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TECHNICAL MEMORANDUM
NOVEMBER 1999 GROUNDWATER MONITORING REPORT

AMERICAN CHEMICAL SERVICE SUPERFUND SITE
GRIFFITH, INDIANA

Montgomery Watson File No. 1252042

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EXECUTIVE SUMMARY

The long term groundwater monitoring plan at the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site in Griffith, Indiana, consists of semi-annual sampling of the 44 wells in the monitoring network. In addition, three of the monitoring wells, MW48, MW49, and MW9R are sampled on a quarterly basis and five private wells in the vicinity of the Site are sampled once each year. For one of the semi-annual sampling events, the monitoring well samples are analyzed for the full Target Compound List and Target Analyte List (TCL/TAL) parameters. For the other major sampling event, the samples are analyzed for a reduced list of indicator parameters. Each quarter, water levels are measured at all monitoring network points in a single 24-hour period.

This Technical Memorandum summarizes the November 1999 groundwater monitoring activities at the ACS NPL Site. The November event consisted of a major sampling event, with the samples analyzed for a reduced list of indicator parameters. All samples and analyses were conducted in accordance with the September 1997 U. S. Environmental Protection Agency (U.S. EPA) approved sampling plan.

SITE HYDROGEOLOGY

The regional groundwater flow in the upper aquifer is from east to west in the vicinity of the ACS facility. At the ACS Site, the flow is diverted to the north and to the south by the barrier wall, installed as part of the ACS remedy. The potentiometric surface to the northwest of the Site (including the wetland area) is relatively flat due to the effects of the Perimeter Groundwater Containment (PGCS) Trench, barrier wall, and discharge points from the groundwater treatment plant effluent. Depressed water levels in the Town of Griffith Landfill reflect the activity of their leachate collection system (LCS).

Horizontal groundwater flow in the lower aquifer is northward with a hydraulic gradient of 0.00030. This gradient is consistent with previous lower aquifer data presented in earlier groundwater technical memoranda.

Vertical gradients were calculated across three aquifer horizons: 1) the upper aquifer in the wetland area, 2) the upper and lower aquifers, and 3) the lower aquifer. All gradients were consistent with previous findings. Vertical gradients measured in the wetland area were very small and were generally upwards, except for a small downward gradient near the center of the wetlands. Downward vertical gradients were measured between the upper and lower aquifer. Vertical gradients measured in the lower aquifer were small and variable; of the calculated gradients in the lower aquifer, four were downward, eight were upward, and one was within the margin of potential error in water level measurement. Consistent vertical gradient trends are seen in three well nests in the lower aquifer: downward at MW52/MW53 and MW54R/MW55, and upward at MW28/PZ43 and MW9R/MW34. This variability indicates that there is not an overall trend in vertical gradient data in the lower aquifer.

EXECUTIVE SUMMARY

For discussion purposes, the upper aquifer flow system was divided into three regions for analysis: the North Area, South Area, and the Griffith Landfill. The North Area extends northward from the north end of the Site near the On-Site Containment Area and west/northwest into the wetlands, and the South Area extends southeasterly from the barrier wall at the southern end of the Off-Site Area.

Groundwater sampling within the shallow aquifer during the November 1999 event was conducted on twenty-one monitoring wells. Normally, twenty-three wells are sampled from the upper aquifer, but due to dry conditions, two wells, MW18 and MW41, were dry and could not be sampled. Detection of VOCs and inorganics were compared to the maximum baseline concentrations for each well. The benzene concentration in MW06 exceeded the baseline concentration for this well. Arsenic concentrations in MW11, MW15, MW19, and MW45 exceeded the baseline concentrations. All other VOCs and metals were not detected or detected below baseline concentrations. Chloroethane and benzene continue to be detected in MW48 and MW49 within the range of previous detections, but have been showing decreasing trends. Concentrations of benzene and chloroethane in wells MW13, MW14, and MW45 have also shown decreasing trends.

In the lower aquifer, twenty-one wells were sampled during November 1999. Detection of VOCs and inorganics were compared to the maximum baseline concentration for each well. The benzene concentration in MW10C exceeded the baseline concentration for this well. All other VOCs were not detected or detected below baseline concentrations. Chloroethane and benzene continue to be detected in MW9R and MW10C with concentrations within the range of previous detections. The downward trend in benzene concentration since monitoring well MW9 was replaced appears to be continuing. There were also no exceedances for arsenic or lead in the lower aquifer wells during this event.

One private well (PW-D) was sampled for cyanide. Cyanide was not detected in this sample.

A separate report will be submitted that includes a discussion and data evaluation for the groundwater treatment system effluent samples.

TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1
1.1	Long Term Groundwater Monitoring Plan	1
1.2	Objectives and Scope of November 1999 Sampling	1
1.3	Organization of Technical Memorandum	2
2.0	FIELD DATA COLLECTION ACTIVITIES NOVEMBER 1999	3
2.1	Water Levels	3
2.2	Groundwater Sampling	4
3.0	EVALUATION OF NOVEMBER 1999 SAMPLING DATA	5
3.1	Groundwater Flow System Data	5
3.1.1	Groundwater Flow in the Upper Aquifer	5
3.1.2	Vertical Gradients in the Upper Aquifer	6
3.1.3	Groundwater Flow in the Lower Aquifer	6
3.1.4	Vertical Gradients in the Lower Aquifer	7
3.1.5	Vertical Gradient Between Upper and Lower Aquifer	7
3.2	Monitoring Well Sample Data	8
3.2.1	Groundwater Sampling Results in the Upper Aquifer	8
3.2.1.1	VOCs	8
3.2.1.2	SVOCs	12
3.2.1.3	Pesticides and PCBs	12
3.2.1.4	Tentatively Identified Compounds (TICs)	12
3.2.2	Groundwater Sampling Results from the Lower Aquifer	12
3.2.2.1	VOCs	12
3.2.2.2	SVOCs	13
3.2.2.3	Pesticides and PCBs	13
3.2.2.4	Tentatively Identified Compounds (TICs)	13
3.2.3	Inorganic Chemical Species	13
3.3	Private Well Sampling	14
4.0	SUMMARY AND CONCLUSIONS	15
4.1	Summary of Groundwater Flow Systems	15
4.2	Summary of Monitoring Well Sample Data	15
4.3	Summary of Private Well Sample Data	16
4.4	Conclusions	16

TABLES

Table 1	Groundwater Level Gauging Points – November 1999
Table 2	Upper Aquifer Wells Sampled – November 1999
Table 3	Lower Aquifer Wells Sampled – November 1999
Table 4	Summary of Field Parameter Results – November 1999
Table 5	Vertical Gradients in Wetlands – November 1999
Table 6	Vertical Gradients in Lower Aquifer – November 1999
Table 7	Vertical Gradients Between Upper and Lower Aquifers – November 1999
Table 8	Summary of Organic Compound Detections in the Upper Aquifer Validated Results – November 1999
Table 9	Summary of Organic Compound Detections in the Lower Aquifer Validated Results – November 1999
Table 10	Summary of Inorganic Exceedances – November 1999

FIGURES

Figure 1	Upper Aquifer Water Table Map – November 1999
Figure 2	Lower Aquifer Potentiometric Surface – November 1999
Figure 3	VOCs Detected in Upper Aquifer Monitoring Wells – November 1999
Figure 4	VOCs Detected in Lower Aquifer Monitoring Wells – November 1999

APPENDICES

Appendix A	Comparison of November 1999 Results to Baseline Maximum Concentrations
Appendix B	Time Trend Plots
Appendix C	Validation Narrative and Laboratory Reports from Upper Aquifer
Appendix D	Validation Narrative and Laboratory Reports from Lower Aquifer

1.0 INTRODUCTION

1.1 LONG TERM GROUNDWATER MONITORING PLAN

The long-term groundwater monitoring plan, approved by U.S. Environmental Protection Agency (U.S. EPA) in September 1997, for the American Chemical Service, Inc. (ACS) National Priorities List (NPL) Site in Griffith, Indiana, consists of two major (semi-annual) sampling events each year and two minor sampling events. The major sampling events consist of sample collection at 44 monitoring wells in the monitoring network. For one of the semi-annual sampling events, the groundwater samples are analyzed for full scan Target Compound List and Target Analyte List (TCL/TAL) parameters. For the other semi-annual sampling event, the samples are analyzed for a reduced list of indicator parameters. The indicator parameters are tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), 1,1-dichloroethene (DCE), 1,2-dichloroethene (1,2-DCE), vinyl chloride (VC), chloroethane, benzene, arsenic, and lead.

The minor sampling events consist of sampling three monitoring wells within the monitoring network, which have shown variable contaminant concentrations during the baseline sampling. These include upper aquifer monitoring wells MW48 and MW49, and lower aquifer monitoring well MW9R. Samples from these monitoring wells are analyzed for indicator parameters. Monitoring well MW9R has been analyzed for full scan TCL/TAL compound list during the minor sampling events in the past, but during 1999 and 2000, it will be analyzed for the same compound list as monitoring wells MW48 and MW49, in accordance with the U.S. EPA Letter dated June 15, 1998.

During each of the four sampling events, water levels are collected from the full monitoring network prior to collecting groundwater samples. These measurements are conducted within a 24-hour period.

Once annually, samples are to be collected from five private wells and analyzed for the full scan TCL/TAL parameters.

1.2 OBJECTIVES AND SCOPE OF NOVEMBER 1999 SAMPLING

The November 1999 sampling consisted of a major sampling event, analyzed for the reduced list of indicator parameters. The following objectives from the long term groundwater monitoring plan apply to the quarterly sampling at the ACS NPL Site.

1. Collect water level data to monitor groundwater flow in the upper and lower aquifers and calculate the hydraulic gradients between the aquifers.

2. Collect water level data to document the performance of the Perimeter Groundwater Containment System (PGCS) and barrier wall extraction system (BWES) and to evaluate changes in the groundwater flow system resulting from

the remedial actions (these activities are outlined in the Performance Standard Verification Plan, April 1997). The Groundwater Treatment Plant Quarterly Monitoring Report is submitted under separate cover and includes information on this objective.

3. Collect and analyze groundwater samples from the interior of the areas of contaminated groundwater to document how concentrations change with time and in response to the remedial actions.

4. Assess progress toward attaining cleanup objectives in contaminated areas.

1.3 ORGANIZATION OF TECHNICAL MEMORANDUM

The results of the November 1999 groundwater monitoring activities at the ACS NPL Site are presented in the following sections of this report:

- Section 1 Objectives and scope of the groundwater monitoring activities
- Section 2 Field data collection activities
- Section 3 Evaluation of the November 1999 sampling data
- Section 4 Summary and Conclusions

Tables, figures and appendices are presented at the end of this report.

A baseline sampling report was completed following the September 1997 sampling event and included a long-term Groundwater Monitoring Plan. In accordance with the U.S. EPA-approved Groundwater Monitoring Plan, this Technical Memorandum compares the November 1999 groundwater analytical results to the highest detected concentrations observed for each well and parameter during the baseline sampling. This comparison table is found in Appendix A.

2.0 FIELD DATA COLLECTION ACTIVITIES NOVEMBER 1999

Field activities were conducted from November 8 through November 12, 1999 at the ACS Site. The groundwater monitoring activities were conducted in accordance with the U.S. EPA-approved Specific Operating Procedures (SOPs), the Pre-Design Quality Assurance Project Plan (QAPP) completed August 1995, and U.S. EPA comments regarding the Pre-Design QAPP. All monitoring wells were purged and sampled using low-flow methods in accordance with the approved Monitoring Well Sampling Proposal and Protocol SOP for the Upper Aquifer Investigation (Revision: July 25, 1996). The November 1999 groundwater sampling event consisted of the following activities:

- Measurement of water levels in 149 upper and lower aquifer wells, piezometers, and staff gauges on November 8, 1999.

- Upper aquifer monitoring: collection of groundwater samples from twenty-one monitoring wells screened in the upper aquifer and analysis for indicator parameters; samples were collected November 8 through November 12, 1999. Two upper aquifer wells (MW-18 and MW-41) scheduled for sampling contained less than three feet of standing water, so there was not enough to obtain representative samples.

  A well with no water is considered a dry well, and a well with a water level too low to be sampled is considered a low well. A water column of at least three feet is required to collect a representative and accurate groundwater sample. The intake of the Grundfos™ sampling pump is at the bottom of the pump. During operation, the Grundfos™ pump cools itself by contact with the surrounding water. Without the cooling effect of the water, the pump will overheat and fail to operate properly. Because drawdown of up to one foot is expected during sampling, two feet of water is required above the intake of the pump. Also, the pump intake must be at least one foot above the bottom of the well to avoid drawing in any silt or sediment that may have accumulated on the well bottom. These requirements are the basis for a minimum three feet of water in a well.

- Lower aquifer monitoring: collection of groundwater samples from twenty-one monitoring wells screened in the lower aquifer and analysis for indicator parameters; samples were collected on November 8 through November 12, 1999.

2.1 WATER LEVELS

Water level measurements were collected at upper and lower aquifer wells, piezometers, and surface water staff gauges on November 8, 1999. The water level measurements were utilized to determine groundwater flow directions in the upper and lower aquifers, and to calculate vertical gradients both within and between the aquifers. Table 1 contains water

level measurements, map coordinates (reference points), top of inside well casing elevations, and calculated groundwater elevations for the measurement points.

2.2 GROUNDWATER SAMPLING

The groundwater samples for the November 1999 event were sent overnight under chain-of-custody to CompuChem Laboratory, Cary, North Carolina, where they were analyzed for the parameters summarized in Tables 2 and 3. The tables summarize well identification, well screen depth (lower aquifer only), location with respect to area of groundwater contamination, and monitoring parameters.

Prior to sampling the monitoring wells, each well was purged using low-flow methods in accordance with the U.S. EPA approved Monitoring Well Sampling SOP of the Upper Aquifer Investigation (revision: March 21, 1997). Field parameters (pH, specific conductivity, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity) were measured and recorded during well purging activities. Table 4 presents a summary of the field parameter results.

3.0 EVALUATION OF NOVEMBER 1999 SAMPLING DATA

3.1 GROUNDWATER FLOW SYSTEM DATA

Water table and potentiometric surface maps were developed for the upper and lower aquifers and the overall horizontal hydraulic gradient was calculated for the lower aquifer. Vertical hydraulic gradients were calculated across three aquifer horizons: 1) within the upper aquifer in the wetland area, 2) within the lower aquifer, and 3) between the upper and lower aquifers. The following sections present and discuss the general flow directions in the upper and lower aquifers and the calculated gradients.

Vertical hydraulic gradients were calculated for both the upper and lower aquifers using water level measurement data from adjacent wells and piezometers screened at different depths within each aquifer.

3.1.1 Groundwater Flow in the Upper Aquifer

The upper aquifer matrix is homogeneous silty sand with no evidence of interlayering or bedding complexities. Many years of groundwater flow monitoring have shown that the natural regional groundwater flow in this aquifer is westward. The barrier wall, completed in 1997, has affected the groundwater flow by diverting it to the north-northwest and to the south-southeast.

Figure 1 presents the upper aquifer water table elevations from data collected on November 8, 1999. Due to the large number of data points (8 staff gauges, 31 wells, and more than 100 piezometers), little interpolation was required to develop detailed contour plots. Since the Remedial Investigation in 1991, all water table maps developed for the ACS Site have consistently shown the same general groundwater flow patterns. The potentiometric surface to the northwest of the site is relatively flat due to the affects of the PGCS trench, barrier wall, and discharge points from the groundwater treatment plant. Southwest of the Site, the water levels are depressed due to the effects of the Town of Griffith Landfill's leachate collection system. During November 1999, a large depression was observed in the water table to the southeast of the site. The water table elevation in monitoring well MW41 was measured about 10 feet below normal. During measurement it was noted that a large excavation was being dug about 100 feet to the northeast, and that de-watering of this excavation might have caused the unusually low water table elevation in MW41. It appears that this in only a localized effect, since wells MW45 and MW42 did not appear to be effected.

3.1.2 Vertical Gradients in the Upper Aquifer

Table 5 shows the upper aquifer vertical gradient calculations based on the November 1999 water level measurements. These are shown in their historical context in the tabulation below:

Piezometer Nest	June 1997	Sept 1997	Dec 1997	June 1998	Sept 1998	Nov 1998	March 1999	June 1999	Sept 1999	Nov 1999
P64/P65	-0.062	0.022	0.016	0.020	0.016	0.016	0.018	0.014	0.010	0.010
P66/P67	0.013	0.007	0.002	0.005	0.004	0.003	WU	0.006	-0.010	WU
P68/P69	0.002	0.003	0.007	0.003	0.005	WU	0.005	0.012	0.010	-0.008
P70/P71	0.042	0.035	0.037	0.023	0.057	0.073	0.040	0.042	0.055	0.058

Notes:
WU= Within uncertainty of measurement technique.
Negative value indicates downward gradient.

As in the past, the vertical gradients in the upper aquifer were calculated by dividing the difference in head between nested piezometers by the vertical distance between screen midpoints. The vertical gradients are generally small and upward, which is the typical occurrence in a wetland area where groundwater discharges to the surface. The only difference from previous events is the small downward gradient measured at P68/P69, near the center of the wetlands.

3.1.3 Groundwater Flow in the Lower Aquifer

The lower aquifer groundwater elevations listed in Table 1 were used to develop a potentiometric surface map for the lower aquifer (Figure 2). The groundwater flow in the lower aquifer is northward, consistent with historical groundwater data. The horizontal hydraulic gradient in the lower aquifer was calculated using the measured difference in head between MW50, located south of the Site, and MW52, located northwest of the Site in the wetlands. This difference, 0.73 feet on November 8, 1999, was divided by the lateral distance between the two wells (2,429 feet). Based on this calculation, the horizontal hydraulic gradient in the lower aquifer is 0.00030. This is consistent with the relatively low gradients historically calculated for the lower aquifer, as summarized below.

Report of Hydraulic Gradient in Lower Aquifer		Horizontal Hydraulic Gradient
Technical Memorandum	(October 1995)	0.00041
Lower Aquifer Tech Memo	(September 1996)	0.00047
Groundwater Monitoring Report	(August 1996)	0.00047
Groundwater Monitoring Report	(November 1996)	0.00049
Groundwater Monitoring Report	(March 1997)	0.00040
Groundwater Monitoring Report	(June 1997)	0.00044
Groundwater Monitoring Report	(September 1997)	0.00035
Groundwater Monitoring Report	(December 1997)	0.00039
Groundwater Monitoring Report	(June 1998)	0.00042
Groundwater Monitoring Report	(September 1998)	0.00029
Groundwater Monitoring Report	(December 1998)	0.00024
Groundwater Monitoring Report	(March 1999)	0.00033
Groundwater Monitoring Report	(June 1999)	0.00038
Groundwater Monitoring Report	(September 1999)	0.00035
November 1999 Groundwater Monitoring Report		0.00030

3.1.4 Vertical Gradients in the Lower Aquifer

Seven nested well sets are screened in the lower aquifer. At each location, there are two or three monitoring wells and/or piezometers, each screened at a different depth within the lower aquifer. The depth intervals include the upper portion, the middle portion, and the lower portion.

The water levels measured in each of these wells (Table 1) were used to calculate vertical hydraulic gradients in the lower aquifer at each location. Table 6 summarizes the calculated vertical gradients. Calculated vertical gradients from November 1999 are shown in their historical context in the following tabulation:

Well/Piezometer Nest	Dec 1997	June 1998	Sept 1998	Nov 1998	Mar 1999	June 1999	Sept 1999	Nov 1999
MW7/PZ44	-0.0005	WU	NA	WU	WU	WU	-0.0016	0.0064
MW8/MW32	WU	WU	WU	-0.0033	0.0011	-0.0007	0.0227	WU
MW9R/MW34	WU	NA	WU	0.0006	WU	0.0037	0.0040	0.0037
MW30/MW33	-0.0040	NA	NA	WU	WU	-0.0058	WU	-0.0005
MW28/PZ43	WU	0.0021	0.0045	0.0008	0.0011	0.0025	0.0140	0.0029
MW52/MW53	-0.0008	-0.001	-0.0006	-0.0008	-0.0012	-0.0008	-0.0002	-0.0008
MW54R/MW55	-0.0012	NA	NA	NA	-0.0069	-0.0077	-0.0071	-0.0020

Notes
WU= Within uncertainty of measurement technique.
NA = A water elevation necessary for the calculation was not available.
Negative value indicates downward gradient.

Of the calculated vertical gradients across the lower aquifer, four were downward, eight were upward, and one was within the uncertainty of the measurement technique. Consistent downward vertical gradients are observed at well nests MW52/MW53 and MW54R/MW55, and consistent upward vertical gradients are observed at well nests MW28/PZ43 and MW9R/MW34. The small and variable gradients indicate that there is not an overall trend in vertical gradient within the lower aquifer.

3.1.5 Vertical Gradient Between Upper and Lower Aquifer

Groundwater elevations from upper and lower aquifer monitoring points were utilized to calculate the vertical hydraulic gradient between the two aquifers at three locations (P28/MW8, P27/MW9R, and P8/MW7). Vertical gradients were calculated by dividing the difference in head between the upper and lower aquifer wells by the thickness of the clay-confining layer between the two wells. These are summarized in Table 7. Since piezometers P28 and P27 were dry during November 1999, two of the vertical gradient calculations could not be completed. The gradient at P8/MW7, however, is consistent with previous findings. The results show that there is a relatively strong downward gradient from the upper aquifer to the lower aquifer. This is because the majority of head drop occurs across the low permeability clay layer. The average groundwater elevations in the upper and lower aquifers, respectively, are approximately 631 and 623 feet above mean sea level (amsl). The confining clay layer between the upper and lower aquifer varies in thickness from greater than 30 feet in the south to less than 5 feet in the wetland to the northwest (MW10C area). Therefore, the variability in calculated downward gradients is

due to the variable thickness of the clay confining layer rather than the difference in head between the upper and lower aquifer.

3.2 MONITORING WELL SAMPLE DATA

Groundwater samples were analyzed for indicator parameters (PCE, TCE, TCA, DCE, 1,2-DCE, VC, chloroethane, benzene, arsenic, and lead). The laboratory results were validated in accordance with U.S. EPA Region V guidelines, *U.S. EPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)* and *Inorganic Data Review (2/94).* Evaluation of the data is discussed in Section 4.0. Validation narratives and laboratory analytical reports for samples from the upper aquifer and the lower aquifer are provided in Appendices C and D, respectively.

The analytical results for the November 1999 quarterly sampling were evaluated for evidence of contaminant migration, changes in contaminant concentrations over time in response to remedial actions, and the presence of contaminants in the lower aquifer. Time trend plots for monitoring wells MW6, MW11, MW12, MW13, MW14, MW15, MW18, MW19, MW37, MW38, MW39, MW40, MW41, MW42, MW43, MW44, MW45, MW46, MW47, MW48, MW49, MW9R, and MW10C are presented in Appendix B. The following sections summarize the results of the organic analyses in the upper aquifer (Section 3.2.1), the organic analyses in the lower aquifer (Section 3.2.2), and the inorganic analyses in both aquifers (Section 3.2.3).

3.2.1 Groundwater Sampling Results in the Upper Aquifer

The ACS Site, except for the wetlands, has been identified as the source of groundwater contamination in the upper aquifer. The Site source areas are currently contained within the barrier wall, which prevents future migration of contaminants to the adjacent areas. Because the source is contained, the groundwater monitoring program is focused on the adjacent areas not confined by the barrier wall. These surrounding areas are: the areas north and west of the ACS Facility, referred to as the North Area; the area south/southeast of Colfax Avenue, referred to as the South Area; and the Town of Griffith Landfill, which covers the area to the southwest of the ACS Site.

Table 8 and Figure 3 present a summary of TCL organic compounds detected in groundwater samples collected from wells in these areas during the November 1999 sampling event. Appendix A also provides a summary table of the analytical data for this round.

3.2.1.1 VOCs

Figure 3 shows the location of VOC detections in the upper aquifer on a map of the area surrounding the ACS Site. The contamination in the three surrounding areas is comprised primarily of chloroethane and benzene. Trans-1,2-dichloroethene and vinyl chloride were also detected during this sampling event, but the estimated concentrations were below the

reporting limit. Below is a discussion of the VOC analytical results for each of the three surrounding areas.

North Area. The North Area is monitored by an array of groundwater wells located hydraulically upgradient of the North Area, within the North Area, at the edge (side gradient) of the North Area, and hydraulically downgradient from the edge of the North Area. These wells are as follows:

Upgradient (east/northeast of Site)	Interior (north of Site)	Side Gradient (north of Site)	Downgradient (north of Site)
MW11	MW13	MW39	MW37
MW12	MW48		MW38
MW40	MW49		

The contamination in the North Area comprised primarily of benzene and chloroethane. Benzene was not detected in the groundwater in the upgradient wells, except for a very low concentration (2 µg/L) in MW11. This result was below the detection limit for the analysis and was qualified as an estimated result. Benzene and trans-1,2-dichloroethene were detected at side-gradient well MW39, however, the estimated concentrations of benzene (2 µg/L) and trans-1,2-dichloroethene (2 µg/L) were below the baseline concentrations for these compounds. Benzene and chloroethane were not detected at the downgradient wells.

Chloroethane and benzene continue to be detected in MW48 and MW49, with concentrations within the range of previous detections. Concentrations of benzene and chloroethane in MW48 have decreased by roughly half since September 1999, while concentrations of benzene and chloroethane in MW49 have increased slightly. The VOC concentrations in MW48 and MW49 for November 1999 do not exceed maximum baseline concentrations. Time trend plots for these compounds are found in Appendix B. The following table summarizes historical benzene and chloroethane detections in MW48 and MW49:

Monitoring Wells MW48 and MW49 (Upper Aquifer)

Monitoring Well	MW48		MW49	
Sampling Date	Benzene	Chloroethane	Benzene	Chloroethane
Baseline Value	9,500	1,000	6,750	715
August 1996	9,100	1,000	5,000	480
March 1997	5,200	620	1,600	310
June 1997	7,700	670	4,800	540
September 1997	9,500	980	8,200	810
December 1997	3,800	300	3,300	250
June 1998	9,500	720	4,500	450
September 1998	7,800	610	4,700	650
December 1998	5,500	420	4,200	440
March 1999	1,900	83	1,900	180
June 1999	5,700	290	2,600	220

Monitoring Well	MW48		MW49	
September 1999	5,400	290	2,200	210
November 1999	2,400	140	2,400	260

Note:
All concentrations in ug/L.

Chloroethane and benzene were not detected in interior well MW13 during the November 1999 sampling round. MW13 is located in the wetland area on the west side of the Site and is downgradient of interior wells MW48 and MW49 in which the highest chloroethane and benzene concentrations have historically been detected in the North Area. The following table summarizes historical chloroethane and benzene detections in MW13:

Monitoring Well MW13 (Upper Aquifer)

Sampling Date	Chloroethane		Benzene	
Baseline Value	570	µg/L	610	µg/L
November 1996	97	µg/L	6	µg/L
March 1997	330	µg/L	170	µg/L
June 1997	570	µg/L	610	µg/L
September 1997	160	µg/L	33	µg/L
December 1997	20	µg/L	ND	
June 1998	82 J	µg/L	2.0 J	µg/L
December 1998	ND		ND	
June 1999	ND		ND	
November 1999	ND		ND	

Note:
J qualifier indicates concentration is estimated.
ND indicates compound was not detected

South Area. The South Area is monitored by an array of groundwater wells located hydraulically upgradient of the South Area, within the South Area, at the edge (side gradient) of the South Area, and hydraulically downgradient from the edge of the South Area. These wells are as follows:

Upgradient (south/east of Site)	Interior (south/southeast of Site)	Side Gradient (south/southeast of Site)	Downgradient (southeast of Site)
MW18	MW6	MW41	MW15
	MW45	MW44	MW42
	MW19	MW47	MW43

As in the North Area, contamination in South Area wells primarily consists of chloroethane and benzene. These contaminants were not detected in side-gradient or downgradient wells, except for relatively low, estimated detected concentrations of benzene and chloroethane in well MW15, which were below maximum baseline concentrations. Upgradient well MW18 and side gradient well MW41 were not sampled because there was not enough water in the well to collect an adequate sample. The water column in wells MW41 and MW18 were about 2 and 4 feet, respectfully. Monitoring well MW18 appears

to be obstructed, since the well construction log indicates that the total depth of the well should be 22 feet, and the total depth recorded in November 1999 was 15.30 feet. The usefulness of this well will be evaluated during the upcoming development of the long-term groundwater monitoring plan.

Chloroethane and benzene were detected in interior wells MW6, MW19, and MW45. Concentrations for benzene exceeded baseline concentrations in well MW06. The concentrations of benzene and chloroethane detected at well MW6 have fluctuated over time. Since groundwater flow was changed the most by the barrier wall in the vicinity of MW06, we believe that this variability in concentration and compounds at MW06 are a result of this change in groundwater flow pattern.

Monitoring Well MW06 (Upper Aquifer)

Sampling Date	Benzene	Chloroethane
Baseline Value	320 µg/L	720 µg/L
November 1996	320 µg/L	720 µg/L
March 1997	35 µg/L	67 µg/L
June 1997	39 µg/L	140 µg/L
September 1997	140 µg/L	140 µg/L
December 1997	1,900 µg/L	550 J µg/L
June 1998	72 J µg/L	350 J µg/L
December 1998	930 µg/L	840 µg/L
June 1999	180 µg/L	78 µg/L
November 1999	480 µg/L	310 µg/L

Note:
J qualifier indicates concentration is estimated.

The concentrations of chloroethane and benzene in MW45 appear to be decreasing, as shown in the following table.

Monitoring Well MW45 (Upper Aquifer)

Sampling Date	Benzene	Chloroethane
Baseline Value	1045 µg/L	215 µg/L
August 1996	530 µg/L	82 J µg/L
March 1997	1,045 µg/L	215 µg/L
June 1997	940 µg/L	120 µg/L
September 1997	860 µg/L	120 µg/L
December 1997	670 µg/L	130 J µg/L
June 1998	670 J µg/L	120 J µg/L
December 1998	500 µg/L	88 µg/L
June 1999	360 µg/L	38 µg/L
November 1999	340 µg/L	32 µg/L

Notes:
J qualifier indicates concentration is estimated.
ND indicates compound was not detected

Griffith Landfill. The Griffith Landfill covers the area to the southwest of the Off-Site Containment Area of the Site. Three upper aquifer wells were sampled within the landfill area: Griffith Landfill wells M-1S and M-4S, and monitoring well MW15.

Chloroethane and benzene were detected in the sample collected at M-4S, located at the northeast boundary of the landfill. Benzene and chloroethane were also detected in MW15 at relatively low, estimated concentrations. None of the detected concentrations exceeded the baseline concentrations in the Griffith Landfill wells. The concentration of chloroethane in samples from M-4S has been decreasing over the last three sampling events. Because M-4S is located on the Landfill property and groundwater quality at this location is strongly influenced by landfill activities, we will continue to monitor M-4S to evaluate if the concentration of chloroethane continues to decrease.

3.2.1.2 SVOCs

Semivolatile organic compounds (SVOCs) were not analyzed as part of the November 1999 groundwater monitoring activities within the upper aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.1.3 Pesticides and PCBs

Pesticides and polychlorinated biphenyls (PCBs) were not analyzed as part of the November 1999 groundwater monitoring activities within the upper aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.1.4 Tentatively Identified Compounds (TICs)

Several tentatively identified compounds (TICS) were detected in upper aquifer monitoring wells during November 1999. Ether was detected in the following five upper aquifer monitoring wells: M-1S (concentration of 21 μg/L), M-4S (62 μg/L), MW06 (29 μg/L), MW13 (8 μg/L), MW19 (51 μg/L), and MW10C (1655 μg/L). Other TICs detected during November 1999 include tetrahydrofuran, cyclohexanone, and various propanes, decanes, benzenes, methanes, and unknown compounds. The complete listing of TICs is compiled in Appendix C along with the analytical results.

3.2.2 Groundwater Sampling Results from the Lower Aquifer

Table 9 presents a summary of TCL organic compounds detected in groundwater samples collected from lower aquifer monitoring wells during the November 1999 sampling event. Appendix A also provides a summary table of the analytical data for this round.

3.2.2.1 VOCs

Figure 4 shows the VOC detections in the lower aquifer. Chloroethane and benzene were detected in eight samples from lower aquifer wells during November 1999. VOC concentrations at MW9R and MW10C are at concentrations within the range of previous detections for these wells. The other six wells (ATMW4D, MW24, MW30, MW52, MW53, and MW54R) had detections of benzene and chloroethane at estimated concentrations below the reporting limit. The benzene concentration at MW10C (340 ug/l)

exceeded the baseline concentration (150 ug/l) for that well. No other VOCs exceeded baseline concentrations in the lower aquifer wells in the November 1999 sampling event.

In MW9R, benzene concentrations increased slightly since the September 1999 sampling event, while chloroethane concentrations decreased slightly. A time trend plot for these compounds is found in Appendix B. The following tabulation shows the concentration of benzene has decreased with the installation of MW9R.

