

INTERIM REMEDIAL MEASURE PROGRAM

SEMI-ANNUAL PROGRESS REPORT (APRIL 1999 – SEPTEMBER 1999)

FORMER GRIFFIN TECHNOLOGY FACILITY TOWN OF FARMINGTON ONTARIO COUNTY, NEW YORK INDEX NO. (B8-315-90-01)

Prepared for Diebold, Inc. Canton, Ohio

December 22, 1999

URS Greiner Woodward Clyde

A Division of URS Corporation

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INTERIM REMEDIAL MEASURE SEMI-ANNUAL PROGRESS REPORT

APRIL 1999 – SEPTEMBER 1999 GRIFFIN TECHNOLOGY, INC. FACILITY TOWN OF FARMINGTON ONTARIO COUNTY, NEW YORK

The enclosed Semi-Annual Progress Report has been reviewed by the undersigned, and has been found to be consistent with the requirements of the Order on Consent (Index No. B8-315-90-01), entered into by the New York State Department of Environmental Conservation and Griffin Technology, Inc.

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Title:

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Date:

12/27/99



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SECTIONONE Introduction

This report presents information collected by URS Greiner Woodward Clyde (URSGWC) between April 1999 and September 1999 during the operation of the Interim Remedial Measure (IRM) system at the Griffin Technology, Inc. (GTI) site located at 6132 Victor-Manchester Road in the Town of Farmington, Ontario County, New York. A general location map is included as Figure 1-1.

The IRM system consists of four wells equipped with groundwater extraction pumps, which have been plumbed to discharge groundwater into the local sanitary sewer system. The IRM system was proposed in the IRM Work Plan submitted to the New York State Department of Environmental Conservation (NYSDEC) on July 10, 1996. The Work Plan was prepared in accordance with the Order on Consent agreement (Index No. B8-315-90-01) entered into by GTI and the NYSDEC. Information supporting the selected IRM, such as the Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan (HASP), were included in the Work Plan.

On September 27, 1996, GTI submitted an Interim Remedial Measure Program, Final Design Document to the NYSDEC. This document contained the proposed layout and detail drawings for the IRM system and a copy of the letter approving the discharge of recovered groundwater into the local publicly-owned treatment works (POTW) sanitary sewer. In addition, an implementation schedule to construct the system and a proposed two year sample collection and reporting schedule were included in the design document.

During December 1996 and January 1997, the IRM components were installed at the site. The components included three recovery wells and one deep monitoring well with the potential to be converted to a recovery well in the future. Following approval by the NYSDEC and the Canandaguia-Farmington Water and Sewer District to discharge recovery water into the sanitary sewer system, the system was placed on line with three recovery wells. The IRM system began operating on February 18, 1997. Between April and June 1999, one deep monitoring well (MW-2D) was converted to a recovery well (RW-4) and brought on line.

In April 1999, a subsurface soil investigation was conducted at the GTI site to evaluate current soil conditions west of the manufacturing building. The scope of work and results are detailed in the Soil Investigation Report, dated June 25, 1999.

The activities performed during this six-month period of operation are described in Section 2.0. Information collected during this period of operation is presented in Section 3.0. Conclusions and recommendations are presented in Section 4.0.

SECTIONTWO **Scope of Work**

The Scope of Work for the IRM was presented in the Final Design Document presented to the NYSDEC on September 27, 1996. Implementation of the IRM consisted of the following elements:

- Installing an IRM system in the undeveloped parcel of land located downgradient of the source area. The IRM system consisted of installing three groundwater extraction wells, one bedrock monitoring well located in the source area which could potentially be used for additional recovery, two sets of nested piezometers located between each of the three extraction wells to monitor groundwater elevations between each well, a groundwater recovery and collection system to convey water to a central access vault, electrical power supply and controllers for each recovery pump, sample collection and flow monitoring appurtenances, and a force main sewer to discharge effluent from the access vault to a sanitary sewer located on the southeast portion of the site.
- Converting the deep bedrock monitoring well into a fourth recovery well.
- Monitoring the quantity and quality of groundwater recovered from the system monthly and reporting this data to the local POTW.
- Monitoring the groundwater elevations in all on-site wells and piezometers to evaluate the effectiveness of the IRM as a groundwater extraction system and hydraulic barrier.
- Collecting groundwater samples from all wells located on and off site semi-annually beginning six months after initiation of the system. All groundwater samples collected during these semi-annual activities will be analyzed for volatile organic compounds (VOCs) by NYSDEC Test Method ASP 91-1 (now referenced as NYSDEC Test Method ASP 95-1).
- Preparing progress reports for submission to the NYSDEC. The reports should include data collected during the proceeding months of operation as well as information and activities to be performed during subsequent reporting periods.

2.1 IRM SYSTEM

The IRM installation activities were performed during December 1996 and January 1997. Operation of the IRM system was initiated on February 18, 1997. Modification of the IRM system was performed between April and June 1999.

The layout of the IRM system, on-site groundwater monitoring wells and piezometers, and other pertinent features discussed in this report are shown in Figure 2-1. The system is currently in operation. The components comprising the IRM system are discussed in greater detail below.

2.1.1 IRM System Configuration

The IRM system originally consisted of a network of three groundwater recovery wells (designated as RW-01, RW-02 and RW-03). Between April and June 1999, one deep monitoring well (MW-2D) was converted to a recovery well (RW-4) and brought on line.

SECTIONTWO Scope of Work

The four recovery wells are constructed with 20-foot screened intervals that straddle the contact between the overburden and the bedrock. The well depths range between approximately 27 and 33 feet below ground surface (bgs).

A Goulds Model 10GS electric, submersible pump was installed in each recovery well. Each pump is connected to a PumpTec[®] "Load-Sensor" type controller to automate the operation of the pump. The controllers are currently operating on 4-minute reset time intervals.

Underground piping and wiring connect the recovery wells to a Central Access Vault, located on the western side of the facility building. At the Central Access Vault, the individual groundwater conveyance pipe from each recovery well is connected to a manifold, which connects to a common header discharge pipe. Each individual conveyance pipe on the manifold is equipped with a shut-off valve, sample port, and totalizing flow meter to facilitate individual well monitoring. In addition, a shut-off valve, sample port, and totalizing flow meter are located on the common header pipe prior to discharge.

The extracted groundwater flows from the manifold and header in the Central Access Vault through a force main pipe and into a sanitary clean-out located on the southeast portion of the site. The sanitary clean-out was installed in-line with the existing sanitary sewer to facilitate discharges into a gravity sewer. Effluent is discharged into the clean-out riser pipe, down into the sanitary sewer where it is travels by gravity to the Canandaguia-Farmington Water and Sewer District for ultimate disposal. Prior to system start-up, it was necessary for the Canandaguia-Farmington Water and Sewer District to receive permission from the NYSDEC to receive this wastewater.

2.1.2 IRM System Modifications and Repairs

Between April and June 1999, monitoring well MW-2D was connected to the groundwater remediation system at the site and brought on line as recovery well RW-04. The work was performed by Sickles Plumbing & Mechanical with oversight by URSGWC.

In addition to the system modifications, repairs were made to piezometers PZ-2S and PZ-2D. Over the winter, the top of the protective stick-up casing over these piezometers had become damaged, and the top of the internal polyvinylchloride (PVC) casing of piezometer PZ-2S had become cracked.

On April 15, 1999, the top of the protective stick-up casing over these piezometers was cut off and a new piece was welded in its place. The damaged portion of the PVC casing at PZ-2S was also cut off. These repairs were performed by Nothnagle Drilling of Scottsville, New York under the supervision of URSGWC. After completion of the repairs, the new top-of-casing elevation at PZ-2S was determined.

2.2 IRM SYSTEM MONITORING

During this six-month period of operation, groundwater elevation, discharge volume, and groundwater analytical data were collected to monitor the effectiveness of the IRM system. The data collected are discussed in the following subsections.

SECTIONTWO Scope of Work

2.2.1 Hydraulic Head Measurement

Hydraulic head (groundwater elevation) measurements were collected from each groundwater well and piezometer located on site a minimum of once per month during routine site visits. During some visits, hydraulic head measurements were also collected from nearby monitoring wells MW-6S and MW-6D. All groundwater measurements were collected using an electronic water level indicator capable of measuring the water elevation to the nearest 0.01 ft.

On September 2, 1999, prior to the collection of groundwater samples, the water level in each on-site and off-site groundwater monitoring well was measured and recorded to evaluate groundwater flow conditions. Measurements were not obtained from staff gauge SG-1 because the elevation of the creek was below this gauge's minimum depth.

2.2.2 Groundwater Sampling and Analysis

During this six-month period of operation, composite effluent samples were collected monthly from the common header discharge in the Central Access Vault. These samples were submitted to Columbia Analytical Services, Inc. (CASI) of Rochester, New York for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) method 8260. The analytical results of these composite samples were used to report estimated loadings to the POTW.

On September 2, 1999, groundwater samples were collected to evaluate regional groundwater quality. Samples were collected from all monitoring wells, except MW-2S, MW-4 and MW-5S, which did not contain enough water to sample (i.e., were "dry"). Prior to sample collection, the static water level in each well was measured (Section 2.2.1). Using the static water level measurements, the volume of water contained in each well (the well volume) was calculated. The monitoring well was then purged of a minimum of three well volumes of water or until dry using a new, disposable, high density polyethylene (HDPE) bailer equipped with a nylon cord.

Groundwater samples were collected within 24 hours of purging each well. Samples were placed into laboratory supplied containers and placed into a cooler with ice for preservation until delivered to the laboratory for analysis. One duplicate sample was collected from monitoring well MW-11D. Groundwater samples were submitted to CASI and analyzed for VOCs by NYSDEC Test Method ASP 95-1. Chain-of-custody procedures were observed throughout the sampling event.

2.2.3 Subsurface Soil Investigation

On April 15, 1999, a subsurface soil investigation was conducted to evaluate current soil conditions at the site. Nothnagle Drilling advanced seven borings at the GTI site with oversight by URSGWC. The borings were located on the west side of the manufacturing building to verify and expand upon results obtained during a 1991 investigation conducted by Blasland, Bouck & Lee (BB&L). Soil samples were submitted for laboratory analysis of volatile organic compounds (VOCs). Results of the investigation are presented in URSGWC's *Soil Investigation Report*, dated June 25, 1999.

The data collected during this six-month period of IRM system operation and the results of the September 1999 semi-annual groundwater sampling event are presented in the following subsections.

3.1 HYDRAULIC HEAD MEASUREMENT RESULTS

Hydraulic head measurements collected during this operating period from on-site and off-site groundwater monitoring wells and piezometers are presented in Table 3-1.

The elevation data were used to construct monthly groundwater contour maps of the site for the overburden water-bearing zone (Figures 3-1 through 3-7) and the bedrock water-bearing zone (Figures 3-8 through 3-14). Figure 3-6 is a contour map illustrating groundwater flow conditions at and in the vicinity of the site in the overburden water-bearing zone on September 2, 1999. Figure 3-13 is a contour map illustrating groundwater flow conditions at and in the vicinity of the site in the bedrock water-bearing zone on September 2, 1999.

The groundwater contour maps from the GTI site indicate that groundwater in the overburden water-bearing zone typically flows to the southwest. On April 14, 1999, groundwater in the northeastern portion of the GTI site appeared to flow toward the northeast.

In the bedrock water-bearing zone, groundwater typically flows southeast toward a groundwater low area near the southwest corner of the site, in the vicinity of RW-03. The September 2, 1999 data showed the presence of a groundwater low in the vicinity of monitoring well MW-7D, which has been observed previously.

The groundwater elevation data indicate that the IRM system is continuing to influence groundwater flow patterns at the GTI site. These results are consistent with previous observed site conditions.

EFFLUENT OPERATING DATA AND ANALYTICAL RESULTS 3.2

A summary of the operating data and effluent analysis collected during each month of IRM system operation is presented in Table 3-2. The results continue to indicate that groundwater containing chemicals of concern (COCs) is being removed from underneath the GTI site. The COCs detected in the effluent samples consisted of trichloroethene (TCE); 1,1,1-trichloroethane (1,1,1-TCA); and cis-1,2-dichloroethene (cis-1,2-DCE). These COCs are consistent with earlier results. TCE was consistently the compound with the highest reported concentration.

The concentrations of COCs in the system effluent fluctuated during this operating period. The concentrations of COCs in the system effluent were lower at the beginning of this operating period, increased toward the middle of the operating period, and then decreased slightly near the end of the operating period. The concentrations remained within the range of historical levels during the entire operating period.

The quantity of water removed by the system decreased during the latter months (June through September 1999) of this operating period. This appears to be related to lower seasonal groundwater elevations during summer and is similar to conditions observed during previous

years. Laboratory data sheets for effluent samples collected during this period of operation are provided in Appendix A.

3.3 GROUNDWATER ANALYTICAL RESULTS

A summary of groundwater analytical data collected from all wells on September 2, 1999 is presented in Table 3-3. Table 3-3 also summarizes the data from previous sampling events. The laboratory data sheets from CASI for this semi-annual groundwater sampling event, are provided in Appendix B. A data validation report for this data, prepared by URSGWC's internal QA/QC reviewer, is provided in Appendix C. Results of the validation indicate that the data are acceptable. Low concentrations of acetone and carbon disulfide were reported in some samples; however, results of the validation suggest that the presence of these chemicals is attributable to laboratory activities.

Groundwater analytical results obtained from the September 2, 1999 event showed that concentrations of COCs were generally higher than those reported for the previous (March 17 and 18, 1999) groundwater sampling event, but were within historical levels. The COCs detected in groundwater samples collected during September 1999 consisted of TCE, 1,1,1-TCA and cis-1,2-DCE. These COCs are consistent with the results of earlier sampling events. TCE was consistently the compound with the highest reported concentration.

Based on the information collected during the fifth six-month period of IRM system operation, the following summary has been developed regarding environmental conditions at the GTI site:

- Groundwater flow in the overburden and bedrock zones at the site is primarily to the southwest. This is consistent with previous reports for the GTI site.
- The IRM system is influencing groundwater flow patterns in the vicinity of the GTI facility. The groundwater elevation data generally indicate the presence of a groundwater low in the bedrock water-bearing zone in the southwest portion of the site, in the immediate vicinity of the IRM system. The September 2, 1999 bedrock groundwater elevation data indicate the presence of a groundwater low southwest of the site in the vicinity of monitoring well MW-7D, which has been observed previously.
- The monthly quantity of groundwater removed by the IRM system decreased during dry weather (summer) conditions. The concentrations of COCs in the IRM system effluent were lowest at the beginning of this operating period, highest in the middle of the operating period, and slightly lower at the end of the operating period. The concentrations of COCs remained within historical levels throughout the operating period. TCE was consistently the COC reported at the highest concentration in the IRM system effluent.
- Groundwater analytical results for samples collected during the September 2, 1999 sampling
 event indicated that concentrations of COCs were generally higher than those reported for the
 previous (March 17 and 18, 1999) groundwater sampling event, but were within historical
 levels.

Data collection activities at the site will be continued in the same manner. Continued monitoring of the site will provide additional data to evaluate the long-term effectiveness of the IRM system.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-01	641.79	04/01/99	3.48	638.31
		04/14/99	9.72	632.07
		04/30/99	4.30	637.49
		05/17/99	6.11	635.68
		06/01/99	8.85	632.94
		06/15/99	11.62	630.17
		06/30/99	12.89	628.90
		07/15/99	13.91	627.88
		08/02/99	15.41	626.38
		08/16/99	15.51	626.28
		09/02/99	15.09	626.70
		09/15/99	14.85	626.94
MW-02S	641.28	04/01/99	4.07	637.21
		04/14/99	4.62	636.66
		04/30/99	6.13	635.15
		05/17/99	9.33	631.95
		06/01/99	12.82	628.46
		06/15/99	15.29	625.99
		06/30/99	DRY	DRY
		07/15/99	DRY	DRY
		08/02/99	DRY	DRY
		08/16/99	DRY	DRY
		09/02/99	DRY	DRY
		09/15/99	DRY	DRY
MW-2D	642.37	04/01/99	5.18	637.19
		04/14/99	5.70	636.67

NM indicates water elevation not measured.
DRY indicates well did not contain groundwater.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

	Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-03	642.17	04/01/99	4.89	637.28
		04/14/99	5.43	636.74
		04/30/99	6.62	635.55
		05/17/99	10.98	631.19
		06/01/99	13.78	628.39
		06/15/99	15.71	626.46
		06/30/99	16.95	625.22
		07/15/99	17.66	624.51
		08/02/99	. 18.96	623.21
		08/16/99	19.12	623.05
		09/02/99	18.87	623.30
		09/15/99	18.62	623.55
MW-04	641.75	04/01/99	5.06	636.69
		04/14/99	5.69	636.06
		04/30/99	7.40	634.35
		05/17/99	14.01	627.74
		06/01/99	17.38	624.37
		06/15/99	18.86	622.89
		06/30/99	18.35	623.40
		07/15/99	19.54	622.21
		08/02/99	19.53	622.22
		08/16/99	19.52	622.23
		09/02/99	DRY	DRY
		09/15/99	19.56	622.19

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-05S	640.85	04/01/99	5.25	635.60
		04/14/99	5.79	635.06
		04/30/99	8.28	632.57
		05/17/99	15.32	625.53
		06/01/99	18.19	622.66
		06/15/99	19.52	621.33
		06/30/99	20.07	620.78
		07/15/99	20.69	620.16
		08/02/99	DRY	DRY
		08/16/99	DRY	DRY
		09/02/99	DRY	DRY
		09/15/99	DRY	DRY
MW-05D	641.01	04/01/99	7.10	633.91
		04/14/99	7.52	633.49
		04/30/99	11.27	629.74
		05/17/99	18.89	622.12
		06/01/99	20.63	620.38
		06/15/99	21.69	619.32
		06/30/99	22.12	618.89
		07/15/99	22.65	618.36
		08/02/99	23.29	617.72
		08/16/99	23.47	617.54
		09/02/99	23.48	617.53
		09/15/99	23.34	. 6 <mark>1</mark> 7.67

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-06S	636.61	04/01/99	NM	NM
		04/14/99	4.20	632.41
		04/30/99	NM	NM
		05/17/99	10.48	626.13
		06/01/99	NM	NM
		06/15/99	14.38	622.23
		06/30/99	NM	NM
		07/15/99	15.16	621.45
		08/02/99	NM	NM
		08/16/99	16.17	620.44
		09/02/99	16.26	620.35
		09/15/99	16.12	620.49
MW-06D	636.83	04/01/99	NM	NM
		04/14/99	4.35	632.48
		04/30/99	NM	NM
		05/17/99	10.60	626.23
		06/01/99	NM	NM
		06/15/99	14.57	622.26
		06/30/99	NM	NM
		07/15/99	15.36	621.47
		08/02/99	NM	NM
		08/16/99	16.45	620.38
		09/02/99	16.55	620.28
		09/15/99	16.37	620.46

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-07S	634.29	04/01/99	NM	NM
		04/14/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	16.20	618.09
		09/15/99	NM	NM
MW-07D	634.16	04/01/99	NM	NM
		04/14/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	37.65	596.51
		09/15/99	NM	NM

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-09S	630.16	04/01/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM.
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	15.60	614.56
		09/15/99	NM	NM
MW-09D	630.29	04/01/99	NM	NM
Share		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	17.84	612.45
		09/15/99	NM	NM

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-10S	629.00	04/01/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	17.01	611.99
		09/15/99	NM	NM
MW-10D	626.80	04/01/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	17.82	608.98
		09/15/99	NM	NM
	Carlo Carlo Carlo Carlo			

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
MW-11D	641.89	04/01/99	7.35	634.54
		04/14/99	7.32	634.57
		04/30/99	8.85	633.04
		05/17/99	12.40	629.49
		06/01/99	15.61	626.28
		06/15/99	16.65	625.24
		06/30/99	17.58	624.31
		07/15/99	17.81	624.08
		08/02/99	18.72	623.17
		08/16/99	18.92	622.97
		09/02/99	19.06	622.83
		09/15/99	19.15	6 <mark>2</mark> 2.74
MW-13D	636.58	04/01/99	NM	NM
		04/30/99	NM	NM
		05/17/99	NM	NM
		06/01/99	NM	NM
		06/15/99	NM	NM
		06/30/99	NM	NM
		07/15/99	NM	NM
		08/02/99	NM	NM
		08/16/99	NM	NM
		09/02/99	18.49	618.09
		09/15/99	NM	NM

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
PZ-1S	640.50	04/01/99	3.98	636.52
		04/14/99	4.61	635.89
		04/30/99	6.44	634.06
		05/17/99	10.30	DRY
		06/01/99	10.40	DRY
		06/15/99	DRY	DRY
		06/30/99	10.36	DRY
		07/15/99	10.35	DRY
		08/02/99	10.40	DRY
		08/16/99	10.38	DRY
		09/02/99	10.39	DRY
		09/15/99	10.42	DRY
07 1D	(40.67	0.4/0.4/0.0	4	
PZ-1D	640.67	04/01/99	4.13	636.54
		04/14/99	4.73	635.94
		04/30/99	6.55	634.12
		05/17/99	13.10	627.57
		06/01/99	DRY	DRY
		06/15/99	DRY	DRY
		06/30/99	DRY	DRY
		07/15/99	DRY	DRY
		08/02/99	DRY	DRY
		08/16/99	DRY	DRY
		09/02/99	DRY	DRY
		09/15/99	DRY	DRY

NM indicates water elevation not measured.

TABLE 3-1
SUMMARY OF MONITORING WELL GROUNDWATER ELEVATION DATA
APRIL - SEPTEMBER 1999
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Well ID	Top of Casing Elevation (ft)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)
PZ-2S	639.81	04/01/99	4.87	634.94
		04/14/99	5.48	634.33
	639.73	04/30/99	8.09	631.64
		05/17/99	14.74	624.99
		06/01/99	17.62	622.11
		06/15/99	DRY	DRY
		06/30/99	DRY	DRY
		07/15/99	DRY	DRY
		08/02/99	DRY	DRY
		08/16/99	DRY	DRY
		09/02/99	DRY	DRY
		09/15/99	DRY	DRY
PZ-2D	640.01	04/01/99	5.04	634.97
		04/14/99	5.64	634.37
		04/30/99	8.68	631.33
		05/17/99	15.53	624.48
		06/01/99	18.04	621.97
		06/15/99	19.61	620.40
		06/30/99	19.85	620.16
		07/15/99	20.30	619.71
		08/02/99	20.59	619.42
		08/16/99	20.65	619.36
		09/02/99	20.62	619.39
		09/15/99	20.41	619.60

NM indicates water elevation not measured.

KS Greiner Woodward Ciya

TABLE 3-2 SUMMARY OF EFFLUENT DISCHARGES TO POTW GRIFFIN TECHNOLOGY FACILITY FARMINGTON, NEW YORK

DISCHARGE						
MONTH	(GAL.)	TCE	1,1,1-TCA	Cis-1,2-DCE	2-BUTANONE	VINYL CHLORIDE
March 1997	320,150	610	14	6.5	ND	ND
April 1997	362,132	240	5.8	6	ND	ND
May 1997	235,601	360	9.8	ND	ND	ND
June 1997	213,976	380	12	10	ND	ND
July 1997	135,320	570	16	15	ND	ND
August 1997	68,270	700	21	13	26	ND
September 1997	70,218	810	ND	ND	ND	ND
October 1997	90,717	880	18	10	ND	ND
November 1997	93,914	690	17	12	ND	ND
December 1997	210,268	420	ND	ND	ND	ND
January 1998	456,551	250	ND	ND	ND	ND
February 1998	191,493	180	ND	ND	ND	ND
March 1998	387,910	200	5.4	ND	ND	ND
April 1998	352,742	150	ND	ND	ND	ND
May 1998	191,088	250	ND	ND	ND	ND
June 1998	96,750	320	7.5	ND	ND	ND
July 1998	270,973	200	ND	ND	ND	ND
August 1998	68,147	400	13	12	ND	ND

- 1. All results expressed in micrograms per liter ($\mu g/l$).
- 2. No other VOC compounds detected.
- 3. ND indicates not detected.

