F*	*Significance F*				
Regression	1	0.503588554	0.503588554	1.620537784	0.292709982				
Residual	3	0.932261918	0.310753973						
Total	4	1.435850473							
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95%*	
Intercept	-1.261850557	0.398959199	-3.162856149	0.050759226	-2.531517978	0.007816864	-2.531518	0.0078169	
X Variable 1	-0.01014094	0.007966152	-1.27300345	0.292709982	-0.035492816	0.015210937	-0.0354928	0.0152109	
	170.4131488	**Calculated Radius of Influence** (0.05 inches of water reference point)							

IW-01/EW-02 tests performed at water table on 4/30 and 5/1/97								
	X	Y = Steady State Soil Vapor Pressures at Ratio of Air Extraction Rate to Air Injection Rate						
	Distance from IW-01	SVP at 1.5 Ratio	SVP at 2.0 Ratio	SVP at 3.0 Ratio				
EW-01	11	0.21	0.17	-0.33				
EW-03	20	0.05	0.03	-0.38				
MW-01	31	1	1.2	1				
EW-02	39	-4.3	-5.9	-12				
IW-01/EW-02 - 1.5 Ratio (30 cfm Extraction Rate/20 cfm Injection Rate) - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.64124293							
R Square	0.411192495							
Adjusted R Square	0.116788742							
Standard Error	2.25198977							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	7.083284152	7.083284152	1.396695834	0.35875707			
Residual	2	10.14291585	5.071457924					
Total	3	17.2262						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	2.398271673	2.899912235	0.827015261	0.495192301	-10.07905231	14.875596	-10.0790523	14.87559565
X Variable 1	-0.125080066	0.105836918	-1.181818867	0.35875707	-0.580459887	0.3302998	-0.58045989	0.330299754
	18.77414798	**Calculated Radius of Influence** (0.05 inches of water reference point)						
IW-01/EW-02 - 2.0 Ratio (40 cfm Extraction Rate/20 cfm Injection Rate) - Water Data/Normal								
SUMMARY OUTPUT								

Regression Statistics								
Multiple R	0.64604474							
R Square	0.417373806							
Adjusted R Square	0.126060709							
Standard Error	3.015627354							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	13.02928332	13.02928332	1.432732722	0.35395526			
Residual	2	18.18801668	9.094008338					
Total	3	31.2173						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	3.158437327	3.883256832	0.813347524	0.501448389	-13.54987991	19.866755	-13.5498799	19.86675457
X Variable 1	-0.169641082	0.141725646	-1.196968138	0.35395526	-0.779437743	0.4401556	-0.77943774	0.440155579
	18.32361174	**Calculated Radius of Influence** (0.05 inches of water reference point)						
IW-01/EW-02 - 3.0 Ratio (60 cfm Extraction Rate/20 cfm Injection Rate) - Water Data/Normal								
SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.680585755							
R Square	0.46319697							
Adjusted R Square	0.194795455							
Standard Error	5.457575169							
Observations	4							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	51.40202155	51.40202155	1.725761385	0.319414244			
Residual	2	59.57025345	29.78512673					
Total	3	110.972275						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5.58039757	7.027780151	0.794048398	0.510416515	-24.65772093	35.818516	-24.6577209	35.81851607
X Variable 1	-0.336946438	0.256490035	-1.313682376	0.319414244	-1.440534755	0.7666419	-1.44053476	0.766641879
	16.41328395	**Calculated Radius of Influence** (0.05 inches of water reference point)						

EW-01 tests performed at water table on 4/21, 4/22, and 4/25/97											
	Distance	Steady State Soil Vapor Pressure									
	x	at 5 cfm	ln at 5 cfm	at 10 cfm	ln at 10 cfm	at 20 cfm	ln at 20 cfm	at 40 cfm	ln at 40 cfm	80 cfm	ln at 80 cfm
EW-01	0	-0.86	-0.15082289	-1.5	0.405465108	-4.7	1.54756251	-14	2.63905733	-25	3.21887582
MW-01	21.3	-0.2	-1.609437912	-0.36	-1.021651248	-0.88	-0.1278334	-1.6	0.47000363	-3.2	1.16315081
EW-03	27.5	-0.11	-2.207274913	-0.18	-1.714798428	-0.48	-0.7339692	-0.96	-0.040822	-1.5	0.40546511
EW-02	44	-0.11	-2.207274913	-0.15	-1.897119985	-0.35	-1.0498221	-0.82	-0.1984509	-1.3	0.26236426

	Distance	Natural Log of Steady State Soil Vapor Pressure				
	x	SVP at 5 cfm	SVP at 10 cfm	SVP at 20 cfm	SVP at 40 cfm	SVP at 80 cfm
EW-01	0	-0.15	0.41	1.55	2.64	3.22
MW-01	21.3	-1.61	-1.02	-0.13	0.47	1.16
EW-03	27.5	-2.21	-1.71	-0.73	-0.04	0.41
EW-02	44	-2.21	-1.90	-1.05	-0.20	0.26

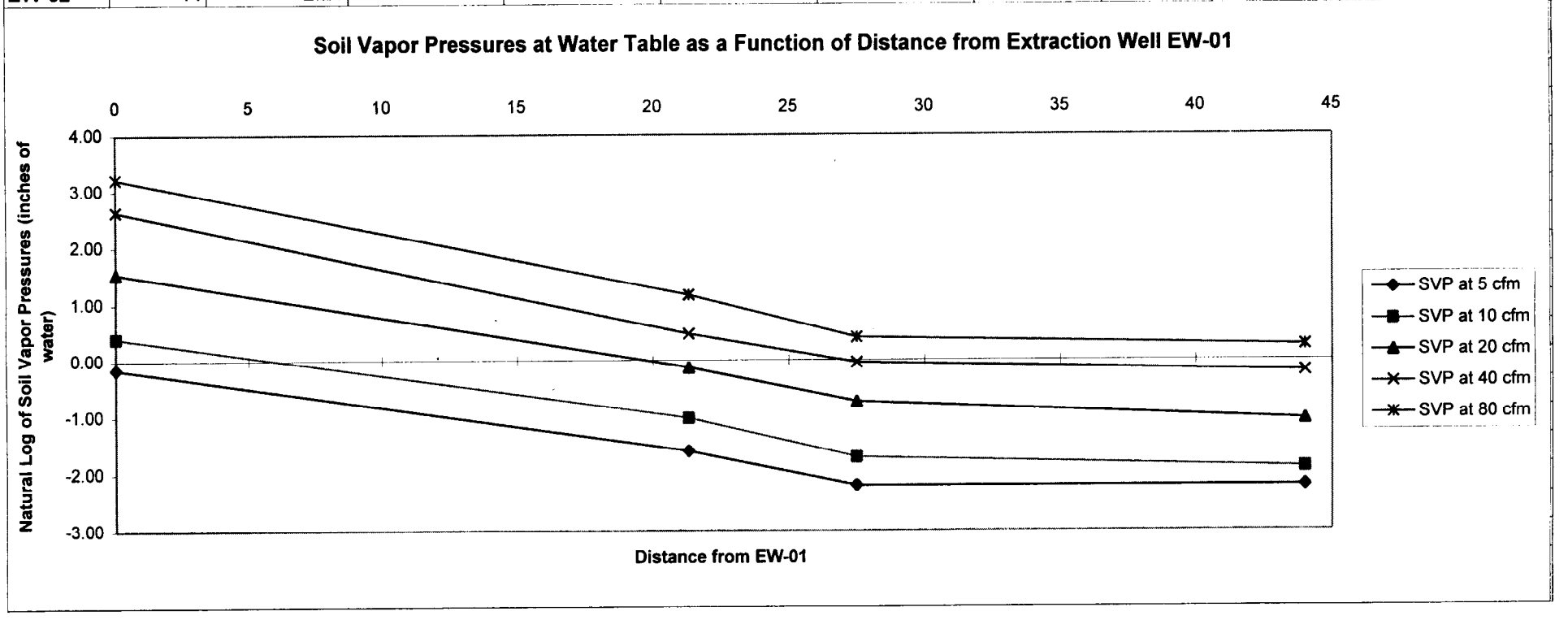
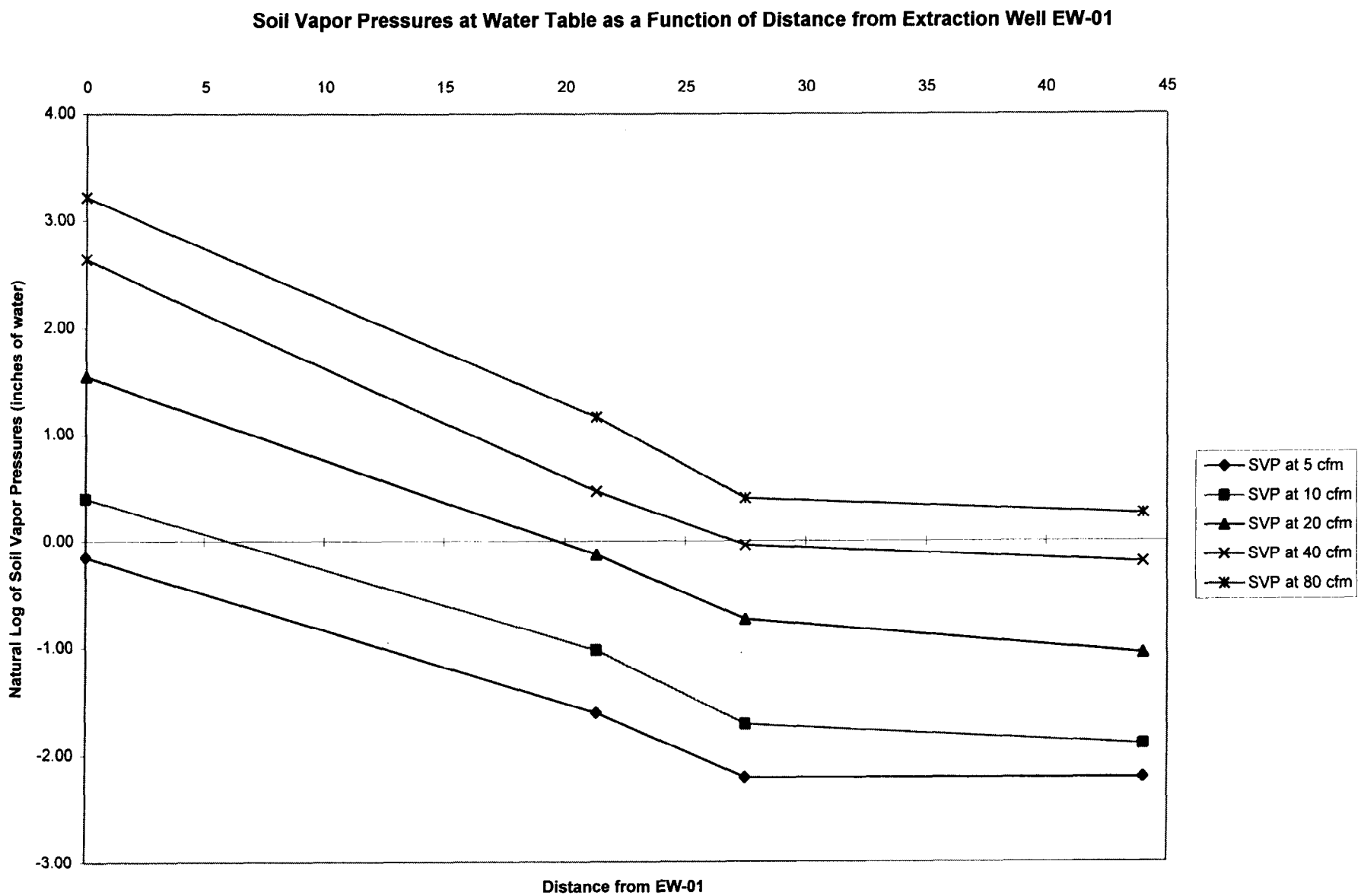


FIGURE 2



BP9701W AS.CH Chart 1

10/9/97 7:23 PM

EW-01 tests performed at middle of unsaturated zone on 4/21, 4/22, and 4/25/97											
	Distance	Steady State Soi Vapor Pressure									
	x	at 5 cfm	ln 5 cfm	at 10 cfm	ln 10 cfm	at 20 cfm	ln 20 cfm	at 40 cfm	ln 40 cfm	at 80 cfm	ln 80 cfm
SVPM 2	16.8	-0.007	-4.962	-0.020	-3.912	-0.030	-3.507	-0.060	-2.813	-0.070	-2.659
SVPM 3	25.9	-0.007	-4.962	-0.020	-3.912	-0.030	-3.507	-0.050	-2.996	-0.060	-2.813
SVPM 1	61	-0.007	-4.962	-0.010	-4.605	-0.020	-3.912	-0.080	-2.526	-0.110	-2.207
SVPM 4	35.1	-		-0.020	-3.912	-0.030	-3.507	-0.060	-2.813	-0.050	-2.996
EW-04	45	-		-0.010	-4.605	-0.030	-3.507	-0.060	-2.813	-0.060	-2.813
SVPM 5	53.3	-		-0.020	-3.912	-0.030	-3.507	-0.050	-2.996	-0.050	-2.996
EW-O5	64	-		-0.020	-3.912	-0.030	-3.507	-0.050	-2.996	-0.050	-2.996

EW-01 tests performed at middle of unsaturated zone on 4/21, 4/22, and 4/25/97						
	Distance	Natural Log of Steady State Soi Vapor Pressure				
	x	SVP at 5 cfm	SVP at 10 cfm	SVP at 20 cfm	SVP at 40 cfm	SVP at 80 cfm
SVPM 2	16.8	-4.96	-3.91	-3.51	-2.81	-2.66
SVPM 3	25.9	-4.96	-3.91	-3.51	-3.00	-2.81
SVPM 1	61	-4.96	-4.61	-3.91	-2.53	-2.21
SVPM 4	35.1		-3.91	-3.51	-2.81	-3.00
EW-04	45		-4.61	-3.51	-2.81	-2.81
SVPM 5	53.3		-3.91	-3.51	-3.00	-3.00
EW-O5	64		-3.91	-3.51	-3.00	-3.00

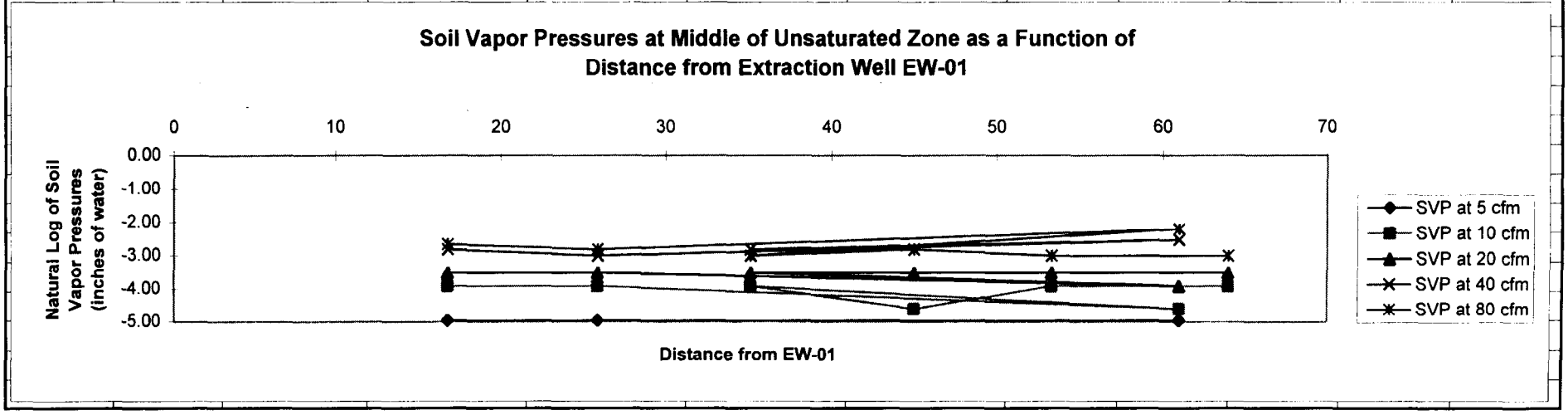
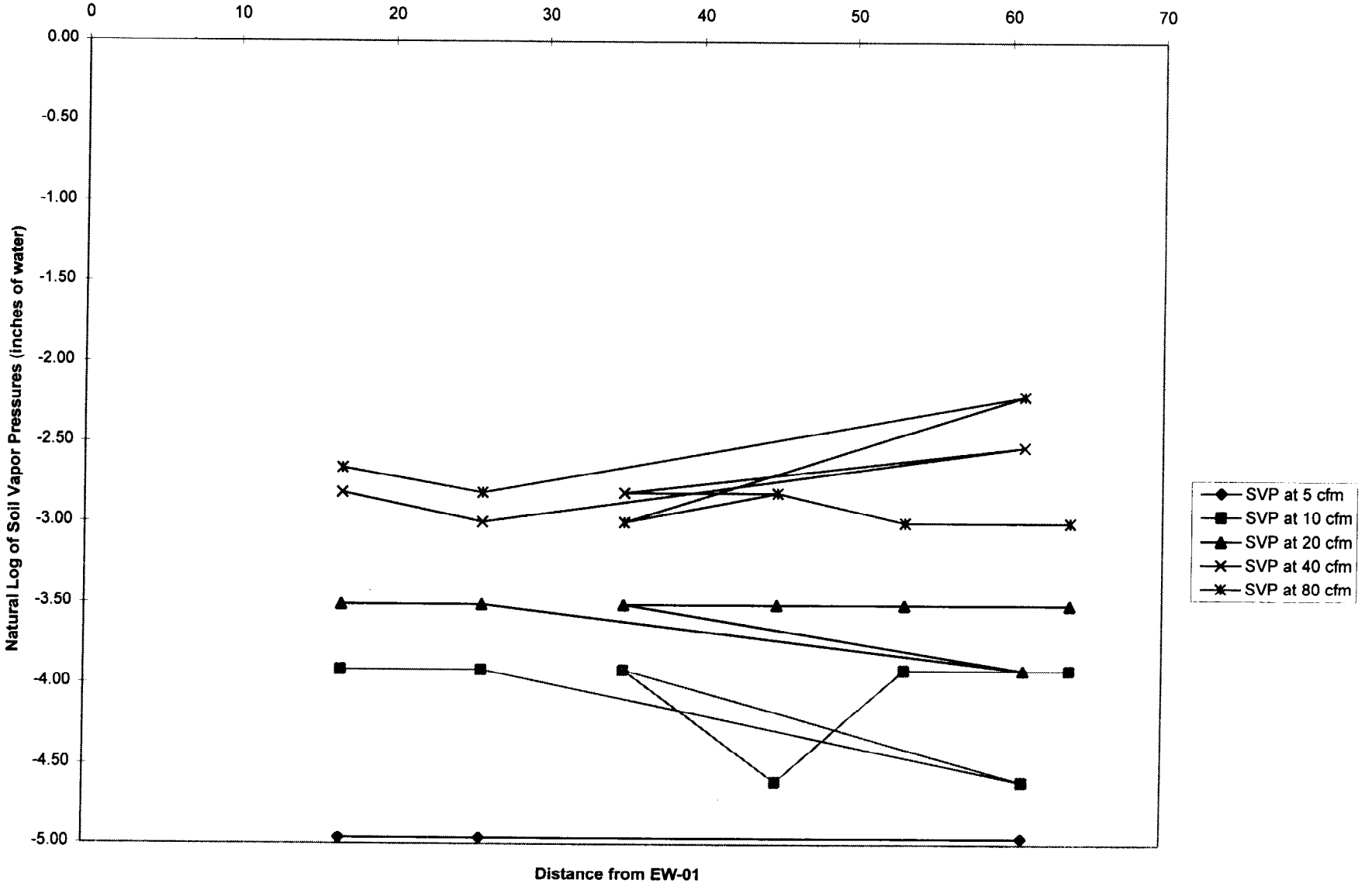


FIGURE 3

Soil Vapor Pressures at Middle of Unsaturated Zone as a Function of Distance from Extraction Well EW-01



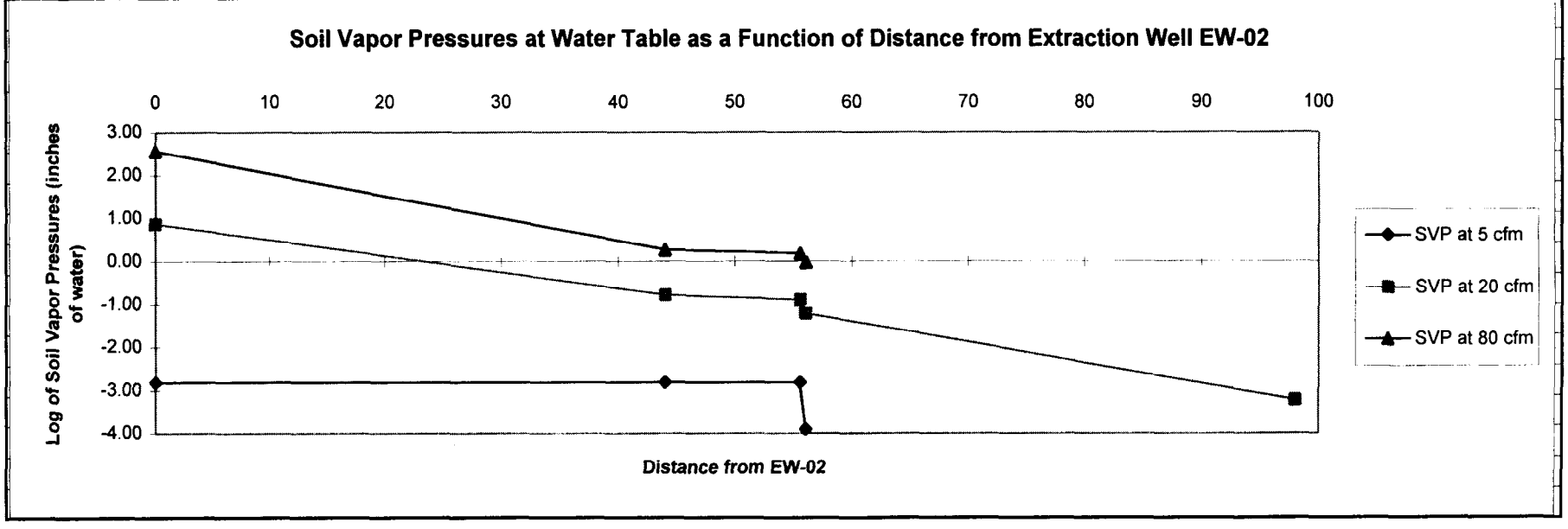
BP9701M AS.CH Chart 1

10/9/97 7:23 PM

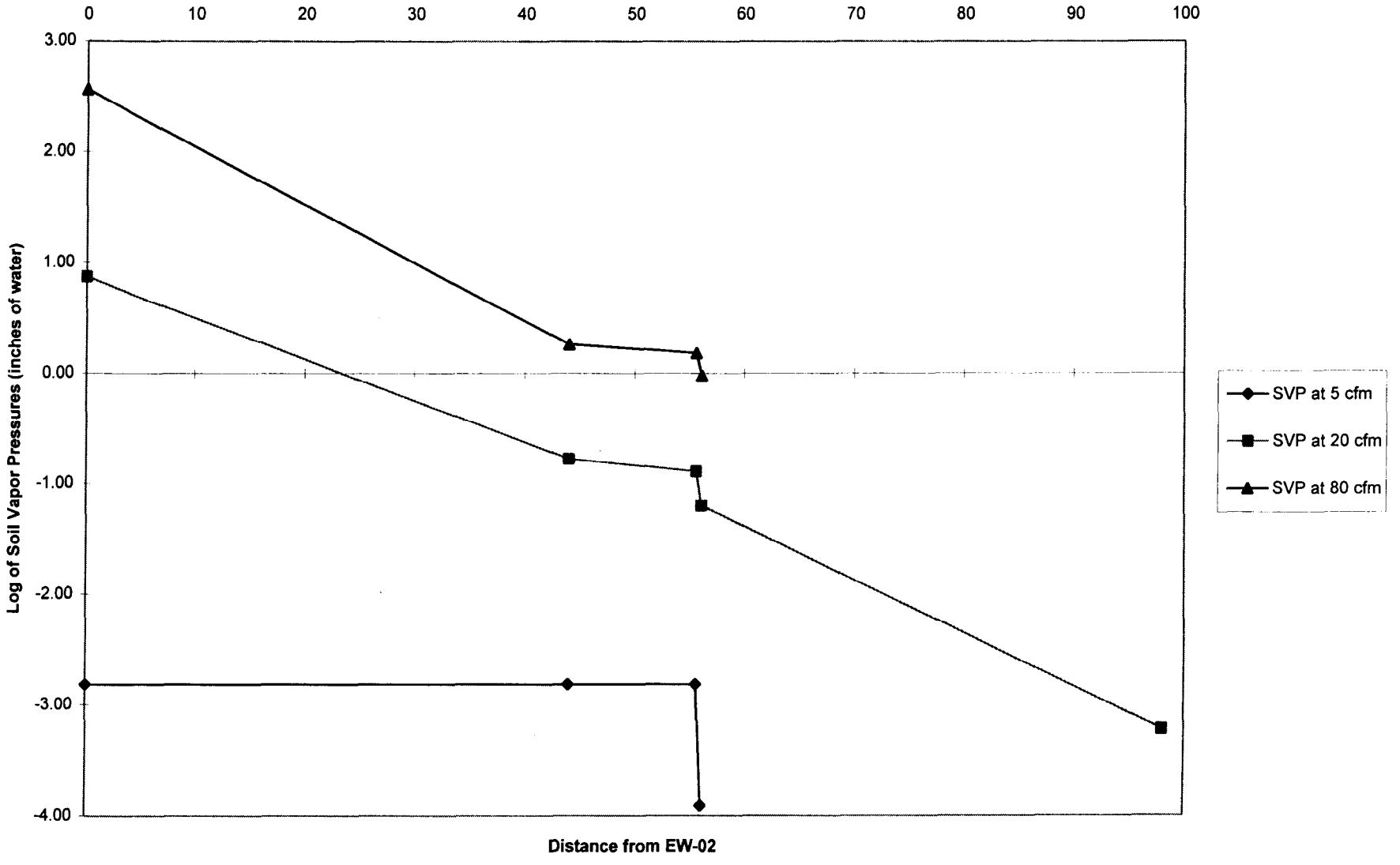
EW-02 tests performed at water table on 4/24/97

	Distance	Steady State Soil Vapor Pressure					
	x	at 5cfm	ln at 5 cfm	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm
EW-02	0	-0.06	-2.813410717	-2.4	0.87546874	-13	2.56494936
EW-01	44	-0.06	-2.813410717	-0.46	-0.7765288	-1.3	0.26236426
EW-03	55.6	-0.06	-2.813410717	-0.41	-0.8915981	-1.2	0.18232156
MW-01	56.1	-0.02	-3.912023005	-0.3	-1.2039728	-0.98	-0.0202027
27-S3	98			-0.04	-3.2188758		

	Distance	Natural Log of Steady State Soil Vapor Pressure		
	x	SVP at 5 cfm	SVP at 20 cfm	SVP at 80 cfm
EW-02	0	-2.81	0.88	2.56
EW-01	44	-2.81	-0.78	0.26
EW-03	55.6	-2.81	-0.89	0.18
MW-01	56.1	-3.91	-1.20	-0.02
27-S3	98		-3.22	



Soil Vapor Pressures at Water Table as a Function of Distance from Extraction Well EW-02



EW-05 tests performed at water table on 4/23/97								
	Distance	Steady State Soil Vapor Pressure						
	x	at 5cfm	ln at 5 cfm	at 20 cfm	n at 20 cf	at 80 cfm	n at 80 cfm	
EW-02	21.2	0.020	3.912	0.070	2.659	0.040	3.219	
EW-01	64	0.020	3.912	0.050	2.996	0.010	4.605	
MW-01	74.6	0.003	5.809	0.030	3.507	0.010	4.605	
EW-03	75	0.020	3.912	0.050	2.996	0.020	3.912	
	Distance	Natural Log of Steady State Soil Vapor Pressure						
	x	SVP at 5 cfm	SVP at 20 cfm	SVP at 80 cfm				
EW-02	21.2	3.91	2.66	3.22				
EW-01	64	3.91	3.00	4.61				
MW-01	74.6	5.81	3.51	4.61				
EW-03	75	3.91	3.00	3.91				

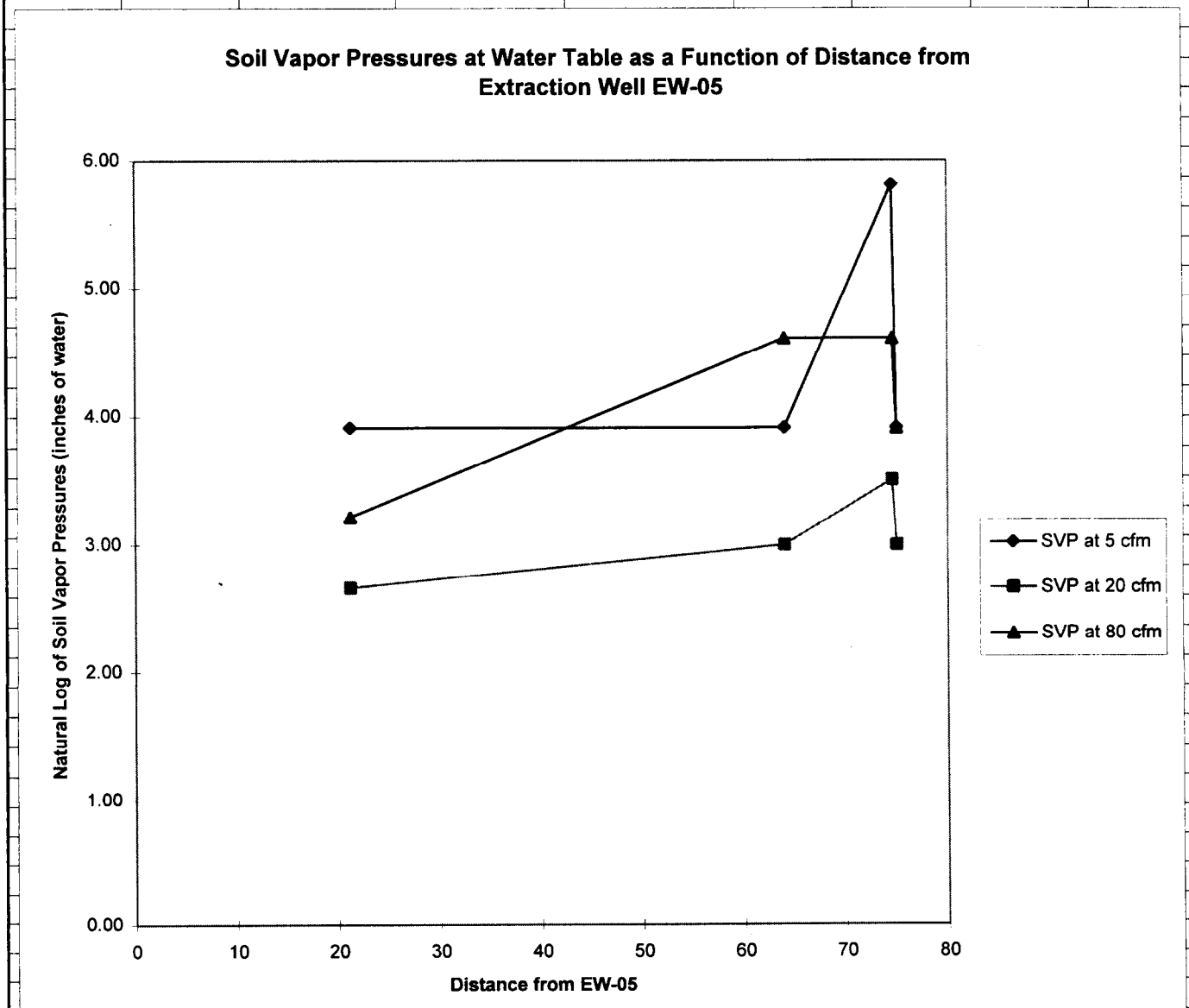
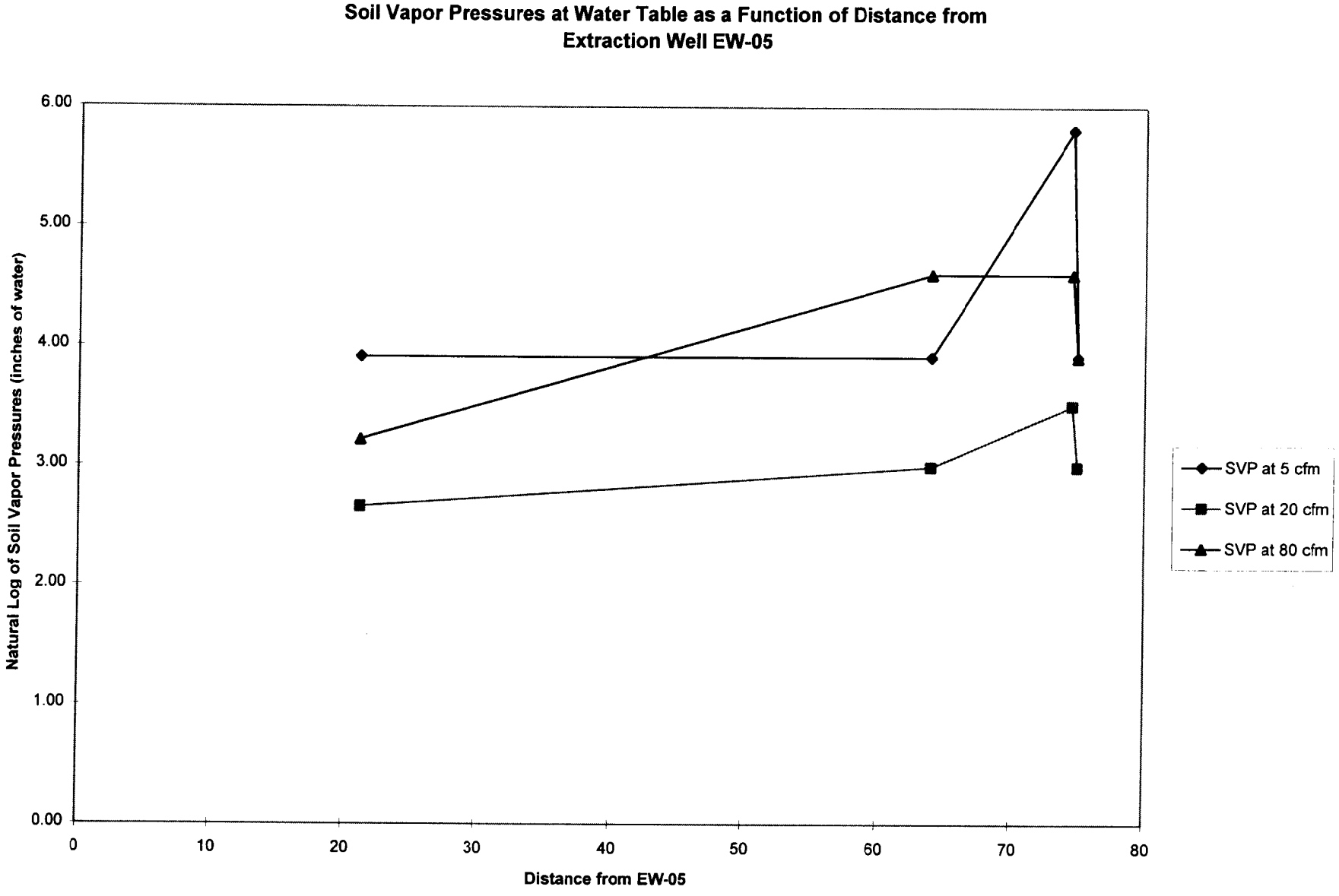