MW9/ MW9R	Mar 1997	Jun 1997	Sept 1997	Dec 1997	Jun* 1998	Sept* 1998	Dec* 1998	Mar* 1999	Jun* 1999	Sept* 1999	Nov* 1999
Benzene (µg/L)	310	280	290	260	110	100	160	130	160	120	160

*sample collected from replacement well MW9R

In June 1999, benzene and chloroethane were detected in MW10C at concentrations two orders of magnitude greater than in March 1999. This monitoring well was resampled in September 1999, and the concentrations had shown a return to magnitude concentrations seen in previous sampling rounds. During November 1999, concentrations of benzene and chloroethane increased by one order of magnitude. This well will continue to be monitored during the next several events. A time trend plot for these compounds is included in Appendix B.

3.2.2.2 SVOCs

SVOCs were not analyzed as part of the November 1999 groundwater monitoring activities within the lower aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.2.3 Pesticides and PCBs

Pesticides or PCBs were not analyzed as part of the November 1999 groundwater monitoring activities within the lower aquifer in accordance with the approved Groundwater Monitoring Plan.

3.2.2.4 Tentatively Identified Compounds (TICs)

Several TICs were detected in the lower aquifer monitoring wells sampled during November 1999. Ether was detected in four lower aquifer wells, and was detected at relatively high concentrations at MW10C (1,655 ug/l) and MW51 (1,532 ug/l). Other TICs detected during November 1999 include 1,4-dioxane, cyclohexanone, tetrahydrofuran, chlorodifluoromethane, and several unknowns. The complete listing of TICs is compiled in Appendix D along with the analytical results.

3.2.3 Inorganic Chemical Species

The November 1999 inorganic results are compiled in Appendix A along with the maximum baseline concentrations. Table 10 summarizes the baseline exceedances of the inorganic analyses during the November 1999 sampling event. Concentrations of arsenic in upper aquifer monitoring wells MW11, MW15, MW19, and MW45 exceeded baseline concentrations during the November 1999 event. There were no exceedances of lead in the upper aquifer wells, and no exceedances of either arsenic or lead in the lower aquifer wells.

Since only the indicator inorganic parameters arsenic and lead were analyzed during the November 1999 sampling event, the comparative evaluation to the baseline will not be completed at this time.

3.3 PRIVATE WELL SAMPLING

Five private wells, each screened in the lower aquifer, were sampled during the September 1999 groundwater sampling event. Analysis of cyanide at PW-D (1033 Reder Rd.) was not completed during the September 1999 event. Thus, during the November event, a groundwater sample was collected from PW-D for analysis of cyanide. Cyanide was not detected in this sample. The analytical report for this well is provided in Appendix D.

4.0 SUMMARY AND CONCLUSIONS

4.1 SUMMARY OF GROUNDWATER FLOW SYSTEMS

Analysis of the groundwater flow systems for both the upper and lower aquifers were found to be consistent with those in previous monitoring events. There were no significant changes or deviations from the baseline groundwater flow system. One difference from previous measurement was observed in the southeast, where water levels in MW41 were 10 feet below normal. This is probably due to construction and de-watering activities observed nearby. This did not change the overall groundwater flow pattern. Groundwater flow within the upper aquifer is from the east and is diverted by the barrier wall toward the north/northwest and south/southwest around the ACS Site. Consistent with historical data, the groundwater flow within the lower aquifer is northward. Vertical gradients within the upper aquifer in the wetlands are generally upwards. Vertical gradients measured within the lower aquifer were either small or variable, and vertical gradients between the upper and lower aquifers were downward as in the past.

4.2 SUMMARY OF MONITORING WELL SAMPLE DATA

VOCs were detected in several monitoring well samples collected from both the upper and lower aquifers. Benzene concentrations exceeded baseline concentrations at monitoring well MW06 and MW10C. No other VOCs exceeded baseline concentrations within the upper and lower aquifers.

SVOCs were not analyzed in the upper and lower aquifer samples this sampling round.

Pesticides and PCBs were not analyzed in the upper and lower aquifer samples this sampling round.

Inorganic compounds were detected in both the upper and lower aquifer samples. Arsenic concentrations exceeded baseline concentrations in four upper aquifer wells. No other inorganics exceeded baseline concentrations in the upper or lower aquifer wells.

In the upper aquifer monitoring wells, several TICS were detected in eleven monitoring well. In the lower aquifer monitoring wells, several TICS were detected in eight monitoring wells. Ether is the most often detected TIC in the upper and lower aquifers, and is detected at the highest concentrations, especially in the lower aquifer.

4.3 SUMMARY OF PRIVATE WELL SAMPLE DATA

One groundwater sample was collected from private well PW-D in order to complete the private well sampling that was conducted during September 1999. This sample was analyzed for cyanide, and cyanide was not detected in the sample.

4.4 CONCLUSIONS

The following conclusions can be drawn for each objective of the Groundwater Monitoring Plan.

Objective 1 was to collect water level data to monitor groundwater flow in the upper and lower aquifers and calculate the hydraulic gradients between the aquifers. The data collected indicates that groundwater flow directions and groundwater gradients for the November 1999 sampling event are consistent with past conditions for both the upper and lower aquifers.

Objective 2 was to collect water level data to document the performance of the PGCS and BWES and to evaluate changes in the groundwater flow system resulting from the remedial actions. The data indicate the barrier wall is containing the groundwater enclosed within the wall. In general, groundwater flow from the east is diverted toward the north/northwest and south/southwest. The groundwater diverted north/northwest is either collected in the PGCS extraction trench or continues beyond under the wetlands. Groundwater diverted south/southwest flows around the barrier wall towards the southwest. These observations are consistent with previous observations.

Objective 3 was to collect and analyze groundwater samples from the interior of the areas of contaminated groundwater to document how concentrations change with time and in response to the remedial actions. Analytical results for samples collected from inside the contaminated areas indicate that concentrations of benzene in two wells (MW06 and MW10C) exceeded baseline concentrations for organic compounds in these wells, and that arsenic exceeded baseline concentrations in four upper aquifer wells for inorganic compounds.

Objective 4 was to assess progress toward attaining cleanup objectives in the contaminated areas. Concentrations of benzene and chloroethane in MW48 and MW49 have decreased over the past several monitoring events, and may be related to oxygen release compound (ORC©) injection and fluctuation in groundwater flow in that area. Concentrations in MW13, MW14, and MW45 have also decreased.

CAS/cas/PJV/CAS/emp/TMK
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1252042.221601

TABLES

Table 1
Groundwater Level Gauging Points - November 1999
American Chemical Service NPL Site
Griffith, Indiana

Upper Aquifer Wells

Well Designation	Reference Points			11/8/99		Notes
	East	North	TOIC	level	Elevation	
MW6	5298	5520	655.28	25.21	630.07	
MW11	6377	7329	640.47	10.35	630.12	
MW12	6019	6352	642.74	11.96	630.78	
MW13	5050	7814	634.08	6.16	627.92	
MW14	4882	6995	638.56	13.33	625.23	
MW15	4721	5003	637.89	8.72	629.17	
MW18	5836	5746	644.89	11.40	633.49	
MW19	5231	4943	635.78	6.38	629.40	
MW37	5395	7976	636.78	8.79	627.99	
MW38	5903	8216	636.51	8.38	628.13	
MW39	6253	7947	637.77	8.59	629.18	
MW40	6349	6831	639.46	8.49	630.97	
MW41	6242	4517	632.74	15.31	617.43	
MW42	6264	3808	632.32	8.99	623.33	
MW43	5880	3719	633.56	9.46	624.10	
MW44	5390	4303	633.04	6.30	626.74	
MW45	5830	4388	635.35	7.56	627.79	
MW46	4526	7424	633.32	4.63	628.69	
MW47	5958	5084	640.54	9.86	630.68	
MW48	5669	7814	636.36	8.25	628.11	
MW49	5551	7650	637.00	9.27	627.73	
M1S	4362	5743	639.09	10.06	629.03	Griffith Landfilll Wells
M4S	4953	6537	633.42	6.52	626.90	Griffith Landfilll Wells

Staff Gauges

Well Designation	Reference Points			11/8/99		Notes
	East	North	TOSG	level	Elevation	
SG2	4423	6864	622.84	NM	NM	Does Not Exist - Covered by landfill
SG7	5403	6889	637.01	2.40	634.61	
SG8R	5409	5252	634.70	NM	NM	Dry
SG1	5023	6196	633.50	NM	NM	Dry
SG3	4180	7123	631.17	NM	NM	Dry
SG5	5464	7713	633.36	NM	NM	Dry
SG6	4495	8075	632.97	NM	NM	Dry
SG11	5859	8245	634.62	NM	NM	Dry
SG12	5596	7867	634.12	NM	NM	Dry

Table 1
Groundwater Level Gauging Points - November 1999
American Chemical Service NPL Site
Griffith, Indiana

Lower Aquifer Wells and Piezometers

Well Designation	Reference Points			11/8/99		Notes
	East	North	TOIC	Level	Elevation	
MW28	5657	5696	648.77	28.97	619.80	
PZ42	5662	5696	648.44	28.60	619.84	
PZ43	5662	5702	648.69	28.82	619.87	
MW50	5269	5383	649.43	29.62	619.81	
PZ44	6170	6766	638.47	19.16	619.31	
MW7	6113	6732	641.46	22.23	619.23	
MW10C	5229	7554	637.45	18.09	619.36	
MW9R	4893	6990	639.05	19.79	619.26	
MW29	4886	7012	638.06	18.64	619.42	
MW34	4880	7002	638.14	18.70	619.44	
MW23	4717	7404	633.31	13.97	619.34	
MW24	4596	8033	635.22	16.23	618.99	
MW52	4996	7814	632.74	13.66	619.08	
MW53	4977	7833	632.87	13.83	619.04	
MW51	5198	7767	634.16	15.20	618.96	
MW30	5194	7774	634.25	15.31	618.94	
MW33	5189	7774	634.13	15.20	618.93	
MW54R	5590	7592	637.51	18.53	618.98	
MW55	5595	7604	636.63	17.75	618.88	
MW8	5934	7506	640.43	21.35	619.08	
MW31	5907	7505	641.64	22.60	619.04	
MW32	5902	7507	641.84	22.75	619.09	
M4D	4949	6538	633.32	13.88	619.44	
ATMW4D	5297	7311	637.99	18.70	619.29	

Table 1
Groundwater Level Gauging Points - November 1999
American Chemical Service NPL Site
Griffith, Indiana

Piezometers

Well Designation	Reference Points			11/8/99		Notes
	East	North	TOC	level	Elevation	
LW1	4807	5070	644.57	15.13	629.44	
LW2	4662	5465	649.70	19.96	629.74	
P3	5453	6470	639.87	5.29	634.58	
P4	5432	6228	639.25	NM	NM	Destroyed
P5	5285	6510	636.70	2.31	634.39	
P6	5150	6551	638.75	NM	NM	Destroyed
P7	5950	6630	643.63	12.88	630.75	
P8	6156	6734	639.27	8.50	630.77	
P9	6134	6994	638.88	8.54	630.34	
P10	5413	5852	649.32	14.78	634.54	
P11	5199	5900	649.14	14.44	634.70	NAPL
P12	5076	5723	650.08	NM	NM	Destroyed
P13	4878	5735	651.20	20.46	630.74	
P15	5003	6187	639.93	11.21	628.72	
P16	4673	5749	648.80	18.03	630.77	
P17	4584	6006	654.64	24.69	629.95	Inside Griffith Landfill
P18	4623	6224	649.84	3.69	646.15	Inside Griffith Landfill / Standing water around well.
P22	4636	6732	634.30	9.03	625.27	
P23	4689	7018	636.18	10.77	625.41	
P24	5002	7178	636.06	NM	NM	Dry; total depth = 9.70
P25	5131	7510	635.01	8.61	626.40	
P26	4764	7309	634.23	7.20	627.03	
P27	4904	7020	639.70	NM	NM	Dry; total depth = 13.59
P28	5883	7486	644.53	NM	NM	Dry
P29	5738	6619	642.37	7.88	634.49	
P30	5626	6793	642.42	NM	NM	Destroyed
P31	5480	7159	641.03	5.15	635.88	
P32	5746	7026	642.32	7.91	634.41	
P35	5515	6572	641.44	NM	NM	Destroyed
P36	5410	6851	645.89	11.25	634.64	
P37	5330	6949	641.37	NM	NM	Destroyed
P38	5149	6992	639.87	NM	NM	Destroyed
P39	5940	6902	642.00	7.54	634.46	
P40	5931	7241	638.77	8.74	630.03	
P41	5663	7377	637.23	7.81	629.42	
P49	5145	6949	638.98	4.70	634.28	
P50	5129	6964	639.59	NM	NM	Destroyed
P51	3876	6859	635.07	9.58	625.49	
P52	4100	7845	636.66	9.18	627.48	
P53	4597	8015	636.18	7.53	628.65	
P54	4936	8081	638.28	9.84	628.44	
P55	5628	7979	636.08	8.45	627.63	
P56	6405	7665	639.46	9.54	629.92	
P59	6389	6590	639.22	8.60	630.62	
P60	6111	6051	640.23	9.28	630.95	
P61	5533	5284	638.58	8.90	629.68	
P62	5665	4945	637.06	7.82	629.24	
P63	5483	7689	637.70	10.29	627.41	
EW1	5113	6942	639.50	NM	NM	Destroyed
P64	4617	7065	634.87	8.98	625.89	
P65	4615	7063	634.77	8.83	625.94	
P66	4729	7034	636.02	10.73	625.29	
P67	4732	7034	636.06	10.78	625.28	
P68	4743	7752	634.48	4.35	630.13	
P69	4741	7751	634.66	4.58	630.08	
P70	4880	7680	635.38	6.80	628.58	
P71	4876	7682	635.32	6.39	628.93	

Table 1
Groundwater Level Gauging Points - November 1999
American Chemical Service NPL Site
Griffith, Indiana

New Piezometers - Upper Aquifer

Well Designation	Reference Points			11/8/99		Notes
	East	North	TOC	level	Elevation	
PGCS Piezometer Sets						
P81	5577	7581	636.19	9.02	627.17	
P82	5577	7572	635.77	8.61	627.16	
P83	5577	7562	635.95	8.88	627.07	
P84	5322	7603	634.35	7.74	626.61	
P85	5326	7594	634.08	7.30	626.78	
P86	5329	7585	634.41	7.92	626.49	
P87	5121	7466	633.88	7.62	626.26	
P88	5130	7460	633.90	7.79	626.11	
P89	5137	7454	634.02	7.98	626.04	
P90	4881	7152	632.59	8.23	624.36	
P91	4889	7145	632.97	9.96	623.01	Stick-up box damaged.
P92	4896	7138	633.63	9.39	624.24	
BWES Piezometer Pairs						
P93	5136	7067	638.79	10.99	627.80	
P94	5146	7061	638.98	NM	NM	Destroyed
P95	5146	6532	638.58	11.20	627.38	
P96	5156	6537	638.39	5.08	633.31	
P97	5098	6283	638.39	10.26	628.13	
P98	5130	6279	639.35	5.20	634.15	
P99	5020	5945	644.35	14.33	630.02	
P100	5031	5948	643.93	9.06	634.87	
P101	5550	5979	650.08	19.40	630.68	
P102	5517	5996	647.18	12.40	634.78	Damaged
P103	5672	6248	644.97	NM	NM	Dry; total depth = 13.58
P104	5639	6267	646.68	11.90	634.78	
P105	5885	6678	638.86	8.00	630.86	
P106	5871	6685	638.10	3.98	634.12	
P107	5766	7339	637.42	8.23	629.19	
P108	5757	7324	638.13	4.03	634.10	
ORC Piezometers						
ORC PZ1	5685	7574	638.57	10.82	627.75	
ORC PZ2	5758	7457	643.43	14.35	629.08	
ORC PZ3	5760	7540	640.24	11.56	628.68	
ORC PZ4	5827	7502	643.79	14.60	629.19	
ORC PZ5	5741	7753	636.21	7.90	628.31	
ORC PZ6	5759	7792	636.13	7.74	628.39	
ORC PZ7	5792	7839	635.85	7.48	628.37	
ORC PZ8	5813	7763	638.16	9.68	628.48	

Notes:
All depth measurements and elevations are in units of feet.

Table 2
Upper Aquifer Wells Sampled - November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	Area of Groundwater Contamination	Well Identification	Location with Respect to Area of Groundwater Contamination	Monitoring Parameters November 1999
1	North	MW11	Side Gradient	IND
2		MW12	Side Gradient	IND
3		MW40	Side Gradient	IND
4		MW48	Internal	IND
5		MW49	Internal	IND
6		MW39	Side Gradient	IND
7		MW37	Downgradient	IND
8		MW38	Side Gradient	IND
9	West	MW14	Internal	IND
10		MW13	Internal	IND
11		MW46	Side Gradient	IND
12		M-1S	Griffith Landfill	IND
13		M-4S	Griffith Landfill	IND
14	South	MW18	Upgradient	IND*
15		MW6	Internal	IND
16		MW19	Internal	IND
17		MW45	Internal	IND
18		MW41	Side Gradient	IND*
19		MW44	Side Gradient	IND
20		MW47	Side Gradient	IND
21		MW15	Side Gradient	IND
22		MW42	Downgradient	IND
23		MW43	Downgradient	IND

Notes:

IND: Arsenic, lead, VC, benzene, chloroethane, TCE, PCE, TCA, DCE, and 1,2-DCA.

TCL/TAL: Full scan Target Compound List and Target Analyte List Parameters

*: Wells not sampled because they were dry.

Table 3
Lower Aquifer Wells Sampled - November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	Well Identification	Well Screen Depth in Lower Aquifer	Location with Respect to Area of GW Contamination	Monitoring Parameters November 1999
1	MW28	Upper	Upgradient	IND
2	MW50	Upper	Upgradient	IND
3	MW7	Upper	Side Gradient	IND
4	MW10C	Upper	Internal	IND
5	MW9R	Upper	Internal	IND
6	MW29	Middle	Internal	IND
7	MW34	Lower	Internal	IND
8	MW23	Upper	Downgradient	IND
9	MW24	Upper	Downgradient	IND
10	MW52	Upper	Downgradient	IND
11	MW53	Lower	Downgradient	IND
12	MW51	Upper	Downgradient	IND
13	MW30	Middle	Downgradient	IND
14	MW33	Lower	Downgradient	IND
15	MW54R	Upper	Downgradient	IND
16	MW55	Lower	Downgradient	IND
17	MW8	Upper	Downgradient	IND
18	MW31	Middle	Downgradient	IND
19	MW32	Lower	Downgradient	IND
20	M-4D	Upper	Griffith Landfill	IND
21	ATMW-4D	Upper	ACS Site	IND

Notes:

IND: Arsenic, lead, VC, benzene, chloroethane, TCE, PCE, TCA, DCE, and 1,2-DCA.

TCL/TAL: Full scan Target Compound List and Target Analyte List Parameters

Table 4
Summary of Field Parameter Results - November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Well ID	Field Parameters					
	pH (std. units)	Conductivity (adjusted to 25° C) (uS/cm)	Temperature (°C)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)
M1S	6.81	330	14.2	320	0.60	-90
M4S	6.45	210	17.1	75	0.60	-80
M4D	7.49	140	15.1	64	0.40	-155
MW06	6.54	330	16.7	29	0.80	-61
MW07	7.24	67	13.7	170	0.56	-163
MW08	7.39	41	12.9	25	1.10	-162
MW09R	6.6	98	16.1	190	0.88	-98
MW10C	7.2	150	12.8	130	0.80	-125
MW11	6.19	26	13.9	990	1.10	86
MW12	6.82	39	14.7	400	0.50	-69
MW13	6.85	134	15.5	57	0.86	-90
MW14	6.82	95	17.2	140	4.20	-26
MW15	7.06	510	15.4	39	2.10	-109
MW18	NS					
MW19	7.45	520	15.4	130	0.50	-171
MW23	6.57	84	15.2	830	3.00	-75
MW24	7	113	14.6	140	1.73	-88
MW28	7.41	70	13.1	100	0.50	-134
MW29	6.93	120	14.3	64	0.40	-126
MW30	7.43	98	12.1	310	0.70	-151
MW31	7.51	69	11.5	69	1.30	-140
MW32	7.49	79	11.8	200	0.90	-149
MW33	6.83	280	11.4	88	3.30	-94
MW34	7.19	86	13.6	50	0.60	-141
MW37	6.92	66	14.2	110	1.82	3
MW38	6.55	45	15.5	150	0.50	-32
MW39	6.88	140	18.0	73	0.50	-124
MW40	6.47	42	18.3	82	2.11	18
MW41	NS					
MW42	6.93	80	18.0	40	1.40	-30
MW43	6.64	85	16.9	210	0.30	-76
MW44	7.2	90	17.3	20	1.20	-105
MW45	6.75	120	16.9	20	1.40	-109
MW46	6.57	150	14.3	66	0.30	-116
MW47	5.52	11	16.4	510	6.20	240
MW48	6.86	73	17.6	140	1.29	-95
MW49	6.7	62	16.3	92	0.72	-102
MW50	7.33	220	13.2	640	0.80	-118
MW51	7.11	150	12.9	200	0.70	-115
MW52	7.03	146	14.9	110	0.69	-108
MW53	6.49	375	12.5	110	1.04	-75
MW54R	6.86	100	13.5	990	1.20	-120
MW55	6.68	83	13.2	990	0.80	NM
ATMW4D	7.25	97	14.0	130	1.98	-118
PW-D	7.23	79	12.4	14	0.30	-130

Notes:
NTU = nephelometric turbidity units
NS = Not sampled. MW-18 and MW-41 were not sampled because they were dry.

Table 5
Vertical Gradients in Wetlands - November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Piezometer Nest	Screen Interval		Screen Midpoint	Separation (feet)	Groundwater Elevation			Hydraulic Gradient
	Top	Bottom			Upper	Lower	delta	
P64	629.05	624.10	626.58	5	625.89			
P65	622.20	620.20	621.20			625.94	0.05	0.010
P66	629.45	625.10	627.28	8	625.29			
P67	620.50	618.50	619.50			625.28	-0.01	WU
P68	628.15	623.80	625.98	6	630.13			
P69	621.10	618.60	619.85			630.08	-0.05	-0.008
P70	628.55	624.20	626.38	6	628.58			
P71	621.00	619.00	620.00			628.93	0.35	0.058

Notes:
Water level measurements collected on November 8, 1999.
(-) = Downward Gradient
(+) = Upward Gradient
See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 3, for an explanation of calculation method.

Table 6
Vertical Gradients in Lower Aquifer - November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Well	Screen Interval		Separation	Lowest	Groundwater Elevation				Vertical Gradients		
Nest	Top	Bottom	(feet)	Measurable Gradient	Upper	Middle	Lower	delta	Upper/ Middle	Middle/ Lower	Upper/ Lower
MW7	595.9	590.9			619.23						
PZ44	578.4	573.4	13	0.0008		619.31		0.08	0.0064	NA	NA
MW8	598.2	593.2			619.08						
MW31	574.6	564.6	19	0.0005		619.04		-0.04	-0.0022		
MW32	547.3	537.3	17	0.0006			619.09	0.05		0.0029	WU
MW9R	605.9	600.9			619.26						
MW29	585.9	575.9	15	0.0007		619.42		0.16	0.0107		
MW34	552.8	542.8	23	0.0004			619.44	0.02		0.0009	0.0037
MW30	585.0	575.0	13	0.0008	NA	618.94			NA		
MW33	556.0	546.0	19	0.0005			618.93	-0.01		-0.0005	NA
MW28	588.7	578.7			619.80						
PZ42	568.5	563.5	10	0.0010		619.84		0.04	0.0039		
PZ43	554.5	549.5	9	0.0011			619.87	0.03		0.0033	0.0029
MW52	615.6	605.6			619.08						
MW53	555.7	545.7	50	0.0002		NA	619.04	-0.04	NA	NA	-0.0008
MW54R	608.1	598.1			618.98						
MW55	547.6	537.6	51	0.0002		NA	618.88	-0.10	NA	NA	-0.0020

Notes:
Water levels collected by Montgomery Watson on November 8, 1999.
NA = Not Applicable.
WU = Within uncertainty of measurement technique.
(-) = Downward Gradient
(+) = Upward Gradient
See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 4, for an explanation of calculation method.

Table 7
Vertical Gradients Between Upper and Lower Aquifers
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Well Designation	Screen Interval		Screen Midpoint	Separation (feet)	Groundwater Elevation			Hydraulic Gradient
	Top	Bottom			Upper	Lower	delta	
P28	634.30	629.30	631.80	11	DRY			
MW8	598.20	593.20	595.70			619.08	NA	NA
P27	631.02	626.02	628.52	23	DRY			
MW9R	605.90	600.90	603.40			619.26	NA	NA
P8	635.36	630.36	632.86	18	630.77			
MW7	595.90	590.90	593.40			619.23	-12	-0.64

Notes:
Water levels collected on November 8, 1999.
(-) = Downward Gradient
(+) = Upward Gradient
NA = Not applicable, since P27 and P28 were dry.
See *September 1997 Groundwater Sampling Results Report and Groundwater Monitoring Plan* (July 1998), p. 4 for an explanation of calculation method.

Table 8
Summary of Organic Compound Detections in the Upper Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	M-1S		M-4S		MW-06		MW-11		MW-12		MW-13	
Parameter	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV
VOCs (ug/L)												
Benzene			120 D/	190	**480** D/	320	2 J/J	10				
Chloroethane			1,200 D/	1,300	310 D/	720						
trans-1,2-Dichloroethene												
Vinyl Chloride												

Notes:
BV = Baseline Value
NS = Not Sampled
NA = Not analyzed for this parameter
_/_ = No data qualifier required
J/_ = Data qualifier added by laboratory
_/J = Data qualifier added by data validator
Data qualifers are defined in Appendix C.
A blank cell indicates the parameter was not detected.
Bold result indicates an exceedance

Table 8
Summary of Organic Compound Detections in the Upper Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	MW-14			MW-15			MW-18		MW-19			MW-37		MW-38	
Parameter	Nov-99		BV	Nov-99		BV	Nov-99	BV	Nov-99		BV	Nov-99	BV	Nov-99	BV
VOCs (ug/L)															
Benzene	2	J/J	41	5	J/J	10	NS		3	J/J	10				
Chloroethane	32	/UJ	1,000	1	J/J	10			20		20				
trans-1,2-Dichloroethene															
Vinyl Chloride	2	J/J	100												

Notes:
BV = Baseline Value
NS = Not Sampled
NA = Not analyzed for this parameter
_/_ = No data qualifier required
J/_ = Data qualifier added by laboratory
_/J = Data qualifier added by data validator
Data qualifers are defined in Appendix C.
A blank cell indicates the parameter was not detected.
Bold result indicates an exceedance

Table 8
Summary of Organic Compound Detections in the Upper Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	MW-39			MW-40		MW-41		MW-42		MW-43		MW-44	
Parameter	Nov-99		BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV
VOCs (ug/L)													
Benzene	2	J/J	12			NS							
Chloroethane													
trans-1,2-Dichloroethene	2	J/J	NA										
Vinyl Chloride													

Notes:
BV = Baseline Value
NS = Not Sampled
NA = Not analyzed for this parameter
_/_ = No data qualifier required
J/_ = Data qualifier added by laboratory
_/J = Data qualifier added by data validator
Data qualifers are defined in Appendix C.
A blank cell indicates the parameter was not detected.
Bold result indicates an exceedance

Table 8
Summary of Organic Compound Detections in the Upper Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Parameter	MW-45			MW-46			MW-47		MW-48			MW-49		
	Nov-99		BV	Nov-99		BV	Nov-99	BV	Nov-99		BV	Nov-99		BV
VOCs (ug/L)														
Benzene	340	D/	1,045	1	J/J	10			2,400	D/	9,500	2,400	D/	6,750
Chloroethane	32	/J	215						140	J/	1,000	260	D/	715
trans-1,2-Dichloroethene												2	J/J	NA
Vinyl Chloride														

Notes:
BV = Baseline Value
NS = Not Sampled
NA = Not analyzed for this parameter
_/_ = No data qualifier required
J/_ = Data qualifier added by laboratory
_/J = Data qualifier added by data validator
Data qualifers are defined in Appendix C.
A blank cell indicates the parameter was not detected.
Bold result indicates an exceedance

Table 9
Summary of Organic Compound Detections in the Lower Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	M-4D		ATMW-4D			MW-07		MW-08		MW-09R			MW-10C		
Parameter	Nov-99	BV	Nov-99		BV	Nov-99	BV	Nov-99	BV	Nov-99		BV	Nov-99		BV
VOCs (ug/L)															
Benzene			3	J/J	NA					160	D/	310	**340**	D/	150
Chloroethane			9	J/J	NA					540	D/	2,900	360	D/	420

Notes:

BV = Baseline Value

NA = Not analyzed for this parameter

_/_ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C

A blank cell indicates parameter not detected.

Bold result indicates an exceedance

Table 9
Summary of Organic Compound Detections in the Lower Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	MW-23		MW-24			MW-28		MW-29		MW-30			MW-31	
Parameter	Nov-99	BV	Nov-99		BV	Nov-99	BV	Nov-99	BV	Nov-99		BV	Nov-99	BV
VOCs (ug/L)														
Benzene			4	J/J	10					2	J/J	10		
Chloroethane										1	J/J	10		

Notes:

BV = Baseline Value

NA = Not analyzed for this parameter

_/_ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C

A blank cell indicates parameter not detected.

Bold result indicates an exceedance

Table 9
Summary of Organic Compound Detections in the Lower Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

	MW-32		MW-33		MW-34		MW-50		MW-51		MW-52		
Parameter	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99	BV	Nov-99		BV
VOCs (ug/L)													
Benzene											1	J/J	100
Chloroethane													

Notes:

BV = Baseline Value

NA = Not analyzed for this parameter

_/_ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C

A blank cell indicates parameter not detected.

Bold result indicates an exceedance

Table 9
Summary of Organic Compound Detections in the Lower Aquifer
Validated Results
November 1999
American Chemical Service Superfund Site
Griffith, Indiana

Parameter	MW-53			MW-54R			MW-55		
	Nov-99		BV	Nov-99		BV	Nov-99		BV
VOCs (ug/L)									
Benzene	3	J/J	10	1	J/J	10			
Chloroethane									

Notes:

BV = Baseline Value

NA = Not analyzed for this parameter

_/_ = No data qualifier required

J/_ = Data qualifier added by laboratory

_/J = Data qualifier added by data validator

Data qualifiers are defined in Appendix C

A blank cell indicates parameter not detected.