URS Greiner Woodward Clyde

TABLE 3-2 SUMMARY OF EFFLUENT DISCHARGES TO POTW GRIFFIN TECHNOLOGY FACILITY FARMINGTON, NEW YORK

DISCHARGE						
MONTH	(GAL.)	TCE	1,1,1-TCA	Cis-1,2-DCE	2-BUTANONE	VINYL CHLORIDE
September 1998	44,030	510	14	15	ND	ND
October 1998	66,160	400	ND	ND	ND	ND
November 1998	44,150	440	12	ND	ND	ND
December 1998	43,580	590	22	19	ND	ND
January 1999	33,531	660	ND	ND	ND	ND
February 1999	144,720	230	ND	ND	ND	ND
March 1999	139,410	140	ND	12	ND	17
April 1999	188,610	170	ND	ND	ND	ND
May 1999	199,541	250	ND	ND	ND	ND
June 1999	75,780	370	ND	ND	ND	ND
July 1999	72,359	510	14	ND ·	ND	ND
August 1999	55,841	490	15	7.5	ND	ND
September 1999	64,019	450	ND	ND	ND	ND

- 1. All results expressed in micrograms per liter (µg/l).
- 2. No other VOC compounds detected.
- 3. ND indicates not detected.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring Well No.	Sample Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES
MW-01	12/19/1994	ND	ND		
1V1 VV -O 1	05/21/1996			ND	ND
	08/13/1997	ND	ND	ND	ND
		ND	ND	ND	ND
	03/18/1998	ND	ND	ND	ND
	9/2/98	ND	ND	ND	ND
	03/18/1999	ND	ND	ND	ND
-	09/02/1999	ND	ND	ND	ND
MW-02S	12/19/1994	850	ND	ND	ND
	05/21/1996	30	ND	1	ND
	08/13/1997	DRY	DRY	DRY	DRY
	03/18/1998	17,000	ND	ND	ND
	9/2/98	18,000	210	ND	ND
	03/18/1999	28	ND	ND	ND
	09/02/1999	DRY	DRY	DRY	DRY
MW-02D	08/13/1997	450	23	42	ND
	03/18/1998	740	16	28	ND
	9/2/98	680	25	39	ND
	03/18/1999	190	5	6	ND
	Mo	onitoring well	converted to red	covery well.	
MW-03	12/19/1994	190	ND	ND	ND
	05/21/1996	120	ND	2	ND
	08/13/1997	150	ND	2	ND
	03/18/1998	88	ND	ND	ND
	9/2/98	110	ND	ND	ND
	03/18/1999	45	ND	ND	ND
	09/02/1999	170	ND	ND	ND
MW-04	12/19/1994	710	6.7	23	ND
	05/21/1996	16	ND	2	ND
	08/13/1997	DRY	DRY	DRY	DRY
	03/18/1998	59	ND	2	ND
	9/2/98	450	7	20	ND
	03/18/1999	58	ND	1	ND
	09/02/1999	DRY	DRY	DRY	DRY

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

Monitoring	Sample				
Well No.	Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES
MW-05S	12/19/1994	580	15	ND	ND
	05/21/1996	350	16	ND	ND
	08/13/1997	760	31	4	ND
	03/18/1998	120	4	ND	1
	9/2/98	390	14	ND	ND
	03/18/1999	95	3	ND	ND
	09/02/1999	DRY	DRY	DRY	DRY
MW-05D	12/19/1994	820	23	ND	ND
	05/21/1996	1,000	48	8	ND
	08/13/1997	250	7	2	ND
	03/18/1998	250	7	ND	ND
	9/2/98	300	8	2	ND
	03/18/1999	200	7	2	ND
	09/02/1999	220	6	2	ND
MW-06S	12/19/1994	270	7.8	ND	ND
	05/21/1996	ND	2	ND	ND
	08/13/1997	140	9	3	ND
	03/18/1998	5	ND	ND	ND
	9/2/98	140	8	2	ND
	03/17/1999	ND	ND	ND	ND
	09/02/1999	110	6	4	ND
MW-06D	12/19/1994	190	7.5	ND	ND
	05/21/1996	240	10	ND	ND
	08/13/1997	150	10	2	ND
	03/18/1998	6	ND	ND	ND
	9/2/98	140	8	2	ND
	03/17/1999	ND	ND	ND	ND
	09/02/1999	110	7	2	ND
MW-07S	12/19/1994	250	6.6	8	ND
	05/21/1996	310	7	6	ND
	08/13/1997	250	6	6	ND
	03/18/1998	3	ND	ND	ND
	9/2/98	220	5	4	ND
	03/17/1999	ND	ND	ND	ND
	09/02/1999	220	4	4	ND

- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.

TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

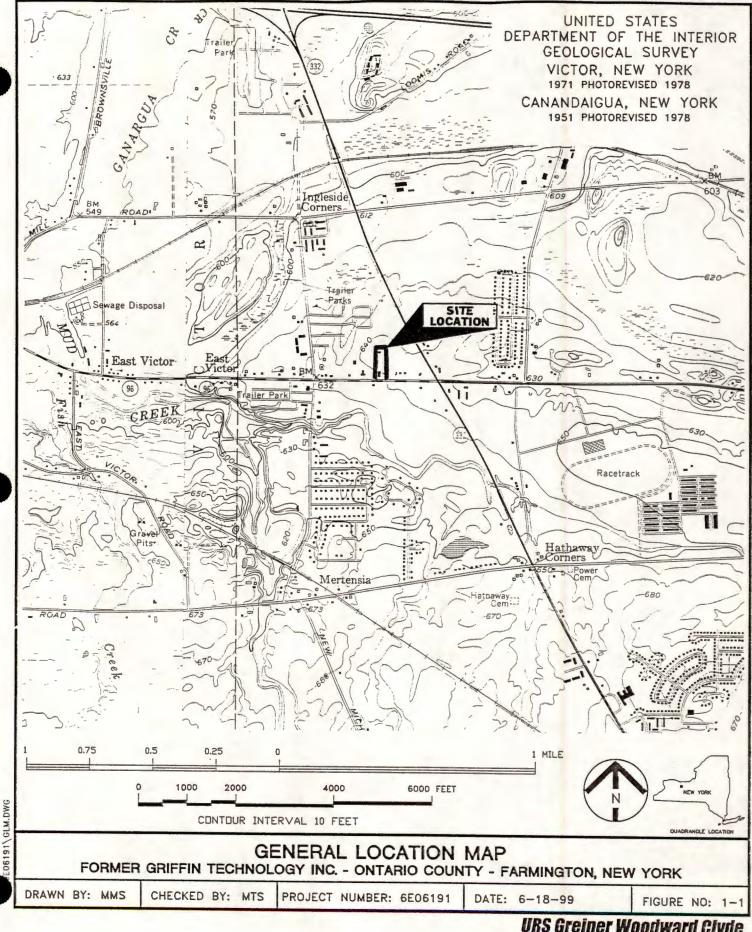
Monitoring	Sample				
Well No.	Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES
MW-07D	12/19/1994	260	ND	7	ND
	05/21/1996	290	4	12	ND
	08/13/1997	180	2	13	ND
	03/18/1998	150	2	15	ND
	9/2/98	200	2	15	ND
	03/17/1999	100	ND	8	ND
	09/02/1999	180	2	14	ND
MW-08S	12/19/1994	29	ND	ND	ND
MW-08D	12/19/1994	55	ND	ND	ND
		112	ND		
MW-09S	12/19/1994	ND	ND	ND	ND
	05/21/1996	ND	ND	ND	ND
	08/13/1997	2	ND	ND	ND
	03/18/1998	3	ND	ND	ND
	9/2/98	NS	NS	NS	NS
	03/18/1999	ND	ND	ND	ND
	09/02/1999	ND	ND	ND	ND
MW-09D	12/19/1994	ND	ND	ND	ND
	05/21/1996	ND	ND	ND	ND
	08/13/1997	ND	ND	ND	ND
	03/18/1998	ND	ND	ND	ND
	9/2/98	NS	NS	NS	NS
	03/18/1999	ND	ND	ND	ND
	09/02/1999	ND	ND	ND	ND
MW-10S	12/19/1994	7.8	ND	ND	ND
	05/29/1996	30	1	ND	ND
	08/13/1997	15	ND	ND	ND
	03/18/1998	NS	NS	NS	NS
	9/2/98	8	ND	ND	ND
	03/18/1999	ND	ND	ND	ND
	09/02/1999	7	ND	ND	ND

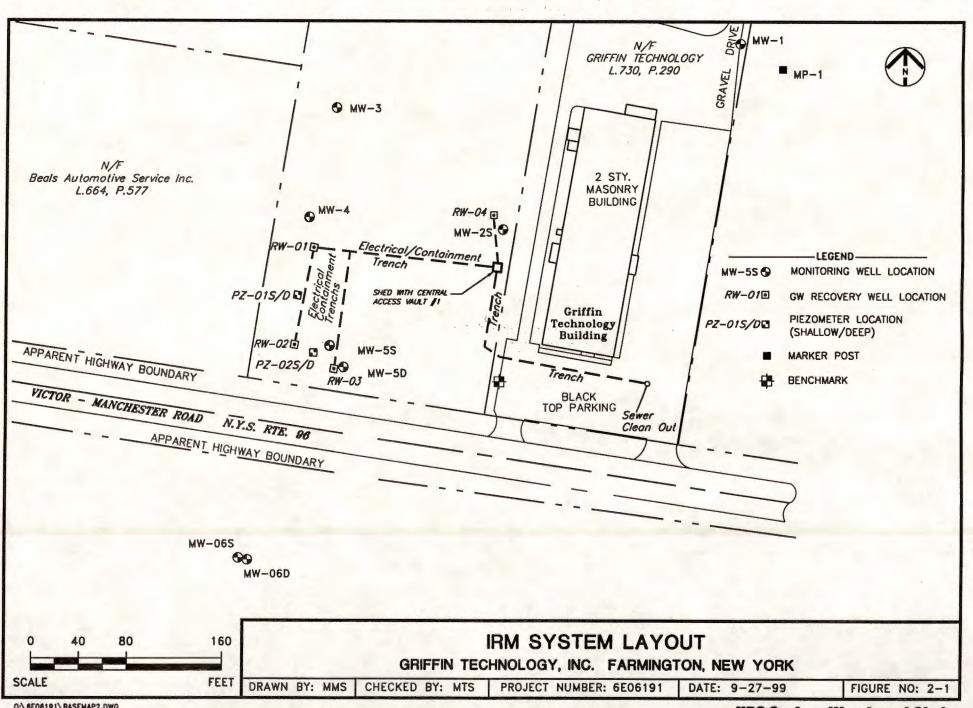
- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter ($\mu g/l$).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.

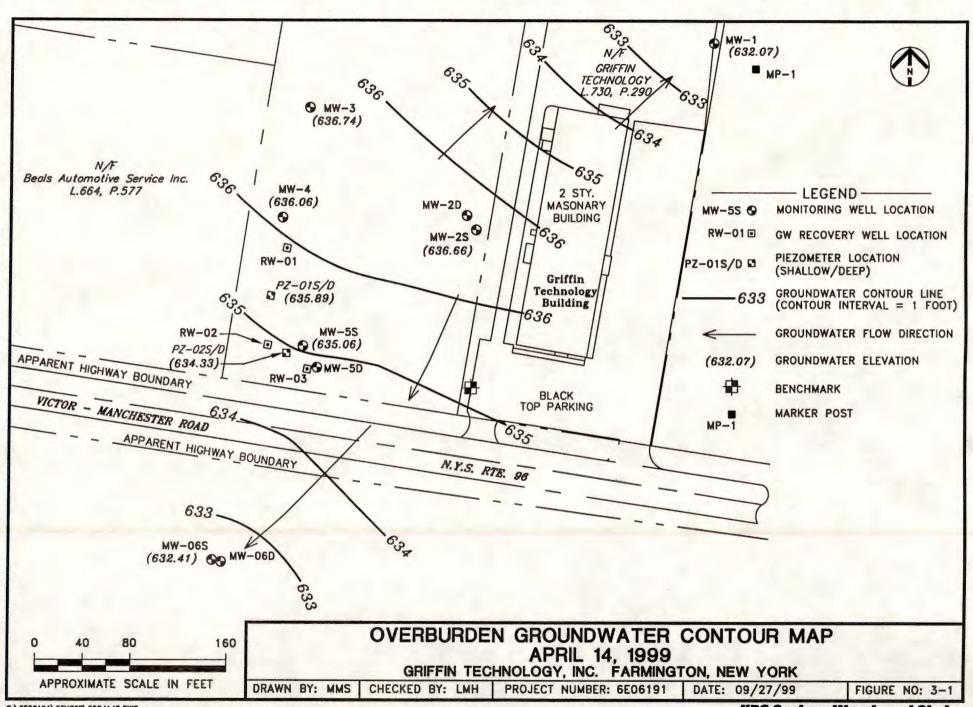
TABLE 3-3
SUMMARY OF MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
GRIFFIN TECHNOLOGY, INC.
FARMINGTON, NEW YORK

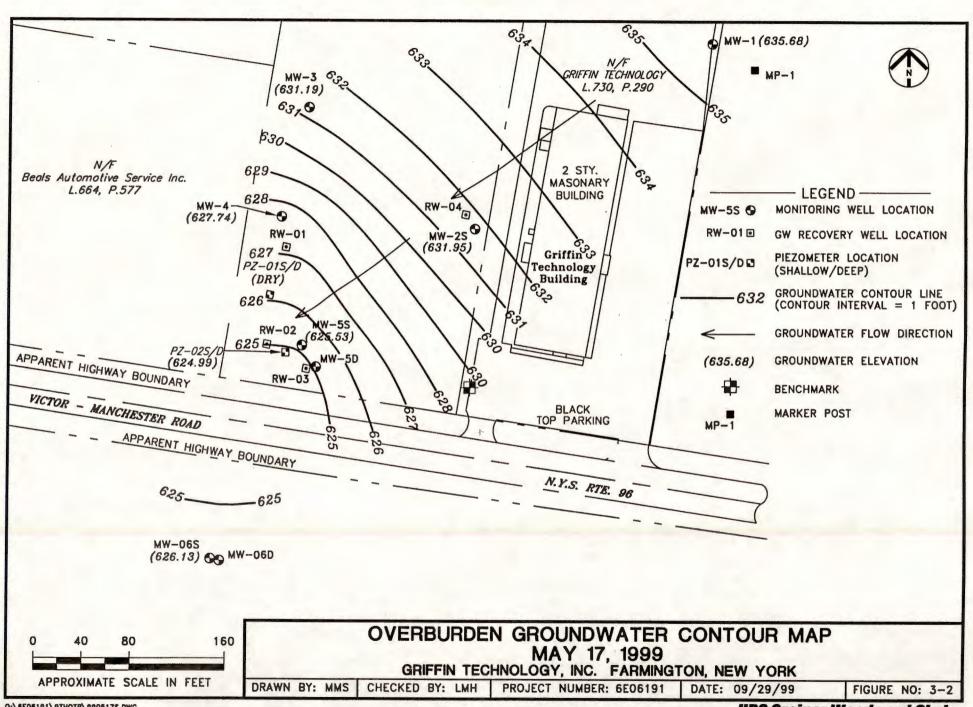
Monitoring Well No.	Sample Date	TCE	1,1,1-TCA	1,2-DCE	XYLENES
MW-10D	12/19/1994	8.2	ND	ND	ND
	05/29/1996	8	ND	ND	ND
	08/13/1997	15	ND	ND	ND
	03/18/1998	NS	NS	NS	NS
	9/2/98	9	ND	ND	ND
	03/18/1999	ND	ND	ND	ND
	09/02/1999	7	ND	ND	ND
MW-11D	04/11/1996	ND	ND	ND	ND
	05/21/1996	ND	ND	ND	ND
	08/13/1997	ND	ND	ND	ND
	03/18/1998	ND	ND	ND	ND
	9/2/98	ND	ND	ND	ND
	03/18/1999	ND	ND	ND	ND
0.00	09/02/1999	ND	ND	ND	ND
MW-13D	04/11/1996	610	5	4	ND
	05/21/1996	190	5 .	4	ND
	08/13/1997	160	4	4	ND
	03/18/1998	110	2	ND	ND
	9/2/98	140	3	2	ND
	03/17/1999	120	2	2	ND
	09/02/1999	140	3	2	ND

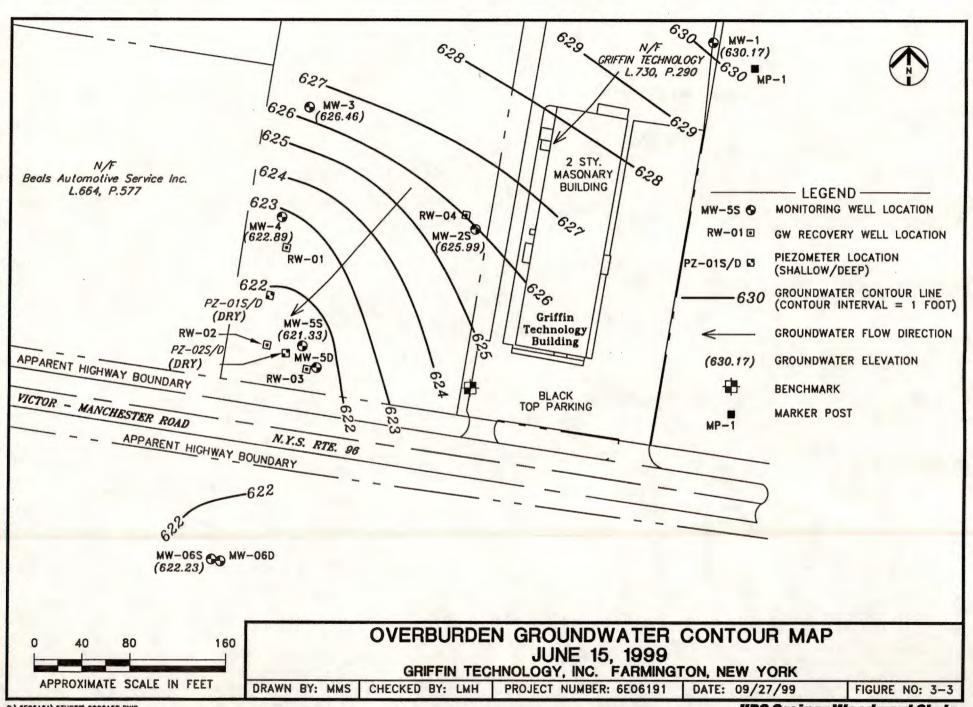
- 1. 12/19/94 data collected by Blasland, Bouck & Lee.
- 2. All results expressed in micrograms per liter (µg/l).
- 3. No other VOC compounds detected at method detection limit.
- 4. ND indicates not detected.
- 5. NS indicates no sample collected; unable to locate or access well.
- 6. DRY indicates well not sampled due to lack of water.