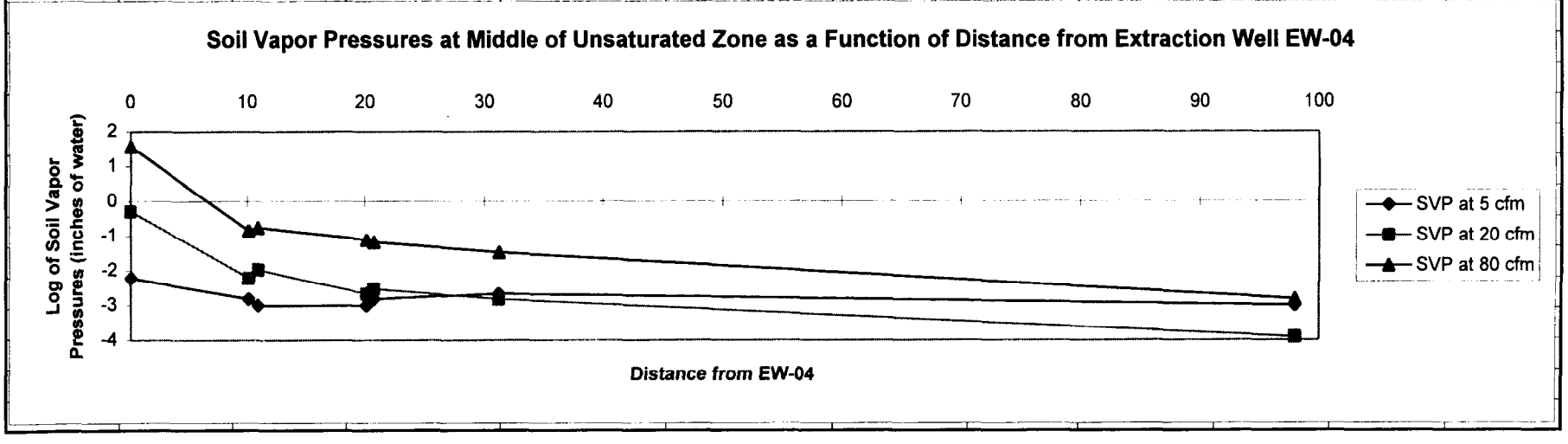
FIGURE 4


Soil Vapor Pressures at Water Table as a Function of Distance from Extraction Well EW-05
Natural Log of Soil Vapor Pressures (inches of water)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
0
10
20
30
40
50
60
70
80
Distance from EW-05
SVP at 5 cfm
SVP at 20 cfm
SVP at 80 cfm

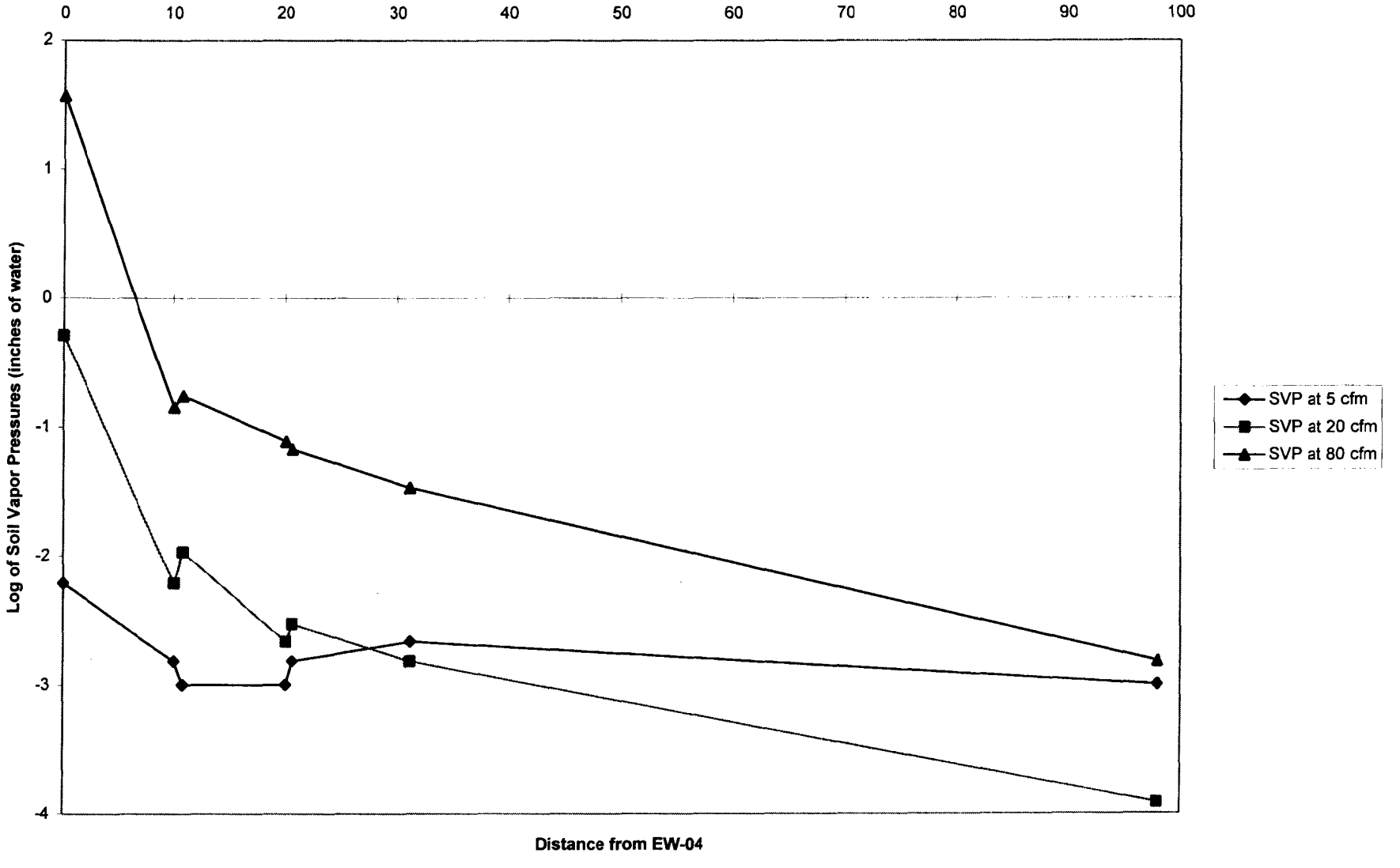
EW-04 tests performed at middle of unsaturated zone on 4/28 and 4/29/97

	Distance	Steady State Soil Vapor Pressure					
	x	at 5 cfm	ln at 5 cfm	at 20 cfm	ln at 20 cfm	at 80 cfm	ln at 80 cfm
EW-04	0	-0.11	-2.207274913	-0.75	-0.2876821	-4.8	1.56861592
SVPM-5	10.1	-0.06	-2.813410717	-0.11	-2.2072749	-0.43	-0.8439701
SVPM-4	10.9	-0.05	-2.995732274	-0.14	-1.9661129	-0.47	-0.7550226
SVPM-3	20.1	-0.05	-2.995732274	-0.07	-2.65926	-0.33	-1.1086626
EW-05	20.7	-0.06	-2.813410717	-0.08	-2.5257286	-0.31	-1.171183
SVPM-2	31.2	-0.07	-2.659260037	-0.06	-2.8134107	-0.23	-1.469676
SVPM-1	98	-0.05	-2.995732274	-0.02	-3.912023	-0.06	-2.8134107

	Distance	Natural Log of Steady State Soil Vapor Pressure		
	x	SVP at 5 cfm	SVP at 20 cfm	SVP at 80 cfm
EW-04	0	-2.20727491	-0.287682072	1.568615918
SVPM-5	10.1	-2.81341072	-2.207274913	-0.84397007
SVPM-4	10.9	-2.99573227	-1.966112856	-0.755022584
SVPM-3	20.1	-2.99573227	-2.659260037	-1.108662625
EW-05	20.7	-2.81341072	-2.525728644	-1.171182982
SVPM-2	31.2	-2.65926004	-2.813410717	-1.46967597
SVPM-1	98	-2.99573227	-3.912023005	-2.813410717



Soil Vapor Pressures at Middle of Unsaturated Zone as a Function of Distance from Extraction Well EW-04



EW-05 tests performed at middle of unsaturated zone on 4/23/97											
	Distance	Steady State Soil Vapor Pressure									
	x	at 5 cfm	ln at 5 cfm	at 20 cfm	ln at 20 cf	at 80 cfm	ln at 80 cfm				
EW-05	0	-0.25	-1.386294361	-1.4	0.336472	-8.3	2.116256				
SVPM 5	11.7	-0.04	-3.218875825	-0.11	-2.20727	-0.43	-0.84397				
EW-04	20.7	-0.01	-4.605170186	-0.08	-2.52573	-0.28	-1.27297				
SVPM 4	30.4	-0.02	-3.912023005	-0.04	-3.21888	-0.21	-1.56065				
SVPM 3	39.6	-0.01	-4.605170186	-0.04	-3.21888	-0.17	-1.77196				
SVPM 2	50.9	-0.01	-4.605170186	-0.03	-3.50656	-0.13	-2.04022				
SVPM 1	117.6	-0.01	-4.605170186	-0.02	-3.91202	-0.03	-3.50656				
	Distance	Natural Log of Steady State Soil Vapor Pressure									
	x	SVP at 5 cfm	SVP at 20 cfm	SVP at 80 cfm							
EW-05	0	-1.39	0.34	2.12							
SVPM 5	12	-3.22	-2.21	-0.84							
EW-04	21	-4.61	-2.53	-1.27							
SVPM 4	30	-3.91	-3.22	-1.56							
SVPM 3	40	-4.61	-3.22	-1.77							
SVPM 2	51	-4.61	-3.51	-2.04							
SVPM 1	118	-4.61	-3.91	-3.51							

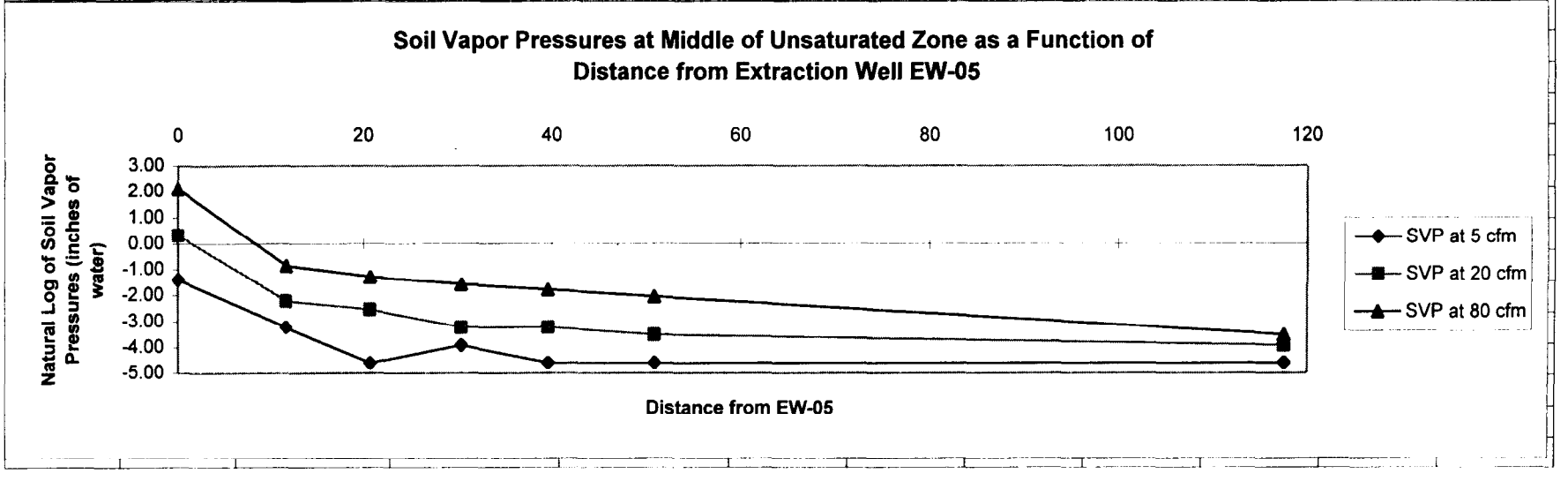
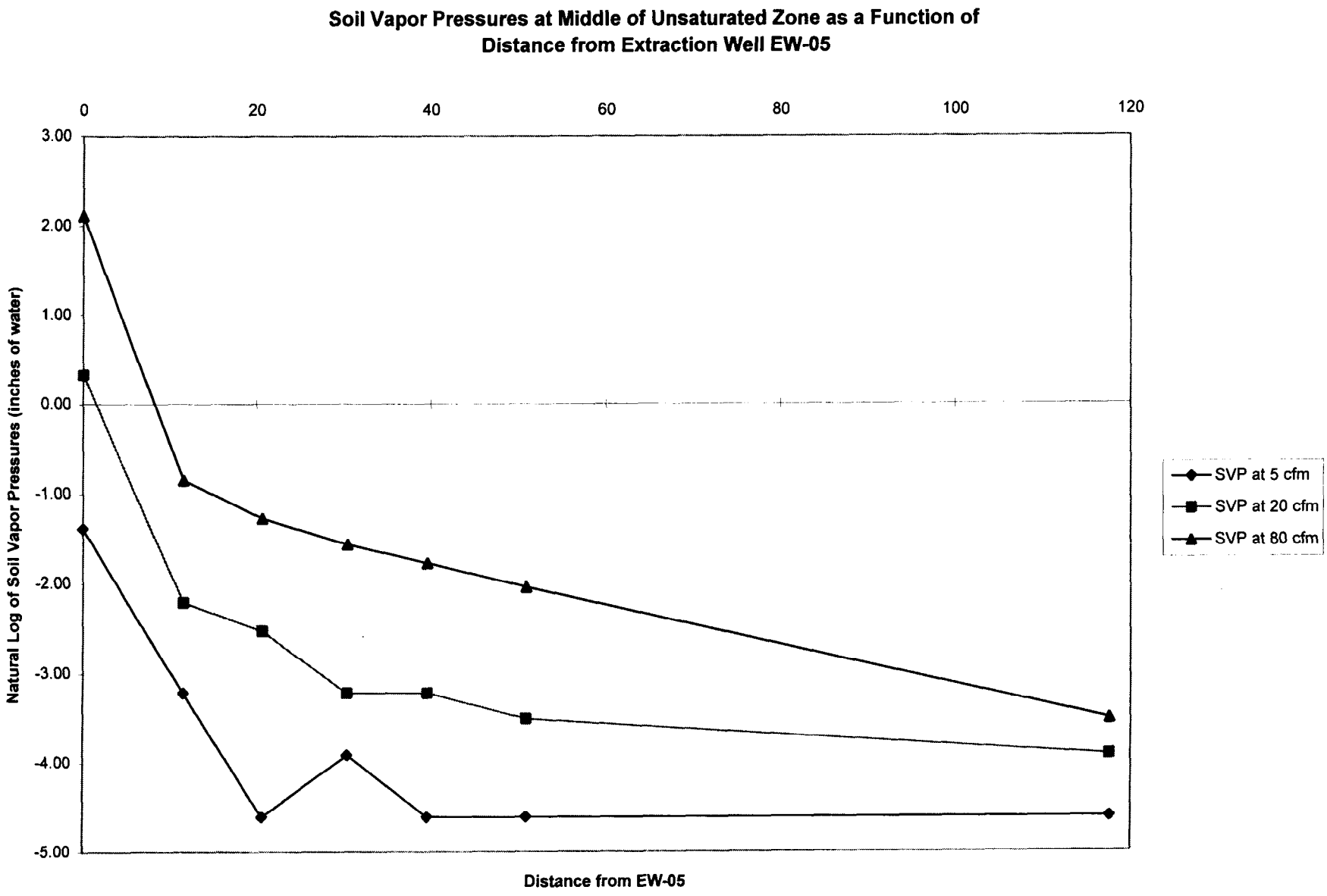


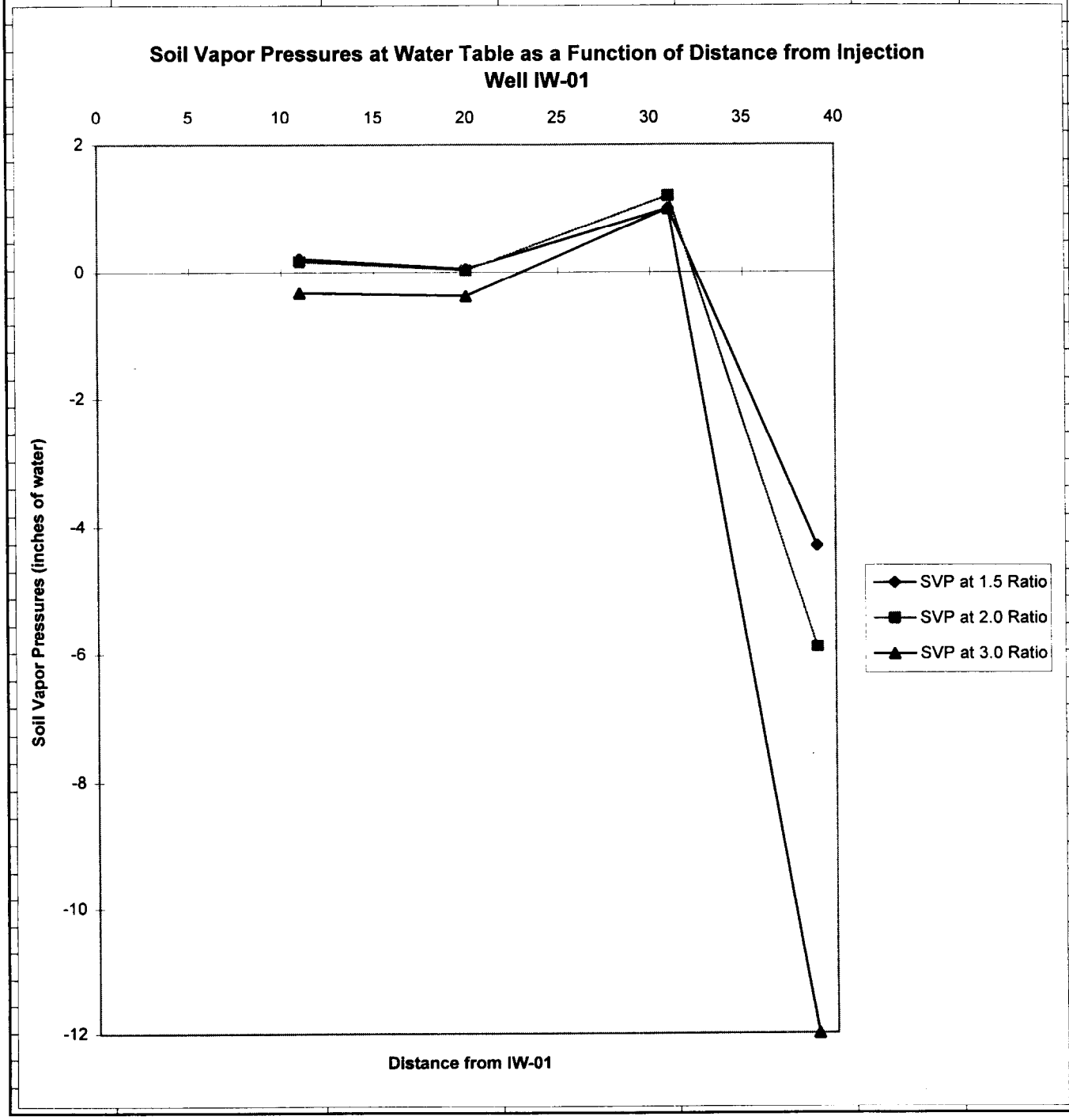
FIGURE 5

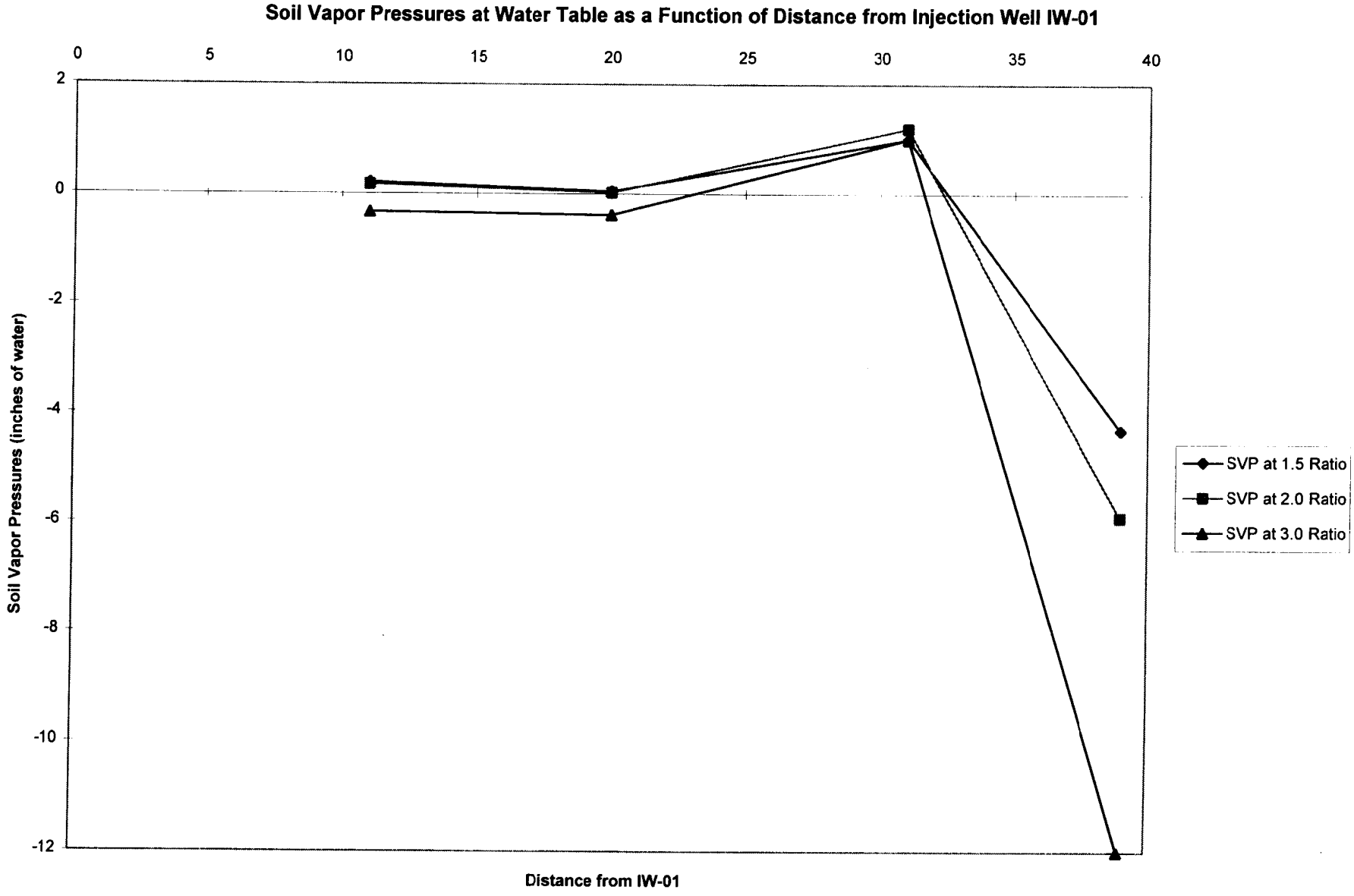


BP9705M AS.CH Chart 1

10/9/97 7:24 PM

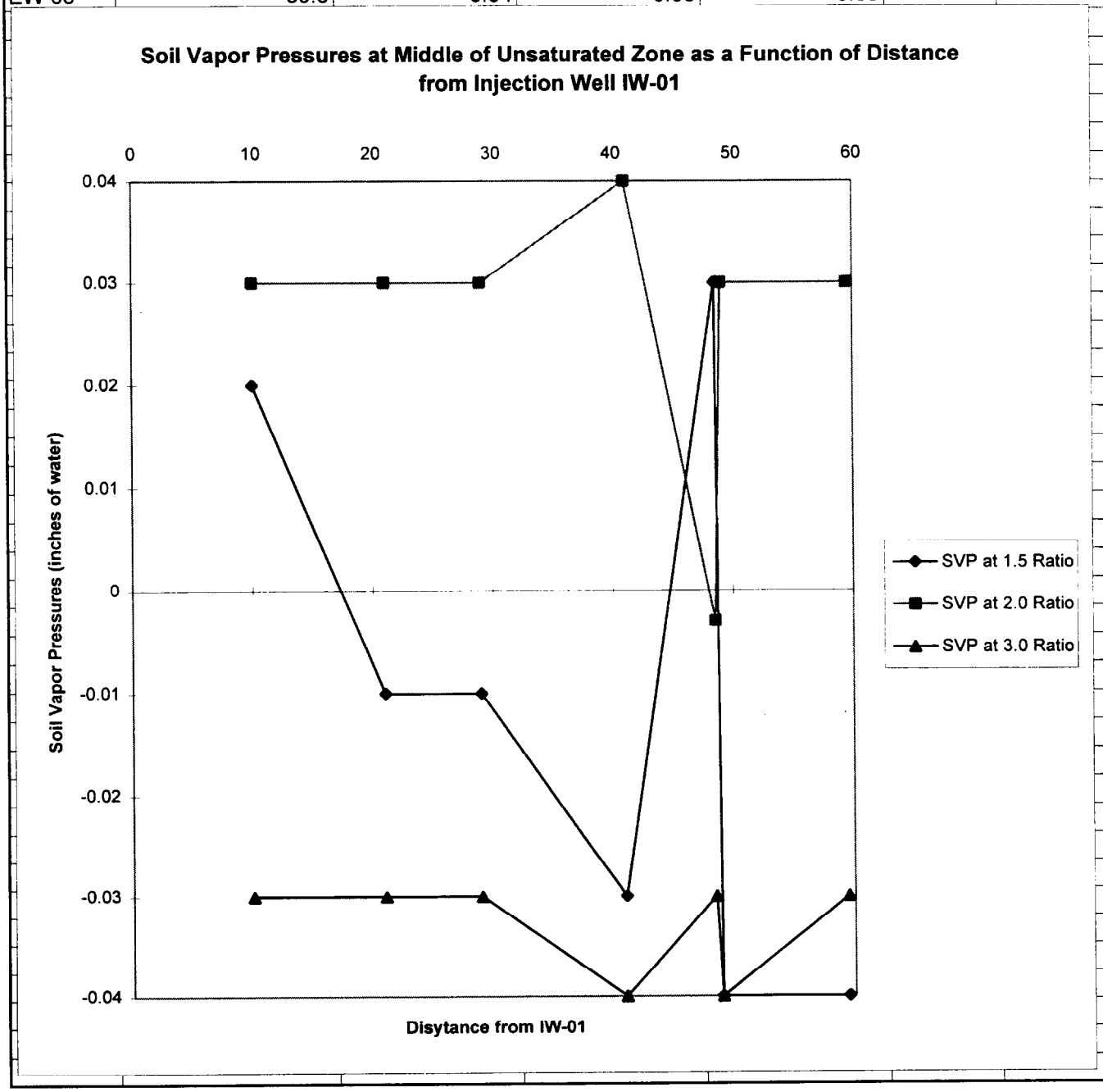
IW-01/EW-02 tests performed at water table on 4/30 and 5/1/97				
	X	Y = Steady State Soil Vapor Pressures at Ratio of Air Extraction Rate to Air Injection Rate		
	Distance from IW-01	SVP at 1.5 Ratio	SVP at 2.0 Ratio	SVP at 3.0 Ratio
EW-01	11	0.21	0.17	-0.33
EW-03	20	0.05	0.03	-0.38
MW-01	31	1	1.2	1
EW-02	39	-4.3	-5.9	-12

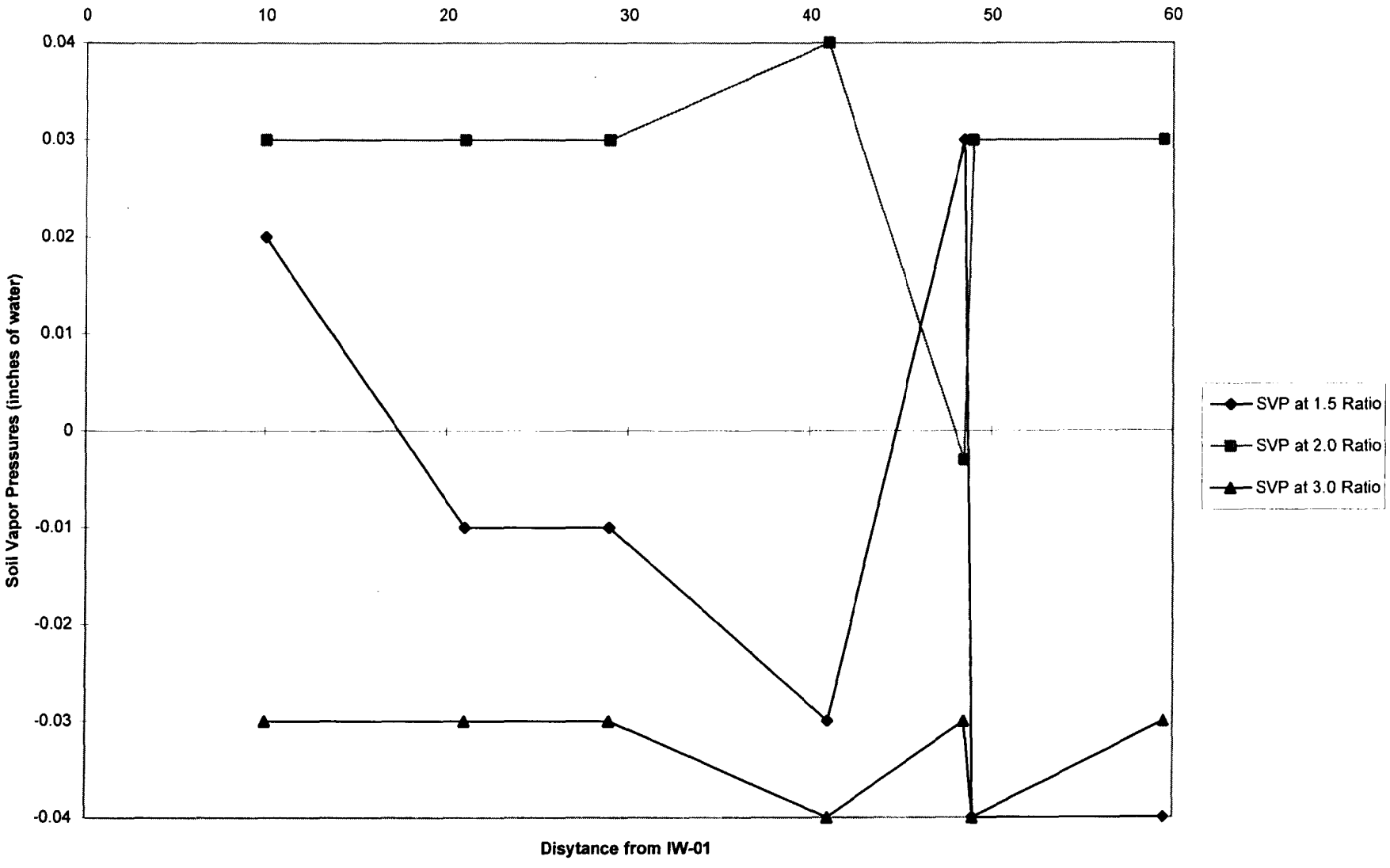



Soil Vapor Pressures at Water Table as a Function of Distance from Injection Well IW-01
0
5
10
15
20
25
30
35
40
2
0
-2
-4
-6
-8
-10
-12
Soil Vapor Pressures (inches of water)
Distance from IW-01
SVP at 1.5 Ratio
SVP at 2.0 Ratio
SVP at 3.0 Ratio