Bold result indicates an exceedance

Table 10
Summmary of Inorganic Baseline Exceedances
November 1999 Groundwater Monitoring
American Chemical Service Superfund Site
Griffith, Indiana

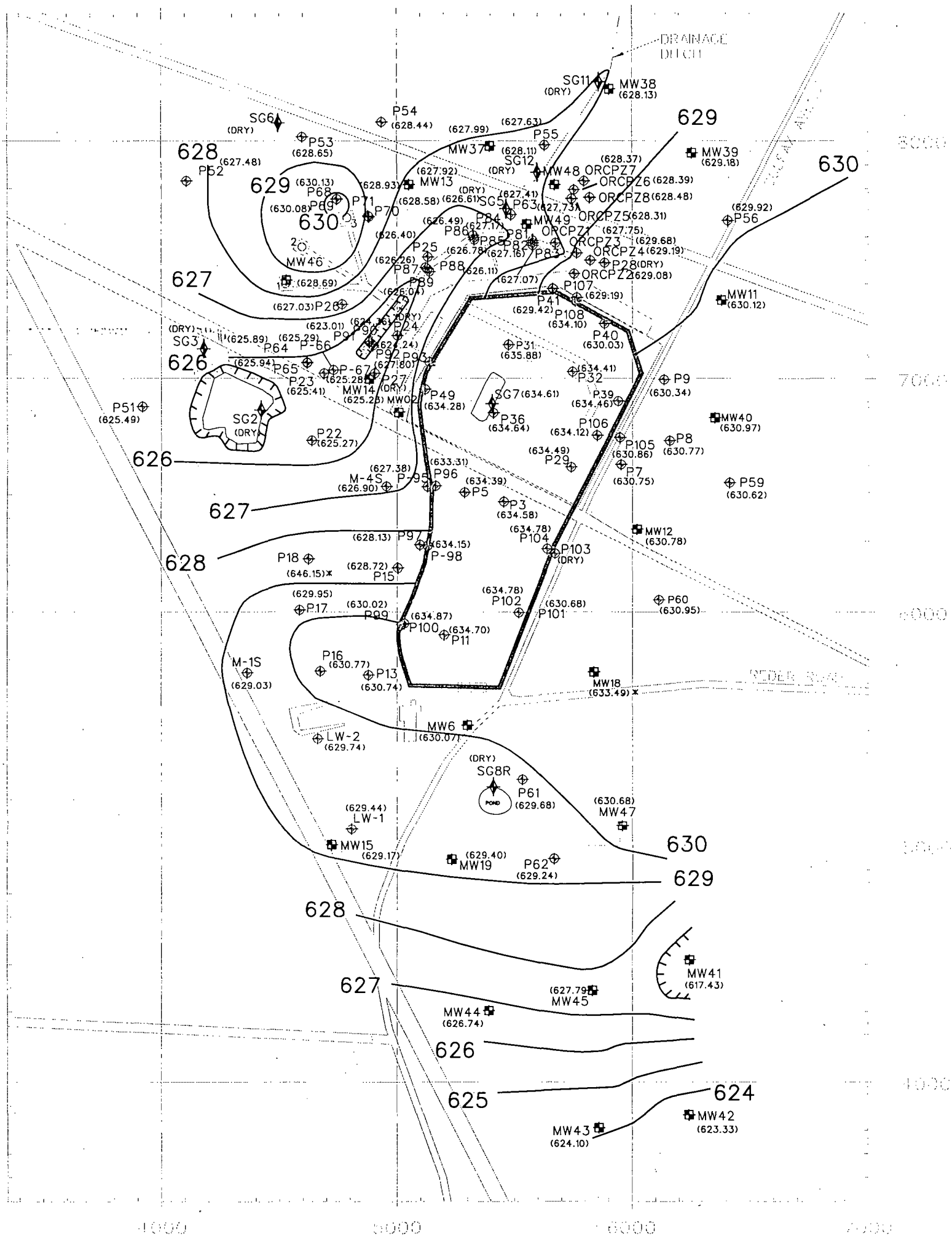
Well	Potentially Statistically Significant Jun-99	Potentially Statistically Significant Nov-99	Arsenic		Lead		Total Number of EXCEEDANCES
			Nov-99	*Baseline*	Nov-99	*Baseline*	
UPPER AQUIFER WELLS							
M-1S							0
M-3S							0
M-4S							0
MW-06	R, M						0
MW-11	M	M, R	9.7	*2*			1
MW-12							0
MW-13	R						0
MW-14	F, M, R						0
MW-15	R		62.8	*59*			1
MW-18			NS		NS		0
MW-19			29.3	*27*			1
MW-37							0
MW-38							0
MW-39	R						0
MW-40							0
MW-41			NS		NS		0
MW-42	M						0
MW-43	M						0
MW-44							0
MW-45	M, R		46.6	*44*			1
MW-46	R						0
MW-47							0
MW-48							0
MW-49							0
LOWER AQUIFER WELLS							
M-4D							0
MW-07							0
MW-08							0
MW-09R							0
MW-10C							0
MW-23							0
MW-24							0
MW-28							0
MW-29	M						0
MW-30	R						0
MW-31							0
MW-32							0
MW-33							0
MW-34							0

Table 10
Summmary of Inorganic Baseline Exceedances
November 1999 Groundwater Monitoring
American Chemical Service Superfund Site
Griffith, Indiana

Well	Potentially Statistically Significant Jun-99	Potentially Statistically Significant Nov-99	Arsenic		Lead		Total Number of EXCEEDANCES
			Nov-99	*Baseline*	Nov-99	*Baseline*	
LOWER AQUIFER WELLS							
MW-36							0
MW-50	M						0
MW-51							0
MW-52							0
MW-53							0
MW-54R	R						0
MW-55							0
		Number of Exceedances	4		0		4

Notes:
1. See Appendix A for complete listing of inorganic analyses results
2. Boxed numbers indicate that the inorganic species in the Sept 1999 results exceeded the maximum baseline concentraton for that species by a factor of 2x or more.
3. Blank cells indicate that for the Sept 1999 sampling round, the inorganic species did not exceed the baseline maximum .
4. Only Indicator parameters, Arsenic and Lead, were analyzed during November 1999.
5. R = Recurrence: Sample results are potentially statistically significant due to recurrence of exceedance.
6. F = Frequency: Sample results are potentially statistically significant due to the frequency of exceedance (>25% or 7 individual analytes)
7. M = Magnitude: Sample results are potentially statistically significant due to magnitude of exceedance (>2x maxium baseline)

NS = Not sampled.



LEGEND

- UPPER AQUIFER WELL LOCATION AND DESIGNATION
- M-1S — LEACHATE WELL LOCATION AND DESIGNATION
- P61 — PIEZOMETER LOCATION AND DESIGNATION
- STAFF GAUGE LOCATION AND DESIGNATION
- 3 — SURFACE DISCHARGE LOCATION FOR PERIMETER GROUND WATER CONTAINMENT SYSTEM
- ORCPZ1 — ORC PIEZOMETER LOCATION AND DESIGNATION
- (632.00) — GROUNDWATER ELEVATION
- (632.00) x — GROUNDWATER ELEVATION MEASURED BUT NOT USED FOR DETERMINATION OF THE POTENTIOMETRIC SURFACE
- 630 — GROUNDWATER ELEVATION CONTOUR BASED ON GROUNDWATER ELEVATION DATA (DASHED WHERE INFERRED)
- BARRIER WALL
- PERIMETER GROUND WATER CONTAINMENT SYSTEM

NOTES

1. GROUNDWATER ELEVATIONS FOR WATER TABLE CONTOURS WERE MEASURED AT THE SITE ON NOVEMBER 8, 1999.

N

0 500 1000

SCALE IN FEET

SCALE 1"=500'

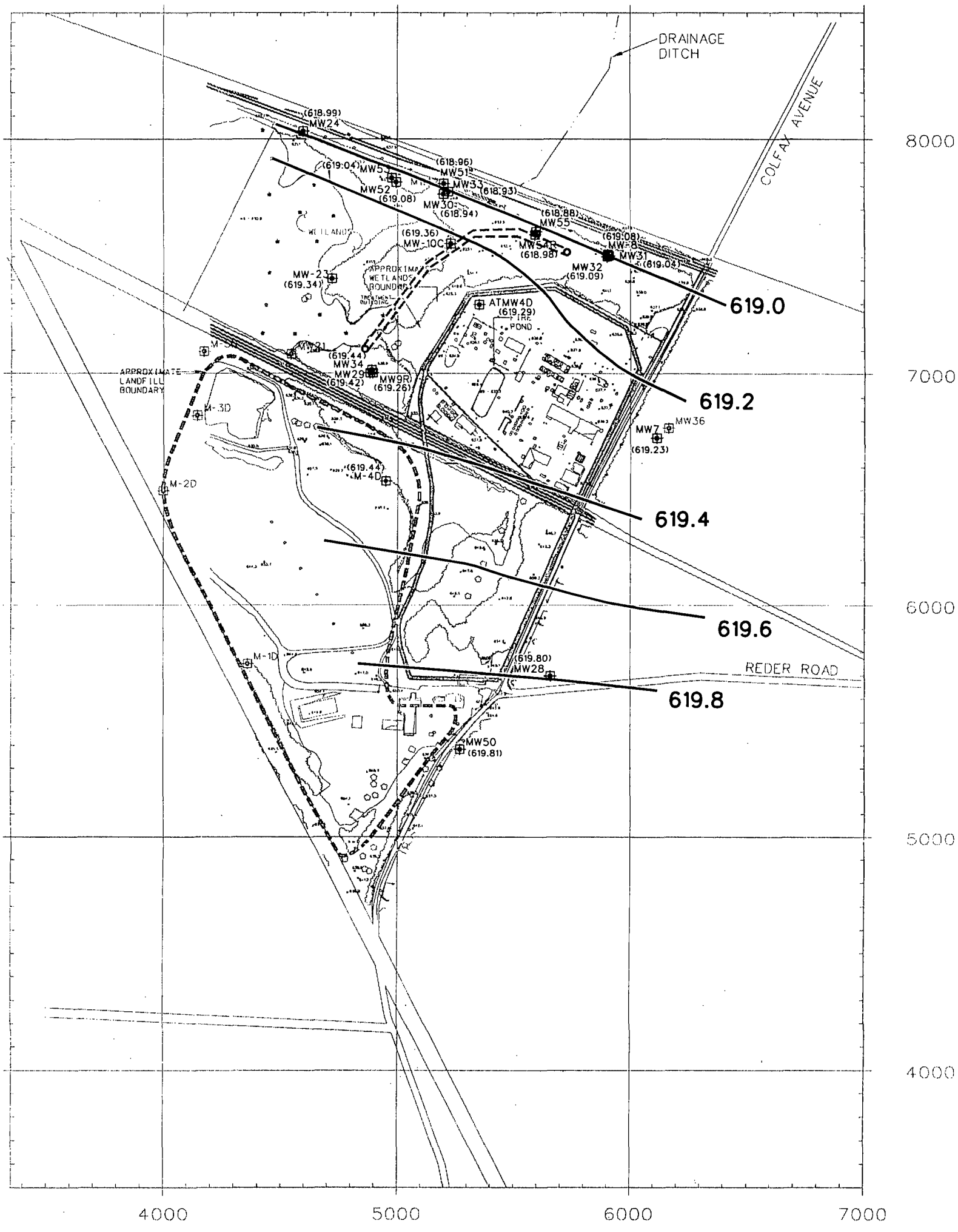
MONTGOMERY WATSON
Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

UPPER AQUIFER WATER TABLE MAP
NOVEMBER 1999

FIGURE 1

JOB No. MW Job No. FILE: J:/1252/042/mwdwgs/november_99/upper_contour3d.dgn



LEGEND

- BARRIER WALL
- PERIMETER GROUND WATER CONTAINMENT SYSTEM
- GRIFFITH LANDFILL BOUNDARY
- MW53 — LOWER AQUIFER WELL LOCATION AND DESIGNATION
- (632.00) — GROUNDWATER ELEVATION
- 619.6 — GROUNDWATER ELEVATION CONTOUR BASED ON GROUNDWATER ELEVATION DATA

N

0 500 1000
SCALE IN FEET

NOTE GROUNDWATER ELEVATIONS FOR POTENTIOMETRIC SURFACE CONTOURS WERE MEASURED ON NOVEMBER 8, 1999

SCALE 1"=500'

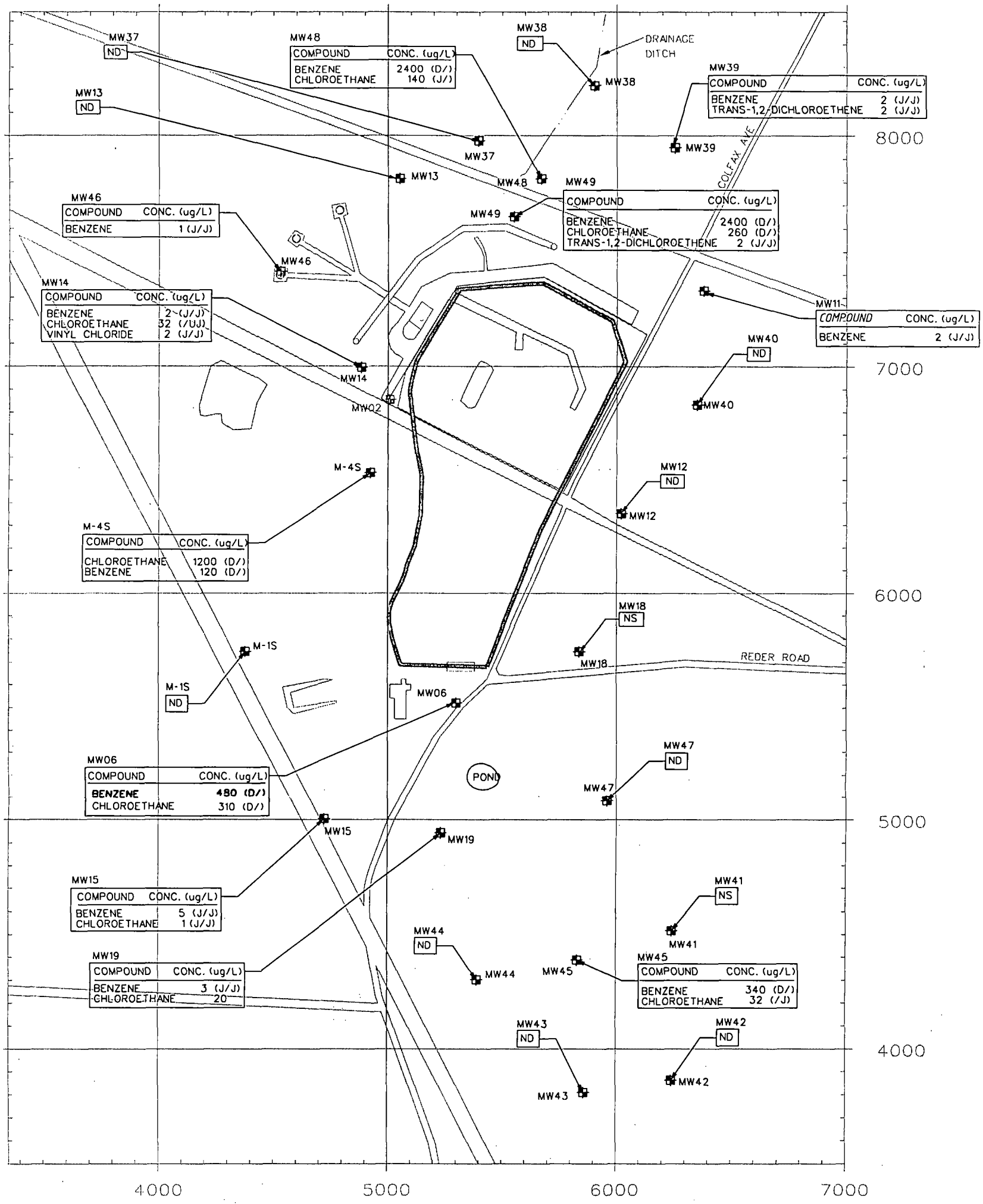
MONTGOMERY WATSON
Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

LOWER AQUIFER POTENTIOMETRIC SURFACE
NOVEMBER 1999

FIGURE 2

JOB No. MW Job No. FILE: J:/1252/042/mwdwgs/november_99/lower_contour3d.dgn



LEGEND

MW12 — UPPER AQUIFER WELL LOCATION AND DESIGNATION

BARRIER WALL

PERIMETER GROUND WATER CONTAINMENT SYSTEM

ug/L — MICROGRAMS PER LITER

(J) — INDICATES AN ESTIMATED VALUE (LAB/VALIDATED)

(D) — INDICATES SAMPLE WAS DILUTED (LAB/VALIDATED)

ND — NO VOC DETECTED

NS — NOT SAMPLED

NOTE: CONCENTRATIONS IN BOLD EXCEEDED BASELINE LEVELS

SCALE 1"=500'

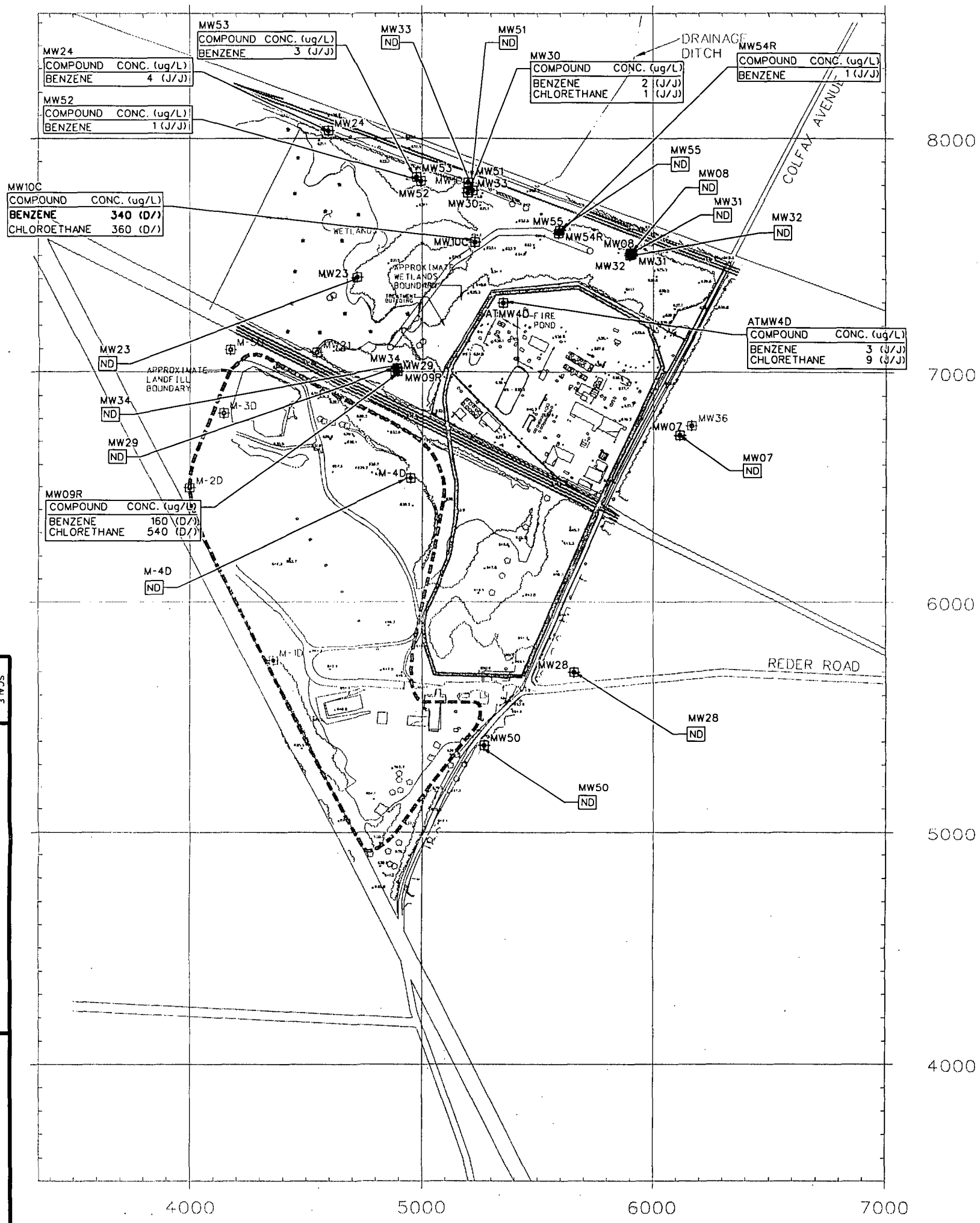
MONTGOMERY WATSON
Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

VOCs DETECTED IN UPPER AQUIFER
MONITORING WELLS-NOVEMBER 1999

FIGURE 3

JOB No. MW Job No. FILE: J:/1252/042/mwdwgs/november_99/upper_spidy3d.dgn



LEGEND

	BARRIER WALL
	PERIMETER GROUND WATER CONTAINMENT SYSTEM
	GRIFFITH LANDFILL BOUNDARY
MW53	LOWER AQUIFER WELL LOCATION AND DESIGNATION
ug/L	MICROGRAMS PER LITER
(J)	INDICATES AN ESTIMATED VALUE (LAB/VALIDATED)
(D)	INDICATES SAMPLE WAS DILUTED (LAB/VALIDATED)
ND	NO VOCs DETECTED

0 500 1000
SCALE IN FEET

NOTE: CONCENTRATIONS IN BOLD EXCEEDED BASELINE VALUES

SCALE 1"=500'

MONTGOMERY WATSON
Chicago, Illinois

AMERICAN CHEMICAL SERVICES, INC.
NPL SITE
GRIFFITH, INDIANA

VOCs DETECTED IN LOWER AQUIFER
MONITORING WELL- NOVEMBER 1999

FIGURE 4

JOB No. MW Job No. FILE: J:/1252/042/mwdwgs/november_99/lower_spidy3d.dgn

APPENDIX A

COMPARISON OF NOVEMBER 1999 RESULTS TO BASELINE MAXIMUM CONCENTRATIONS

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
ATMW-4D	Arsenic	UG/L			U		7.6
ATMW-4D	Lead	UG/L		2.4	B	J	1.5
M-1S	Arsenic	UG/L	3.0		U		7.6
M-1S	Lead	UG/L	2.5		U		1.5
M-4D	Arsenic	UG/L	2.5		U		7.6
M-4D	Lead	UG/L	3.1		U		1.5
M-4S	Arsenic	UG/L	6.8		U		7.6
M-4S	Lead	UG/L	6.1		U		1.5
MW-06	Arsenic	UG/L	72	66.9			7.6
MW-06	Lead	UG/L	9.6		U		1.5
MW-07	Arsenic	UG/L	3.5		U		7.6
MW-07	Lead	UG/L	5.8		U		1.5
MW-08	Arsenic	UG/L	6.1		U		7.6
MW-08	Lead	UG/L	3.4		U		1.5
MW-09R	Arsenic	UG/L	6.8		U		7.6
MW-09R	Lead	UG/L	6.7		U		1.5
MW-10C	Arsenic	UG/L	10		U		7.6
MW-10C	Lead	UG/L	19		U		1.5
MW-11	Arsenic	UG/L	2.0	**9.7**	B	J	7.6
MW-11	Lead	UG/L	7.9	4.5			1.5
MW-12	Arsenic	UG/L	7.8		U		7.6
MW-12	Lead	UG/L	12	6			1.5
MW-13	Arsenic	UG/L	2.0		U		7.6
MW-13	Lead	UG/L	2.3		U		1.5
MW-14	Arsenic	UG/L	11		U		7.6
MW-14	Lead	UG/L	20	2.6	B	J	1.5
MW-15	Arsenic	UG/L	59	**62.8**			7.6
MW-15	Lead	UG/L	2.4		U		1.5
MW-19	Arsenic	UG/L	27	**29.3**			7.6
MW-19	Lead	UG/L	3.7		U		1.5
MW-23	Arsenic	UG/L	5.3		U		7.6
MW-23	Lead	UG/L	7.7	2.1	B	J	1.5
MW-24	Arsenic	UG/L	10		U		7.6
MW-24	Lead	UG/L	25		U		1.5
MW-28	Arsenic	UG/L	4.9		U		7.6
MW-28	Lead	UG/L	12		U		1.5
MW-29	Arsenic	UG/L	2.9		U		7.6
MW-29	Lead	UG/L	2.4		U		1.5
MW-30	Arsenic	UG/L	4.3		U		7.6
MW-30	Lead	UG/L	8.0		U		1.5
MW-31	Arsenic	UG/L	7.5		U		7.6
MW-31	Lead	UG/L	8.9		U		1.5
MW-32	Arsenic	UG/L	4.9		U		7.6
MW-32	Lead	UG/L	11	2.5	B	J	1.5
MW-33	Arsenic	UG/L	23	21.1			7.6
MW-33	Lead	UG/L	1.5		U		1.5

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb{rptNewResultsInorg}
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-34	Arsenic	UG/L	2.8		U		7.6
MW-34	Lead	UG/L	3.8		U		1.5
MW-37	Arsenic	UG/L	2.5		U		7.6
MW-37	Lead	UG/L	8.6		U		1.5
MW-38	Arsenic	UG/L	5.6		U		7.6
MW-38	Lead	UG/L	10		U		1.5
MW-39	Arsenic	UG/L	4.3		U		7.6
MW-39	Lead	UG/L	3.5		U		1.5
MW-40	Arsenic	UG/L	3.8		U		7.6
MW-40	Lead	UG/L	11	1.8	B	J	1.5
MW-42	Arsenic	UG/L	15		U		7.6
MW-42	Lead	UG/L	5.7		U		1.5
MW-43	Arsenic	UG/L	81	17.6			7.6
MW-43	Lead	UG/L	33		U		1.5
MW-44	Arsenic	UG/L	41	10.3			7.6
MW-44	Lead	UG/L	1.5		U		1.5
MW-45	Arsenic	UG/L	44	**46.6**			7.6
MW-45	Lead	UG/L	39		U		1.5
MW-46	Arsenic	UG/L	3.7		U		7.6
MW-46	Lead	UG/L	5.0		U		1.5
MW-47	Arsenic	UG/L	2.0		U		7.6
MW-47	Lead	UG/L	23	4.3			1.5
MW-48	Arsenic	UG/L	13		U		7.6
MW-48	Lead	UG/L	7.7		U		1.5
MW-49	Arsenic	UG/L	38	14.1			7.6
MW-49	Lead	UG/L	4.4		U		1.5
MW-50	Arsenic	UG/L	7.7		U		7.6
MW-50	Lead	UG/L	14		U		1.5
MW-51	Arsenic	UG/L	3.9		U		7.6
MW-51	Lead	UG/L	3.9		U		1.5
MW-52	Arsenic	UG/L	125		U		7.6
MW-52	Lead	UG/L	31		U		1.5
MW-53	Arsenic	UG/L	30		U		7.6
MW-53	Lead	UG/L	138	2	B	J	1.5
MW-54R	Arsenic	UG/L	9.8		U		7.6
MW-54R	Lead	UG/L	10		U		1.5
MW-55	Arsenic	UG/L	13		U		7.6
MW-55	Lead	UG/L	46	14			1.5

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DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsInorg]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
ATMW-4D	1,1,1-Trichloroethane	UG/L			U		10
ATMW-4D	1,1,2-Trichloroethane	UG/L			U		10
ATMW-4D	1,1-Dichloroethene	UG/L			U		10
ATMW-4D	Benzene	UG/L		3	J	J	10
ATMW-4D	Chloroethane	UG/L		9	J	J	10
ATMW-4D	cis-1,2-Dichloroethene	UG/L			U		10
ATMW-4D	Tetrachloroethene	UG/L			U		10
ATMW-4D	trans-1,2-Dichloroethene	UG/L			U		10
ATMW-4D	Trichloroethene	UG/L			U		10
ATMW-4D	Vinyl chloride	UG/L			U		10
M-1S	1,1,1-Trichloroethane	UG/L	10		U		10
M-1S	1,1,2-Trichloroethane	UG/L	10		U		10
M-1S	1,1-Dichloroethene	UG/L	10		U		10
M-1S	Benzene	UG/L	10		U		10
M-1S	Chloroethane	UG/L	10		U		10
M-1S	cis-1,2-Dichloroethene	UG/L			U		10
M-1S	Tetrachloroethene	UG/L	10		U		10
M-1S	trans-1,2-Dichloroethene	UG/L			U		10
M-1S	Trichloroethene	UG/L	10		U		10
M-1S	Vinyl chloride	UG/L	10		U		10
M-4D	1,1,1-Trichloroethane	UG/L	10		U		10
M-4D	1,1,2-Trichloroethane	UG/L	10		U		10
M-4D	1,1-Dichloroethene	UG/L	10		U		10
M-4D	Benzene	UG/L	10		U		10
M-4D	Chloroethane	UG/L	10		U		10
M-4D	cis-1,2-Dichloroethene	UG/L			U		10
M-4D	Tetrachloroethene	UG/L	10		U		10
M-4D	trans-1,2-Dichloroethene	UG/L			U		10
M-4D	Trichloroethene	UG/L	10		U		10
M-4D	Vinyl chloride	UG/L	10		U		10
M-4S	1,1,1-Trichloroethane	UG/L	100		U		10
M-4S	1,1,2-Trichloroethane	UG/L	100		U		10
M-4S	1,1-Dichloroethene	UG/L	100		U		10
M-4S	Benzene	UG/L	190	120	D		83
M-4S	Chloroethane	UG/L	1,300	1,200	D		83
M-4S	cis-1,2-Dichloroethene	UG/L			U		10
M-4S	Tetrachloroethene	UG/L	100		U		10
M-4S	trans-1,2-Dichloroethene	UG/L			U		10
M-4S	Trichloroethene	UG/L	100		U		10
M-4S	Vinyl chloride	UG/L	100		U		10
MW-06	1,1,1-Trichloroethane	UG/L	50		U		10
MW-06	1,1,2-Trichloroethane	UG/L	50		U		10
MW-06	1,1-Dichloroethene	UG/L	50		U	J	10
MW-06	Benzene	UG/L	320	**480**	D		50
MW-06	Chloroethane	UG/L	720	310	D		50
MW-06	cis-1,2-Dichloroethene	UG/L			U	J	10

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J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-06	Tetrachloroethene	UG/L	50		U		10
MW-06	trans-1,2-Dichloroethene	UG/L			U	J	10
MW-06	Trichloroethene	UG/L	50		U	J	10
MW-06	Vinyl chloride	UG/L	50		U	J	10
MW-07	1,1,1-Trichloroethane	UG/L	10		U		10
MW-07	1,1,2-Trichloroethane	UG/L	10		U		10
MW-07	1,1-Dichloroethene	UG/L	10		U		10
MW-07	Benzene	UG/L	10		U		10
MW-07	Chloroethane	UG/L	10		U		10
MW-07	cis-1,2-Dichloroethene	UG/L			U		10
MW-07	Tetrachloroethene	UG/L	10		U		10
MW-07	trans-1,2-Dichloroethene	UG/L			U		10
MW-07	Trichloroethene	UG/L	10		U		10
MW-07	Vinyl chloride	UG/L	10		U		10
MW-08	1,1,1-Trichloroethane	UG/L	10		U		10
MW-08	1,1,2-Trichloroethane	UG/L	10		U		10
MW-08	1,1-Dichloroethene	UG/L	10		U	J	10
MW-08	Benzene	UG/L	10		U		10
MW-08	Chloroethane	UG/L	10		U		10
MW-08	cis-1,2-Dichloroethene	UG/L			U		10
MW-08	Tetrachloroethene	UG/L	10		U		10
MW-08	trans-1,2-Dichloroethene	UG/L			U		10
MW-08	Trichloroethene	UG/L	10		U		10
MW-08	Vinyl chloride	UG/L	10		U		10
MW-09R	1,1,1-Trichloroethane	UG/L	200		U		10
MW-09R	1,1,2-Trichloroethane	UG/L	200		U		10
MW-09R	1,1-Dichloroethene	UG/L	200		U	J	10
MW-09R	Benzene	UG/L	310	160	D		40
MW-09R	Chloroethane	UG/L	2,900	540	D		40
MW-09R	cis-1,2-Dichloroethene	UG/L			U		10
MW-09R	Tetrachloroethene	UG/L	200		U		10
MW-09R	trans-1,2-Dichloroethene	UG/L			U		10
MW-09R	Trichloroethene	UG/L	200		U		10
MW-09R	Vinyl chloride	UG/L	200		U		10
MW-10C	1,1,1-Trichloroethane	UG/L	150		U		10
MW-10C	1,1,2-Trichloroethane	UG/L	150		U		10
MW-10C	1,1-Dichloroethene	UG/L	150		U	J	10
MW-10C	Benzene	UG/L	150	**340**	D		25
MW-10C	Chloroethane	UG/L	420	360	D		25
MW-10C	cis-1,2-Dichloroethene	UG/L			U		10
MW-10C	Tetrachloroethene	UG/L	150		U		10
MW-10C	trans-1,2-Dichloroethene	UG/L			U		10
MW-10C	Trichloroethene	UG/L	150		U		10
MW-10C	Vinyl chloride	UG/L	129		U	J	10
MW-11	1,1,1-Trichloroethane	UG/L	10		U		10
MW-11	1,1,2-Trichloroethane	UG/L	10		U		10

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J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-11	1,1-Dichloroethene	UG/L	10		U		10
MW-11	Benzene	UG/L	10	2	J	J	10
MW-11	Chloroethane	UG/L	10		U		10
MW-11	cis-1,2-Dichloroethene	UG/L			U		10
MW-11	Tetrachloroethene	UG/L	10		U		10
MW-11	trans-1,2-Dichloroethene	UG/L			U		10
MW-11	Trichloroethene	UG/L	10		U		10
MW-11	Vinyl chloride	UG/L	10		U		10
MW-12	1,1,1-Trichloroethane	UG/L	10		U		10
MW-12	1,1,2-Trichloroethane	UG/L	10		U		10
MW-12	1,1-Dichloroethene	UG/L	10		U		10
MW-12	Benzene	UG/L	10		U		10
MW-12	Chloroethane	UG/L	10		U		10
MW-12	cis-1,2-Dichloroethene	UG/L			U		10
MW-12	Tetrachloroethene	UG/L	10		U		10
MW-12	trans-1,2-Dichloroethene	UG/L			U		10
MW-12	Trichloroethene	UG/L	10		U		10
MW-12	Vinyl chloride	UG/L	10		U		10
MW-13	1,1,1-Trichloroethane	UG/L	50		U		10
MW-13	1,1,2-Trichloroethane	UG/L	50		U		10
MW-13	1,1-Dichloroethene	UG/L	50		U		10
MW-13	Benzene	UG/L	610		U		10
MW-13	Chloroethane	UG/L	570		U		10
MW-13	cis-1,2-Dichloroethene	UG/L			U		10
MW-13	Tetrachloroethene	UG/L	50		U		10
MW-13	trans-1,2-Dichloroethene	UG/L			U		10
MW-13	Trichloroethene	UG/L	50		U		10
MW-13	Vinyl chloride	UG/L	50		U		10
MW-14	1,1,1-Trichloroethane	UG/L	100		U		10
MW-14	1,1,2-Trichloroethane	UG/L	100		U		10
MW-14	1,1-Dichloroethene	UG/L	100		U		10
MW-14	Benzene	UG/L	41	2	J	J	10
MW-14	Chloroethane	UG/L	1,000	32		UJ	10
MW-14	cis-1,2-Dichloroethene	UG/L			U		10
MW-14	Tetrachloroethene	UG/L	100		U		10
MW-14	trans-1,2-Dichloroethene	UG/L			U		10
MW-14	Trichloroethene	UG/L	100		U		10
MW-14	Vinyl chloride	UG/L	100	2	J	J	10
MW-15	1,1,1-Trichloroethane	UG/L	10		U		10
MW-15	1,1,2-Trichloroethane	UG/L	10		U		10
MW-15	1,1-Dichloroethene	UG/L	10		U		10
MW-15	Benzene	UG/L	10	5	J	J	10
MW-15	Chloroethane	UG/L	10	1	J	J	10
MW-15	cis-1,2-Dichloroethene	UG/L			U		10
MW-15	Tetrachloroethene	UG/L	10		U		10
MW-15	trans-1,2-Dichloroethene	UG/L			U		10