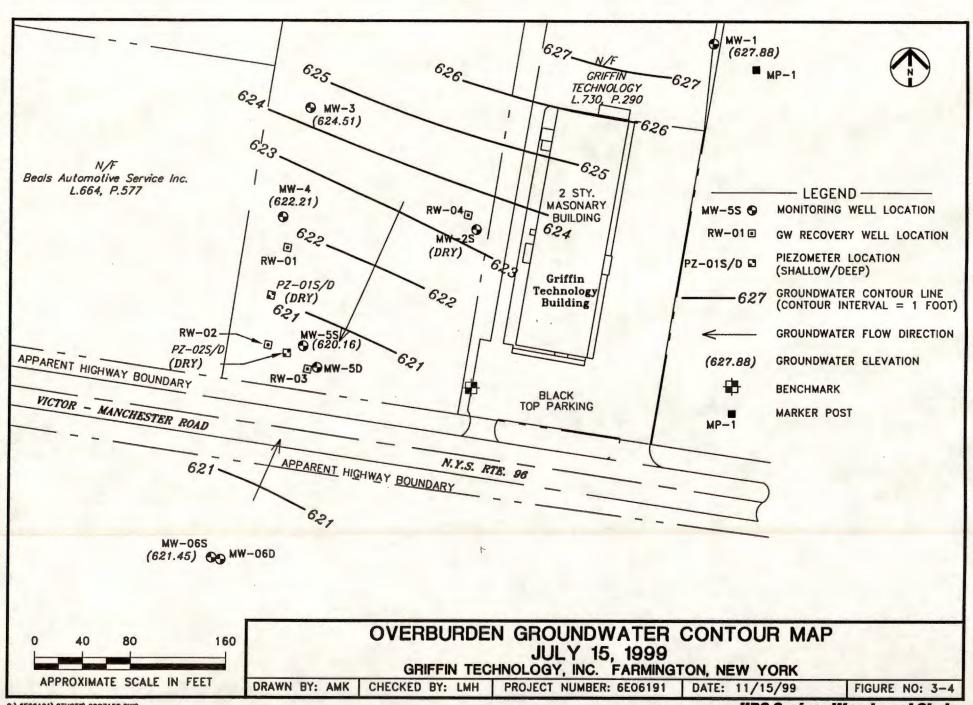


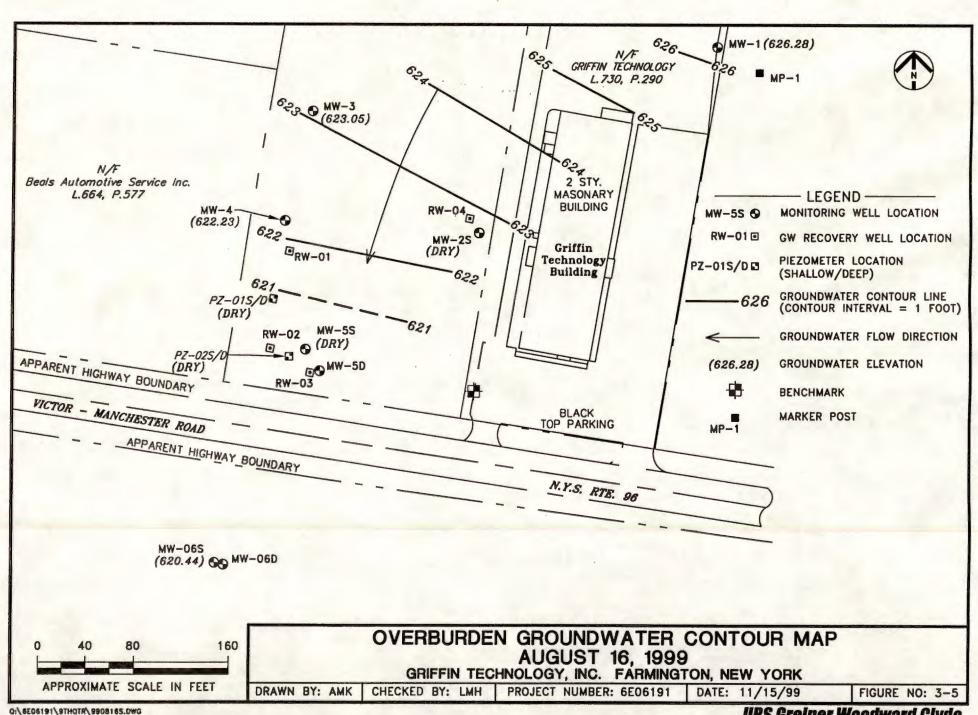


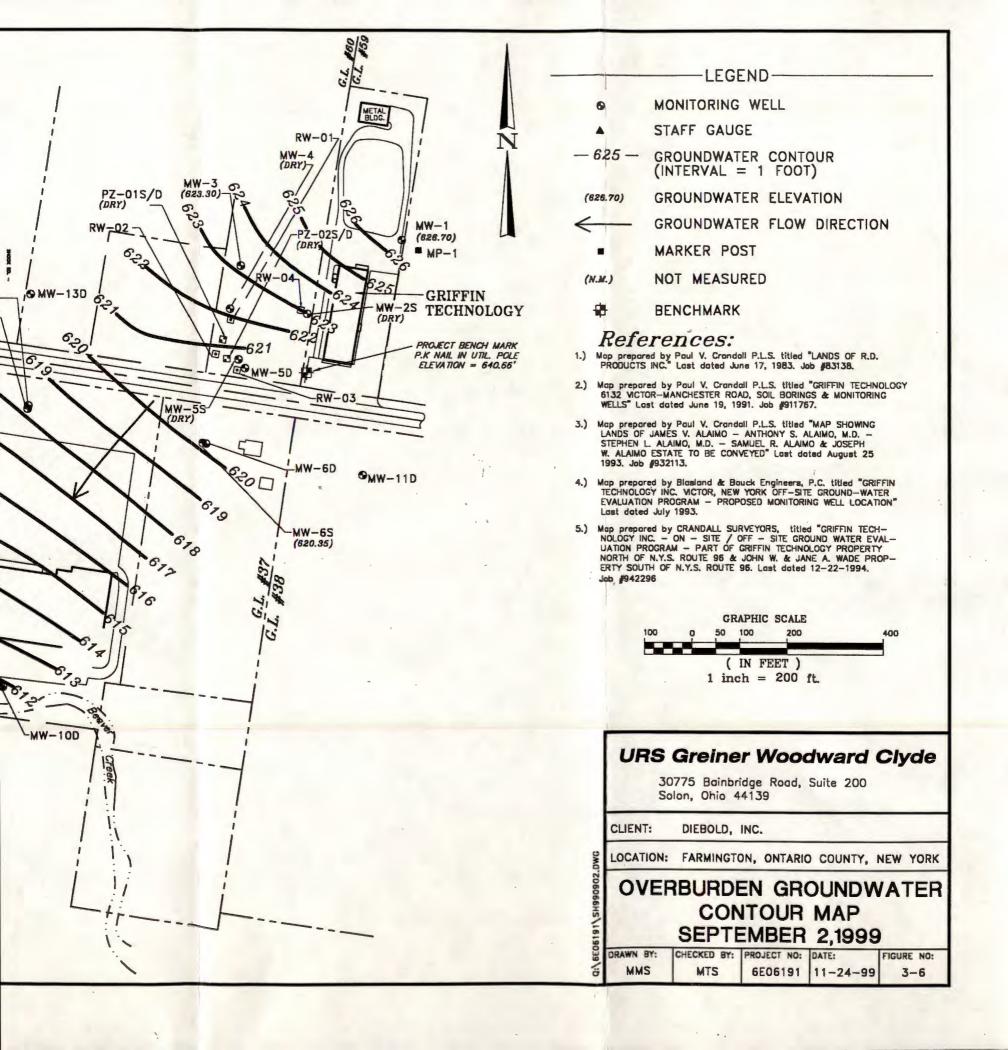


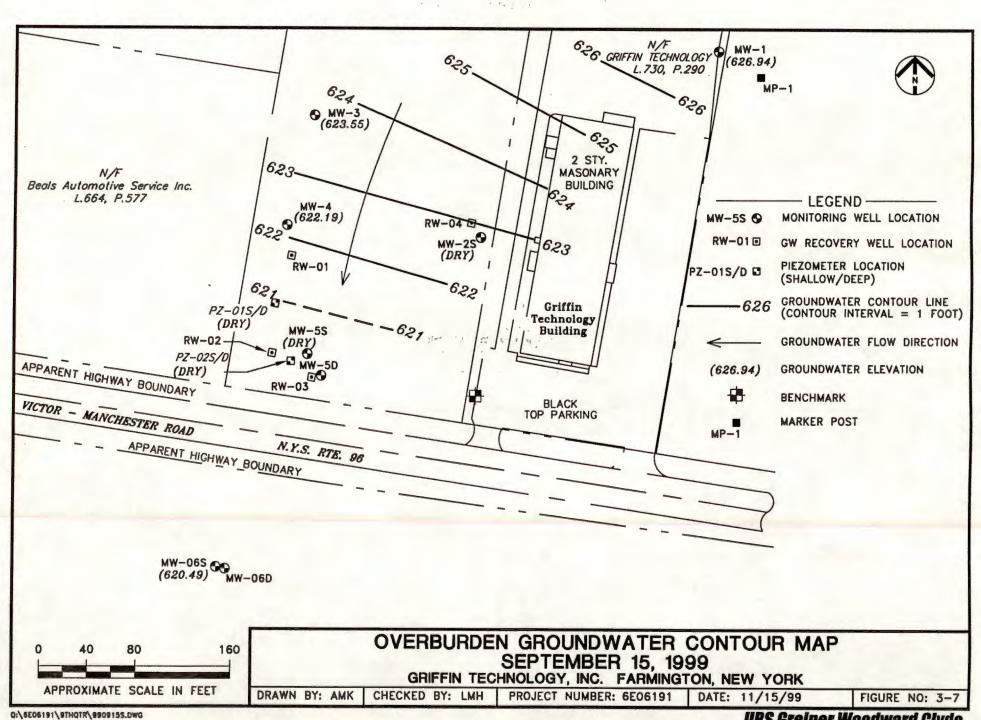


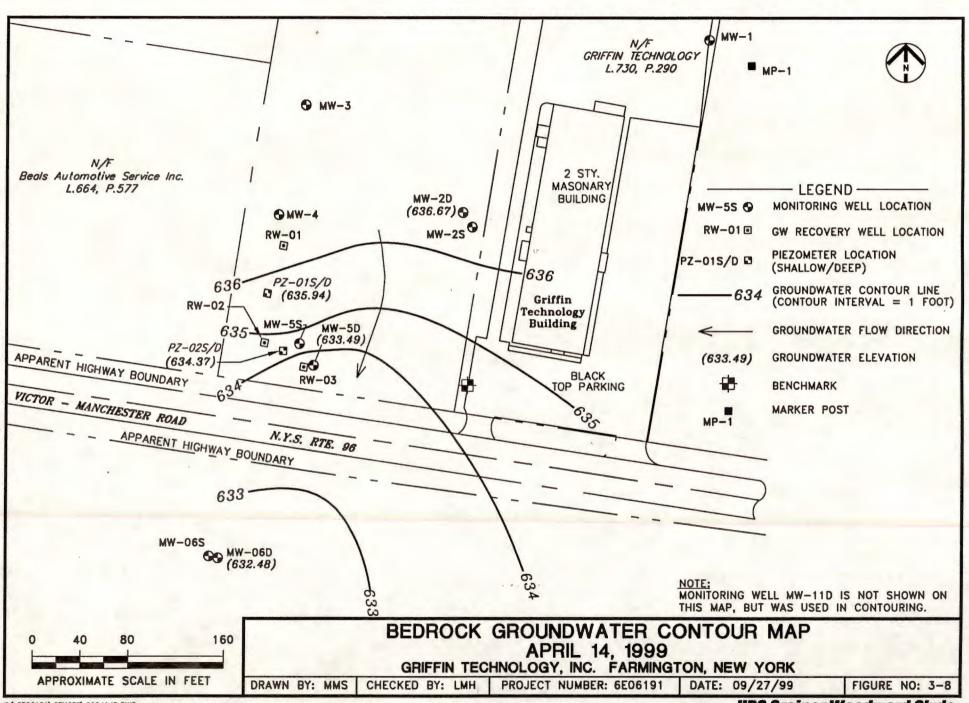


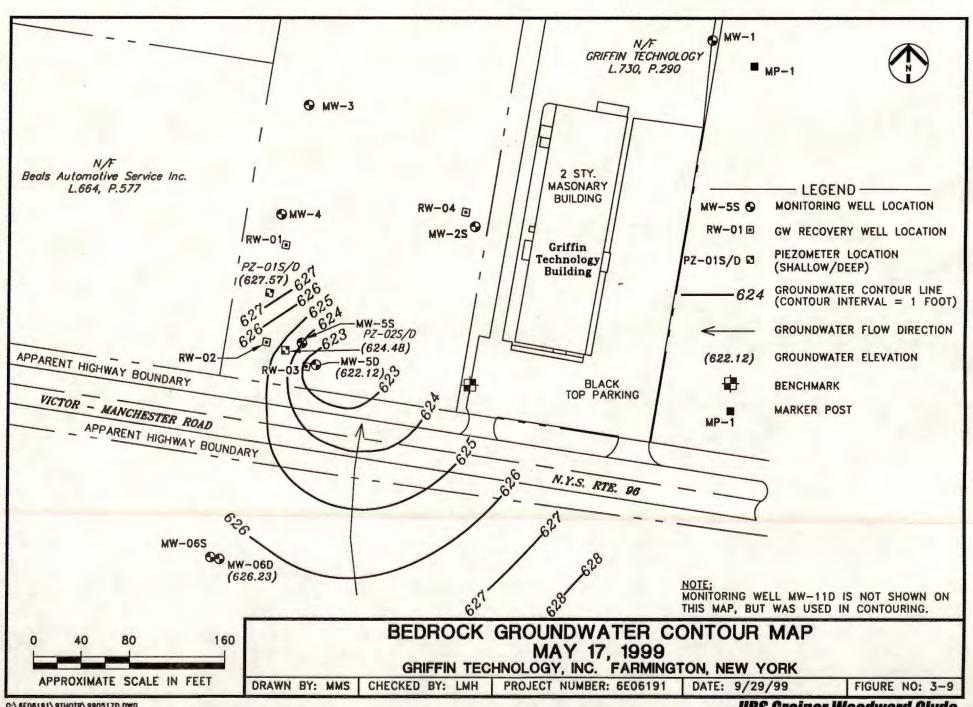


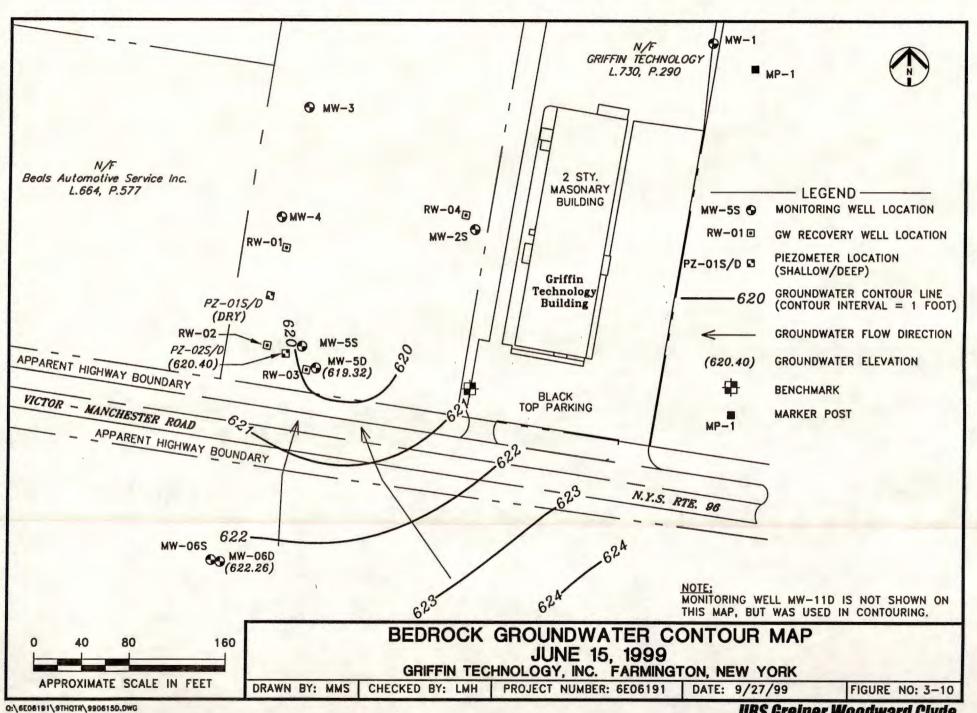


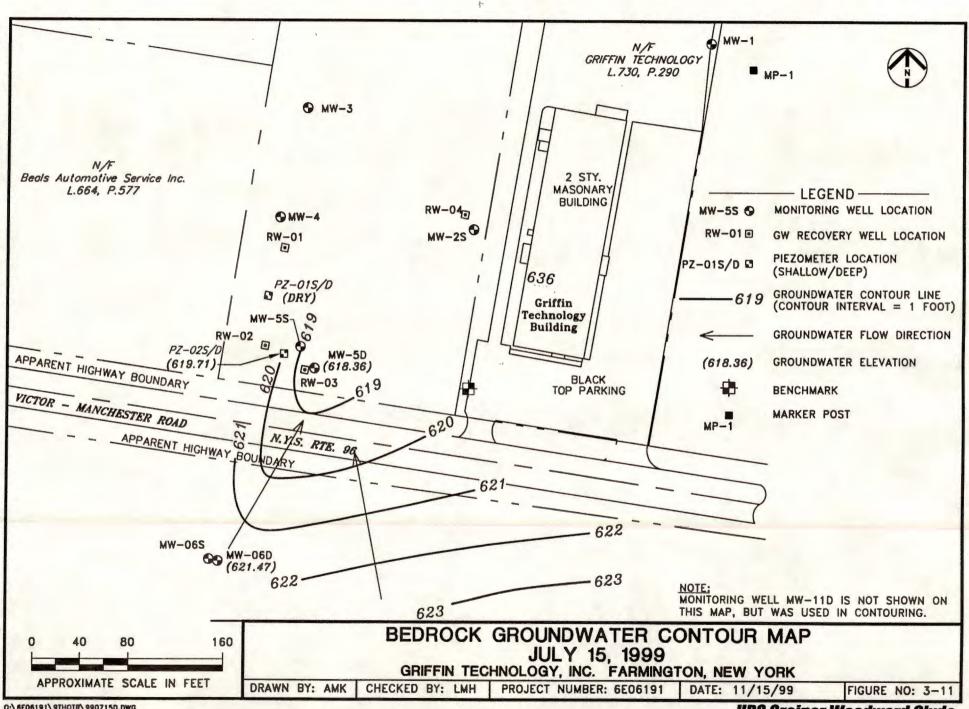


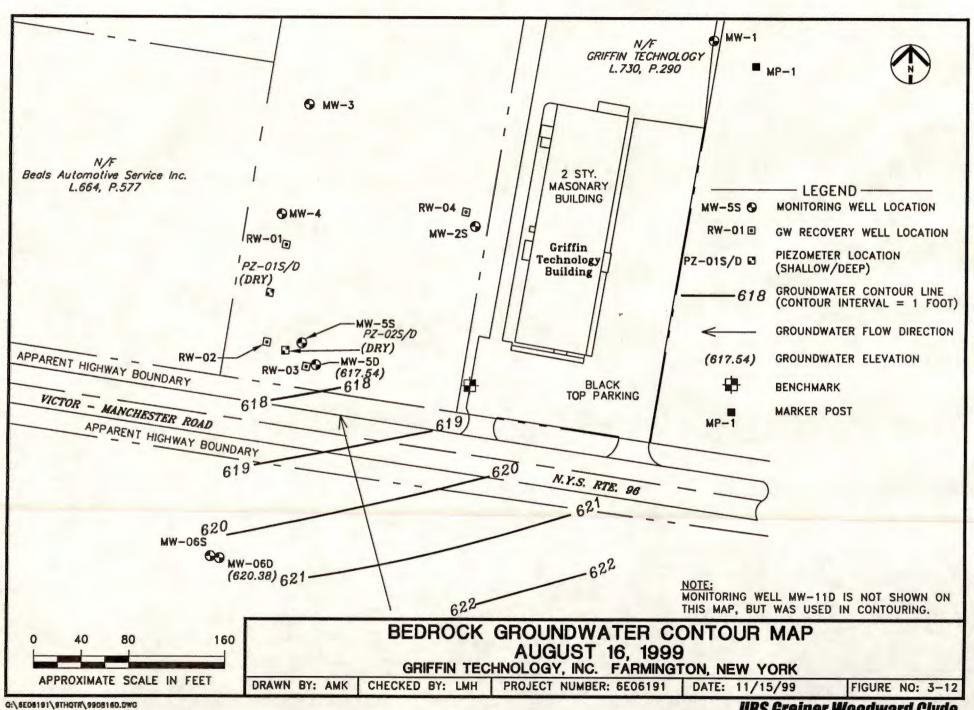


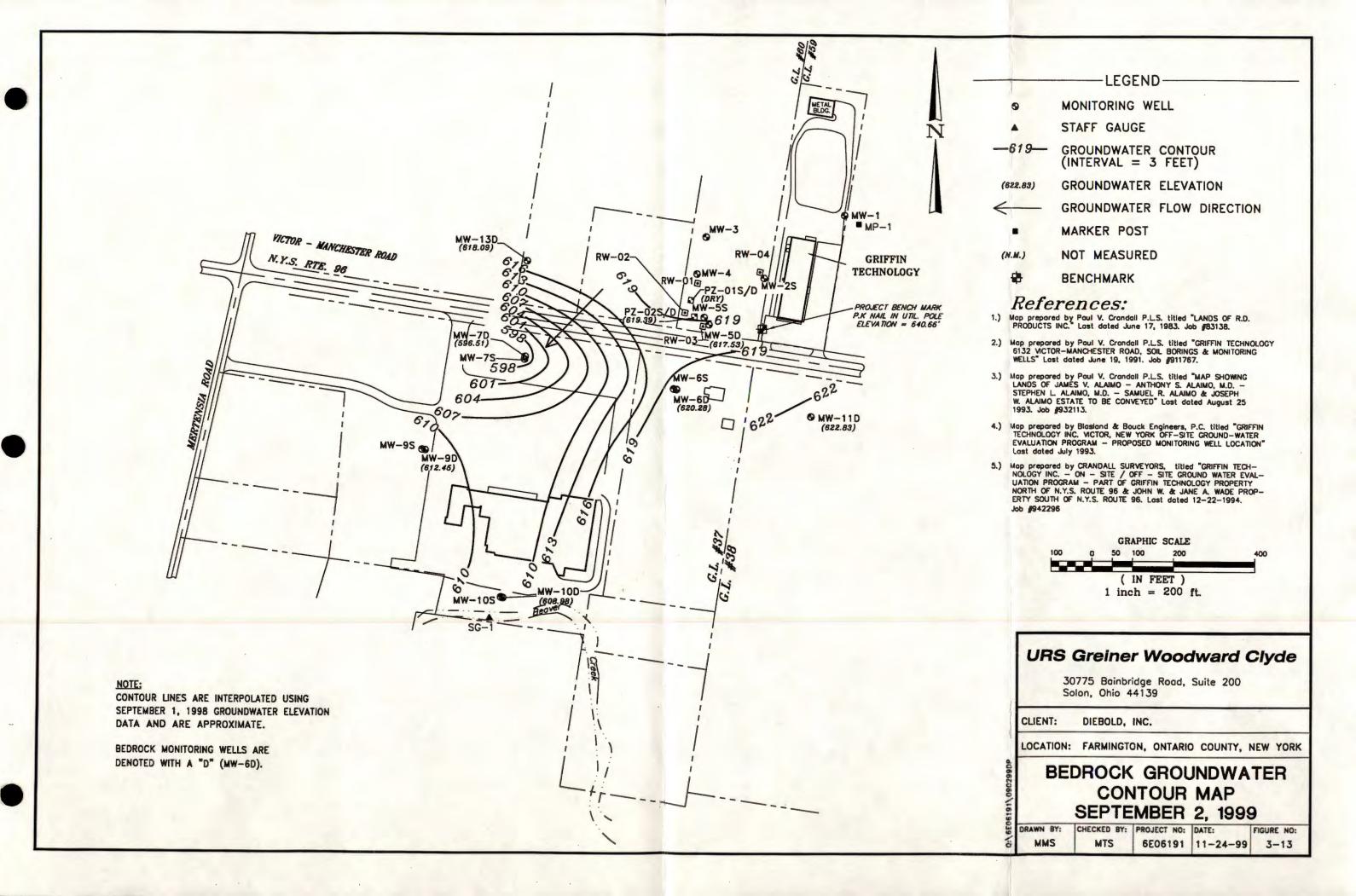


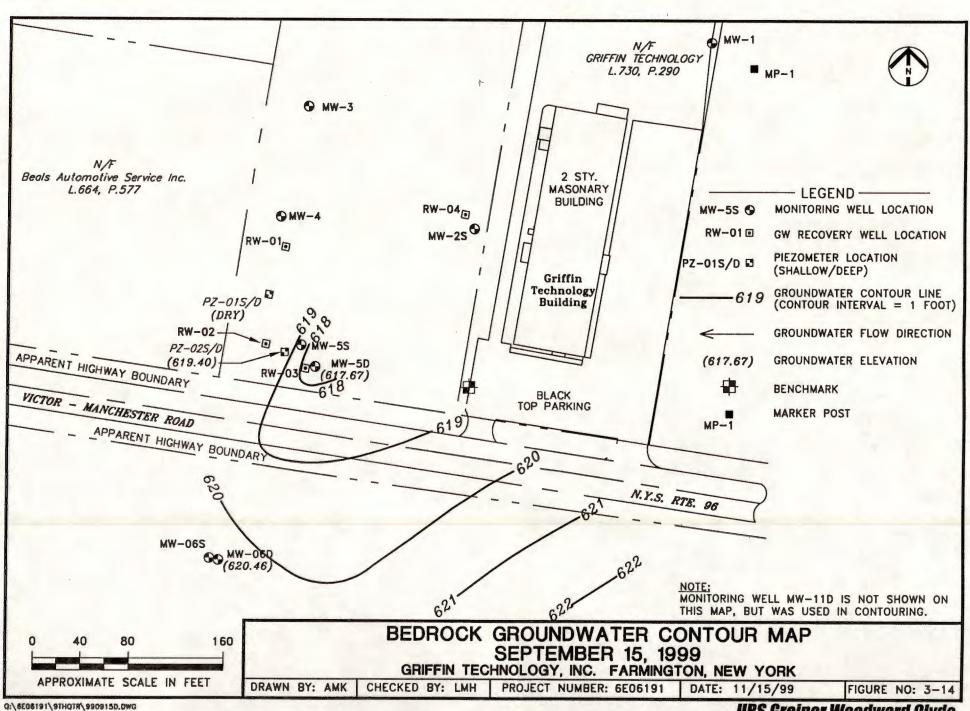














A FULL SERVICE ENVIRONMENTAL LABORATORY

September 30, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9909000202

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



Effective 04/01/96

73004

158

7889

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- Indicates an estimated value. For further explanation see case narrative / cover letter.
- This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- Spiked sample recovery not within control limits. (Flag the entire batch - Inorganic analysis only)
- * Duplicate analysis not within control limits. (Flag the entire batch - Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145 NJ ID # in Rochester: CT ID # in Rochester: PH0556 RI ID # in Rochester: MA ID # in Rochester: M-NY032 NH ID # in Rochester: 294198-A OH EPA # in Rochester: VAP AIHA # in Rochester:

VOLATILE ORGANICS METHOD 8260B TCL Reported: 09/30/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID: EFF-9-15-99

Date Sampled: 09/15/99 Order #: 324424 Sample Matrix: WATER Date Received: 09/15/99 Submission #: 9909000202 Analytical Run 42916

ANALYTE				P	QL	I	RESUI	T	UNIT
DATE ANALYZED : 09/27/99									
	.50								
ACETONE					20		50 T	-	UG/L
BENZENE					5.0		13 U		UG/L
BROMODICHLOROMETHANE					5.0		13 U		UG/L
BROMOFORM					5.0		13 U		UG/L
BROMOMETHANE					5.0		13 U		
2-BUTANONE (MEK)					10				UG/L
CARBON DISULFIDE					10		25 U		UG/L
CARBON TETRACHLORIDE							25 U		UG/L
CHLOROBENZENE					5.0		13 U		UG/L
					5.0		13 U		UG/L
CHLOROETHANE					5.0		13 U		UG/L
CHLOROFORM					5.0		13 U		UG/L
CHLOROMETHANE					5.0		13 U		UG/L
DIBROMOCHLOROMETHANE					5.0		13 U		UG/L
1,1-DICHLOROETHANE					5.0		13 U		UG/L
1,2-DICHLOROETHANE					5.0		13 Ü		UG/L
1,1-DICHLOROETHENE					5.0		13 U		UG/L
CIS-1,2-DICHLOROETHENE					5.0		13 U		UG/L
TRANS-1,2-DICHLOROETHENE					5.0		13 U		UG/L
1,2-DICHLOROPROPANE					5.0		13 U		UG/L
CIS-1,3-DICHLOROPROPENE					5.0		13 U		UG/L
TRANS-1,3-DICHLOROPROPENE					5.0		13 U		UG/L
ETHYLBENZENE					5.0		13 U		UG/L
2-HEXANONE					10		25 U		UG/L
METHYLENE CHLORIDE					5.0		13 U		UG/L
4-METHYL-2-PENTANONE (MIBK)					10				
STYRENE					5.0		25 U		UG/L
1,1,2,2-TETRACHLOROETHANE							13 U		UG/L
TETRACHLOROETHENE					5.0		13 U		UG/L
TOLUENE					5.0		13 U		UG/L
					5.0		13 U		UG/L
1,1,1-TRICHLOROETHANE					5.0		13 U		UG/L
1,1,2-TRICHLOROETHANE					5.0		13 U		UG/L
TRICHLOROETHENE					5.0	4	50		UG/L
/INYL CHLORIDE					5.0		13 U		UG/L
O-XYLENE					5.0		13 U		UG/L
M+P-XYLENE					5.0		13 U		UG/L
SURROGATE RECOVERIES	QC	LI	MITS						
4-BROMOFLUOROBENZENE	(86	_	115	%)			96		96
FOLUENE-D8	(88)		110				99		00
DIBROMOFLUOROMETHANE	(86		118				96		00

VOLATILE ORGANICS METHOD 8260B TCL Reported: 09/30/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled: Date Received:	Order #:	328337	Sample Matrix: Analytical Run	WATER 42916
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED : 09/2 ANALYTICAL DILUTION:	7/99			-
ACETONE BENZENE BROMODICHLOROMETHANE BROMOFORM BROMOMETHANE 2-BUTANONE (MEK) CARBON DISULFIDE CARBON TETRACHLORIDE CHLOROBENZENE CHLOROFORM CHLOROMETHANE		20 5.0 5.0 5.0 10 10 5.0 5.0 5.0	20 U 5.0 U 5.0 U 5.0 U 10 U 10 U 5.0 U 5.0 U 5.0 U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L
DIBROMOCHLOROMETHANE 1,1-DICHLOROETHANE 1,2-DICHLOROETHANE 1,1-DICHLOROETHENE CIS-1,2-DICHLOROETHENE TRANS-1,2-DICHLOROETHENE 1,2-DICHLOROPROPANE CIS-1,3-DICHLOROPROPENE TRANS-1,3-DICHLOROPROPENE ETHYLBENZENE	han-	5.0 5.0 5.0 5.0 5.0 5.0 5.0	5.0 U 5.0 U 5.0 U 5.0 U 5.0 U 5.0 U 5.0 U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L
2-HEXANONE METHYLENE CHLORIDE 4-METHYL-2-PENTANONE (MIBK STYRENE 1,1,2,2-TETRACHLOROETHANE TETRACHLOROETHENE TOLUENE)	5.0 10 5.0 10 5.0 5.0 5.0	5.0 U 10 U 5.0 U 10 U 5.0 U 5.0 U 5.0 U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L
1,1,1-TRICHLOROETHANE 1,1,2-TRICHLOROETHANE TRICHLOROETHENE VINYL CHLORIDE O-XYLENE M+P-XYLENE		5.0 5.0 5.0 5.0 5.0	5.0 U 5.0 U 5.0 U 5.0 U 5.0 U	UG/L UG/L UG/L UG/L
SURROGATE RECOVERIES 4-BROMOFLUOROBENZENE	QC LIMI	TS	0.6	0.
TOLUENE-D8 DIBROMOFLUOROMETHANE	(88 - 1	.10 %) .18 %)	96 99 94	oto oto oto

COL BIA ANALYTICAL SERVICES, INC.

rd St., Suite 250, Rochester, NY 14609-6925 (716) 288-5380 • FAX (716) 288-8475

CHAIN O USTODY/LABORATORY ANALYSIS REQUIRE FORM

(800) 695-7222

DATE	9-15-99	PAGE	/ OF /
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PROJECT NAME _G	riffin	FR	m													QUE	ESTE	D					-	
PROJECT MANAGER/O	CONTACT_	Mark	Schmids	1-		7	-2		9	s,	A's	H/P	ATION Ignit.									PRES	ERVA	TION
COMPANY/ADDRESS	Solon	, Ohia	o A	a	NERS	56	96 🗆 9	/602	CB's	CLP CLP	70 SVO	LS OA's	TERIZ/		OLVED									
TEL (440) 349 - SAMPLER'S SIGNATUR	2708 E Bo	1- Fa	40, 349-15	514	CONTAINERS	1S VOA's 60	IS SVOA's	OA's 21 🗆 601	PESTICIDES/PCB's	TAL DT	S LIST 82	A'S SV	E CHARA(LS, TOTAL BELOW)	METALS, DISSOLVED (LIST BELOW)	40						0::	12	
SAMPLE I.D.	DATE	1	FOR OFFICE USE ONLY LAB I.D.		# OF	GC/N	GC/N	GC V	PEST 0 80	STAR	STAR	350	WAST Bea	META	META	8						pH < 2.0	pH > 1	Other
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Signature		Signature						-																
Printed Name Firm		Printed Name Firm																						
Date/Time		Date/Time																						