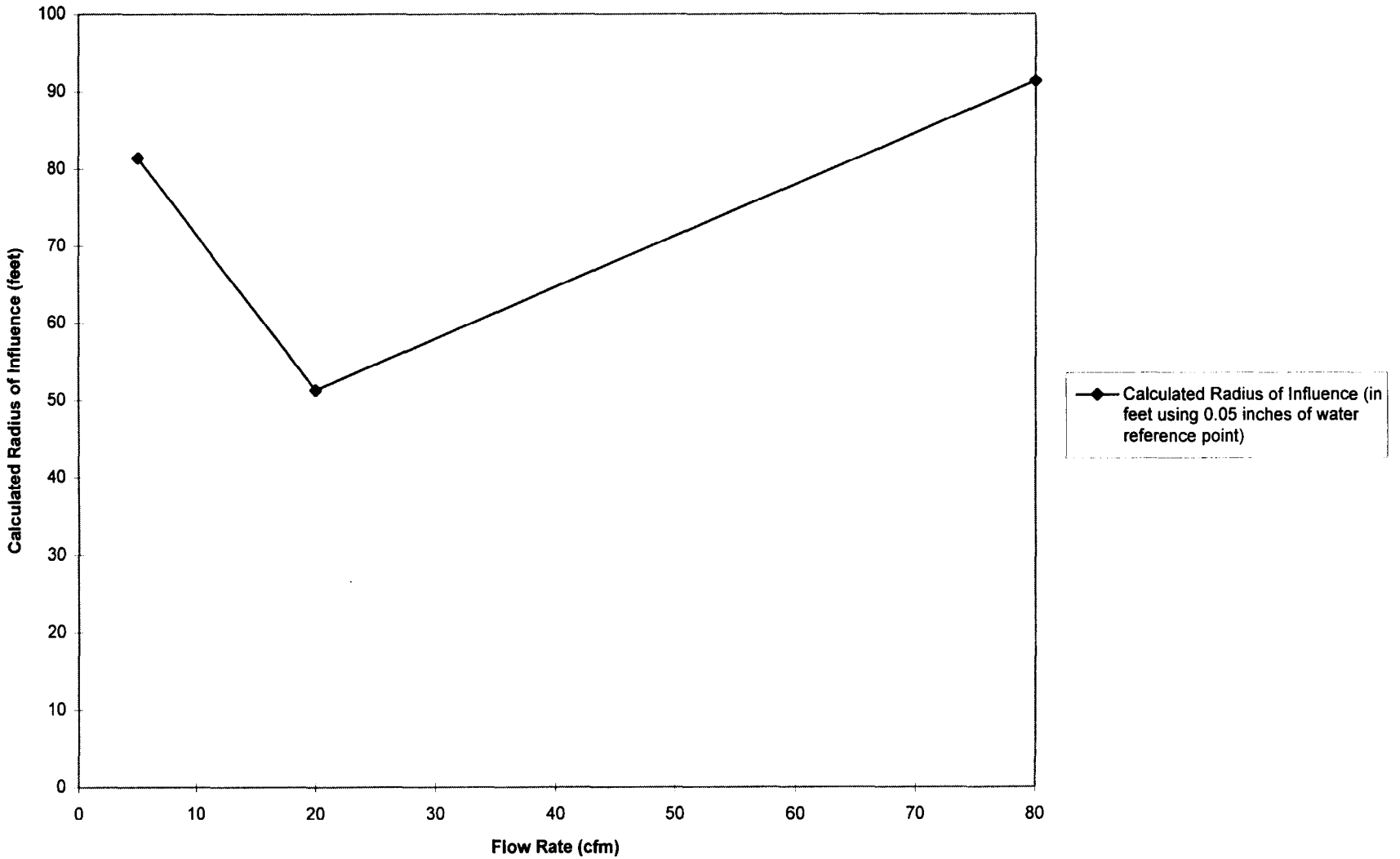
IW-01/EW-02 tests performed at middle of unsaturated zone on 4/30 and 5/1/97

	X	Y = Steady State Soil Vapor Pressures at Ratio of Extraction to Injection Rates		
	Distance from IW-01	SVP at 1.5 Ratio	SVP at 2.0 Ratio	SVP at 3.0 Ratio
SVPM 2	10	0.02	0.03	-0.03
SVPM 3	21	-0.01	0.03	-0.03
SVPM 4	29	-0.01	0.03	-0.03
EW-04	41	-0.03	0.04	-0.04
SVPM 1	48.5	0.03	-0.003	-0.03
SVPM 5	49	-0.04	0.03	-0.04
EW-05	59.5	-0.04	0.03	-0.03




Soil Vapor Pressures at Middle of Unsaturated Zone as a Function of Distance from Injection Well IW-01
0
10
20
30
40
50
60
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
Soil Vapor Pressures (inches of water)
Disytance from IW-01
SVP at 1.5 Ratio
SVP at 2.0 Ratio
SVP at 3.0 Ratio

Calculated Radius of Influence as a Function of Flow Rate from Extraction Well EW-04



Calculated Radius of Influence as a Function of Flow Rate from Extraction Well EW-05

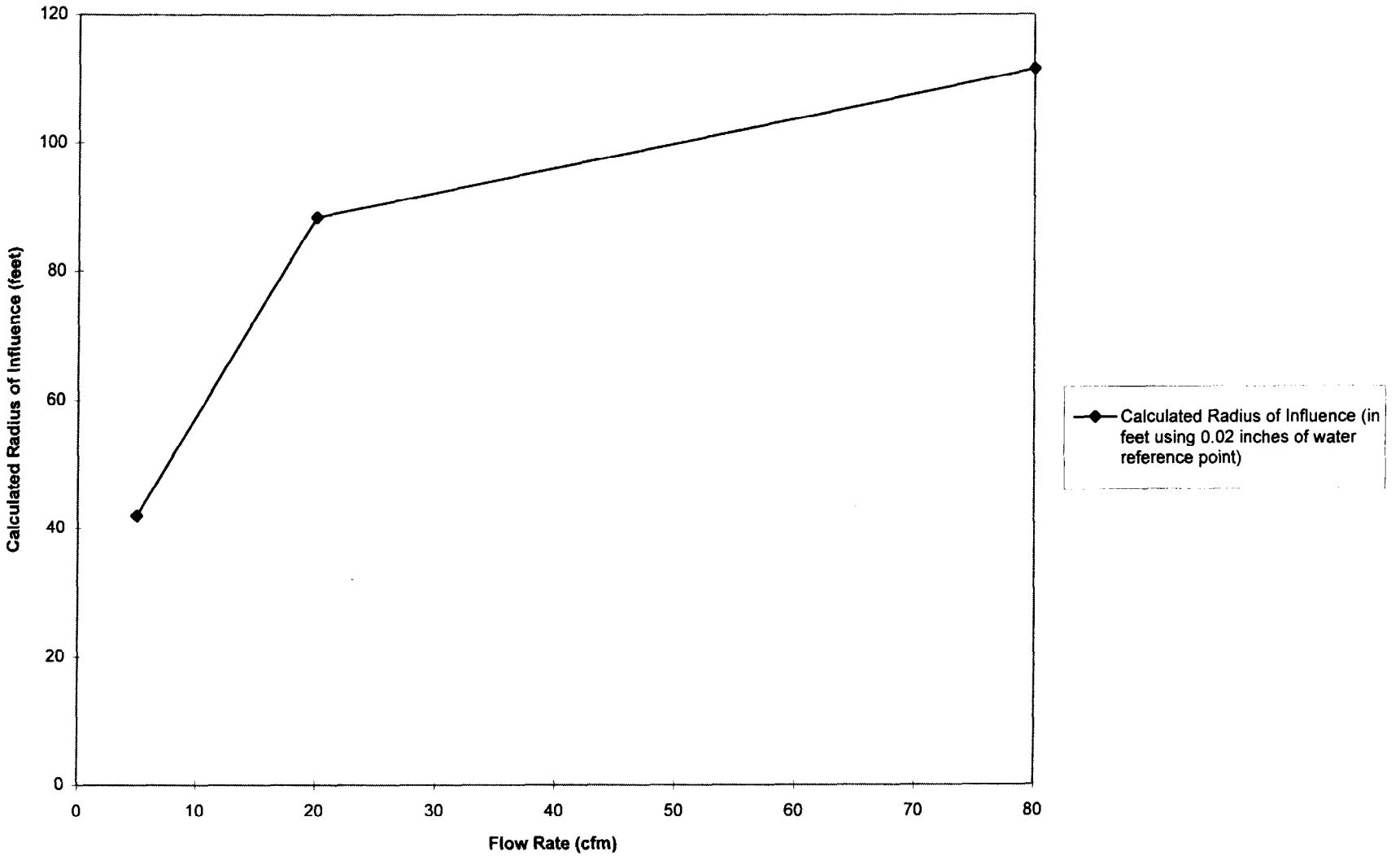
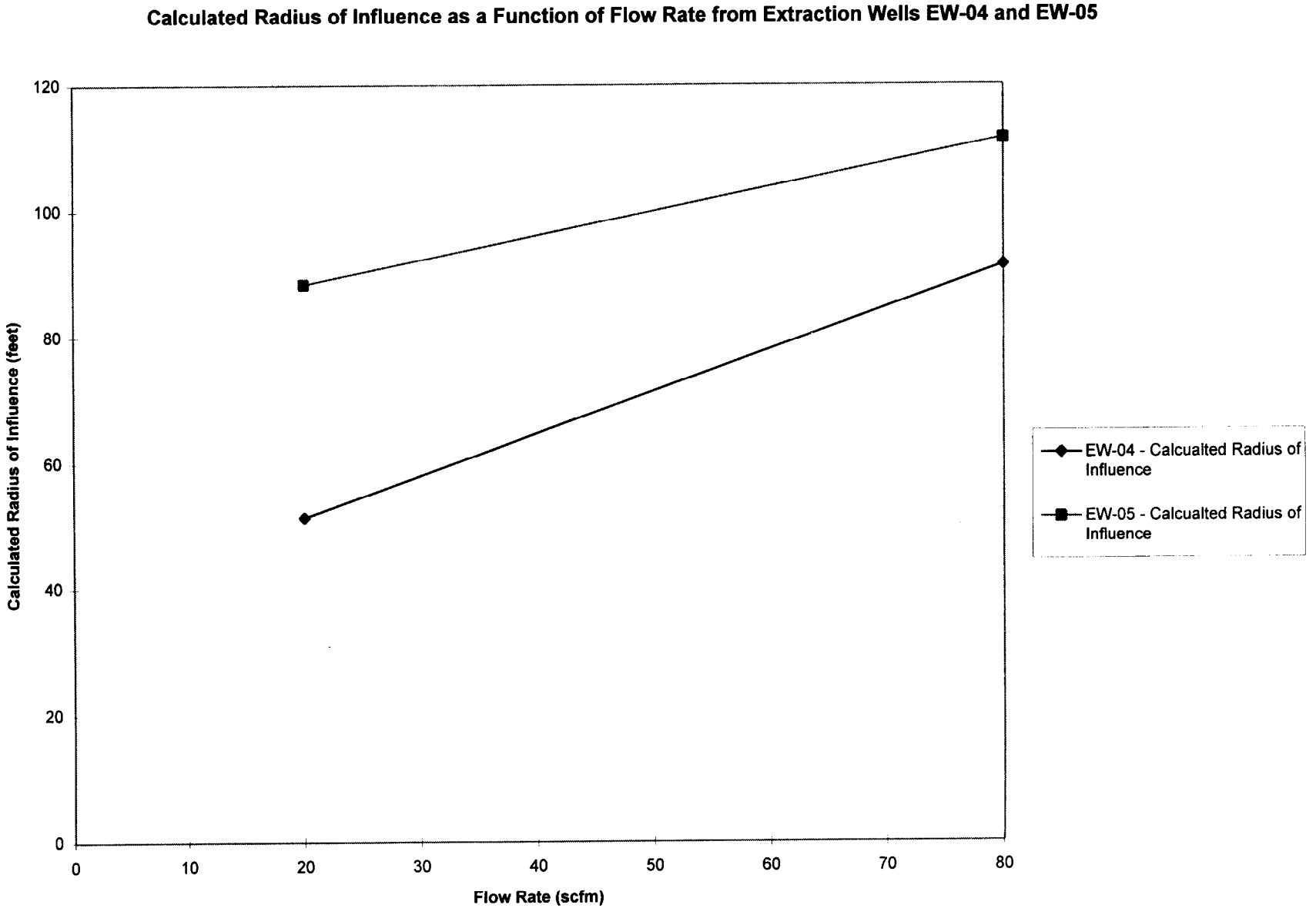
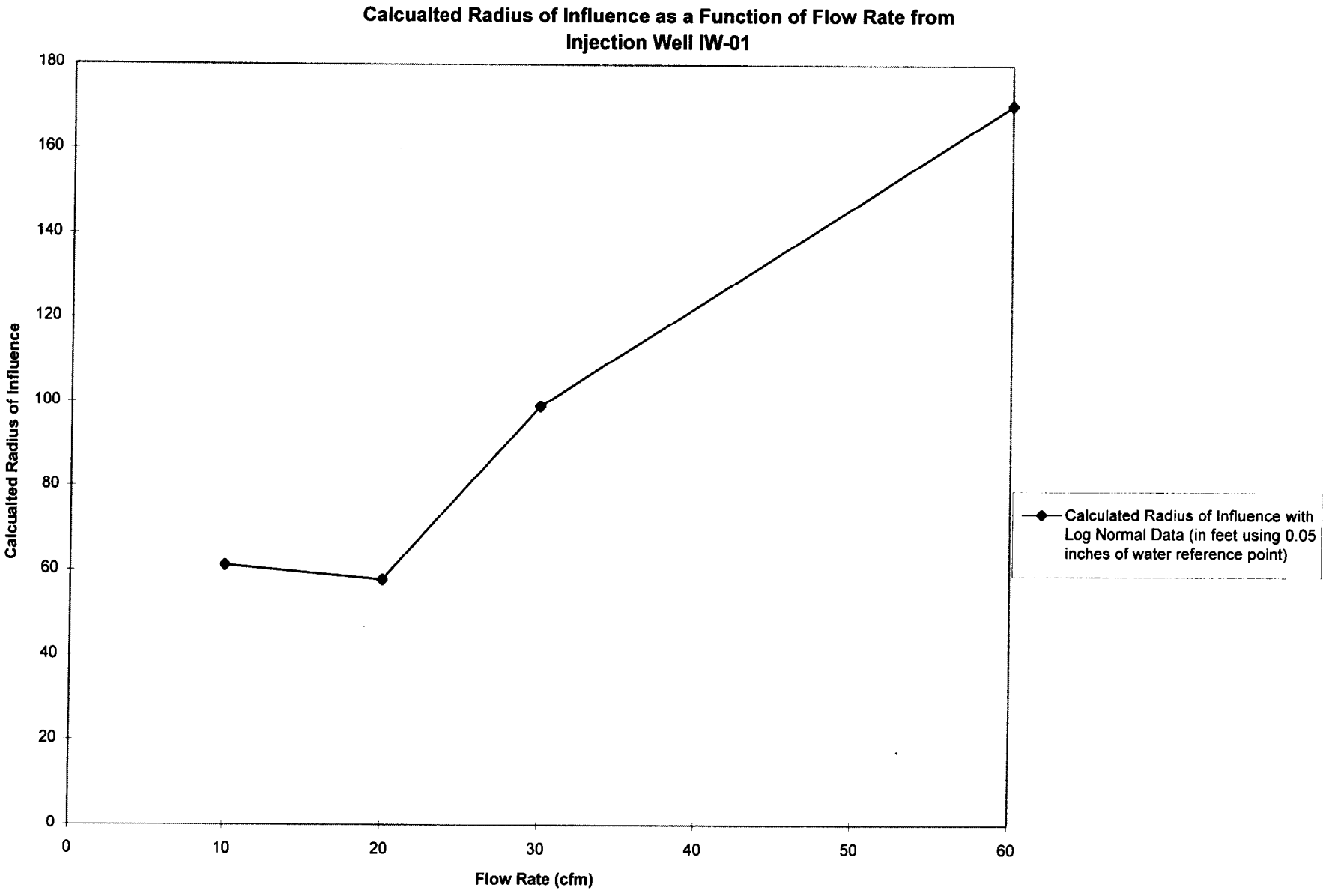
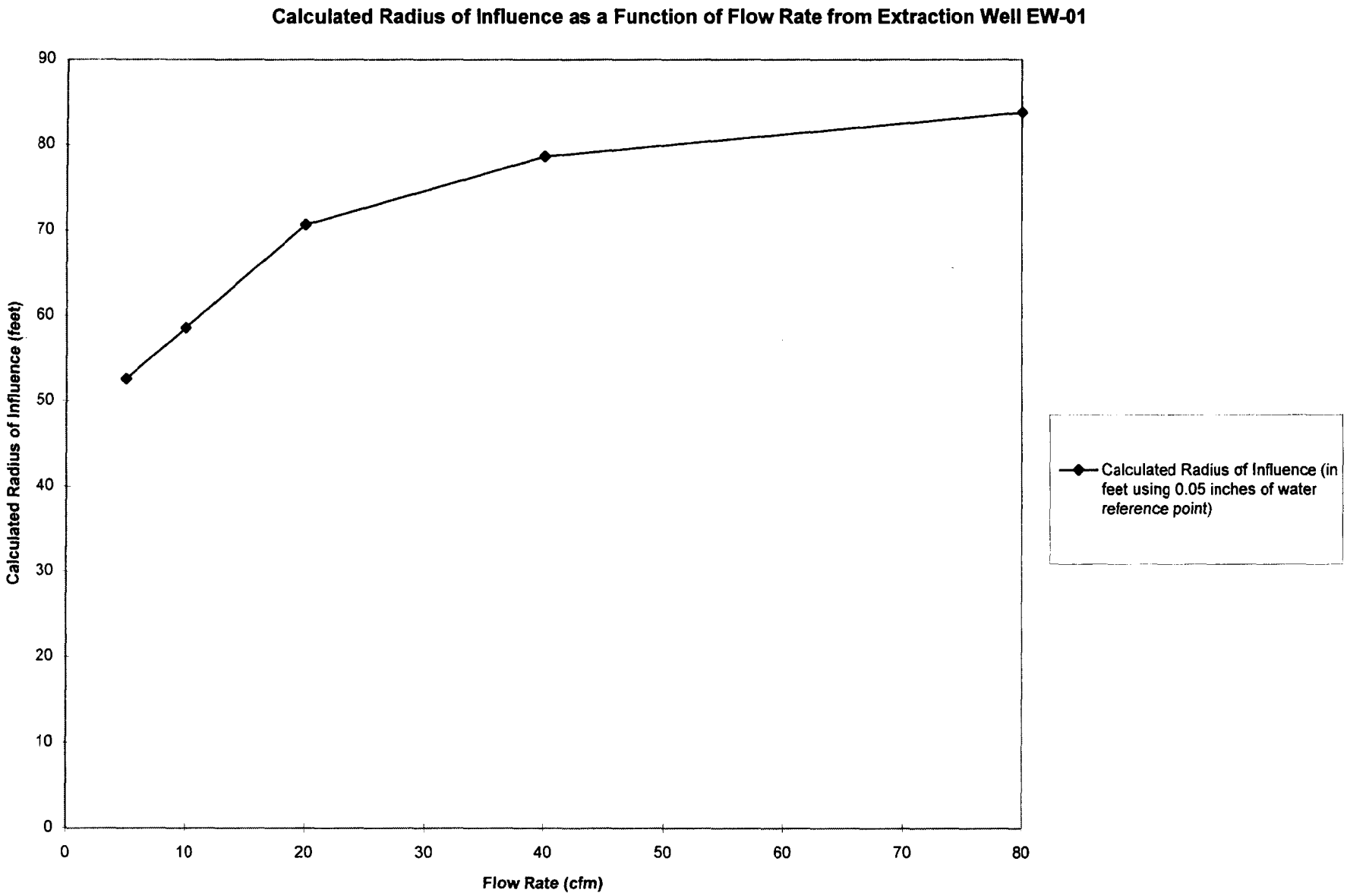
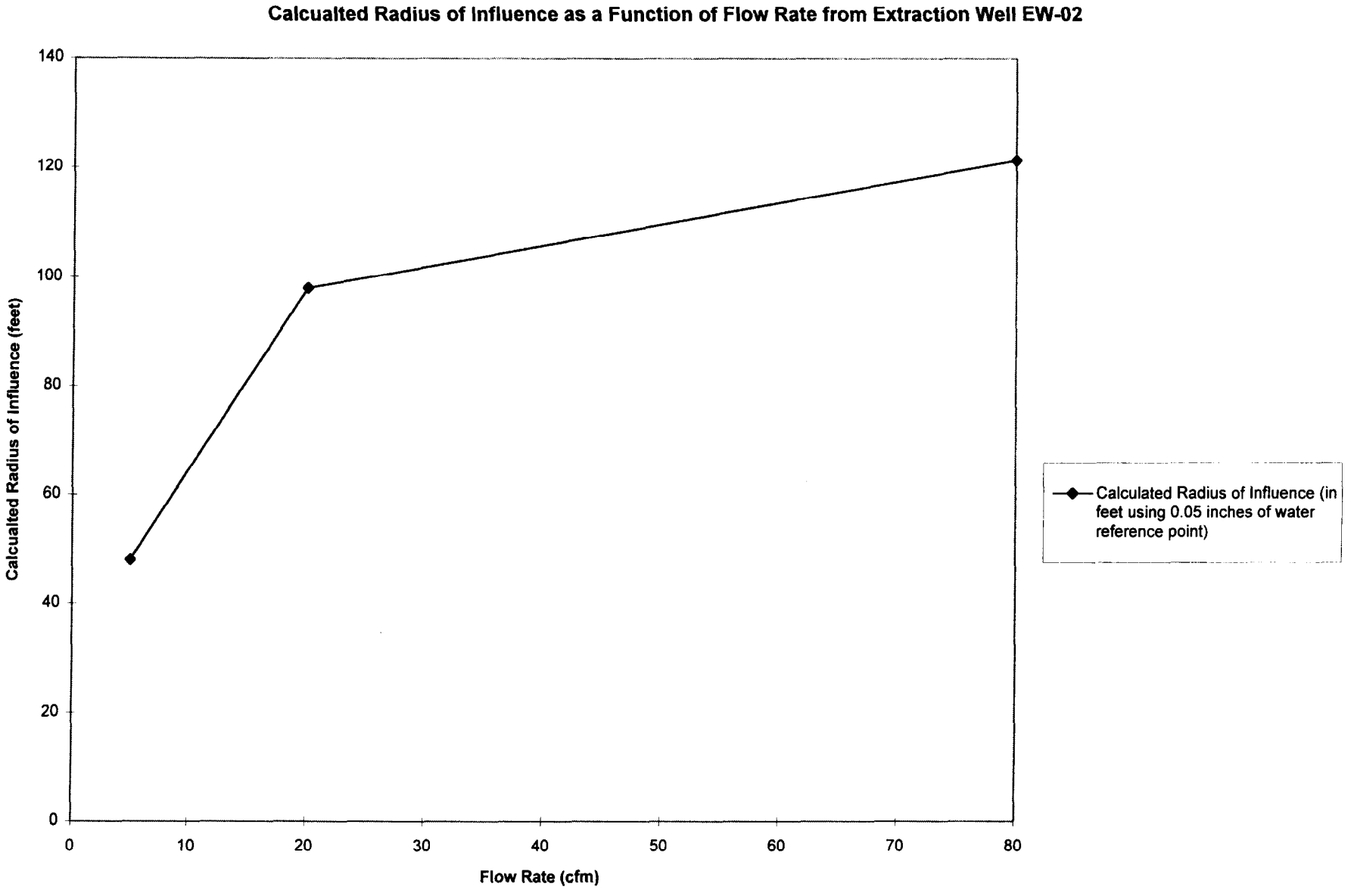


FIGURE 8

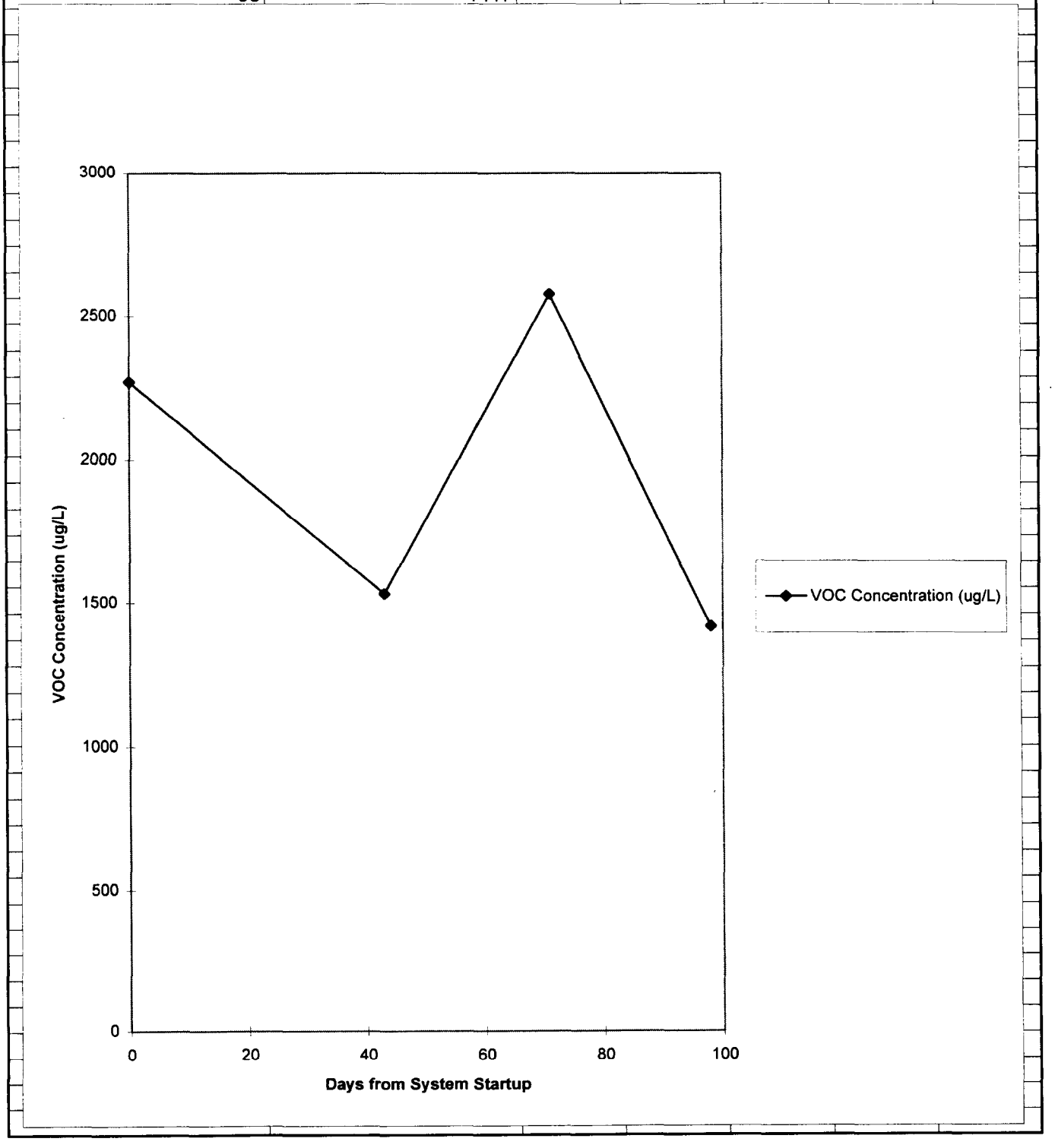

Calculated Radius of Influence as a Function of Flow Rate from Extraction Wells EW-04 and EW-05
Calculated Radius of Influence (feet)
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
Flow Rate (scfm)
EW-04 - Calcualted Radius of Influence
EW-05 - Calcualted Radius of Influence


Calcualted Radius of Influence as a Function of Flow Rate from Injection Well IW-01
Calcualted Radius of Influence
180
160
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
Flow Rate (cfm)
Calculated Radius of Influence with Log Normal Data (in feet using 0.05 inches of water reference point)

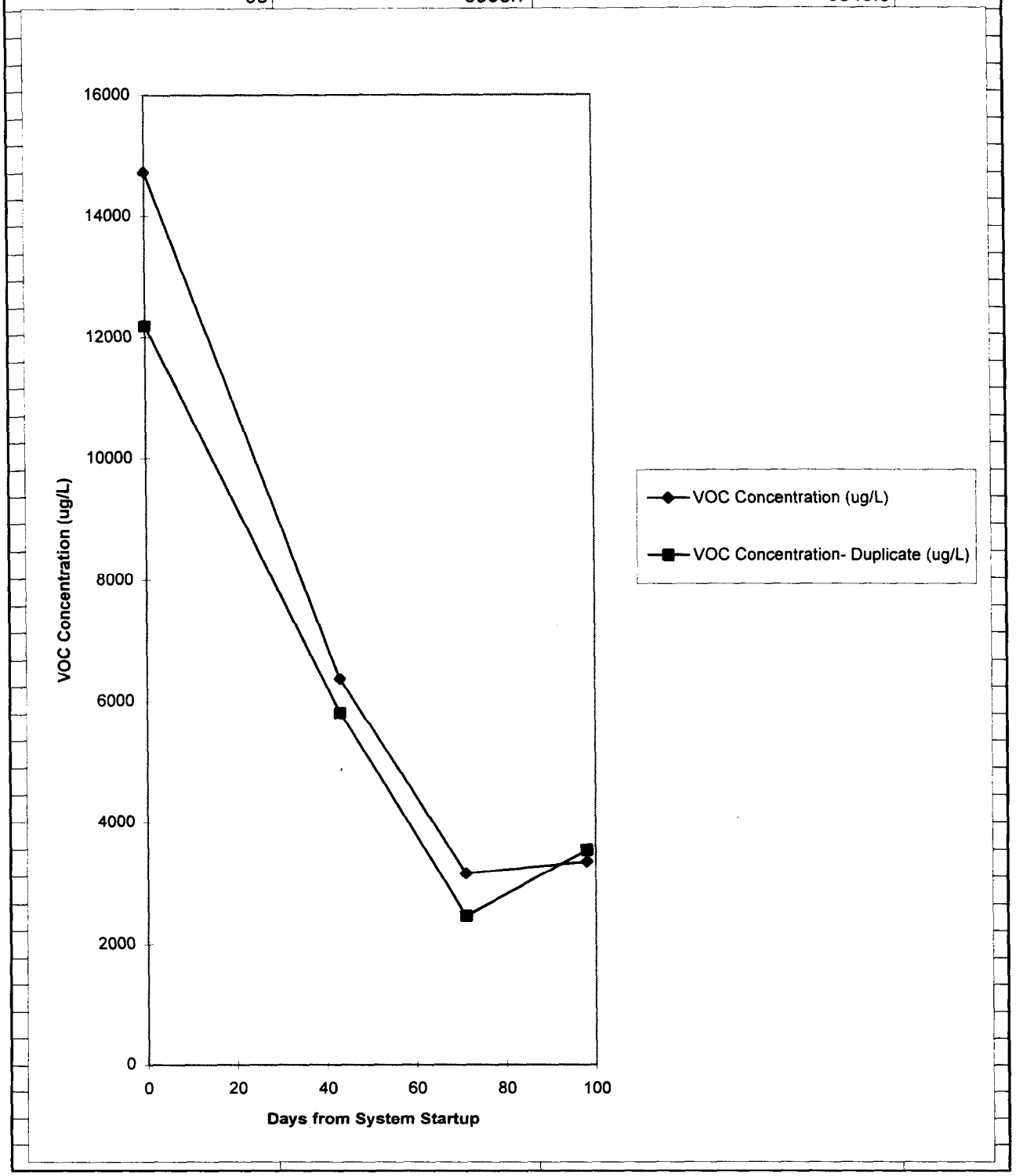

Calculated Radius of Influence as a Function of Flow Rate from Extraction Well EW-01
Calculated Radius of Influence (feet)
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
Flow Rate (cfm)
Calculated Radius of Influence (in feet using 0.05 inches of water reference point)


Calcualted Radius of Influence as a Function of Flow Rate from Extraction Well EW-02
Calcualted Radius of Influence (feet)
140
120
100
80
60
40
20
0
0
10
20
30
40
50
60
70
80
Flow Rate (cfm)
Calculated Radius of Influence (in feet using 0.05 inches of water reference point)

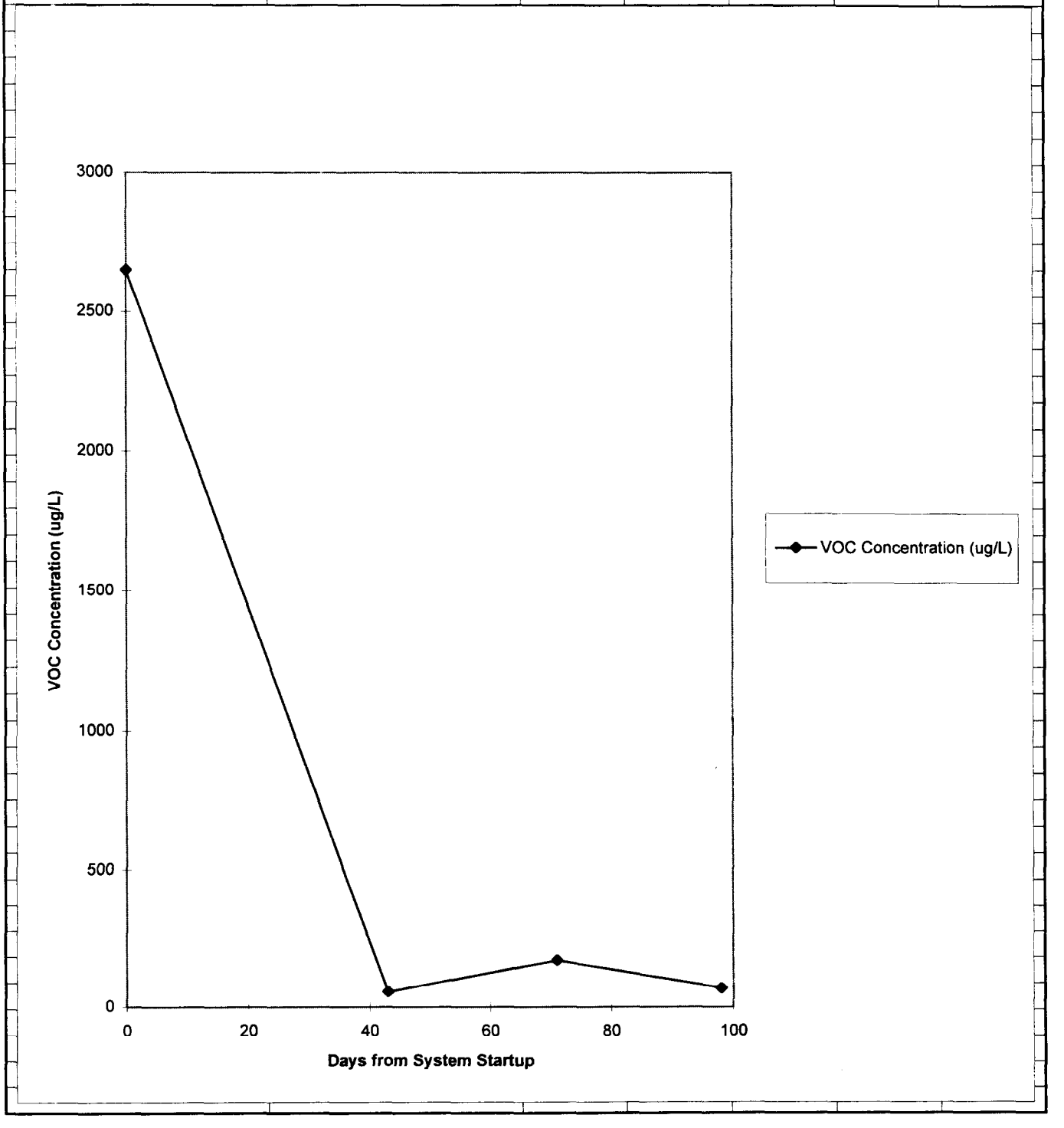
Extraction well EW-03	
Days from System Startup	VOC Concentration (ug/L)
0	2269
43	1531
71	2576
98	1417



Extraction well EW-02			
Days from System Startup	VOC Concentration (ug/L)	VOC Concentration- Duplicate (ug/L)	
0	14732	12190	
43	6362	5808	
71	3161	2474	
98	3358.7	3548.3	

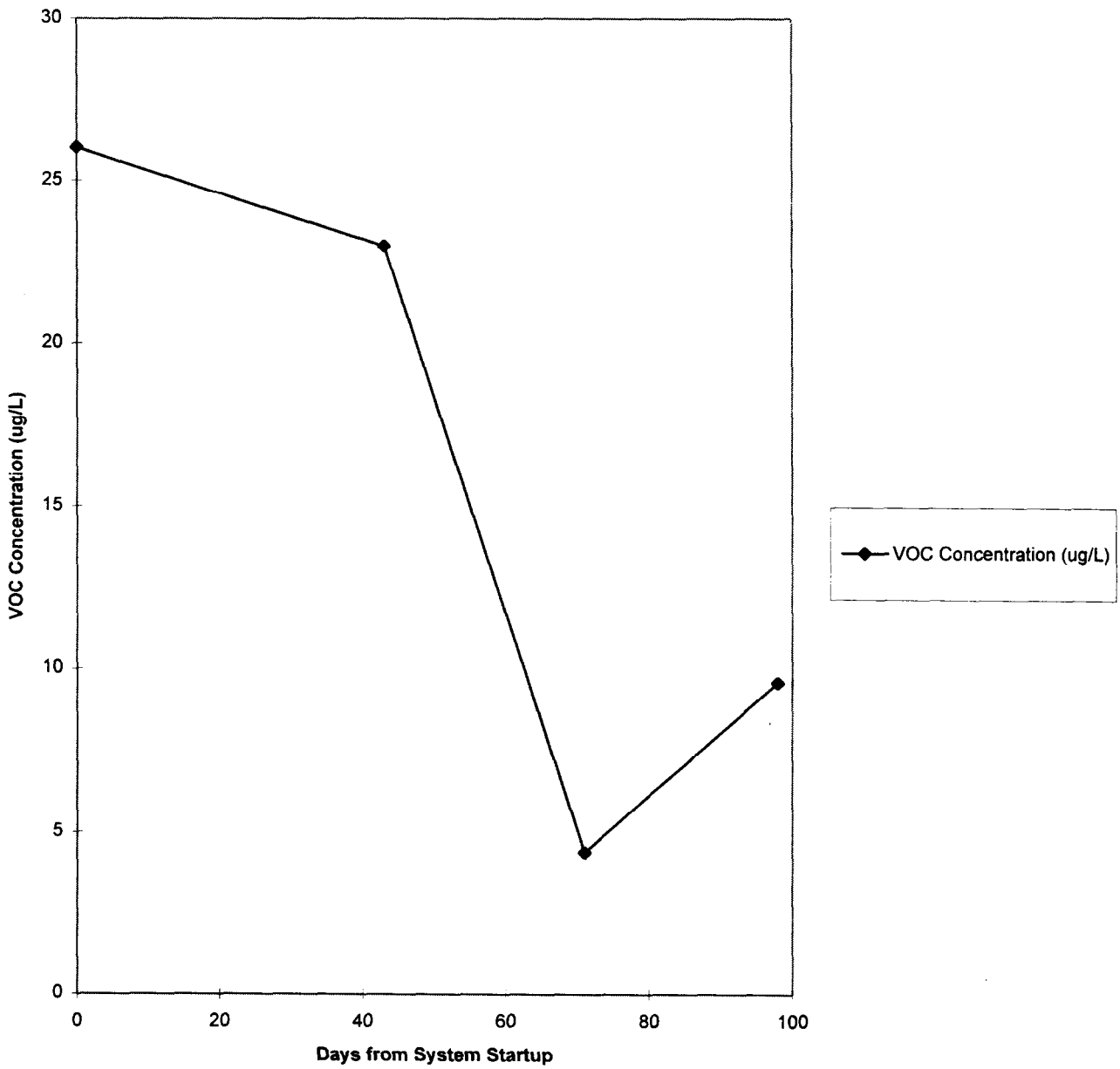


Extraction well EW-01						
Days from System Startup	VOC Concentration (ug/L)					
0	2650					
43	56					
71	169					
98	68					



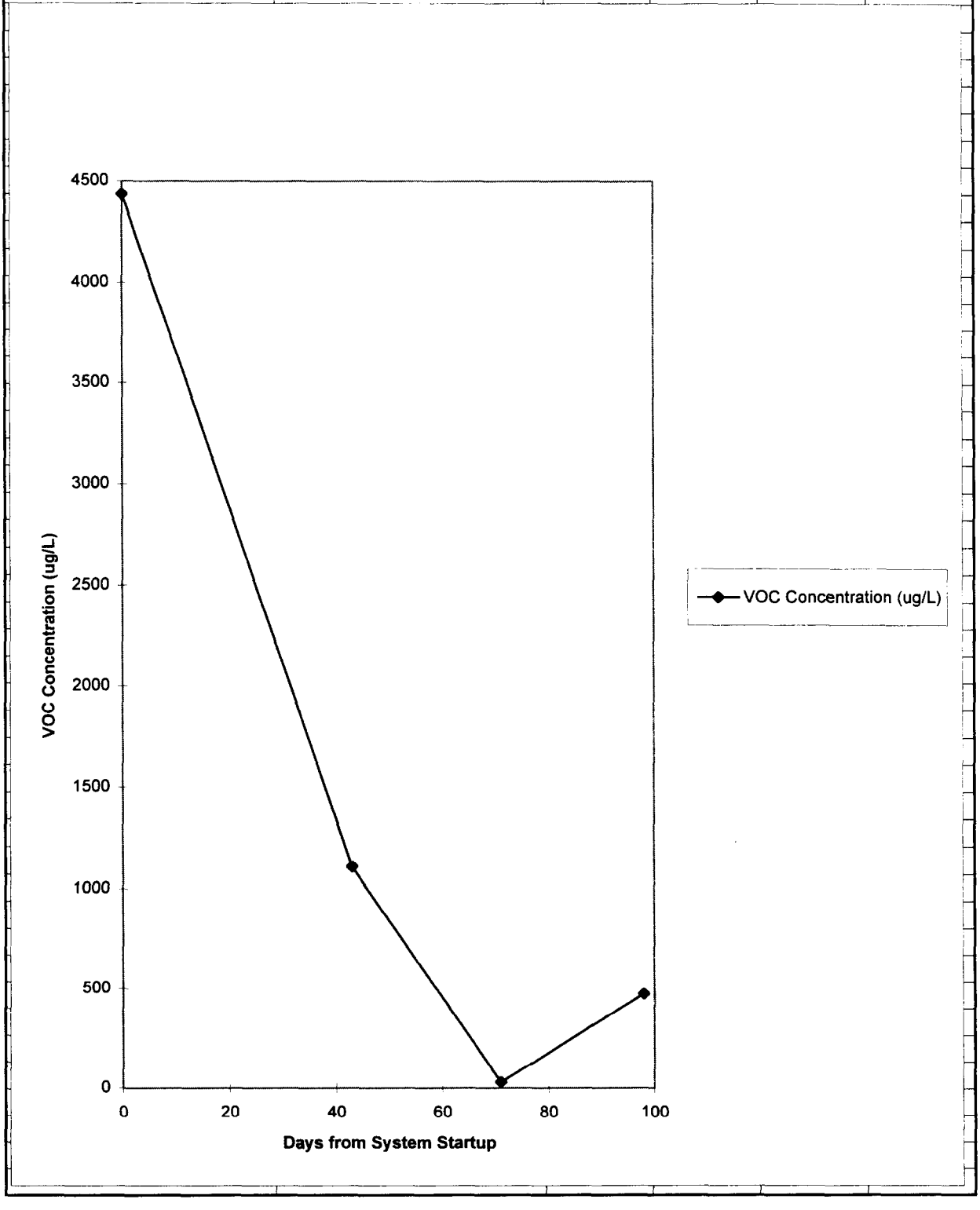
IW-01

Injection well IW-01	
Days from System Startup	VOC Concentration (ug/L)
0	26
43	23
71	4.4
98	9.6



MW-01

Days from System Startup	VOC Concentration (ug/L)
0	4436
43	1110
71	29.9
98	474



APPENDIX E

SAMPLE LOG SHEETS

SOLID/SOIL/SEDIMENT SAMPLE LOG SHEET

Brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB02-10

Source Location Site 1 – Boring 02

Sample Method: Split Spoon / disposable trowel

Depth Sampled: 8'-10'

Sample Date & Time: 7/15/97 1215

Sampled by: Starros Patselas

Signature(s):

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes
- cuttings left in cesspool 79
- ☐ Duplicate sample taken
- PID reading = 0 ppm
- Analysis Parameter is SW-846-8240
- Samples sent to Kemron Env. via FedEx Airbill # 508140033 2

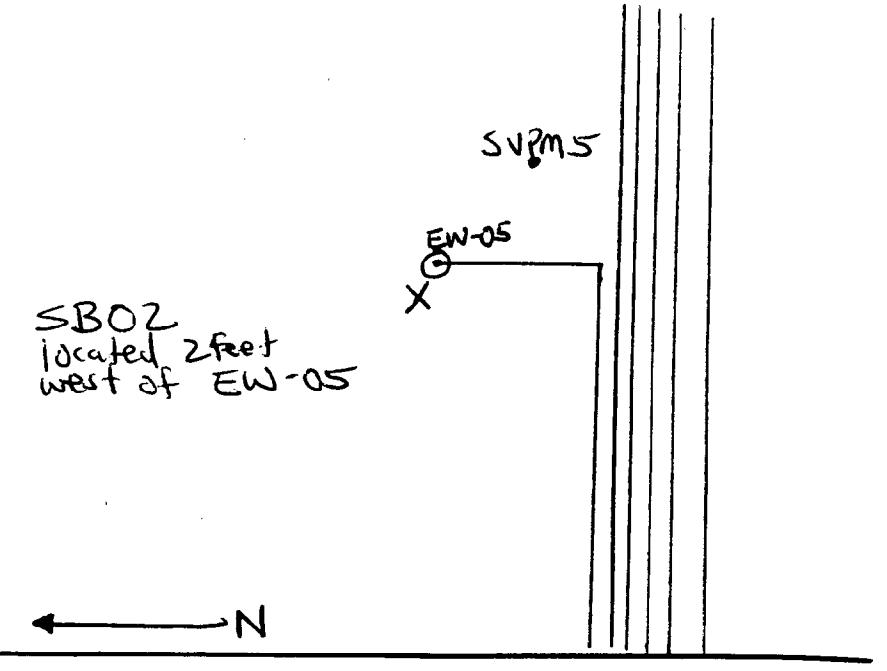
Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Brown	Moist, medium-grained sand w/some grav

Sample Location Map



Revised 4/5/96

SOLID/SOIL/SEDIMENT
SAMPLE LOG SHEET

Brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB02-40

Source Location Site 1 - Boring

Sample Method: Split Spoon / disposable trowel

Depth Sampled: 38'-40'

Sample Date & Time: 7/15/97 1240

Sampled by: Starros Patselas

Signature(s): [signature]

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes
- cutting left in cesspool 79
☐ Duplicate sample taken
- PID reading = 0 ppm
- Analysis Parameter is SW-846-8240
- Samples sent to Kemron Env. via FedEx Airbill # 508140033 2

Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellow-orange	Medium-grained sand, moist

Sample Location Map

See PS-SB02-10 Sample Log Sheet

Revised 4/5/96

SOLID/SOIL/SEDIMENT SAMPLE LOG SHEET

Brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB03-20

Source Location Site 1 - Boring 03

Sample Method: Split Spoon / disposable trowel

Depth Sampled: 20' - 22'

Sample Date & Time: 7/15/97 1050

Sampled by: Starros Patselas

Signature(s): [signature]

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes
- cuttings containerized
☐ Duplicate sample taken
- PID reading = 68.7 ppm
- Analysis Parameter is SW-846-8240
- Samples sent to Kemron Env. via Fed Ex Airbill # 508140033 2

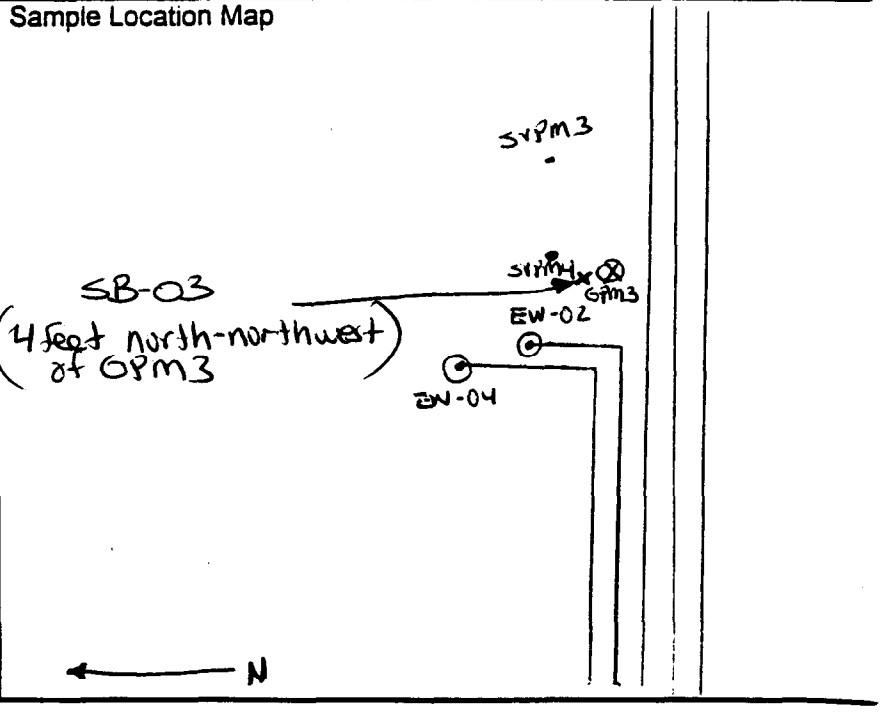
Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)

Sample Location Map



Revised 4/5/96

SOLID/SOIL/SEDIMENT
SAMPLE LOG SHEET

Brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB03-40

Source Location Site 1 - Boring 03

Sample Method: Split Spoon / disposable trowel

Depth Sampled: 40'-42'

Sample Date & Time: 7/15/97 1110

Sampled by: Starros Patselas

Signature(s): [signature]

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes
- cuttings containerized
☐ Duplicate sample taken
- PID reading => 2000 ppm
- Analysis Parameter is SW-846-8240
- Samples sent to Kemron Env. via FedEx Airbill # 508140033 2

Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Gray w/yellow	Medium grained sand w/some silty clay

Sample Location Map

See PS-SB03-20 Sample Log Sheet

Revised 4/5/96

SOLID/SOIL/SEDIMENT SAMPLE LOG SHEET

brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB04-30

Source Location Site 1 – Boring 04

Sample Method: Split Spoon/disposable trowel

Depth Sampled: 30'-32'

Sample Date & Time: 7/15/97 0925

Sampled by: Starros Patselas

Signature(s): [signature]

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes

■ Duplicate sample taken (PS-SB04-30D)
PID reading = 0 ppm.
Analysis Parameter is SW-846-8240
Samples sent to Kemron Env. with FedEx. Airbill #508140033 2

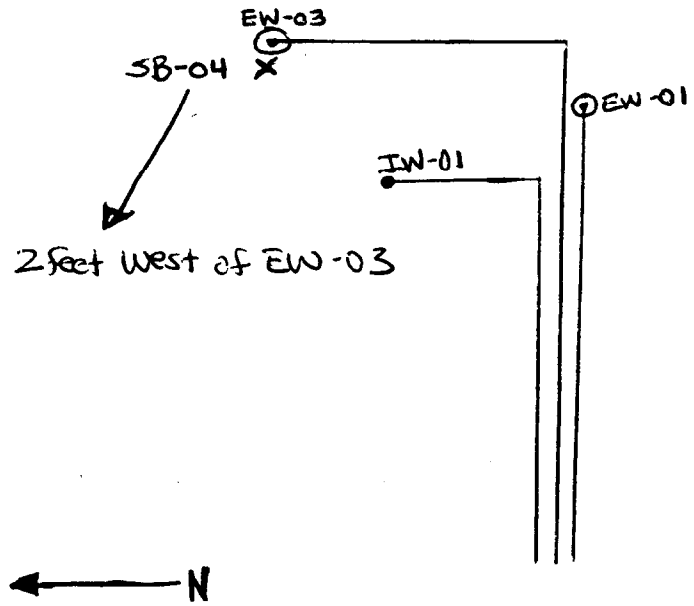
Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellow-orange	Medium grained sand w/some gravel – moist

Sample Location Map — CONCRETE PAD



Revised 4/5/96

SOLID/SOIL/SEDIMENT SAMPLE LOG SHEET

Brown & Root Environmental

- ☐ Surface Soil
- ■ Subsurface Soil
- ☐ Sediment
- ☐ Lagoon/Pond
- ☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-SB04-40

Source Location Site 1 – Boring 04

Sample Method: Split Spoon / disposable trowel

Depth Sampled: 40'-42'

Sample Date & Time: 7/15/97 0940

Sampled by: Starros Patselas

Signature(s): [signature]

Sample Type

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 1-4oz. CLEAR	dark, 4°C
☐ TCL SVOAs	dark, 4°C
☐ TCL Pest/PCBs	dark, 4°C
☐ TAL Metals	4°C
☐ Cyanide	4°C

Observations and Notes

☐ Duplicate sample taken

- PID reading = 0ppm
- Analysis Parameter is SW-846-8240
- Samples sent to Kemron Env. via FedEx Airbill # 508140033 2

Composite Sample Data

Sample	Time	Color and Description
	N.A.	

Sample Data

Color	Description: (Sand, Clay, Dry, Moist, Wet, etc.)
Yellow-orange	Moist, medium-grained sand

Sample Location Map

See PS-SB04-30 sample log sheet

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other Extraction well

Project Site Name NWIRP Bethpage -- Site 1
Project Site Number 5253-0142/CTO213

Source Number PS-EW-01
Source Location EW-01

Total Well Depth: 63.80' TOC	
Well Casing Size & Depth: 2" PVC 63.8'	
Static Water Level: 58.10' TOC	
One Casing Volume: 5.7' ≈ 3.5 l	
Start Purge (hrs): —	
End Purge (hrs.): —	
Total Purge Time (min.): —	
Total Amount Purged (gal.): 3gal = 11 l	
Monitor reading: No PID reading above background levels	
Purge Method: 2" stainless steel bailer	
Sample Method: 2" s.s. bailer	
Depth Sampled: —	
Sample Date & Time: 4/8/97 1315	
Sampled by: Fred W. Ramser	
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

$5.7'$ standing $H_2O \times 0.616 \frac{\text{liters}}{\text{ft.}} = 3.5 \frac{\text{liters}}{\text{vol}}$

$3.5 \frac{\text{liters}}{\text{vol}} \times 3 \text{ vol} \cong 11 \text{ liters}$

Samples sent to Kemron Environmental Services
Fed Ex Airbill # 4595916474

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other: Extraction well

Project Site Name NWIRP Bethpage -- Site 1 Project Site Number 5253-0142/CTO213

Source Number PS-EW-02 Source Location EW-02

Total Well Depth:	64.20' TOC
Well Casing Size & Depth:	2" PVC 64.20' TOC
Static Water Level:	58.80' TOC
One Casing Volume:	5.4' ≅ 3.3 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	
Monitor reading:	No PID reading above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	4/8/97 1400
Sampled by:	Fred W. Ramser
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
■ Duplicate sample taken — PS-DUP-01

$5.4'\ \text{standing } H_2O \times 0.616 \frac{\text{liters}}{ft} = 3.3 \frac{\text{liters}}{\text{volume}}$

$3.3 \frac{\text{liters}}{\text{volume}} * 3 \text{ vol.} \cong 10 l.$

Samples sent to Kemron Environmental Services
Fed Ex Airbill # 459591647 4

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other Extraction well

Project Site Name NWIRP Bethpage -- Site 1

Project Site Number 5253-0142/CTO213

Source Number PS-EW-03

Source Location EW-03

Total Well Depth:	62.90 Top of Casing
Well Casing Size & Depth:	2" PVC 63' TOC
Static Water Level:	58.07' TOC
One Casing Volume:	4.83' ≅ 3 liters
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	2.4 gal = 9 l
Monitor reading:	No PID reading above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	4/8/97 1130
Sampled by:	Fred W. Ramser
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

$4.83'_{\text{standing } H_2O} \times 0.616 \frac{\text{liters}}{\text{ft.}} = 2.97 \frac{\text{liters}}{\text{vol}}$

$2.97 \frac{\text{liters}}{\text{vol.}} \times 3 \text{ vol} = 9 \text{ liters}$

Samples sent to Kemron Environmental Services
Fed Ex Airbill # 459591647 4

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other Injection well

Project Site Name NWIRP Bethpage -- Site 1 Project Site Number 5253-0142/CTO213

Source Number PS-IW-01 Source Location IW-01

Total Well Depth:	68.65 TOC
Well Casing Size & Depth:	2" PVC 68.7
Static Water Level:	58.0' TOC
One Casing Volume:	10.65' = 6.6ℓ
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	5.3gal = 20ℓ
Monitor reading:	No PID reading above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	4/8/97 1340
Sampled by:	Fred W. Ramser
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

10.65' standing in 20 × 0.6216 liters/ft. = 6.6 liters/volume

6.6 liters/vol. × 3 vol. ≅ 20ℓ

Samples sent to Kemron Environmental Services
Fed Ex Airbill # 4595916474

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C.F. Braun Engineering Corp.

- [■] Monitoring Well Data
- [ ] Domestic Well Data
- [ ] Other_____

Project Site Name NWIRP Bethpage - Site 1 Project Site Number 5253-0142/CTO 213

Source Number PS-MW-01 Source Location CFB-MW-01

Total Well Depth:	66.75' TOC
Well Casing Size & Depth:	2" PVC - 66.75'
Static Water Level:	59.20' TOC
One Casing Volume:	7.55' =
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	3.7gal = 14l
Monitor reading:	No PID reading above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	4/8/97 1245
Sampled by:	Fred W. Ramser
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N/A		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

- [■] Low Concentration
- [ ] High Concentration
- [■] Grab
- [ ] Composite
- [ ] Grab - Composite

Analysis	Preservative:
[■] TCL VOAs/2-40ml. vials	HCl to pH<2, 4°C
[ ] TCL SVOAs	4°C
[ ] TCL Pest/PCBs	4°C
[ ] TAL Metals	HNO_3 to pH<2
[ ] Cyanide	NaOH to pH>12

Observations/Notes:

- [ ] Duplicate sample taken

7.55' of standing H_2O x 0.616 $\frac{\text{liters}}{\text{ft}}$ = 4.7 liters/volume

4.7 $\frac{\text{liters}}{\text{volume}}$ x 3vol ≈ 14 l

Samples sent to Kemron Environmental Services — Fed Ex Airbill #4595916474

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage - Site 1 Project Site Number 5253-0142/CTO 213

Source Number TB-040897-1 Source Location QA/QC

Total Well Depth: —	**Purge Data**				
Well Casing Size & Depth: —	Volume	pH	S.C.	Temp (°C)	Color and Turbidity
Static Water Level: —					
One Casing Volume: —					
Start Purge (hrs): —					
End Purge (hrs.): —			NA		
Total Purge Time (min.): —					
Total Amount Purged (gal.): —					
Monitor reading: —					
Purge Method: Stainless steel bailer					
Sample Method: 2" s.s. bailer					
Depth Sampled:					
Sample Date & Time: 4/8/97 1500					
Sampled by: Fred W. Ramser					
Signature(s):	**SAMPLE DATA**				
	pH	S.C.	Temp (°C)	Color and Turbidity	

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs - 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

Trip Blank paired with deionized water (CAT. No. 9150-5) with Lot #A231 from Ricca Chemical Co.

Samples sent to Kemron Environmental Services via Fed Ex Airbill #4595916474

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Jwn & Root Environmental

CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Extraction well

Project Site Name NWIRP Bethpage - Site 1

Project Site Number 5253-0412 / CTO 213

Source Number PS-EW-01

Source Location EW-01

Total Well Depth: 63.80' TOC	
Well Casing Size & Depth: 2" PVC 63.8' TOC	
Static Water Level: 58.27' TOC	
One Casing Volume: 5.53' ≅ 3.4 l	
Start Purge (hrs): —	
End Purge (hrs.): —	
Total Purge Time (min.): —	
Total Amount Purged (gal.): 2.64 gal = 10 l	
Monitor reading: No PID readings above background levels	
Purge Method: 2" stainless steel bailer	
Sample Method: 2" s.s. bailer	
Depth Sampled: —	
Sample Date & Time: 5/21/97 0845	
Sampled by: Starros Patselas	
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

$5.53'$ standing H_2O $\times$ $0.6016 \frac{\text{liters}}{\text{ft.}} = 3.4 \frac{l}{\text{vol.}}$

$3.4 \frac{l}{\text{vol.}} \times 3 \text{ vol} \cong 10 l$

Samples sent to Kemron Environmental
Fed Ex Airbill # 5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Extraction Well

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0412 / CTO 213

Source Number PS-EW-03
Source Location EW-03

Total Well Depth:	62.9' TOC
Well Casing Size & Depth:	2" PVC 63' TOC
Static Water Level:	58.18' TOC
One Casing Volume:	4.72' ≡
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	2.4gal = 9ℓ
Monitor reading:	No PID readings above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	5/21/97 0910
Sampled by:	Starros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N/A		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

$4.72'$ standing H_2O $\times$ $0.616 \frac{\text{liters}}{\text{ft.}} = 2.91 \frac{\ell}{\text{vol}}$

$2.91 \frac{\ell}{\text{vol}} \times 3 \text{ vol} = 8.72\ell = 9\ell$

Samples sent to Kemron Environmental
Fed Ex Airbill # 5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

wn & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other Extraction Well

Project Site Name NWIRP Bethpage - Site 1 Project Site Number 5253-0412/CTO 213

Source Number PS-EW-02 Source Location EW-02

Total Well Depth:	64.20' TOC
Well Casing Size & Depth: 2" PVC	64.2' TOC
Static Water Level:	58.43' TOC
One Casing Volume:	5.77' ≒ 3.55ℓ
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	2.9gal = 11ℓ
Monitor reading:	No PID readings above background levels
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	5/21/97 0910
Sampled by:	Starros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N/A		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs /2-40ml vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

■ Duplicate sample taken = PS-DUP-02 at 00:00

$5.77'\ \text{standing } H_2O \times 0.616 \frac{\ell}{\text{feet}} = 3.55 \frac{\ell}{\text{vol}}$

$3.55 \frac{\ell}{\text{vol}} \times 3\ \text{vol} = 10.66 \doteq 11\ell$

Samples sent to Kemron Environmental
Fed Ex Airbill # 5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

■ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0142/CTO 213

Source Number PS-MW-01
Source Location CFB-MW-01

Total Well Depth: 66.75' TOC
Well Casing Size & Depth: 2" PVC 66.75' TOC
Static Water Level: 59.30' TOC
One Casing Volume: 7.45' ≈ 4.6ℓ
Start Purge (hrs): ——
End Purge (hrs.): ——
Total Purge Time (min.): ——
Total Amount Purged (gal.): 3.7gal ≈ 14ℓ
Monitor reading: No PID reading above background levels
Purge Method: 2" stainless steel bailer
Sample Method: 2" s.s. bailer
Depth Sampled: ——
Sample Date & Time: 5/21/97 0840
Sampled by: Starros Patselas
Signature(s):

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs /2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

$7.45'\ \text{standing}\ H_2O \times 0.616\frac{\ell}{\text{feet}} = 4.6\frac{\ell}{\text{vol.}}$

$4.6\frac{\ell}{\text{vol.}} \times 3\text{vol} = 14\ell$

Samples sent to Kemron Environmental
Fed Ex Airbill #5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
CF Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Injection Well

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0412 / CTO 213

Source Number PS-IW-01
Source Location IW-01

Total Well Depth: 68.85' TOC	
Well Casing Size & Depth: 2" PVC 68.85' TOC	
Static Water Level: 59.05' TOC	
One Casing Volume: 9.8' ≅ 6ℓ	
Start Purge (hrs): —	
End Purge (hrs.): —	
Total Purge Time (min.): —	
Total Amount Purged (gal.): 1.6gal = 6ℓ	
Monitor reading: No PID readings above background levels	
Purge Method: 2" stainless steel bailer	
Sample Method: 2" s.s. bailer	
Depth Sampled: —	
ample Date & Time: 5/21/97 0815	
Sampled by: Starros Patselas	
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

$9.8'$ standing H_2O $\times$ $0.616 \frac{\text{liters}}{\text{ft.}} = 6.04 \frac{\ell}{\text{vol.}}$

$6.04\ \ell/\text{vol} \times 3\text{vol} = 18\ \ell$

Samples sent to Kemron Environmental
Fed Ex Airbill # 5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0142/CTO 213
Source Number TB-052197-02
Source Location QA/QC

	Purge Data				
Total Well Depth: —	Volume	pH	S.C.	Temp (°C)	Color and Turbidity
Well Casing Size & Depth: —					
Static Water Level: —					
One Casing Volume: —					
Start Purge (hrs): —					
End Purge (hrs.): —			N.A.		
Total Purge Time (min.): —					
Total Amount Purged (gal.):					
Monitor reading: No PID reading above background levels					
Purge Method: —					
Sample Method: —					
Depth Sampled: —					
Sample Date & Time: 5/21/97 0800					
Sampled by: Stavros Patselas					
Signature(s):					

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs /2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

Trip Blank poured with deionized water (Cat. No. 9150-5) with Lot # A-216 from RICCA Chemical Co.

Samples sent to Kemron Environmental
Fed Ex Airbill #5347199701

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C. F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other- Extraction well

Project Site Name NWIRP Bethpage – Site 1

Project Site Number 5253-0142/CTO 213

Source Number PS-EW-01

Source Location EW-01

Total Well Depth:	63.80' TOC
Well Casing Size & Depth:	2" PVC 63.80' TOC
Static Water Level:	55.82' TOC
One Casing Volume:	798' ≅ 4.9ℓ
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	3.96 ≅ 15ℓ
Monitor reading:	23.6 ppm.
Purge Method:	2" stainless steel bailer
Sample Method:	2" s s bailer
Depth Sampled:	—
Sample Date & Time:	6/18/97 1555
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.	A.	

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40 ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

7.98' standing H_2O x 0.616 $\frac{\ell}{ft.}$ = 4.9 $\frac{\ell}{Vol}$

4.9 $\frac{\ell}{Vol}$ x 3 Vol = 14.74

Samples sent to Kemron Environmental

Fed Ex Airbill # 5347199675

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C. F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
☐ Other - Extraction well

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0142/CTO 213

Source Number PS-EW-02
Source Location EW-02

Total Well Depth:	64.20'
Well Casing Size & Depth:	2" PVC 64.20'
Static Water Level:	56.51' TOC
One Casing Volume:	7.69'
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	3.7 ≅ 14ℓ
Monitor reading:	85.2 ppm
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s bailer
Depth Sampled:	—
Sample Date & Time:	6/18/97 1640
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.	A.	

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
- ☒ Low Concentration
- ☐ High Concentration
- ☒ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
☒ TCL VOAs / 2-40 ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☒ Duplicate sample taken = PS-DUP-03 at 00:00

7.69' standing H_2O × 0.616 ℓ/ft. = 4.7 ℓ/VOl

4.7 ℓ/VOl × 3 VOl = 14.2 ℓ

Samples sent to Kemron Environmental
Fed Ex Airbill # 534719962

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C. F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other _____

Project Site Name NWIRP Bethpage – Site 1

Project Site Number 5253-0142/CTO 213

Source Number PS-EW-03

Source Location EW-03

Total Well Depth:	62.9' TOC
Well Casing Size & Depth:	2" PVC 62.9' TOC
Static Water Level:	55.62' TOC
One Casing Volume:	7.28' ≅ 4.5 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	3.7 ≅ 14 l
Monitor reading:	79.2 ppm
Purge Method:	2" stainless steel bailer
Sample Method:	2" s s bailer
Depth Sampled:	—
Sample Date & Time:	6/18/97 1650
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.	A.	

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40 ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

7.28' standing H_2O x 0.616 $\frac{l}{ft}$ = 4.5 $\frac{l}{vol}$

4.5 $\frac{l}{vol}$ x 3 vol = 13.4 l

Samples sent to Kemron Environmental

Fed Ex Airbill # 5347199675

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C. F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Injection well

Project Site Name NWIRP Bethpage - Site 1
Project Site Number 5253-0142/CTO 213

Source Number PS-IW-01
Source Location IW-01

Total Well Depth:	68.85' TOC
Well Casing Size & Depth:	2" PVC 68.85' TOC
Static Water Level:	56.60' TOC
One Casing Volume:	12.25' ≅ 7.5ℓ
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	5.96 23ℓ
Monitor reading:	5.2 ppm
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s bailer
Depth Sampled:	—
Sample Date & Time:	6/18/97 1700
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40 ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

$12.25'\ \text{standing } H_2O \times 0.616\ \frac{\ell}{ft} = 7.5\ \frac{\ell}{VOL}$

$7.5\ \frac{\ell}{VOL} \times 3\ VOL = 22.6\ \ell$

Samples sent to Kemron Environmental
Fed Ex Airbill # 534719962

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C. F. Braun Engineering Corp.

■ Monitoring Well Data
☐ Domestic Well Data
☐ Other _____

Project Site Name NWIRP Bethpage – Site 1

Project Site Number 5253-0142/CTO 213

Source Number PS-MW-01

Source Location MW-01

Total Well Depth:	606.75' TOC
Well Casing Size & Depth:	2" PVC 606.75' TOC
Static Water Level:	56.99' TOC
One Casing Volume:	9.76' ≅ 6.0 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	4.8 = 18 l
Monitor reading:	0.0 ppm
Purge Method:	2" stainless steel bailer
Sample Method:	2" s.s. bailer
Depth Sampled:	—
Sample Date & Time:	6/18/97 1545
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N. A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40 ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

$9.76'\ \text{standing}\ H_2O \times 0.616\,\frac{l}{\text{feet}} = 6.0\,\frac{l}{\text{vol}}$

$6.0\,\frac{l}{\text{vol}} \times 3\,\text{vol} = 18\,l$

Samples sent to Kemron Environmental

Fed Ex Airbill # 5347199675

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C. F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage - Site 1 Project Site Number 5253-0142/CTO 213

Source Number PS-TB061897-03 Source Location QA/QC

Total Well Depth: —	
Well Casing Size & Depth: —	
Static Water Level: —	
One Casing Volume: —	
Start Purge (hrs): —	
End Purge (hrs.): —	
Total Purge Time (min.): —	
Total Amount Purged (gal.): —	
Monitor reading: —	
Purge Method: —	
Sample Method: —	
Depth Sampled: —	
Sample Date & Time: 6/18/97 1400	
Sampled by: Stavros Patselas	
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.	A.	

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40 ml vials	HCl to pH<2. 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

Trip Blank poured w/ deionized water (Cat. No. 9150-5) with Lot # A-216 from RICCA Chemical Co.

Samples sent to Kemron Environmental
Fed Ex Airbill # 5347199675

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Extraction well

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CT0213

Source Number PS-EW-01

Source Location Site 1 / EW-01

Total Well Depth: 63.80' TOC

Well Casing Size & Depth: 2"PVC 63.80 TOC

Static Water Level: 57.20' TOC

One Casing Volume: 6.6' ≅ 4.07 liters

Start Purge (hrs): —

End Purge (hrs.): —

Total Purge Time (min.): —

Total Amount Purged (gal.): 3.4 = 13 l

Monitor reading: 0.0 ppm.

Purge Method: 2" disposable bailer

Sample Method: 2" disposable bailer

Depth Sampled:

Sample Date & Time: 7/15/97 1600

Sampled by: Stavros Patselas

Signature(s):

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

6.6' standing H_2O × 0.616 $\frac{\text{liters}}{\text{feet}}$ = 4.07 $\frac{l}{\text{vol.}}$

4.07 $\frac{l}{\text{vol}}$ × 3 vol = 13 l

Sent to Kemron Environmental
Fed Ex Airbill # 5081400332

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other – Extraction well

Project Site Name NWIRP Bethpage
Project Site Number 5253-0142/CT0213
Source Number PS-EW-02
Source Location Site 1 / EW-02

Total Well Depth:	64.20' TOC
Well Casing Size & Depth:	2" PVC 64.20 TOC
Static Water Level:	57.88' TOC
One Casing Volume:	6.32' ≈ 3.89 liters
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	3.2 ≈ 12 l
Monitor reading:	13.1 ppm
Purge Method:	2" disposable bailer
Sample Method:	2" disposable bailer
Depth Sampled:	—
Sample Date & Time:	7/15/97 1610
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs / 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
■ Duplicate sample taken PS-DUP-04 at 00:00

6.32' standing H_2O × 0.616 $\frac{l}{ft.}$ = 3.8[illegible]

3.89 $\frac{l}{vol.}$ × 3 vol. = 12 liters

sent to Kemron Environmental
Fed Ex Airbill # 508140033[illegible]

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other - Extraction well

Project Site Name NWIRP Bethpage
Project Site Number 5253-0142/CTO213
Source Number PS-EW-03
Source Location Site 1 / EW-03

Total Well Depth:	62.90' TOC
Well Casing Size & Depth:	2" PVC 62.90' TOC
Static Water Level:	57.11' TOC
One Casing Volume:	5.79' ≈ 3.57 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	2.9 = 11 l
Monitor reading:	0.0 ppm
Purge Method:	2" disposable bailer
Sample Method:	2" disposable bailer
Depth Sampled:	
Sample Date & Time:	7/15/97 1620
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs (2-40ml. vials)	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

$5.79'$ Standing $H_2O \times 0.616 \frac{l}{ft} = 3.57 \frac{l}{vol}$

$3.57 \frac{l}{vol.} \times 3 vol = 10.7 \cong 11 l$

Sent to Kemron Environmental
Fed Ex Airbill # 508140033 2

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental

C.F. Braun Engineering Corp.

■ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage

Project Site Number 5253-0142/CTO 213

Source Number PS-MW-01

Source Location Site 1 / MW-01

Total Well Depth:	66.75' TOC
Well Casing Size & Depth:	2" PVC 66.75' TOC
Static Water Level:	58.32' TOC
One Casing Volume:	8.43' ≈ 5.19 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	4.1 ≈ 15.5 l
Monitor reading:	0.0 ppm
Purge Method:	2" disposable bailer
Sample Method:	2" disposable bailer
Depth Sampled:	—
Sample Date & Time:	7/15/97 1635
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample

■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs (2-40ml Vials)	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:

☐ Duplicate sample taken

$8.43'$ standing $H_2O \times 0.616 \frac{l}{ft} = 5.19 \frac{l}{vol}$

$5.19 \frac{l}{vol} \times 3 vol = 15.5 l$

Sent to Kemron Environmental via FedEx Airbill #508140033 2

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
■ Other – Injection well

Project Site Name NWIRP Bethpage
Project Site Number 5253-0142/CT0213
Source Number PS-IW-01
Source Location Site 1 / IW-01

Total Well Depth:	68.85' TOC
Well Casing Size & Depth:	2" PVC 68.85' TOC
Static Water Level:	58.00' TOC
One Casing Volume:	10.85' ≈ 6.68 l
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	5.28 ≈ 20 l
Monitor reading:	0.0 ppm
Purge Method:	2" disposable bailer
Sample Method:	2" disposable bailer
Depth Sampled:	—
Sample Date & Time:	7/15/97 1645
Sampled by:	Stavros Patselas
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color and Turbidity
		N.A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and Turbidity

Type of Sample
■ Low Concentration
☐ High Concentration
■ Grab
☐ Composite
☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs (2-40ml. vials)	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

10.85' standing H_2O × 0.616 $\frac{l}{ft.}$ = 6.68 $\frac{l}{vol}$

6.68 $\frac{l}{vol.}$ × 3 vol = 20 l

Sent to Kemron Environmental
Fed Ex Airbill # 508140033 2

Revised 4/5/96

GROUNDWATER
SAMPLE LOG SHEET

Brown & Root Environmental
C.F. Braun Engineering Corp.

☐ Monitoring Well Data
☐ Domestic Well Data
☐ Other_____

Project Site Name NWIRP Bethpage
Project Site Number 5253-0142

Source Number PS-TB071597-04
Source Location QA/Q

Total Well Depth:	
Well Casing Size & Depth:	—
Static Water Level:	—
One Casing Volume:	—
Start Purge (hrs):	—
End Purge (hrs.):	—
Total Purge Time (min.):	—
Total Amount Purged (gal.):	—
Monitor reading:	—
Purge Method:	—
Sample Method:	—
Depth Sampled:	—
Sample Date & Time: 7/15/97 1400	
Sampled by: Stavros Patselas	
Signature(s):	

Purge Data

Volume	pH	S.C.	Temp (°C)	Color
		N. A.		

SAMPLE DATA

pH	S.C.	Temp (°C)	Color and T

Type of Sample
- ■ Low Concentration
- ☐ High Concentration
- ■ Grab
- ☐ Composite
- ☐ Grab - Composite

Analysis	Preservative:
■ TCL VOAs 2-40ml. vials	HCl to pH<2, 4°C
☐ TCL SVOAs	4°C
☐ TCL Pest/PCBs	4°C
☐ TAL Metals	HNO_3 to pH<2
☐ Cyanide	NaOH to pH>12

Observations/Notes:
☐ Duplicate sample taken

Trip Blank poured w/ de water (Cat. No. 9150-5 with Lot # A-210 from RICCA Chemical Co

Sent to Kemron Envi Fed Ex Airbill #

Revised 4/5/96

APPENDIX F

CHAIN OF CUSTODY FORMS

AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

CHAIN-OF-CUSTODY RECORD

№ 010502

Page 1 of 1

Contact Person: D. Liryack
Company: Brown & Root Environmental
Address: 661 Anderson Dr. City: Pittsburgh State: Pa Zip: 15230
Phone: 412-921-8375 FAX: 412-921-4040
Collected By: Signature [signature]

Project info:
P.O. #:
Project #: 670213
Project Name: Bethpage

Turn Around Time:
☒ Normal
☐ Rush ____ Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	PS-AS01-01	4/23/97, 1840	TO-14			
02A	PS-AS01-02	4/23/97, 1850	TO-14			

Relinquished By: (Signature) [signature] Date/Time 4/24/97 1300 Print Name Stavros Patselas

Relinquished By: (Signature) Date/Time — Received By: (Signature) Date/Time

Relinquished By: (Signature) Date/Time — Received By: (Signature) Date/Time Air Toxics [illegible] 4/25/97 947

Notes: Fed Ex Air Bill # 2992720662

Lab Use Only

Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
Fedex	2992720662	[illegible]	4/25/97 947	Ambient	Good	(Yes) No None N/A	9704283

Form 1293 rev 06

AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Nº 010507

Page 1 of 1

Contact Person: Dave Brayack
Company: Brown & Root Environmental
Address: 6601 Anderson Dr. City: Pittsburgh State: PA Zip: 15230
Phone: 412-921-8375 FAX: 412-921-4040
Collected By: Signature: [signature]

Project info:
P.O. #:
Project #: CTO 213
Project Name: Bethpage

Turn Around Time:
[X] Normal
[ ] Rush ____ Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	PS-AS02-01	5/20/97, 1320	TO-14			
02A	PS-AS02-02	5/20/97, 1330	TO-14			

Relinquished By: (Signature) Date/Time: [signature] 5/20/97 1400
Print Name: Stavros Patselas
Relinquished By: (Signature) Date/Time:
Received By: (Signature) Date/Time:
Relinquished By: (Signature) Date/Time:
Received By: (Signature) Date/Time: [signature] ATL 5/21/97 1025

Notes: Fed Ex Air Bill # 5347199690

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Exp	5347199690	CK	5/21/97, 1029	Ambient	good	(Yes) No None N/A	9705219

F 293 rev 06

@ AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Nº 010504

Page 1 of 1

Contact Person: Dave Brayack
Company: Brown & Root Environmental
Address: 6161 Anderson Dr. City: Pittsburgh State: PA Zip: 15230
Phone: 412-921-8375 FAX: 412-921-4040
Collected By: Signature: [signature]

Project Info:
P.O. #:
Project #: CTO 213
Project Name: Bethpage

Turn Around Time:
☒ Normal
☐ Rush ____ Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	PS-AS03-01	6/19/97, 9:00	TO-14			
02A	PS-AS03-02	6/19/97, 9:15	TO-14			

Relinquished By: (Signature) Date/Time: [signature] 6/19/97, 0930 Print Name: Stavros Petsalis
Relinquished By: (Signature) Date/Time: Received By: (Signature) Date/Time:
Relinquished By: (Signature) Date/Time: Received By: (Signature) Date/Time: [signature] ATL 6/20/97 0946

Notes: Fed Ex Air Bill #
5081400310

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Exp	5081400310	OK	6/20/97 0946	Ambient	good	(Yes) No None N/A	9706247

Form 1293 rev. 06

AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX: (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Nº 010505

Page 1 of 1

Contact Person: Dave Brayack
Company: Brown & Root Environmental
Address: 661 Andersen Dr. City: Pittsburgh State: PA Zip: 15230
Phone: 412-921-8375 FAX: 412-921-4040
Collected By: Signature

Project Info:
P.O. #:
Project #: CTO 213
Project Name: Bethpage

Turn Around Time:
☒ Normal
☐ Rush ____ Specify

Lab I.D.	Field Sample I.D.	Date & Time	Analyses Requested	Canister Pressure / Vacuum Initial	Final	Receipt
01A	PS-AS04-01	7/15/97, 10:30	TO-14			
02A	PS-AS04-02	7/15/97, 10:40	TO-14			

Relinquished By: (Signature) Date/Time: 7/15/97 1625 Print Name: Stavros Patselas
Relinquished By: (Signature) Date/Time
Received By: (Signature) Date/Time
Relinquished By: (Signature) Date/Time
Received By: (Signature) Date/Time: 7/16/97 0902

Notes:
Fed Ex Airbill # 5081400321

Lab Use Only	Shipper Name	Air Bill #	Opened By:	Date/Time	Temp. (°C)	Condition	Custody Seals Intact?	Work Order #
	Fed Exp.	5081400321	PK	7/16/97 0902	Ambient	good	Yes No (None) N/A	9707145

F '93 rev 06

KEMRON ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

07461

Page 1 of 1

Project Contact: DAVE BRAYACK CF BRAUN/BROWN+ROOT ENV.

Turn Around Requirements:

Project No.: 5253

Project Name: NWIRP BETHPAGE SVE/AS

Sampler (print): FRED W RAMSER

Signature: Fred W Ramser

Sample I.D. No.	Comp*	Grab	Date	Time	Protocol CWA	Protocol SW846	NUMBER OF SAMPLES	Hold	VOA	ADDITIONAL REQUIREMENTS
PS-SB02-10		X	3-26-97	1130			1		✓	
PS-SB02-40		X	3-26-97	1150			1		✓	
PS-SB03-20		X	3-26-97	1300			1		✓	
~~PS-SB03-20D~~		~~X~~	~~3-26-97~~	FWR					X FWR	
PS-SB03-40		X	3-26-97	1320			1		✓	
PS-SB03-40D		X	3-26-97	1320			1		✓	
PS-SB04-30		X	3-26-97	1440			1		✓	
PS-SB04-40		X	3-26-97	1500			1		✓	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Fred W Ramser	3/26/97	1700	TRACK # 2582884485 FED EX				

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:
			[signature]	3/27/97	1000	C of C Sealed / Sts intact / Cooler temp 0.0

*Homogenize all composite samples prior to analysis

White - Lab Yellow - Office Pink - Field

Subsurface Soil

CF Braun / Brown & Root

Project Manager - Dave Bra

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
CTO 213 / 5253-0142	NWIRP Bethpage - Site 1
SAMPLERS (SIGNATURE):	

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	SW-846-8240 VOA - 40z. Clear						REMARKS
0	7/15 (per Sue Gus)	0925		✓	PS-SB04-30	1	1						
1		0925		✓	PS-SB04-30D	1	1						Field Duplicate
2		0940		✓	PS-SB04-40	1	1						
3		1050		✓	PS-SB03-20	1	1						
4		1110		✓	PS-SB03-40	1	1						
5		1215		✓	PS-SB02-10	1	1						
6		1240		✓	PS-SB02-40	1	1						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	7/15/97 1630				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	
		Angelia B Scott	7-16-97 1927	1 cooler via Fed Ex # 508140033 2	

Order No. 70440

Cooler Temp 4.0

Kemron
ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

.'460

Page of

Project Contact: DAVE BRAYACK

Turn Around Requirements:

Project No.: 5253

Project Name: NWIRP BETHPAGE

Sampler (print): FRED W. RAMSER

Signature:

Sample I.D. No.	Comp*	Grab	Date	Time	Protocol CWA	Protocol SW846	NUMBER OF SAMPLES	Hold	VOA 40ml VIAL	ADDITIONAL REQUIREMENTS
PS-EW-03		✓	4-8-97	1130		✓			2	
PS-MW-01			↓	1245		✓			2	
PS-EW-01			↓	1315		✓			2	
PS-IW-01			↓	1340		✓			2	
PS-EW-02			↓	1400		✓			2	
PS-DUP-01			4-8-9	0000		✓			2	
TB-040897-1			3-20-97	1500		✓			2	

C O C dated
Seal intact
Cooler Temp 5.0 °C

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Fred W Ramser	4/8/97	1800	FED EX				

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:
			Brenda Gregory	4/9/97	1000	1 COOLER FED EX AB# 4595916474

*Homogenize all composite samples prior to analysis

White – Lab Yellow – Office Pink – Field

CHAIN OF CUSTODY RECORD

CF Braun / Brown & Root Project Manager Dave Bryant

PROJECT NO.: CTO 213 / 5253-0142	SITE NAME: NWIRP Bethpage	NO. OF CONTAINERS	VOA - 40ml vials						REMARKS
SAMPLERS (SIGNATURE):									

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA - 40ml vials						REMARKS
	5/21/97	08/0	5/22/97	✓	PS-TB052197-02	2	2						Field paired Trip Blank
	5/21/97	0815	per client	✓	PS-IW-01	2	2						
	5/21/97	0840		✓	PS-MW-01	2	2						
	5/21/97	0845		✓	PS-EW-01	2	2						
	5/21/97	0910		✓	PS-EW-03	2	2						
	5/21/97	0910		✓	PS-EW-02	2	2						
	5/21/97	0000		✓	PS-DUP-02	2	2						
	~~5/21/97~~	~~0930~~			~~PS-FB052197-02~~	5/21/97							
													Cgs Sealed Sp intact

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
	5/21/97 1130				Cooler Temp 2.0 ok
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	
			5/22/97 1043	1 cooler	Fed Ex Track# 534719970 1

Order No. 70440 (F

CHAIN CUSTODY RECORD

C.T. Braun / Brown & Root
Project Manager - Dave Brayack

PROJECT NO.:	SITE NAME:
CTO 213 / 5253-0142	NWIRP Bethpage — Site 1

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA - 40ml Vials						REMARKS
0	6/16/97	1400		✓	PS-TB061897-03	2	2						Field poured Trip Blank
1	6/16/97	1545		✓	PS-MW-01	2	2						
2	6/16/97	1555		✓	PS-EW-01	2	2						
3	6/16/97	1640		✓	PS-EW-02	2	2						
4	6/16/97	1650		✓	PS-EW-03	2	2						
5	6/16/97	1700		✓	PS-IW-01	2	2						
6	6/19/97	0800		✓	PS-DUP-03	2	2						Blind duplicate

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
	6/18/97 1835				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: 1 cooler via Fed Ex Airbill # 534719967 5	
		Crystal Scott	6/19/97 1105		

Order No. 70440 (0693)

Coolers Ships & Rec'd Sealed

Groundwater

CHAIN OF CUSTODY RECORD

C+ Braun / Brown & Root
Project Manager: Dave Brayack

PROJECT NO.: CTO 213 / 5253-0142	SITE NAME: NWIRP Bethpage-Site 1

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA - 40ml vials w/ HCl					REMARKS
0	7/15/97	1400		✓	TB-071597-04	2	2					Field Poured Trip Blank
1	7/15/97	1600		✓	PS-EW-01	2	2					
2	7/15/97	1610		✓	PS-EW-02	2	2					
3	7/15/97	1620		✓	PS-EW-03	2	2					
4	7/15/97	1635		✓	PS-MW-01	2	2					
5	7/15/97	1645		✓	PS-IW-01	2	2					
6	7/15/97	0800		✓	PS-DUP-04	2	2					Blind Duplicate

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	7/15/97 1703	[signature]			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE): Angelina R Scott	DATE / TIME: 7-16-97 9:27	REMARKS: 1 Cooler via Fed Ex # 5081400332	

Order No. 70440 (0593)

Cooler Temp [illegible]

APPENDIX G

LABORATORY DATA SHEETS

@AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9704283

Work Order Summary

CLIENT:	Mr. David Brayack Brown & Root Environmental 661 Andersen Drive Pittsburgh, PA 15230	**BILL TO:** Same	
PHONE:	412-921-8375	**P.O. #**	
FAX:	412-921-4040	**PROJECT #** C70 213 Bethpage	
DATE RECEIVED:	4/25/97		
DATE COMPLETED:	5/7/97		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	PS-AS01-01	TO-14	Tedlar Bag
02A	PS-AS01-02	TO-14	Tedlar Bag
03A	Lab Blank	TO-14	NA

CERTIFIED BY: Robert Kooman
Laboratory Director

DATE: 5/9/97

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : PS-AS01-01
ID#: 9704283-01A
EPA METHOD TO-14 GC/MS Full Scan

File Name:	5142515	Date of Collection: 4/23/97
Dil. Factor:	4230	Date of Analysis: 4/25/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	1700	Not Detected
Freon 114	1700	Not Detected
Chloromethane	1700	Not Detected
Vinyl Chloride	1700	Not Detected
Bromomethane	1700	Not Detected
Chloroethane	1700	Not Detected
Freon 11	1700	Not Detected
1,1-Dichloroethene	1700	Not Detected
Freon 113	1700	22000
Methylene Chloride	1700	Not Detected
1,1-Dichloroethane	1700	5200
cis-1,2-Dichloroethene	1700	20000
Chloroform	1700	Not Detected
1,1,1-Trichloroethane	1700	75000
Carbon Tetrachloride	1700	Not Detected
Benzene	1700	Not Detected
1,2-Dichloroethane	1700	Not Detected
Trichloroethene	1700	51000
1,2-Dichloropropane	1700	Not Detected
cis-1,3-Dichloropropene	1700	Not Detected
Toluene	1700	Not Detected
trans-1,3-Dichloropropene	1700	Not Detected
1,1,2-Trichloroethane	1700	Not Detected
Tetrachloroethene	1700	580000
Ethylene Dibromide	1700	Not Detected
Chlorobenzene	1700	Not Detected
Ethyl Benzene	1700	Not Detected
m,p-Xylene	1700	Not Detected
o-Xylene	1700	Not Detected
Styrene	1700	Not Detected
1,1,2,2-Tetrachloroethane	1700	Not Detected
1,3,5-Trimethylbenzene	1700	Not Detected
1,2,4-Trimethylbenzene	1700	Not Detected
1,3-Dichlorobenzene	1700	Not Detected
1,4-Dichlorobenzene	1700	Not Detected
Chlorotoluene	1700	Not Detected
1,2-Dichlorobenzene	1700	Not Detected
1,2,4-Trichlorobenzene	1700	Not Detected
Hexachlorobutadiene	1700	Not Detected
Propylene	6700	Not Detected
1,3-Butadiene	6700	Not Detected
Acetone	6700	Not Detected
Carbon Disulfide	6700	Not Detected
2-Propanol	6700	Not Detected
trans-1,2-Dichloroethene	6700	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS01-01
ID#: 9704283-01A
EPA METHOD TO-14 GC/MS Full Scan

File Name:	5042515	Date of Collection: 4/23/97
Dil. Factor:	3330	Date of Analysis: 4/25/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Vinyl Acetate	6700	Not Detected
Chloroprene	6700	Not Detected
2-Butanone (Methyl Ethyl Ketone)	6700	Not Detected
Hexane	6700	Not Detected
Tetrahydrofuran	6700	Not Detected
Cyclohexane	6700	Not Detected
1,4-Dioxane	6700	Not Detected
Bromodichloromethane	6700	Not Detected
4-Methyl-2-pentanone	6700	Not Detected
2-Hexanone	6700	Not Detected
Dibromochloromethane	6700	Not Detected
Bromoform	6700	Not Detected
4-Ethyltoluene	6700	Not Detected
Ethanol	6700	Not Detected
Methyl tert-Butyl Ether	6700	Not Detected
Heptane	6700	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	107	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	94	70-130

AIR TOXICS LTD.

SAMPLE NAME : PS-AS01-02

ID#: 9704283-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	5042514.d	Date of Collection: 4/23/97
Dil. Factor:	2.00	Date of Analysis: 4/25/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	1.0	Not Detected
Freon 114	1.0	Not Detected
Chloromethane	1.0	Not Detected
Vinyl Chloride	1.0	Not Detected
Bromomethane	1.0	Not Detected
Chloroethane	1.0	Not Detected
Freon 11	1.0	Not Detected
1,1-Dichloroethene	1.0	Not Detected
Freon 113	1.0	Not Detected
Methylene Chloride	1.0	4.2
1,1-Dichloroethane	1.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected
Chloroform	1.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected
Carbon Tetrachloride	1.0	Not Detected
Benzene	1.0	Not Detected
1,2-Dichloroethane	1.0	Not Detected
Trichloroethene	1.0	Not Detected
1,2-Dichloropropane	1.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected
Toluene	1.0	2.2
trans-1,3-Dichloropropene	1.0	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected
Tetrachloroethene	1.0	Not Detected
Ethylene Dibromide	1.0	Not Detected
Chlorobenzene	1.0	Not Detected
Ethyl Benzene	1.0	Not Detected
m,p-Xylene	1.0	Not Detected
o-Xylene	1.0	Not Detected
Styrene	1.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected
Chlorotoluene	1.0	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected
1,2,4-Trichlorobenzene	1.0	Not Detected
Hexachlorobutadiene	1.0	Not Detected
Propylene	4.0	Not Detected
1,3-Butadiene	4.0	Not Detected
Acetone	4.0	6.3
Carbon Disulfide	4.0	Not Detected
2-Propanol	4.0	Not Detected
trans-1,2-Dichloroethene	4.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS01-02
ID#: 9704283-02A
EPA METHOD TO-14 GC/MS Full Scan

File Name:	**5042514**	**Date of Collection:**	**4/23/97**
Dil. Factor:	**2.00**	**Date of Analysis:**	**4/25/97**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Vinyl Acetate	4.0	Not Detected
Chloroprene	4.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.0	13
Hexane	4.0	Not Detected
Tetrahydrofuran	4.0	15
Cyclohexane	4.0	Not Detected
1,4-Dioxane	4.0	Not Detected
Bromodichloromethane	4.0	Not Detected
4-Methyl-2-pentanone	4.0	Not Detected
2-Hexanone	4.0	Not Detected
Dibromochloromethane	4.0	Not Detected
Bromoform	4.0	Not Detected
4-Ethyltoluene	4.0	Not Detected
Ethanol	4.0	Not Detected
Methyl tert-Butyl Ether	4.0	Not Detected
Heptane	4.0	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	96	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	108	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9704283-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	5042503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 4/25/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected
2-Propanol	2.0	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9704283-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	5042504	**Date of Collection:**	NA
Dil. Factor:	1.00	**Date of Analysis:**	4/25/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Vinyl Acetate	2.0	Not Detected
Chloroprene	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected
Hexane	2.0	Not Detected
Tetrahydrofuran	2.0	Not Detected
Cyclohexane	2.0	Not Detected
1,4-Dioxane	2.0	Not Detected
Bromodichloromethane	2.0	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected
2-Hexanone	2.0	Not Detected
Dibromochloromethane	2.0	Not Detected
Bromoform	2.0	Not Detected
4-Ethyltoluene	2.0	Not Detected
Ethanol	2.0	Not Detected
Methyl tert-Butyl Ether	2.0	Not Detected
Heptane	2.0	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	106	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	92	70-130

@AIR TOXICS LTD.
AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9705219

Work Order Summary

CLIENT:	Mr. David Brayack Brown & Root Environmental 661 Andersen Drive Pittsburgh, PA 15230	**BILL TO:** Same	
PHONE:	412-921-8375	P.O. # NR	
FAX:	412-921-4040	PROJECT # CT0 213 Bethpage	
DATE RECEIVED:	5/21/97		
DATE COMPLETED:	6/6/97		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	PS-AS02-01	TO-14	Tedlar Bag
02A	PS-AS02-02	TO-14	Tedlar Bag
03A	Lab Blank	TO-14	NA

CERTIFIED BY: _____
Laboratory Director

DATE: 6/6/97

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : PS-AS02-01

ID#: 9705219-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	j052930	Date of Collection:	5/20/97
Dil. Factor:	674	Date of Analysis:	5/30/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	340	Not Detected
Freon 114	340	Not Detected
Chloromethane	340	Not Detected
Vinyl Chloride	340	Not Detected
Bromomethane	340	Not Detected
Chloroethane	340	Not Detected
Freon 11	340	Not Detected
1,1-Dichloroethene	340	410
Freon 113	340	2800
Methylene Chloride	340	Not Detected
1,1-Dichloroethane	340	2500
cis-1,2-Dichloroethene	340	2600
Chloroform	340	Not Detected
1,1,1-Trichloroethane	340	27000
Carbon Tetrachloride	340	Not Detected
Benzene	340	Not Detected
1,2-Dichloroethane	340	Not Detected
Trichloroethene	340	4600
1,2-Dichloropropane	340	Not Detected
cis-1,3-Dichloropropene	340	Not Detected
Toluene	340	Not Detected
trans-1,3-Dichloropropene	340	Not Detected
1,1,2-Trichloroethane	340	Not Detected
Tetrachloroethene	340	52000
Ethylene Dibromide	340	Not Detected
Chlorobenzene	340	Not Detected
Ethyl Benzene	340	Not Detected
m,p-Xylene	340	Not Detected
o-Xylene	340	Not Detected
Styrene	340	Not Detected
1,1,2,2-Tetrachloroethane	340	Not Detected
1,3,5-Trimethylbenzene	340	Not Detected
1,2,4-Trimethylbenzene	340	Not Detected
1,3-Dichlorobenzene	340	Not Detected
1,4-Dichlorobenzene	340	Not Detected
Chlorotoluene	340	Not Detected
1,2-Dichlorobenzene	340	Not Detected
1,2,4-Trichlorobenzene	340	Not Detected
Hexachlorobutadiene	340	Not Detected
Propylene	1300	Not Detected
1,3-Butadiene	1300	Not Detected
Acetone	1300	Not Detected
Carbon Disulfide	1300	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS02-01

ID#: 9705219-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	052330	Date of Collection: 5/20/97
Dil. Factor:	674	Date of Analysis: 5/30/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
2-Propanol	1300	Not Detected
trans-1,2-Dichloroethene	1300	Not Detected
Vinyl Acetate	1300	Not Detected
Chloroprene	1300	Not Detected
2-Butanone (Methyl Ethyl Ketone)	1300	Not Detected
Hexane	1300	Not Detected
Tetrahydrofuran	1300	Not Detected
Cyclohexane	1300	Not Detected
1,4-Dioxane	1300	Not Detected
Bromodichloromethane	1300	Not Detected
4-Methyl-2-pentanone	1300	Not Detected
2-Hexanone	1300	Not Detected
Dibromochloromethane	1300	Not Detected
Bromoform	1300	Not Detected
4-Ethyltoluene	1300	Not Detected
Ethanol	1300	Not Detected
Methyl tert-Butyl Ether	1300	Not Detected
Heptane	1300	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	104	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	96	70-130

AIR TOXICS LTD.

SAMPLE NAME : PS-AS02-02

ID#: 9705219-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	j052931	Date of Collection: 5/20/97
Dil. Factor:	8.08	Date of Analysis: 5/30/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	4.0	Not Detected
Freon 114	4.0	Not Detected
Chloromethane	4.0	Not Detected
Vinyl Chloride	4.0	12
Bromomethane	4.0	Not Detected
Chloroethane	4.0	Not Detected
Freon 11	4.0	Not Detected
1,1-Dichloroethene	4.0	Not Detected
Freon 113	4.0	Not Detected
Methylene Chloride	4.0	4.6
1,1-Dichloroethane	4.0	Not Detected
cis-1,2-Dichloroethene	4.0	Not Detected
Chloroform	4.0	Not Detected
1,1,1-Trichloroethane	4.0	Not Detected
Carbon Tetrachloride	4.0	Not Detected
Benzene	4.0	Not Detected
1,2-Dichloroethane	4.0	Not Detected
Trichloroethene	4.0	Not Detected
1,2-Dichloropropane	4.0	Not Detected
cis-1,3-Dichloropropene	4.0	Not Detected
Toluene	4.0	Not Detected
trans-1,3-Dichloropropene	4.0	Not Detected
1,1,2-Trichloroethane	4.0	Not Detected
Tetrachloroethene	4.0	5.7
Ethylene Dibromide	4.0	Not Detected
Chlorobenzene	4.0	Not Detected
Ethyl Benzene	4.0	Not Detected
m,p-Xylene	4.0	Not Detected
o-Xylene	4.0	Not Detected
Styrene	4.0	Not Detected
1,1,2,2-Tetrachloroethane	4.0	Not Detected
1,3,5-Trimethylbenzene	4.0	Not Detected
1,2,4-Trimethylbenzene	4.0	Not Detected
1,3-Dichlorobenzene	4.0	Not Detected
1,4-Dichlorobenzene	4.0	Not Detected
Chlorotoluene	4.0	Not Detected
1,2-Dichlorobenzene	4.0	Not Detected
1,2,4-Trichlorobenzene	4.0	Not Detected
Hexachlorobutadiene	4.0	Not Detected
Propylene	16	Not Detected
1,3-Butadiene	16	Not Detected
Acetone	16	19
Carbon Disulfide	16	Not Detected

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AIR TOXICS LTD.

SAMPLE NAME : PS-AS02-02

ID#: 9705219-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1052331	Date of Collection:	5/20/97
Dil. Factor:	5.03	Date of Analysis:	5/30/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
2-Propanol	16	Not Detected
trans-1,2-Dichloroethene	16	Not Detected
Vinyl Acetate	16	Not Detected
Chloroprene	16	Not Detected
2-Butanone (Methyl Ethyl Ketone)	16	Not Detected
Hexane	16	Not Detected
Tetrahydrofuran	16	19
Cyclohexane	16	Not Detected
1,4-Dioxane	16	Not Detected
Bromodichloromethane	16	Not Detected
4-Methyl-2-pentanone	16	Not Detected
2-Hexanone	16	Not Detected
Dibromochloromethane	16	Not Detected
Bromoform	16	Not Detected
4-Ethyltoluene	16	Not Detected
Ethanol	16	Not Detected
Methyl tert-Butyl Ether	16	Not Detected
Heptane	16	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	100	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9705219-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	j052905	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 5/29/97	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9705219-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	I052805	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/28/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
2-Propanol	2.0	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected
Vinyl Acetate	2.0	Not Detected
Chloroprene	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected
Hexane	2.0	Not Detected
Tetrahydrofuran	2.0	Not Detected
Cyclohexane	2.0	Not Detected
1,4-Dioxane	2.0	Not Detected
Bromodichloromethane	2.0	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected
2-Hexanone	2.0	Not Detected
Dibromochloromethane	2.0	Not Detected
Bromoform	2.0	Not Detected
4-Ethyltoluene	2.0	Not Detected
Ethanol	2.0	Not Detected
Methyl tert-Butyl Ether	2.0	Not Detected
Heptane	2.0	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	106	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	100	70-130

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AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9706247

Work Order Summary

CLIENT:	Mr. David Brayack Brown & Root Environmental 661 Andersen Drive Pittsburgh, PA 15230	**BILL TO:** Same	
PHONE:	412-921-8375	**P.O. #** NR	
FAX:	412-921-4040	**PROJECT #** CT0 213 Bethpage	
DATE RECEIVED:	6/20/97		
DATE COMPLETED:	7/2/97		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	PS-AS03-01	TO-14	Tedlar Bag
02A	PS-AS03-02	TO-14	Tedlar Bag
03A	Lab Blank	TO-14	NA

CERTIFIED BY: Linda L. Truman DATE: 7/3/97

Laboratory Director

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : PS-AS03-01

ID#: 9706247-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1062116**	**Date of Collection: 6/19/97**	
Dil. Factor:	**250**	**Date of Analysis: 6/21/97**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	130	Not Detected
Freon 114	130	Not Detected
Chloromethane	130	Not Detected
Vinyl Chloride	130	Not Detected
Bromomethane	130	Not Detected
Chloroethane	130	Not Detected
Freon 11	130	Not Detected
1,1-Dichloroethene	130	140
Freon 113	130	1100
Methylene Chloride	130	Not Detected
1,1-Dichloroethane	130	960
cis-1,2-Dichloroethene	130	1000
Chloroform	130	Not Detected
1,1,1-Trichloroethane	130	14000
Carbon Tetrachloride	130	Not Detected
Benzene	130	Not Detected
1,2-Dichloroethane	130	Not Detected
Trichloroethene	130	3400
1,2-Dichloropropane	130	Not Detected
cis-1,3-Dichloropropene	130	Not Detected
Toluene	130	Not Detected
trans-1,3-Dichloropropene	130	Not Detected
1,1,2-Trichloroethane	130	Not Detected
Tetrachloroethene	130	23000
Ethylene Dibromide	130	Not Detected
Chlorobenzene	130	Not Detected
Ethyl Benzene	130	Not Detected
m,p-Xylene	130	Not Detected
o-Xylene	130	Not Detected
Styrene	130	Not Detected
1,1,2,2-Tetrachloroethane	130	Not Detected
1,3,5-Trimethylbenzene	130	Not Detected
1,2,4-Trimethylbenzene	130	Not Detected
1,3-Dichlorobenzene	130	Not Detected
1,4-Dichlorobenzene	130	Not Detected
Chlorotoluene	130	Not Detected
1,2-Dichlorobenzene	130	Not Detected
1,2,4-Trichlorobenzene	130	Not Detected
Hexachlorobutadiene	130	Not Detected
Propylene	500	Not Detected
1,3-Butadiene	500	Not Detected
Acetone	500	Not Detected
Carbon Disulfide	500	Not Detected
2-Propanol	500	Not Detected
trans-1,2-Dichloroethene	500	Not Detected
Vinyl Acetate	500	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS03-01

ID#: 9706247-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1062116	Date of Collection: 6/19/97
Dil. Factor:	250	Date of Analysis: 6/21/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	500	Not Detected
2-Butanone (Methyl Ethyl Ketone)	500	Not Detected
Hexane	500	Not Detected
Tetrahydrofuran	500	Not Detected
Cyclohexane	500	Not Detected
1,4-Dioxane	500	Not Detected
Bromodichloromethane	500	Not Detected
4-Methyl-2-pentanone	500	Not Detected
2-Hexanone	500	Not Detected
Dibromochloromethane	500	Not Detected
Bromoform	500	Not Detected
4-Ethyltoluene	500	Not Detected
Ethanol	500	Not Detected
Methyl tert-Butyl Ether	500	Not Detected
Heptane	500	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	106	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130

AIR TOXICS LTD.

SAMPLE NAME : PS-AS03-02

ID#: 9706247-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1062115	Date of Collection: 6/19/97
Dil. Factor:	2.00	Date of Analysis: 6/21/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	1.0	Not Detected
Freon 114	1.0	Not Detected
Chloromethane	1.0	Not Detected
Vinyl Chloride	1.0	1.6
Bromomethane	1.0	Not Detected
Chloroethane	1.0	24
Freon 11	1.0	Not Detected
1,1-Dichloroethene	1.0	Not Detected
Freon 113	1.0	Not Detected
Methylene Chloride	1.0	7.4
1,1-Dichloroethane	1.0	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected
Chloroform	1.0	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected
Carbon Tetrachloride	1.0	Not Detected
Benzene	1.0	Not Detected
1,2-Dichloroethane	1.0	Not Detected
Trichloroethene	1.0	Not Detected
1,2-Dichloropropane	1.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected
Toluene	1.0	3.0
trans-1,3-Dichloropropene	1.0	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected
Tetrachloroethene	1.0	Not Detected
Ethylene Dibromide	1.0	Not Detected
Chlorobenzene	1.0	Not Detected
Ethyl Benzene	1.0	Not Detected
m,p-Xylene	1.0	Not Detected
o-Xylene	1.0	Not Detected
Styrene	1.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected
1,2,4-Trimethylbenzene	1.0	1.2
1,3-Dichlorobenzene	1.0	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected
Chlorotoluene	1.0	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected
1,2,4-Trichlorobenzene	1.0	Not Detected
Hexachlorobutadiene	1.0	Not Detected
Propylene	4.0	13
1,3-Butadiene	4.0	Not Detected
Acetone	4.0	5.1
Carbon Disulfide	4.0	Not Detected
2-Propanol	4.0	4.1
trans-1,2-Dichloroethene	4.0	Not Detected
Vinyl Acetate	4.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS03-02

ID#: 9706247-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1062115	Date of Collection:	6/19/97
Dil. Factor:	2.00	Date of Analysis:	6/21/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	4.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.0	Not Detected
Hexane	4.0	Not Detected
Tetrahydrofuran	4.0	Not Detected
Cyclohexane	4.0	Not Detected
1,4-Dioxane	4.0	Not Detected
Bromodichloromethane	4.0	Not Detected
4-Methyl-2-pentanone	4.0	Not Detected
2-Hexanone	4.0	Not Detected
Dibromochloromethane	4.0	Not Detected
Bromoform	4.0	Not Detected
4-Ethyltoluene	4.0	Not Detected
Ethanol	4.0	Not Detected
Methyl tert-Butyl Ether	4.0	Not Detected
Heptane	4.0	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	103	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9706247-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1062104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/21/97**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected
2-Propanol	2.0	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected
Vinyl Acetate	2.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9706247-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1062104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/21/97**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected
Hexane	2.0	Not Detected
Tetrahydrofuran	2.0	Not Detected
Cyclohexane	2.0	Not Detected
1,4-Dioxane	2.0	Not Detected
Bromodichloromethane	2.0	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected
2-Hexanone	2.0	Not Detected
Dibromochloromethane	2.0	Not Detected
Bromoform	2.0	Not Detected
4-Ethyltoluene	2.0	Not Detected
Ethanol	2.0	Not Detected
Methyl tert-Butyl Ether	2.0	Not Detected
Heptane	2.0	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

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AN ENVIRONMENTAL ANALYTICAL LABORATORY

WORK ORDER #: 9707145

Work Order Summary

CLIENT:	Mr. David Brayack Brown & Root Environmental 661 Andersen Drive Pittsburgh, PA 15230	**BILL TO:** Same	
PHONE:	412-921-8375	**P.O. #** NR	
FAX:	412-921-4040	**PROJECT #** CT0 213 Bethpage	
DATE RECEIVED:	7/16/97		
DATE COMPLETED:	7/23/97		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.
01A	PS-AS04-01	TO-14	Tedlar Bag
02A	PS-AS04-02	TO-14	Tedlar Bag
03A	Lab Blank	TO-14	NA

CERTIFIED BY: _____ DATE: 7/23/97
Laboratory Director

Certification numbers: CA ELAP - 1149, NY ELAP - 11291, UT ELAP - E-217

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630
(916) 985-1000 • (800) 985-5955 • FAX (916) 985-1020

AIR TOXICS LTD.

SAMPLE NAME : PS-AS04-01

ID#: 9707145-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1071709**	**Date of Collection:**	**7/15/97**
Dil. Factor:	**222**	**Date of Analysis:**	**7/17/97**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	110	Not Detected
Freon 114	110	Not Detected
Chloromethane	110	Not Detected
Vinyl Chloride	110	Not Detected
Bromomethane	110	Not Detected
Chloroethane	110	Not Detected
Freon 11	110	Not Detected
1,1-Dichloroethene	110	250
Freon 113	110	1100
Methylene Chloride	110	Not Detected
1,1-Dichloroethane	110	2300
cis-1,2-Dichloroethene	110	1400
Chloroform	110	Not Detected
1,1,1-Trichloroethane	110	26000
Carbon Tetrachloride	110	Not Detected
Benzene	110	Not Detected
1,2-Dichloroethane	110	Not Detected
Trichloroethene	110	3800
1,2-Dichloropropane	110	Not Detected
cis-1,3-Dichloropropene	110	Not Detected
Toluene	110	Not Detected
trans-1,3-Dichloropropene	110	Not Detected
1,1,2-Trichloroethane	110	Not Detected
Tetrachloroethene	110	21000
Ethylene Dibromide	110	Not Detected
Chlorobenzene	110	Not Detected
Ethyl Benzene	110	Not Detected
m,p-Xylene	110	Not Detected
o-Xylene	110	Not Detected
Styrene	110	Not Detected
1,1,2,2-Tetrachloroethane	110	Not Detected
1,3,5-Trimethylbenzene	110	Not Detected
1,2,4-Trimethylbenzene	110	Not Detected
1,3-Dichlorobenzene	110	Not Detected
1,4-Dichlorobenzene	110	Not Detected
Chlorotoluene	110	Not Detected
1,2-Dichlorobenzene	110	Not Detected
1,2,4-Trichlorobenzene	110	Not Detected
Hexachlorobutadiene	110	Not Detected
Propylene	440	Not Detected
1,3-Butadiene	440	Not Detected
Acetone	440	Not Detected
Carbon Disulfide	440	Not Detected
2-Propanol	440	Not Detected
trans-1,2-Dichloroethene	440	Not Detected
Vinyl Acetate	440	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS04-01

ID#: 9707145-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1071709**	**Date of Collection:**	**7/15/97**
Dil. Factor:	**222**	**Date of Analysis:**	**7/17/97**

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	440	Not Detected
2-Butanone (Methyl Ethyl Ketone)	440	Not Detected
Hexane	440	Not Detected
Tetrahydrofuran	440	Not Detected
Cyclohexane	440	Not Detected
1,4-Dioxane	440	Not Detected
Bromodichloromethane	440	Not Detected
4-Methyl-2-pentanone	440	Not Detected
2-Hexanone	440	Not Detected
Dibromochloromethane	440	Not Detected
Bromoform	440	Not Detected
4-Ethyltoluene	440	Not Detected
Ethanol	440	Not Detected
Methyl tert-Butyl Ether	440	Not Detected
Heptane	440	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	95	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	94	70-130

AIR TOXICS LTD.

SAMPLE NAME : PS-AS04-02

ID#: 9707145-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1071711	**Date of Collection:**	7/15/97
Dil. Factor:	2.00	**Date of Analysis:**	7/17/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	1.0	Not Detected
Freon 114	1.0	Not Detected
Chloromethane	1.0	Not Detected
Vinyl Chloride	1.0	5.1
Bromomethane	1.0	Not Detected
Chloroethane	1.0	19
Freon 11	1.0	Not Detected
1,1-Dichloroethene	1.0	1.4
Freon 113	1.0	8.6
Methylene Chloride	1.0	11
1,1-Dichloroethane	1.0	14
cis-1,2-Dichloroethene	1.0	24
Chloroform	1.0	Not Detected
1,1,1-Trichloroethane	1.0	230
Carbon Tetrachloride	1.0	Not Detected
Benzene	1.0	Not Detected
1,2-Dichloroethane	1.0	Not Detected
Trichloroethene	1.0	50
1,2-Dichloropropane	1.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected
Toluene	1.0	3.5
trans-1,3-Dichloropropene	1.0	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected
Tetrachloroethene	1.0	38
Ethylene Dibromide	1.0	Not Detected
Chlorobenzene	1.0	Not Detected
Ethyl Benzene	1.0	Not Detected
m,p-Xylene	1.0	Not Detected
o-Xylene	1.0	Not Detected
Styrene	1.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected
Chlorotoluene	1.0	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected
1,2,4-Trichlorobenzene	1.0	Not Detected
Hexachlorobutadiene	1.0	Not Detected
Propylene	4.0	Not Detected
1,3-Butadiene	4.0	Not Detected
Acetone	4.0	6.8
Carbon Disulfide	4.0	Not Detected
2-Propanol	4.0	5.3
trans-1,2-Dichloroethene	4.0	Not Detected
Vinyl Acetate	4.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : PS-AS04-02

ID#: 9707145-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	1071711	**Date of Collection:**	7/15/97
Dil. Factor:	2.00	**Date of Analysis:**	7/17/97

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	4.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.0	4.3
Hexane	4.0	Not Detected
Tetrahydrofuran	4.0	Not Detected
Cyclohexane	4.0	Not Detected
1,4-Dioxane	4.0	Not Detected
Bromodichloromethane	4.0	Not Detected
4-Methyl-2-pentanone	4.0	Not Detected
2-Hexanone	4.0	Not Detected
Dibromochloromethane	4.0	Not Detected
Bromoform	4.0	Not Detected
4-Ethyltoluene	4.0	Not Detected
Ethanol	4.0	Not Detected
Methyl tert-Butyl Ether	4.0	Not Detected
Heptane	4.0	Not Detected

Container Type: Tedlar Bag

Surrogates	% Recovery	Method Limits
Octafluorotoluene	100	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	103	70-130

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9707145-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1071704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/17/97**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected
2-Propanol	2.0	Not Detected
trans-1,2-Dichloroethene	2.0	Not Detected
Vinyl Acetate	2.0	Not Detected

AIR TOXICS LTD.

SAMPLE NAME : Lab Blank

ID#: 9707145-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	**1071704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 7/17/97**	

Compound	Det. Limit (ppbv)	Amount (ppbv)
Chloroprene	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected
Hexane	2.0	Not Detected
Tetrahydrofuran	2.0	Not Detected
Cyclohexane	2.0	Not Detected
1,4-Dioxane	2.0	Not Detected
Bromodichloromethane	2.0	Not Detected
4-Methyl-2-pentanone	2.0	Not Detected
2-Hexanone	2.0	Not Detected
Dibromochloromethane	2.0	Not Detected
Bromoform	2.0	Not Detected
4-Ethyltoluene	2.0	Not Detected
Ethanol	2.0	Not Detected
Methyl tert-Butyl Ether	2.0	Not Detected
Heptane	2.0	Not Detected

Container Type: NA

Surrogates	% Recovery	Method Limits
Octafluorotoluene	96	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attn: Dave Brayack

Login #: 97-03-514
Date Received: 03/27/97
Date Completed: 04/08/97
Date Reported: 04/09/97 17:00
Work ID: 5253/NWRIP BETHPAGE SVE/AS

Client Code: BRROOTENV418

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	PS-SB02-10	02	PS-SB02-40
03	PS-SB03-20	04	PS-SB03-40
05	PS-SB03-40D	06	PS-SB04-30
07	PS-SB04-40		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.

Certified by
Leslie Bucina

This is to certify that the following samples were analyzed using good laboratory practices to show the following results.

SAMPLE ID: **01** **PS-SB02-10** Collected: **03/26/97 1130** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	94	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **02** **PS-SB02-40** Collected: **03/26/97 1150** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	93	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **03** **PS-SB03-20** Collected: **03/26/97 1300** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	97	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **04** **PS-SB03-40** Collected: **03/26/97 1320** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	96	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **05** **PS-SB03-40D** Collected: **03/26/97 1320** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	96	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **06** **PS-SB04-30** Collected: **03/26/97 1440** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	82	1	% wt.	04/03/97	SCM	D2216-90

SAMPLE ID: **07** **PS-SB04-40** Collected: **03/26/97 1500** Category: **Soil**

TEST DESCRIPTION	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED	BY	METHOD
Percent Solids	95	1	% wt.	04/03/97	SCM	D2216-90

NOTES AND DEFINITIONS:

Test Code: **826-BRE2** Lab No: **01** Collected: **03/26/97 1130**
Sample Description: **PS-SB02-10** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15400
Instrument: HPMS2 Injected: 03/27/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	11
74-83-9	Bromomethane	U	11
75-01-4	Vinyl chloride	U	11
75-00-3	Chloroethane	U	11
75-09-2	Methylene chloride	U	5.3
67-64-1	Acetone	890D	11
75-15-0	Carbon disulfide	U	5.3
75-35-4	1,1-Dichloroethene	U	5.3
75-34-3	1,1-Dichloroethane	U	5.3
156-59-2	cis-1,2-Dichloroethene	U	5.3
156-60-5	trans-1,2-Dichloroethene	U	5.3
67-66-3	Chloroform	U	5.3
107-06-2	1,2-Dichloroethane	U	5.3
78-93-3	2-Butanone	U	11
74-97-5	Bromochloromethane	U	5.3
71-55-6	1,1,1-Trichloroethane	U	5.3
56-23-5	Carbon tetrachloride	U	5.3
108-05-4	Vinyl acetate	U	11
75-27-4	Bromodichloromethane	U	5.3
78-87-5	1,2-Dichloropropane	U	5.3
10061-01-5	cis-1,3-Dichloropropene	U	5.3
79-01-6	Trichloroethene	U	5.3
124-48-1	Dibromochloromethane	U	5.3
79-00-5	1,1,2-Trichloroethane	U	5.3
71-43-2	Benzene	U	5.3
10061-02-6	trans-1,3-Dichloropropene	U	5.3
75-25-2	Bromoform	U	5.3
108-10-1	4-Methyl-2-pentanone	U	11
591-78-6	2-Hexanone	U	11
127-18-4	Tetrachloroethene	80	5.3
79-34-5	1,1,2,2-Tetrachloroethane	U	5.3
106-93-4	1,2-Dibromoethane	U	5.3
108-88-3	Toluene	U	5.3
108-90-7	Chlorobenzene	U	5.3
100-41-4	Ethyl benzene	U	5.3
100-42-5	Styrene	U	5.3
1330-20-7	Xylenes, Total	U	5.3
541-73-1	1,3-Dichlorobenzene	U	5.3
106-46-7	1,4-Dichlorobenzene	U	5.3
95-50-1	1,2-Dichlorobenzene	U	5.3
96-12-8	1,2-Dibromo-3-chloropropane	U	5.3

SURROGATES:

Dibromofluoromethane	103	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	96	% Recovery	(80% - 120%)
Toluene-d8	104	% Recovery	(81% - 117%)
p-Bromofluorobenzene	106	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

Test Code: **826-BRE2** Lab No: **02** Collected: **03/26/97 1150**
Sample Description: **PS-SB02-40** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15401
Instrument: HPMS2 Injected: 03/27/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	11
74-83-9	Bromomethane	U	11
75-01-4	Vinyl chloride	U	11
75-00-3	Chloroethane	U	11
75-09-2	Methylene chloride	U	5.4
67-64-1	Acetone	18000D	11
75-15-0	Carbon disulfide	U	5.4
75-35-4	1,1-Dichloroethene	U	5.4
75-34-3	1,1-Dichloroethane	U	5.4
156-59-2	cis-1,2-Dichloroethene	U	5.4
156-60-5	trans-1,2-Dichloroethene	U	5.4
67-66-3	Chloroform	U	5.4
107-06-2	1,2-Dichloroethane	U	5.4
78-93-3	2-Butanone	U	11
74-97-5	Bromochloromethane	U	5.4
71-55-6	1,1,1-Trichloroethane	U	5.4
56-23-5	Carbon tetrachloride	U	5.4
108-05-4	Vinyl acetate	U	11
75-27-4	Bromodichloromethane	U	5.4
78-87-5	1,2-Dichloropropane	U	5.4
10061-01-5	cis-1,3-Dichloropropene	U	5.4
79-01-6	Trichloroethene	U	5.4
124-48-1	Dibromochloromethane	U	5.4
79-00-5	1,1,2-Trichloroethane	U	5.4
71-43-2	Benzene	U	5.4
10061-02-6	trans-1,3-Dichloropropene	U	5.4
75-25-2	Bromoform	U	5.4
108-10-1	4-Methyl-2-pentanone	U	11
591-78-6	2-Hexanone	U	11
127-18-4	Tetrachloroethene	59	5.4
79-34-5	1,1,2,2-Tetrachloroethane	U	5.4
106-93-4	1,2-Dibromoethane	U	5.4
108-88-3	Toluene	U	5.4
108-90-7	Chlorobenzene	U	5.4
100-41-4	Ethyl benzene	U	5.4
100-42-5	Styrene	U	5.4
1330-20-7	Xylenes, Total	U	5.4
541-73-1	1,3-Dichlorobenzene	U	5.4
106-46-7	1,4-Dichlorobenzene	U	5.4
95-50-1	1,2-Dichlorobenzene	U	5.4
96-12-8	1,2-Dibromo-3-chloropropane	U	5.4

SURROGATES:

Dibromofluoromethane	109	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	105	% Recovery	(80% - 120%)
Toluene-d8	110	% Recovery	(81% - 117%)
p-Bromofluorobenzene	112	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **03** Collected: **03/26/97 1300**
Sample Description: **PS-SB03-20** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15402
Instrument: HPMS2 Injected: 03/27/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5.2
67-64-1	Acetone	3600D	10
75-15-0	Carbon disulfide	U	5.2
75-35-4	1,1-Dichloroethene	U	5.2
75-34-3	1,1-Dichloroethane	U	5.2
156-59-2	cis-1,2-Dichloroethene	U	5.2
156-60-5	trans-1,2-Dichloroethene	U	5.2
67-66-3	Chloroform	U	5.2
107-06-2	1,2-Dichloroethane	U	5.2
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5.2
71-55-6	1,1,1-Trichloroethane	U	5.2
56-23-5	Carbon tetrachloride	U	5.2
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5.2
78-87-5	1,2-Dichloropropane	U	5.2
10061-01-5	cis-1,3-Dichloropropene	U	5.2
79-01-6	Trichloroethene	U	5.2
124-48-1	Dibromochloromethane	U	5.2
79-00-5	1,1,2-Trichloroethane	U	5.2
71-43-2	Benzene	U	5.2
10061-02-6	trans-1,3-Dichloropropene	U	5.2
75-25-2	Bromoform	U	5.2
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	47	5.2
79-34-5	1,1,2,2-Tetrachloroethane	U	5.2
106-93-4	1,2-Dibromoethane	U	5.2
108-88-3	Toluene	U	5.2
108-90-7	Chlorobenzene	U	5.2
100-41-4	Ethyl benzene	U	5.2
100-42-5	Styrene	U	5.2
1330-20-7	Xylenes, Total	U	5.2
541-73-1	1,3-Dichlorobenzene	U	5.2
106-46-7	1,4-Dichlorobenzene	U	5.2
95-50-1	1,2-Dichlorobenzene	U	5.2
96-12-8	1,2-Dibromo-3-chloropropane	U	5.2

SURROGATES:

Dibromofluoromethane	109	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	99	% Recovery	(80% - 120%)
Toluene-d8	106	% Recovery	(81% - 117%)
p-Bromofluorobenzene	109	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

Test Code: **826-BRE2** Lab No: **04** Collected: **03/26/97 1320**
Sample Description: **PS-SB03-40** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15443
Instrument: HPMS2 Injected: 03/28/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5.2
67-64-1	Acetone	47	10
75-15-0	Carbon disulfide	U	5.2
75-35-4	1,1-Dichloroethene	U	5.2
75-34-3	1,1-Dichloroethane	U	5.2
156-59-2	cis-1,2-Dichloroethene	U	5.2
156-60-5	trans-1,2-Dichloroethene	U	5.2
67-66-3	Chloroform	U	5.2
107-06-2	1,2-Dichloroethane	U	5.2
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5.2
71-55-6	1,1,1-Trichloroethane	U	5.2
56-23-5	Carbon tetrachloride	U	5.2
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5.2
78-87-5	1,2-Dichloropropane	U	5.2
10061-01-5	cis-1,3-Dichloropropene	U	5.2
79-01-6	Trichloroethene	U	5.2
124-48-1	Dibromochloromethane	U	5.2
79-00-5	1,1,2-Trichloroethane	U	5.2
71-43-2	Benzene	U	5.2
10061-02-6	trans-1,3-Dichloropropene	U	5.2
75-25-2	Bromoform	U	5.2
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	U	5.2
79-34-5	1,1,2,2-Tetrachloroethane	U	5.2
106-93-4	1,2-Dibromoethane	U	5.2
108-88-3	Toluene	U	5.2
108-90-7	Chlorobenzene	U	5.2
100-41-4	Ethyl benzene	U	5.2
100-42-5	Styrene	U	5.2
1330-20-7	Xylenes, Total	U	5.2
541-73-1	1,3-Dichlorobenzene	U	5.2
106-46-7	1,4-Dichlorobenzene	U	5.2
95-50-1	1,2-Dichlorobenzene	U	5.2
96-12-8	1,2-Dibromo-3-chloropropane	U	5.2

SURROGATES:

Dibromofluoromethane	100	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	97	% Recovery	(80% - 120%)
Toluene-d8	101	% Recovery	(81% - 117%)
p-Bromofluorobenzene	106	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **05** Collected: **03/26/97 1320**
Sample Description: **PS-SB03-40D** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15442
Instrument: HPMS2 Injected: 03/28/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5.2
67-64-1	Acetone	60	10
75-15-0	Carbon disulfide	U	5.2
75-35-4	1,1-Dichloroethene	U	5.2
75-34-3	1,1-Dichloroethane	U	5.2
156-59-2	cis-1,2-Dichloroethene	U	5.2
156-60-5	trans-1,2-Dichloroethene	U	5.2
67-66-3	Chloroform	U	5.2
107-06-2	1,2-Dichloroethane	U	5.2
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5.2
71-55-6	1,1,1-Trichloroethane	U	5.2
56-23-5	Carbon tetrachloride	U	5.2
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5.2
78-87-5	1,2-Dichloropropane	U	5.2
10061-01-5	cis-1,3-Dichloropropene	U	5.2
79-01-6	Trichloroethene	U	5.2
124-48-1	Dibromochloromethane	U	5.2
79-00-5	1,1,2-Trichloroethane	U	5.2
71-43-2	Benzene	U	5.2
10061-02-6	trans-1,3-Dichloropropene	U	5.2
75-25-2	Bromoform	U	5.2
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	U	5.2
79-34-5	1,1,2,2-Tetrachloroethane	U	5.2
106-93-4	1,2-Dibromoethane	U	5.2
108-88-3	Toluene	U	5.2
108-90-7	Chlorobenzene	U	5.2
100-41-4	Ethyl benzene	U	5.2
100-42-5	Styrene	U	5.2
1330-20-7	Xylenes, Total	U	5.2
541-73-1	1,3-Dichlorobenzene	U	5.2
106-46-7	1,4-Dichlorobenzene	U	5.2
95-50-1	1,2-Dichlorobenzene	U	5.2
96-12-8	1,2-Dibromo-3-chloropropane	U	5.2

SURROGATES:

Dibromofluoromethane	108	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	111	% Recovery	(80% - 120%)
Toluene-d8	106	% Recovery	(81% - 117%)
p-Bromofluorobenzene	109	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

Test Code: **826-BRE2** Lab No: **06** Collected: **03/26/97 1440**
Sample Description: **PS-SB04-30** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15405
Instrument: HPMS2 Injected: 03/27/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	12
74-83-9	Bromomethane	U	12
75-01-4	Vinyl chloride	U	12
75-00-3	Chloroethane	U	12
75-09-2	Methylene chloride	U	6.1
67-64-1	Acetone	48	12
75-15-0	Carbon disulfide	U	6.1
75-35-4	1,1-Dichloroethene	U	6.1
75-34-3	1,1-Dichloroethane	17	6.1
156-59-2	cis-1,2-Dichloroethene	150	6.1
156-60-5	trans-1,2-Dichloroethene	U	6.1
67-66-3	Chloroform	U	6.1
107-06-2	1,2-Dichloroethane	U	6.1
78-93-3	2-Butanone	U	12
74-97-5	Bromochloromethane	U	6.1
71-55-6	1,1,1-Trichloroethane	50	6.1
56-23-5	Carbon tetrachloride	U	6.1
108-05-4	Vinyl acetate	U	12
75-27-4	Bromodichloromethane	U	6.1
78-87-5	1,2-Dichloropropane	U	6.1
10061-01-5	cis-1,3-Dichloropropene	U	6.1
79-01-6	Trichloroethene	120	6.1
124-48-1	Dibromochloromethane	U	6.1
79-00-5	1,1,2-Trichloroethane	U	6.1
71-43-2	Benzene	U	6.1
10061-02-6	trans-1,3-Dichloropropene	U	6.1
75-25-2	Bromoform	U	6.1
108-10-1	4-Methyl-2-pentanone	U	12
591-78-6	2-Hexanone	U	12
127-18-4	Tetrachloroethene	170D	6.1
79-34-5	1,1,2,2-Tetrachloroethane	U	6.1
106-93-4	1,2-Dibromoethane	U	6.1
108-88-3	Toluene	U	6.1
108-90-7	Chlorobenzene	U	6.1
100-41-4	Ethyl benzene	U	6.1
100-42-5	Styrene	U	6.1
1330-20-7	Xylenes, Total	U	6.1
541-73-1	1,3-Dichlorobenzene	U	6.1
106-46-7	1,4-Dichlorobenzene	U	6.1
95-50-1	1,2-Dichlorobenzene	U	6.1
96-12-8	1,2-Dibromo-3-chloropropane	U	6.1

SURROGATES:

Dibromofluoromethane	105	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	96	% Recovery	(80% - 120%)
Toluene-d8	100	% Recovery	(81% - 117%)
p-Bromofluorobenzene	104	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **07** Collected: **03/26/97 1500**
Sample Description: **PS-SB04-40** Category: **Soil**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: MDA File: 2BR15406
Instrument: HPMS2 Injected: 03/27/97 Factor: 1 Units: ug/kg

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	11
74-83-9	Bromomethane	U	11
75-01-4	Vinyl chloride	U	11
75-00-3	Chloroethane	U	11
75-09-2	Methylene chloride	U	5.3
67-64-1	Acetone	U	11
75-15-0	Carbon disulfide	U	5.3
75-35-4	1,1-Dichloroethene	U	5.3
75-34-3	1,1-Dichloroethane	U	5.3
156-59-2	cis-1,2-Dichloroethene	U	5.3
156-60-5	trans-1,2-Dichloroethene	U	5.3
67-66-3	Chloroform	U	5.3
107-06-2	1,2-Dichloroethane	U	5.3
78-93-3	2-Butanone	U	11
74-97-5	Bromochloromethane	U	5.3
71-55-6	1,1,1-Trichloroethane	U	5.3
56-23-5	Carbon tetrachloride	U	5.3
108-05-4	Vinyl acetate	U	11
75-27-4	Bromodichloromethane	U	5.3
78-87-5	1,2-Dichloropropane	U	5.3
10061-01-5	cis-1,3-Dichloropropene	U	5.3
79-01-6	Trichloroethene	U	5.3
124-48-1	Dibromochloromethane	U	5.3
79-00-5	1,1,2-Trichloroethane	U	5.3
71-43-2	Benzene	U	5.3
10061-02-6	trans-1,3-Dichloropropene	U	5.3
75-25-2	Bromoform	U	5.3
108-10-1	4-Methyl-2-pentanone	U	11
591-78-6	2-Hexanone	U	11
127-18-4	Tetrachloroethene	U	5.3
79-34-5	1,1,2,2-Tetrachloroethane	U	5.3
106-93-4	1,2-Dibromoethane	U	5.3
108-88-3	Toluene	U	5.3
108-90-7	Chlorobenzene	U	5.3
100-41-4	Ethyl benzene	U	5.3
100-42-5	Styrene	U	5.3
1330-20-7	Xylenes, Total	U	5.3
541-73-1	1,3-Dichlorobenzene	U	5.3
106-46-7	1,4-Dichlorobenzene	U	5.3
95-50-1	1,2-Dichlorobenzene	U	5.3
96-12-8	1,2-Dibromo-3-chloropropane	U	5.3

SURROGATES:

Dibromofluoromethane	110	% Recovery	(80% - 120%)
1,2-Dichloroethane-d4	101	% Recovery	(80% - 120%)
Toluene-d8	109	% Recovery	(81% - 117%)
p-Bromofluorobenzene	111	% Recovery	(74% - 121%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
REPORT COMMENTS

The matrix spike/matrix spike duplicate (MS/MSD) analyzed 3/27/97 yielded recoveries for several analytes outside advisory limits. This was caused by sample matrix interference confirmed by reanalysis. All MS/MSD outliers were acceptable in the laboratory control sample.

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attention: Dave Brayack

PO Number:
Account Number: BRROOTENV418

Login #: L9707328
Report Date: 07/29/97
Work ID: CTO213/5253-0142/NWIRP BETHPAG
Date Received: 07/16/97

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L9707328-01	PS-SB04-30	L9707328-02	PS-SB04-30D
L9707328-03	PS-SB04-40	L9707328-04	PS-SB03-20
L9707328-05	PS-SB03-40	L9707328-06	PS-SB02-10
L9707328-07	PS-SB02-40		

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. The report shall not be reproduced, except in full, without the written approval of KEMRON.

Certified By
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-01
Client Sample ID: PS-SB04-30
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 925

% Solid: 88
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	88		1.0	CLH	07/24/97	D2216-90	N/A

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-01
Client Sample ID: PS-SB04-30
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 88

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18259

Method: 8260A
Run ID: R29301

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	11	1
74-83-9	Bromomethane	ug/kg		ND	11	1
75-01-4	Vinyl chloride	ug/kg		ND	11	1
75-00-3	Chloroethane	ug/kg		ND	11	1
75-09-2	Methylene chloride	ug/kg		ND	5.7	1
67-64-1	Acetone	ug/kg		ND	11	1
75-15-0	Carbon disulfide	ug/kg		ND	5.7	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.7	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.7	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.7	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.7	1
67-66-3	Chloroform	ug/kg		ND	5.7	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.7	1
78-93-3	2-Butanone	ug/kg		ND	11	1
74-97-5	Bromochloromethane	ug/kg		ND	5.7	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.7	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.7	1
108-05-4	Vinyl acetate	ug/kg		ND	11	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.7	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.7	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.7	1
79-01-6	Trichloroethene	ug/kg		ND	5.7	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.7	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.7	1
71-43-2	Benzene	ug/kg		ND	5.7	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.7	1
75-25-2	Bromoform	ug/kg		ND	5.7	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	11	1
591-78-6	2-Hexanone	ug/kg		ND	11	1
127-18-4	Tetrachloroethene	ug/kg		ND	5.7	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.7	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.7	1
108-88-3	Toluene	ug/kg		ND	5.7	1
108-90-7	Chlorobenzene	ug/kg		ND	5.7	1
100-41-4	Ethyl benzene	ug/kg		ND	5.7	1
100-42-5	Styrene	ug/kg		ND	5.7	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.7	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.7	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.7	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-01
Client Sample ID: PS-SB04-30
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/15/97

% Solid: 88

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18259

Method: 8260A
Run ID: R29301

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	5.7	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	5.7	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		94.1	(80 - 120%)		
	1,2-Dichloroethane-d4		87.2	(80 - 120%)		
	Toluene-d8		96.4	(81 - 117%)		
	p-Bromofluorobenzene		103	(74 - 121%)		

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-02
Client Sample ID: PS-SB04-30D
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 925

% Solid: 89
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	89		1.0	CLH	07/24/97	D2216 90	N/A

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-02
Client Sample ID: PS-SB04-30D
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A

Sample Weight: N/A
Extract Volume: N/A

Date Collected: 07/15/97

% Solid: 89

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18275

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	11	1
74-83-9	Bromomethane	ug/kg		ND	11	1
75-01-4	Vinyl chloride	ug/kg		ND	11	1
75-00-3	Chloroethane	ug/kg		ND	11	1
75-09-2	Methylene chloride	ug/kg		ND	5.6	1
67-64-1	Acetone	ug/kg		ND	11	1
75-15-0	Carbon disulfide	ug/kg		ND	5.6	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.6	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.6	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.6	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.6	1
67-66-3	Chloroform	ug/kg		ND	5.6	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.6	1
78-93-3	2-Butanone	ug/kg		ND	11	1
74-97-5	Bromochloromethane	ug/kg		ND	5.6	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.6	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.6	1
108-05-4	Vinyl acetate	ug/kg		ND	11	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.6	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.6	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.6	1
79-01-6	Trichloroethene	ug/kg		ND	5.6	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.6	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.6	1
71-43-2	Benzene	ug/kg		ND	5.6	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.6	1
75-25-2	Bromoform	ug/kg		ND	5.6	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	11	1
591-78-6	2-Hexanone	ug/kg		ND	11	1
127-18-4	Tetrachloroethene	ug/kg		ND	5.6	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.6	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.6	1
108-88-3	Toluene	ug/kg		ND	5.6	1
108-90-7	Chlorobenzene	ug/kg		ND	5.6	1
100-41-4	Ethyl benzene	ug/kg		ND	5.6	1
100-42-5	Styrene	ug/kg		ND	5.6	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.6	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.6	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.6	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-02
Client Sample ID: PS-SB04-30D
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 89

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18275

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	5.6	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	5.6	1

SURROGATES- In Percent Recovery:

Dibromofluoromethane	107	(80 - 120%)
1,2-Dichloroethane-d4	103	(80 - 120%)
Toluene-d8	98.3	(81 - 117%)
p-Bromofluorobenzene	106	(74 - 121%)

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-03
Client Sample ID: PS-SB04-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 940

% Solid: 96
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	96		1.0	CLH	07/24/97	D2216-90	N/A

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-03
Client Sample ID: PS-SB04-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 96

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18276

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	10	1
74-83-9	Bromomethane	ug/kg		ND	10	1
75-01-4	Vinyl chloride	ug/kg		ND	10	1
75-00-3	Chloroethane	ug/kg		ND	10	1
75-09-2	Methylene chloride	ug/kg		ND	5.2	1
67-64-1	Acetone	ug/kg	15		10	1
75-15-0	Carbon disulfide	ug/kg		ND	5.2	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.2	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.2	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.2	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.2	1
67-66-3	Chloroform	ug/kg		ND	5.2	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.2	1
78-93-3	2-Butanone	ug/kg		ND	10	1
74-97-5	Bromochloromethane	ug/kg		ND	5.2	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.2	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.2	1
108-05-4	Vinyl acetate	ug/kg		ND	10	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.2	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.2	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.2	1
79-01-6	Trichloroethene	ug/kg		ND	5.2	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.2	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.2	1
71-43-2	Benzene	ug/kg		ND	5.2	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.2	1
75-25-2	Bromoform	ug/kg		ND	5.2	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	10	1
591-78-6	2-Hexanone	ug/kg		ND	10	1
127-18-4	Tetrachloroethene	ug/kg		ND	5.2	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.2	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.2	1
108-88-3	Toluene	ug/kg		ND	5.2	1
108-90-7	Chlorobenzene	ug/kg		ND	5.2	1
100-41-4	Ethyl benzene	ug/kg		ND	5.2	1
100-42-5	Styrene	ug/kg		ND	5.2	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.2	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.2	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.2	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-03
Client Sample ID: PS-SB04-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 96

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18276

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	5.2	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	5.2	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		104	(80 - 120%)		
	1,2-Dichloroethane-d4		101	(80 - 120%)		
	Toluene-d8		99.8	(81 - 117%)		
	p-Bromofluorobenzene		106	(74 - 121%)		

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-04
Client Sample ID: PS-SB03-20
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 1050

% Solid: 98
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	98		1.0	CLH	07/24/97	D2216-90	N/A

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-04
Client Sample ID: PS-SB03-20
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 98

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18277

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	10	1
74-83-9	Bromomethane	ug/kg		ND	10	1
75-01-4	Vinyl chloride	ug/kg		ND	10	1
75-00-3	Chloroethane	ug/kg		ND	10	1
75-09-2	Methylene chloride	ug/kg		ND	5.1	1
67-64-1	Acetone	ug/kg		ND	10	1
75-15-0	Carbon disulfide	ug/kg		ND	5.1	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.1	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.1	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.1	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.1	1
67-66-3	Chloroform	ug/kg		ND	5.1	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.1	1
78-93-3	2-Butanone	ug/kg		ND	10	1
74-97-5	Bromochloromethane	ug/kg		ND	5.1	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.1	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.1	1
108-05-4	Vinyl acetate	ug/kg		ND	10	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.1	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.1	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.1	1
79-01-6	Trichloroethene	ug/kg		ND	5.1	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.1	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.1	1
71-43-2	Benzene	ug/kg		ND	5.1	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.1	1
75-25-2	Bromoform	ug/kg		ND	5.1	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	10	1
591-78-6	2-Hexanone	ug/kg		ND	10	1
127-18-4	Tetrachloroethene	ug/kg	160		5.1	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.1	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.1	1
108-88-3	Toluene	ug/kg		ND	5.1	1
108-90-7	Chlorobenzene	ug/kg		ND	5.1	1
100-41-4	Ethyl benzene	ug/kg		ND	5.1	1
100-42-5	Styrene	ug/kg		ND	5.1	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.1	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.1	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.1	1

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-04
Client Sample ID: PS-SB03-20
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 98

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18277

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	5.1	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	5.1	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		110	(80 - 120%)		
	1,2-Dichloroethane-d4		104	(80 - 120%)		
	Toluene-d8		112	(81 - 117%)		
	p-Bromofluorobenzene		145 *,RE	(74 - 121%)		

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-05
Client Sample ID: PS-SB03-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 1110

% Solid: 80
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	80		1.0	CLH	07/24/97	D2216-90	N/A

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Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-05
Client Sample ID: PS-SB03-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 80

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47400

Method: 8260A
Run ID: R29309

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	1600	125
74-83-9	Bromomethane	ug/kg		ND	1600	125
75-01-4	Vinyl chloride	ug/kg		ND	1600	125
75-00-3	Chloroethane	ug/kg		ND	1600	125
75-09-2	Methylene chloride	ug/kg		ND	780	125
67-64-1	Acetone	ug/kg		ND	1600	125
75-15-0	Carbon disulfide	ug/kg		ND	780	125
75-35-4	1,1-Dichloroethene	ug/kg		ND	780	125
75-34-3	1,1-Dichloroethane	ug/kg		ND	780	125
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	780	125
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	780	125
67-66-3	Chloroform	ug/kg		ND	780	125
107-06-2	1,2-Dichloroethane	ug/kg		ND	780	125
78-93-3	2-Butanone	ug/kg		ND	1600	125
74-97-5	Bromochloromethane	ug/kg		ND	780	125
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	780	125
56-23-5	Carbon tetrachloride	ug/kg		ND	780	125
108-05-4	Vinyl acetate	ug/kg		ND	1600	125
75-27-4	Bromodichloromethane	ug/kg		ND	780	125
78-87-5	1,2-Dichloropropane	ug/kg		ND	780	125
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	780	125
79-01-6	Trichloroethene	ug/kg		ND	780	125
124-48-1	Dibromochloromethane	ug/kg		ND	780	125
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	780	125
71-43-2	Benzene	ug/kg		ND	780	125
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	780	125
75-25-2	Bromoform	ug/kg		ND	780	125
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	1600	125
591-78-6	2-Hexanone	ug/kg		ND	1600	125
127-18-4	Tetrachloroethene	ug/kg	660000	D	780	125
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	780	125
106-93-4	1,2-Dibromoethane	ug/kg		ND	780	125
108-88-3	Toluene	ug/kg		ND	780	125
108-90-7	Chlorobenzene	ug/kg		ND	780	125
100-41-4	Ethyl benzene	ug/kg		ND	780	125
100-42-5	Styrene	ug/kg		ND	780	125
1330-20-7	Xylenes, Total	ug/kg		ND	780	125
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	780	125
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	780	125

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-05
Client Sample ID: PS-SB03-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 80

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47400

Method: 8260A
Run ID: R29309

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	780	125
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	780	125
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		103	(80 - 120%)		
	1,2-Dichloroethane-d4		93.5	(80 - 120%)		
	Toluene-d8		114	(81 - 117%)		
	p-Bromofluorobenzene		99.9	(74 - 121%)		

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KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-06
Client Sample ID: PS-SB02-10
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 1215

% Solid: 94
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	94		1.0	CLH	07/24/97	D2216-90	N/A

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-06
Client Sample ID: PS-SB02-10
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18278

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	11	1
74-83-9	Bromomethane	ug/kg		ND	11	1
75-01-4	Vinyl chloride	ug/kg		ND	11	1
75-00-3	Chloroethane	ug/kg		ND	11	1
75-09-2	Methylene chloride	ug/kg		ND	5.3	1
67-64-1	Acetone	ug/kg		ND	11	1
75-15-0	Carbon disulfide	ug/kg		ND	5.3	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.3	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.3	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.3	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.3	1
67-66-3	Chloroform	ug/kg		ND	5.3	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.3	1
78-93-3	2-Butanone	ug/kg		ND	11	1
74-97-5	Bromochloromethane	ug/kg		ND	5.3	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.3	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.3	1
108-05-4	Vinyl acetate	ug/kg		ND	11	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.3	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.3	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.3	1
79-01-6	Trichloroethene	ug/kg		ND	5.3	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.3	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.3	1
71-43-2	Benzene	ug/kg		ND	5.3	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.3	1
75-25-2	Bromoform	ug/kg		ND	5.3	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	11	1
591-78-6	2-Hexanone	ug/kg		ND	11	1
127-18-4	Tetrachloroethene	ug/kg		ND	5.3	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.3	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.3	1
108-88-3	Toluene	ug/kg		ND	5.3	1
108-90-7	Chlorobenzene	ug/kg		ND	5.3	1
100-41-4	Ethyl benzene	ug/kg		ND	5.3	1
100-42-5	Styrene	ug/kg		ND	5.3	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.3	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.3	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.3	1

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-06
Client Sample ID: PS-SB02-10
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 94

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18278

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/kg		ND	5.3	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/kg		ND	5.3	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		96.3	(80 - 120%)		
	1,2-Dichloroethane-d4		90.2	(80 - 120%)		
	Toluene-d8		93.0	(81 - 117%)		
	p-Bromofluorobenzene		102	(74 - 121%)		

KEMRON ENVIRONMENTAL SERVICES

Lab Sample ID: L9707328-07
Client Sample ID: PS-SB02-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG

Matrix: Soil
Collected: 07/15/97 1240

% Solid: 93
COC Info: N/A

ANALYTE	UNITS	RESULT	QUALIFIER	RDL	ANALYST	ANALYSIS DATE	METHOD	DIL TYPE
Percent Solids.....	% wt.	93		1.0	CLH	07/24/97	D2216-90	N/A

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-07
Client Sample ID: PS-SB02-40
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Soil

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: 93

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/23/97

Instrument: HPMS2
Analyst: MDA
Lab File ID: 2BR18279

Method: 8260A
Run ID: R29312

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/kg		ND	11	1
74-83-9	Bromomethane	ug/kg		ND	11	1
75-01-4	Vinyl chloride	ug/kg		ND	11	1
75-00-3	Chloroethane	ug/kg		ND	11	1
75-09-2	Methylene chloride	ug/kg		ND	5.4	1
67-64-1	Acetone	ug/kg		ND	11	1
75-15-0	Carbon disulfide	ug/kg		ND	5.4	1
75-35-4	1,1-Dichloroethene	ug/kg		ND	5.4	1
75-34-3	1,1-Dichloroethane	ug/kg		ND	5.4	1
156-59-2	cis-1,2-Dichloroethene	ug/kg		ND	5.4	1
156-60-5	trans-1,2-Dichloroethene	ug/kg		ND	5.4	1
67-66-3	Chloroform	ug/kg		ND	5.4	1
107-06-2	1,2-Dichloroethane	ug/kg		ND	5.4	1
78-93-3	2-Butanone	ug/kg		ND	11	1
74-97-5	Bromochloromethane	ug/kg		ND	5.4	1
71-55-6	1,1,1-Trichloroethane	ug/kg		ND	5.4	1
56-23-5	Carbon tetrachloride	ug/kg		ND	5.4	1
108-05-4	Vinyl acetate	ug/kg		ND	11	1
75-27-4	Bromodichloromethane	ug/kg		ND	5.4	1
78-87-5	1,2-Dichloropropane	ug/kg		ND	5.4	1
10061-01-5	cis-1,3-Dichloropropene	ug/kg		ND	5.4	1
79-01-6	Trichloroethene	ug/kg		ND	5.4	1
124-48-1	Dibromochloromethane	ug/kg		ND	5.4	1
79-00-5	1,1,2-Trichloroethane	ug/kg		ND	5.4	1
71-43-2	Benzene	ug/kg		ND	5.4	1
10061-02-6	trans-1,3-Dichloropropene	ug/kg		ND	5.4	1
75-25-2	Bromoform	ug/kg		ND	5.4	1
108-10-1	4-Methyl-2-pentanone	ug/kg		ND	11	1
591-78-6	2-Hexanone	ug/kg		ND	11	1
127-18-4	Tetrachloroethene	ug/kg		ND	5.4	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/kg		ND	5.4	1
106-93-4	1,2-Dibromoethane	ug/kg		ND	5.4	1
108-88-3	Toluene	ug/kg		ND	5.4	1
108-90-7	Chlorobenzene	ug/kg		ND	5.4	1
100-41-4	Ethyl benzene	ug/kg		ND	5.4	1
100-42-5	Styrene	ug/kg		ND	5.4	1
1330-20-7	Xylenes, Total	ug/kg		ND	5.4	1
541-73-1	1,3-Dichlorobenzene	ug/kg		ND	5.4	1
106-46-7	1,4-Dichlorobenzene	ug/kg		ND	5.4	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707328-07	Dil. Type: N/A	Sample Weight: N/A	
Client Sample ID: PS-SB02-40	COC Info: N/A	Extract Volume: N/A	
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG			
Matrix: Soil	Date Collected: 07/15/97	% Solid: 93	
TCLP Extract Date: N/A	Instrument: HPMS2	Method: 8260A	
Extract Date: N/A	Analyst: MDA	Run ID: R29312	
Analysis Date: 07/23/97	Lab File ID: 2BR18279		

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene.....	ug/kg		ND	5.4	1
96-12-8	1,2-Dibromo-3-chloropropane.....	ug/kg		ND	5.4	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane.....		93.1	(80 - 120%)		
	1,2-Dichloroethane-d4.....		96.3	(80 - 120%)		
	Toluene-d8.....		97.8	(81 - 117%)		
	p-Bromofluorobenzene.....		103	(74 - 121%)		

Order #97-07-328
July 29, 1997 17:02

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

Sample L9707328-04 (Client ID: P5-SB03-20) had sample matrix interference on internal standards and surrogate recoveries.

The soil laboratory control sample analyzed 7/25/97 yielded recoveries for the following analytes outside advisory limits:

1,1-dichloroethane
C-1-2-dichloroethene
chloroform
benzene

Matrix spike/matrix spike duplicate (MS/MSD) analytes performed 7/25/97 yielded recoveries for 1,2-dibromo-3-chloropropane outside advisory limits.

Sample results obtained 7/25/97 were used solely to confirm sample matrix interference,

KEMRON Environmental Services, Inc.
LIST OF VALID DATA QUALIFIERS (qual)
April 23, 1997

Qualifier	Description
(A)	See the report narrative
(B)	See the report narrative
(C)	See the report narrative
+	Correlation coefficient for the MSA is less than 0.995
<	Less than
>	Greater than
B	Present in the method blank
C	Confirmed by GC/MS
*	Surrogate or spike compound out of range
CG	Confluent growth
D	The analyte was quantified at a secondary dilution factor
DL	Surrogate or spike was diluted out
E	Estimated concentration due to sample matrix interference
F	Present below nominal reporting limit (AFCEE only)
FL	Free liquid
I	Semiquantitative result, out of instrument calibration range
J	Present below nominal reporting limit
L	Sample reporting limits elevated due to matrix interference
M	Duplicate injection precision not met
N	Tentatively Identified Compound (TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit
NF	Not found
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations > 25% difference between the two GC columns
QNS	Quantity not sufficient to perform analysis
R	Analyte exceeds regulatory limit
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TNTC	Too numerous to count
U	Analyzed for but not detected
W	Post-digestion spike for furnace AA out of control limits
X	Can not be resolved from isomer. See below.

Special Notes for Organic Analytes

1. Acrolein and acrylonitrile by method 624 are semiquantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methyphenol and 4-Methyphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attn: Dave Brayack

Login #: 97-04-189
Date Received: 04/09/97
Date Completed: 04/21/97
Date Reported: 04/21/97 15:35
Work ID: 5253/NWIRP BETHPAGE

Client Code: BRROOTENV418

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	PS-EW-03	02	PS-MW-01
03	PS-EW-01	04	PS-IW-01
05	PS-EW-02	06	PS-DUP-01
07	TB-040897-1		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.

Certified by
Leslie Bucina

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **01** Collected: **04/08/97 1130**
Sample Description: **PS-EW-03** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15985
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	49	5
156-59-2	cis-1,2-Dichloroethene	240D	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	200D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	380D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	1400D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	99	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	96	% Recovery	(80% - 120%)
Toluene-d8	94	% Recovery	(88% - 110%)
p-Bromofluorobenzene	94	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **02** Collected: **04/08/97 1245**
Sample Description: **PS-MW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15986
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	6	5
75-34-3	1,1-Dichloroethane	110	5
156-59-2	cis-1,2-Dichloroethene	500D	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	390D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	630D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	2800D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	95	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	90	% Recovery	(80% - 120%)
Toluene-d8	90	% Recovery	(88% - 110%)
p-Bromofluorobenzene	90	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **03** Collected: **04/08/97 1315**
Sample Description: **PS-EW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15987
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	80	5
156-59-2	cis-1,2-Dichloroethene	380D	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	220D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	370D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	1600D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	106	% Recovery (86% - 118%)
1,2-Dichloroethane-d4	103	% Recovery (80% - 120%)
Toluene-d8	100	% Recovery (88% - 110%)
p-Bromofluorobenzene	101	% Recovery (86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **04** Collected: **04/08/97 1340**
Sample Description: **PS-IW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15988
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT		REPORTING LIMIT
74-87-3	Chloromethane		U	10
74-83-9	Bromomethane		U	10
75-01-4	Vinyl chloride		U	10
75-00-3	Chloroethane		U	10
75-09-2	Methylene chloride		U	5
67-64-1	Acetone	560D		10
75-15-0	Carbon disulfide		U	5
75-35-4	1,1-Dichloroethene		U	5
75-34-3	1,1-Dichloroethane		U	5
156-59-2	cis-1,2-Dichloroethene		U	5
156-60-5	trans-1,2-Dichloroethene		U	5
67-66-3	Chloroform		U	5
107-06-2	1,2-Dichloroethane		U	5
78-93-3	2-Butanone	1700D		10
74-97-5	Bromochloromethane		U	5
71-55-6	1,1,1-Trichloroethane	7		5
56-23-5	Carbon tetrachloride		U	5
108-05-4	Vinyl acetate		U	10
75-27-4	Bromodichloromethane		U	5
78-87-5	1,2-Dichloropropane		U	5
10061-01-5	cis-1,3-Dichloropropene		U	5
79-01-6	Trichloroethene		U	5
124-48-1	Dibromochloromethane		U	5
79-00-5	1,1,2-Trichloroethane		U	5
71-43-2	Benzene		U	5
10061-02-6	trans-1,3-Dichloropropene		U	5
75-25-2	Bromoform		U	5
108-10-1	4-Methyl-2-pentanone		U	10
591-78-6	2-Hexanone		U	10
127-18-4	Tetrachloroethene	19		5
79-34-5	1,1,2,2-Tetrachloroethane		U	5
106-93-4	1,2-Dibromoethane		U	5
108-88-3	Toluene		U	5
108-90-7	Chlorobenzene		U	5
100-41-4	Ethyl benzene		U	5
100-42-5	Styrene		U	5
1330-20-7	Xylenes, Total		U	5
541-73-1	1,3-Dichlorobenzene		U	5
106-46-7	1,4-Dichlorobenzene		U	5
95-50-1	1,2-Dichlorobenzene		U	5
96-12-8	1,2-Dibromo-3-chloropropane		U	5

SURROGATES:

Dibromofluoromethane	101	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	97	% Recovery	(80% - 120%)
Toluene-d8	95	% Recovery	(88% - 110%)
p-Bromofluorobenzene	98	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **05** Collected: **04/08/97 1400**
Sample Description: **PS-EW-02** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15995
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	11	5
75-34-3	1,1-Dichloroethane	170	5
156-59-2	cis-1,2-Dichloroethene	840D	5
156-60-5	trans-1,2-Dichloroethene	6	5
67-66-3	Chloroform	5	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	1200D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	1500D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	11000D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	100	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	98	% Recovery	(80% - 120%)
Toluene-d8	96	% Recovery	(88% - 110%)
p-Bromofluorobenzene	103	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **06** Collected: **04/08/97**
Sample Description: **PS-DUP-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR15996
Instrument: HPMS2 Injected: 04/18/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	9	5
75-34-3	1,1-Dichloroethane	150	5
156-59-2	cis-1,2-Dichloroethene	720D	5
156-60-5	trans-1,2-Dichloroethene	6	5
67-66-3	Chloroform	5	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	1000D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	1300D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	9000D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	93 % Recovery	(86% - 118%)
1,2-Dichloroethane-d4	92 % Recovery	(80% - 120%)
Toluene-d8	88 % Recovery	(88% - 110%)
p-Bromofluorobenzene	96 % Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **07** Collected: **04/08/97**
Sample Description: **TB-040897-1** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 2BR16030
Instrument: HPMS2 Injected: 04/19/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	U	5
156-59-2	cis-1,2-Dichloroethene	U	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	U	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	U	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	U	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	105	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	104	% Recovery	(80% - 120%)
Toluene-d8	100	% Recovery	(88% - 110%)
p-Bromofluorobenzene	104	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
REPORT COMMENTS

Volatile M8260A:

No technical difficulties were experienced with this analytical batch.

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750

Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attn: Dave Brayack

Login #: 97-05-351
Date Received: 05/22/97
Date Completed: 06/02/97
Date Reported: 06/02/97 15:28
Work ID: CT0213/5253-0142/NWIRP BETHPA

Client Code: BRROOTENV418

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	PS-TB052197-02	02	PS-IW-01
03	PS-MW-01	04	PS-EW-01
05	PS-EW-03	06	PS-EW-02
07	PS-DUP-02		

All results for soils/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. This report shall not be reproduced, except in full, without the prior written approval of KEMRON.

Certified by
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE

TCL Volatile Analysis:

Sample PS-EW-02 (Kemron ID 97-05-351-06) yielded a result for methylene chloride slightly below the nominal reporting limit.

Sample PS-DUP-02 (Kemron ID 97-05-351-07) was reanalyzed at a 50x dilution due to surrogate recoveries above acceptance limits and to quantitate results within the instrument calibration range.

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **01** Collected: **05/21/97 930**
Sample Description: **PS-TB052197-02** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21504
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	U	5
156-59-2	cis-1,2-Dichloroethene	U	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	U	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	U	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	U	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	94.5	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	86.9	% Recovery	(80% - 120%)
Toluene-d8	102	% Recovery	(88% - 110%)
p-Bromofluorobenzene	103	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **02** Collected: **05/21/97 815**
Sample Description: **PS-IW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21507
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	U	5
156-59-2	cis-1,2-Dichloroethene	U	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	8	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	U	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	15	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	102	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	102	% Recovery	(80% - 120%)
Toluene-d8	103	% Recovery	(88% - 110%)
p-Bromofluorobenzene	107	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **03** Collected: **05/21/97 840**
Sample Description: **PS-MW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21509
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	36	5
156-59-2	cis-1,2-Dichloroethene	110	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	94	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	160	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	710D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	107 % Recovery	(86% - 118%)
1,2-Dichloroethane-d4	105 % Recovery	(80% - 120%)
Toluene-d8	107 % Recovery	(88% - 110%)
p-Bromofluorobenzene	112 % Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **04** Collected: **05/21/97 845**
Sample Description: **PS-EW-01** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21515
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	U	5
156-59-2	cis-1,2-Dichloroethene	15	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	5	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	9	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	27	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	91.9	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	92.1	% Recovery	(80% - 120%)
Toluene-d8	92.4	% Recovery	(88% - 110%)
p-Bromofluorobenzene	95.5	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **05** Collected: **05/21/97 910**
Sample Description: **PS-EW-03** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21511
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	83	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	U	5
75-34-3	1,1-Dichloroethane	51	5
156-59-2	cis-1,2-Dichloroethene	160	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	170	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	230D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	920D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	105	% Recovery (86% - 118%)
1,2-Dichloroethane-d4	104	% Recovery (80% - 120%)
Toluene-d8	108	% Recovery (88% - 110%)
p-Bromofluorobenzene	111	% Recovery (86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **06** Collected: **05/21/97 910**
Sample Description: **PS-EW-02** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21512
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT	REPORTING LIMIT
74-87-3	Chloromethane	U	10
74-83-9	Bromomethane	U	10
75-01-4	Vinyl chloride	U	10
75-00-3	Chloroethane	U	10
75-09-2	Methylene chloride	U	5
67-64-1	Acetone	U	10
75-15-0	Carbon disulfide	U	5
75-35-4	1,1-Dichloroethene	12	5
75-34-3	1,1-Dichloroethane	160	5
156-59-2	cis-1,2-Dichloroethene	340D	5
156-60-5	trans-1,2-Dichloroethene	U	5
67-66-3	Chloroform	U	5
107-06-2	1,2-Dichloroethane	U	5
78-93-3	2-Butanone	U	10
74-97-5	Bromochloromethane	U	5
71-55-6	1,1,1-Trichloroethane	770D	5
56-23-5	Carbon tetrachloride	U	5
108-05-4	Vinyl acetate	U	10
75-27-4	Bromodichloromethane	U	5
78-87-5	1,2-Dichloropropane	U	5
10061-01-5	cis-1,3-Dichloropropene	U	5
79-01-6	Trichloroethene	580D	5
124-48-1	Dibromochloromethane	U	5
79-00-5	1,1,2-Trichloroethane	U	5
71-43-2	Benzene	U	5
10061-02-6	trans-1,3-Dichloropropene	U	5
75-25-2	Bromoform	U	5
108-10-1	4-Methyl-2-pentanone	U	10
591-78-6	2-Hexanone	U	10
127-18-4	Tetrachloroethene	4500D	5
79-34-5	1,1,2,2-Tetrachloroethane	U	5
106-93-4	1,2-Dibromoethane	U	5
108-88-3	Toluene	U	5
108-90-7	Chlorobenzene	U	5
100-41-4	Ethyl benzene	U	5
100-42-5	Styrene	U	5
1330-20-7	Xylenes, Total	U	5
541-73-1	1,3-Dichlorobenzene	U	5
106-46-7	1,4-Dichlorobenzene	U	5
95-50-1	1,2-Dichlorobenzene	U	5
96-12-8	1,2-Dibromo-3-chloropropane	U	5

SURROGATES:

Dibromofluoromethane	98.7	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	98.7	% Recovery	(80% - 120%)
Toluene-d8	102	% Recovery	(88% - 110%)
p-Bromofluorobenzene	105	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor

KEMRON ENVIRONMENTAL SERVICES
TEST RESULTS BY SAMPLE

Test Code: **826-BRE2** Lab No: **07** Collected: **05/21/97**
Sample Description: **PS-DUP-02** Category: **Water**
Test Description: **TCL additional compounds** Method: **8260A**

Analyst: SLT File: 1BR21513
Instrument: HPMS1 Injected: 05/27/97 Factor: 1 Units: ug/L

CAS#	COMPOUND	RESULT		REPORTING LIMIT
74-87-3	Chloromethane		U	10
74-83-9	Bromomethane		U	10
75-01-4	Vinyl chloride		U	10
75-00-3	Chloroethane		U	10
75-09-2	Methylene chloride	5.4		5
67-64-1	Acetone		U	10
75-15-0	Carbon disulfide		U	5
75-35-4	1,1-Dichloroethene	14		5
75-34-3	1,1-Dichloroethane	180		5
156-59-2	cis-1,2-Dichloroethene	330D		5
156-60-5	trans-1,2-Dichloroethene		U	5
67-66-3	Chloroform		U	5
107-06-2	1,2-Dichloroethane		U	5
78-93-3	2-Butanone		U	10
74-97-5	Bromochloromethane		U	5
71-55-6	1,1,1-Trichloroethane	680D		5
56-23-5	Carbon tetrachloride		U	5
108-05-4	Vinyl acetate		U	10
75-27-4	Bromodichloromethane		U	5
78-87-5	1,2-Dichloropropane		U	5
10061-01-5	cis-1,3-Dichloropropene		U	5
79-01-6	Trichloroethene	550D		5
124-48-1	Dibromochloromethane		U	5
79-00-5	1,1,2-Trichloroethane		U	5
71-43-2	Benzene		U	5
10061-02-6	trans-1,3-Dichloropropene		U	5
75-25-2	Bromoform		U	5
108-10-1	4-Methyl-2-pentanone		U	10
591-78-6	2-Hexanone		U	10
127-18-4	Tetrachloroethene	4000D		5
79-34-5	1,1,2,2-Tetrachloroethane		U	5
106-93-4	1,2-Dibromoethane		U	5
108-88-3	Toluene		U	5
108-90-7	Chlorobenzene		U	5
100-41-4	Ethyl benzene		U	5
100-42-5	Styrene		U	5
1330-20-7	Xylenes, Total		U	5
541-73-1	1,3-Dichlorobenzene		U	5
106-46-7	1,4-Dichlorobenzene		U	5
95-50-1	1,2-Dichlorobenzene		U	5
96-12-8	1,2-Dibromo-3-chloropropane		U	5

SURROGATES:

Dibromofluoromethane	109	% Recovery	(86% - 118%)
1,2-Dichloroethane-d4	110	% Recovery	(80% - 120%)
Toluene-d8	112RE	% Recovery	(88% - 110%)
p-Bromofluorobenzene	118RE	% Recovery	(86% - 115%)

NOTES AND DEFINITIONS FOR THIS SAMPLE:

U = Analyzed for but not detected
D = The analyte was quantified at a secondary dilution factor
RE = Reanalysis confirms sample matrix interference

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attention: Dave Brayack

PO Number:
Account Number: BRROOTENV418

Login #: L9706427
Report Date: 07/02/97
Work ID: CTO 213/5253-0142/NWIRP BETHPA
Date Received: 06/19/97

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L9706427-01	PS-TB061897-03	L9706427-02	PS-MW-01
L9706427-03	PS-EW-01	L9706427-04	PS-EW-02
L9706427-05	PS-EW-03	L9706427-06	PS-IW-01
L9706427-07	PS-DUP-03		

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. The report shall not be reproduced, except in full, without the written approval of KEMRON.

Certified By
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-01
Client Sample ID: PS-TB061897-03
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47110

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L	26		10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L		ND	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L		ND	5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L	16		10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L		ND	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L		ND	5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	6.2		5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-01
Client Sample ID: PS-TB061897-03
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47110

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		113	(86 - 118%)		
	1,2-Dichloroethane-d4		113	(80 - 120%)		
	Toluene-d8		106	(88 - 110%)		
	p-Bromofluorobenzene		104	(86 - 115%)		

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-02
Client Sample ID: PS-MW-01
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47113

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L		ND	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	6.7		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	6.2		5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	17		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L		ND	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-02
Client Sample ID: PS-MW-01
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47113

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1

SURROGATES- In Percent Recovery:

Dibromofluoromethane	109	(86 - 118%)
1,2-Dichloroethane-d4	109	(80 - 120%)
Toluene-d8	99.3	(88 - 110%)
p-Bromofluorobenzene	104	(86 - 115%)

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-03
Client Sample ID: PS-EW-01
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47114

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L	15		5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	15		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	50		5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	18		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	71		5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID:	L9706427-03	Dil. Type: N/A	Sample Weight: N/A
Client Sample ID:	PS-EW-01	COC Info: N/A	Extract Volume: N/A
Site/Work ID:	CTO 213/5253-0142/NWIRP BETHPA		
Matrix:	Water	Date Collected: 06/18/97	% Solid: N/A
TCLP Extract Date:	N/A	Instrument: FINN3	Method: 8260A
Extract Date:	N/A	Analyst: MBJ	Run ID: R27061
Analysis Date:	06/25/97	Lab File ID: 3BT47114	

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		104	(86 - 118%)		
	1,2-Dichloroethane-d4		108	(80 - 120%)		
	Toluene-d8		106	(88 - 110%)		
	p-Bromofluorobenzene		99.3	(86 - 115%)		

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-04
Client Sample ID: PS-EW-02
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47111

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	100	10
74-83-9	Bromomethane	ug/L		ND	100	10
75-01-4	Vinyl chloride	ug/L		ND	100	10
75-00-3	Chloroethane	ug/L		ND	100	10
75-09-2	Methylene chloride	ug/L		ND	50	10
67-64-1	Acetone	ug/L		ND	100	10
75-15-0	Carbon disulfide	ug/L		ND	50	10
75-35-4	1,1-Dichloroethene	ug/L		ND	50	10
75-34-3	1,1-Dichloroethane	ug/L	91		50	10
156-59-2	cis-1,2-Dichloroethene	ug/L	190		50	10
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	50	10
67-66-3	Chloroform	ug/L		ND	50	10
107-06-2	1,2-Dichloroethane	ug/L		ND	50	10
78-93-3	2-Butanone	ug/L		ND	100	10
74-97-5	Bromochloromethane	ug/L		ND	50	10
71-55-6	1,1,1-Trichloroethane	ug/L	410		50	10
56-23-5	Carbon tetrachloride	ug/L		ND	50	10
108-05-4	Vinyl acetate	ug/L		ND	100	10
75-27-4	Bromodichloromethane	ug/L		ND	50	10
78-87-5	1,2-Dichloropropane	ug/L		ND	50	10
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	50	10
79-01-6	Trichloroethene	ug/L	270		50	10
124-48-1	Dibromochloromethane	ug/L		ND	50	10
79-00-5	1,1,2-Trichloroethane	ug/L		ND	50	10
71-43-2	Benzene	ug/L		ND	50	10
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	50	10
75-25-2	Bromoform	ug/L		ND	50	10
108-10-1	4-Methyl-2-pentanone	ug/L		ND	100	10
591-78-6	2-Hexanone	ug/L		ND	100	10
127-18-4	Tetrachloroethene	ug/L	2200	D	50	10
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	50	10
106-93-4	1,2-Dibromoethane	ug/L		ND	50	10
108-88-3	Toluene	ug/L		ND	50	10
108-90-7	Chlorobenzene	ug/L		ND	50	10
100-41-4	Ethyl benzene	ug/L		ND	50	10
100-42-5	Styrene	ug/L		ND	50	10
1330-20-7	Xylenes, Total	ug/L		ND	50	10
541-73-1	1,3-Dichlorobenzene	ug/L		ND	50	10
106-46-7	1,4-Dichlorobenzene	ug/L		ND	50	10

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-04
Client Sample ID: PS-EW-02
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47111

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L	ND		50	10
96-12-8	1,2-Dibromo-3-chloropropane	ug/L	ND		50	10

SURROGATES- In Percent Recovery:

Dibromofluoromethane	120	*,RA	(86 - 118%)
1,2-Dichloroethane-d4	113		(80 - 120%)
Toluene-d8	117	*,RA	(88 - 110%)
p-Bromofluorobenzene	104		(86 - 115%)

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-05
Client Sample ID: PS-EW-03
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: N/A

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	100	10
74-83-9	Bromomethane	ug/L		ND	100	10
75-01-4	Vinyl chloride	ug/L		ND	100	10
75-00-3	Chloroethane	ug/L		ND	100	10
75-09-2	Methylene chloride	ug/L		ND	50	10
67-64-1	Acetone	ug/L		ND	100	10
75-15-0	Carbon disulfide	ug/L		ND	50	10
75-35-4	1,1-Dichloroethene	ug/L		ND	50	10
75-34-3	1,1-Dichloroethane	ug/L	46	J	50	10
156-59-2	cis-1,2-Dichloroethene	ug/L	160		50	10
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	50	10
67-66-3	Chloroform	ug/L		ND	50	10
107-06-2	1,2-Dichloroethane	ug/L		ND	50	10
78-93-3	2-Butanone	ug/L		ND	100	10
74-97-5	Bromochloromethane	ug/L		ND	50	10
71-55-6	1,1,1-Trichloroethane	ug/L	250		50	10
56-23-5	Carbon tetrachloride	ug/L		ND	50	10
108-05-4	Vinyl acetate	ug/L		ND	100	10
75-27-4	Bromodichloromethane	ug/L		ND	50	10
78-87-5	1,2-Dichloropropane	ug/L		ND	50	10
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	50	10
79-01-6	Trichloroethene	ug/L	320		50	10
124-48-1	Dibromochloromethane	ug/L		ND	50	10
79-00-5	1,1,2-Trichloroethane	ug/L		ND	50	10
71-43-2	Benzene	ug/L		ND	50	10
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	50	10
75-25-2	Bromoform	ug/L		ND	50	10
108-10-1	4-Methyl-2-pentanone	ug/L		ND	100	10
591-78-6	2-Hexanone	ug/L		ND	100	10
127-18-4	Tetrachloroethene	ug/L	1800		50	10
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	50	10
106-93-4	1,2-Dibromoethane	ug/L		ND	50	10
108-88-3	Toluene	ug/L		ND	50	10
108-90-7	Chlorobenzene	ug/L		ND	50	10
100-41-4	Ethyl benzene	ug/L		ND	50	10
100-42-5	Styrene	ug/L		ND	50	10
1330-20-7	Xylenes, Total	ug/L		ND	50	10
541-73-1	1,3-Dichlorobenzene	ug/L		ND	50	10
106-46-7	1,4-Dichlorobenzene	ug/L		ND	50	10

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-05
Client Sample ID: PS-EW-03
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/25/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: N/A

Method: 8260A
Run ID: R27061

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	50	10
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	50	10

SURROGATES- In Percent Recovery:

Dibromofluoromethane	111	(86 - 118%)
1,2-Dichloroethane-d4	108	(80 - 120%)
Toluene-d8	110	(88 - 110%)
p-Bromofluorobenzene	103	(86 - 115%)

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-06
Client Sample ID: PS-IW-01
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/26/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47115

Method: 8260A
Run ID: R27370

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L		ND	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L		ND	5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L	31	ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L		ND	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L		ND	5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	4.4	J	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-06
Client Sample ID: PS-IW-01
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/26/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47115

Method: 8260A
Run ID: R27370

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		100	(86 - 118%)		
	1,2-Dichloroethane-d4		107	(80 - 120%)		
	Toluene-d8		100	(88 - 110%)		
	p-Bromofluorobenzene		106	(86 - 115%)		

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9706427-07
Client Sample ID: PS-DUP-03
Site/Work ID: CTO 213/5253-0142/NWIRP BETHPA
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 06/18/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 06/26/97

Instrument: FINN3
Analyst: MBJ
Lab File ID: 3BT47116

Method: 8260A
Run ID: R27370

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	100	10
74-83-9	Bromomethane	ug/L		ND	100	10
75-01-4	Vinyl chloride	ug/L		ND	100	10
75-00-3	Chloroethane	ug/L		ND	100	10
75-09-2	Methylene chloride	ug/L		ND	50	10
67-64-1	Acetone	ug/L		ND	100	10
75-15-0	Carbon disulfide	ug/L		ND	50	10
75-35-4	1,1-Dichloroethene	ug/L		ND	50	10
75-34-3	1,1-Dichloroethane	ug/L	74		50	10
156-59-2	cis-1,2-Dichloroethene	ug/L	140		50	10
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	50	10
67-66-3	Chloroform	ug/L		ND	50	10
107-06-2	1,2-Dichloroethane	ug/L		ND	50	10
78-93-3	2-Butanone	ug/L		ND	100	10
74-97-5	Bromochloromethane	ug/L		ND	50	10
71-55-6	1,1,1-Trichloroethane	ug/L	340		50	10
56-23-5	Carbon tetrachloride	ug/L		ND	50	10
108-05-4	Vinyl acetate	ug/L		ND	100	10
75-27-4	Bromodichloromethane	ug/L		ND	50	10
78-87-5	1,2-Dichloropropane	ug/L		ND	50	10
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	50	10
79-01-6	Trichloroethene	ug/L	220		50	10
124-48-1	Dibromochloromethane	ug/L		ND	50	10
79-00-5	1,1,2-Trichloroethane	ug/L		ND	50	10
71-43-2	Benzene	ug/L		ND	50	10
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	50	10
75-25-2	Bromoform	ug/L		ND	50	10
108-10-1	4-Methyl-2-pentanone	ug/L		ND	100	10
591-78-6	2-Hexanone	ug/L		ND	100	10
127-18-4	Tetrachloroethene	ug/L	1700		50	10
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	50	10
106-93-4	1,2-Dibromoethane	ug/L		ND	50	10
108-88-3	Toluene	ug/L		ND	50	10
108-90-7	Chlorobenzene	ug/L		ND	50	10
100-41-4	Ethyl benzene	ug/L		ND	50	10
100-42-5	Styrene	ug/L		ND	50	10
1330-20-7	Xylenes, Total	ug/L		ND	50	10
541-73-1	1,3-Dichlorobenzene	ug/L		ND	50	10
106-46-7	1,4-Dichlorobenzene	ug/L		ND	50	10

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID:	L9706427-07	Dil. Type: N/A	Sample Weight: N/A
Client Sample ID:	PS-DUP-03	COC Info: N/A	Extract Volume: N/A
Site/Work ID:	CTO 213/5253-0142/NWIRP BETHPA		
Matrix:	Water	Date Collected: 06/18/97	% Solid: N/A
TCLP Extract Date:	N/A	Instrument: FINN3	Method: 8260A
Extract Date:	N/A	Analyst: MBJ	Run ID: R27370
Analysis Date:	06/26/97	Lab File ID: 3BT47116	

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	50	10
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	50	10
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		103	(86 - 118%)		
	1,2-Dichloroethane-d4		100	(80 - 120%)		
	Toluene-d8		105	(88 - 110%)		
	p-Bromofluorobenzene		102	(86 - 115%)		

KEMRON Environmental Services
109 Starlite Park
Marietta, Ohio 45750
Phone: (614) 373-4071

Brown and Root Environmental
CF Braun, Foster Plaza 7
661 Andersen Drive
Pittsburgh, PA 15220
Attention: Dave Brayack

PO Number:
Account Number: BRROOTENV418

Login #: L9707329
Report Date: 07/29/97
Work ID: CTO213/5253-0142/NWIRP BETHPAG
Date Received: 07/16/97

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
L9707329-01	TB-071597-04	L9707329-02	PS-EW-01
L9707329-03	PS-EW-02	L9707329-04	PS-EW-03
L9707329-05	PS-MW-01	L9707329-06	PS-IW 01
L9707329-07	PS-DUP-04		

All results on solids/sludges are reported on a dry weight basis, where applicable, unless otherwise specified. The report shall not be reproduced, except in full, without the written approval of KEMRON.

Certified By
David L. Bumgarner

KEMRON ENVIRONMENTAL SERVICES

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Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-01
Client Sample ID: TB-071597-04
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22652

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L	37		10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L		ND	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L		ND	5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L		ND	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L		ND	5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L		ND	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

Login #L9707329
July 29, 1997 01:51 pm

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-01	Dil. Type: N/A	Sample Weight: N/A	
Client Sample ID: TB-071597-04	COC Info: N/A	Extract Volume: N/A	
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG			
Matrix: Water	Date Collected: 07/15/97	% Solid: N/A	
TCLP Extract Date: N/A	Instrument: HPMS1	Method: 8260A	
Extract Date: N/A	Analyst: SLT	Run ID: R29318	
Analysis Date: 07/21/97	Lab File ID: 1BR22652		

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		92.8	(86 - 118%)		
	1,2-Dichloroethane-d4		90.9	(80 - 120%)		
	Toluene-d8		98.0	(88 - 110%)		
	p-Bromofluorobenzene		96.9	(86 - 115%)		

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-02
Client Sample ID: PS-EW-01
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22653

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L	7.0		5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	10		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	12		5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	12		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	27		5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-02
Client Sample ID: PS-EW-01
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22653

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		102	(86 - 118%)		
	1,2-Dichloroethane-d4		107	(80 - 120%)		
	Toluene-d8		101	(88 - 110%)		
	p-Bromofluorobenzene		99.0	(86 - 115%)		

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Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-03
Client Sample ID: PS-EW-02
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22656

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L	8.7		5.0	1
75-34-3	1,1-Dichloroethane	ug/L	410	D	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	200		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	1200	D	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	140		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	1400	D	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-03
Client Sample ID: PS-EW-02
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Dil. Type: N/A
COC Info: N/A

Date Collected: 07/15/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22656

Sample Weight: N/A
Extract Volume: N/A

% Solid: N/A

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		104	(86 - 118%)		
	1,2-Dichloroethane-d4		110	(80 - 120%)		
	Toluene-d8		108	(88 - 110%)		
	p-Bromofluorobenzene		107	(86 - 115%)		

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Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-04
Client Sample ID: PS-EW-03
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22657

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L	57		5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	130		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	210	D	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	180		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	840	D	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-04
Client Sample ID: PS-EW-03
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22657

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane	113		(86 - 118%)		
	1,2-Dichloroethane-d4	121	*,RE	(80 - 120%)		
	Toluene-d8	118	*,RE	(88 - 110%)		
	p-Bromofluorobenzene	114		(86 - 115%)		

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-05
Client Sample ID: PS-MW-01
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22658

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L	60		5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	77		5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	120		5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	47		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	170		5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-05
Client Sample ID: PS-MW-01
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22658

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		103	(86 - 118%)		
	1,2-Dichloroethane-d4		109	(80 - 120%)		
	Toluene-d8		103	(88 - 110%)		
	p-Bromofluorobenzene		100	(86 - 115%)		

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-06
Client Sample ID: PS-IW-01
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/22/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22679

Method: 8260A
Run ID: R29320

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L		ND	5.0	1
75-34-3	1,1-Dichloroethane	ug/L		ND	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L		ND	5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L		ND	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L		ND	5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	9.6		5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

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KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID:	L9707329-06	Dil. Type:	N/A	Sample Weight:	N/A
Client Sample ID:	PS-IW-01	COC Info:	N/A	Extract Volume:	N/A
Site/Work ID:	CTO213/5253-0142/NWIRP BETHPAG				
Matrix:	Water	Date Collected:	07/15/97	% Solid:	N/A
TCLP Extract Date:	N/A	Instrument:	HPMS1	Method:	8260A
Extract Date:	N/A	Analyst:	SLT	Run ID:	R29320
Analysis Date:	07/22/97	Lab File ID:	1BR22679		

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1
	SURROGATES- In Percent Recovery:					
	Dibromofluoromethane		101	(86 - 118%)		
	1,2-Dichloroethane-d4		105	(80 - 120%)		
	Toluene-d8		110	(88 - 110%)		
	p-Bromofluorobenzene		106	(86 - 115%)		

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-07
Client Sample ID: PS-DUP-04
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22664

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
74-87-3	Chloromethane	ug/L		ND	10	1
74-83-9	Bromomethane	ug/L		ND	10	1
75-01-4	Vinyl chloride	ug/L		ND	10	1
75-00-3	Chloroethane	ug/L		ND	10	1
75-09-2	Methylene chloride	ug/L		ND	5.0	1
67-64-1	Acetone	ug/L		ND	10	1
75-15-0	Carbon disulfide	ug/L		ND	5.0	1
75-35-4	1,1-Dichloroethene	ug/L	8.3		5.0	1
75-34-3	1,1-Dichloroethane	ug/L	490	D	5.0	1
156-59-2	cis-1,2-Dichloroethene	ug/L	210	D	5.0	1
156-60-5	trans-1,2-Dichloroethene	ug/L		ND	5.0	1
67-66-3	Chloroform	ug/L		ND	5.0	1
107-06-2	1,2-Dichloroethane	ug/L		ND	5.0	1
78-93-3	2-Butanone	ug/L		ND	10	1
74-97-5	Bromochloromethane	ug/L		ND	5.0	1
71-55-6	1,1,1-Trichloroethane	ug/L	1400	D	5.0	1
56-23-5	Carbon tetrachloride	ug/L		ND	5.0	1
108-05-4	Vinyl acetate	ug/L		ND	10	1
75-27-4	Bromodichloromethane	ug/L		ND	5.0	1
78-87-5	1,2-Dichloropropane	ug/L		ND	5.0	1
10061-01-5	cis-1,3-Dichloropropene	ug/L		ND	5.0	1
79-01-6	Trichloroethene	ug/L	140		5.0	1
124-48-1	Dibromochloromethane	ug/L		ND	5.0	1
79-00-5	1,1,2-Trichloroethane	ug/L		ND	5.0	1
71-43-2	Benzene	ug/L		ND	5.0	1
10061-02-6	trans-1,3-Dichloropropene	ug/L		ND	5.0	1
75-25-2	Bromoform	ug/L		ND	5.0	1
108-10-1	4-Methyl-2-pentanone	ug/L		ND	10	1
591-78-6	2-Hexanone	ug/L		ND	10	1
127-18-4	Tetrachloroethene	ug/L	1300	D	5.0	1
79-34-5	1,1,2,2-Tetrachloroethane	ug/L		ND	5.0	1
106-93-4	1,2-Dibromoethane	ug/L		ND	5.0	1
108-88-3	Toluene	ug/L		ND	5.0	1
108-90-7	Chlorobenzene	ug/L		ND	5.0	1
100-41-4	Ethyl benzene	ug/L		ND	5.0	1
100-42-5	Styrene	ug/L		ND	5.0	1
1330-20-7	Xylenes, Total	ug/L		ND	5.0	1
541-73-1	1,3-Dichlorobenzene	ug/L		ND	5.0	1
106-46-7	1,4-Dichlorobenzene	ug/L		ND	5.0	1

KEMRON ENVIRONMENTAL SERVICES

Product: 826-BRE2 - TCL additional compounds

Lab Sample ID: L9707329-07
Client Sample ID: PS-DUP-04
Site/Work ID: CTO213/5253-0142/NWIRP BETHPAG
Matrix: Water

Dil. Type: N/A
COC Info: N/A
Date Collected: 07/15/97

Sample Weight: N/A
Extract Volume: N/A
% Solid: N/A

TCLP Extract Date: N/A
Extract Date: N/A
Analysis Date: 07/21/97

Instrument: HPMS1
Analyst: SLT
Lab File ID: 1BR22664

Method: 8260A
Run ID: R29318

CAS #	Compound	Units	Result	Qualifiers	RDL	Dilution
95-50-1	1,2-Dichlorobenzene	ug/L		ND	5.0	1
96-12-8	1,2-Dibromo-3-chloropropane	ug/L		ND	5.0	1

SURROGATES- In Percent Recovery:

Dibromofluoromethane	103	(86 - 118%)
1,2-Dichloroethane-d4	109	(80 - 120%)
Toluene-d8	105	(88 - 110%)
p-Bromofluorobenzene	103	(86 - 115%)

APPENDIX H

VOC LOADING CALCULATIONS

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

CLIENT		JOB NUMBER	
SUBJECT	System Operation Up to 7/30/97		
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE 8/26/97

System Operation

4/16/97	1500	Start and balance extraction	
	1800	shut down	
4/17/97	0810	Balance extraction	
	1200	shut down	
4/18/97	0810	Balance extraction Start injection	
	1230	Shut down	
4/21	1035	Radius of Influence (ROI) 01	
	1845	Shut down	
4/22	0835	ROI EW-01	
	1830	Shut down	
4/23	0825	ROI EW-05	Air Sample 1 week after Start-up
	1715	Balance extraction	
	1855	shut down	
4/24	0835	ROI EW-02	
	1815	Shut down	
4/25	0800	ROI EW-01	
	1120	Shut down	
4/28	1150	ROI EW-04 Run overnight at 20cfm	
4/29	1130	Shut down	
	1445	ROI IW-01	1607 Shut down
	1613	Restart IW-01	2005 Shut down
	2005	Start & balance extraction — overnight	

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

CLIENT		JOB NUMBER	
SUBJECT			
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE

4/30 0750 Shut down extraction
1020 Start ROI IW-01
1315 Shut down In
1530 Start ROI IW-01/EW-02 (3.0)
1824 In shut down
Ex overnight balanced

5/1 0753 Ex shut down
0955 Start ROI IW01/EW02 (2.0)
1730 In shut down
Ex balance

5/2 0805 Turn on In (10 cfm)
Ex still balanced

5/7 Ex and In on since 5/2 (5 days)

5/12 Blowers off cause of building rewiring
— blower off since 5/7 or 5 days
1450 Start Ex and In
Total Ex = 114 cfm

5/15 Both blowers on
- normal check list

5/20 Both blowers on
Normal checklist
Air samples
1405 Shut down system
System off overnight

5/21 Start In for ROI IW-01
1445 Restart In 1530 start & balance ex

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

CLIENT		JOB NUMBER	
SUBJECT			
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE

5/29 Normal operation ✓ list

6/5 Normal operation ✓ list

6/12 Normal operation ✓ list

6/18 Blowers are off
- thunderstorm on 6/12 afternoon
- probably off 6 days Air samples

1925 Start system

6/19 Normal operation ✓ list

6/24 normal operation ✓ list

7/2/97 both blowers off
- A. Taormina reports of electrical storms on 6/26
blowers off for 6 days

Start up the system

7/11/97 normal operation ✓ list

7/15/97 Normal operation ✓ list
System Shutdown Air samples

7/24/97 Start up system
System off for 9 days

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

CLIENT		JOB NUMBER	
SUBJECT			
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE

7/30 System is off
∴ Assume power outage occurred in heavy rains/thunderstorm after leaving site on 7/24
- system down 6 days

1020 Restart system
1520 Extraction flow = 166

8/20 Carbon units ✓ list
Ex flow = 175

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

CLIENT	JOB NUMBER		
NAVY	5253		
SUBJECT	lbs of VOC's Removed		
BASED ON	Field measurements	DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
SGP			9/3/97

VOC's removed between 4/23/97 and 5/2/97
based on pid readings

9 days
Avg. PID reading = 1102 ppm
Avg. Flowrate = 116.7 cfm

VOC removed/day = 62 lbs/day x 9 days

Total = 558 lbs.

between 5/2/97 and 5/7/97

5 days
Avg. estimated PID reading = 798.5 ppm
Avg Flowrate = 113.4 cfm

VOC removed per day = 43 lbs/day x 5 days

Total = 215 lbs

between 5/7/ and 5/12/97
system down

between 5/12/97 & 5/15

3 days
Avg. estimated PID reading = 243 ppm
Avg. Flowrate = 111
VOC removed/day = 13/day x 3
Total = 39 lbs VOC removed

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

CLIENT	JOB NUMBER		
NAVY	5253		
SUBJECT	lbs. of VOC's Removed		
BASED ON	Field Measurements	DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
SGP			9/3/91

between 5/15/91 & 5/20

5 days
Avg. PID reading = 155 ppm
Avg. Flow rate = 108

VOC removed / day = 8 lbs/day

Total = 40 lbs

between

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

CLIENT		JOB NUMBER	
SUBJECT			
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE

VOC's removed between 6/19/97 and 7/15/97
based on fixed lab results

26 day − 6 days (due to power surges) = 20 days

lab results avg. = 49.7 ppm-V
avg. MW of contaminants = 130.18
avg. measured flow rate = 133cfm

VOC's removed per day = 3.15 lbs/day

Total VOC's removed over period = 63 lbs

Total VOC's removed between 4/23/97 and 7/15/97 is 671 lbs

Sample Date	Calculated Extraction	Measured Extraction	PRE CARBON Treatment Units		POST CARBON Treatment Units	
	Flow Rate*	Flow Rate**	PID readings (ppm)	Fixed-Base Lab Results (ppm-v)	PID Readings (ppm)	Fixed-Base Lab Results (ppm-v)
4/23/97	120	23	1,106	753.2	0	0.04
5/2/97	113.4	104	1,097	-	0	-
5/7/97	113.4	104	***	-	***	-
5/12/97[1]	-	114	***	-	***	-
5/15/97	113.4	108	185	-	0	-
5/20/97	106.8	108	125	91.9	0	0.061
5/29/97	169	152	62	-	0	-
6/5/97	173.5	170	58	-	3.8	-
6/12/97	164.7	170	51	-	0	-
6/19/97[2]	163.6	166	68	43.6	0	0.0594
6/24/97	166.9	166	59.7	-	0	-
7/2/97[3]	169	158	60.2	-	0	-
7/11/97	161.4	166	53.9	-	0	-
7/15/97	187.7	175	48.3	55.85	0	0.421
7/24/97[4]	-	175	52.9	-	0	-
7/30/97[5]	-	166	***	-	***	-
8/20/97	175	175	***	-	***	-
9/5/97[6]	-	-	82.3	-	22	-
9/17/97[7]	155	166	41.5	-	0	-

* - Sum of flow rates from each extraction line prior to extraction blower.

** - Measured flow rate after extraction blower and prior to carbon treatment units.

*** - No photo-ionization detector (PID) readings were taken.

1 - Extraction blower was off for approximately 5 days because of building rewiring.

2 - Extraction blower was off for approximately 6 days due to power surge caused by thunderstorm.

3 - Extraction blower was off for approxiamtely 6 days due to power surge caused by thunderstorm.

4 - Extraction blower was off for 9 days due to end of system operations.

5 - Extraction blower was off for approxiamtely 6 days due to power surge caused by thunderstorm.

6 - Vapors measured with portable flame ionization detector (FID).

7 - AS/SVE system is turned off.

Days from System Startup	VOC Concentration (mg/m3)	VOC Removed (lbs.)		
0	4002.1	0		
27	488.4	509.56		
57	231.7	658.26		
83	296.8	760.88		
142	312.96	888.35