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1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-15	Trichloroethene	UG/L	10		U		10
MW-15	Vinyl chloride	UG/L	10		U		10
MW-19	1,1,1-Trichloroethane	UG/L	10		U		10
MW-19	1,1,2-Trichloroethane	UG/L	10		U		10
MW-19	1,1-Dichloroethene	UG/L	10		U		10
MW-19	Benzene	UG/L	10	3	J	J	10
MW-19	Chloroethane	UG/L	20	20			10
MW-19	cis-1,2-Dichloroethene	UG/L			U		10
MW-19	Tetrachloroethene	UG/L	10		U		10
MW-19	trans-1,2-Dichloroethene	UG/L			U		10
MW-19	Trichloroethene	UG/L	10		U		10
MW-19	Vinyl chloride	UG/L	10		U		10
MW-23	1,1,1-Trichloroethane	UG/L	10		U		10
MW-23	1,1,2-Trichloroethane	UG/L	10		U		10
MW-23	1,1-Dichloroethene	UG/L	10		U		10
MW-23	Benzene	UG/L	10		U		10
MW-23	Chloroethane	UG/L	10		U		10
MW-23	cis-1,2-Dichloroethene	UG/L			U		10
MW-23	Tetrachloroethene	UG/L	10		U		10
MW-23	trans-1,2-Dichloroethene	UG/L			U		10
MW-23	Trichloroethene	UG/L	10		U		10
MW-23	Vinyl chloride	UG/L	10		U		10
MW-24	1,1,1-Trichloroethane	UG/L	10		U		10
MW-24	1,1,2-Trichloroethane	UG/L	10		U		10
MW-24	1,1-Dichloroethene	UG/L	10		U		10
MW-24	Benzene	UG/L	10	4	J	J	10
MW-24	Chloroethane	UG/L	10		U		10
MW-24	cis-1,2-Dichloroethene	UG/L			U		10
MW-24	Tetrachloroethene	UG/L	10		U		10
MW-24	trans-1,2-Dichloroethene	UG/L			U		10
MW-24	Trichloroethene	UG/L	10		U		10
MW-24	Vinyl chloride	UG/L	10		U		10
MW-28	1,1,1-Trichloroethane	UG/L	10		U		10
MW-28	1,1,2-Trichloroethane	UG/L	10		U		10
MW-28	1,1-Dichloroethene	UG/L	10		U		10
MW-28	Benzene	UG/L	10		U		10
MW-28	Chloroethane	UG/L	10		U		10
MW-28	cis-1,2-Dichloroethene	UG/L			U		10
MW-28	Tetrachloroethene	UG/L	10		U		10
MW-28	trans-1,2-Dichloroethene	UG/L			U		10
MW-28	Trichloroethene	UG/L	10		U		10
MW-28	Vinyl chloride	UG/L	10		U		10
MW-29	1,1,1-Trichloroethane	UG/L	10		U		10
MW-29	1,1,2-Trichloroethane	UG/L	10		U		10
MW-29	1,1-Dichloroethene	UG/L	10		U		10
MW-29	Benzene	UG/L	10		U		10

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1252042.221601

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Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-29	Chloroethane	UG/L	10		U		10
MW-29	cis-1,2-Dichloroethene	UG/L			U		10
MW-29	Tetrachloroethene	UG/L	10		U		10
MW-29	trans-1,2-Dichloroethene	UG/L			U		10
MW-29	Trichloroethene	UG/L	10		U		10
MW-29	Vinyl chloride	UG/L	10		U		10
MW-30	1,1,1-Trichloroethane	UG/L	10		U		10
MW-30	1,1,2-Trichloroethane	UG/L	10		U		10
MW-30	1,1-Dichloroethene	UG/L	10		U		10
MW-30	Benzene	UG/L	10	2	J	J	10
MW-30	Chloroethane	UG/L	10	1	J	J	10
MW-30	cis-1,2-Dichloroethene	UG/L			U		10
MW-30	Tetrachloroethene	UG/L	10		U		10
MW-30	trans-1,2-Dichloroethene	UG/L			U		10
MW-30	Trichloroethene	UG/L	10		U		10
MW-30	Vinyl chloride	UG/L	10		U		10
MW-31	1,1,1-Trichloroethane	UG/L	10		U		10
MW-31	1,1,2-Trichloroethane	UG/L	10		U		10
MW-31	1,1-Dichloroethene	UG/L	10		U		10
MW-31	Benzene	UG/L	10		U		10
MW-31	Chloroethane	UG/L	10		U		10
MW-31	cis-1,2-Dichloroethene	UG/L			U		10
MW-31	Tetrachloroethene	UG/L	10		U		10
MW-31	trans-1,2-Dichloroethene	UG/L			U		10
MW-31	Trichloroethene	UG/L	10		U		10
MW-31	Vinyl chloride	UG/L	10		U		10
MW-32	1,1,1-Trichloroethane	UG/L	10		U		10
MW-32	1,1,2-Trichloroethane	UG/L	10		U		10
MW-32	1,1-Dichloroethene	UG/L	10		U		10
MW-32	Benzene	UG/L	10		U		10
MW-32	Chloroethane	UG/L	10		U		10
MW-32	cis-1,2-Dichloroethene	UG/L			U		10
MW-32	Tetrachloroethene	UG/L	10		U		10
MW-32	trans-1,2-Dichloroethene	UG/L			U		10
MW-32	Trichloroethene	UG/L	10		U		10
MW-32	Vinyl chloride	UG/L	10		U		10
MW-33	1,1,1-Trichloroethane	UG/L	10		U		10
MW-33	1,1,2-Trichloroethane	UG/L	10		U		10
MW-33	1,1-Dichloroethene	UG/L	10		U	J	10
MW-33	Benzene	UG/L	10		U		10
MW-33	Chloroethane	UG/L	10		U		10
MW-33	cis-1,2-Dichloroethene	UG/L			U		10
MW-33	Tetrachloroethene	UG/L	10		U		10
MW-33	trans-1,2-Dichloroethene	UG/L			U		10
MW-33	Trichloroethene	UG/L	10		U		10
MW-33	Vinyl chloride	UG/L	10		U		10

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1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
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Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-34	1,1,1-Trichloroethane	UG/L	10		U		10
MW-34	1,1,2-Trichloroethane	UG/L	10		U		10
MW-34	1,1-Dichloroethene	UG/L	10		U		10
MW-34	Benzene	UG/L	10		U		10
MW-34	Chloroethane	UG/L	10		U		10
MW-34	cis-1,2-Dichloroethene	UG/L			U		10
MW-34	Tetrachloroethene	UG/L	10		U		10
MW-34	trans-1,2-Dichloroethene	UG/L			U		10
MW-34	Trichloroethene	UG/L	10		U		10
MW-34	Vinyl chloride	UG/L	10		U		10
MW-37	1,1,1-Trichloroethane	UG/L	10		U		10
MW-37	1,1,2-Trichloroethane	UG/L	10		U		10
MW-37	1,1-Dichloroethene	UG/L	10		U		10
MW-37	Benzene	UG/L	10		U		10
MW-37	Chloroethane	UG/L	10		U		10
MW-37	cis-1,2-Dichloroethene	UG/L			U		10
MW-37	Tetrachloroethene	UG/L	10		U		10
MW-37	trans-1,2-Dichloroethene	UG/L			U		10
MW-37	Trichloroethene	UG/L	10		U		10
MW-37	Vinyl chloride	UG/L	10		U		10
MW-38	1,1,1-Trichloroethane	UG/L	10		U		10
MW-38	1,1,2-Trichloroethane	UG/L	10		U		10
MW-38	1,1-Dichloroethene	UG/L	10		U	J	10
MW-38	Benzene	UG/L	10		U		10
MW-38	Chloroethane	UG/L	10		U		10
MW-38	cis-1,2-Dichloroethene	UG/L			U		10
MW-38	Tetrachloroethene	UG/L	10		U		10
MW-38	trans-1,2-Dichloroethene	UG/L			U		10
MW-38	Trichloroethene	UG/L	10		U		10
MW-38	Vinyl chloride	UG/L	10		U		10
MW-39	1,1,1-Trichloroethane	UG/L	10		U		10
MW-39	1,1,2-Trichloroethane	UG/L	10		U		10
MW-39	1,1-Dichloroethene	UG/L	10		U		10
MW-39	Benzene	UG/L	12	2	J	J	10
MW-39	Chloroethane	UG/L	10		U		10
MW-39	cis-1,2-Dichloroethene	UG/L			U		10
MW-39	Tetrachloroethene	UG/L	10		U		10
MW-39	trans-1,2-Dichloroethene	UG/L		2	J	J	10
MW-39	Trichloroethene	UG/L	10		U		10
MW-39	Vinyl chloride	UG/L	10		U		10
MW-40	1,1,1-Trichloroethane	UG/L	10		U		10
MW-40	1,1,2-Trichloroethane	UG/L	10		U		10
MW-40	1,1-Dichloroethene	UG/L	10		U		10
MW-40	Benzene	UG/L	10		U		10
MW-40	Chloroethane	UG/L	10		U		10
MW-40	cis-1,2-Dichloroethene	UG/L			U		10

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-40	Tetrachloroethene	UG/L	10		U		10
MW-40	trans-1,2-Dichloroethene	UG/L			U		10
MW-40	Trichloroethene	UG/L	10		U		10
MW-40	Vinyl chloride	UG/L	10		U		10
MW-42	1,1,1-Trichloroethane	UG/L	10		U		10
MW-42	1,1,2-Trichloroethane	UG/L	10		U		10
MW-42	1,1-Dichloroethene	UG/L	10		U		10
MW-42	Benzene	UG/L	10		U		10
MW-42	Chloroethane	UG/L	10		U		10
MW-42	cis-1,2-Dichloroethene	UG/L			U		10
MW-42	Tetrachloroethene	UG/L	10		U		10
MW-42	trans-1,2-Dichloroethene	UG/L			U		10
MW-42	Trichloroethene	UG/L	10		U		10
MW-42	Vinyl chloride	UG/L	10		U		10
MW-43	1,1,1-Trichloroethane	UG/L	10		U		10
MW-43	1,1,2-Trichloroethane	UG/L	10		U		10
MW-43	1,1-Dichloroethene	UG/L	10		U		10
MW-43	Benzene	UG/L	10		U		10
MW-43	Chloroethane	UG/L	10		U		10
MW-43	cis-1,2-Dichloroethene	UG/L			U		10
MW-43	Tetrachloroethene	UG/L	10		U		10
MW-43	trans-1,2-Dichloroethene	UG/L			U		10
MW-43	Trichloroethene	UG/L	10		U		10
MW-43	Vinyl chloride	UG/L	10		U		10
MW-44	1,1,1-Trichloroethane	UG/L	10		U	J	10
MW-44	1,1,2-Trichloroethane	UG/L	10		U	J	10
MW-44	1,1-Dichloroethene	UG/L	10		U	J	10
MW-44	Benzene	UG/L	10		U	J	10
MW-44	Chloroethane	UG/L	10		U	J	10
MW-44	cis-1,2-Dichloroethene	UG/L			U	J	10
MW-44	Tetrachloroethene	UG/L	10		U	J	10
MW-44	trans-1,2-Dichloroethene	UG/L			U	J	10
MW-44	Trichloroethene	UG/L	10		U	J	10
MW-44	Vinyl chloride	UG/L	10		U	J	10
MW-45	1,1,1-Trichloroethane	UG/L	80		U		10
MW-45	1,1,2-Trichloroethane	UG/L	80		U		10
MW-45	1,1-Dichloroethene	UG/L	80		U		10
MW-45	Benzene	UG/L	1,045	340	D		23
MW-45	Chloroethane	UG/L	215	32		J	23
MW-45	cis-1,2-Dichloroethene	UG/L			U		10
MW-45	Tetrachloroethene	UG/L	80		U		10
MW-45	trans-1,2-Dichloroethene	UG/L			U	J	10
MW-45	Trichloroethene	UG/L	80		U		10
MW-45	Vinyl chloride	UG/L	80		U		10
MW-46	1,1,1-Trichloroethane	UG/L	10		U		10
MW-46	1,1,2-Trichloroethane	UG/L	10		U		10

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-46	1,1-Dichloroethene	UG/L	10		U		10
MW-46	Benzene	UG/L	10	1	J	J	10
MW-46	Chloroethane	UG/L	10		U		10
MW-46	cis-1,2-Dichloroethene	UG/L			U		10
MW-46	Tetrachloroethene	UG/L	10		U		10
MW-46	trans-1,2-Dichloroethene	UG/L			U		10
MW-46	Vinyl chloride	UG/L	10		U		10
MW-47	1,1,1-Trichloroethane	UG/L	10		U		10
MW-47	1,1,2-Trichloroethane	UG/L	10		U		10
MW-47	1,1-Dichloroethene	UG/L	10		U		10
MW-47	Benzene	UG/L	10		U		10
MW-47	Chloroethane	UG/L	10		U		10
MW-47	cis-1,2-Dichloroethene	UG/L			U		10
MW-47	Tetrachloroethene	UG/L	10		U		10
MW-47	trans-1,2-Dichloroethene	UG/L			U		10
MW-47	Trichloroethene	UG/L	10		U		10
MW-47	Vinyl chloride	UG/L	10		U		10
MW-48	1,1,1-Trichloroethane	UG/L	500		U		10
MW-48	1,1,2-Trichloroethane	UG/L	500		U		10
MW-48	1,1-Dichloroethene	UG/L	500		U		10
MW-48	Benzene	UG/L	9,500	2,400	D		250
MW-48	Chloroethane	UG/L	1,000	140	J		250
MW-48	cis-1,2-Dichloroethene	UG/L			U		10
MW-48	Tetrachloroethene	UG/L	500		U		10
MW-48	trans-1,2-Dichloroethene	UG/L			U		10
MW-48	Trichloroethene	UG/L	500		U		10
MW-48	Vinyl chloride	UG/L	500		U		10
MW-49	1,1,1-Trichloroethane	UG/L	500		U		10
MW-49	1,1,2-Trichloroethane	UG/L	500		U		10
MW-49	1,1-Dichloroethene	UG/L	500		U		10
MW-49	Benzene	UG/L	6,750	2,400	D		250
MW-49	Chloroethane	UG/L	715	260	D		250
MW-49	cis-1,2-Dichloroethene	UG/L			U		10
MW-49	Tetrachloroethene	UG/L	500		U		10
MW-49	trans-1,2-Dichloroethene	UG/L		2	J	J	10
MW-49	Trichloroethene	UG/L	500		U		10
MW-49	Vinyl chloride	UG/L	500		U		10
MW-50	1,1,1-Trichloroethane	UG/L	10		U		10
MW-50	1,1,2-Trichloroethane	UG/L	10		U		10
MW-50	1,1-Dichloroethene	UG/L	10		U		10
MW-50	Benzene	UG/L	10		U		10
MW-50	Chloroethane	UG/L	10		U		10
MW-50	cis-1,2-Dichloroethene	UG/L			U		10
MW-50	Tetrachloroethene	UG/L	10		U		10
MW-50	trans-1,2-Dichloroethene	UG/L			U		10
MW-50	Trichloroethene	UG/L	10		U		10

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-50	Vinyl chloride	UG/L	10		U		10
MW-51	1,1,1-Trichloroethane	UG/L	100		U		10
MW-51	1,1,2-Trichloroethane	UG/L	100		U		10
MW-51	1,1-Dichloroethene	UG/L	100		U		10
MW-51	Benzene	UG/L	100		U		10
MW-51	Chloroethane	UG/L	100		U		10
MW-51	cis-1,2-Dichloroethene	UG/L			U		10
MW-51	Tetrachloroethene	UG/L	100		U		10
MW-51	trans-1,2-Dichloroethene	UG/L			U		10
MW-51	Trichloroethene	UG/L	100		U		10
MW-51	Vinyl chloride	UG/L	100		U		10
MW-52	1,1,1-Trichloroethane	UG/L	100		U		10
MW-52	1,1,2-Trichloroethane	UG/L	100		U		10
MW-52	1,1-Dichloroethene	UG/L	100		U		10
MW-52	Benzene	UG/L	100	1	J	J	10
MW-52	Chloroethane	UG/L	100		U		10
MW-52	cis-1,2-Dichloroethene	UG/L			U		10
MW-52	Tetrachloroethene	UG/L	100		U		10
MW-52	trans-1,2-Dichloroethene	UG/L			U		10
MW-52	Trichloroethene	UG/L	100		U		10
MW-52	Vinyl chloride	UG/L	100		U		10
MW-53	1,1,1-Trichloroethane	UG/L	10		U		10
MW-53	1,1,2-Trichloroethane	UG/L	10		U		10
MW-53	1,1-Dichloroethene	UG/L	10		U		10
MW-53	Benzene	UG/L	10	3	J	J	10
MW-53	Chloroethane	UG/L	10		U		10
MW-53	cis-1,2-Dichloroethene	UG/L			U		10
MW-53	Tetrachloroethene	UG/L	10		U		10
MW-53	trans-1,2-Dichloroethene	UG/L			U		10
MW-53	Trichloroethene	UG/L	10		U		10
MW-53	Vinyl chloride	UG/L	10		U		10
MW-54R	1,1,1-Trichloroethane	UG/L	10		U		10
MW-54R	1,1,2-Trichloroethane	UG/L	10		U		10
MW-54R	1,1-Dichloroethene	UG/L	10		U		10
MW-54R	Benzene	UG/L	10	1	J	J	10
MW-54R	Chloroethane	UG/L	10		U		10
MW-54R	cis-1,2-Dichloroethene	UG/L			U		10
MW-54R	Tetrachloroethene	UG/L	10		U		10
MW-54R	trans-1,2-Dichloroethene	UG/L			U		10
MW-54R	Trichloroethene	UG/L	10		U		10
MW-54R	Vinyl chloride	UG/L	10		U		10
MW-55	1,1,1-Trichloroethane	UG/L	10		U		10
MW-55	1,1,2-Trichloroethane	UG/L	10		U		10
MW-55	1,1-Dichloroethene	UG/L	10		U		10
MW-55	Benzene	UG/L	10		U		10
MW-55	Chloroethane	UG/L	10		U		10

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Results to Baseline Highest Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	Current Event			
				Result	LQ	DQ	Detect Limit
MW-55	cis-1,2-Dichloroethene	UG/L			U		10
MW-55	Tetrachloroethene	UG/L	10		U		10
MW-55	trans-1,2-Dichloroethene	UG/L			U		10
MW-55	Trichloroethene	UG/L	10		U		10
MW-55	Vinyl chloride	UG/L	10		U		10

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptNewResultsVOC]
1252042.221601

Comparison of Current Results to Baseline Detections
November 1999
American Chemical Services NPL Site
Griffith, Indiana

Well	Analyte	Units	Highest Detect during Baseline	CurrentEvent			
				Result	LQ	DQ	Detect Limit
PW-D	Cyanide (Total)	UG/L	10		U		8.2

BOLD = Exceedance
NA = Not Applicable

DMD/dmd/CAS
J:\1252\042\Databases\1998\ACS GW.mdb[rptPWNewResultsInorg]
1252042.221601

APPENDIX B

TIME TREND PLOTS

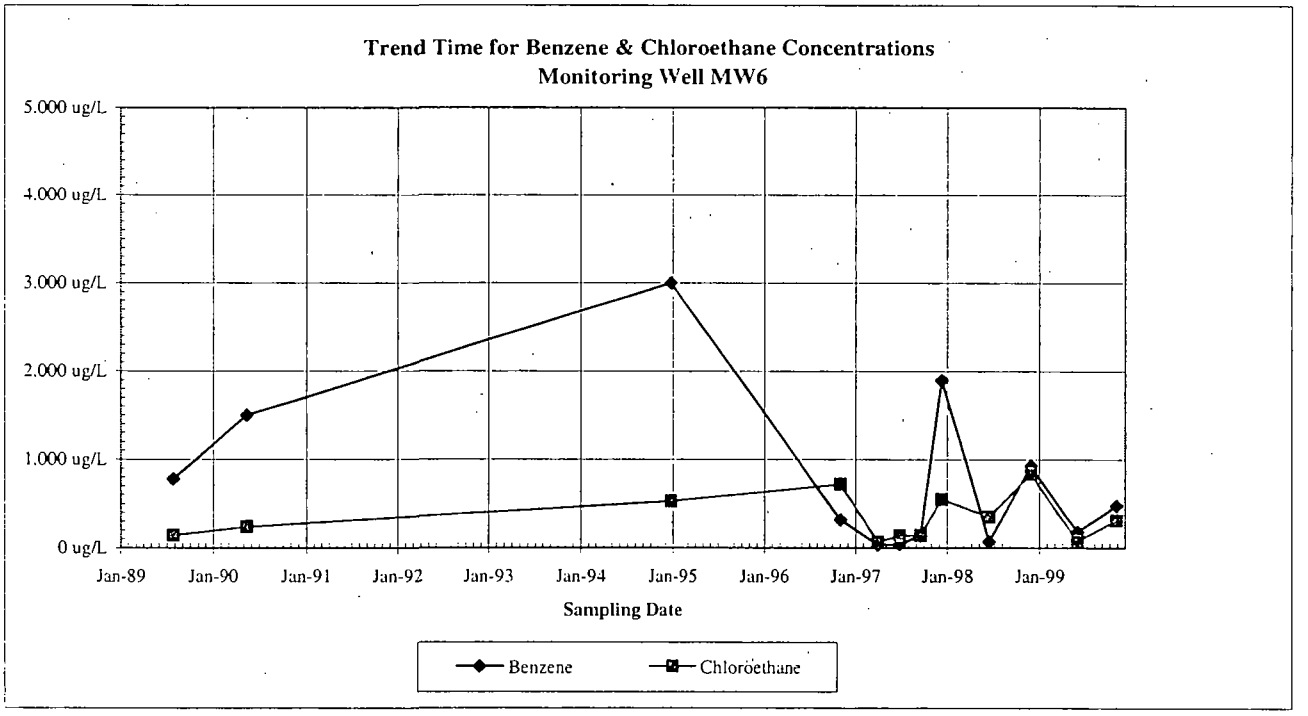
Upper Aquifer Monitoring Well: MW6

Baseline Groundwater Monitoring
ACS NPL Site

MW6

Date	Benzene	Chloroethane
BASELINE	**320**	**720**
August-89	780 ug/L	140 ug/L
May-90	1,500 ug/L	240 ug/L
December-94	3,000 ug/L	530 ug/L
November-96	320 ug/L	720 ug/L
April-97	35 ug/L	67 ug/L
July-97	39 ug/L	140 ug/L
September-97	140 ug/L	140 ug/L
December-97	1,900 ug/L	550 ug/L
June-98	72 ug/L	350 ug/L
December-98	930 ug/L	840 ug/L
June-99	180 ug/L	78 ug/L
November-99	480 ug/L	310 ug/L
March-00		

BDL = Below the Detection Limit

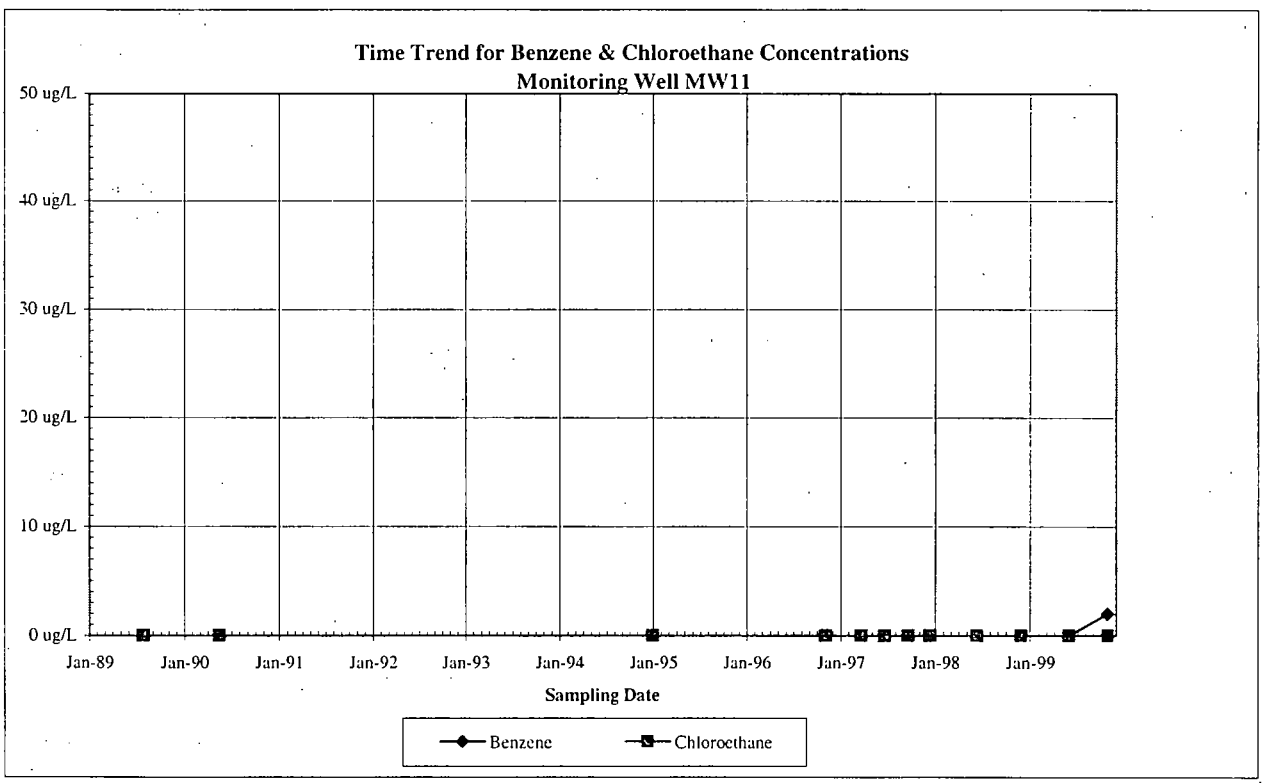


Baseline Groundwater Monitoring
ACS NPL Site

MW11

Date	Benzene	Chloroethane
Baseline	**10**	**10**
August-89	BDL	BDL
May-90	BDL	BDL
January-95	BDL	BDL
November-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	2 ug/L	BDL
March-00		

BDL = Below the Detection Limit



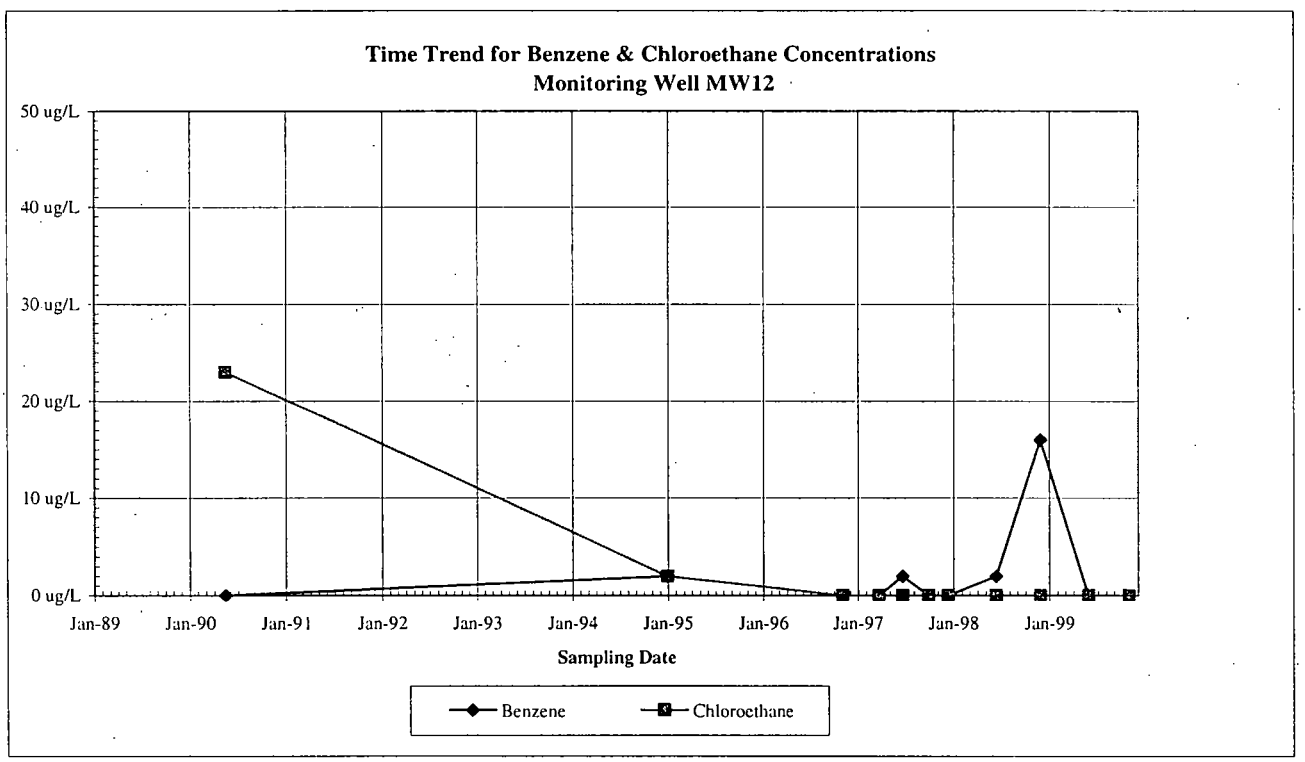
Upper Aquifer Monitoring Well: MW12

Baseline Groundwater Monitoring
ACS NPL Site

MW12

Date	Benzene	Chloroethane
BASELINE	**10**	**10**
August-89		
May-90	BDL	23 ug/L
January-95	2 ug/L	2 ug/L
November-96	BDL	BDL
March-97	BDL	BDL
June-97	2 ug/L	BDL
October-97	BDL	BDL
December-97	BDL	BDL
June-98	2 ug/L	BDL
December-98	16 ug/L	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



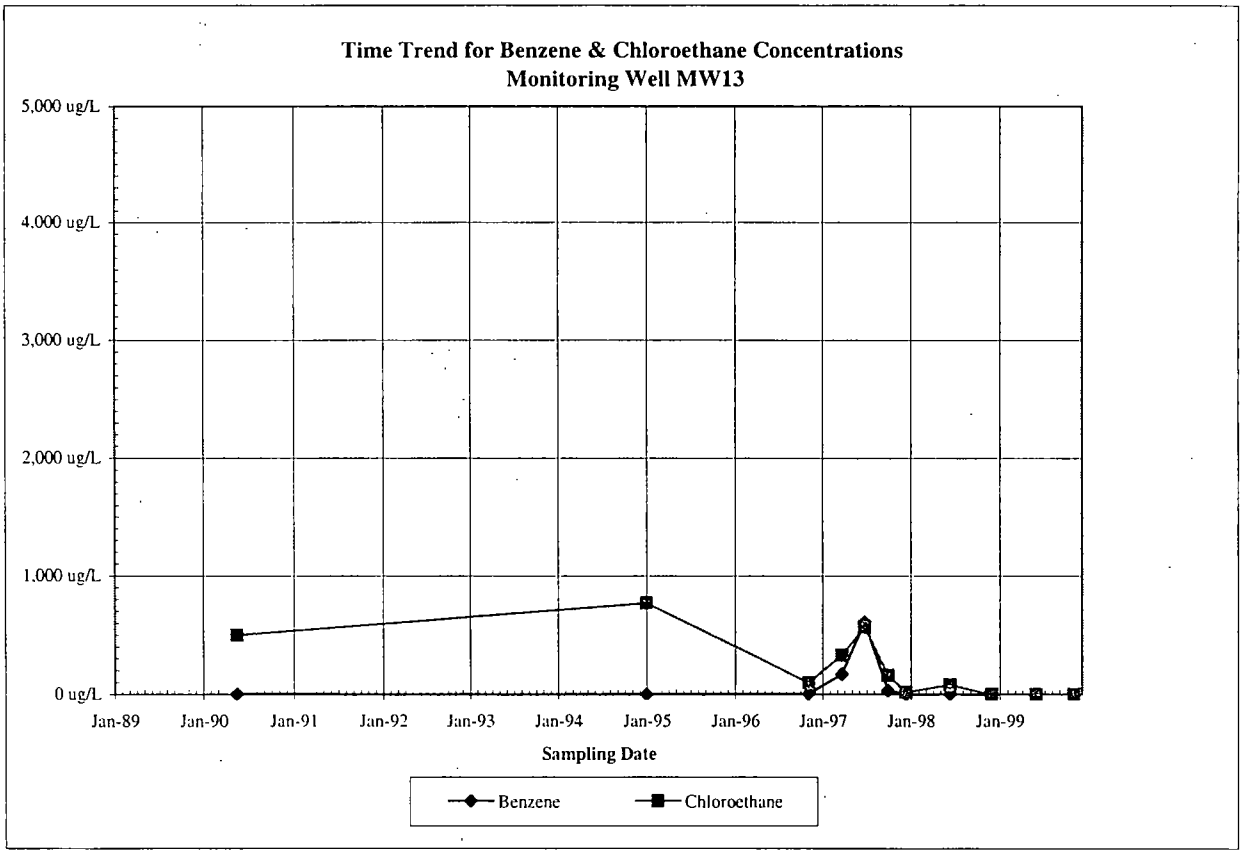
Upper Aquifer Monitoring Well: MW13

Baseline Groundwater Monitoring
ACS NPL Site

MW13

Date	Benzene	Chloroethane
Baseline	**610**	**570**
August-89		
May-90	2 ug/L	500 ug/L
January-95	BDL	770 ug/L
November-96	6 ug/L	97 ug/L
March-97	170 ug/L	330 ug/L
June-97	610 ug/L	570 ug/L
October-97	33 ug/L	160 ug/L
December-97	BDL	20 ug/L
June-98	2 ug/L	82 ug/L
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit

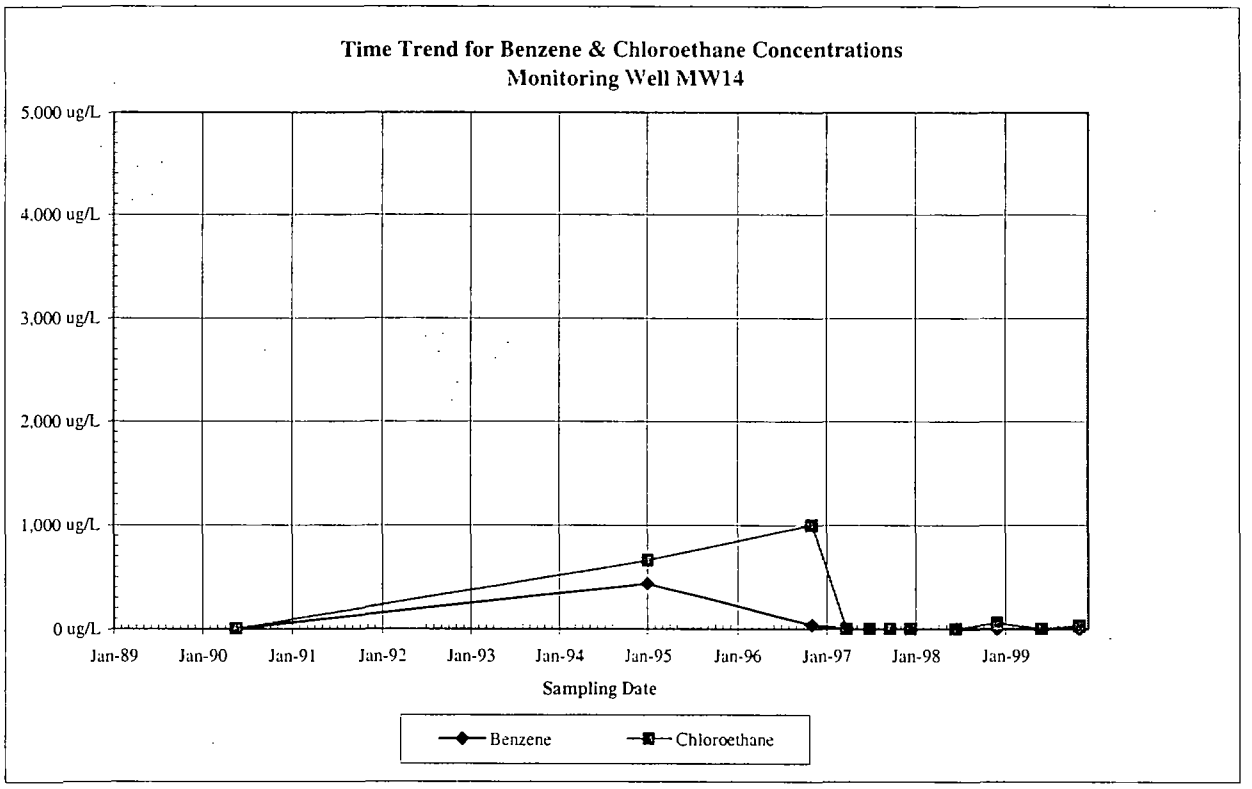


Baseline Groundwater Monitoring
ACS NPL Site

MW14

Date	Benzene	Chloroethane
Baseline	**41**	**1000**
August-89		
May-90	2 ug/L	3 ug/L
January-95	440 ug/L	660 ug/L
November-96	41 ug/L	1,000 ug/L
March-97	BDL	BDL
June-97	1 ug/L	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	59 ug/L
June-99	BDL	BDL
November-99	2 ug/L	32 ug/L
March-00		

BDL = Below the Detection Limit



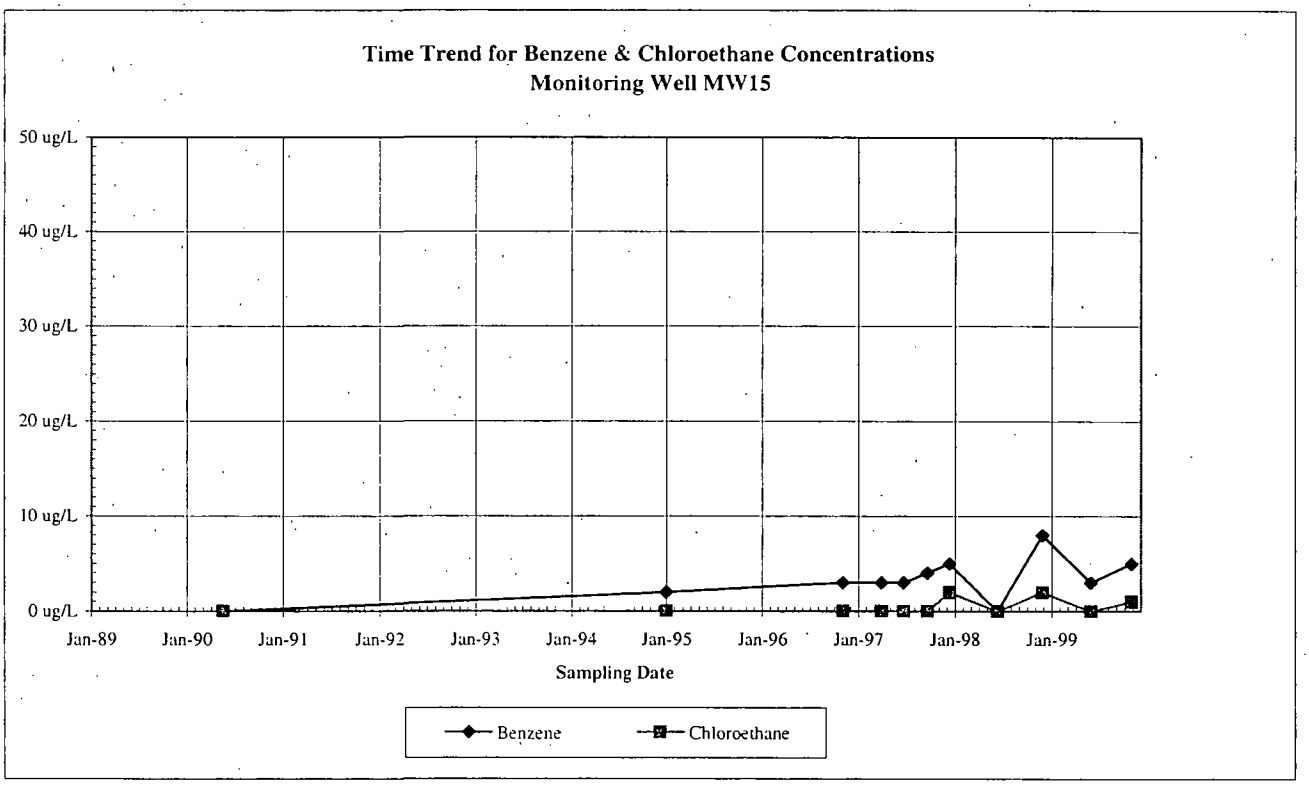
Upper Aquifer Monitoring Well: MW15

Baseline Groundwater Monitoring
ACS NPL Site

MW15

Date	Benzene	Chloroethane
BASELINE	**10**	**10**
August-89		
May-90	BDL	BDL
January-95	2 ug/L	BDL
November-96	3 ug/L	BDL
April-97	3 ug/L	BDL
June-97	3 ug/L	BDL
September-97	4 ug/L	BDL
December-97	5 ug/L	2 ug/L
June-98	BDL	BDL
December-98	8 ug/L	2 ug/L
June-99	3 ug/L	BDL
November-99	5 ug/L	1 ug/L
March-00		

BDL = Below the Detection Limit



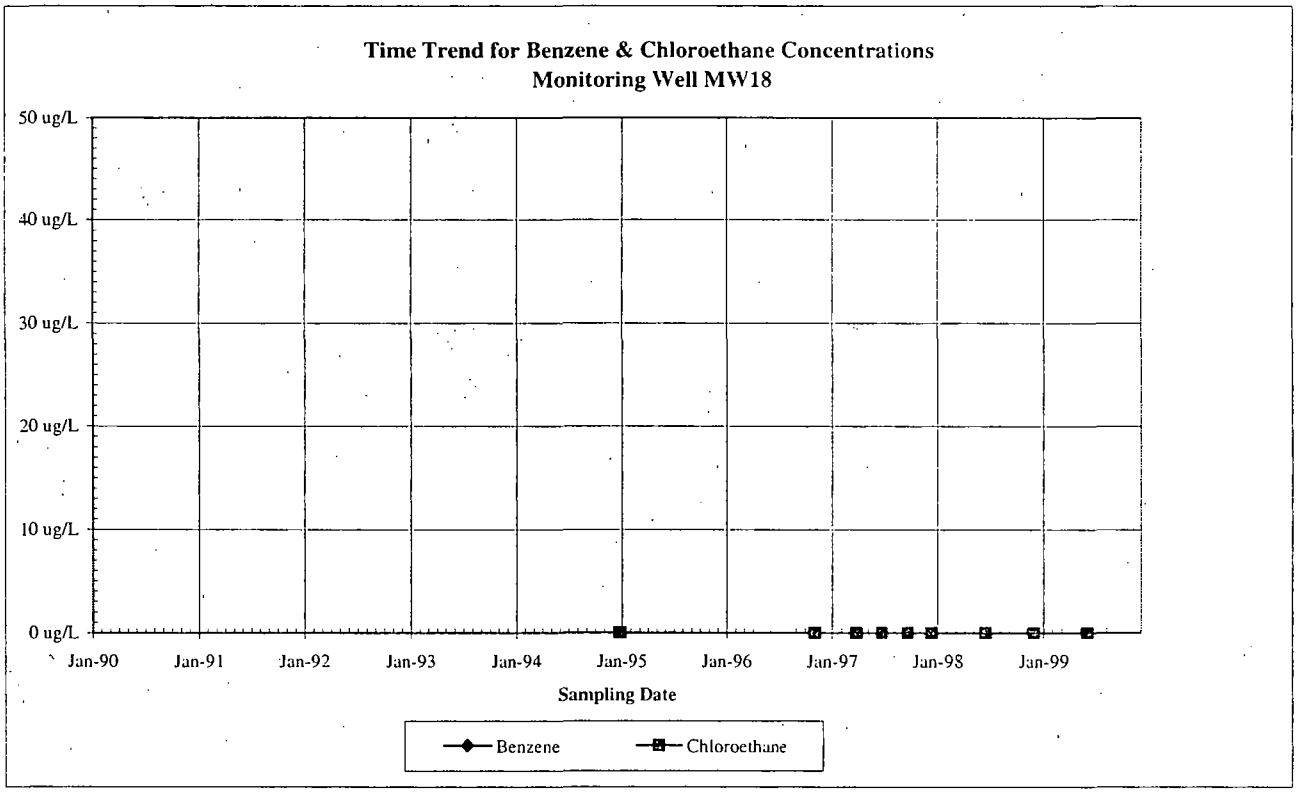
Upper Aquifer Monitoring Well: MW18

Baseline Groundwater Monitoring
ACS NPL Site

MW18

Date	Benzene	Chloroethane	
BASELINE	**10**	**10**	
August-89			
May-90			
December-94	BDL	BDL	
November-96	BDL	BDL	
March-97	BDL	BDL	
June-97	BDL	BDL	
September-97	BDL	BDL	
December-97	BDL	BDL	
June-98	BDL	BDL	
December-98	BDL	BDL	
June-99	BDL	BDL	
November-99			Not Sampled - Dry
March-00			

BDL = Below the Detection Limit



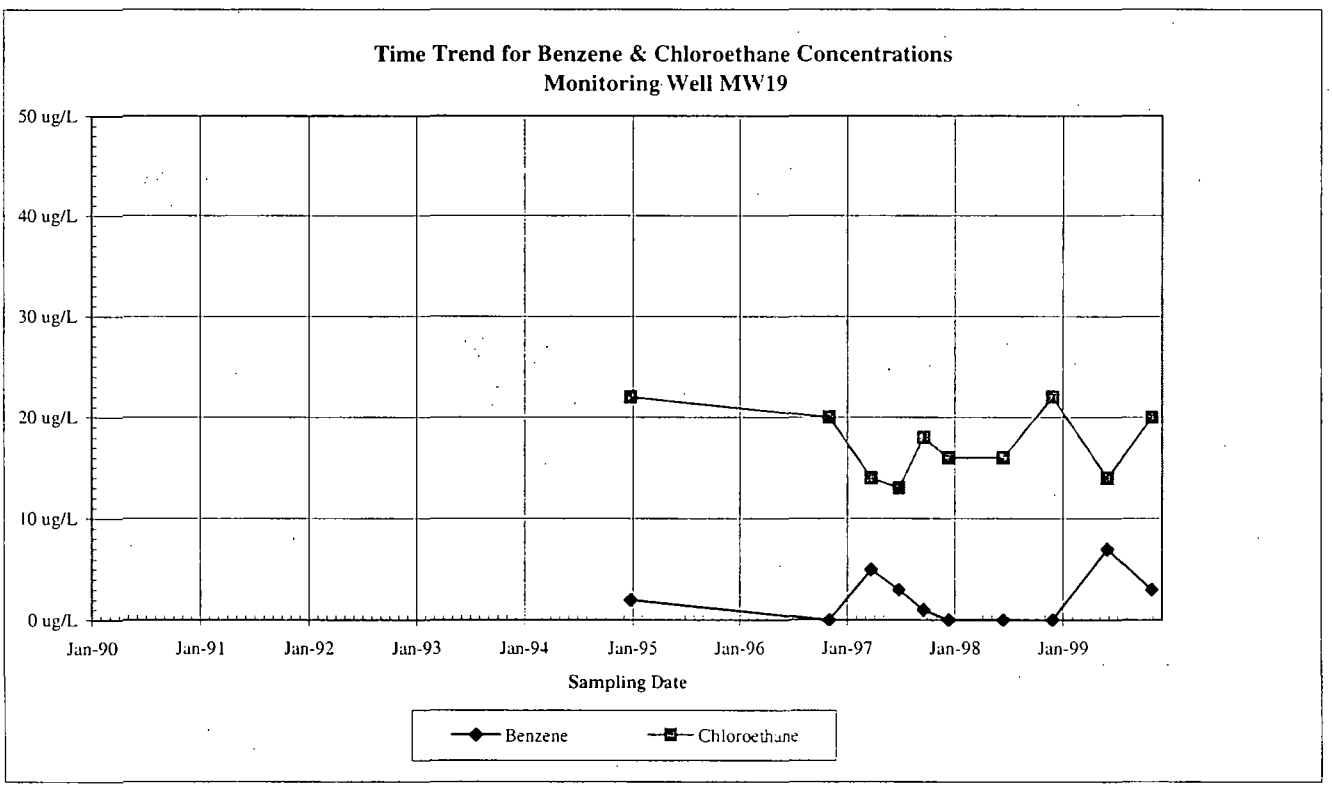
Upper Aquifer Monitoring Well: MW19

Baseline Groundwater Monitoring
ACS NPL Site

MW19

Date	Benzene	Chloroethane
BASELINE	**10**	**20**
August-89		
May-90		
December-94	2 ug/L	22 ug/L
November-96	BDL	20 ug/L
March-97	5 ug/L	14 ug/L
June-97	3 ug/L	13 ug/L
September-97	1 ug/L	18 ug/L
December-97	BDL	16 ug/L
June-98	BDL	16 ug/L
December-98	BDL	22 ug/L
June-99	7 ug/L	14 ug/L
November-99	3 ug/L	20 ug/L
March-00		

BDL = Below the Detection Limit



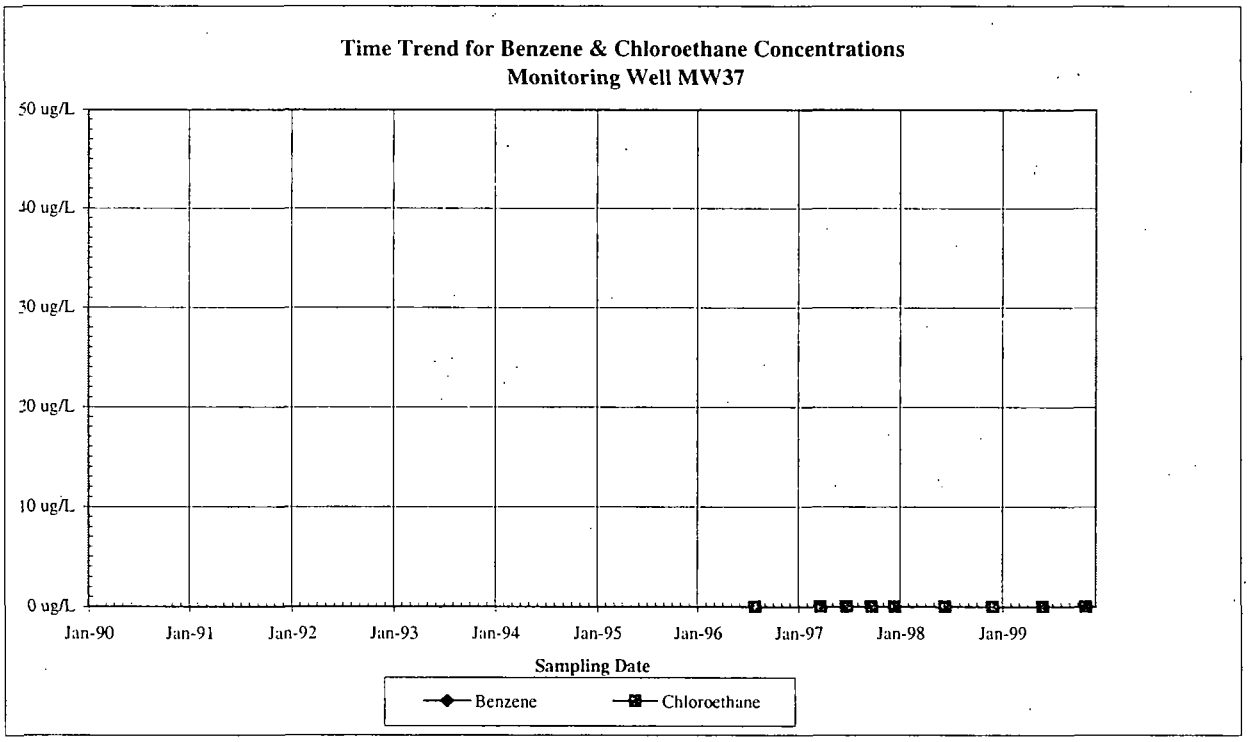
Baseline Groundwater Monitoring

ACS NPL Site

MW37

Date	Benzene	Chloroethane
Baseline	**10**	**10**
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



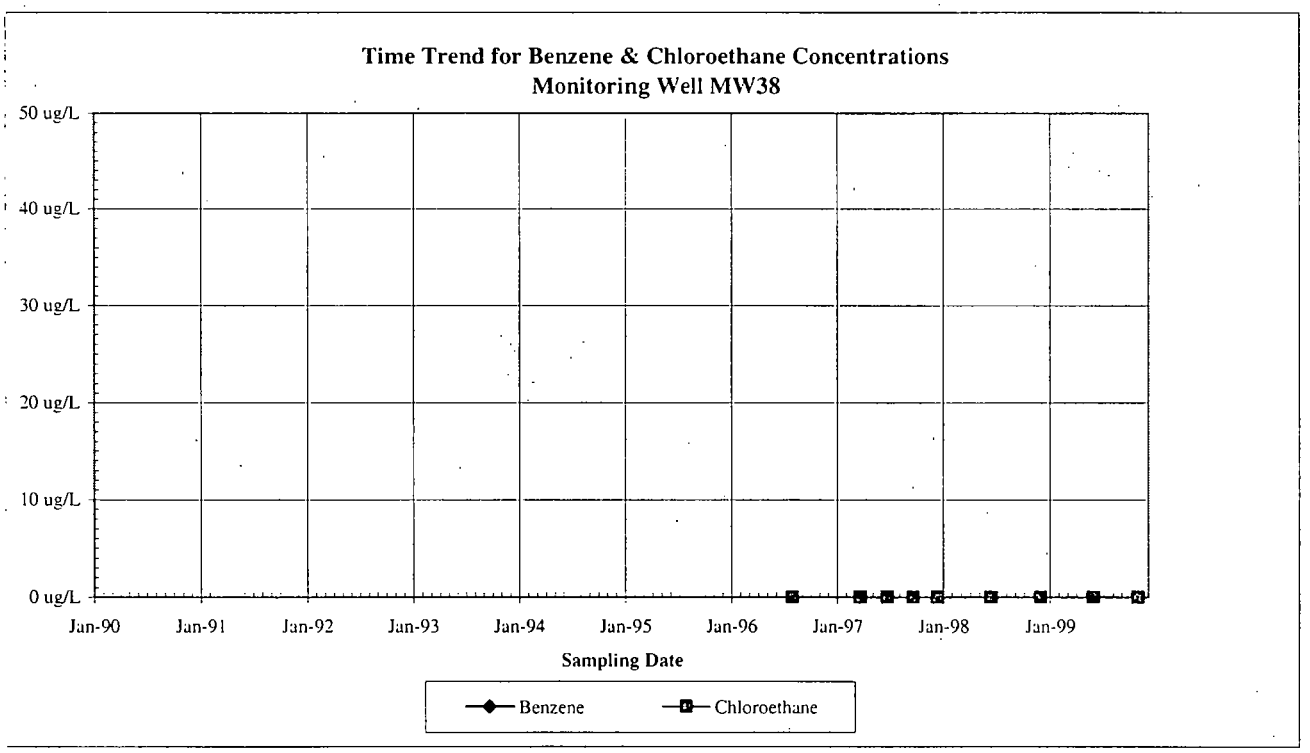
Upper Aquifer Monitoring Well: MW38

Baseline Groundwater Monitoring
ACS NPL Site

MW38

Date	Benzene	Chloroethane
Baseline	**10**	**10**
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit

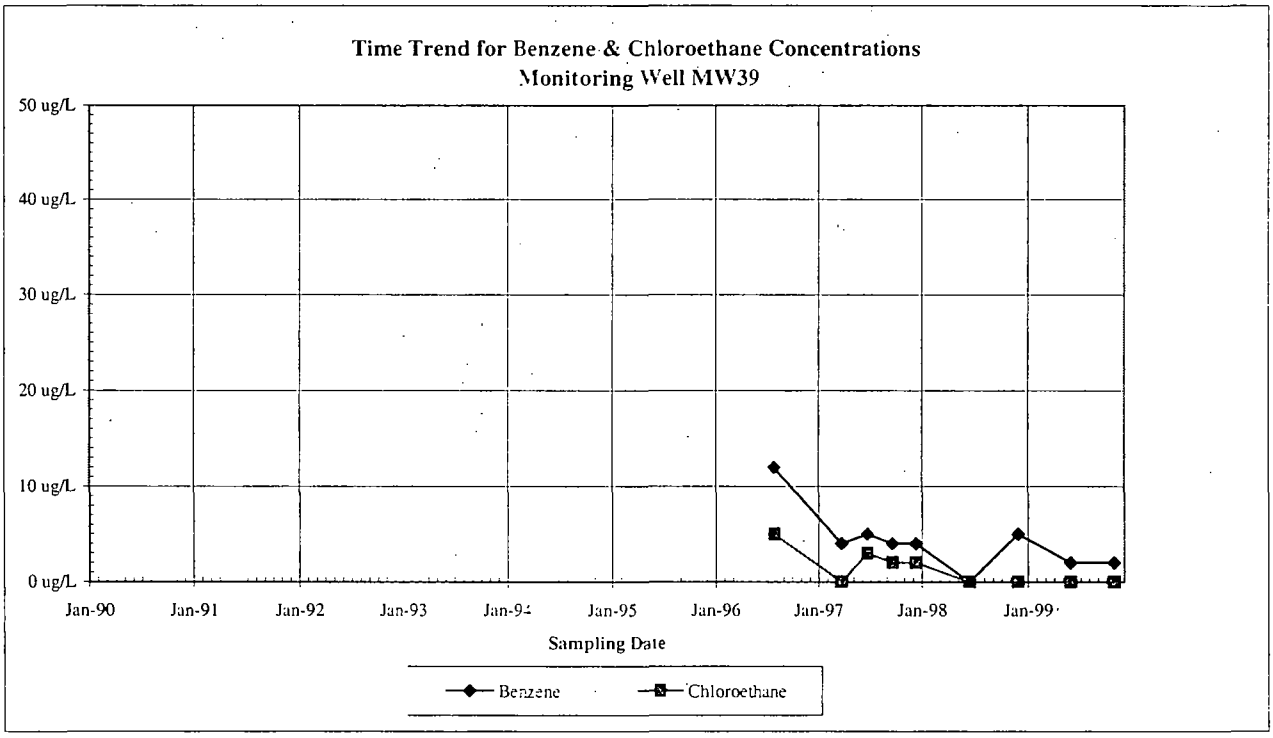


Baseline Groundwater Monitoring
ACS NPL Site

MW39

Date	Benzene	Chloroethane
Baseline	**12**	**10**
August-89		
May-90		
December-94		
August-96	12 ug/L	5 ug/L
March-97	4 ug/L	BDL
June-97	5 ug/L	3 ug/L
September-97	4 ug/L	2 ug/L
December-97	4 ug/L	2 ug/L
June-98	BDL	BDL
December-98	5 ug/L	BDL
June-99	2 ug/L	BDL
November-99	2 ug/L	BDL
March-00		

BDL = Below the Detection Limit



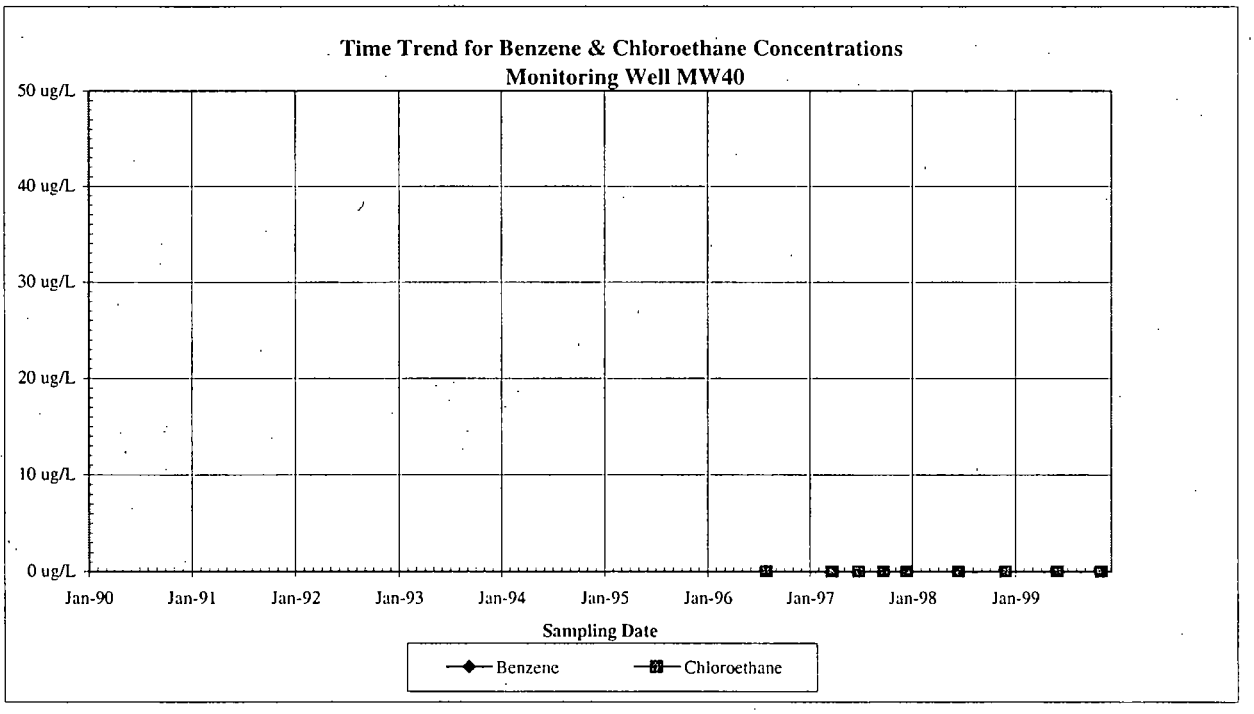
Baseline Groundwater Monitoring

ACS NPL Site

MW40

Date	Benzene	Chloroethane
Baseline	**10**	**10**
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



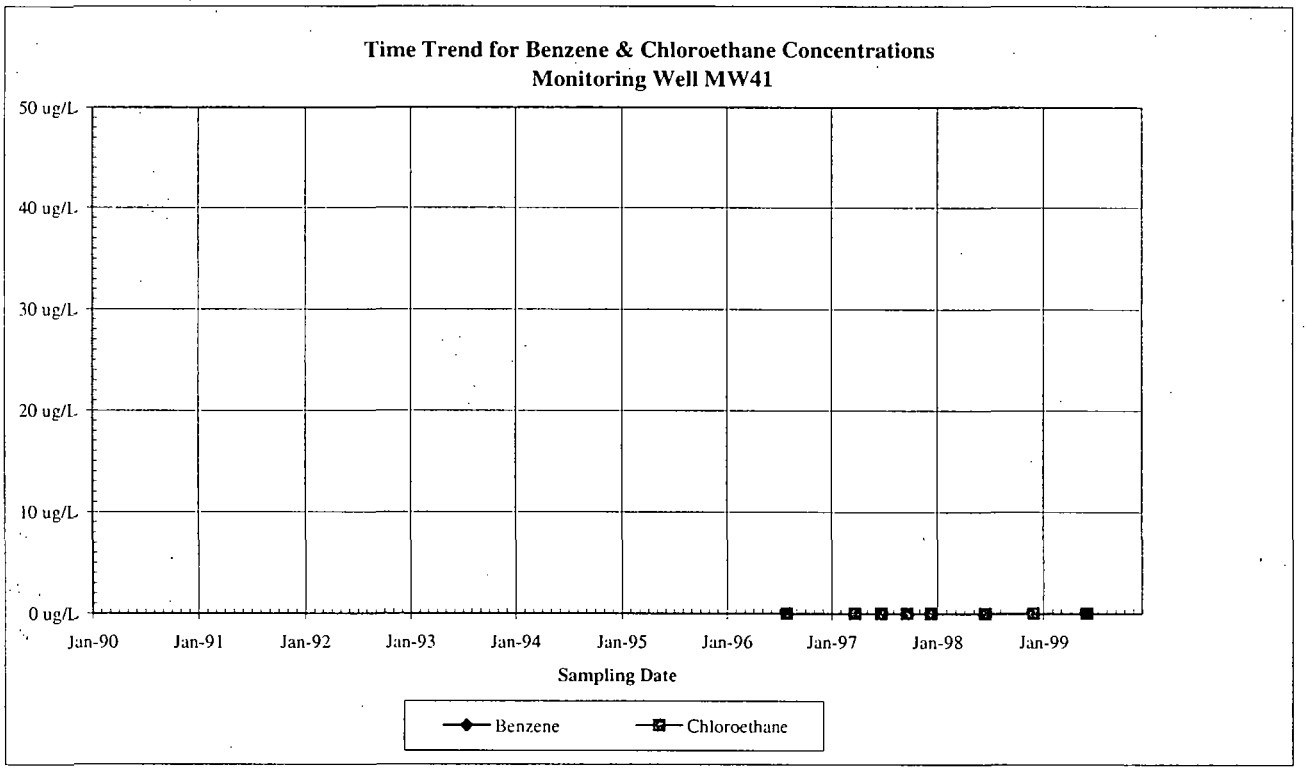
Upper Aquifer Monitoring Well: MW41

Baseline Groundwater Monitoring
ACS NPL Site

MW41

Date	Benzene	Chloroethane	
BASELINE	10	10	
August-89			
May-90			
December-94			
August-96	BDL	BDL	
March-97	BDL	BDL	
June-97	BDL	BDL	
September-97	BDL	BDL	
December-97	BDL	BDL	
June-98	BDL	BDL	
December-98	BDL	BDL	
June-99	BDL	BDL	
November-99			Not Sampled - Dry
March-00			