Columbia Analytical Services Inc. Cooler Receipt And Preservation Check Form

Project/Client				Subm	ission Number_		200
Cooler received on	9-15-99 and	opened o	on 9-15	99 by 1	hor men	on.	
	dy seals on outsidemany and where?		er?	7	YES N	10	
	ture & date correc				YES N	10	
	dy papers properly		ut (ink, si	gned, etc)?	YES		
	les arrive in good				YES	40	
5. Were all bo	ttle labels comple	te (i.e. ar	alysis, p	reservation, etc)?			
 Did all bott Were correct 	le labels and tags : ct bottles used for	agree wit	in custod	y papers?	YES		
	vials checked for				if so? (YES)		
9. Where did	the bottles origina	te? CA	S/A CA	AS/K CAS/S (AS/R
10. Tempera	ature of cooler(s) u	upon rece	eipt:	11,1*			
Is the tem	perature within 4 ± 2°	° C?:		Yes □ Yes □	Yes 🗆	Yes 🗆	Yes 🗆
If No, Ex	plain Below		1	No No E		No 🗆	No 🗆
Date/Tir	me Temperatures	Taken:	9-15			🗀	110 🚨
	meter ID: 16/			One: Temp B		Bottle Cool	
Explain any discrep	a VOA Viles	t delive	red, to	ok woher v	with him a Tool	K temp by	Putting
Explain any discrep	pancies: * Chevi a VOA Viles	t delive YES	red, to	Sample I.D.	vith him Tool	(temp by	
Explain any discrep Probe between pH	pancies: * Chevi				T		
Frode between	a VUA VITES				T		
pH	Reagent				T		
pH 12	Reagent NaOH				T		
рН 12 2	Reagent NaOH HNO3				T		
pH 12 2 2	Reagent NaOH HNO ₃ H ₂ SO ₄				T		
pH 12 2 2	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed	YES			T		
pH 12 2 5-9* YES = All samples OK NO = Samples were pre *If pH adjustment is req	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed quired, use NaOH and/o CC Vial pH Verificatio (Tested after Analysis) Following Samples	YES Or H ₂ SO ₄			T		
pH 12 2 5-9* YES = All samples OK NO = Samples were pre *If pH adjustment is req	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed quired, use NaOH and/o OC Vial pH Verificatio (Tested after Analysis)	YES Or H ₂ SO ₄			T		
pH 12 2 5-9* YES = All samples OK NO = Samples were pre *If pH adjustment is req	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed quired, use NaOH and/o CC Vial pH Verificatio (Tested after Analysis) Following Samples	YES Or H ₂ SO ₄			T		
pH 12 2 5-9* YES = All samples OK NO = Samples were pre *If pH adjustment is req	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed quired, use NaOH and/o CC Vial pH Verificatio (Tested after Analysis) Following Samples	YES Or H ₂ SO ₄			T		
pH 12 2 5-9* YES = All samples OK NO = Samples were pre *If pH adjustment is req	Reagent NaOH HNO3 H ₂ SO ₄ P/PCBs (608 only) served at lab as listed quired, use NaOH and/o CC Vial pH Verificatio (Tested after Analysis) Following Samples	YES Or H ₂ SO ₄			T		



A FULL SERVICE ENVIRONMENTAL LABORATORY

August 31, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9908000200

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits.
 (Flag the entire batch Inorganic analysis only)
- Duplicate analysis not within control limits.
 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145
CT ID # in Rochester: PH0556
MA ID # in Rochester: M-NY032
OH EPA # in Rochester: VAP

NJ ID # i 556 RI ID # i Y032 NH ID #

NJ ID # in Rochester: 73004
RI ID # in Rochester: 158
NH ID # in Rochester: 294198-A
AIHA # in Rochester: 7889

VOLATILE ORGANICS METHOD 8260B TCL Reported: 08/31/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID: EFF-8-16-99

Date Sampled: 08/16/99 Order #: 316348 Sample Matrix: WATER Date Received: 08/16/99 Submission #: 9908000200 Analytical Run 41913

ANALYTE		P	ΣΓ	RESULT	UNITS
DATE ANALYZED : 08/24/9	9		-	The state of the s	
	00				
ACETONE			20	20 U	UG/L
BENZENE			5.0	5.0 U	UG/L
BROMODICHLOROMETHANE			5.0	5.0 U	UG/L
BROMOFORM			5.0	5.0 U	UG/L
BROMOMETHANE			5.0	5.0 U	UG/L
2-BUTANONE (MEK)			10	10 U	
CARBON DISULFIDE			10		UG/L
CARBON TETRACHLORIDE			5.0	10 U	UG/L
CHLOROBENZENE				5.0 U	UG/L
CHLOROETHANE			5.0	5.0 U	UG/L
CHLOROFORM			5.0	5.0 U	UG/L
			5.0	5.0 U	UG/L
CHLOROMETHANE			5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE			5.0	5.0 U	UG/L
,1-DICHLOROETHANE			5.0	5.0 U	UG/L
,2-DICHLOROETHANE			5.0	5.0 U	UG/L
,1-DICHLOROETHENE			5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE			5.0	7.5	UG/L
RANS-1,2-DICHLOROETHENE			5.0	5.0 U	UG/L
,2-DICHLOROPROPANE			5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE			5.0	5.0 U	UG/L
RANS-1,3-DICHLOROPROPENE			5.0	5.0 U	UG/L
THYLBENZENE			5.0	5.0 U	UG/L
2-HEXANONE			10	10 U	UG/L
ETHYLENE CHLORIDE			5.0	5.0 U	UG/L
-METHYL-2-PENTANONE (MIBK)			10	10 U	UG/L
TYRENE		-	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE			5.0	5.0 U	UG/L
ETRACHLOROETHENE			5.0	5.0 U	UG/L
OLUENE			5.0	5.0 U	UG/L
,1,1-TRICHLOROETHANE			5.0	15	UG/L
,1,2-TRICHLOROETHANE			5.0	5.0 U	UG/L
FRICHLOROETHENE					UG/L
INYL CHLORIDE			5.0	480 E 5.0 U	
-XYLENE			5.0		UG/L
I+P-XYLENE				5.0 U	UG/L
ITE ALLIQUE			5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC LIMITS				
-BROMOFLUOROBENZENE	(86 - 115	왕)		101	8
OLUENE-D8	(88 - 110			103	96
DIBROMOFLUOROMETHANE	(86 - 118			107	96

VOLATILE ORGANICS METHOD 8260B TCL Reported: 08/31/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID : EFF-8-16-99

Date Sampled: 08/16/99 Order #: 316348 Sample Matrix: WATER Date Received: 08/16/99 Submission #: 9908000200 Analytical Run 41913

ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED : 08/25/	99			
	5.00			
ACETONE		20	100 77	/
BENZENE			100 U	UG/L
BROMODICHLOROMETHANE		5.0	25 U	UG/L
BROMOFORM	~	5.0	25 U	UG/L
BROMOMETHANE		5.0	25 U	UG/L
		5.0	25 U	UG/L
2-BUTANONE (MEK)		10	50 U	UG/L
CARBON DISULFIDE		10	50 U	UG/L
CARBON TETRACHLORIDE		5.0	25 U	UG/L
CHLOROBENZENE		5.0	25 U	UG/L
CHLOROETHANE		5.0	25 U	UG/L
CHLOROFORM		5.0	25 U	UG/L
CHLOROMETHANE		5.0	25 U	UG/L
DIBROMOCHLOROMETHANE		5.0	25 U	UG/L
1,1-DICHLOROETHANE		5.0	25 U	UG/L
1,2-DICHLOROETHANE		5.0	25 U	UG/L
,1-DICHLOROETHENE		5.0	25 U	
CIS-1,2-DICHLOROETHENE		5.0		UG/L
TRANS-1,2-DICHLOROETHENE			25 U	UG/L
L,2-DICHLOROPROPANE		5.0	25 U	UG/L
CIS-1,3-DICHLOROPROPENE		5.0	25 U	UG/L
		5.0	25 U	UG/L
TRANS-1,3-DICHLOROPROPENE		5.0	25 U	UG/L
THYLBENZENE		5.0	25 U	UG/L
2-HEXANONE		10	50 U	UG/L
METHYLENE CHLORIDE		5.0	25 U	UG/L
-METHYL-2-PENTANONE (MIBK)		10	50 U	UG/L
STYRENE		5.0	25 U	UG/L
,1,2,2-TETRACHLOROETHANE		5.0	25 U	UG/L
TETRACHLOROETHENE		5.0	25 U	UG/L
COLUENE		5.0	25 U	UG/L
,1,1-TRICHLOROETHANE		5.0	25 U	UG/L
,1,2-TRICHLOROETHANE		5.0	25 U	UG/L
RICHLOROETHENE		5.0	490	UG/L
INYL CHLORIDE		5.0	25 U	
-XYLENE		5.0		UG/L
+P-XYLENE			25 U	UG/L
		5.0	25 U	UG/L
SURROGATE RECOVERIES	QC LIMITS			
-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
OLUENE-D8	(88 - 110 %		104	8
DIBROMOFLUOROMETHANE	(86 - 118 %		99	8

VOLATILE ORGANICS METHOD 8260B TCL Reported: 08/31/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled: Date Received:	Order #: Submission #:		Sample Matrix: Analytical Run	
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED :	08/24/99	-		
ANALYTICAL DILUTION:	1.00			
ACETONE		20	20 U	UG/L
BENZENE		5.0	5.0 U	UG/L
BROMODICHLOROMETHANE		5.0	5.0 U	UG/L
BROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0	5.0 U	UG/L
2-BUTANONE (MEK)		10	10 U	UG/L
CARBON DISULFIDE		10	10 U	UG/L
CARBON TETRACHLORIDE		5.0	5.0 U	UG/L
CHLOROBENZENE		5.0	5.0 U	UG/L
CHLOROETHANE		5.0	5.0 U	UG/L
CHLOROFORM		5.0	5.0 U	UG/L
CHLOROMETHANE		5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE		5.0	5.0 U	UG/L
L, 1-DICHLOROETHANE		5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	4	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE		5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHE	NE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE		5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPEN		5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROP	ENE	5.0	5.0 U	UG/L
ETHYLBENZENE		5.0	5.0 U	UG/L
2-HEXANONE		10	10 U	UG/L
METHYLENE CHLORIDE		5.0	5.0 U	UG/L
	MIBK)	10	10 U	UG/L
STYRENE		5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETH	ANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE		5.0	5.0 U	UG/L
TOLUENE		5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE		5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE		5.0	5.0 U	UG/L
TRICHLOROETHENE		5.0	5.0 U	UG/L
VINYL CHLORIDE O-XYLENE		5.0	5.0 U	UG/L
M+P-XYLENE		5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC LIM		8	
-BROMOFLUOROBENZENE	(86 -	115 %)	96	*
COLUENE-D8		110 %)	104	8
DIBROMOFLUOROMETHANE		118 %)	94	8

VOLATILE ORGANICS METHOD 8260B TCL

Reported: 08/31/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received:	Order Submission	#: 319364 #:	Sample Matrix: Analytical Run	
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED :	08/25/99			
ANALYTICAL DILUTION:	1.00			
ACETONE		20	20 U	UG/L
BENZENE		5.0	5.0 U	UG/L
BROMODICHLOROMETHANE		5.0		UG/L
BROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0		UG/L
2-BUTANONE (MEK)		10		UG/L
CARBON DISULFIDE		10		UG/L
CARBON TETRACHLORIDE		5.0		UG/L
CHLOROBENZENE		5.0		UG/L
CHLOROETHANE		5.0		UG/L
CHLOROFORM		5.0		UG/L
CHLOROMETHANE		5.0		UG/L
DIBROMOCHLOROMETHANE		5.0		UG/L
,1-DICHLOROETHANE		5.0		UG/L
1,2-DICHLOROETHANE	J	5.0		UG/L
1,1-DICHLOROETHENE	***	5.0		UG/L
CIS-1, 2-DICHLOROETHENE		5.0		UG/L
TRANS-1, 2-DICHLOROETHE		5.0		UG/L
1,2-DICHLOROPROPANE		5.0		UG/L
CIS-1, 3-DICHLOROPROPEN	IE	5.0		UG/L
TRANS-1, 3-DICHLOROPROP		5.0		UG/L
ETHYLBENZENE		5.0		UG/L
2-HEXANONE		10		UG/L
METHYLENE CHLORIDE		5.0		UG/L
4-METHYL-2-PENTANONE	(MIBK)	10		UG/L
STYRENE		5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETH	IANE	5.0		UG/L
TETRACHLOROETHENE		5.0		UG/L
TOLUENE		5.0		UG/L
1,1,1-TRICHLOROETHANE	•	5.0		UG/L
1,1,2-TRICHLOROETHANE		5.0		UG/L
TRICHLOROETHENE		5.0		UG/L
VINYL CHLORIDE		5.0	5.0 U	UG/L
O-XYLENE		5.0		UG/L
M+P-XYLENE	•	5.0		UG/L
SURROGATE RECOVERIES	QC I	IMITS		
-BROMOFLUOROBENZENE	(86	- 115 %)	109	8
OLUENE-D8	(88)	- 110 %)	109	8
DIBROMOFLUOROMETHANE	(86	- 118 %)	89	ક

ard St., Suite 250, Rochester, NY 14609-6925 (716) 288-5380 • FAX (716) 288-8475

CHAIN O USTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 8-16-99 PAGE / OF /

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SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	#	GC/MS VOA's	GC	00 00 00 00 00 00 00 00 00 00 00 00 00	PES 0 80	STA DT(STA	호	WAS	MET (LIS	METALS, DISSOLVED (LIST BELOW)	00						PH.	F Y	Other
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Signature Bob Fabigan Printed Name URS WCC Firm C-11-22		Printed Nam	6 145	Star		0-15 wor	-			Narrative EPA Lev														
Firm 8-16-99	1:50	Firm S/Date/Time	16/99 11.	50 - Prov	ride Verl	bal Prelir	ninary A	lesults		/alidatat		age							— Te	ipping # mperature:	26	VOC.	6.	26
Date/Time		Date/Time		Prov	ide FAX	Prelimie	nary Res	sults		V.J. Red Deliverat		of IV		-					- _			2)	AZ	_
RELINQUISHED BY	Y:	Spa	RECEIVED BY:	Request	led Repo	ort Date				Y ASP			es						- Su	bmission M	No:	1-1	.00	_
Signature		Signature	egovy O. Esne	15000					6. 5	Site spec	cific QC.													
Printed Name		Printed Nami		SPEC	CIAL	NSTR	UCTIC	NS/C	OMME	NTS:														
Firm		Firm S	3-16-94 11:	50 META	ALS																			
Date/Time						2.	TCI			AFC	anh:		10-1		2nest-	111-1								
RELINQUISHED BY	Y:		RECEIVED BY:	OHG	ANIUS	э. Ц	TUL		L	AE C	ліу		Only		Specia	LIST								-
Signature		Signature																						_
Printed Name		Printed Name	9																					
Firm Date/Time		Firm Date/Time																						

Columbia Analytical Services Inc. Cooler Receipt And Preservation Check Form

	VCC4				Submiss	ion Numb	er	8-011)
Cooler received on	8/16/99 and	opened o	on 8/16/	149	by	Be			
. Were custo	ody seals on outside many and where?	e of coole	/			YE	SNO	DCI	earl
•	ature & date correct					(YE	S NO	5	livere
. Were custo	ody papers properly	filled or	ut (ink, sig	ned, etc))?		S NO) De	110000
	tles arrive in good						S) NC		
Were all both. Did all both	ottle labels complete tle labels and tags a	le (1.e. an	alysis, pre	servatio	n, etc)?		S NO		
Were corre	ect bottles used for	the tests	indicated?	papers		-	S NC		
	vials checked for					so? YE	S) NC)	
	the bottles original			S/K CA	AS/S CA	S/L CA	S/X (CAS/J C	AS/R
	rature of cooler(s) u		•	5			_		
	nperature within 4 ± 2°	, C.:	Ye	is Bo	Yes 🗆	Yes 🗆		Yes 🗆	Yes 🗆
	xplain Below		No		No 🗆	No 🗆		No 🗆	No 🗆
	ime Temperatures		8/16	199		53			
Thermo	ometer ID: 161	/	Circle (One: T	emp Blan	nk Samı	ole Bo	ttle Coc	oler Tem
					4		A. E		4 (2) (2) (2) (2)
Explain any discre	pancies:		7-(4		, , ,	the second		and the second	
,					A = 14				
		YES	NO	Sample	I.D.	Reagent		Vol. A	dded
рH	Reagent								
12	NaOH					ivi, m			
. 2	HNO ₃				. 4	and a second			
2	H ₂ SO ₄		\$ 2.5	113	<i>371</i>	A STATE OF S	1984		
5-9*	P/PCBs				1		214.		
	(608 only)	-			÷				
YES = All samples Of	reserved at lab as listed	11 50					¥E.	1	
	quired, use NaOH and/o	OF HISOLA							(0.00)
*If pH adjustment is re	equired, use NaOH and/o VOC Vial pH Verification	on			*		/		
*If pH adjustment is re	VOC Vial pH Verification (Tested after Analysis) Following Samples	on			-			and ordinates are ordinates and ordinates ar	
*If pH adjustment is re	VOC Vial pH Verification (Tested after Analysis)	on			•				i.e.
*If pH adjustment is re	VOC Vial pH Verification (Tested after Analysis) Following Samples	on							
If pH adjustment is re	VOC Vial pH Verification (Tested after Analysis) Following Samples	on							- 19 14
If pH adjustment is re	VOC Vial pH Verification (Tested after Analysis) Following Samples	on			•				



A FULL SERVICE ENVIRONMENTAL LABORATORY

August 5, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9907000225

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits. (Flag the entire batch Inorganic analysis only)
- Duplicate analysis not within control limits.
 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145
CT ID # in Rochester: PH0556
MA ID # in Rochester: M-NY032
OH EPA # in Rochester: VAP

NJ ID # in Rochester: 73004
RI ID # in Rochester: 158
NH ID # in Rochester: 294198-A
AIHA # in Rochester: 7889

VOLATILE ORGANICS

METHOD 8260B TCL Reported: 08/05/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID: EFF-7-15-99

Date Sampled: 07/15/99 Order #: 308203 Sample Matrix: WATER Date Received: 07/15/99 Submission #: 9907000225 Analytical Run 41015

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 07/27/99			
ANALYTICAL DILUTION: 2.50			
CETONE	20	E0 II	
BENZENE	5.0	50 U	UG/L
ROMODICHLOROMETHANE		13 U	UG/L
ROMOFORM	5.0	13 U	UG/L
ROMOMETHANE	5.0	13 U	UG/L
-BUTANONE (MEK)	5.0	13 U	UG/L
ARBON DISULFIDE	10	25 U	UG/L
ARBON TETRACHLORIDE	10	25 U	UG/L
HLOROBENZENE	5.0	13 U	UG/L
HLOROETHANE	5.0	13 U	UG/L
HLOROFORM	5.0	13 U	UG/L
HLOROMETHANE	5.0	13 U	UG/L
IBROMOCHLOROMETHANE	5.0	13 U	UG/L
,1-DICHLOROETHANE	5.0	13 U	UG/L
,2-DICHLOROETHANE	5.0	13 U	UG/L
,1-DICHLOROETHENE	5.0	13 U	UG/L
IS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
PANC-1 2 DICHLOROETHENE	5.0	13 U	UG/L
RANS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
,2-DICHLOROPROPANE	5.0	13 U	UG/L
IS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
RANS-1,3-DICHLOROPROPENE THYLBENZENE	5.0	13 U	UG/L
-HEXANONE	5.0	13 U	UG/L
	10	25 U	UG/L
ETHYLENE CHLORIDE	5.0	13 U	UG/L
-METHYL-2-PENTANONE (MIBK)	10	25 U	UG/L
TYRENE	5.0	13 U	UG/L
,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
ETRACHLOROETHENE	5.0	13 U	UG/L
DLUENE	5.0	13 U	UG/L
,1,1-TRICHLOROETHANE	5.0	14	UG/L
1,2-TRICHLOROETHANE	5.0	13 U	UG/L
RICHLOROETHENE	5.0	510	UG/L
INYL CHLORIDE	5.0	13 U	UG/L
XYLENE	5.0	13 U	UG/L
-P-XYLENE	5.0	13 U	UG/L
SURROGATE RECOVERIES QC	LIMITS		
BROMOFLUOROBENZENE (86	- 115 %)	0.3	
LUENE-D8 (80	- 110 %)	93	ato ato ato
BROMOFLUOROMETHANE (86	- 118 %)	102	र्व

VOLATILE ORGANICS METHOD 8260B TCL Reported: 08/05/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received:	Order #: Submission #:	312929	Sample Matrix: Analytical Run	WATER 41015
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED : ANALYTICAL DILUTION:	/ / - 2			
AMABITICAL DILUTION:	1.00			
ACETONE		20	20.77	
BENZENE		20.	20 U	UG/L
BROMODICHLOROMETHANE		5.0	5.0 U	UG/L
BROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0	5.0 U	UG/L
2-BUTANONE (MEK)		5.0	5.0 U	UG/L
CARBON DISULFIDE		10	10 U	UG/L
CARBON TETRACHLORIDE		10	10 U	UG/L
CHLOROBENZENE		5.0	5.0 U	UG/L
CHLOROETHANE		5.0	5.0 U	UG/L
CHLOROFORM		5.0	5.0 U	UG/L
CHLOROMETHANE		5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE		5.0	5.0 U	UG/L
1,1-DICHLOROETHANE		5.0	5.0 U	UG/L
1,2-DICHLOROETHANE		5.0	5.0 U	UG/L
, 1-DICHLOROETHENE		5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
TRANS-1, 2-DICHLOROETHE	A TOTAL	5.0	5.0 U	UG/L *
2-DICHLOROPROPANE	TIVE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPEN	173	5.0	5.0 U	UG/L
RANS-1, 3-DICHLOROPROP	E	5.0	5.0 U	UG/L
ETHYLBENZENE	ENE	5.0	5.0 U	UG/L
- HEXANONE		5.0	5.0 U	UG/L
ETHYLENE CHLORIDE		10	10 U	UG/L
MITTER		5.0	5.0 U	UG/L
TYRENE	MIBK)	10	10 U	UG/L
		5.0	5.0 U	UG/L
.,1,2,2-TETRACHLOROETH ETRACHLOROETHENE	ANE	5.0	5.0 U	UG/L
OLUENE		5.0	5.0 U	UG/L
		5.0	5.0 U	UG/L
,1,1-TRICHLOROETHANE		5.0	5.0 U	UG/L
,1,2-TRICHLOROETHANE RICHLOROETHENE		5.0	5.0 U	UG/L
INYL CHLORIDE		5.0	5.0 U	UG/L
-XYLENE		5.0	5.0 U	UG/L
+P-XYLENE		5.0	5.0 U	UG/L
THE - AILENE		5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC LIMI	TS		00/ 1
-BROMOFLUOROBENZENE	100			
OLUENE-D8		15 %)	100	96
IBROMOFLUOROMETHANE		10 %)	101	00
LOCKONE I HAIVE	(86 - 1:	18 %)	91	96

1

ustard St., Suite 250, Rochester, NY 14609-6925 (716) 288-5380 • FAX (716) 288-8475

CHAIN CUSTODY/LABORATORY ANALYSIS RECEST FORM

(800) 695-7222

DATE 7-15-99 PAGE / OF /

PROJECT NAME Griffin TRM PROJECT MANAGER/CONTACT Mark Schmidt							1					A	NAL	YSI	S RE	QUE	ESTED			FAGE		OF	-
PROJECT MANAGER	CONTACT	Marks	Salanid	+		T	T			T	T							T			DDE	SEDV	ATION
COMPANY / ADDRESS	3017	5 2	Luide. F	2.1		1 7	2		9	S	A's	1	등	,							FAC	JENV	T
	5/	Jun	oriage x	4.	RS	□ 95-1	6	2	96	00	SVC	S	50										
	Dolor	101	410		R	-	1 10	09/	SB's	22	22	LS	TOS.		2								
TEL (440) 349-2	2708	FAX (H	401 349-	1514	IA	4's 62,)A's 625	9	S/P	180	187	ETA	SA	F.S	SS(N								
TEL (440) 349-2 SAMPLER'S SIGNATURE	E_Be	96 F	abian		OF CONTAINERS	GC/MS VOA's	AS SVC	OA's	PESTICIDES/PCB's	r'S LIS	TAL TAL	A's □	E CHA	LS, TC BELO	METALS, DISSOLVED (LIST BELOW)	40					< 2.0	12	
SAMPLE I.D.	DATE		FOR OFFICE USE ONLY LAB 1.D.		# 0	GCA B2	GCA □ 82	000	PEST 0 800	STAF	STAR	125	WAST	META (LIST	META LIST	(%)					PH < 2	PH > 1	Other
EFF-7-15-99	7-16-90	11:57			4							-	-,-		-		-	\vdash			Δ.	α.	
0111011	1/15//	11.5/	2000	WATER	2	-										X							
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Bob Fabian Printed Name URS WCC	/ :	The state of the s	RECEIVED BY:	TURNA						ORT R		EMEN	TS		INVOIC	E INFO	RMATION:	1		SAMPLE	RECEIP	T:	
Signature Bob Fabian	-	Signature	Brian Coll								Rep. w/C	CASE		P.O. #:						/ia:	1000	1	
Printed Name URS WCC		Printed Name	1 42	X Stand	lard (10	-15 worl	king day:	s)		arrative				Bill To:							ierj	Γ	
7-15-99	12:40	Firm 5/1	5/49 /2	Provi	de Verb	al Prefin	linary Re	esults		PA Leve	il III le Packa	ane		Om 10.					Shipping #	re:/	11 7	01	-
Date/Time		Date/Time	400	Provid	le FAX	Prelimin	ary Resi	ults		J. Redu		ige							Temperatu	e:/	416		-
RELINQUISHED BY	f :	F	RECEIVED BY:	Requeste	d Repo	rt Date _					les Leve									•	7.2	15	-1
Signature		Cionalina								te speci		iverables	s						Submission	1 No:			-
Printed Name		Signature Printed Name		SPECI	A 1 1A	ETDI	CTIO	NOVOC															
Firm		Firm		SPECI	AL IN	STHU	CHO	NS/CC	MME	NIS:													
Date/Time		Date/Time		METAL	S																		
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Signature		Signature																					
Printed Name		Printed Name																					
Firm		Firm																					_
Date/Time		Date/Time																					