BDL = Below the Detection Limit



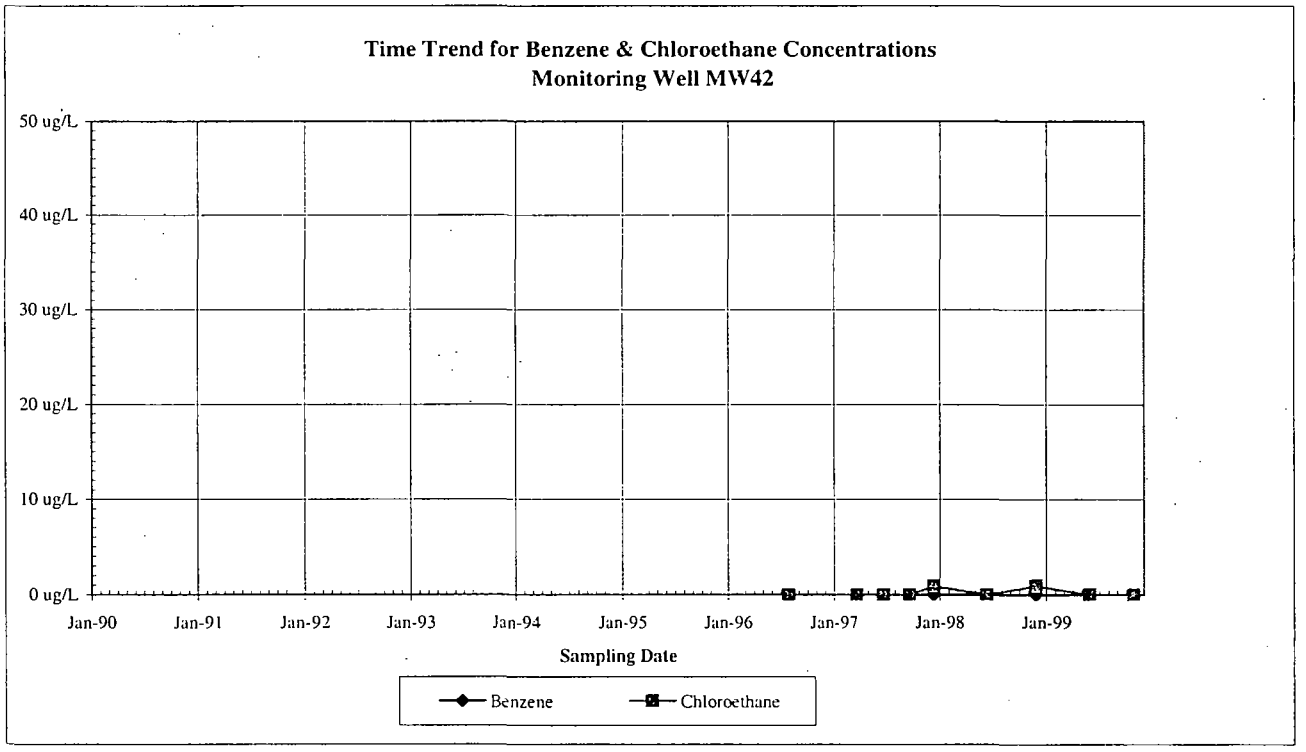
Upper Aquifer Monitoring Well: MW42

Baseline Groundwater Monitoring
ACS NPL Site

MW42

Date	Benzene	Chloroethane
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	0.9 ug/L
June-98	BDL	BDL
December-98	BDL	0.9 ug/L
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



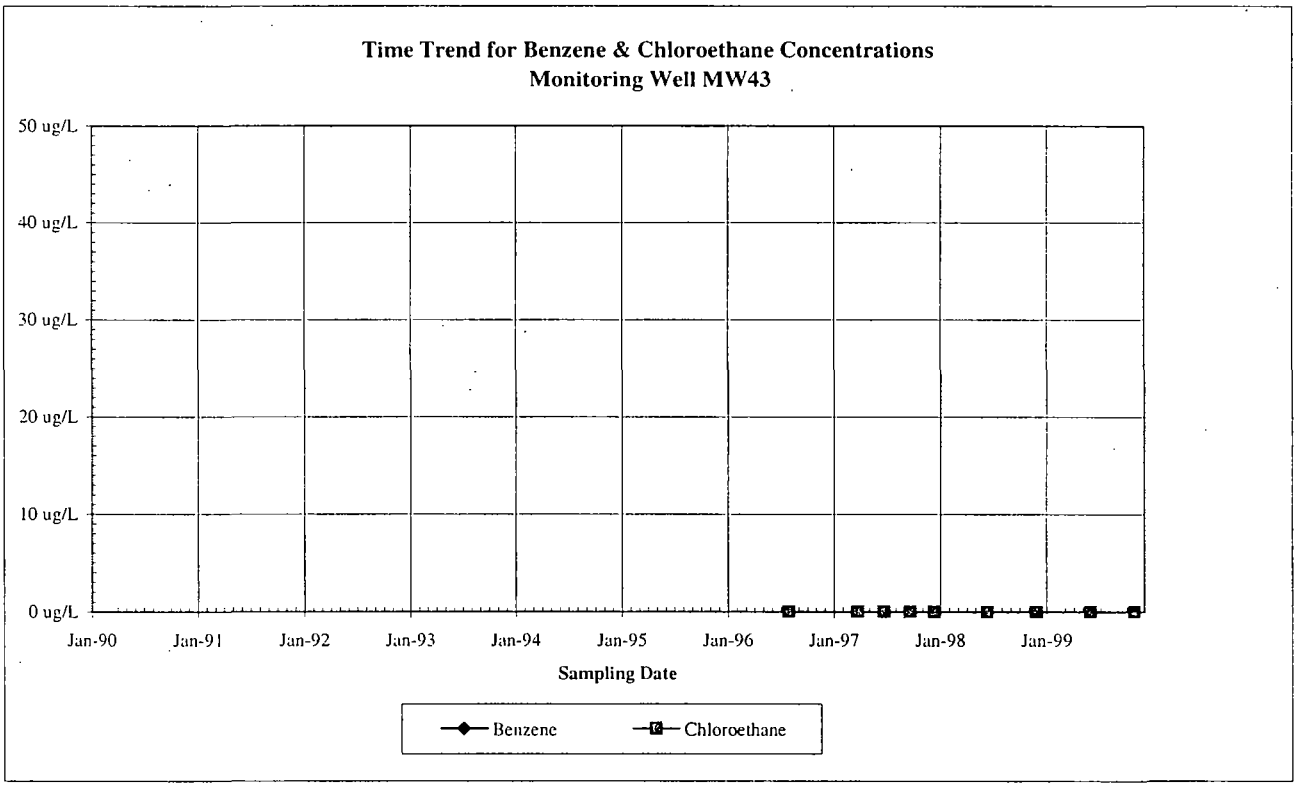
Upper Aquifer Monitoring Well: MW43

Baseline Groundwater Monitoring
ACS NPL Site

MW43

Date	Benzene	Chloroethane
BASELINE	10	10
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



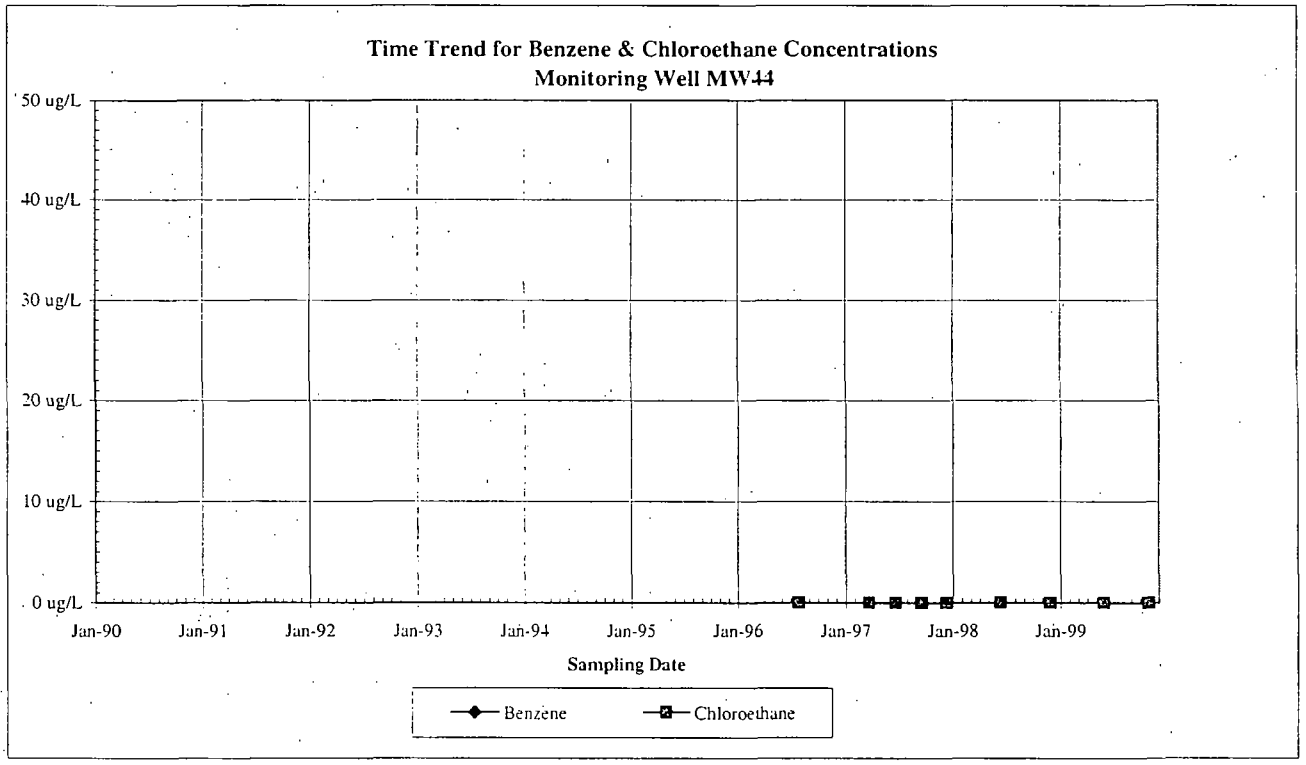
Upper Aquifer Monitoring Well: MW44

Baseline Groundwater Monitoring
ACS NPL Site

MW44

Date	Benzene	Chloroethane
BASELINE	**10**	**10**
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
September-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit



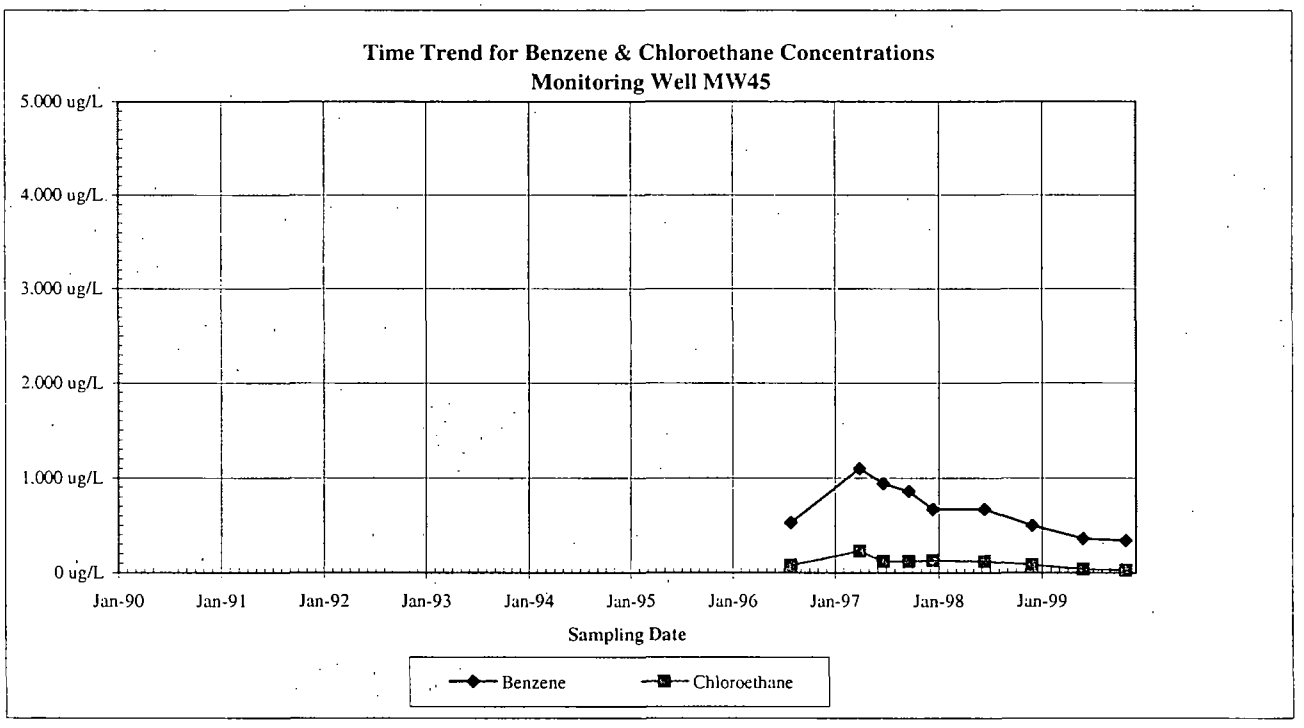
Upper Aquifer Monitoring Well: MW45

Baseline Groundwater Monitoring
ACS NPL Site

MW45

Date	Benzene	Chloroethane
BASELINE	**1045**	**215**
August-89		
May-90		
December-94		
August-96	530 ug/L	82 ug/L
April-97	1,100 ug/L	230 ug/L
June-97	940 ug/L	120 ug/L
September-97	860 ug/L	120 ug/L
December-97	670 ug/L	130 ug/L
June-98	670 ug/L	120 ug/L
December-98	500 ug/L	88 ug/L
June-99	360 ug/L	38 ug/L
November-99	340 ug/L	32 ug/L
March-00		

BDL = Below the Detection Limit

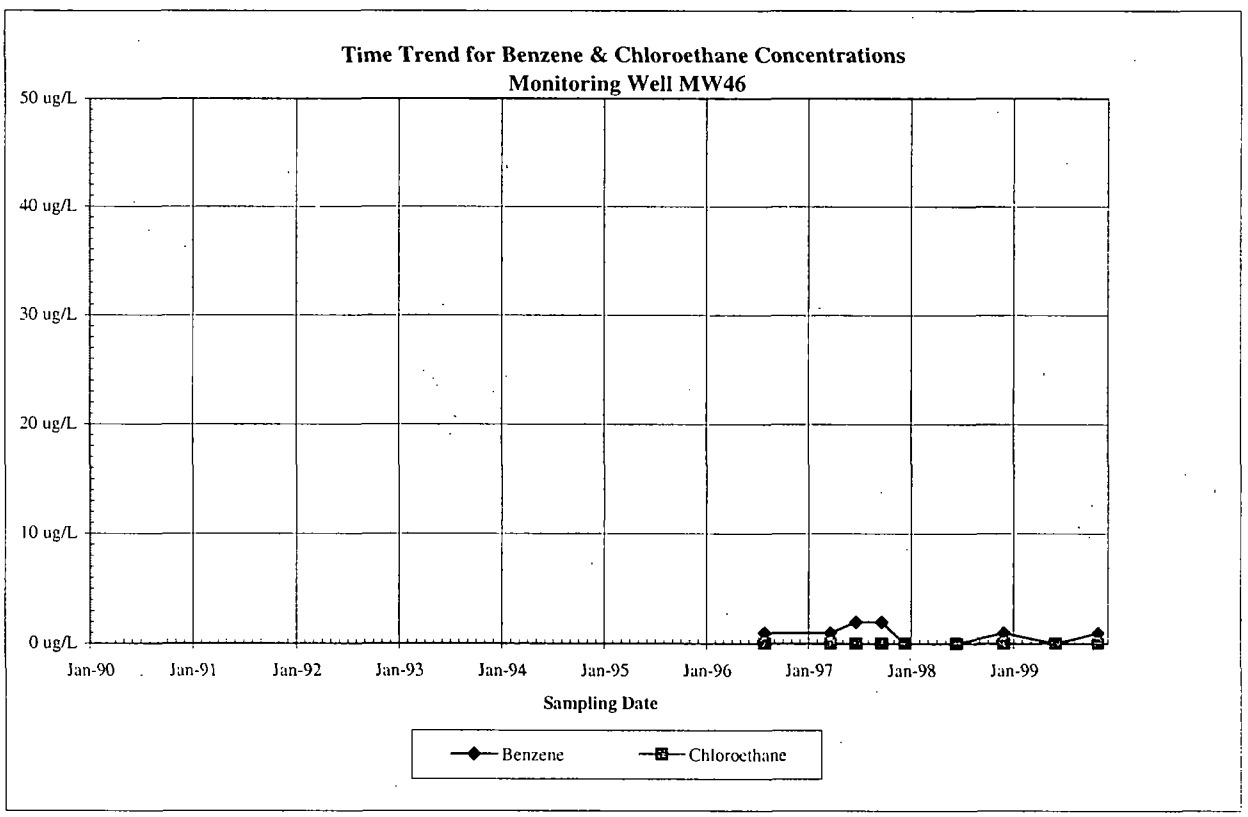


Baseline Groundwater Monitoring
ACS NPL Site

MW46

Date	Benzene	Chloroethane
Baseline	**10**	**10**
August-89		
May-90		
December-94		
August-96	1 ug/L	BDL
March-97	1 ug/L	BDL
June-97	2 ug/L	BDL
September-97	2 ug/L	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	1 ug/L	BDL
June-99	BDL	BDL
November-99	1 ug/L	BDL
March-00		

BDL = Below the Detection Limit



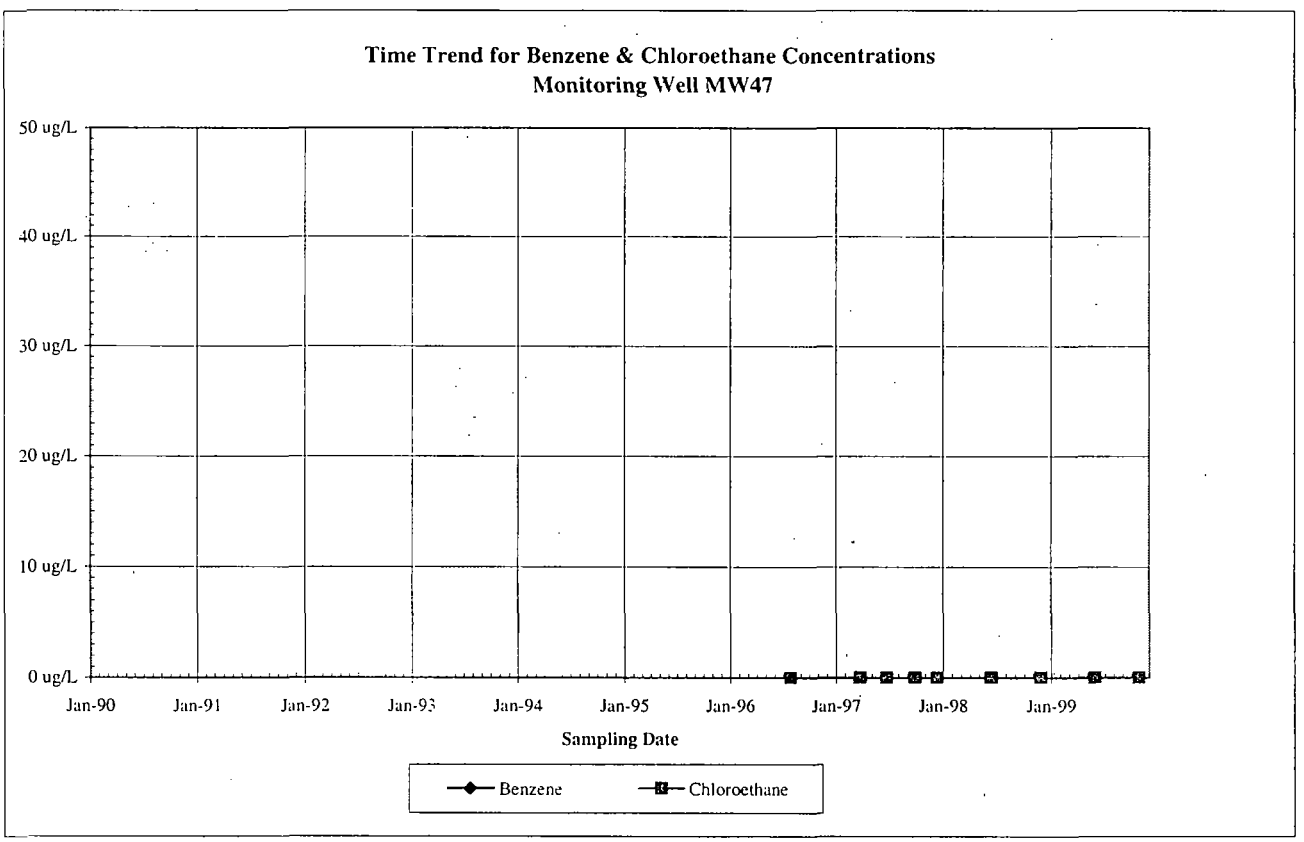
Upper Aquifer Monitoring Well: MW47

Baseline Groundwater Monitoring
ACS NPL Site

MW47

Date	Benzene	Chloroethane
BASELINE	**10**	**10**
August-89		
May-90		
December-94		
August-96	BDL	BDL
March-97	BDL	BDL
June-97	BDL	BDL
October-97	BDL	BDL
December-97	BDL	BDL
June-98	BDL	BDL
December-98	BDL	BDL
June-99	BDL	BDL
November-99	BDL	BDL
March-00		

BDL = Below the Detection Limit

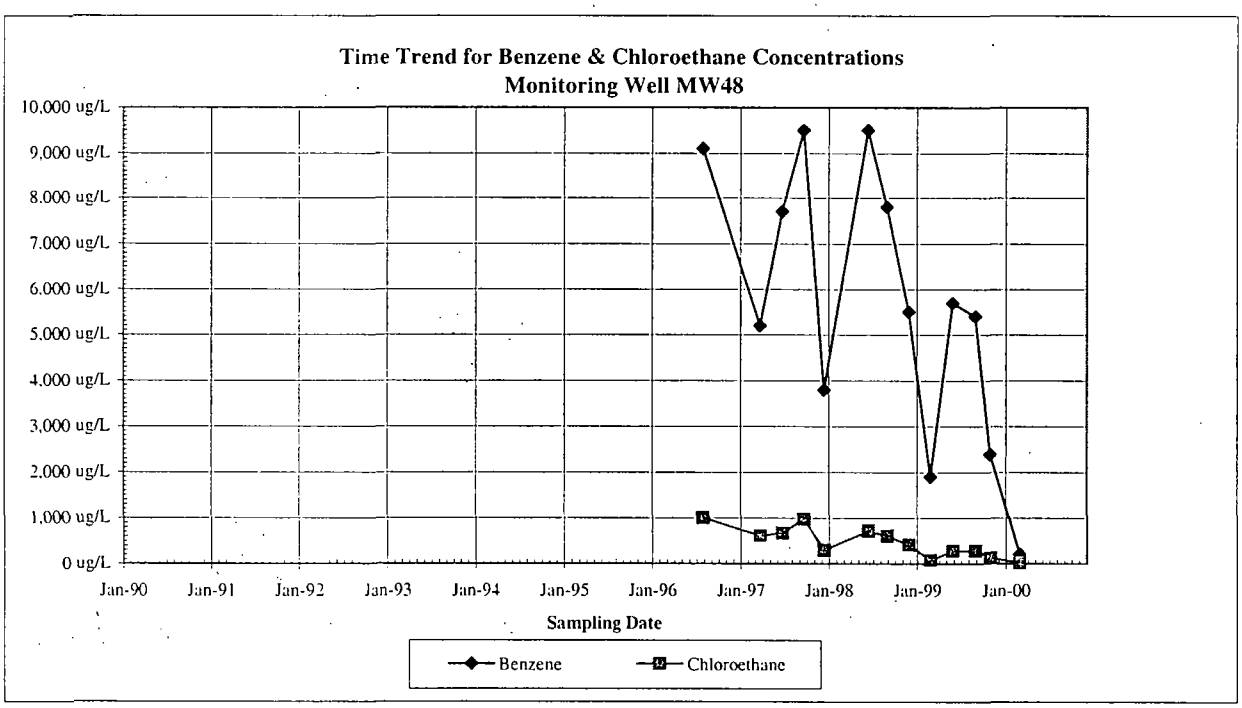


Baseline Groundwater Monitoring

ACS NPL Site

MW48

Date	Benzene	Chloroethane
Baseline	**9500**	**1000**
August-89		
May-90		
December-94		
August-96	9,100 ug/L	1,000 ug/L
March-97	5,200 ug/L	620 ug/L
June-97	7,700 ug/L	670 ug/L
September-97	9,500 ug/L	980 ug/L
December-97	3,800 ug/L	300 ug/L
June-98	9,500 ug/L	720 ug/L
September-98	7,800 ug/L	610 ug/L
December-98	5,500 ug/L	420 ug/L
March-99	1,900 ug/L	83 ug/L
June-99	5,700 ug/L	290 ug/L
September-99	5,400 ug/L	290 ug/L
November-99	2,400 ug/L	140 ug/L
March-00	220 ug/L	24 ug/L

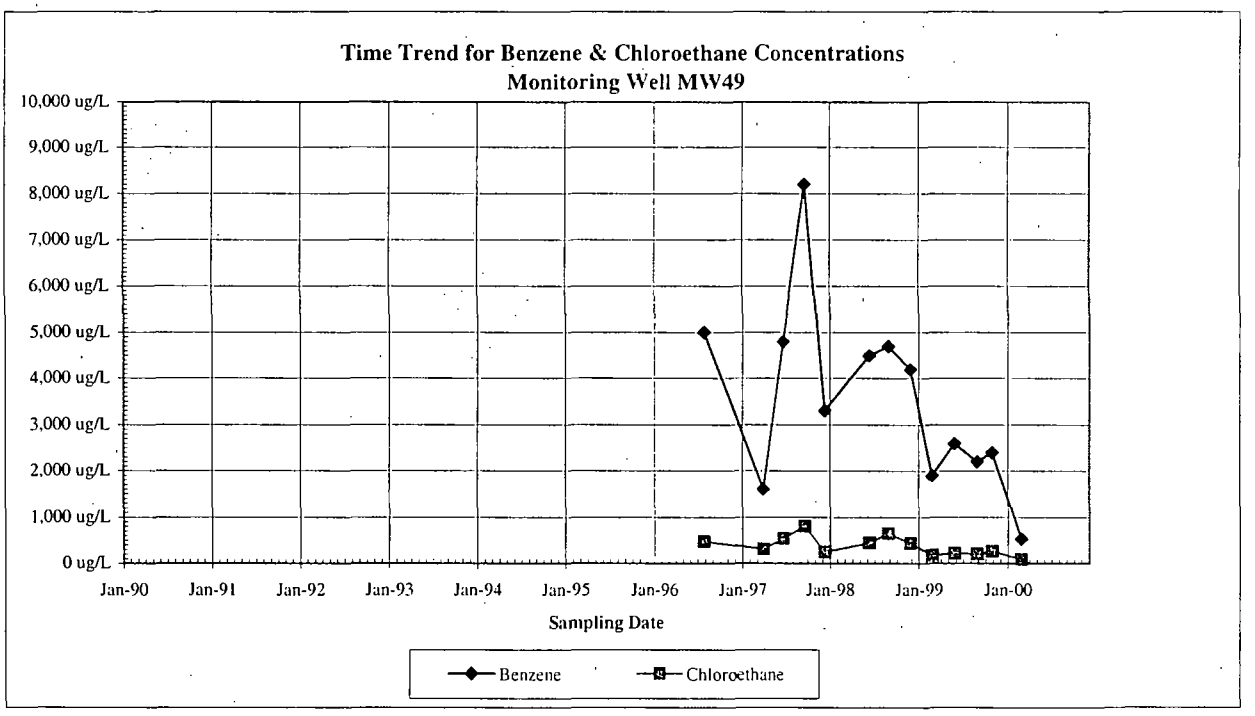


Upper Aquifer Monitoring Well: MW49

Baseline Groundwater Monitoring
ACS NPL Site

MW49

Date	Benzene	Chloroethane
Baseline	**6750**	**715**
August-89		
May-90		
December-94		
August-96	5,000 ug/L	480 ug/L
April-97	1,600 ug/L	310 ug/L
June-97	4,800 ug/L	540 ug/L
September-97	8,200 ug/L	810 ug/L
December-97	3,300 ug/L	250 ug/L
June-98	4,500 ug/L	450 ug/L
September-98	4,700 ug/L	650 ug/L
December-98	4,200 ug/L	440 ug/L
March-99	1,900 ug/L	180 ug/L
June-99	2,600 ug/L	220 ug/L
September-99	2,200 ug/L	210 ug/L
November-99	2,400 ug/L	260 ug/L
March-00	530 ug/L	91 ug/L



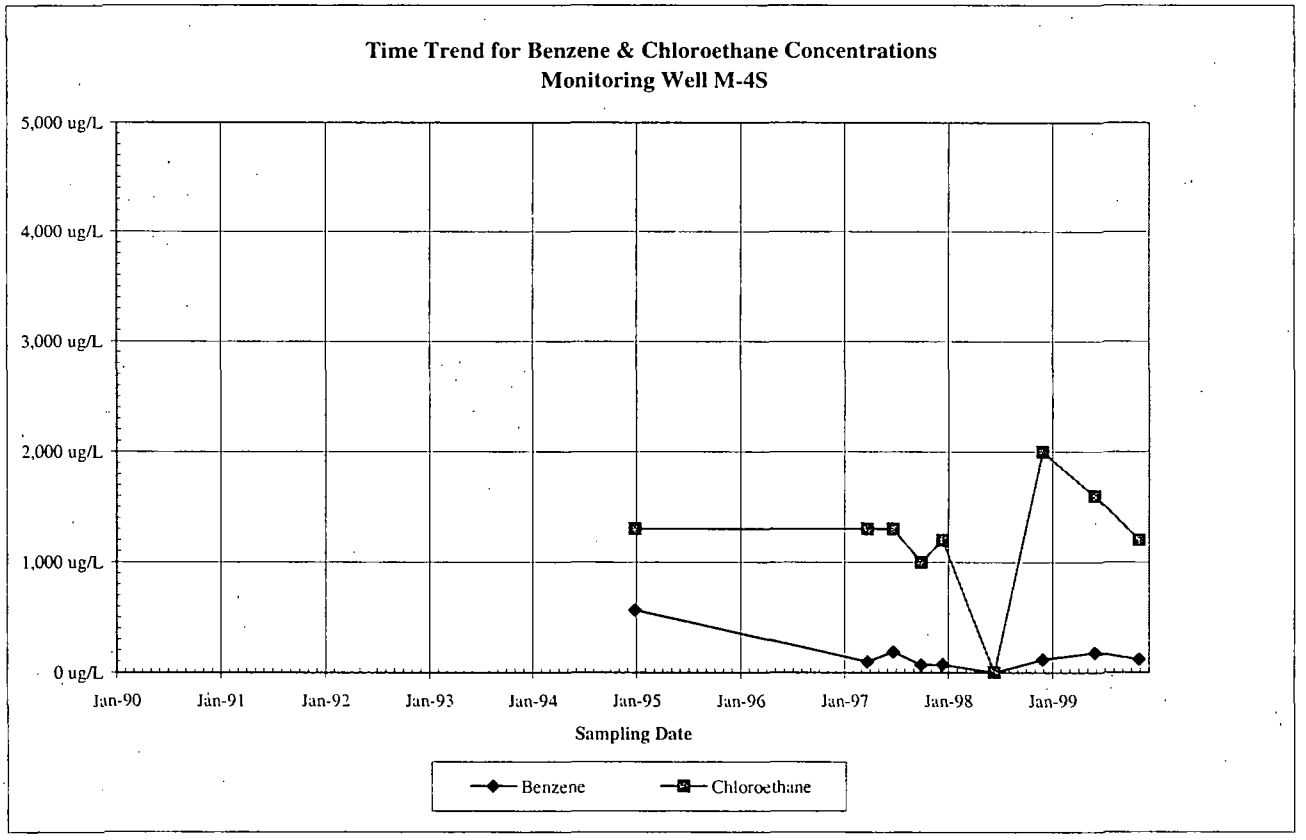
Upper Aquifer Monitoring Well: M-4S

Baseline Groundwater Monitoring
ACS NPL Site

M-4S

Date	Benzene	Chloroethane
BASELINE	190	1300
January-95	570 ug/L	1,300 ug/L
March-97	98 ug/L	1,300 ug/L
June-97	190 ug/L	1,300 ug/L
October-97	73 ug/L	1,000 ug/L
December-97	75 ug/L	1,200 ug/L
June-98	BDL	BDL
December-98	120 ug/L	2,000 ug/L
June-99	180 ug/L	1,600 ug/L
November-99	120 ug/L	1,200 ug/L
March-00		

BDL = Below the Detection Limit



JMK/JMS/CAS
J:1252\042\Database
Timetrnd_South.xls[M-4S]

5/9/00

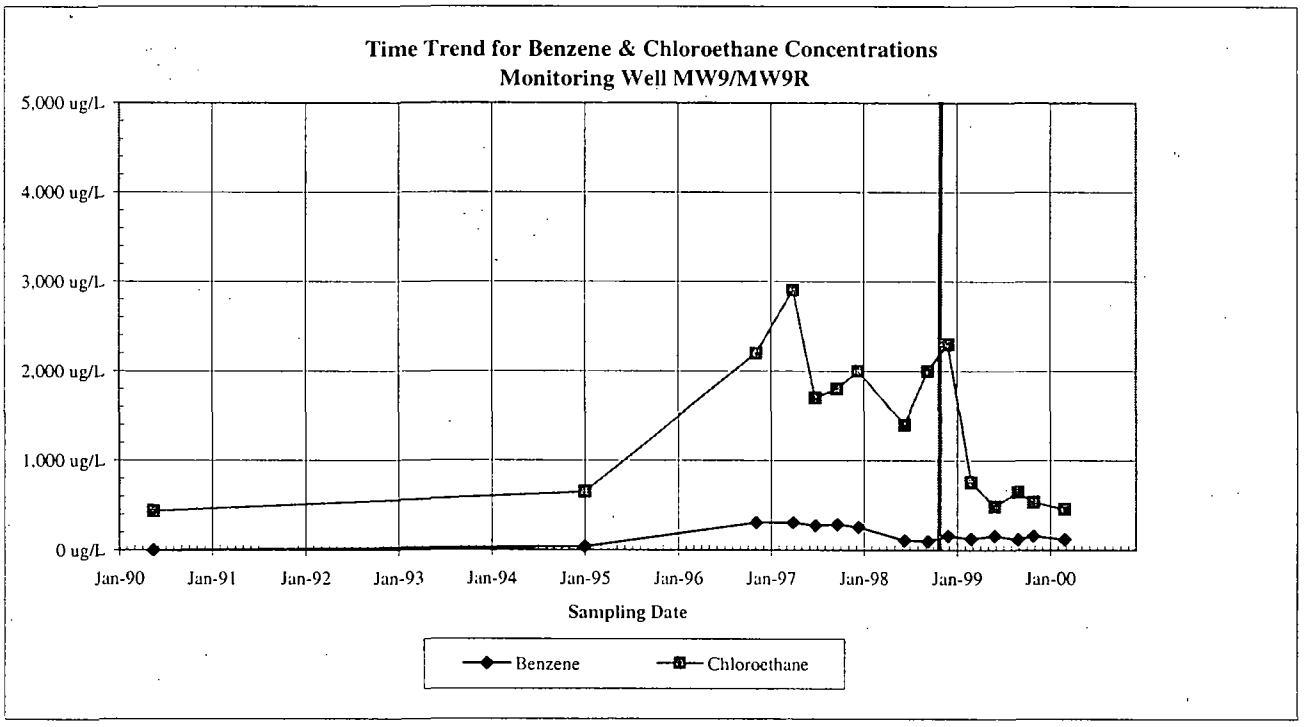
Lower Aquifer Monitoring Well: MW9/MW9R

Baseline Groundwater Monitoring
ACS NPL Site

MW9/MW9R

Date	Benzene	Chloroethane
BASELINE	**310**	**2900**
August-89		
May-90	BDL	440 ug/L
January-95	40 ug/L	650 ug/L
November-96	310 ug/L	2,200 ug/L
April-97	310 ug/L	2,900 ug/L
June-97	280 ug/L	1,700 ug/L
September-97	290 ug/L	1,800 ug/L
December-97	260 ug/L	2,000 ug/L
June-98	110 ug/L	1,400 ug/L
September-98	100 ug/L	2,000 ug/L
December-98	160 ug/L	2,300 ug/L
March-99	130 ug/L	760 ug/L
June-99	160 ug/L	490 ug/L
September-99	120 ug/L	650 ug/L
November-99	160 ug/L	540 ug/L
March-00	120 ug/L	460 ug/L

BDL = Below the Detection Limit



Line indicates change to replacement well

JMK/JMS/CAS
J:1252\042\Database
Timetrnd-LA.xls[MW9]

5/9/00

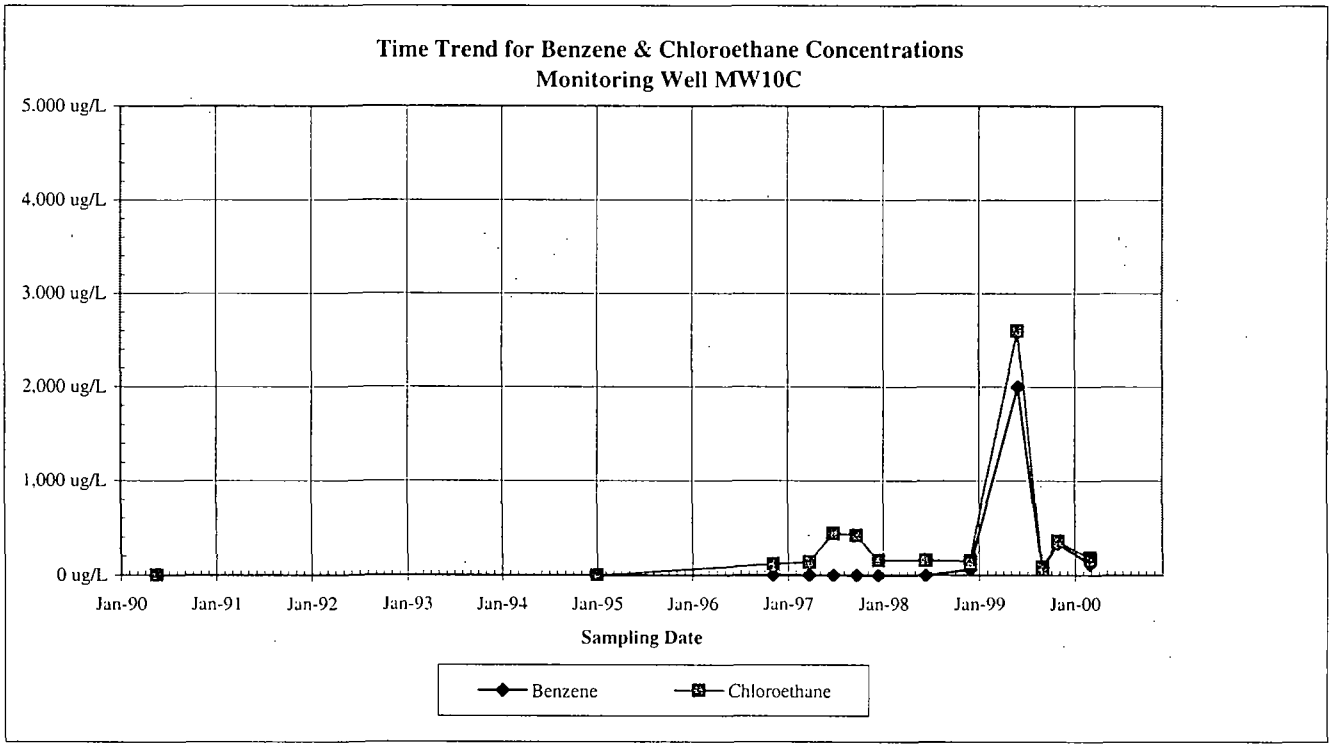
Lower Aquifer Monitoring Well: MW10C/MW9R

Baseline Groundwater Monitoring
ACS NPL Site

MW10C

Date	Benzene	Chloroethane
BASELINE	**150**	**420**
August-89		
May-90	BDL	BDL
January-95	BDL	BDL
November-96	BDL	120 ug/L
March-97	BDL	140 ug/L
June-97	BDL	440 ug/L
September-97	BDL	420 ug/L
December-97	BDL	160 ug/L
June-98	BDL	160 ug/L
December-98	66 ug/L	150 ug/L
June-99	2,000 ug/L	2,600 ug/L
September-99	83 ug/L	88 ug/L
November-99	340 ug/L	360 ug/L
March-00	120 ug/L	180 ug/L

BDL = Below the Detection Limit



JMK/JMS/CAS
J:1252\042\Database
Timetrnd-LA.xls[MW10C]

5/9/00

APPENDIX C

VALIDATION NARRATIVE AND LABORATORY REPORTS FROM UPPER AQUIFER

MEMORANDUM

MONTGOMERY WATSON

To: Chad Smith

From: Anne Koob, MW

Job No.: 1252042.221601

Subject: Data Validation for American Chemical Service (ACS). Griffith, Indiana.

SDG: 00107,00130, 00122

Date: January 14, 2000

INTRODUCTION

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in November of 1999.

Forty-eight water samples and eight field quality assurance samples were analyzed by CompuChem Laboratories, Cary, North Carolina for the following parameters:

- SDG 130 VOA IND by CLP – OLM 3.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, FB-05-11, and TB-03-11)

- SDG 130 Cyanide by CLP – ILM04.0 (sample PWD-10)

- SDG 130 Metals by CLP – ILM04.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, and FB-05-11)

- SDG 107 VOA IND by CLP – OLM 3.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11; MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 107 Metals by CLP – ILM04.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11, MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 122 VOA IND by CLP – OLM 3.0 (samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11,

FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11, and TB02-11)

- SDG 122 Metals by CLP – ILM04.0 (samples MW38-11, MW08-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11, FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11)

Data validation was conducted in accordance with procedures specified in *Pre-Design Activities Quality Assurance Project Plan (MW, 1995), National Functional Guidelines for Organic Data Review (USEPA, 1994a), and National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).*

The following field quality control samples were collected during the November 1999 sampling round:

- Five field blanks: FB01-11, FB02-11, FB03-11, FB04-11, FB05-11; and
- Three trip blanks: TB01-11, TB02-11, and TB03-11.

This memorandum contains a narrative summarizing the data quality objectives specified in the work plan, and provides a table of qualified data (Table 1-1) and supporting validation documentation (Attachment A).

SUMMARY

This section describes the quality control parameters reviewed during validation, summarizes the data quality objectives as a result of the validation and provides a summary of the deficiencies and qualification applied. The following paragraphs describe deficiencies that were identified which resulted in qualification of the sample results. Each analysis is separated into sections for clarity.

Volatile Organic Componds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Field Blanks

- The SDG 130 sample FB04-11 had a Chloroethane result of 14 ug/L, resulting in the qualification of all associated positive results of less than five times the blank result, or 70ug/L. The sample MW14-11 Chloroethane result of 32 ug/L fell into this category and was qualified nondetect, "UJ". Associated Chloroethane results greater than 70ug/L were not qualified.

Continuing Calibration

- The SDG 00130 continuing calibration (run on 11/27/99 at 1250) had a Vinyl Chloride %D of 29.4%, which is outside the control limit of 25%. Method blanks VBLKRW and VHBLKC5 were associated with this continuing calibration and the associated practical quantitation limits (PQL's) were qualified as estimated "UJ". The MS/MSD of sample MW31-11 was also associated with this continuing calibration but not qualified.

- The SDG 00107 continuing calibration (run on 11/19/99 at 1927) had a Chloroethane %D of 61.6%, which is outside the control limit of 25%. Samples MW15-11 and MW45-11 were associated with this continuing calibration, and had positive results. The Chloroethane results for these samples were qualified as estimated "J", with a high bias.

- The SDG 00122 continuing calibration (run on 11/15/99 at 2030) had a 1,1-Dichloroethene %D of 26.1%, which is outside the control limit of 25%. Method blank VBLKBB and samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, and MW33-11 were associated with this continuing calibration and their practical quantitation limits (PQL's) were qualified as estimated "UJ", with a low bias.

Matrix Spike/Matrix Spike Duplicate

- SDG 107 sample MW46-11 has a Benzene MS/MSD relative percent difference (RPD) of 12, which is greater than the control limit of 11. The Benzene result of 1ug/L was qualified as estimated "J" due to this nonconformance.

Field Duplicate Comparison

- SDG 107 sample MW45-11 had a Chloroethane result of 32ug/L, while its field duplicate MW45-911 had a Chloroethane result of 52ug/L, resulting in an RPD of 48. The MW45-11 result was qualified as estimated "J", with a low bias.

Holding Times

- SDG 107 sample MW44-11 was initially analyzed within holding time but was reanalyzed as a part of the laboratory's internal QC process. The analysis of sample MW44-11RE showed no contamination, and as a result the original analysis within holding time should be used. The rerun was performed one day outside of the fourteen day holding time, and the PQLs associated with sample MW44-11RE were qualified as estimated "J", with a low bias.

Sample Dilution

- SDG 130 field duplicate sample MW49-911 had an initial Chloroethane concentration of 300 ug/L, which exceeded the calibration range. This sample was then diluted and MW49-911DL was run with a reporting limit of 250 ug/L. The newly quantitated Chloroethane concentration was 240 ug/L, resulting in a "J" flag due to detection below the reporting limit. The associated primary sample, MW49-11, had a post-dilution Chloroethane concentration of 260 ug/L, resulting in an acceptable field duplicate RPD. No additional qualifiers were applied to the MW49-911 result.

Inorganics / Cyanide

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: There were no minor deficiencies identified during the validation process.

DATA QUALITY OBJECTIVES

The following is a summary of the data quality objectives that were evaluated during the data validation process.

Reporting Limits: Reporting limits were met for all analyses with the following exception.

- For VOCs: Reporting limits were met with the exception of necessary dilutions. Both the original and diluted sample results were included.
- For Metals and Cyanide: Reporting limits were met without exception. No dilutions were necessary.

Accuracy

Laboratory Control Sample: Validation of the LCS was performed for inorganic analyses. The LCS for the inorganic analyses were within control limits and analyzed at the correct frequency. An LCS was not required for the VOA analyses.

Surrogates: The surrogate results were within laboratory specified limits without exception.

Matrix Spike / Matrix Spike Duplicate: The MS/MSD results were within laboratory specified limits with the exceptions noted previously.

Precision

Field Duplicates: Field duplicate comparisons were made, resulting in one qualification noted previously. Some other RPDs were greater than 20 but the associated results were close to or below the reporting limit. These other discrepancies were likely due to the greater uncertainty close to the reporting limit.

Laboratory Duplicate Sample: The laboratory duplicate results were within laboratory specified limits without exception.

The overall results were acceptable, indicating that sampling and analytical precision objectives were met for the sampling event.

Completeness

The data package was complete for the requested analyses. No results were considered unusable. The completeness was 100 percent, which meets the completeness objective of 95 percent.

Representativeness:

Trip blanks TB01-11, TB02-11, and TB03-11 had no target analytes detected above the reporting limit, indicating that the representativeness objectives for the sampling event were met.

Field Blanks FB01-11, FB02-11, FB03-11, FB04-11, and FB05-11 had no target analytes detected above the reporting limit, for all analyses, with the exception noted previously, indicating that the representativeness objectives for the sampling event were met.

Comparability:

All data were reported in similar units to facilitate comparison of results within the data packages. Samples arrived at the laboratory at 4°C, which is within the limits of 2-6°C. All holding times were met, with the exception noted previously, indicating that the comparability objectives for the sampling event were met.

As a result of this evaluation, all data within this SDG for wells at American Chemical Service are of known and acceptable quality in relation to the DQOs of this project. Data are considered usable as qualified for the intended purposes. Table 1-1 summarizes the validation and laboratory qualifications for this sampling event.

REFERENCES

Pre-Design Activities Quality Assurance Project Plan, American Chemical Service, Inc. NPL Site, Griffith Indiana (MW, 1995).

National Functional Guidelines for Organic Data Review (USEPA, 1994a).

National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).

ATTACHMENT A

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	VBLKRW	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	VHBLKC5	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	MW14-11	CLP VOA IND	Chloroethane	32	ug/L	UJ	high	Associated Field blank concentration of 14 ug/L (FB04-11 11/10/99)
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	high	CCAL %D 61.6
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	high	CCAL %D 61.6
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	MS/MSD RPD of 12, CL is 11
107	MW44-11	CLP VOA IND	Vinyl Chloride	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Chloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,1-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Trichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,2-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Benzene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Tetrachloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	trans-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	cis-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
122	VBLKBB	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW38-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW08-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	TB01-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW10C-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-911	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW33-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
107	MW54R-911	CLP METALS IND	Lead	1.6	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP METALS IND	Lead	2	ug/L	J	NDT	Detected between MDL and RL
107	MW40-11	CLP METALS IND	Lead	1.8	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP METALS IND	Arsenic	9.7	ug/L	J	NDT	Detected between MDL and RL
122	MW32-11	CLP METALS IND	Lead	2.5	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW-4D-11	CLP METALS IND	Lead	2.4	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP METALS IND	Lead	2.6	ug/L	J	NDT	Detected between MDL and RL
130	MW23-11	CLP METALS IND	Lead	2.1	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	1,1-Dichloroethene	4	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Trichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	trans-1,2-Dichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	cis-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW10C-11	CLP VOA IND	Vinyl Chloride	1	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW19-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Benzene	5	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	NDT	Field Duplicate RPD of 48
107	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW52-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-911	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Chloroethane	9	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	FB05-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	FB04-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW24-11	CLP VOA IND	Benzene	4	ug/L	J	NDT	Detected between MDL and RL
130	MW49-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911DL	CLP VOA IND	Chloroethane	240	ug/L	DJ	NDT	Initial detection exceeded calibration range and subsequent dilution to a DL of 250ug/L resulted in a detection slightly below the RL. Field duplicate RPD acceptable.

Notes:
CCAL-Continuing calibration
CL-Control limit
CLP-Contract laboratory protocol
D-Associated with dilution
DL-Detection limit
HT-Holding time
J - Estimated
MDL - Method detection limit
MS/MSD - Matrix Spike/Matrix Spike Duplicate
NDT-Not determined
RL-Reporting limit
RPD - Relative percent difference
U-Not detected
ug/L - Micrograms per liter

ACS SDG 107, 122, and 130
Field Duplicate Comparisons

SDG 130	MW49-11	MW49-911	RPD	
	ug/L	ug/L		
Arsenic	14.1	13.5	4.35%	
Chloroethane (Duplicate is J flagged)	260	240	8.00%	
Benzene	2400	2200	8.70%	
trans-1,2-Dichloroethene (J flagged)	2	2	0.00%	
SDG 122	**MW09R-11**	**MW09R-911**		
Arsenic	ND	ND	NA	
Lead	ND	ND	NA	
Chloroethane	540	540	0.00%	
Benzene	150	140	6.90%	
	MW19-11	**MW19-911**		
Arsenic	29.3	26	11.93%	
Lead	ND	ND	NA	
Chloroethane	20	20	0.00%	
Benzene(J flagged)	3	4	28.57%	below reporting limit, did not qualify.
SDG 107	**MW45-11**	**MW45-911**		
Arsenic	46.6	47.7	2.33%	
Chloroethane	32	52	47.62%	qualified as estimated "J" with low bias.
Benzene	340	360	5.71%	
trans-1,2-Dichloroethene	2	2	0.00%	
	MW54R-11	**MW54R-911**		
Arsenic	ND	ND	NA	
Lead	ND	1.6J	NA	
Benzene(J flagged)	1	2	66.67%	below reporting limit, did not qualify.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1S-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967696

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067696A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW1S-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967696

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067696a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-45-6	METHANE, CHLORODIFLUORO-	3.53	11	NJ
2. 60-29-7	ETHER	7.81	21	NJ
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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

M1S-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967696

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M4S-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967682

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067682B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/18/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	1100	E
75-35-4	1,1-Dichloroethene	50	U
71-55-6	1,1,1-Trichloroethane	50	U
79-01-6	Trichloroethene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	130	
127-18-4	Tetrachloroethene	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
156-59-2	cis-1,2-Dichloroethene	50	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M4S-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967682

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067682b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/18/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.0

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-20-3	DIISOPROPYL ETHER	10.94	27	NJ
2. 109-99-9	FURAN, TETRAHYDRO-	12.17	138	NJ
3. 111-43-3	DI-N-PROPYL ETHER	13.67	26	NJ
4. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	21.79	53	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M4S-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967682

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067682A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 8.3

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	83	U
75-00-3	Chloroethane	1200	D
75-35-4	1,1-Dichloroethene	83	U
71-55-6	1,1,1-Trichloroethane	83	U
79-01-6	Trichloroethene	83	U
79-00-5	1,1,2-Trichloroethane	83	U
71-43-2	Benzene	120	D
127-18-4	Tetrachloroethene	83	U
156-60-5	trans-1,2-Dichloroethene	83	U
156-59-2	cis-1,2-Dichloroethene	83	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M4S-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967682

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067682a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 8.3

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.83	62	NJD
2. 109-99-9	FURAN, TETRAHYDRO-	12.19	156	NJD
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

M4S-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967682

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW06-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967681

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067681B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/18/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	2	J
75-00-3	Chloroethane	300	E
75-35-4	1,1-Dichloroethene	4	J
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	5	J
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	340	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	5	J
156-59-2	cis-1,2-Dichloroethene	2	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW06-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967681

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067681b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/18/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 8

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 593-70-4	METHANE, CHLOROFLUORO-	4.54	9	NJ
2. 590-19-2	1,2-BUTADIENE	7.34	12	NJ
3. 60-29-7	ETHER	7.83	29	NJ
4. 108-20-3	DIISOPROPYL ETHER	10.96	5	NJ
5. 109-99-9	FURAN, TETRAHYDRO-	12.18	8	NJ
6. 111-43-3	DI-N-PROPYL ETHER	13.69	6	NJ
7. 624-42-0	3-HEPTANONE, 6-METHYL-	20.19	8	NJ
8. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	21.80	103	NJ
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MEMORANDUM

MONTGOMERY WATSON

To: Chad Smith

From: Anne Koob, MW **Job No.:** 1252042.221601

Subject: Data Validation for American Chemical Service (ACS). Griffith, Indiana. **SDG:** 00107,00130, 00122

Date: January 14, 2000

INTRODUCTION

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in November of 1999.

Forty-eight water samples and eight field quality assurance samples were analyzed by CompuChem Laboratories, Cary, North Carolina for the following parameters:

- SDG 130 VOA IND by CLP – OLM 3.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, FB-05-11, and TB-03-11)

- SDG 130 Cyanide by CLP – ILM04.0 (sample PWD-10)

- SDG 130 Metals by CLP – ILM04.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, and FB-05-11)

- SDG 107 VOA IND by CLP – OLM 3.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11, MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 107 Metals by CLP – ILM04.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11, MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 122 VOA IND by CLP – OLM 3.0 (samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11,

FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11, and TB02-11)

- SDG 122 Metals by CLP – ILM04.0 (samples MW38-11, MW08-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11, FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11)

Data validation was conducted in accordance with procedures specified in *Pre-Design Activities Quality Assurance Project Plan (MW, 1995), National Functional Guidelines for Organic Data Review (USEPA, 1994a), and National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).*

The following field quality control samples were collected during the November 1999 sampling round:

- Five field blanks: FB01-11, FB02-11, FB03-11, FB04-11, FB05-11; and
- Three trip blanks: TB01-11, TB02-11, and TB03-11.

This memorandum contains a narrative summarizing the data quality objectives specified in the work plan, and provides a table of qualified data (Table 1-1) and supporting validation documentation (Attachment A).

SUMMARY

This section describes the quality control parameters reviewed during validation, summarizes the data quality objectives as a result of the validation and provides a summary of the deficiencies and qualification applied. The following paragraphs describe deficiencies that were identified which resulted in qualification of the sample results. Each analysis is separated into sections for clarity.

Volatile Organic Componds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Field Blanks

- The SDG 130 sample FB04-11 had a Chloroethane result of 14 ug/L, resulting in the qualification of all associated positive results of less than five times the blank result, or 70ug/L. The sample MW14-11 Chloroethane result of 32 ug/L fell into this category and was qualified nondetect, "UJ". Associated Chloroethane results greater than 70ug/L were not qualified.

Continuing Calibration

- The SDG 00130 continuing calibration (run on 11/27/99 at 1250) had a Vinyl Chloride %D of 29.4%, which is outside the control limit of 25%. Method blanks VBLKRW and VHBLKC5 were associated with this continuing calibration and the associated practical quantitation limits (PQL's) were qualified as estimated "UJ". The MS/MSD of sample MW31-11 was also associated with this continuing calibration but not qualified.

- The SDG 00107 continuing calibration (run on 11/19/99 at 1927) had a Chloroethane %D of 61.6%, which is outside the control limit of 25%. Samples MW15-11 and MW45-11 were associated with this continuing calibration, and had positive results. The Chloroethane results for these samples were qualified as estimated "J", with a high bias.

- The SDG 00122 continuing calibration (run on 11/15/99 at 2030) had a 1,1-Dichloroethene %D of 26.1%, which is outside the control limit of 25%. Method blank VBLKBB and samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, and MW33-11 were associated with this continuing calibration and their practical quantitation limits (PQL's) were qualified as estimated "UJ", with a low bias.

Matrix Spike/Matrix Spike Duplicate

- SDG 107 sample MW46-11 has a Benzene MS/MSD relative percent difference (RPD) of 12, which is greater than the control limit of 11. The Benzene result of 1ug/L was qualified as estimated "J" due to this nonconformance.

Field Duplicate Comparison

- SDG 107 sample MW45-11 had a Chloroethane result of 32ug/L, while its field duplicate MW45-911 had a Chloroethane result of 52ug/L, resulting in an RPD of 48. The MW45-11 result was qualified as estimated "J", with a low bias.

Holding Times

- SDG 107 sample MW44-11 was initially analyzed within holding time but was reanalyzed as a part of the laboratory's internal QC process. The analysis of sample MW44-11RE showed no contamination, and as a result the original analysis within holding time should be used. The rerun was performed one day outside of the fourteen day holding time, and the PQLs associated with sample MW44-11RE were qualified as estimated "J", with a low bias.

Sample Dilution

- SDG 130 field duplicate sample MW49-911 had an initial Chloroethane concentration of 300 ug/L, which exceeded the calibration range. This sample was then diluted and MW49-911DL was run with a reporting limit of 250 ug/L. The newly quantitated Chloroethane concentration was 240 ug/L, resulting in a "J" flag due to detection below the reporting limit. The associated primary sample, MW49-11, had a post-dilution Chloroethane concentration of 260 ug/L, resulting in an acceptable field duplicate RPD. No additional qualifiers were applied to the MW49-911 result.

Inorganics / Cyanide

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: There were no minor deficiencies identified during the validation process.

DATA QUALITY OBJECTIVES

The following is a summary of the data quality objectives that were evaluated during the data validation process.

Reporting Limits: Reporting limits were met for all analyses with the following exception.

- For VOCs: Reporting limits were met with the exception of necessary dilutions. Both the original and diluted sample results were included.
- For Metals and Cyanide: Reporting limits were met without exception. No dilutions were necessary.

Accuracy

Laboratory Control Sample: Validation of the LCS was performed for inorganic analyses. The LCS for the inorganic analyses were within control limits and analyzed at the correct frequency. An LCS was not required for the VOA analyses.

Surrogates: The surrogate results were within laboratory specified limits without exception.

Matrix Spike / Matrix Spike Duplicate: The MS/MSD results were within laboratory specified limits with the exceptions noted previously.

Precision

Field Duplicates: Field duplicate comparisons were made, resulting in one qualification noted previously. Some other RPDs were greater than 20 but the associated results were close to or below the reporting limit. These other discrepancies were likely due to the greater uncertainty close to the reporting limit.

Laboratory Duplicate Sample: The laboratory duplicate results were within laboratory specified limits without exception.

The overall results were acceptable, indicating that sampling and analytical precision objectives were met for the sampling event.

Completeness

The data package was complete for the requested analyses. No results were considered unusable. The completeness was 100 percent, which meets the completeness objective of 95 percent.

Representativeness:

Trip blanks TB01-11, TB02-11, and TB03-11 had no target analytes detected above the reporting limit, indicating that the representativeness objectives for the sampling event were met.

Field Blanks FB01-11, FB02-11, FB03-11, FB04-11, and FB05-11 had no target analytes detected above the reporting limit, for all analyses, with the exception noted previously, indicating that the representativeness objectives for the sampling event were met.

Comparability:

All data were reported in similar units to facilitate comparison of results within the data packages. Samples arrived at the laboratory at 4°C, which is within the limits of 2-6°C. All holding times were met, with the exception noted previously, indicating that the comparability objectives for the sampling event were met.

As a result of this evaluation, all data within this SDG for wells at American Chemical Service are of known and acceptable quality in relation to the DQOs of this project. Data are considered usable as qualified for the intended purposes. Table 1-1 summarizes the validation and laboratory qualifications for this sampling event.

REFERENCES

Pre-Design Activities Quality Assurance Project Plan, American Chemical Service, Inc. NPL Site, Griffith Indiana (MW, 1995).

National Functional Guidelines for Organic Data Review (USEPA, 1994a).

National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).

ATTACHMENT A

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	VBLKRW	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	VHBLKC5	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	MW14-11	CLP VOA IND	Chloroethane	32	ug/L	UJ	high	Associated Field blank concentration of 14 ug/L (FB04-11 11/10/99)
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	high	CCAL %D 61.6
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	high	CCAL %D 61.6
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	MS/MSD RPD of 12, CL is 11
107	MW44-11	CLP VOA IND	Vinyl Chloride	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Chloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,1-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Trichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,2-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Benzene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Tetrachloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	trans-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	cis-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
122	VBLKBB	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW38-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW08-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	TB01-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW10C-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-911	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW33-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
107	MW54R-911	CLP METALS IND	Lead	1.6	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP METALS IND	Lead	2	ug/L	J	NDT	Detected between MDL and RL
107	MW40-11	CLP METALS IND	Lead	1.8	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP METALS IND	Arsenic	9.7	ug/L	J	NDT	Detected between MDL and RL
122	MW32-11	CLP METALS IND	Lead	2.5	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW-4D-11	CLP METALS IND	Lead	2.4	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP METALS IND	Lead	2.6	ug/L	J	NDT	Detected between MDL and RL
130	MW23-11	CLP METALS IND	Lead	2.1	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	1,1-Dichloroethene	4	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Trichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	trans-1,2-Dichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	cis-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW10C-11	CLP VOA IND	Vinyl Chloride	1	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW19-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Benzene	5	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	NDT	Field Duplicate RPD of 48
107	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW52-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-911	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Chloroethane	9	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	FB05-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	FB04-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW24-11	CLP VOA IND	Benzene	4	ug/L	J	NDT	Detected between MDL and RL
130	MW49-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911DL	CLP VOA IND	Chloroethane	240	ug/L	DJ	NDT	Initial detection exceeded calibration range and subsequent dilution to a DL of 250ug/L resulted in a detection slightly below the RL. Field duplicate RPD acceptable.