A FULL SERVICE ENVIRONMENTAL LABORATORY

April 29, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM-MONTHLY Submission #:9904000198

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits.
 (Flag the entire batch Inorganic analysis only)
- Duplicate analysis not within control limits.
 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145 NJ ID # in Rochester: 73004 CT ID # in Rochester: PH0556 RI ID # in Rochester: 158 MA ID # in Rochester: M-NY032 NH ID # in Rochester: 294198-A OH EPA # in Rochester: VAP AIHA: # in Rochester: 7889

VOLATILE ORGANICS METHOD 8260B TCL Reported: 04/29/99

URS Greiner Woodward Clyde

Project Reference: GRIFFIN IRM-MONTHLY

Client Sample ID : EFF-4-14-99

Date Sampled: 04/14/99 Order #: 285173 Sample Matrix: WATER Date Received: 04/14/99 Submission #: 9904000198 Analytical Run 37517

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 04/27	/99		
ANALYTICAL DILUTION:	1.00		
ACETONE	2	0 20 U	770 /7
BENZENE	5.		UG/L
BROMODICHLOROMETHANE	5.		UG/L
BROMOFORM	5.		UG/L
BROMOMETHANE	5.		UG/L
2-BUTANONE (MEK)	1		UG/L
CARBON DISULFIDE	1		UG/L
CARBON TETRACHLORIDE			UG/L
CHLOROBENZENE	5.		UG/L
CHLOROETHANE	5.		UG/L
CHLOROFORM	5.		UG/L
CHLOROMETHANE	5.		UG/L
DIBROMOCHLOROMETHANE	5.		UG/L
1,1-DICHLOROETHANE	5.		UG/L
1,2-DICHLOROETHANE	5.0		UG/L
1,1-DICHLOROETHENE	5.0		UG/L
CIS-1,2-DICHLOROETHENE	5.0		UG/L
FRANS-1,2-DICHLOROETHENE	5.0		UG/L
	5.0		UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10		UG/L
METHYLENE CHLORIDE	5.0		UG/L
4-METHYL-2-PENTANONE (MIBK)	10		UG/L
STYRENE	5.0		UG/L
1,1,2,2-TETRACHLOROETHANE	5.0		UG/L
TETRACHLOROETHENE	5.0		UG/L
TOLUENE	5.0		UG/L
1,1,1-TRICHLOROETHANE	5.0		UG/L
1,1,2-TRICHLOROETHANE	5.0		UG/L
TRICHLOROETHENE	5.0		UG/L
/INYL CHLORIDE	5.0		UG/L
-XYLENE	5.0		
M+P-XYLENE	5.0		UG/L UG/L
SURROGATE RECOVERIES	QC LIMITS		
-BROMOFLUOROBENZENE	(86 - 115 %)	0.4	
COLUENE-D8	(88 - 110 %)	94	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	101	%

VOLATILE ORGANICS METHOD 8260B TCL Reported: 04/29/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received: Sub	Order #: 2		ample Matrix: nalytical Run	
ANALYTE		PQL	RESULT	UNITS
DATE ANALYZED : 04/27/	99			
ANALYTICAL DILUTION:	1.00			
ACETONE		20	20 U	UG/L
BENZENE		5.0	5.0 U	UG/L
BROMODICHLOROMETHANE		5.0	5.0 U	UG/L
BROMOFORM		5.0	5.0 U	UG/L
BROMOMETHANE		5.0	5.0 U	UG/L
2-BUTANONE (MEK)		10	10 U	UG/L
CARBON DISULFIDE		10	10 U	UG/L
CARBON TETRACHLORIDE		5.0	5.0 U	UG/L
CHLOROBENZENE		5.0	5.0 U	UG/L
CHLOROETHANE		5.0	5.0 U	UG/L
CHLOROFORM		5.0	5.0 U	UG/L
CHLOROMETHANE		5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE		5.0	5.0 U	UG/L
1,1-DICHLOROETHANE		5.0	5.0 U	UG/L
1,2-DICHLOROETHANE		5.0	5.0 U	UG/L
1,1-DICHLOROETHENE		5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE		5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE		5.0	5.0 U	
1,2-DICHLOROPROPANE		5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE		5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE		5.0	5.0 U	UG/L
ETHYLBENZENE		5.0	5.0 U	UG/L
2-HEXANONE				UG/L
METHYLENE CHLORIDE		10	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)		5.0	5.0 U	UG/L
STYRENE		10	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE		5.0	5.0 U	UG/L
TETRACHLOROETHENE	, i		5.0 U	UG/L
TOLUENE		5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE		5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE		5.0	5.0 U	UG/L
TRICHLOROETHENE		5.0	5.0 U	UG/L
VINYL CHLORIDE		5.0	5.0 U	UG/L
O-XYLENE		5.0	5.0 U	UG/L
M+P-XYLENE		5.0	5.0 U	UG/L
		5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC LIMITS	3		
4-BROMOFLUOROBENZENE	(86 - 115	8)	95	olo
FOLUENE-D8	(88 - 110		100	0/0
DIBROMOFLUOROMETHANE	(86 - 118		101	96

COMBIA ANALYTICAL SERVICES, INC.

ustard Suite 250, P.O. Box 90859, Rochester, NY 14609-0859 (716) 288-5380 • FAX (716) 288-8475

CHAIN QUESTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 4-14-99 PAGE / OF /

PROJECT NAME	Griffi	n II	Rm									A	NAL	YSIS	RE	QUI	EST	ED							
PROJECT MANAGER/	CONTACT_	Mark	Schmidt								S	0	S E										PRES	ERVA	ATION
COMPANY/ADDRESS	30775	Buirbi	idge Rd.		S			601/602		S, VC	STAR'S LIST 8270 SVOA's	- HVB	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Iqnit.												
TEL (440) 349 -	Solon	Ohio	0		CONTAINERS		2	09[B's	21.V	20 S	SAS	TER OS.		METALS, DISSOLVED (LIST BELOW)										
TEL (440) 349 -	2708	FAX (N	401 249-1	514	TAIN	's 624	A's 1		S/PC 608	7 800 D TC	782 77C	SVC	Con	AZ S	SSO (N										
CAMPI EDIC CICNATUE	E Red	Fals		<u> </u>	ON NO	Š□	SVC	4's	E C	LIS	LIS	Z 0	동미	5,7	S, D	40									
SAMPLER'S SIGNATUR	E SOU	1400	av .		OF C	GC/MS VOA's	GC/MS SVOA's	GC VOA's	PESTICIDES/PCB's	AR'S TOTA	AR'S OTA	P Q	STE	METALS, TOTAL (LIST BELOW)	TALS	2						χ'	< 2.0	> 12	- G
SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	#	80	80	80	E C	ST	ST	50	₹"	ME	ME CES	OO							H	Hd	Other
EFF-4-14-99	4-14-99	12:55	285173	WATER	2											X									
					_		1																		
	-				-	-																		_	
					-			-									-								
																					-				
																								-1	
Signature Bub Fabian Printed Name URS WCC Firm 4-14-99	Name URS WCC Printed Name (A) Firm 4/14/99 13:40				nr ndard (1 vide Ver	VD REQ 48 hr. 0-15 wo	5 o	day ys) Nesults	1.1 2.1 3.E	Routine l Routine l Narrative PA Levi	Rep. w/o el III ole Pack	CASE	VTS	P.O. #:		CE INF	ORMAT	TION:		Shippin Shippin Temper	ng Via:	CR	RECEIP		PRODUCTION OF THE PRODUCTION O
Date/Time RELINQUISHED 8	3Y:	Date/Time	RECEIVED BY:	Prov		C Prelimi		sults	C		oles Lev										sion Ng.	GN 1	/ /	612	
Signature		Signature			, ou , (op	ort Duto					CLP De		es	-						Submis	sion Ng:	10-7	-/	10	
Printed Name		Printed Name		SPEC	IALI	NSTR	UCTIC	NS/C	ОММЕ	NTS:									1						
Firm		Firm		META	LS																				1
Date/Time		Date/Time														-									
RELINQUISHED E	BY:	1	RECEIVED BY:	ORG	ANICS	S: 🗆	TCL	☐ PP	L 🗆	AE C	Only	□ BN	Only		Special	List									_
Signature		Signature																							_
Printed Name		Printed Name								•															
Firm		Firm		65 R	AMA	PO VA	LLE	Y ROA	AD		2	01-51	2-32		309 W							6	10-52	21-30	83
Date/Time		Date/Time		WAH	, NJ 0	7430			F	AX 2	01-51	2-33		RIDLE						F		10-52			

Cooler Receipt And Preservation Check Form

Project/Client	Oritin			Sı	bmission	Number_	4-1	73
Cooler received on_	4/14/49 and	opened o	on 4/14/	/	.•	BC		
. Were custod	y seals on outside	of cool		.*	•	YES 1	10 .	-lean
	nany and where?		- 4			YES'1	10	= Polio
_	re & date correct y papers properly	*	nt (inle sic	Clate bear		YES 1	. 10	
	s arrive in good				.*	YES I		
Were all bott	le labels complet	e (i e ar	nalveis nre	eservation	etc)?	YES		
5. Did all bottle	labels and tags a	agree wit	th custody	naners?	cioj.	YES I		• • •
	bottles used for					YES		
	rials checked for	absence	of air bubl	bles, and no	oted if so			
	e bottles originat						CAS/J	CAS/R
10. Temperat	ure of cooler(s) u	pon rece	eipt:	5.0				. • •
	erature within 4 ± 2°		•		res 🗆	Yes 🗆	Yes 🗆	
		Cr.		/		44		Yes [
If No, Exp			N	90 1	% □	No □	No 🗆	No [
Date/Tim	e Temperatures	Taken:	411419	9 1	340			
	. /	7.					D	7
Thermon Explain any discrepa	neter ID:/	4	_ Circle (One: Ten	np Blank	Sample	Bottle	ooler Ter
		YES				A A		
		YES	Circle (Sample I.D		Sample Reagent		. Added
Explain any discrepa	ancies:	YES				A A		
Explain any discrepa	Reagent	YES				A A		
Explain any discrepa pH 12	Reagent NaOH	YES				A A		
Explain any discrepa pH 12 2	Reagent NaOH HNO3	YES				A A		
Explain any discrepa	Reagent NaOH HNO ₃ H ₂ SO ₄ P/PCBs	YES				A A		
Explain any discrepa	Reagent NaOH HNO ₃ H ₂ SO ₄ P/PCBs (608 only)					A A		
pH 12 2 5-9* YES = All samples OK NO = Samples were press *If pH adjustment is requ	Reagent NaOH HNO ₃ H ₂ SO ₄ P/PCBs (608 only)	or H ₂ SO ₄				A A		
pH 12 2 5-9* YES = All samples OK NO = Samples were press *If pH adjustment is requ	Reagent NaOH HNO3 H2SO4 P/PCBs (608 only) rived at lab as listed ired, use NaOH and/offected after Analysis) Following Samples	or H ₂ SO ₄				A A		
pH 12 2 5-9* YES = All samples OK NO = Samples were press *If pH adjustment is requ	Reagent NaOH HNO3 H2SO4 P/PCBs (608 only) rived at lab as listed ired, use NaOH and/offected after Analysis) Following Samples	or H ₂ SO ₄				A A		
pH 12 2 5-9* YES = All samples OK NO = Samples were press *If pH adjustment is requ	Reagent NaOH HNO3 H2SO4 P/PCBs (608 only) rived at lab as listed ired, use NaOH and/offected after Analysis) Following Samples	or H ₂ SO ₄				A A		
pH 12 2 5-9* YES = All samples OK NO = Samples were press *If pH adjustment is requ	Reagent NaOH HNO3 H2SO4 P/PCBs (608 only) rived at lab as listed ired, use NaOH and/offected after Analysis) Following Samples	or H ₂ SO ₄				A A		



A FULL SERVICE ENVIRONMENTAL LABORATORY

June 7, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9905000269

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.

This package has been reviewed by Columbia Analytical Services OA Department/Laboratory Director prior to report submittal.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits.
 (Flag the entire batch Inorganic analysis only)
- Duplicate analysis not within control limits.
 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145
CT ID # in Rochester: PH0556
MA ID # in Rochester: M-NY032
OH EPA # in Rochester: VAP

NJ ID # in Rochester: 73004 RI ID # in Rochester: 158 NH ID # in Rochester: 294198-A AIHA # in Rochester: 7889

VOLATILE ORGANICS METHOD 8260B TCL Reported: 06/07/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID: EFF-5-17-99

Date Sampled: 05/17/99 Order #: 293345 Sample Matrix: WATER Date Received: 05/17/99 Submission #: 9905000269 Analytical Run 38891

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/28/99			
ANALYTICAL DILUTION: 2.00			
ACETONE	20	40 11	
BENZENE	5.0	40 U	UG/L
BROMODICHLOROMETHANE	5.0	. 10 U	UG/L
BROMOFORM	5.0	10 U	UG/L
BROMOMETHANE	5.0	10 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE		20 U	UG/L
CARBON TETRACHLORIDE	10	20 U	UG/L
CHLOROBENZENE	5.0	10 U	UG/L
CHLOROETHANE	5.0	10 U	UG/L
CHLOROFORM	5.0	10 U	UG/L
CHLOROMETHANE	5.0	10 U	UG/L
DIBROMOCHLOROMETHANE	5.0	10 U	UG/L
,1-DICHLOROETHANE	5.0	10 U	UG/L
,2-DICHLOROETHANE	5.0	10 U	UG/L
1,1-DICHLOROETHENE	5.0	10 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
FRANS-1,2-DICHLOROETHENE	5.0	10 U	UG/L
1,2-DICHLOROPROPANE	5.0	10 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
PDAME 1 3 DICHLOROPROPENE	5.0	10 U	UG/L
TRANS-1,3-DICHLOROPROPENE THYLBENZENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
2-HEXANONE	10	20 U	UG/L
METHYLENE CHLORIDE	5.0	10 U	UG/L
-METHYL-2-PENTANONE (MIBK)	10	20 U	UG/L
	5.0	10 U	UG/L
,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0	10 U	UG/L
	5.0	10 U	UG/L
,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
RICHLOROETHENE	5.0	250	UG/L
INYL CHLORIDE	5.0	10 U	UG/L
-XYLENE	5.0	10 U	UG/L
+P-XYLENE	5.0	10 U	UG/L
SURROGATE RECOVERIES QC LIM	MITS		
-BROMOFLUOROBENZENE (86 -	115 %)	100	
LUENE-D8 (88 -	110 %)	100	ે
DOOMO DI TIODO ANDRESS SEE	118 %)	102	%
(00	110 0)	99	90

1

VOLATILE ORGANICS METHOD 8260B TCL

Reported: 06/07/99

Project Reference:

Client Sample ID : METHOD BLANK

Date Sampled : Date Received: Subm	Order #: 297528	Sample Matrix: Analytical Run	WATER 38891
ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/28/9 ANALYTICAL DILUTION: 1	99		
ACETONE	20	20 U	UG/L
BENZENE	5.0		UG/L
BROMODICHLOROMETHANE	5.0		UG/L
BROMOFORM	5.0		UG/L
BROMOMETHANE	5.0		UG/L
2-BUTANONE (MEK)	10		UG/L
CARBON DISULFIDE	10		UG/L
CARBON TETRACHLORIDE	5.0		UG/L
CHLOROBENZENE	5.0		UG/L
CHLOROETHANE	5.0		UG/L
CHLOROFORM	5.0		
CHLOROMETHANE	5.0		UG/L
DIBROMOCHLOROMETHANE	5.0		UG/L
1,1-DICHLOROETHANE	5.0		UG/L
.2-DICHLOROETHANE	5.0		UG/L
,1-DICHLOROETHENE	5.0		UG/L
CIS-1,2-DICHLOROETHENE	5.0		UG/L
TRANS - 1, 2 - DICHLOROETHENE	5.0		UG/L
1,2-DICHLOROPROPANE			UG/L
CIS-1,3-DICHLOROPROPENE	5.0		UG/L
TRANS-1,3-DICHLOROPROPENE	5.0		UG/L
ETHYLBENZENE	5.0		UG/L
2-HEXANONE	5.0		UG/L
METHYLENE CHLORIDE	10		UG/L
4-METHYL-2-PENTANONE (MIBK)	5.0		UG/L
STYRENE (MIDR)	10		UG/L
1,1,2,2-TETRACHLOROETHANE	5.0		UG/L
TETRACHLOROETHENE	5.0		UG/L
TOLUENE			UG/L
1,1,1-TRICHLOROETHANE	5.0		UG/L
1,1,2-TRICHLOROETHANE	5.0		UG/L
TRICHLOROETHENE	5.0		UG/L
VINYL CHLORIDE	5.0		UG/L
O-XYLENE	5.0		UG/L
M+P-XYLENE	5.0		UG/L UG/L
SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	, 98	9
TOLUENE-D8	(88 - 110 %)	99	%
BROMOFLUOROMETHANE	(86 '- 118 %)	99	96

UMBIA ANALYTICAL SERVICES, INC. istard St., Suite 250, Rochester, NY 14609-6925

(716) 288-5380 • FAX (716) 288-8475

CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 5-17-99 PAGE / OF /

PROJECT NAME	Griff	n I	RM										A	NAL	YSIS	RE	QUI	ESTE	D						
PROJECT MANAGER/	PROJECT MANAGER/CONTACT Mark Schmidt													Z					T	T		T	PRE	SERVA	ATION
COMPANY (ADDDESS	30715	Par	Lide D	1	-		1.6	2.5		က္	y's	JA's	H	ATIC											T
COMPANY/ADDRESS	01/3	pune	onage Ka	<u> </u>		RS	0 95-1	0 95-2	N	80	9	SVC	S	RIZ		8									
	Solon	, Oh	10			R		10	1/60	CB's	22	22	SA OA	CTE	1) C									
TEL (440) 349 -	2708	FAX (4	40, 349-	1514		A	A's 162)A's	09	S/P 608	180	1 8 L	SV	SAA	TO S	ISS(W)	0								
TEL (440) 349 - SAMPLER'S SIGNATURE	RE Z	Bor F	atra			# OF CONTAINERS	GC/MS VOA's	GC/MS SVOA's	GC VOA's	TICIDE 181	R'S LIS	R'S LIS	P D W	act CH	ALS, T	METALS, DISSOLVED (LIST BELOW)	824						2.0	12	-
SAMPLE I.D.	DATE	TIME	FOR OFFICE USE OF LAB 1.D.	ILY SAM MAT	PLE	0	GC/8	GC 0	000	PES D 80	STA	STA DT(호	WAS	MET (LIS	MET (LIS	ilo	-					PH ~	Ha^Ha	Other
EFF-5-17-99	5-17-99	11:23	29334			2						1					X								
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,				<u> </u>	TURNA	ROLIN	D REO	LIIREM	ENTS	BEI	PORT	EOUI	PEMEN	JTC		INVO	CE INE	ORMATI	ON.			AMPLE	RECEIP	l	
RELINQUISHED	BY:	a land	RECEIVED BY: 10 Hawk 10 nua Ha 10 (AS)				48 hr.			V	Routine		ILME	""		HAVOR	OL IIII	OTIMEATI	014.						
Brow Yakean Signature Bob Fabrian Printed Name URS WCC		Signature 4	bara la	ok	XStan				1	2.1	Routine	Rep. w/	CASE		P.O. #:					Shi	pping Via:	0	Lex.	#	
Printed Name URS WCC		Printed Nam	CAS	DIC							Varrative EPA Lev				Bill To:					- Ship	pping #:				
5-17-47	12:20	Firm 5 1	7.99 @	1220	Prov					1	/alidatat	le Pack	age							- Terr	nperature:	8	600	1	
Date/Time					Prov			-	ults		V.J. Red Deliveral		el IV							-			6) (Q.
RELINQUISHED	BY:	980	RECEIVED BY:	,	Request	ed Repo	ort Date		- 1	5. 1	Y ASP	CLP De	liverable	es						- Sub	mission N	lo:) -	60	
Signature		Signature	Winds Com	1/20 -						6. 5	Site spec	ific QC.								-					
Printed Name		Printed Name	1/49 C	11000	SPEC	IAL II	VSTR	JCTIO	NS/C	OMME	NTS:														
Firm		Firm 5/1.	1/49 @	1220	META	LS		1																	
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RELINQUISHED	BY:		RECEIVED BY:		ORGA	ANICS	- A	ICL	☐ PP	'L L	AE C	enty	☐ BV	Only		specia	List								-
Signature		Signature																							
Printed Name	,	Printed Name)																						
Firm		Firm															-								
Date/Time		Date/Time																							



A FULL SERVICE ENVIRONMENTAL LABORATORY

June 30, 1999

Mr. Mark Schmidt URS Greiner Woodward Clyde 30775 Bainbridge Road Suite 200 Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9906000195

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.



Effective 04/01/96

CAS LIST OF QUALIFIERS

(The basis of this proposal are the EPA-CLP Qualifiers)

- U Indicates compound was analyzed for but was not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.
- J Indicates an estimated value. For further explanation see case narrative / cover letter.
- B This flag is used when the analyte is found in the associated blank as well as in the sample.
- E This flag identifies compounds whose concentrations exceed the calibration range.
- A This flag indicates that a TIC is a suspected aldol-condensation product.
- N Spiked sample recovery not within control limits.
 (Flag the entire batch Inorganic analysis only)
- Duplicate analysis not within control limits.
 (Flag the entire batch Inorganic analysis only)
 - Also used to qualify Organics QC data outside limits.
- D Spike diluted out.
- S Reported value determined by Method of Standard Additions. (MSA)
- X As specified in the case narrative.

CAS Lab ID # for State Certifications

NY ID # in Rochester: 10145
CT ID # in Rochester: PH0556
MA ID # in Rochester: M-NY032
OH EPA # in Rochester: VAP

NJ ID # in Rochester: 73004
RI ID # in Rochester: 158
NH ID # in Rochester: 294198-A
AIHA # in Rochester: 7889

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS METHOD 8260B TCL Reported: 06/30/99

URS Greiner Woodward Clyde Project Reference: GRIFFIN IRM Client Sample ID: EFF-6-15-99

Date Sampled: 06/15/99 Order #: 299613 Sample Matrix: WATER Date Received: 06/15/99 Submission #: 9906000195 Analytical Run 39587

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 06/22/	99		
	2.50		
ACETONE	20	50 U	UG/L
BENZENE	5.0	13 U	
BROMODICHLOROMETHANE	5.0	. 13 U	UG/L
BROMOFORM	5.0	13 U	UG/L
BROMOMETHANE	5.0	13 U	UG/L
-BUTANONE (MEK)	10		UG/L
ARBON DISULFIDE	10	25 U	UG/L
ARBON TETRACHLORIDE		25 U	UG/L
HLOROBENZENE	5.0	13 U	UG/L
HLOROETHANE	5.0	13 U	UG/L
HLOROFORM	5.0	13 U	UG/L
HLOROMETHANE	5.0	13 U	UG/L
IBROMOCHLOROMETHANE	5.0	13 U	UG/L
,1-DICHLOROETHANE	5.0	13 U	UG/L
	5.0	13 U	UG/L
,2-DICHLOROETHANE	5.0	13 U	UG/L
,1-DICHLOROETHENE	5.0	13 U	UG/L
IS-1,2-DICHLOROETHENE	5.0	13 U	UG/L
RANS-1,2-DICHLOROETHENE	5.0	. 13 U	UG/L
,2-DICHLOROPROPANE	5.0	13 U	UG/L
IS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
RANS-1,3-DICHLOROPROPENE	5.0	13 U	UG/L
THYLBENZENE	5.0	13 U	UG/L
-HEXANONE	10	25 U	UG/L
ETHYLENE CHLORIDE	5.0	13 U	UG/L
-METHYL-2-PENTANONE (MIBK)	10	25 U	UG/L
TYRENE	5.0	13 U	UG/L
,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
ETRACHLOROETHENE	5.0	13 U	
OLUENE	5.0	13 U	UG/L
,1,1-TRICHLOROETHANE	5.0	13 U	UG/L
,1,2-TRICHLOROETHANE	5.0	13 U	UG/L
RICHLOROETHENE	5.0	370	UG/L
INYL CHLORIDE	5.0		UG/L
-XYLENE		13 U	UG/L
+P-XYLENE	. 5.0	13 U	UG/L
	5.0	13 U	UG/L
SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(86 - 115 %)	99	9
PLUENE-D8	(88 - 110 %)	99	00
BROMOFLUOROMETHANE	(86 - 118 %)	97	00

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS METHOD 8260B TCL Reported: 06/30/99

Project Reference: Client Sample ID : METHOD BLANK

Date Sampled : Date Received:	Order Submission	#: 3035 #:	07	Sample Matrix: Analytical Run	WATER 39587
ANALYTE			PQL	RESULT	UNITS
DATE ANALYZED : 06/ ANALYTICAL DILUTION:	22/99				
ACETONE			20	00.5	Service and the
BENZENE			5.0	20 U	UG/L
BROMODICHLOROMETHANE				5.0 U	UG/L
BROMOFORM			5.0	5.0 U	UG/L
BROMOMETHANE			5.0	5.0 U	UG/L
2-BUTANONE (MEK)			5.0	5.0 U	UG/L
CARBON DISULFIDE			10	10 U	UG/L
CARBON TETRACHLORIDE			10	10 U	UG/L
CHLOROBENZENE			5.0	5.0 U	UG/L
CHLOROETHANE			5.0	5.0 U	UG/L
CHLOROFORM			5.0	5.0 U	UG/L
CHLOROMETHANE			5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE			5.0	5.0 U	UG/L
1,1-DICHLOROETHANE			5.0	5.0 U	UG/L
1,2-DICHLOROETHANE			5.0	5.0 U	UG/L
1-DICHLOROETHENE			5.0	5.0 U.	UG/L
S-1,2-DICHLOROETHENE			5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE			5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE			5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE			5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE			5.0	5.0 U	UG/L
ETHYLBENZENE			5.0	5.0 U	UG/L
2-HEXANONE			5.0	5.0 U	UG/L
METHYLENE CHLORIDE .			10	10 U	UG/L
4-METHYL-2-PENTANONE (MIBE	-\		5.0	5.0 U	UG/L
STYRENE	()		10	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE			5.0	5.0 U	UG/L
TETRACHLOROETHENE			5.0	5.0 U	UG/L
TOLUENE			5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE			5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE			5.0	5.0 U	UG/L
TRICHLOROETHENE			5.0	5.0 U	UG/L
VINYL CHLORIDE			5.0	5.0 U	UG/L
O-XYLENE	• .		5.0	5.0 U	UG/L
M+P-XYLENE			5.0	5.0 U	UG/L
SURROGATE RECOVERIES	QC Li	IMITS		3.00	UG/L
-BROMOFLUOROBENZENE					
COLUENE-D8	(86 -	115 %)		., 97	ક
LBROMOFLUOROMETHANE		110 %)		96	%
	(86 -	118 %)		96	96

COLUMBIA ANALYTICAL SERVICES, INC.

stard St., Suite 250, Rochester, NY 14609-6925 (716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(8 695-7222

DATE	6-15-99	PAGE

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PAGE	UF

PROJECT NAME GY	reffin	IRW	\									Al	NAL	YSIS	RE	QUE	STE	D							
PROJECT MANAGER/CONTACT Mark Schmidt						T						0	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.									P	RESI	ERVA	TION
						7	N		က္	S	A's	1	A PE										T		
COMPANY/ADDRESS _	30775	Baink	ridge Kd.		33	□ 95-1	395	01	95	Š.	SVC	S	RZ		B										
	Solon	. Oh	io		N	1		/90	CB's	127 CLF	52	SA O	TOS	با	SI SI		,								
TEL (440) 349-2	208	EAV die	to. 249-15	14	TAI	624	A's 625	601	S/P(28 L	187	SV	SA A	PS €	W)	-									
TEL (4(0) 371-0	0	- FAX CK	10) 34/10		O	S -	S	s.		LIS	LIS	20	동니	E.O.	S.D	3							0	~	
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SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE	0	GC/MS VOA's	000 000	000	PESTICIDES/PCB's	STA	STA	달음	WA	ME (LIS	ME (LIS	w							Ha.	I.	Other
				MATRIX			-	-			-	-				V									
EFF-6-15-99	6-15-99	10:49	299613	WATER	2	-	_									X		_				_	-	-	
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Signature 306 Facti	air	Signature	Long Hawk	Star	ndard (10-15 wo	orking da	ys)		Narrativ	e			Bill To						Chinnin	o #-				
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A FULL SERVICE ENVIRONMENTAL LABORATORY

September 30, 1999

Mr. Mark Schmidt
URS Greiner Woodward Clyde
30775 Bainbridge Road
Suite 200
Solon, OH 44139

PROJECT:GRIFFIN IRM Submission #:9909000037

Dear Mr. Schmidt

Enclosed are the analytical results of the analyses requested. All data has been reviewed prior to report submission. Should you have any questions please contact me at (716) 288-5380.

Thank you for letting us provide this service.

Sincerely,

COLUMBIA ANALYTICAL SERVICES

Mark Wilson

Client Service Manager

Enc.

CASE NARRATIVE

COMPANY: URS Greiner Woodward Clyde Griffin IRM SUBMISSION #: 9909000037

WCC water samples were collected on 09/02/99 and received at CAS on 09/02/99. Samples were received in good condition. See the CLP Batching form for a cross reference of sample ID's.

VOLATILE ORGANICS

Water samples were analyzed for the Target Compound List of volatile organics by Method 95-1 from the NYSASP 1995.

Sample MW-5D was analyzed for site specific QC. All matrix spike recoveries and RPD were within QC limits. All blank spike recoveries were within limits

All surrogate recoveries and internal standard areas were within limits

All tuning criteria for BFB were met.

The initial and continuing calibration criteria were met for all analytes.

Samples were analyzed within the holding time as specified in the method.

No other analytical or QC problems were encountered.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SAMPLE IDENTIFICATION AND ANALYTICAL REQUIREMENT SUMMARY

Customer Sample	Laboratory Sample			al Require			
Code	Code	*VOA GC/MS	*BNA GC/MS	*VOA GC	*PEST PCB	*METALS	*OTHER
MW1 [∨]	321622	X					
MW3 ~	321623	X					
MW5D	321624	X	+ DL				
MW6S [√]	321625	X					
MW6D √	321626	X					
MW7S √	321627	X					
MW7D √	321628	X	+ 101				
MW9S 1	321629	X					
MW9D	321630	X					
MW10S	321631	X					
MW10D	321632	X					
MW11D	321633	X					
MW13D V	321634	X					
DUP /	321635	X					
TRIP /	321636	X					

^{*}Check Appropriate Boxes

^{*}HSL, Priority Pollutant



^{*}CLP, Non-CLP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SAMPLE PREPARATION AND ANALYSIS SUMMARY VOA

ANALYSES

ABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	LOW LEVEL	DATE
	MATER				
321622	WATER	09/02/99	09/02/99	LOW	09/10/99
321623	WATER	09/02/99	09/02/99	LOW	09/10/99
321624	WATER	09/02/99	09/02/99	LOW	09/10/99
321625	WATER	09/02/99	09/02/99	LOW	09/10/99
321626	WATER	09/02/99	09/02/99	LOW	09/10/99
321627	WATER	09/02/99	09/02/99	LOW	09/10/99
321628	WATER	09/02/99	09/02/99	LOW	09/10/99
321629	WATER	09/02/99	09/02/99	LOW	09/10/99
321630	WATER	09/02/99	09/02/99	LOW	09/10/99
321631	WATER	09/02/99	09/02/99	LOW	09/10/99
321632	WATER	09/02/99	09/02/99	LOW	09/10/99
321633	WATER	09/02/99	09/02/99	LOW	09/10/99
321634	WATER	09/02/99	09/02/99	LOW	09/10/99
321635	WATER	09/02/99	09/02/99	LOW	09/10/99
321636	WATER	09/02/99	09/02/99	LOW	09/10/99

NCF5

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SAMPLE PREPARATION AND ANALYSIS SUMMARY

ORGANIC ANALYSES

SAMPLE ID	MATRIX	ANALYTICAL PROTOCOL	EXTRACTION METHOD	AUXILARY CLEAN UP	DIL/CONC FACTOR
321622	WATER	95-1			1.0
321623	WATER	95-1			1.0
321624	WATER	95-1	•		1.0
321625	WATER	95-1			1.0
321626	WATER	95-1			1.0
321627	WATER	95-1			1.0
321628	WATER	95-1			1.0
321629	WATER	95-1			1.0
321630	WATER	95-1			1.0
321631	WATER	95-1			1.0
321632	WATER	95-1			1.0
321633	WATER	95-1			1.0
321634	WATER	95-1			1.0
321635	WATER	95-1			1.0
321636	WATER	95-1			1.0
		-			
					-
	10000				

NCF2 9/89

1A

EPA SAMPLE NO.

VOLATII	LE ORGANICS ANALYSIS	DATA SHEET				
Lab Name: CAS-ROC	Co	ntract: URS/WCC		MW1		
Lab Name: CAS-ROC	CO.	IILLACL: URS/WCC	1			
Lab Code: 10145	Case No.: 9-37 S.	AS No.: SI	DG No.: N	W1		
Matrix: (soil/water	r) WATER	Lab Sample	ID: 32162	22		
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID	: Q4202	2		
Level: (low/med)	LOW	Date Receive	ed: 09/03	2/99		
% Moisture: not dec		Date Analyz				
		-				
GC Column: HP624	ID: 2.00 (mm)	Dilution Fa	CLOI: 1.	U		
Soil Extract Volume	e:(uL)	Soil Aliquo	t Volume	:		_(u
		CONCENTRATION UNI	TS:			
CAS NO.	COMPOUND	(ug/L or ug/Kg) U	G/L	Q	Q	
					-1	1
	Chloromethane		10			
	Bromomethane		10			1
	Vinyl Chloride		10			
	Chloroethane		10	1		
	Methylene Chlori	.de	10			
	Acetone		10 1		U	B
	Carbon Disulfide		10			
	1,1-Dichloroethe		10			
	1,1-Dichloroetha		10	U		
540-59-0	1,2-Dichloroethe	ene (total)	10	U .		
	Chloroform			U		
	1,2-Dichloroetha	ine	10			
	2-Butanone			U		
	1,1,1-Trichloroe	thane		U	-	
	Carbon Tetrachlo		10			1
	Bromodichloromet		10			
	1,2-Dichloroprop			Ū		
10061-01-5-	cis-1,3-Dichlord	propene	10			
70 01 6	Trichloroethene	pproperie	10	_		
124 49 1	Dibromochloromet	hana		Ü		
79-00-5	1,1,2-Trichloroe	schane		U		
				U	1 8	
10061-02-6-	trans-1,3-Dichlo	probrobene		U		
	Bromoform			U		
108-10-1	4-Methyl-2-Pento	onone		U		
591-78-6	2-Hexanone			U		
	Tetrachloroether			U		
	1,1,2,2-Tetrachl	loroethane		U		
	Toluene			U		
108-90-7	Chlorobenzene			U		
100-41-4	Ethylbenzene			U		
100-42-5	Styrene		10	U		
1330-20-7	Xylene (Total)		10	U		
	-					

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPLE	NO

Soil Aliquot Volume: ____(uL)

Lab Name: CAS-ROC	-	Contract: URS/WCC	MWI
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321622
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4202
Level: (low/med)	LOW	Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	or: 1.0

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

Number TICs found: 0

Soil Extract Volume: (uL)

CAS NUMBER	RT		Q
	 == =======	==========	===
1		-	
2			_
3			
5			_
6			-
7.			
8.			-
9.			
0			-
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2		-	_
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J			
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T .			
J.			-
0.			
1.			
8.			
9.			
0.			

Lab Name: CAS-ROC		Contract: URS/W	ICC.	MW	13	
			1			1
Lab Code: 10145	Case No.: 9-37	SAS No.:	SDG N	Io.: MW1		
Matrix: (soil/water	c) WATER	Lab Sa	imple ID:	321623		
Sample wt/vol:	5.000 (g/mL) ML	Lab Fi	le ID:	Q4203		
Level: (low/med)	LOW	Date R	Received:	09/02/9	19	
% Moisture: not dec	c	Date A	nalyzed:	09/10/9	9	
GC Column: HP624	ID: 2.00 (mm)	Diluti	on Factor	: 1.0		
Soil Extract Volume	e:(uL)	Soil A	Aliquot Vo	olume:		(uI
		CONCENTRATIO	M INTTO			_
CAS NO.	COMPOUND	(ug/L or ug/		-	QQ	
74-83-9 75-01-4 75-00-3 75-09-2 67-64-1 75-15-0 75-35-4 75-34-3 75-34-3 67-66-3 107-06-2 78-93-3 71-55-6 75-27-4 78-87-5 10061-01-5 79-01-6 124-48-1 79-00-5 71-43-2 10061-02-6 75-25-2 108-10-1 591-78-6 127-18-4	ChloromethaneBromomethaneBromomethaneVinyl ChlorideChloroethaneMethylene Chloromethylene Chloromethoroe	cride ide chene chane chene (total) chane roethane nloride methane ropane propropene methane roethane nloropropene methane nloropropene		10 U U U U U U U U U U U U U U U U U U U	<u>∪</u>	8
108-88-3 108-90-7 100-41-4	1,1,2,2-TetraceToluene Chlorobenzene Ethylbenzene Styrene			10 U 10 U 10 U		
	Xylene (Total)			10 U		

1E

Number TICs found: 0

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA S	SAMPLE	NO
-------	--------	----

Lab Name: CAS-ROC Co	ontract: URS/WCC
Lab Code: 10145	SAS No.: SDG No.: MW1
Matrix: (soil/water) WATER	Lab Sample ID: 321623
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: Q4203
Level: (low/med) LOW	Date Received: 09/02/99
% Moisture: not dec.	Date Analyzed: 09/10/99
GC Column: HP624 ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume:(uL)	Soil Aliquot Volume:(ul

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

	COMPOUND NAME		EST. CONC.	Q
1			,	===:
2			The state of the s	
3.				-
4				
5				
6	0_			
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9.			1	
.0.				
21.				
.2.				
3.				
24.				
5.				
26.				
.0.				
30.				

MW5D SDG No.: MW1 Lab Sample ID: 321624

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.:

Matrix: (soil/water) WATER

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: Q4194

Level: (low/med) LOW

Date Received: 09/02/99

% Moisture: not dec.

Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: ____(uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND

(ug/L or ug/Kg) UG/L 0

74-87-3	Chloromethane	10 U	
74-83-9	Bromomethane	10 U	
75-01-4	Vinyl Chloride	10 U	
75-00-3	Chloroethane	10 U	
75-09-2	Methylene Chloride	10 U	
67-64-1	Acetone	10 -2 51	- UB
	Carbon Disulfide	10 U	
75-35-4	1.1-Dichloroethene	10 U	
75-34-3	1.1-Dichloroethane	10 U	
540-59-0	1,2-Dichloroethene (total)	2 J	
67-66-3	Chloroform	10 U	
107-06-2	1,2-Dichloroethane	10 U	,
78-93-3	2-Butanone	10 U	
	1,1,1-Trichloroethane	6 J	
56-23-5	Carbon Tetrachloride	10 U	
75-27-4	Bromodichloromethane	10 U	
78-87-5	1,2-Dichloropropane	10 U	
10061-01-5	cis-1,3-Dichloropropene	10 U	
79-01-6	Trichloroethene	220 E	
124-48-1	Dibromochloromethane	10 U	
79-00-5	1,1,2-Trichloroethane	10 U	
71-43-2	Benzene	10 U	
	trans-1,3-Dichloropropene	10 U	
75-25-2	Bromoform	10 U	
108-10-1	4-Methyl-2-Pentonone	10 U	
591-78-6	2-Hexanone	10 U	
127-18-4	Tetrachloroethene	10 U	
	1,1,2,2-Tetrachloroethane	10 U	
108-88-3	Tolliene	10 U	
	Chlorobenzene	10 U	
100-41-4	Ethylbenzene	10 U	
100-42-5	Styrene	10 U	
1330-20-7	Xylene (Total)	10 0	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

T177 D1 11 11 11	EPA	SAMPLE	NO
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Lab Name: CAS-ROC	Contract:	URS/WCC	FMSD
Lab Code: 10145 Case No	.: 9-37 SAS No.:	SDG 1	No.: MW1
Matrix: (soil/water) WATER		Lab Sample ID:	321624
Sample wt/vol: 5.000	(g/mL) ML	Lab File ID:	Q4194
Level: (low/med) LOW		Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624 ID: 2.0	00 (mm)	Dilution Factor	r: 1.0
Soil Extract Volume:	_(uL)	Soil Aliquot Vo	olume: (uL)

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

Number TICs found: 0 CAS NUMBER COMPOUND NAME RT EST. CONC. 0 3._ 10. 11. 12. 13. 14._ 15._ 16.__ 17._ 18._ 19. 20. 21. 22. 23._ 24._ 25. 26. 27. 28. 29. 30.

MW5DDL

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: 321624DL

Sample wt/vol: 2.500 (g/mL) ML Lab File ID: Q4197

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L QQ COMPOUND CAS NO. 20 U 74-87-3-----Chloromethane 20 U 74-83-9-----Bromomethane 75-01-4-----Vinyl Chloride 20 U 20 U 75-00-3-----Chloroethane 75-09-2-----Methylene Chloride 20 U B 4 DJB 67-64-1-----Acetone U 75-15-0-----Carbon Disulfide 20 U 20 U 75-35-4-----1,1-Dichloroethene 20 U 75-34-3-----1,1-Dichloroethane 20 U 540-59-0----1,2-Dichloroethene (total) 20 U 67-66-3-----Chloroform 20 U 107-06-2----1,2-Dichloroethane 20 U 78-93-3----2-Butanone 6 DJ 71-55-6----1,1,1-Trichloroethane 20 U 56-23-5-----Carbon Tetrachloride 20 U 75-27-4-----Bromodichloromethane 78-87-5----1,2-Dichloropropane 20 U 10061-01-5----cis-1,3-Dichloropropene 20 U 220 D 79-01-6-----Trichloroethene 124-48-1-----Dibromochloromethane 20 U 79-00-5----1,1,2-Trichloroethane 20 U 71-43-2-----Benzene 20 U 10061-02-6----trans-1,3-Dichloropropene 20 U 75-25-2-----Bromoform 20 U 108-10-1----4-Methyl-2-Pentonone 20 U 20 U 591-78-6----2-Hexanone 20 U 127-18-4-----Tetrachloroethene 79-34-5----1,1,2,2-Tetrachloroethane 20 U 20 U 108-88-3-----Toluene 20 U 108-90-7-----Chlorobenzene 20 U 100-41-4-----Ethylbenzene 20 U 100-42-5-----Styrene 1330-20-7-----Xylene (Total) 20 U

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW5DDL	

Lab Name: CAS-ROC		Contract:	URS/WCC		
Lab Code: 10145 C	ase No.: 9-37	SAS No.:	SDG 1	No.: MW1	
Matrix: (soil/water)	WATER		Lab Sample ID:	321624DL	
Sample wt/vol:	2.500 (g/mL) ML		Lab File ID:	Q4197	
Level: (low/med)	LOW		Date Received:	09/02/99	
% Moisture: not dec.			Date Analyzed:	09/10/99	
GC Column: HP624	ID: 2.00 (mm)		Dilution Factor	r: 1.0	
Soil Extract Volume:_	(uL)		Soil Aliquot V	olume:	(uL)

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

Number TICs found: 0 CAS NUMBER COMPOUND NAME RT EST. CONC. Q _____ 5. 10. 11._ 12.__ 13._ 14.__ 15.__ 16._ 17._ 18._ 19.__ 20.__ 21.__ 22.__ 23. 24. 25. 26. 27. 28. 29. 30.

1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VOLATILE ORGANICS ANALIS	SIS DATA SHEET
ab Name: CAS-ROC	MW6S
ab Name: CAS-ROC	Contract: URS/WCC
ab Code: 10145	SAS No.: SDG No.: MW1
atrix: (soil/water) WATER	Lab Sample ID: 321625
ample wt/vol: 5.000 (g/mL) MI	L Lab File ID: Q4204
evel: (low/med) LOW	Date Received: 09/02/99
Moisture: not dec.	Date Analyzed: 09/10/99
C Column: HP624 ID: 2.00 (mm)	Dilution Factor: 1.0
oil Extract Volume: (uL)	Soil Aliquot Volume: (
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
74-87-3Chloromethane	
74-83-9Bromomethane	
75-01-4Vinyl Chloric	10 U
75-00-3Chloroethane	
75-09-2Methylene Chi	
67-64-1Acetone	10 2 JB V 3
75-15-0Carbon Disul:	fide10 U
75-35-41,1-Dichloroe	ethene 10 U
75-34-31,1-Dichloroe	ethane 10 U
540-59-01,2-Dichloroe	ethene (total) 4 J
67-66-3Chloroform	10 0
107-06-21,2-Dichloroe	ethane 10 U
78-93-32-Butanone	
70-93-32-Butanone	10 U
71-55-61,1,1-Trichle	oroethane 6 J
56-23-5Carbon Tetrac	chloride 10 U
75-27-4Bromodichloro	omethane 10 U
78-87-51,2-Dichloro	propane10 U
10061-01-5cis-1,3-Dich	
79-01-6Trichloroethe	
124-48-1Dibromochlore	omethane 10 U
79-00-51,1,2-Trichle	oroethane 10 U
71-43-2Benzene	10 U
10061-02-6trans-1,3-Dic	chloropropene 10 U
75-25-2Bromoform	10 U
108-10-14-Methyl-2-Pe	entonone 10 U
591-78-62-Hexanone	10 U
127-18-4Tetrachloroei	thene 10 U
79-34-51,1,2,2-Tetra	achloroethane 10 U
108-88-3Toluene	
108-90-7Chlorobenzene	10 U
100-90-/Cniorobenzene	
100-41-4Ethylbenzene	
100-42-5Styrene	10 U
1330-20-7Xylene (Total	1) 10 U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAS-ROC		Contract: URS/WCC
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID: 321625
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID: Q4204
Level: (low/med)	LOW	Date Received: 09/02/99
% Moisture: not dec.		Date Analyzed: 09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Factor: 1.0

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

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

	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

MW6D Contract: URS/WCC Lab Name: CAS-ROC SDG No.: MW1 Matrix: (soil/water) WATER Lab Sample ID: 321626 Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4205 Level: (low/med) LOW Date Received: 09/02/99 % Moisture: not dec. Date Analyzed: 09/10/99 Dilution Factor: 1.0 GC Column: HP624 ID: 2.00 (mm) Soil Extract Volume: ____(uL) Soil Aliquot Volume: (uL)

CAS NO.		NTRATION UNI or ug/Kg) U		Q	Q	
74-87-3	Chloromethane		10	U		
	Bromomethane		10	_		
	Vinyl Chloride		10			
75-00-3	Chloroethane		10	U		
	Methylene Chloride		10	_		1
67-64-1	Acetone		10 2		U	E
	Carbon Disulfide		10			+
75-35-4	1,1-Dichloroethene		10			
75-34-3	1,1-Dichloroethane		10			
540-59-0	1,2-Dichloroethene (to	tal)	2	J		
67-66-3	Chloroform		10	_		
	1,2-Dichloroethane		10	U		1
78-93-3	2-Butanone		10	Ū		
	1,1,1-Trichloroethane		7	J		
56-23-5	Carbon Tetrachloride		10	U		
75-27-4	Bromodichloromethane			U		
78-87-5	1,2-Dichloropropane		10	Ū		
10061-01-5-	cis-1,3-Dichloropropen	10	10	_		
79-01-6	Trichloroethene		110			
124-48-1	Dibromochloromethane		10	TT	-	
	1,1,2-Trichloroethane		10			
	Benzene		10			
	trans-1,3-Dichloroprop	ene	10			
75-25-2	Bromoform	CIIC	10			
	4-Methyl-2-Pentonone					
591-78-6	2-Hexanone			ŭ	1	
	Tetrachloroethene			ŭ		
	1,1,2,2-Tetrachloroeth	ane		ŭ		
108-88-3	Toluene			U		
	Chlorobenzene		10	U		
100-41-4	Ethylbenzene		10	1 -		
100-42-5	Styrene		10			
1330-20-7	Xylene (Total)		10			

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(uL)

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE N

Soil Aliquot Volume: (uL)

Lab Name: CAS-ROC		Contract: URS/WCC	
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321626
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4205
Level: (low/med)	LOW	Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed	: 09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	or: 1.0

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

Number TICs found: 0

Soil Extract Volume:

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Lab Name: CAS-ROC Co.	ntract: URS/WCC	7S
Lab Code: 10145	AS No.: SDG No.: MW	1
Matrix: (soil/water) WATER	Lab Sample ID: 321627	
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: Q4206	
Level: (low/med) LOW	Date Received: 09/02/	99
% Moisture: not dec.	Date Analyzed: 09/10/	99
GC Column: HP624 ID: 2.00 (mm)	Dilution Factor: 1.0	
Soil Extract Volume:(uL)	Soil Aliquot Volume:	(u
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q Q
74-87-3	10 2 3 10 U 10 U	B- UB

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: CAS-ROC		Contract: URS/WCC	PW/5
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321627
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4206
Level: (low/med)	LOW	Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	or: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot V	Volume: (uL)

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

Number TICs found: 0 (ug

	The state of the s		-	
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
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MW7SDL Jo.: MW1

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: 321627DL

Sample wt/vol: 2.500 (g/mL) ML Lab File ID: Q4223

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/11/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q Q 74-87-3-----Chloromethane 20 U 74-83-9-----Bromomethane 20 U 75-01-4-----Vinyl Chloride 20 U 75-00-3-----Chloroethane 20 U 75-09-2-----Methylene Chloride 20 U 67-64-1-----Acetone 10 10 DJB UB 75-15-0-----Carbon Disulfide 20 U 75-35-4-----1,1-Dichloroethene 20 U 75-34-3----1,1-Dichloroethane 20 U 540-59-0----1,2-Dichloroethene (total) 4 DJ 67-66-3-----Chloroform 20 U 107-06-2----1,2-Dichloroethane 20 U 78-93-3----2-Butanone 20 U 71-55-6----1,1,1-Trichloroethane 4 DJ 56-23-5-----Carbon Tetrachloride 20 U 75-27-4-----Bromodichloromethane 20 U 78-87-5----1, 2-Dichloropropane 20 U 10061-01-5----cis-1,3-Dichloropropene 20 U 79-01-6----Trichloroethene 220 D 124-48-1-----Dibromochloromethane 20 U 79-00-5-----1, 1, 2-Trichloroethane 20 U 71-43-2-----Benzene 20 U 10061-02-6----trans-1,3-Dichloropropene 20 U 75-25-2-----Bromoform 20 U 108-10-1----4-Methyl-2-Pentonone 20 U 591-78-6----2-Hexanone 20 U 127-18-4----Tetrachloroethene 20 U 79-34-5----1,1,2,2-Tetrachloroethane 20 U 108-88-3-----Toluene 20 U 108-90-7-----Chlorobenzene 20 U 100-41-4----Ethylbenzene 20 U 100-42-5-----Styrene 20 U 1330-20-7-----Xylene (Total) 20 U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab	Name:	CAS-ROC		Contract: URS/WCC		MW7SDL	
Lab	Code:	10145	Case No.: 9-37	SAS No.:	SDG	No.: MW1	

Matrix: (soil/water) WATER

Lab Sample ID: 321627DL Sample wt/vol: 2.500 (g/mL) ML Lab File ID: Q4223

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/11/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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% Moisture: not dec.

EPA SAMPLE NO.

Lab Name: CAS-RO	C	Contract: URS/WCC MW7D	
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG No.: MW1	
Matrix: (soil/wat	ter) WATER	Lab Sample ID: 321628	
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID: Q4207	
Level: (low/med	d) LOW	Date Received: 09/02/99	

Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO. (ug/L or ug/Kg) UG/L COMPOUND a 74-87-3-----Chloromethane 10 U 74-83-9-----Bromomethane 10 U 75-01-4-----Vinyl Chloride 10 U 75-00-3-----Chloroethane 10 U 75-09-2-----Methylene Chloride 10 U 67-64-1-----Acetone 10 1 JB UB 75-15-0-----Carbon Disulfide 10 U 75-35-4----1,1-Dichloroethene 10 U 75-34-3-----1,1-Dichloroethane 10 U 540-59-0----1,2-Dichloroethene (total) 14 67-66-3-----Chloroform 10 U 107-06-2----1,2-Dichloroethane 10 U 78-93-3----2-Butanone 10 U 71-55-6----1,1,1-Trichloroethane 2 J 56-23-5-----Carbon Tetrachloride 10 U 75-27-4-----Bromodichloromethane 10 U 78-87-5-----1,2-Dichloropropane 10 U 10061-01-5----cis-1,3-Dichloropropene 10 U 79-01-6-----Trichloroethene 180 10 U 124-48-1-----Dibromochloromethane 79-00-5-----1,1,2-Trichloroethane 10 U 71-43-2-----Benzene 10 U 10061-02-6----trans-1,3-Dichloropropene 10 U 75-25-2-----Bromoform 10 U 108-10-1----4-Methyl-2-Pentonone 10 U 591-78-6----2-Hexanone 10 U 127-18-4-----Tetrachloroethene 10 U 79-34-5----1,1,2,2-Tetrachloroethane 10 U 108-88-3-----Toluene 10 U 108-90-7-----Chlorobenzene 10 U 100-41-4-----Ethylbenzene 10 U 100-42-5-----Styrene 10 U 1330-20-7-----Xylene (Total) 10 U

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VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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Lab Name: CAS-ROC		Contract: URS/WCC	PW7D
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321628
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4207
Level: (low/med)	LOW	Date Received:	09/02/99

% Moisture: not dec. _____ Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (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

and months	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: CAS-ROC		Contract: URS/WCC	MW9S
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321629
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4208
Level: (low/med)	LOW	Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	r: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot V	olume:(uL)
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	QQ

54.05.0			-11
	Chloromethane	10 U	
74-83-9	Bromomethane	10 U	
75-01-4	Vinyl Chloride	10 U	
75-00-3	Chloroethane	10 U	
75-09-2	Methylene Chloride	10 U	
	Acetone	10 -2 JB	U
	Carbon Disulfide	10 U	
75-35-4	1,1-Dichloroethene	10 U	
75-34-3	1,1-Dichloroethane	10 U	
	1,2-Dichloroethene (total)	10 U	
	Chloroform	10 U	
107-06-2	1,2-Dichloroethane	10 U	
	2-Butanone	10 U	
71-55-6	1,1,1-Trichloroethane	10 U	
56-23-5	Carbon Tetrachloride	10 U	
75-27-4	Bromodichloromethane	10 U	
78-87-5	1,2-Dichloropropane	10 U	
10061-01-5	cis-1,3-Dichloropropene	10 U	
79-01-6	Trichloroethene	10 U	
124-48-1	Dibromochloromethane	10 U	
79-00-5	1,1,2-Trichloroethane	10 U	
71-43-2	Benzene	10 U	
10061-02-6	trans-1,3-Dichloropropene	10 U	
75-25-2	Bromoform	10 U	
108-10-1	4-Methyl-2-Pentonone	10 U	
591-78-6	2-Hexanone	10 U	
127-18-4	Tetrachloroethene	10 U	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	
108-88-3	Toluene	10 U	
108-90-7	Chlorobenzene	10 U	
100-41-4	Ethylbenzene	10 U	
100-42-5	Styrene	10 U	
1330-20-7	Xylene (Total)	10 U	

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: CAS-ROC	Contract: URS/WCC	MW9S
Lab Code: 10145	SAS No.: SDG N	o.: MW1
Matrix: (soil/water) WATER	Lab Sample ID:	321629
Sample wt/vol· 5 000 (α/mT .) MT.	Lah File ID:	04208

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Date Received: 09/02/99

Number TICs found: 0 (ug/L or ug/Kg) ug/L

Level: (low/med) LOW

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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No.:	MW1	'
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Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG

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

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4209

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

		MW9D	
SDG	No.:	MW1	1

Lab Name: CAS-ROC

Lab Code: 10145 Case No.: 9-37 SAS No.:

Contract: URS/WCC

Matrix: (soil/water) WATER

Lab Sample ID: 321630

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: Q4209

Level: (low/med) LOW

Date Received: 09/02/99

% Moisture: not dec.

Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (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.

Lab Name: CAS-ROC	Contract: URS/WCC	MW10S	
			1
Lab Code: 10145 Case No.: 9-37	SAS No.: SDG	No.: MW1	
Matrix: (soil/water) WATER	Lab Sample ID:	321631	
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID:	Q4210	
Level: (low/med) LOW	Date Received:	09/02/99	
% Moisture: not dec.	Date Analyzed:	09/10/99	
GC Column: HP624 ID: 2.00 (mm)	Dilution Facto	r: 1.0	
Soil Extract Volume:(uL)	Soil Aliquot V	olume:	(uL
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
74-87-3	ride de hene hane hene (total) hane bethane copane ropropene ethane bethane bethane hene loropropene de honone hene	10 U U U U U U U U U U U U U U U U U U U	U &

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FD7	SAMPLE	NO
EPA	SHIPLE	TAC

		COME COM	55	MW10S
Lab Name:	CAS-ROC	Contract:	URS/WCC	MMIOS

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab Sample ID: 321631 Matrix: (soil/water) WATER

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4210

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0 CAS NUMBER COMPOUND NAME EST. CONC. 3. 10. 11. 12. 13._ 14._ 15._ 16.__ 17._ 18. 19. 20. 21. 22._ 23._

24._ 25. 26._ 27.

29. 30.

MW10D

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER

Lab Sample ID: 321632

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: Q4211

Level: (low/med) LOW

Date Received: 09/02/99

% Moisture: not dec.

Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

Soil Extract Volume: ____(uL)

CAS NO.	COMPOUND (ug/L or ug/Kg)	-	Q	- Q	1
	Chloromethane	10	U		
74-83-9	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10	U		
75-00-3	Chloroethane	10	U		
75-09-2	Methylene Chloride	10	U		
	Acetone	10 2	JB-	V	E
75-15-0	Carbon Disulfide	10 1		U	
75-35-4	1.1-Dichloroethene	10	U		
75-34-3	1.1-Dichloroethane	10			
540-59-0	1,2-Dichloroethene (total)	10			
67-66-3	Chloroform	10			1
107-06-2	1,2-Dichloroethane	10			
78-93-3	2-Butanone	10			1
	1,1,1-Trichloroethane	10			
56-23-5	Carbon Tetrachloride	10			
75-27-4	Bromodichloromethane	10			
78-87-5	1,2-Dichloropropane	10	1		
10061-01-5	cis-1,3-Dichloropropene	10			
79-01-6	Trichloroethene	7	J		
124-48-1	Dibromochloromethane	10	_		
79-00-5	1,1,2-Trichloroethane	10			
71-43-2	Benzene	10	1000		
10061-02-6	trans-1,3-Dichloropropene	10			
75-25-2	Bromoform	10			
108-10-1	4-Methyl-2-Pentonone	10			
591-78-6	2-Hexanone	10			
127-18-4	Tetrachloroethene	10			
79-34-5	1,1,2,2-Tetrachloroethane	10			
108-88-3	Toluene	10			
108-90-7	Chlorobenzene	10			
100-41-4	Ethylbenzene	10			
100-42-5	Styrene	10			
1220-20-7	Xylene (Total)	10			

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE IN	EPA	SAMPLE	NC
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Lab	Name:	CAS-ROC		Contract: URS/WC	С	MW10D	
Lab	Code:	10145	Case No.: 9-37	SAS No.:	SDG	No.: MW1	

Matrix: (soil/water) WATER Lab Sample ID: 321632

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4211

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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J.				
0				

Lab Name: CAS-ROC		Contract: URS/WCC
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID: 321633
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID: Q4212
Level: (low/med)	LOW	Date Received: 09/02/99
% Moisture: not dec.		Date Analyzed: 09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot Volume:(uL
CAS NO.	COMPOUND	CONCENTRATION UNITS:

		-		-1	1
	Chloromethane	10	U		ı
	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10.	U		
	Chloroethane	10	U		1
	Methylene Chloride	10	U		1
	Acetone	10 2	JB-	V	1
	Carbon Disulfide	10			T
75-35-4	1,1-Dichloroethene	10	U		1
75-34-3	1,1-Dichloroethane	10			1
540-59-0	1,2-Dichloroethene (total)	10			1
67-66-3	Chloroform	10			1
107-06-2	1,2-Dichloroethane	10			
78-93-3	2-Butanone	10			1
	1,1,1-Trichloroethane	10			1
56-23-5	Carbon Tetrachloride	10		1	
75-27-4	Bromodichloromethane	10			
78-87-5	1,2-Dichloropropane	10			
10061-01-5-	cis-1,3-Dichloropropene	10			
79-01-6	Trichloroethene	10			
124-48-1	Dibromochloromethane	10			
79-00-5	1,1,2-Trichloroethane	10			
71-43-2	Benzene	10			
10061-02-6-	trans-1,3-Dichloropropene	10			
75-25-2	Bromoform	10			
	4-Methyl-2-Pentonone	10			
591-78-6	2-Hexanone	10			
127-18-4	Tetrachloroethene	10			
79-34-5	1,1,2,2-Tetrachloroethane	10			
108-88-3	Toluene	10			
	Chlorobenzene	10			
100-41-4	Ethylbenzene	10			
100-42-5	Styrene	10			
1330-20-7	Xylene (Total)	10			

1E

Soil Extract Volume: (uL)

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

MW11D

Soil Aliquot Volume: (uL)

Lab Name: CAS-ROC	(Contract: URS/WCC	
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321633
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4212
Level: (low/med)	LOW	Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	or: 1.0

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

Number TICs found: 0 CAS NUMBER COMPOUND NAME RT EST. CONC. 10. 11. 12. 13.___ 15.___ 16.___ 17.___ 18.____ 19. 20.__ 21.__ 22. 23.__ 24.__ 25.__ 26._ 27._ 28.__ 29.__ 30.

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

M	IW1	3D	

Contract: URS/WCC Lab Name: CAS-ROC

SDG No.: MW1

Lab Sample ID: 321634 Matrix: (soil/water) WATER

Lab File ID: Q4213 Sample wt/vol: 5.000 (g/mL) ML

Level: (low/med) LOW Date Received: 09/02/99

Date Analyzed: 09/10/99 % Moisture: not dec.

Dilution Factor: 1.0 GC Column: HP624 ID: 2.00 (mm)

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

CONCENTRATION UNITS:

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

	Chloromethane		10			
74-83-9	Bromomethane		10			
75-01-4	Vinyl Chloride		10	U		
75-00-3	Chloroethane		10	U		
	Methylene Chloride		10	U		
57-64-1			10 -2	JB-	U	5
	Carbon Disulfide		10	U		
75-35-4	1,1-Dichloroethene		10	U		
75-34-3	1,1-Dichloroethane		10	U	1 1	
540-59-0	1,2-Dichloroethene (total)	_	2	J		
57-66-3	Chloroform	1	10	U		
107-06-2	1,2-Dichloroethane		10	U		
	2-Butanone		10	U		
71-55-6	1,1,1-Trichloroethane		3	J		
6-23-5	Carbon Tetrachloride		10	U		
	Bromodichloromethane		10			
	1,2-Dichloropropane		10			
10061-01-5	cis-1,3-Dichloropropene		10			
79-01-6	Trichloroethene		140			
	Dibromochloromethane		10	Ū		
79-00-5	1,1,2-Trichloroethane		10	U		
71-43-2			10	U		
	trans-1,3-Dichloropropene		10	U		
	Bromoform		10	U		
108-10-1	4-Methyl-2-Pentonone		10	U		
591-78-6	2-Hexanone		10	U		
	Tetrachloroethene		10	U		
	1,1,2,2-Tetrachloroethane		10			
108-88-3			10			
	Chlorobenzene		10	U		
	Ethylbenzene			U		
100-42-5			10			
	Xylene (Total)		10			

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA S	AMPLE	NO
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MW13D

Soil Aliquot Volume: (uL)

Lab Name: CAS-ROC		Contract: URS	/WCC	
Lab Code: 10145	Case No.: 9-37	SAS No.:	SDG :	No.: MW1
Matrix: (soil/water)	WATER	Lab	Sample ID:	321634
Sample wt/vol:	5.000 (g/mL) ML	Lab	File ID:	Q4213
Level: (low/med)	LOW	Date	Received:	09/02/99
% Moisture: not dec.		Date	Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilu	tion Facto	r: 1.0

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

Number TICs found: 0

Soil Extract Volume: (uL)

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

EPA SAMPLE NO.

	Contract: URS/WCC	DUP	
Case No.: 9-37	SAS No.: SDG	No.: MW1	
WATER	Lab Sample ID	321635	
5.000 (g/mL) ML	Lab File ID:	Q4214	
LOW	Date Received	: 09/02/99	
	Date Analyzed	: 09/10/99	
ID: 2.00 (mm)	Dilution Facto	or: 1.0	
(uL)	Soil Aliquot	Volume:	(uL
COMPOUND			Q
BromomethaneVinyl ChlorideChloroethaneMethylene ChlorideAcetoneCarbon Disulfic1,1-Dichloroet1,2-DichloroetChloroform1,2-Dichloroet2-Butanone1,1,1-TrichloroetCarbon TetrachBromodichlorom1,2-Dichloroprcis-1,3-DichloroetDibromochlorom1,1,2-TrichloroethenDibromochlorom1,1,2-TrichloroethenBenzenetrans-1,3-DichBenzenetrans-1,3-DichBromoform4-Methyl-2-Pen2-HexanoneTetrachloroethen1,1,2,2-TetracTolueneChlorobenzeneEthylbenzeneStyrene	ride de_ hene hane hene (total)_ hane oethane loride ethane opane ropropene e ethane oethane loropropene tonone ene	10 U U U U U U U U U U U U U U U U U U U	V B.
	Case No.: 9-37 WATER 5.000 (g/mL) ML LOW ID: 2.00 (mm) (uL) COMPOUND ChloromethaneVinyl ChlorideChloroethaneWethylene ChloAcetoneCarbon Disulfi1,1-Dichloroet1,1-Dichloroet1,2-Dichloroet1,2-Dichloroet1,2-Dichloroet1,1-TrichlorCarbon TetrachBromodichlorom1,2-DichloroetCarbon TetrachBromodichlorom1,2-DichloroetTichloroethen1,2-Trichlor	WATER Lab Sample ID 5.000 (g/mL) ML Lab File ID: LOW Date Received Date Analyzed ID: 2.00 (mm) Dilution Factor (uL) Soil Aliquot V CONCENTRATION UNITS COMPOUND (ug/L or ug/Kg) Ug/N ChloromethaneVinyl ChlorideChloroethaneWethylene ChlorideAcetoneCarbon Disulfide1,1-Dichloroethane1,2-Dichloroethane1,2-Dichloroethane1,2-Dichloroethane1,1-Trichloroethane1,1-Trichloroethane1,1-Trichloroethane1,1-Trichloroethane1,1-Trichloroethane1,2-Dichloropropane	Contract: URS/WCC Case No.: 9-37 SAS No.: SDG No.: MW1 WATER Lab Sample ID: 321635 5.000 (g/mL) ML Lab File ID: Q4214 LOW Date Received: 09/02/99 Date Analyzed: 09/10/99 ID: 2.00 (mm) Dilution Factor: 1.0 (uL) Soil Aliquot Volume: CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q Chloromethane 10 UVinyl Chloride 10 UChloroethane 10 UAcetone 10 UAcetone 10 U1,1-Dichloroethene 10 U1,1-Dichloroethene 10 U1,1-Dichloroethane 10 U1,1-Dichloroethane 10 U1,1-Dichloroethane 10 U1,1-Trichloroethane 10 U1,1-Trichloroethane 10 U1,1-Trichloroethane 10 U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	EPA	SAMPLE	NO.
1		DUP	

Lab Name:	CAS-ROC	Contract:	URS/WCC
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Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: 321635

Lab File ID: Q4214 Sample wt/vol: 5.000 (g/mL) ML

Date Received: 09/02/99 Level: (low/med) LOW

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Lab Name: CAS-ROC

Contract: URS/WCC

Lab Code: 10145

Case No.: 9-37

SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER

Lab Sample ID: 321633

Sample wt/vol: 5.000 (g/mL) ML

Lab File ID: Q4215

Level: (low/med) LOW

Date Received: 09/02/99

% Moisture: not dec. ______

Date Analyzed: 09/10/99

GC Column: HP624

ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

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

CAD NO.	(ug/L or ug/kg)	OG/L C
74-87-3	Chloromethane	10 U
74-83-9	Bromomethane	10 U
75-01-4	Vinyl Chloride	10 U
75-00-3	Chloroethane	10 U
75-09-2	Methylene Chloride	10 U
67-64-1	Acetone	2 JB
75-15-0	Carbon Disulfide	10 U
75-35-4	1,1-Dichloroethene	10 U
75-34-3	1,1-Dichloroethane	10 0
540-59-0	1,2-Dichloroethene (total)	10 U
67-66-3	Chloroform	10 U
107-06-2	1,2-Dichloroethane	10 U
78-93-3	2-Butanone	10 0
71-55-6	1,1,1-Trichloroethane	10 U
56-23-5	Carbon Tetrachloride	10 U
75-27-4	Bromodichloromethane	10 U
78-87-5	1,2-Dichloropropane	10 U
10061-01-5	cis-1.3-Dichloropropene	10 U
79-01-6	Trichloroethene	10 U
124-48-1	Dibromochloromethane	10 U
79-00-5	1,1,2-Trichloroethane	10 U
71-43-2	Benzene	10 U
10061-02-6	trans-1,3-Dichloropropene	10 U
75-25-2	Bromoform	10 U
108-10-1	4-Methyl-2-Pentonone	10 U
591-78-6	2-Hexanone	10 U
127-18-4	Tetrachloroethene	10 U
79-34-5	1,1,2,2-Tetrachloroethane	10 U
108-88-3	Toluene	10 U
108-90-7	Chlorobenzene	10 U
100-41-4	Ethylbenzene	10 U
100-42-5	Styrene	10 U
L330-20-7	Xylene (Total)	10 U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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TILLE	DIEMAI

Lab Name: CAS-ROC	Contract	: URS/WCC	
Lab Code: 10145 Case No	o.: 9-37 SAS No.	: SDG	No.: MW1
Matrix: (soil/water) WATER		Lab Sample ID:	321633
Sample wt/vol: 5.000	(g/mL) ML	Lab File ID:	Q4215
Level: (low/med) LOW		Date Received:	09/02/99
% Moisture: not dec.		Date Analyzed:	09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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COOLER BLANK

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: 321844

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4224

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. Date Analyzed: 09/11/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

		-
74-87-3	Chloromethane	10 U
74-83-9	Bromomethane	10 U
	Vinyl Chloride	10 0
	Chloroethane	10 U
	Methylene Chloride	10 U
57-64-1	Acetone	4 JB@9
	Carbon Disulfide	10 U
75-35-4	1,1-Dichloroethene	10 U
75-34-3	1,1-Dichloroethane	10 U
540-59-0	1,2-Dichloroethene (total)	10 U
57-66-3	Chloroform	10 U
	1,2-Dichloroethane	10 U
78-93-3	2-Butanone	10 U
	1,1,1-Trichloroethane	10 U
	Carbon Tetrachloride	10 U
	Bromodichloromethane	10 U
	1,2-Dichloropropane	10 U
10061-01-5	cis-1,3-Dichloropropene	10 U
79-01-6	Trichloroethene	10 U
124-48-1	Dibromochloromethane	10 U
79-00-5	1,1,2-Trichloroethane	10 U
71-43-2		10 U
	trans-1,3-Dichloropropene	10 U
	Bromoform	10 U
	4-Methyl-2-Pentonone	10 U
591-78-6	2-Hexanone	10 U
	Tetrachloroethene	10 U
	1,1,2,2-Tetrachloroethane	10 U
108-88-3	Toluene	10 U
	Chlorobenzene	10 U
100-41-4	Ethylbenzene	10 U
100-42-5	Styrene	10 0
II J	Xylene (Total)	1010

1E

Lab Name: CAS-ROC Contract: URS/WCC

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

COOLER BLANK

		The state of the s	
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	321844
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4224
Level: (low/med)	LOW	Date Received:	09/02/99

% Moisture: not dec. _____ Date Analyzed: 09/11/99

GC Column: HP624 ID: 2.00 (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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6				-
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0.				
9.				

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

	EPA	CMC1	CMCO	OMOO	OUTTO	mom I
	SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT
	SAMPLE NO.	(101)#	(DFD)#	(DCE)#		===
01	VBLK01	100	94	100		0
02	VBLK01MS	100	96	100		0
03	MW5D	102	92	100		ol
04	MW5DMS	100	94	100		0
05	MW5DMSD	100	92	100		0
06	MW5DDL	100	94	100		0
07	VBLK02	98	92	100		0
08	MW1	100	92	94		0
09	MW3	100	92	98		0
10	MW6S	100	94	98		0
11	MW6D	100	92	98		0
12	MW7S	98	94	100		0
13	MW7D	98	92	102		0
14	MW9S	98	92	100		0
	MW9D	98	92	100		0
16	MW10S	100	92	100		0
17	MW10D	98	94	100		0
18	MW11D	100	94	100		0
19	MW13D	100	92	104		0
20	DUP	98	92	102		0
21	TRIP BLANK	98	92	100		0
22	VBLK03	100	96	104		0
23	MW7SDL	100	96	100		0
24	COOLER BLANK	98	96	106		0
25						
26 27						
28						-
29						
30						
50					l	

SMC1 (TOL) = Toluene-d8 (88-110) SMC2 (BFB) = Bromofluorobenzene (86-115) SMC3 (DCE) = 1,2-Dichloroethane-d4 (76-114)

- # Column to be used to flag recovery values
- * Values outside of contract required QC limits
- D System Monitoring Compound diluted out

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix Spike - EPA Sample No.: MW5D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
	=======	==========	==========	=====	=====
1,1-Dichloroethene	50	0.0	53	106	61-145
Trichloroethene	50	220	260	80	71-120
Benzene	50	0.0	51	102	76-127
Toluene	50	0.0	52	104	76-125
Chlorobenzene	50	0.0	50	100	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC L:	IMITS REC.
		==========	=====	=====	======	=====
1,1-Dichloroethene	50	57	114	7	14	61-145
Trichloroethene	50	260	80	0	14	71-120
Benzene	50	52	104	2	11	76-127
Toluene	50	54	108	4	13	76-125
Chlorobenzene	50	52	104	4	13	75-130

[#] Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS:		

^{*} Values outside of QC limits

Lab Name: CAS-ROC	Contract	: URS/WCC	MW5DMS
Lab Code: 10145 Case No.	: 9-37 SAS No.	SDG	No.: MW1
Matrix: (soil/water) WATER		Lab Sample ID:	321624MS
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID:	Q4195
Level: (low/med) LOW		Date Received:	09/02/99
% Moisture: not dec.	_	Date Analyzed:	09/10/99
GC Column: HP624 ID: 2.00	0 (mm)	Dilution Facto	r: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot V	olume: (uI
CAS NO. COMPO		TRATION UNITS: or ug/Kg) UG/L	

		-	
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	_
75-01-4	Vinvl Chloride	10	_
75-00-3	Chloroethane	10	
75-09-2	Methylene Chloride	10	
67-64-1	Acetone		_
75-15-0	Carbon Disulfide	1	JB U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	53	
540-59-0	1,2-Dichloroethene (total)	10	
57-66-3	Chloroform	1	
07-06-2	1,2-Dichloroethane	10	
78-93-3	2-Butanone	10	_
71-55-6	1,1,1-Trichloroethane	10	
6-23-5	Carbon Tetrachloride	6	
75-27-4	Bromodichloromethane	10	
10-07-E	Bromodichioromethane	10	
0061 01 5	1,2-Dichloropropane	10	
10001-01-2	cis-1,3-Dichloropropene	10	
24 40 7	Trichloroethene	260	E
24-48-1	Dibromochloromethane	10	U
9-00-5	1,1,2-Trichloroethane	10	U
1-43-2	Benzene	51	
.0061-02-6	trans-1,3-Dichloropropene	10	U
5-25-2	Bromoform	10	U
.08-10-1	4-Methyl-2-Pentonone	10	
91-78-6	2-Hexanone	10	U
27-18-4	Tetrachloroethene	10	
9-34-5	1.1.2.2-Tetrachloroethane	10	_
.08-88-3	Toluene	52	0
.08-90-7	Chlorobenzene	50	
.00-41-4	Ethylbenzene	10	TT
.00-42-5	Styrene	10	_
1330-20-7	Xylene (Total)	10	_

MW5DMSD

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: 321624MSD

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4196

Level: (low/med) LOW Date Received: 09/02/99

% Moisture: not dec. ____ Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
57-64-1		2	JB
	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	57	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	2	J
	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	6	J
56-23-5	Carbon Tetrachloride	10	U
	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	260	E
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2		52	
10061-02-6	trans-1,3-Dichloropropene	10	Ū
	Bromoform	10	U
108-10-1	4-Methyl-2-Pentonone	10	U
	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	54	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
	Xylene (Total)	10	U

Data File: \\C-ROCH1\CSV\CHEM\MS6.I\wcc9-37.b\Q4190.D

Report Date: 28-Sep-1999 15:45

Columbia Analytical Services, INC (ROC)

RECOVERY REPORT

Client SDG: MW1

Operator: TTRAVER SampleType: BS Quant Type: ISTD

Client Smp ID: VBLK01MS

Fraction: VOA

Client Name: WCC/URS Sample Matrix: LIQUID Lab Smp Id: VBLK01MS

Level: LOW
Data Type: MS DATA
SpikeList File: watermsd.spk

Sublist File: tcl.sub

Method File: \\C-ROCH1\CSV\CHEM\MS6.I\wcc9-37.b\asp0909w.m

Misc Info: 95-1

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
5 1,1-Dichloroethene	50	54	108.00	61-145
23 Trichloroethene	50	44	88.00	71-120
20 Benzene	50	51	102.00	76-127
29 Toluene	50	52	104.00	76-125
36 Chlorobenzene	50	51	102.00	75-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 19 1,2-Dichloroethane	50	50	100.00	76-114
\$ 28 Toluene-d8	50	50	100.00	88-110
\$ 43 Bromofluorobenzene	50	48	96.00	86-115

VBLK01MS

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: VBLK01MS

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4190

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

% Moisture: not dec. ______ Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

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

CAS NO.	COMPOUND (ug/L or	ug/Kg) UG/L	. Q
74-87-3	Chloromethane		10 U
74-83-9	Bromomethane		10 U
75-01-4	Vinyl Chloride		10 U
75-00-3	Chloroethane	_	10 U
75-09-2	Methylene Chloride	_	10 U
67-64-1	Acetone		2 JB
	Carbon Disulfide		10 U
	1,1-Dichloroethene		54
75-34-3	1,1-Dichloroethane		10 U
540-59-0	1,2-Dichloroethene (total)		10 U
67-66-3	Chloroform		10 U
	1,2-Dichloroethane		10 U
78-93-3	2-Butanone		10 U
71-55-6	1,1,1-Trichloroethane		10 U
56-23-5	Carbon Tetrachloride		10 U
75-27-4	Bromodichloromethane	_	10 U
78-87-5	1,2-Dichloropropane		10 U
10061-01-5	cis-1,3-Dichloropropene		10 U
79-01-6	Trichloroethene	_	44
124-48-1	Dibromochloromethane		10 U
79-00-5	1,1,2-Trichloroethane		10 U
71-43-2	Benzene		51
10061-02-6	trans-1,3-Dichloropropene		10 U
75-25-2	Bromoform	NAME OF TAXABLE PARTY.	10 U
108-10-1	4-Methyl-2-Pentonone		10 U
591-78-6	2-Hexanone		10 U
127-18-4	Tetrachloroethene	_	10 U
79-34-5	1,1,2,2-Tetrachloroethane		10 U
108-88-3	Toluene		52
108-90-7	Chlorobenzene		51
100-41-4	Ethylbenzene	9.1	10 0
100-42-5	Styrene		10 U
1330-20-7	Xylene (Total)		10 U

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID: Q4189 Lab Sample ID: VBLK01

Date Analyzed: 09/10/99 Time Analyzed: 1035

GC Column: HP624 ID: 2 (mm) Heated Purge: (Y/N) N

Instrument ID: MS6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
01	VBLK01MS	VBLK01MS	Q4190	1105
02	MW5D	321624	Q4194	1254
03	MW5DMS	321624MS	Q4195	1319
04	MW5DMSD	321624MSD	Q4196	1343
05	MW5DDL	321624DL	Q4197	1419
06				
07				
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09				
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COMMENTS:		
-		

Lab Name: CAS-ROC		Contract: URS/WCC	VBLKUI
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID	VBLK01
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4189
Level: (low/med)	LOW	Date Received	
% Moisture: not dec.		Date Analyzed	: 09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Factor	or: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot	Volume:(uL
CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/	

	Chloromethane	10 U	
	Bromomethane	10 U	
75-01-4	Vinyl Chloride	10 U	
	Chloroethane	10 U	
75-09-2	Methylene Chloride	10 U	
	Acetone	1 J	
	Carbon Disulfide	10 U	
75-35-4	1,1-Dichloroethene	10 U	
75-34-3	1,1-Dichloroethane	10 U	
540-59-0	1,2-Dichloroethene (total)	10 U	
67-66-3	Chloroform	10 U	
	1,2-Dichloroethane	10 U	
78-93-3	2-Butanone	10 U	
	1,1,1-Trichloroethane	10 U	
	Carbon Tetrachloride	10 U	
75-27-4	Bromodichloromethane	10 U	
78-87-5	1,2-Dichloropropane	10 U	
10061-01-5-	cis-1,3-Dichloropropene	10 U	
79-01-6	Trichloroethene	10 U	
	Dibromochloromethane	10 U	
79-00-5	1,1,2-Trichloroethane	10 U	
	Benzene	10 U	
10061-02-6-	trans-1,3-Dichloropropene	10 U	
	Bromoform	10 U	
108-10-1	4-Methyl-2-Pentonone	10 U	
	2-Hexanone	10 U	
	Tetrachloroethene	10 U	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	
108-88-3	Toluene	10 U	
108-90-7	Chlorobenzene	10 U	
	Ethylbenzene	10 U	
	Styrene	10 U	
1330-20-7	Xylene (Total)	10 U	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPLE	NO.
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Lab Name: CAS-ROC		Contract: URS/WCC	VBDROI
Lab Code: 10145	Case No.: 9-37	SAS No.: SDG	No.: MW1
Matrix: (soil/water)	WATER	Lab Sample ID:	VBLK01
Sample wt/vol:	5.000 (g/mL) ML	Lab File ID:	Q4189
Level: (low/med)	LOW	Date Received:	
% Moisture: not dec.		Date Analyzed:	09/10/99
GC Column: HP624	ID: 2.00 (mm)	Dilution Facto	pr: 1.0
Soil Extract Volume:	(uL)	Soil Aliquot V	Volume: (uL)

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

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VBLK02

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID: Q4201 Lab Sample ID: VBLK02

Date Analyzed: 09/10/99 Time Analyzed: 1633

GC Column: HP624 ID: 2 (mm) Heated Purge: (Y/N) N

Instrument ID: MS6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME
01	MT.73	201600	= =====================================	= =========
01	MW1 MW3	321622 321623	Q4202 Q4203	1706
03	MW6S	321625	04204	1731 1755
04	MW6D	321626	Q4204 Q4205	1820
05	MW7S	321627	Q4205 Q4206	1846
06	MW7D	321628	Q4207	1913
07	MW9S	321629	Q4208	1939
80	MW9D	321630	Q4209	2004
09	MW10S	321631	Q4210	2029
10	MW10D	321632	Q4211	2055
11	MW11D	321633	Q4212	2121
12	MW13D	321634	Q4213	2148
13	DUP	321635	Q4214	2216
14	TRIP BLANK	321633	Q4215	2242
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COMMENTS:

		VBLK02
Lab Name: CAS-ROC	Contract: URS/WCC	

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Matrix: (soil/water) WATER Lab Sample ID: VBLK02

Lab File ID: Q4201 Sample wt/vol: 5.000 (g/mL) ML

Date Received: Level: (low/med) LOW

% Moisture: not dec. Date Analyzed: 09/10/99

GC Column: HP624 ID: 2.00 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

74-87-3	Chloromethane	10 U
74-83-9	Bromomethane	10 U
75-01-4	Vinyl Chloride	10 U
75-00-3	Chloroethane	10 U
75-09-2	Methylene Chloride	10 U
67-64-1	Acetone	2 J
	Carbon Disulfide	10 U
	1,1-Dichloroethene	10 U
75-34-3	1,1-Dichloroethane	10 U
	1,2-Dichloroethene (total)	10 U
	Chloroform	10 U
	1,2-Dichloroethane	10 U
	2-Butanone	10 U
71-55-6	1,1,1-Trichloroethane	10 U
56-23-5	Carbon Tetrachloride	10 U
75-27-4	Bromodichloromethane	10 U
78-87-5	1,2-Dichloropropane	10 U
10061-01-5-	cis-1,3-Dichloropropene	10 U
79-01-6	Trichloroethene	10 U
124-48-1	Dibromochloromethane	10 U
79-00-5	1,1,2-Trichloroethane	10 U
71-43-2	Benzene	10 U
10061-02-6-	trans-1,3-Dichloropropene	10 U
	Bromoform	10 U
108-10-1	4-Methyl-2-Pentonone	10 U
	2-Hexanone	10 U
	Tetrachloroethene	10 U
79-34-5	1,1,2,2-Tetrachloroethane	10 U
	Toluene	10 U
108-90-7	Chlorobenzene	10 U
100-41-4	Ethylbenzene	10 U
	Styrene	10 U
1330-20-7	Xylene (Total)	10 U

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

VBLK02

Lab Name: CAS-ROC	Contract: URS/WCC
Lab Code: 10145 Case No.: 9-3	SAS No.: SDG No.: MW1
Matrix: (soil/water) WATER	Lab Sample ID: VBLK02
Sample wt/vol: 5.000 (g/mL)	ML Lab File ID: Q4201
Level: (low/med) LOW	Date Received:
% Moisture: not dec	Date Analyzed: 09/10/99
GC Column: HP624 ID: 2.00 (1	mm) Dilution Factor: 1.0
Soil Extract Volume. (UL)	Soil Alignot Volume: (ut

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 METHOD BLANK SUMMARY

VBLK03

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID: Q4219 Lab Sample ID: VBLK03

Date Analyzed: 09/11/99 Time Analyzed: 1051

GC Column: HP624 ID: 2 (mm) Heated Purge: (Y/N) N

Instrument ID: MS6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
		=========	=======================================	========
01	MW7SDL COOLER BLANK	321627DL 321844	Q4223 Q4224	1253 1318
03				
04				
05 06				
07				
08				
09			MANAGEMENT CONTRACTOR AND CONTRACTOR	115.04
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11 12				
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1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK03

Lab Name: CAS-ROC	Contract: URS/WCC
Lab Code: 10145 Case No.: 9-37	SAS No.: SDG No.: MW1
Matrix: (soil/water) WATER	Lab Sample ID: VBLK03
Sample wt/vol: 5.000 (g/mL) ML	Lab File ID: Q4219
Level: (low/med) LOW	Date Received:
% Moisture: not dec.	Date Analyzed: 09/11/99
GC Column: HP624 ID: 2.00 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (117.)	Soil Aliquot Volume: (1)

CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q 74-87-3-----Chloromethane 10 U 74-83-9-----Bromomethane 10 U 75-01-4-----Vinyl Chloride 10 U 75-00-3-----Chloroethane 10 U 75-09-2-----Methylene Chloride 10 U 67-64-1-----Acetone 3 J 75-15-0-----Carbon Disulfide 10 U 75-35-4----1,1-Dichloroethene 10 U 75-34-3-----1,1-Dichloroethane 10 U 540-59-0----1,2-Dichloroethene (total) 10 U 67-66-3-----Chloroform 10 U 107-06-2----1,2-Dichloroethane 10 U 78-93-3----2-Butanone 10 U 71-55-6-----1,1,1-Trichloroethane 10 U 56-23-5-----Carbon Tetrachloride 10 U 75-27-4-----Bromodichloromethane 10 U 78-87-5----1,2-Dichloropropane 10 U 10061-01-5----cis-1,3-Dichloropropene 10 U 79-01-6----Trichloroethene 10 U 124-48-1-----Dibromochloromethane 10 U 79-00-5----1,1,2-Trichloroethane 10 U 71-43-2----Benzene 10 U 10061-02-6----trans-1,3-Dichloropropene 10 U 10 U 75-25-2-----Bromoform 108-10-1----4-Methyl-2-Pentonone 10 U

591-78-6----2-Hexanone

108-90-7-----Chlorobenzene

1330-20-7------Xylene (Total)

100-41-4-----Ethylbenzene

108-88-3-----Toluene

100-42-5-----Styrene

127-18-4----Tetrachloroethene

79-34-5----1,1,2,2-Tetrachloroethane

10 U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPLE	NO
-----	--------	----

VBLK03	
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Contract: URS/WCC Lab Name: CAS-ROC

SDG No.: MW1

Matrix: (soil/water) WATER

Lab Sample ID: VBLK03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: Q4219

Level: (low/med) LOW

Date Received:

% Moisture: not dec.

Date Analyzed: 09/11/99

GC Column: HP624 ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Aliquot Volume: (uL)

Soil Extract 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 INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID (Standard): Q4188 Date Analyzed: 09/10/99

Instrument ID: MS6 Time Analyzed: 0926

GC Column: HP624 ID: 2.00 (mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
12 HOUR STD UPPER LIMIT LOWER LIMIT EPA SAMPLE NO.	72507	6.86	497487	8.51	434490	13.23
	145014	7.36	994974	9.01	868980	13.73
	36254	6.36	248744	8.01	217245	12.73
01 VBLK01 02 VBLK01MS 03 MW5D 04 MW5DMS 05 MW5DMSD 06 MW5DDL 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22	70156	6.87	496725	8.51	421436	13.23
	70786	6.86	503254	8.50	432256	13.23
	66294	6.86	473719	8.50	401744	13.23
	68906	6.86	490094	8.50	419107	13.23
	67261	6.86	483460	8.50	412243	13.23
	65394	6.86	467311	8.50	394790	13.22

IS1 (BCM) = Bromochloromethane (DFB) = 1,4-Difluorobenzene (CBZ) = Chlorobenzene-d5 IS2

IS3

AREA UPPER LIMIT = +100% of internal standard area AREA LOWER LIMIT = - 50% of internal standard area RT UPPER LIMIT = + 0.50 minutes of internal standard RT RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk. * Values outside of QC limits.

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8A VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID (Standard): Q4200 Date Analyzed: 09/10/99

Instrument ID: MS6 Time Analyzed: 1548

GC Column: HP624 ID: 2.00 (mm) Heated Purge: (Y/N) N

		IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
	12 HOUR STD UPPER LIMIT LOWER LIMIT	68575 137150 34288	6.86 7.36 6.36	463168 926336 231584	8.50 9.00 8.00	402354 804708 201177	13.23 13.73 12.73
	EPA SAMPLE NO.	========		========	======		======
01	VBLK02	57601		405504	======	=========	======
02	MW1	57681 66893	6.86	405584 474494	8.50	352182	13.22
03	MW3	64940	6.86	453050	8.50 8.50	407873 392580	13.22 13.22
04	MW6S	65463	6.86	456002	8.50	393981	13.23
05	MW6D	63327	6.86	447339	8.50	383607	13.22
06	MW7S	63183	6.86	425721	8.51	373376	13.23
07	MW7D	65548	6.86	444476	8.50	388402	13.23
08	MW9S	63987	6.86	428890	8.50	378736	13.23
09	MW9D	65714	6.86	454618	8.50	394314	13.23
10	MW10S	66538	6.86	449431	8.50	392575	13.23
11	MW10D	65541	6.86	444112	8.51	385930	13.23
12	MW11D	66117	6.86	449525	8.50	383663	13.22
13	MW13D	61254	6.86	425859	8.50	367174	13.23
14	DUP	63210	6.86	430520	8.50	377857	13.23
15 16 17	TRIP BLANK	66674	6.86	436125	8.50	382482	13.23
18							
19			-				
20							
21							
22							

IS1 (BCM) = Bromochloromethane IS2 (DFB) = 1,4-Difluorobenzene IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

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[#] Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CAS-ROC Contract: URS/WCC

Lab Code: 10145 Case No.: 9-37 SAS No.: SDG No.: MW1

Lab File ID (Standard): Q4218 Date Analyzed: 09/11/99

Instrument ID: MS6 Time Analyzed: 1026

GC Column: HP624 ID: 2.00 (mm) Heated Purge: (Y/N) N

	IS1 (BCM) AREA #	RT #	IS2 (DFB) AREA #	RT #	IS3 (CBZ) AREA #	RT #
12 HOUR STD UPPER LIMIT LOWER LIMIT EPA SAMPLE NO.	70785	6.86	489879	8.50	421986	13.23
	141570	7.36	979758	9.00	843972	13.73
	35393	6.36	244940	8.00	210993	12.73
1 VBLK03 MW7SDL 3 COOLER BLANK 4 5 6 7 8 9 0	68073	6.86	482355	8.51	415397	13.23
	64948	6.85	460301	8.50	400982	13.22
	64709	6.86	460751	8.50	402001	13.22
7 8 9 0 1						

IS1 (BCM) = Bromochloromethane IS2 (DFB) = 1,4-Difluorobenzene IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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APPENDIX C

ANALYTICAL DATA VALIDATION
GRIFFIN TECHNOLOGY SITE
SYSTEM OPERATION
SEMI-ANNUAL GROUNDWATER SAMPLING
SECOND ROUND, 1999

INTRODUCTION

This appendix presents the findings of a validation of analytical data for samples collected in September 1999 at the Griffin Technology Inc. (GTI) Site. Sampling was conducted by URS GreinerWoodward Clyde (URSGWC) and analytical services were provided by Columbia Analytical Services, Inc. (CASI) of Rochester, New York. All samples were analyzed for volatile organic compounds (VOCs) in accordance with New York State Department of Environmental Conservation (NYSDEC) Analytical Service Protocol (ASP) Method 95-1.

The procedures for validation of the data followed guidance from the following documents:

- Interim Remedial Measure Program Appendix B: Quality Assurance Project Plan (QAPP). July 1996. Prepared by Woodward-Clyde Consultants.
- CLP Organics Data Review and Preliminary Review. S.O.P. No. HW-6 No. 8, January 1992. Prepared by USEPA Region II.

The above "Guidelines" provided the criteria to review. Additional quantitative criteria are given in the analytical method.

The criteria evaluated included the following:

VOCs

Significant problems identified in case narrative
Results reported from secondary dilutions
Sample holding times
Instrument performance and calibration
Method blank and trip blank contamination
Surrogate spike recoveries
MS/MSD recoveries and relative percent difference (RPD) values
Internal standard areas and retention times

VOCs continued:

Field duplicate results Compound identification and quantitation Overall assessment of data

The following sections present the data validation:

SIGNIFICANT PROBLEMS IDENTIFIED IN CASE NARRATIVE

No significant problems were identified in the laboratory case narrative.

RESULTS REPORTED FROM SECONDARY DILUTIONS

For samples that required dilutions, part of the validation process is to evaluate which set of results (initial or diluted) are considered to be more representative of the sample matrix. For this data set, two samples required dilution for VOC analysis.

For the initial VOC analyses of samples MW-5D and MW-7S analyzed at 1.0 dilution factors, the corresponding TCE concentrations exceeded the instrument's linear calibration range, and both samples were reanalyzed at a dilution factor of 1:2. For these sample, the TCE concentrations reported from the diluted analysis are considered to be more representative of the samples concentration and were transcribed onto the data summary table, along with any appropriate qualifiers.

SAMPLE HOLDING TIMES

The VOC holding time criterion established in the QAPP is seven days from receipt at the laboratory to analysis. All samples were analyzed between eight and nine days from sample receipt. Data qualification was not considered necessary since all samples were preserved with hydrochloric acid and they were analyzed within the "Guidelines" holding time criterion of fourteen days from collection to analyses.

GC/MS INSTRUMENT PERFORMANCE

GC/MS instrument performance checks are performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for instrument performance checks included evaluation of possible transcription or calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. All criteria for bromofluorobenzene (BFB) for VOCs were met for this data set. Additionally, no transcription errors or calculation errors were found.

INITIAL AND CONTINUING CALIBRATION

Initial and continuing calibration criteria are established to ensure the instruments are capable of producing acceptable qualitative and quantitative data for VOCs. All initial and continuing calibrations were performed at the required frequency.

All VOC initial calibration relative response factor (RRF) values and relative standard deviation (%RSD) values met the acceptance criteria presented in the "Guidelines".

All VOC continuing calibration RRF values met the acceptance criteria presented in the "Guidelines". One VOC continuing calibration analysis had a percent difference (%D) value between initial and continuing calibration response factors in excess of the "Guidelines" criterion of 25 percent. Per the "Guidelines," detected and non-detected sample results for the affected compound are qualified as estimated (J for detects UJ for non-detects) based on the outlying %D values. Sample results requiring qualification based on the outlying continuing calibration %D values are shown below:

Instrument	Date	Compound	%D	Qualifier Detects/Non-detects
1. GCMS#6	09/10/99	1,1,2,2-tetrachloroethane	32.1	J/UJ

Associated Samples: MW-5D J - estimated result for detects UJ - estimated result for non-detects

Sample MW-5D was reported as non-detected for 1,1,2,2-tetrachloroethane, and as such, the result was qualified as UJ. Additionally, no errors in calculations or transcriptions were noted during the validation of the calibration data from this data set.

LABORATORY METHOD BLANKS

Laboratory method blanks evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blanks were analyzed at the prescribed method frequencies.

Two VOC method blank samples had low level detections of acetone. Per the "Guidelines," sample results that are not at least 10 times greater than laboratory method blank concentrations require qualification as non-detected (data qualifier U). All samples had low level acetone detections and required qualification as follows:

Fraction	Analyte	Conc.	Qualified Conc.
VOCs (µg/l)			
1. VBLK01	acetone	1J	
Associated Sample	es:		
MW-5D	acetone	2JB	10U
2. VBLK02	acetone	2Ј	
Associated Sample	es:		
MW-1	acetone	1JB	10U
MW-3	acetone	1JB	10U
MW-6S	acetone	2JB	10U
MW-6D	acetone	2JB	10U
MW-7S	acetone	2JB	10U
MW-7D	acetone	1JB	10U
MW-9S	acetone	2JB	10U
MW-9D	acetone	2JB	10U
MW-10S	acetone	2JB	10U
MW-10D	acetone	2JB	10U
MW-11D	acetone	2JB	10U
MW-11D Dup.	acetone	1JB	10U
MW-13D	acetone	2JB	10U
Trip Blank	acetone	2JB	10U

B detected in corresponding laboratory blank

detected below quantitation limit, result is estimated

qualified as non-detected due to potential contamination

Additionally, carbon disulfide was detected in one investigative sample, MW-10D at a concentration of 1J µg/l. The presence of this compound at low concentrations is typically associated with laboratory contamination. Carbon disulfide has been detected at low concentrations in other wells from previous monitoring rounds but the results have been qualified as non-detected (U) due to the presence of same in either lab blanks, rinsate blanks or trip blank samples. Carbon disulfide was not detected in any blanks analyzed this sampling round. However, in the professional judgement of the Data Validator, the presence of carbon disulfide in MW-10D is likely attributable to laboratory contamination. Therefore, the carbon disulfide result for MW-10D was qualified as non-detected (data qualifier U) at the sample quantitation limit (10 μ g/l).

TRIP BLANK SAMPLES

Trip blank samples are used to assess VOC cross-contamination during shipment to the laboratory. One trip blank sample was submitted with the cooler containing aqueous samples for VOC analyses.

Following qualification due to method blank contamination, the trip blank sample was VOCfree, which indicated that the potential for cross contamination of samples during shipping was minimal

SURROGATE SPIKE RECOVERIES

Samples analyzed for VOCs were spiked with surrogate compounds prior to analysis. Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. The "Guidelines" require that all VOC surrogate spike recoveries meet acceptance criteria.

All VOC surrogate spike recoveries were within the laboratory's established control limits, which indicated that the laboratory's preparation procedure was acceptable.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES

Matrix effects on the analytical results are checked by analyzing matrix spike/matrix spike duplicate (MS/MSD) samples. MW-5D was analyzed as an MS/MSD sample for this sampling event.

All VOC MS/MSD recoveries and relative percent difference (RPD) values for samples MW-5D were within the method established control limits. Therefore, acceptable analytical accuracy and precision were achieved for these analyses.

INTERNAL STANDARDS

Internal standard (I.S.) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. All VOC I.S. retention times and area responses were within the established control limits.

Validation of the I.S. data also included spot checking the retention times and areas summarized on Form-8 to those on the instrument chromatograms; no anomalies were noted.

FIELD DUPLICATE RESULTS

Field duplicate results were used to evaluate representativeness. For aqueous samples, when analytes for both duplicate and sample values are greater than five times the quantitation limit, satisfactory representativeness is indicated by an RPD less than or equal to 50 percent. Where one or both of the analytes of a field duplicate pair are reported at less than five times the quantitation limit, satisfactory representativeness is indicated if the field duplicate results agree within 2.5 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory representativeness of the results.

One field duplicate sample pair, labeled as MW-11D and Dup., was collected with this sampling event. The results reported for the field duplicate sample pair are in agreement with the above criteria, which indicates that the aggregate sampling and analytical precision was acceptable.

COMPOUND IDENTIFICATION AND QUANTITATION

Data for one or more detected compound/analytes were checked for potential identification errors and were recalculated from the raw data. No anomalies or transcription errors were noted during validation of the reported analyte identifications and quantitations.

OVERALL DATA ASSESSMENT

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision (based on the MS/MSD and field duplicate results) were achieved for this data set. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated (J or UJ) values, for this data set was 100 percent. Sample results from this investigation required some qualification based on the minor deficiencies summarized below:

- The 1,1,2,3-tetrachloroethane result for sample MW-5D was qualified as (UJ for non-detect) based on an outlying continuing calibration %D value.
- Acetone results for all samples and a carbon disulfide result for one sample (MW-10D) were qualified as non-detected (U) on the basis of potential laboratory contamination.

No transcription errors or calculation errors were found during validation of the reported VOC results from this data set.