Notes:
CCAL-Continuing calibration
CL-Control limit
CLP-Contract laboratory protocol
D-Associated with dilution
DL-Detection limit
HT-Holding time
J - Estimated
MDL - Method detection limit
MS/MSD - Matrix Spike/Matrix Spike Duplicate
NDT-Not determined
RL-Reporting limit
RPD - Relative percent difference
U-Not detected
ug/L - Micrograms per liter

ACS SDG 107, 122, and 130
Field Duplicate Comparisons

SDG 130	MW49-11	MW49-911	RPD	
	ug/L	ug/L		
Arsenic	14.1	13.5	4.35%	
Chloroethane (Duplicate is J flagged)	260	240	8.00%	
Benzene	2400	2200	8.70%	
trans-1,2-Dichloroethene (J flagged)	2	2	0.00%	
SDG 122	**MW09R-11**	**MW09R-911**		
Arsenic	ND	ND	NA	
Lead	ND	ND	NA	
Chloroethane	540	540	0.00%	
Benzene	150	140	6.90%	
	MW19-11	**MW19-911**		
Arsenic	29.3	26	11.93%	
Lead	ND	ND	NA	
Chloroethane	20	20	0.00%	
Benzene(J flagged)	3	4	28.57%	below reporting limit, did not qualify.
SDG 107	**MW45-11**	**MW45-911**		
Arsenic	46.6	47.7	2.33%	
Chloroethane	32	52	47.62%	qualified as estimated "J" with low bias.
Benzene	340	360	5.71%	
trans-1,2-Dichloroethene	2	2	0.00%	
	MW54R-11	**MW54R-911**		
Arsenic	ND	ND	NA	
Lead	ND	1.6J	NA	
Benzene(J flagged)	1	2	66.67%	below reporting limit, did not qualify.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW06-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967681

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067681A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	50	U
75-00-3	Chloroethane	310	D
75-35-4	1,1-Dichloroethene	50	U
71-55-6	1,1,1-Trichloroethane	50	U
79-01-6	Trichloroethene	50	U
79-00-5	1,1,2-Trichloroethane	50	U
71-43-2	Benzene	480	D
127-18-4	Tetrachloroethene	50	U
156-60-5	trans-1,2-Dichloroethene	50	U
156-59-2	cis-1,2-Dichloroethene	50	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW06-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967681

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067681a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 5.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.84	32	NJD
2. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	21.80	138	NJD
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW06-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967681

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	66.9			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW11-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967683

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067683B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW11-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967683

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067683b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW11-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967683

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	9.7	B		P
7439-92-1	Lead	4.5			P

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW12-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967148

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067148A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW12-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967148

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067148a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-60-1	PROPANE, 2,2'-OXYBIS[1-CHLOR	21.75	20	NJ
2.				
3.				
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW12-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967148

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	6.0			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW13-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967664

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067664B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW13-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967664

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067664b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.84	8	NJ
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW13-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967664

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW14-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967663

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067663B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	2	J
75-00-3	Chloroethane	32	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW14-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967663

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067663b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 629-78-7	HEPTADECANE	17.75	6	NJ
2. 629-59-4	TETRADECANE	21.35	7	NJ
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW14-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967663

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	2.6	B		P
	Cyanide				NR

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW15-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967149

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067149A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	1	J
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	5	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW15-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967149

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067149a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW15-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967149

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	62.8			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW19-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967695

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067695A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	20	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW19-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967695

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067695a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-45-6	METHANE, CHLORODIFLUORO-	3.52	6	NJ
2. 60-29-7	ETHER	7.84	6	NJ
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW19-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967695

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	29.3			P
7439-92-1	Lead	1.5	U		P

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: PINK Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW19-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967689

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067689B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	20	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	4	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW19-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967689

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067689b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.81	51	NJ
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW19-911

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967689

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	26.0			P
7439-92-1	Lead	1.5	U		P

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: PINK Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW37-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967661

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067661B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW37-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967661

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067661b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW37-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967661

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW38-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967154

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067154B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW38-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967154

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067154b54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW38-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967154

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW39-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967152

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067152A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	2	J
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW39-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967152

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067152a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW39-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967152

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW40-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967648

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067648B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW40-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967648

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067648b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW40-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967648

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.8	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW42-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967144

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067144A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW42-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967144

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067144a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW42-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967144

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW43-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967143

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067143A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW43-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967143

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067143a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW43-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967143

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	17.6			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW44-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967142

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067142A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW44-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967142

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067142a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW44-11RE

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967142

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: C2R67142A55

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW44-11RE

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967142

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: c2r67142a55

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW44-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967142

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	10.3			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW45-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967140

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067140B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	32	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	280	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	2	J
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW45-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967140

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067140b54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-87-2	CYCLOHEXANE, METHYL-	14.73	8	NJ
2. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	18.11	18	NJ
3. 103-65-1	BENZENE, PROPYL-	20.24	17	NJ
4.	TRIMETHYLBENZENE	20.79	129	J
5.	TRIMETHYLBENZENE	21.22	45	J
6. 496-11-7	INDANE	21.44	23	NJ
7.	ETHYLDIMETHYLBENZENE	21.83	8	J
8.	ETHYLDIMETHYLBENZENE	21.95	8	J
9.	SUBSTITUTED BENZENE	22.09	6	J
10.	TETRAMETHYLBENZENE	22.41	7	J
11.	TETRAMETHYLBENZENE	22.48	11	J
12. 874-35-1	1H-INDENE, 2,3-DIHYDRO-5-MET	22.83	6	NJ
13.	SUBSTITUTED BENZENE	23.04	15	J
14.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW45-11DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967140

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: C2R67140A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.3

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	48	D
75-35-4	1,1-Dichloroethene	23	U
71-55-6	1,1,1-Trichloroethane	23	U
79-01-6	Trichloroethene	23	U
79-00-5	1,1,2-Trichloroethane	23	U
71-43-2	Benzene	340	D
127-18-4	Tetrachloroethene	23	U
156-60-5	trans-1,2-Dichloroethene	23	U
156-59-2	cis-1,2-Dichloroethene	23	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW45-11DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967140

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: c2r67140a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.3

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

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	17.73	79	JD
2. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	18.13	20	NJD
3. 98-82-8	BENZENE, (1-METHYLETHYL)-	19.84	17	NJD
4. 103-65-1	BENZENE, PROPYL-	20.25	17	NJD
5.	TRIMETHYLBENZENE	20.79	182	JD
6.	TRIMETHYLBENZENE	21.23	62	JD
7.	UNKNOWN ALKANE	21.35	38	JD
8. 496-11-7	INDANE	21.44	36	NJD
9.	UNKNOWN ALKANE	21.69	76	JD
10.	ETHYLDIMETHYLETHYLBENZENE	21.93	21	JD
11.	TETRAMETHYLBENZENE	22.41	23	JD
12.	TETRAMETHYLBENZENE	22.49	29	JD
13.	UNKNOWN ALKANE	23.00	101	JD
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW45-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967140

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	46.6			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW45-911

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967201

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067201A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	52	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	300	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	2	J
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW45-911

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967201

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067201a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 14

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-87-2	CYCLOHEXANE, METHYL-	14.74	7	NJ
2. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	18.14	17	NJ
3. 98-82-8	BENZENE, (1-METHYLETHYL)-	19.85	17	NJ
4. 103-65-1	BENZENE, PROPYL-	20.26	15	NJ
5.	TRIMETHYLBENZENE	20.81	127	J
6.	TRIMETHYLBENZENE	21.24	44	J
7. 496-11-7	INDANE	21.46	20	NJ
8.	UNKNOWN ALKANE	21.71	14	J
9.	ETHYLDIMETHYLBENZENE	21.85	6	J
10.	ETHYLDIMETHYLBENZENE	21.96	8	J
11. 27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	22.11	7	NJ
12.	TETRAMETHYLBENZENE	22.42	8	J
13.	TETRAMETHYLBENZENE	22.49	13	J
14.	UNKNOWN ALKANE	23.01	32	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW45-911DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967201

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067201A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	52	D
75-35-4	1,1-Dichloroethene	25	U
71-55-6	1,1,1-Trichloroethane	25	U
79-01-6	Trichloroethene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	360	D
127-18-4	Tetrachloroethene	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
156-59-2	cis-1,2-Dichloroethene	25	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW45-911DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967201

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067201a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

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

Number TICs found: 14

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 100-40-3	CYCLOHEXENE, 4-ETHENYL-	18.12	20	NJD
2. 98-82-8	BENZENE, (1-METHYLETHYL)-	19.84	23	NJD
3. 103-65-1	BENZENE, PROPYL-	20.25	21	NJD
4.	UNKNOWN ALKANE	20.48	21	JD
5.	TRIMETHYLBENZENE	20.79	205	JD
6.	TRIMETHYLBENZENE	21.23	82	JD
7.	SUBSTITUTED BENZENE	21.44	27	JD
8.	UNKNOWN ALKANE	21.69	106	JD
9.	METHYLMETHYLETHYLBENZENE	21.93	21	JD
10.	SUBSTITUTED BENZENE	22.08	18	JD
11.	UNKNOWN	22.41	32	JD
12.	TETRAMETHYLBENZENE	22.49	34	JD
13.	UNKNOWN ALKANE	22.61	16	JD
14.	UNKNOWN ALKANE	23.00	123	JD
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW45-911

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967201

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	47.7			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW46-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967132

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067132B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW46-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967132

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067132b54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-20-3	DIISOPROPYL ETHER	10.96	8	NJ
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW46-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967132

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Duplicate (MW46-11D)

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW46-11MS

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967133

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067133B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	45	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	49	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	53	
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	50	
108-90-7	Chlorobenzene	50	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW46-11MSD

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967134

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067134B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	41	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	45	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	47	
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	46	
108-90-7	Chlorobenzene	47	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW47-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967146

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067146A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW47-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967146

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067146a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW47-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967146

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	4.3			P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW48-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967649

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067649A55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	140	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1000	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW48-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967649

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067649a55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW48-11DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967649

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067649B55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	250	U
75-00-3	Chloroethane	150	DJ
75-35-4	1,1-Dichloroethene	250	U
71-55-6	1,1,1-Trichloroethane	250	U
79-01-6	Trichloroethene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
71-43-2	Benzene	2400	D
127-18-4	Tetrachloroethene	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
156-59-2	cis-1,2-Dichloroethene	250	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW48-11DL

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967649

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067649b55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW48-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967649

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW49-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967894

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067894A55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	280	E
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1100	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	2	J
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW49-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967894

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067894a55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 352-93-2	DIETHYL SULFIDE	15.05	9	NJ
2. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	22.62	17	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW49-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967894

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067894B55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	250	U
75-00-3	Chloroethane	260	D
75-35-4	1,1-Dichloroethene	250	U
71-55-6	1,1,1-Trichloroethane	250	U
79-01-6	Trichloroethene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
71-43-2	Benzene	2400	D
127-18-4	Tetrachloroethene	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
156-59-2	cis-1,2-Dichloroethene	250	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW49-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967894

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067894b55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW49-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967894

Level (low/med): LOW Date Received: 11/13/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	14.1			P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW49-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967893

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067893A55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	300	E
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1000	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	2	J
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW49-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967893

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067893a55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	14.35	6	J
2. 352-93-2	DIETHYL SULFIDE	15.06	9	NJ
3.				
4.				
5.				
6.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW49-911DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967893

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067893B55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	250	U
75-00-3	Chloroethane	240	DJ
75-35-4	1,1-Dichloroethene	250	U
71-55-6	1,1,1-Trichloroethane	250	U
79-01-6	Trichloroethene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
71-43-2	Benzene	2200	D
127-18-4	Tetrachloroethene	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
156-59-2	cis-1,2-Dichloroethene	250	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW49-911DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967893

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067893b55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 25.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW49-911

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967893

Level (low/med): LOW Date Received: 11/13/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	13.5			P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB01-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967141

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067141A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB01-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967141

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067141a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB01-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967141

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB02-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967684

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067684B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB02-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967684

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067684b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB02-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967684

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB03-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967687

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067687B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB03-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967687

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067687b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB03-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967687

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB04-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967667

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067667B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	14	
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB04-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967667

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067667b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB04-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967667

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-05-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967896

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067896A55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-05-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967896

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067896a55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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U.S. EPA - CLP

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

FB-05-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967896

Level (low/med): LOW Date Received: 11/13/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB01-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967163

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067163B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB01-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967163

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067163b54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	21.38	6	J
2.				
3.				
4.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB02-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967704

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067704A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB02-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967704

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067704a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-09-2	METHYLENE CHLORIDE	9.21	6	NJ
2.				
3.				
4.				
5.				
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-03-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967897

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067897A55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-03-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967897

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067897a55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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APPENDIX D

VALIDATION NARRATIVE AND LABORATORY REPORTS FROM LOWER AQUIFER

MEMORANDUM

MONTGOMERY WATSON

To: Chad Smith

From: Anne Koob, MW

Job No.: 1252042.221601

Subject: Data Validation for American Chemical Service (ACS). Griffith, Indiana.

SDG: 00107,00130, 00122

Date: January 14, 2000

INTRODUCTION

The following text is based on the validation of water samples collected at American Chemical Service, Inc. in November of 1999.

Forty-eight water samples and eight field quality assurance samples were analyzed by CompuChem Laboratories, Cary, North Carolina for the following parameters:

- SDG 130 VOA IND by CLP – OLM 3.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, FB-05-11, and TB-03-11)

- SDG 130 Cyanide by CLP – ILM04.0 (sample PWD-10)

- SDG 130 Metals by CLP – ILM04.0 (samples MW29-11, MW23-11, MW37-11, MW24-11, MW14-11, MW13-11, MW07-11, MW34-11, FB04-11, MW31-11, MW49-911, MW49-11, ATMW-4D-11, and FB-05-11)

- SDG 107 VOA IND by CLP – OLM 3.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11; MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 107 Metals by CLP – ILM04.0 (samples MW46-11, MW45-11, FB01-11, MW44-11, MW43-11, MW42-11, MW50-11, MW47-11, MW28-11, MW12-11, MW15-11, MW54R-11, MW54R-911, MW39-11, MW55-11, MW45-911, MW40-11, MW48-11, MW52-11, and MW53-11)

- SDG 122 VOA IND by CLP – OLM 3.0 (samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11,

FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11, and TB02-11)

- SDG 122 Metals by CLP – ILM04.0 (samples MW38-11, MW08-11, MW10C-11, MW09R-911, MW09R-11, MW33-11, MW06-11, MW4S-11, MW11-11, FB02-11, MW32-11, MW4D-11, FB03-11, MW51-11, MW19-911, MW19-11, M1S-11, MW30-11)

Data validation was conducted in accordance with procedures specified in *Pre-Design Activities Quality Assurance Project Plan (MW, 1995), National Functional Guidelines for Organic Data Review (USEPA, 1994a), and National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).*

The following field quality control samples were collected during the November 1999 sampling round:

- Five field blanks: FB01-11, FB02-11, FB03-11, FB04-11, FB05-11; and
- Three trip blanks: TB01-11, TB02-11, and TB03-11.

This memorandum contains a narrative summarizing the data quality objectives specified in the work plan, and provides a table of qualified data (Table 1-1) and supporting validation documentation (Attachment A).

SUMMARY

This section describes the quality control parameters reviewed during validation, summarizes the data quality objectives as a result of the validation and provides a summary of the deficiencies and qualification applied. The following paragraphs describe deficiencies that were identified which resulted in qualification of the sample results. Each analysis is separated into sections for clarity.

Volatile Organic Componds

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: The following paragraphs describe the minor deficiencies that were identified during the validation process.

Field Blanks

- The SDG 130 sample FB04-11 had a Chloroethane result of 14 ug/L, resulting in the qualification of all associated positive results of less than five times the blank result, or 70ug/L. The sample MW14-11 Chloroethane result of 32 ug/L fell into this category and was qualified nondetect, "UJ". Associated Chloroethane results greater than 70ug/L were not qualified.

Continuing Calibration

- The SDG 00130 continuing calibration (run on 11/27/99 at 1250) had a Vinyl Chloride %D of 29.4%, which is outside the control limit of 25%. Method blanks VBLKRW and VHBLKC5 were associated with this continuing calibration and the associated practical quantitation limits (PQL's) were qualified as estimated "UJ". The MS/MSD of sample MW31-11 was also associated with this continuing calibration but not qualified.

- The SDG 00107 continuing calibration (run on 11/19/99 at 1927) had a Chloroethane %D of 61.6%, which is outside the control limit of 25%. Samples MW15-11 and MW45-11 were associated with this continuing calibration, and had positive results. The Chloroethane results for these samples were qualified as estimated "J", with a high bias.

- The SDG 00122 continuing calibration (run on 11/15/99 at 2030) had a 1,1-Dichloroethene %D of 26.1%, which is outside the control limit of 25%. Method blank VBLKBB and samples MW38-11, MW08-11, TB01-11, MW10C-11, MW09R-911, MW09R-11, and MW33-11 were associated with this continuing calibration and their practical quantitation limits (PQL's) were qualified as estimated "UJ", with a low bias.

Matrix Spike/Matrix Spike Duplicate

- SDG 107 sample MW46-11 has a Benzene MS/MSD relative percent difference (RPD) of 12, which is greater than the control limit of 11. The Benzene result of 1ug/L was qualified as estimated "J" due to this nonconformance.

Field Duplicate Comparison

- SDG 107 sample MW45-11 had a Chloroethane result of 32ug/L, while its field duplicate MW45-911 had a Chloroethane result of 52ug/L, resulting in an RPD of 48. The MW45-11 result was qualified as estimated "J", with a low bias.

Holding Times

- SDG 107 sample MW44-11 was initially analyzed within holding time but was reanalyzed as a part of the laboratory's internal QC process. The analysis of sample MW44-11RE showed no contamination, and as a result the original analysis within holding time should be used. The rerun was performed one day outside of the fourteen day holding time, and the PQLs associated with sample MW44-11RE were qualified as estimated "J", with a low bias.

Sample Dilution

- SDG 130 field duplicate sample MW49-911 had an initial Chloroethane concentration of 300 ug/L, which exceeded the calibration range. This sample was then diluted and MW49-911DL was run with a reporting limit of 250 ug/L. The newly quantitated Chloroethane concentration was 240 ug/L, resulting in a "J" flag due to detection below the reporting limit. The associated primary sample, MW49-11, had a post-dilution Chloroethane concentration of 260 ug/L, resulting in an acceptable field duplicate RPD. No additional qualifiers were applied to the MW49-911 result.

Inorganics / Cyanide

Major Deficiencies: There were no major deficiencies identified during the validation process.

Minor Deficiencies: There were no minor deficiencies identified during the validation process.

DATA QUALITY OBJECTIVES

The following is a summary of the data quality objectives that were evaluated during the data validation process.

Reporting Limits: Reporting limits were met for all analyses with the following exception.

- For VOCs: Reporting limits were met with the exception of necessary dilutions. Both the original and diluted sample results were included.
- For Metals and Cyanide: Reporting limits were met without exception. No dilutions were necessary.

Accuracy

Laboratory Control Sample: Validation of the LCS was performed for inorganic analyses. The LCS for the inorganic analyses were within control limits and analyzed at the correct frequency. An LCS was not required for the VOA analyses.

Surrogates: The surrogate results were within laboratory specified limits without exception.

Matrix Spike / Matrix Spike Duplicate: The MS/MSD results were within laboratory specified limits with the exceptions noted previously.

Precision

Field Duplicates: Field duplicate comparisons were made, resulting in one qualification noted previously. Some other RPDs were greater than 20 but the associated results were close to or below the reporting limit. These other discrepancies were likely due to the greater uncertainty close to the reporting limit.

Laboratory Duplicate Sample: The laboratory duplicate results were within laboratory specified limits without exception.

The overall results were acceptable, indicating that sampling and analytical precision objectives were met for the sampling event.

Completeness

The data package was complete for the requested analyses. No results were considered unusable. The completeness was 100 percent, which meets the completeness objective of 95 percent.

Representativeness:

Trip blanks TB01-11, TB02-11, and TB03-11 had no target analytes detected above the reporting limit, indicating that the representativeness objectives for the sampling event were met.

Field Blanks FB01-11, FB02-11, FB03-11, FB04-11, and FB05-11 had no target analytes detected above the reporting limit, for all analyses, with the exception noted previously, indicating that the representativeness objectives for the sampling event were met.

Comparability:

All data were reported in similar units to facilitate comparison of results within the data packages. Samples arrived at the laboratory at 4°C, which is within the limits of 2-6°C. All holding times were met, with the exception noted previously, indicating that the comparability objectives for the sampling event were met.

As a result of this evaluation, all data within this SDG for wells at American Chemical Service are of known and acceptable quality in relation to the DQOs of this project. Data are considered usable as qualified for the intended purposes. Table 1-1 summarizes the validation and laboratory qualifications for this sampling event.

REFERENCES

Pre-Design Activities Quality Assurance Project Plan, American Chemical Service, Inc. NPL Site, Griffith Indiana (MW, 1995).

National Functional Guidelines for Organic Data Review (USEPA, 1994a).

National Functional Guidelines for Inorganic Data Review (USEPA, 1994b).

ATTACHMENT A

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	VBLKRW	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	VHBLKC5	CLP VOA IND	Vinyl Chloride	<10	ug/L	UJ	low	CCAL %D 29.4
130	MW14-11	CLP VOA IND	Chloroethane	32	ug/L	UJ	high	Associated Field blank concentration of 14 ug/L (FB04-11 11/10/99)
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	high	CCAL %D 61.6
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	high	CCAL %D 61.6
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	MS/MSD RPD of 12, CL is 11
107	MW44-11	CLP VOA IND	Vinyl Chloride	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Chloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,1-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Trichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	1,1,2-Trichloroethane	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Benzene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	Tetrachloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	trans-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
107	MW44-11	CLP VOA IND	cis-1,2-Dichloroethene	<10	ug/L	J	low	14 day HT exeeded by 1 day
122	VBLKBB	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW38-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW08-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	TB01-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW10C-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-911	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW09R-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
122	MW33-11	CLP VOA IND	1,1-Dichloroethene	<10	ug/L	J	low	CCAL %D 26.1
107	MW54R-911	CLP METALS IND	Lead	1.6	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP METALS IND	Lead	2	ug/L	J	NDT	Detected between MDL and RL
107	MW40-11	CLP METALS IND	Lead	1.8	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP METALS IND	Arsenic	9.7	ug/L	J	NDT	Detected between MDL and RL
122	MW32-11	CLP METALS IND	Lead	2.5	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW-4D-11	CLP METALS IND	Lead	2.4	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP METALS IND	Lead	2.6	ug/L	J	NDT	Detected between MDL and RL
130	MW23-11	CLP METALS IND	Lead	2.1	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	1,1-Dichloroethene	4	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	Trichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	trans-1,2-Dichloroethene	5	ug/L	J	NDT	Detected between MDL and RL
122	MW06-11	CLP VOA IND	cis-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW10C-11	CLP VOA IND	Vinyl Chloride	1	ug/L	J	NDT	Detected between MDL and RL
122	MW11-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
122	MW19-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
122	MW30-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Chloroethane	1	ug/L	J	NDT	Detected between MDL and RL
107	MW15-11	CLP VOA IND	Benzene	5	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW39-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW45-11	CLP VOA IND	Chloroethane	32	ug/L	J	NDT	Field Duplicate RPD of 48
107	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
107	MW46-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW52-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW53-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-11	CLP VOA IND	Benzene	1	ug/L	J	NDT	Detected between MDL and RL
107	MW54R-911	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Chloroethane	9	ug/L	J	NDT	Detected between MDL and RL
130	ATMW-4D-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	FB05-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL
130	FB04-11	CLP VOA IND	Benzene	3	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Vinyl Chloride	2	ug/L	J	NDT	Detected between MDL and RL
130	MW14-11	CLP VOA IND	Benzene	2	ug/L	J	NDT	Detected between MDL and RL

Table 1-1
Table of Qualified Data
ACS Quarterly Monitoring
SDGs 107, 122, and 130

ID	Field ID	Analysis	Analyte	result	unit	flag	bias	comment
130	MW24-11	CLP VOA IND	Benzene	4	ug/L	J	NDT	Detected between MDL and RL
130	MW49-11	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911	CLP VOA IND	trans-1,2-Dichloroethene	2	ug/L	J	NDT	Detected between MDL and RL
130	MW49-911DL	CLP VOA IND	Chloroethane	240	ug/L	DJ	NDT	Initial detection exceeded calibration range and subsequent dilution to a DL of 250ug/L resulted in a detection slightly below the RL. Field duplicate RPD acceptable.

Notes:
CCAL-Continuing calibration
CL-Control limit
CLP-Contract laboratory protocol
D-Associated with dilution
DL-Detection limit
HT-Holding time
J - Estimated
MDL - Method detection limit
MS/MSD - Matrix Spike/Matrix Spike Duplicate
NDT-Not determined
RL-Reporting limit
RPD - Relative percent difference
U-Not detected
ug/L - Micrograms per liter

ACS SDG 107, 122, and 130
Field Duplicate Comparisons

SDG 130	MW49-11	MW49-911	RPD	
	ug/L	ug/L		
Arsenic	14.1	13.5	4.35%	
Chloroethane (Duplicate is J flagged)	260	240	8.00%	
Benzene	2400	2200	8.70%	
trans-1,2-Dichloroethene (J flagged)	2	2	0.00%	
SDG 122	**MW09R-11**	**MW09R-911**		
Arsenic	ND	ND	NA	
Lead	ND	ND	NA	
Chloroethane	540	540	0.00%	
Benzene	150	140	6.90%	
	MW19-11	**MW19-911**		
Arsenic	29.3	26	11.93%	
Lead	ND	ND	NA	
Chloroethane	20	20	0.00%	
Benzene(J flagged)	3	4	28.57%	below reporting limit, did not qualify.
SDG 107	**MW45-11**	**MW45-911**		
Arsenic	46.6	47.7	2.33%	
Chloroethane	32	52	47.62%	qualified as estimated "J" with low bias.
Benzene	340	360	5.71%	
trans-1,2-Dichloroethene	2	2	0.00%	
	MW54R-11	**MW54R-911**		
Arsenic	ND	ND	NA	
Lead	ND	1.6J	NA	
Benzene(J flagged)	1	2	66.67%	below reporting limit, did not qualify.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4D-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967686

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067686B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW4D-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967686

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067686b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	LABORATORY ARTIFACT	20.26	6	J
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW4D-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967686

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW07-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967665

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067665B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW07-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967665

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067665b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW07-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967665

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW08-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967162

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067162B54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW08-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967162

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067162b54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW08-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967162

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Duplicate (MW08-11D)

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW08-11MS

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967155

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067155A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	46	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	49	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	51	
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	49	
108-90-7	Chlorobenzene	50	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW08-11MSD

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967156

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067156A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	41	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	46	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	47	
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	46	
108-90-7	Chlorobenzene	47	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW09R-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967679

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067679B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	500	E
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	150	
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW09R-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967679

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067679b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108-20-3	DIISOPROPYL ETHER	10.97	8	NJ
2. 111-43-3	DI-N-PROPYL ETHER	13.70	16	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW09R-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967679

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067679A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 4.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	40	U
75-00-3	Chloroethane	540	D
75-35-4	1,1-Dichloroethene	40	U
71-55-6	1,1,1-Trichloroethane	40	U
79-01-6	Trichloroethene	40	U
79-00-5	1,1,2-Trichloroethane	40	U
71-43-2	Benzene	160	D
127-18-4	Tetrachloroethene	40	U
156-60-5	trans-1,2-Dichloroethene	40	U
156-59-2	cis-1,2-Dichloroethene	40	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW09R-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967679

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067679a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 4.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW09R-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967679

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW09R-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967675

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067675A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	500	E
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	140	
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW09R-911

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967675

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067675a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-09-2	METHYLENE CHLORIDE	9.21	7	NJ
2. 108-20-3	DIISOPROPYL ETHER	10.94	8	NJ
3. 111-43-3	DI-N-PROPYL ETHER	13.69	16	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW09R-911DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967675

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: C2R67675A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 3.9

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	38	U
75-00-3	Chloroethane	540	D
75-35-4	1,1-Dichloroethene	38	U
71-55-6	1,1,1-Trichloroethane	38	U
79-01-6	Trichloroethene	38	U
79-00-5	1,1,2-Trichloroethane	38	U
71-43-2	Benzene	140	D
127-18-4	Tetrachloroethene	38	U
156-60-5	trans-1,2-Dichloroethene	38	U
156-59-2	cis-1,2-Dichloroethene	38	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW09R-911DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967675

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: c2r67675a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 3.9

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW09R-911

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967675

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW10C-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967669

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067669B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	1	J
75-00-3	Chloroethane	330	E
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	280	E
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW10C-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967669

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067669b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.90	946	NJ
2.	UNKNOWN	8.47	18	J
3.	UNKNOWN ALCOHOL	9.74	10	J
4. 109-99-9	FURAN, TETRAHYDRO-	12.20	73	NJ
5. 123-91-1	1,4-DIOXANE	14.92	7	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW10C-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967669

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067669A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	25	U
75-00-3	Chloroethane	360	D
75-35-4	1,1-Dichloroethene	25	U
71-55-6	1,1,1-Trichloroethane	25	U
79-01-6	Trichloroethene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
71-43-2	Benzene	340	D
127-18-4	Tetrachloroethene	25	U
156-60-5	trans-1,2-Dichloroethene	25	U
156-59-2	cis-1,2-Dichloroethene	25	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW10C-11DL

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967669

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067669a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 2.5

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.81	1655	NJD
2.	UNKNOWN	8.41	17	JD
3. 109-99-9	FURAN, TETRAHYDRO-	12.16	77	NJD
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW10C-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967669

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW23-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967660

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067660B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW23-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967660

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067660b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW23-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967660

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	2.1	B		P
	Cyanide				NR

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW24-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967662

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067662B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	4	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW24-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967662

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067662b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 526-73-8	BENZENE, 1,2,3-TRIMETHYL-	20.79	8	NJ
2. 112-40-3	DODECANE	23.00	8	NJ
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW24-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967662

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW28-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967147

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067147A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW28-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967147

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067147a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW28-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967147

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW29-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967652

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067652B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW29-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967652

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067652b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW29-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967652

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW30-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967697

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067697A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	1	J
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW30-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967697

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067697a54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 873-94-9	CYCLOHEXANONE, 3,3,5-TRIMETH	21.79	16	NJ
2.				
3.				
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW30-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967697

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW31-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967668

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: C2R67668B55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW31-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967668

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: c2r67668b55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/25/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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EPA SAMPLE NO.

MW31-11

SDG No.: 00130_

e ID: 967668

ived: 11/12/99

: UG/L____

M

P_
P_
NR

Texture: _____

Artifacts: _____

ILM04.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW31-11MS

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967653

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067653A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/27/99

GC Column: EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	50	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	49	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	51	
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	50	
108-90-7	Chlorobenzene	50	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW31-11MSD

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967654

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067654A54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/27/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	48	
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	47	
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	49	
127-18-4	Tetrachloroethene	2	J
108-88-3	Toluene	47	
108-90-7	Chlorobenzene	48	
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW32-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967685

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067685B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW32-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967685

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067685b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW32-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967685

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	2.5	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW33-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967680

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067680B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW33-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967680

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067680b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/16/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 109-87-5	METHANE, DIMETHOXY-	8.47	16	NJ
2.	UNKNOWN ALCOHOL	9.74	8	J
3. 646-06-0	1,3-DIOXOLANE	11.84	13	NJ
4. 109-99-9	FURAN, TETRAHYDRO-	12.20	109	NJ
5.	UNKNOWN ALCOHOL	13.31	7	J
6. 123-91-1	1,4-DIOXANE	14.92	15	NJ
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW33-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967680

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	21.1			P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW34-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967666

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067666B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW34-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967666

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067666b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/23/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW34-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967666

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW50-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967145

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CR067145A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW50-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967145

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cr067145a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	21.38	5	J
2.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW50-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967145

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW51-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967688

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067688B54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW51-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: LIBRTY Case No.: 34200 SAS No.: SDG No.: 00122

Matrix: (soil/water) WATER Lab Sample ID: 967688

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067688b54

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/19/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	7.90	1532	NJ
2. 75-09-2	METHYLENE CHLORIDE	9.22	12	NJ
3.	UNKNOWN ALCOHOL	9.72	36	J
4. 109-99-9	FURAN, TETRAHYDRO-	12.18	51	NJ
5. 123-91-1	1,4-DIOXANE	14.90	9	NJ
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW51-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00122

Matrix (soil/water): WATER Lab Sample ID: 967688

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW52-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967650

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067650A55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW52-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967650

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067650a55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	8.42	3260	J
2.	UNKNOWN ALCOHOL	10.33	58	J
3.	UNKNOWN	12.56	5	J
4. 109-99-9	FURAN, TETRAHYDRO-	12.84	45	NJ
5. 123-91-1	1,4-DIOXANE	15.62	7	NJ
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW52-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967650

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967651

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067651A55

Level: (low/med) LOW Date Received: 11/12/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW53-11

Lab Name: COMPUCHEM | Contract: 501220

Lab Code: COMPU | Case No.: 34200 | SAS No.: | SDG No.: 00107

Matrix: (soil/water) WATER | Lab Sample ID: 967651

Sample wt/vol: 5.0 (g/mL) mL | Lab File ID: cn067651a55

Level: (low/med) LOW | Date Received: 11/12/99

% Moisture: not dec. _____ | Date Analyzed: 11/24/99

GC Column: EQUITY624 ID: 0.53 (mm) | Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) | Soil Aliquot Volume: _____ (uL)

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	8.37	5	NJ
2. 109-87-5	METHANE, DIMETHOXY-	9.00	14	NJ
3.	UNKNOWN ALCOHOL	10.31	8	J
4. 646-06-0	1,3-DIOXOLANE	12.47	5	NJ
5. 109-99-9	FURAN, TETRAHYDRO-	12.83	15	NJ
6. 123-91-1	1,4-DIOXANE	15.60	22	NJ
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW53-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967651

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	2.0	B		P

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW54R-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967150

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: C2R67150A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	1	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW54R-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967150

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: c2r67150a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/22/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW54R-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967150

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.5	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW54R-911

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967151

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067151A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	2	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.:

Matrix: (soil/water) WATER Lab Sample

Sample wt/vol: 5.0 (g/mL) mL Lab File

Level: (low/med) LOW Date Re

% Moisture: not dec. _____ Date An

GC Column:EQUITY624 ID: 0.53 (mm) Dilution

Soil Extract Volume:_____(uL) Soil Aliq

Number TICs found: 0 CONCENTRATION
(ug/L or ug/Kg

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW54R-911

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967151

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	1.6	B		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW55-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967153

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067153A54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW55-11

Lab Name: COMPUCHEM Contract: 501220

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix: (soil/water) WATER Lab Sample ID: 967153

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067153a54

Level: (low/med) LOW Date Received: 11/10/99

% Moisture: not dec. _____ Date Analyzed: 11/21/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW55-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00107

Matrix (soil/water): WATER Lab Sample ID: 967153

Level (low/med): LOW Date Received: 11/10/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	14.0			P

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

ATMW-4D-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967895

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: CN067895A55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	9	J
75-35-4	1,1-Dichloroethene	10	U
71-55-6	1,1,1-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	3	J
127-18-4	Tetrachloroethene	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
156-59-2	cis-1,2-Dichloroethene	10	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

ATMW-4D-11

Lab Name: COMPUCHEM Contract: OLM03-REVS

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix: (soil/water) WATER Lab Sample ID: 967895

Sample wt/vol: 5.0 (g/mL) mL Lab File ID: cn067895a55

Level: (low/med) LOW Date Received: 11/13/99

% Moisture: not dec. _____ Date Analyzed: 11/24/99

GC Column:EQUITY624 ID: 0.53 (mm) Dilution Factor: 1.0

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

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 60-29-7	ETHER	8.36	8	NJ
2.				
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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MW-4D-11

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967895

Level (low/med): LOW Date Received: 11/13/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic	7.6	U		P
7439-92-1	Lead	2.4	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PW-D-10

Lab Name: COMPUCHEM Contract: ILM04.0

Lab Code: COMPU Case No.: 34200 SAS No.: SDG No.: 00130

Matrix (soil/water): WATER Lab Sample ID: 967698

Level (low/med): LOW Date Received: 11/12/99

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-38-2	Arsenic				NR
7439-92-1	Lead				NR
	Cyanide	8.2	U		CA

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: