FINAL REPORT

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

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INTERIM REMEDIAL MEASURE SEMI-ANNUAL PROGRESS REPORT

APRIL 1999 – SEPTEMBER 1999

GRIFFIN TECHNOLOGY, INC. FACILITY

TOWN OF FARMINGTON

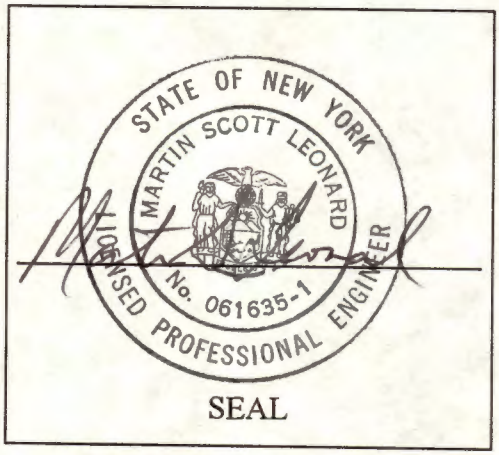
ONTARIO COUNTY, NEW YORK

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.

Name: Martin S. Leonard, P.E.

Title: Consulting Professional Engineer

Date: 12/27/99



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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.

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.

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.

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.

3.2 EFFLUENT OPERATING DATA AND ANALYTICAL RESULTS

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
		Monitoring well converted to a recovery well.		

NOTES
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

Well ID	Top of 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

NOTES
NM indicates water elevation not measured.
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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	617.67

NOTES
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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

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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

NOTES
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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
		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

NOTES
NM indicates water elevation not measured.
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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

NOTES
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

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	622.74
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

NOTES
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

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
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

NOTES
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

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

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

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

	DISCHARGE	CONCENTRATIONS				
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

Notes:

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

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

	DISCHARGE	CONCENTRATIONS				
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

Notes:

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	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
	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
	Monitoring well converted to recovery 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

Notes:

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 Well No.	Sample 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

Notes:

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 Well No.	Sample 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
		Well abandoned.			
MW-08D	12/19/1994	55	ND	ND	ND
		Well abandoned.			
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

Notes:

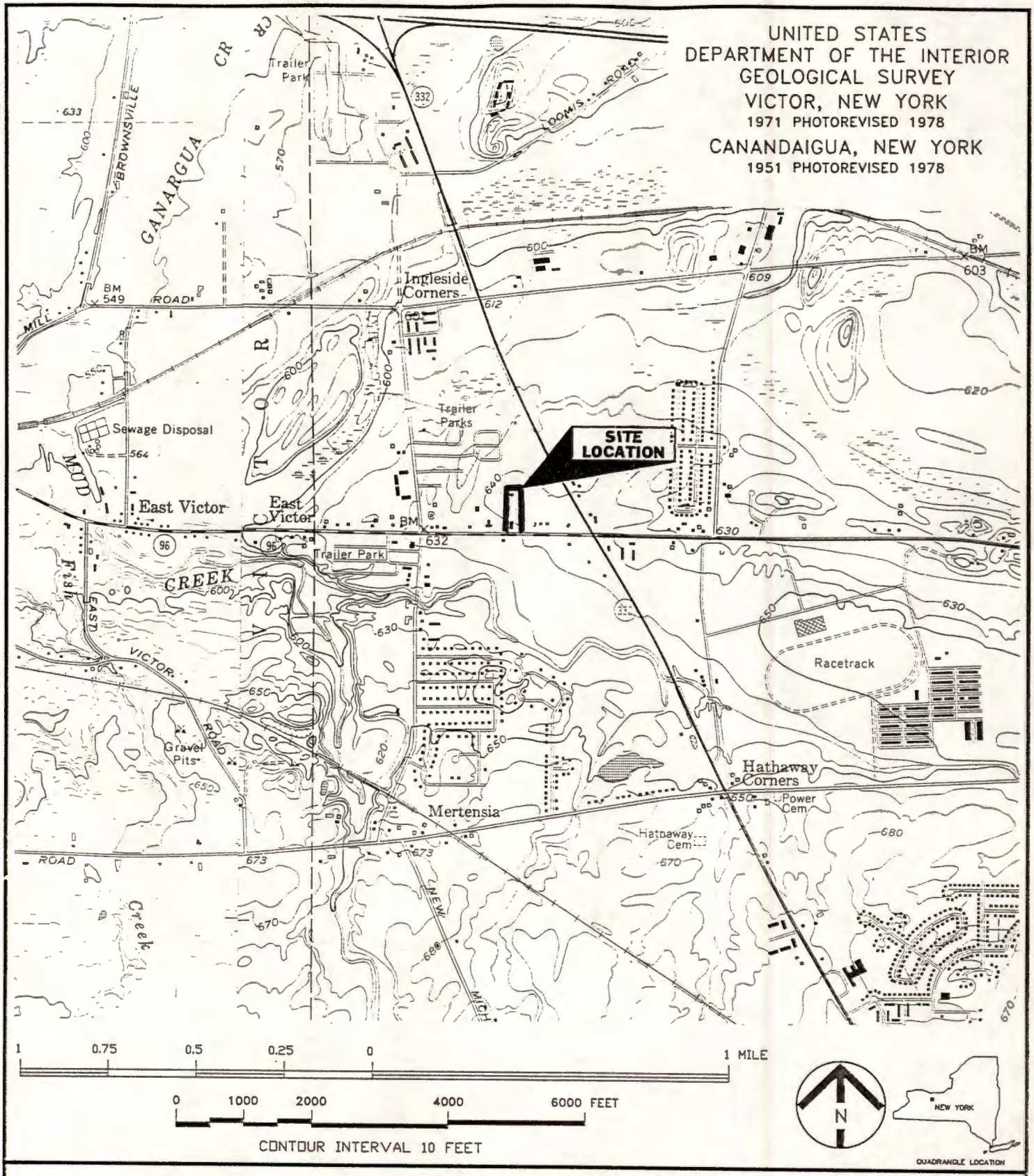
1. 12/19/94 data collected by Blasland, Bouck & Lee.
2. All results expressed in micrograms per liter (µg/l).
3. No other VOC compounds detected at method detection limit.
4. ND indicates not detected.
5. NS indicates no sample collected; unable to locate or access well.
6. DRY indicates well not sampled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

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

Monitoring 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
	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

Notes:

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.



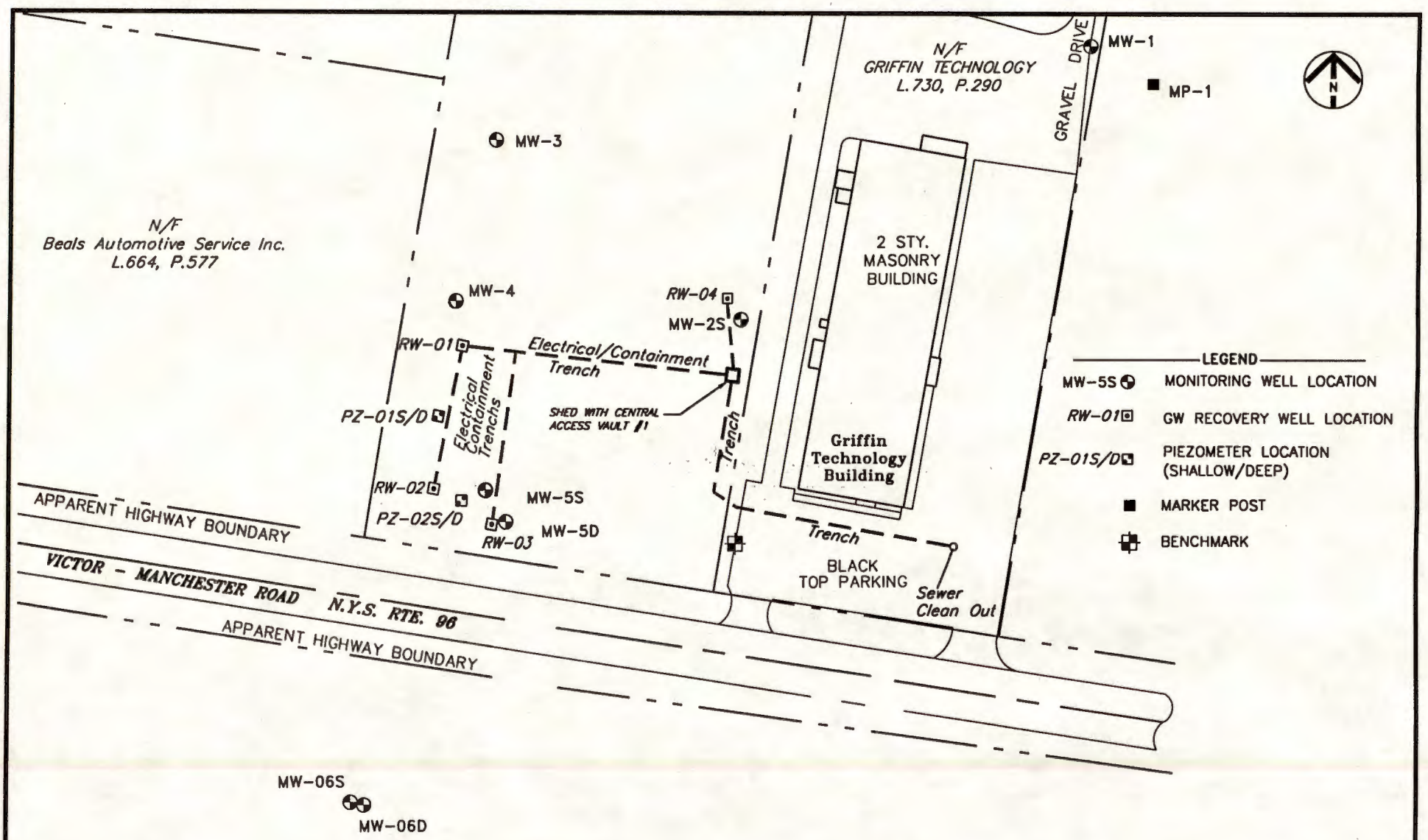
GENERAL LOCATION MAP

FORMER GRIFFIN TECHNOLOGY INC. - ONTARIO COUNTY - FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: MTS	PROJECT NUMBER: 6E06191	DATE: 6-18-99	FIGURE NO: 1-1

E06191\GLM.DWG

URS Greiner Woodward Clyde



IRM SYSTEM LAYOUT

GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: MTS	PROJECT NUMBER: 6E06191	DATE: 9-27-99	FIGURE NO: 2-1

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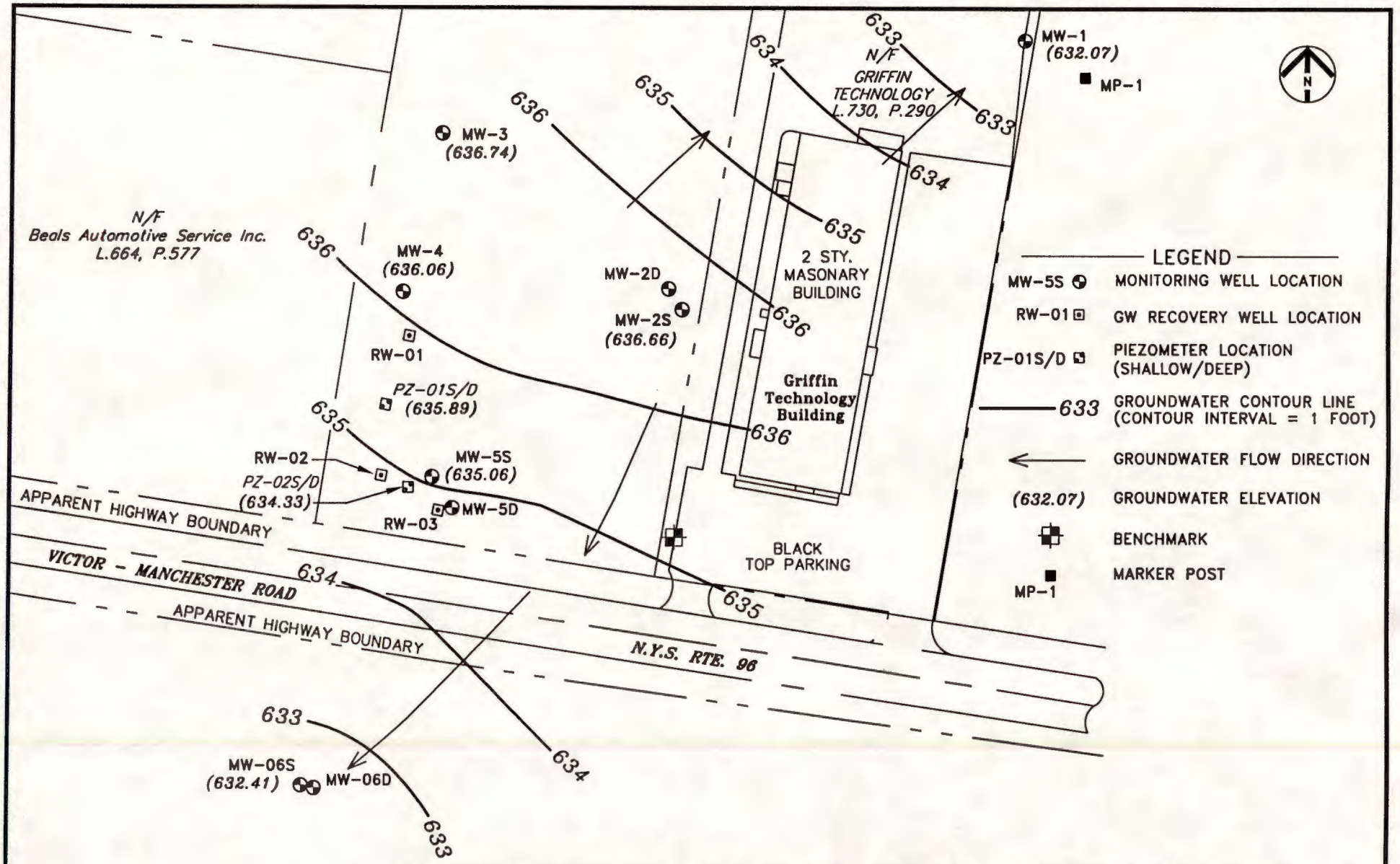
URS Greiner Woodward Clyde

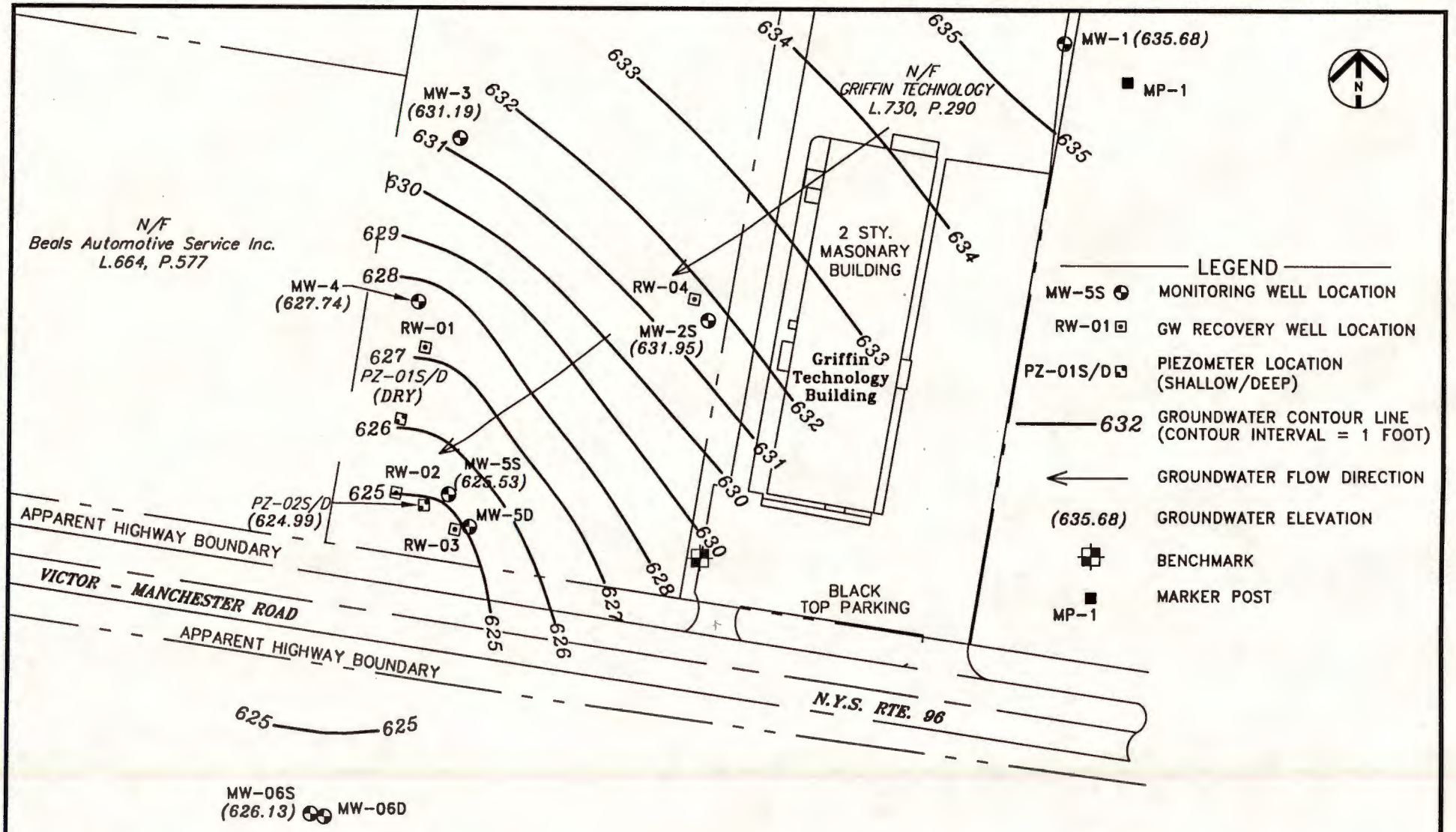


OVERBURDEN GROUNDWATER CONTOUR MAP
APRIL 14, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 09/27/99	FIGURE NO: 3-1

Q:\6E06191\9THQTR\990414S.DWG

URS Greiner Woodward Clyde



OVERBURDEN GROUNDWATER CONTOUR MAP
MAY 17, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 09/29/99	FIGURE NO: 3-2

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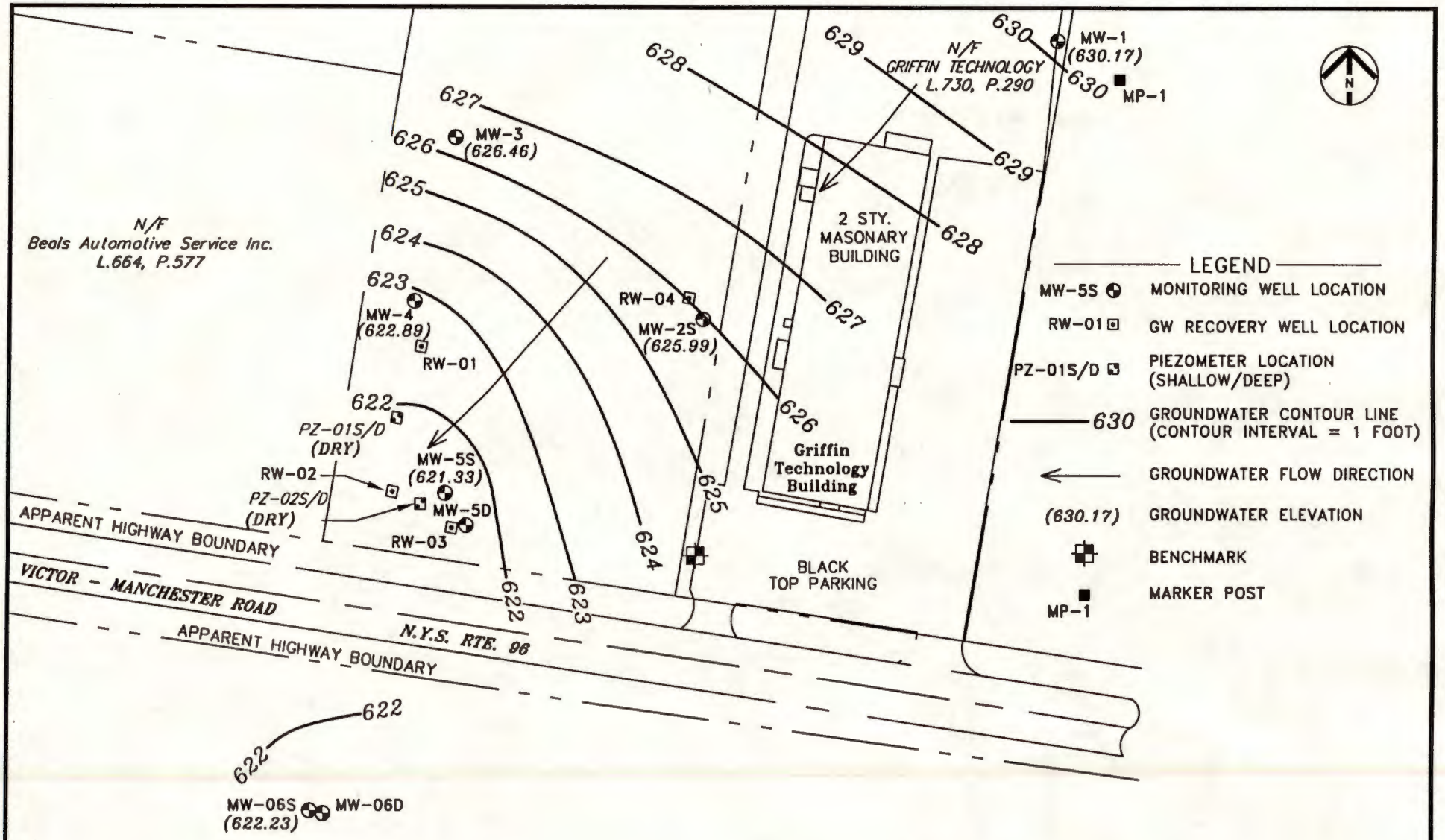
URS Greiner Woodward Clyde



OVERBURDEN GROUNDWATER CONTOUR MAP
JUNE 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 09/27/99	FIGURE NO: 3-3

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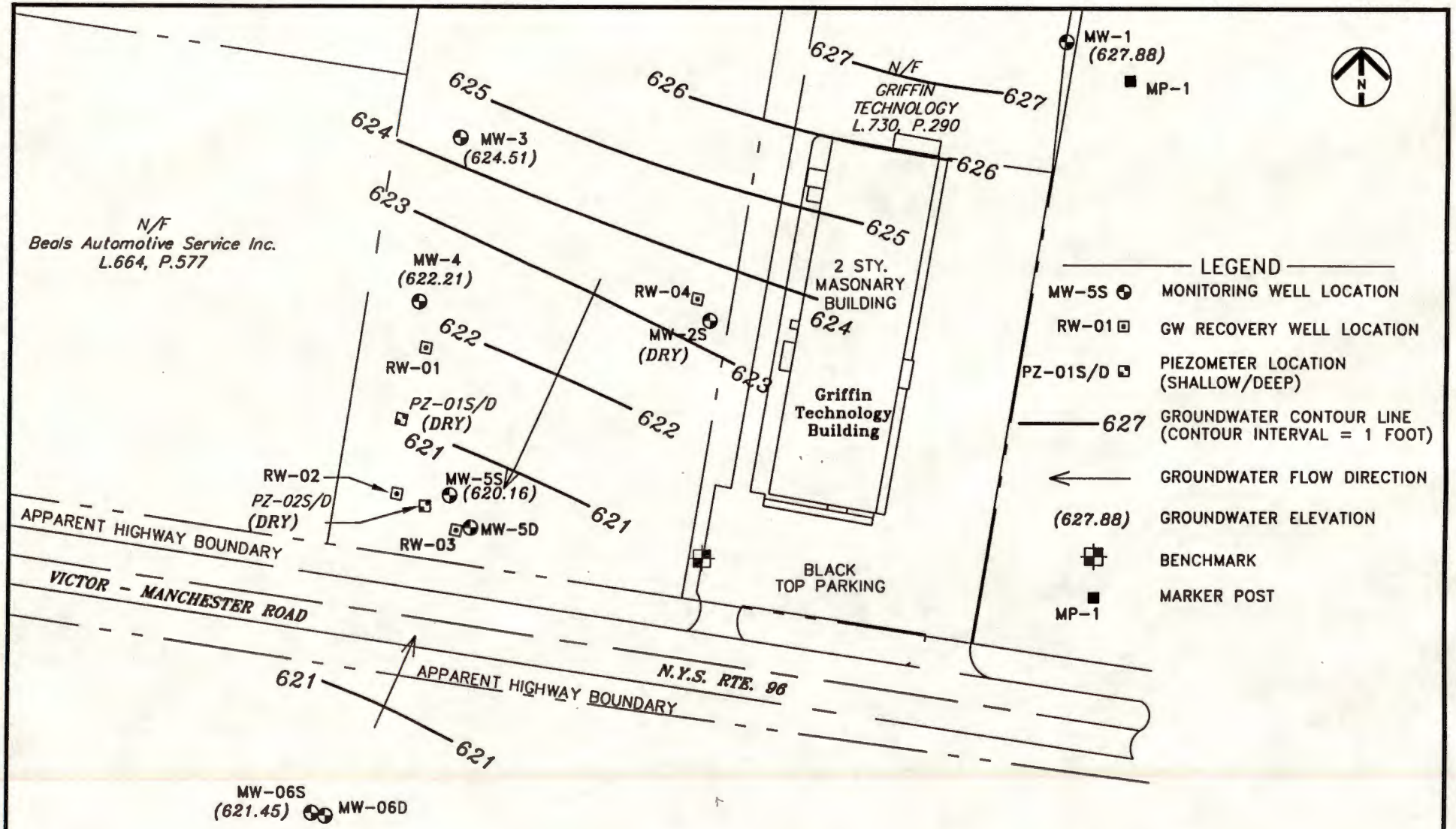
URS Greiner Woodward Clyde



OVERBURDEN GROUNDWATER CONTOUR MAP
JULY 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-4

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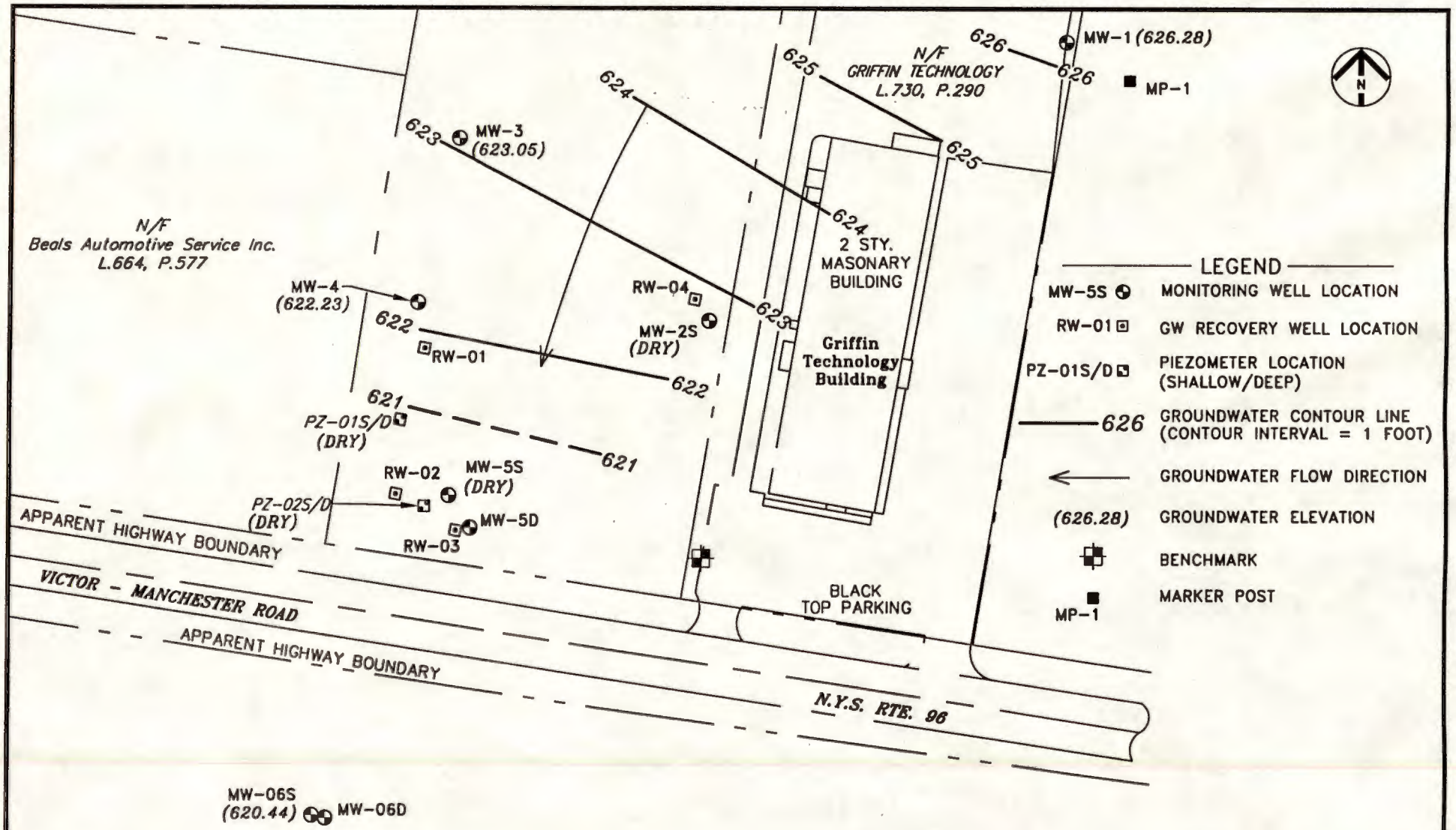
URS Greiner Woodward Clyde

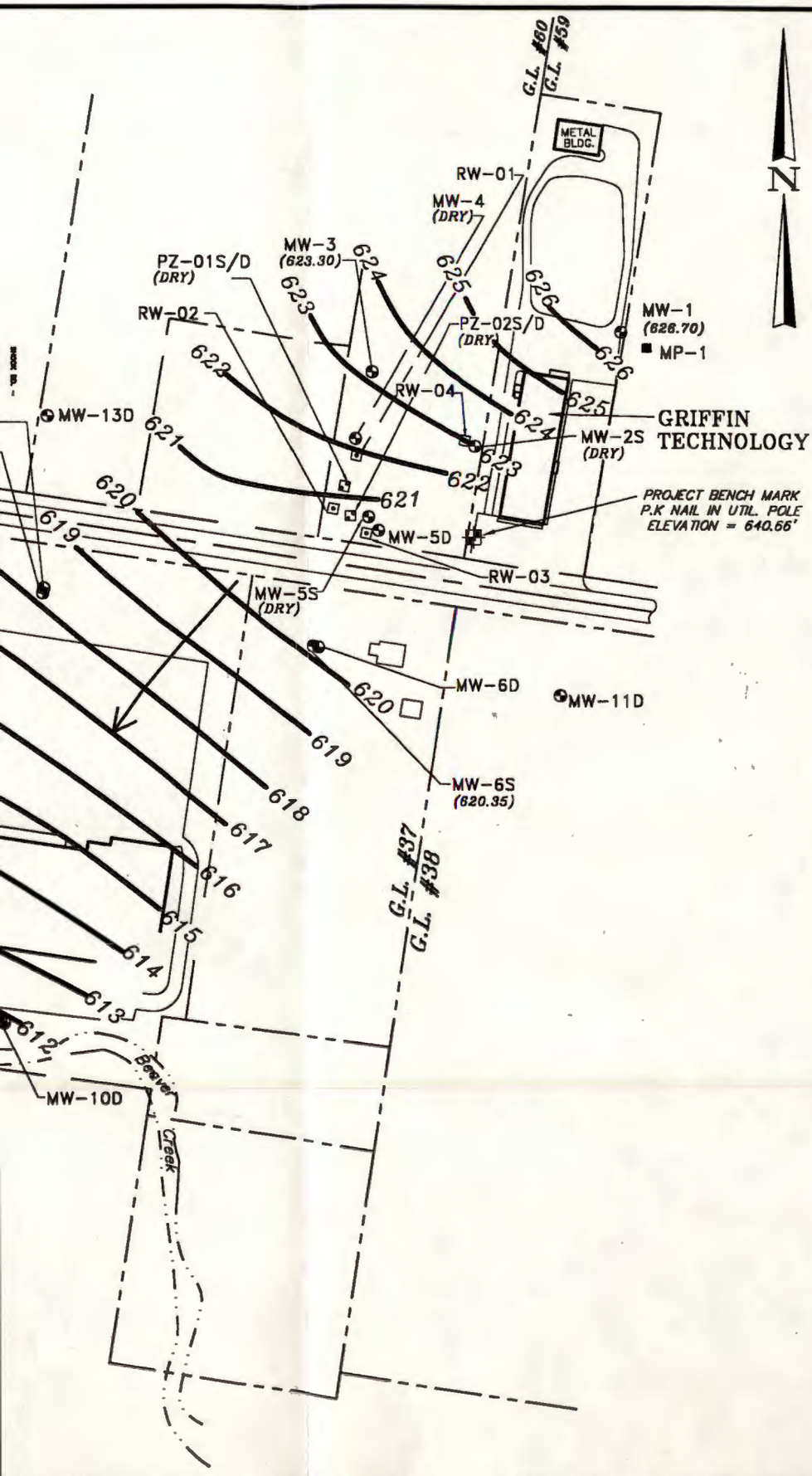


OVERBURDEN GROUNDWATER CONTOUR MAP
AUGUST 16, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-5

O:\6E06191\9THQTR\990816S.DWG

URS Greiner Woodward Clyde



LEGEND

- ⊕ MONITORING WELL
- ▲ STAFF GAUGE
- — 625 — GROUNDWATER CONTOUR (INTERVAL = 1 FOOT)
- (626.70) GROUNDWATER ELEVATION
- ← GROUNDWATER FLOW DIRECTION
- ■ MARKER POST
- (N.M.) NOT MEASURED
- BENCHMARK

References:

1.) Map prepared by Paul V. Crandall P.L.S. titled "LANDS OF R.D. PRODUCTS INC." Last dated June 17, 1983. Job #83138.

2.) Map prepared by Paul V. Crandall P.L.S. titled "GRIFFIN TECHNOLOGY 6132 VICTOR-MANCHESTER ROAD, SOIL BORINGS & MONITORING WELLS" Last dated June 19, 1991. Job #911767.

3.) Map prepared by Paul V. Crandall P.L.S. titled "MAP SHOWING LANDS OF JAMES V. ALAIMO – ANTHONY S. ALAIMO, M.D. – STEPHEN L. ALAIMO, M.D. – SAMUEL R. ALAIMO & JOSEPH W. ALAIMO ESTATE TO BE CONVEYED" Last dated August 25 1993. Job #932113.

4.) Map prepared by Blasland & Bouck Engineers, P.C. titled "GRIFFIN TECHNOLOGY INC. VICTOR, NEW YORK OFF-SITE GROUND-WATER EVALUATION PROGRAM – PROPOSED MONITORING WELL LOCATION" Last dated July 1993.

5.) Map prepared by CRANDALL SURVEYORS, titled "GRIFFIN TECHNOLOGY INC. – ON – SITE / OFF – SITE GROUND WATER EVALUATION PROGRAM – PART OF GRIFFIN TECHNOLOGY PROPERTY NORTH OF N.Y.S. ROUTE 96 & JOHN W. & JANE A. WADE PROPERTY SOUTH OF N.Y.S. ROUTE 96. Last dated 12-22-1994. Job #942296

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 200 ft.

URS Greiner Woodward Clyde

30775 Bainbridge Road, Suite 200
Solon, Ohio 44139

CLIENT: DIEBOLD, INC.

LOCATION: FARMINGTON, ONTARIO COUNTY, NEW YORK

OVERBURDEN GROUNDWATER CONTOUR MAP SEPTEMBER 2,1999

DRAWN BY:	CHECKED BY:	PROJECT NO:	DATE:	FIGURE NO:
MMS	MTS	6E06191	11-24-99	3-6

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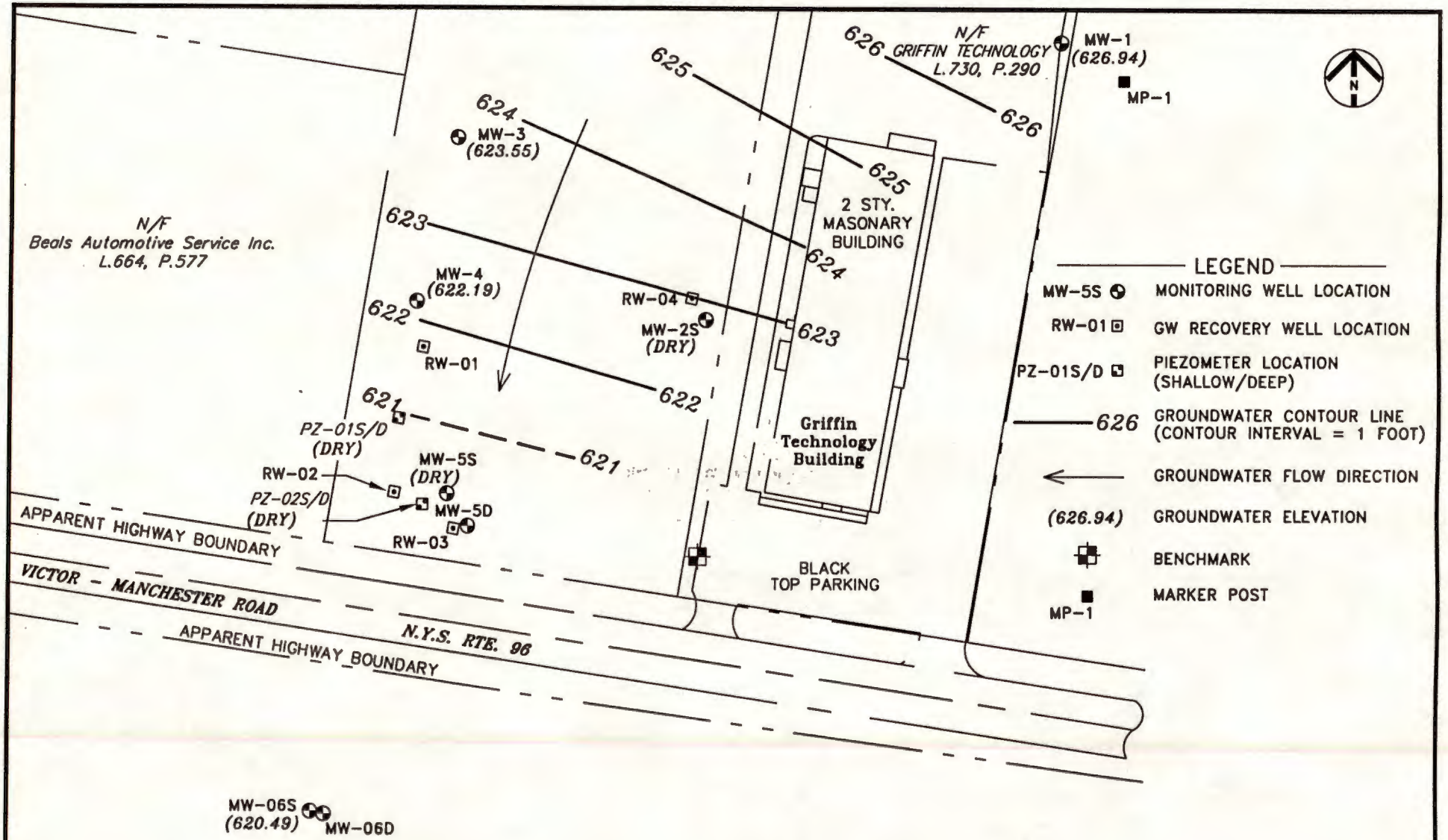

OVERBURDEN GROUNDWATER CONTOUR MAP
SEPTEMBER 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-7

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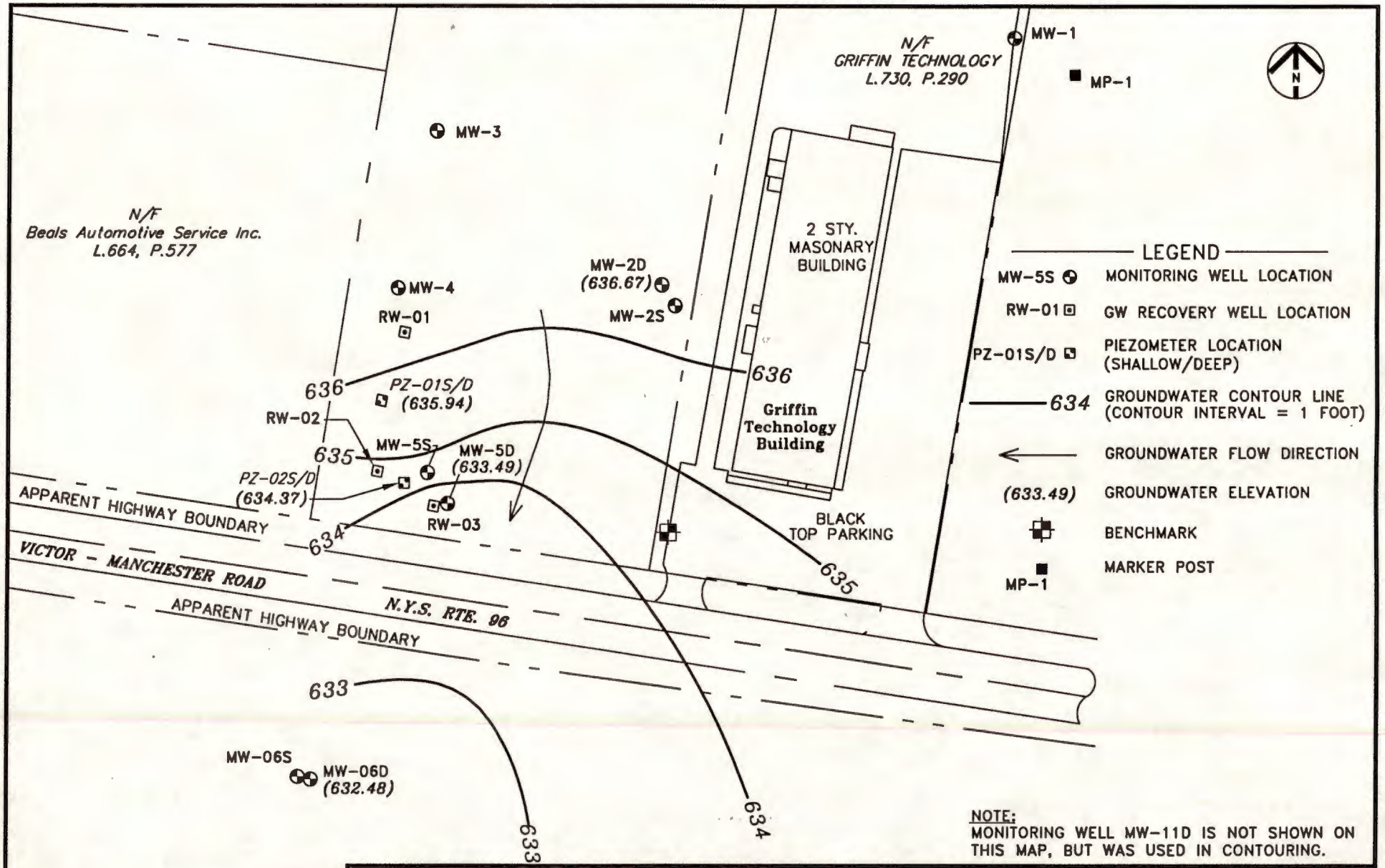
URS Greiner Woodward Clyde



BEDROCK GROUNDWATER CONTOUR MAP
APRIL 14, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 09/27/99	FIGURE NO: 3-8

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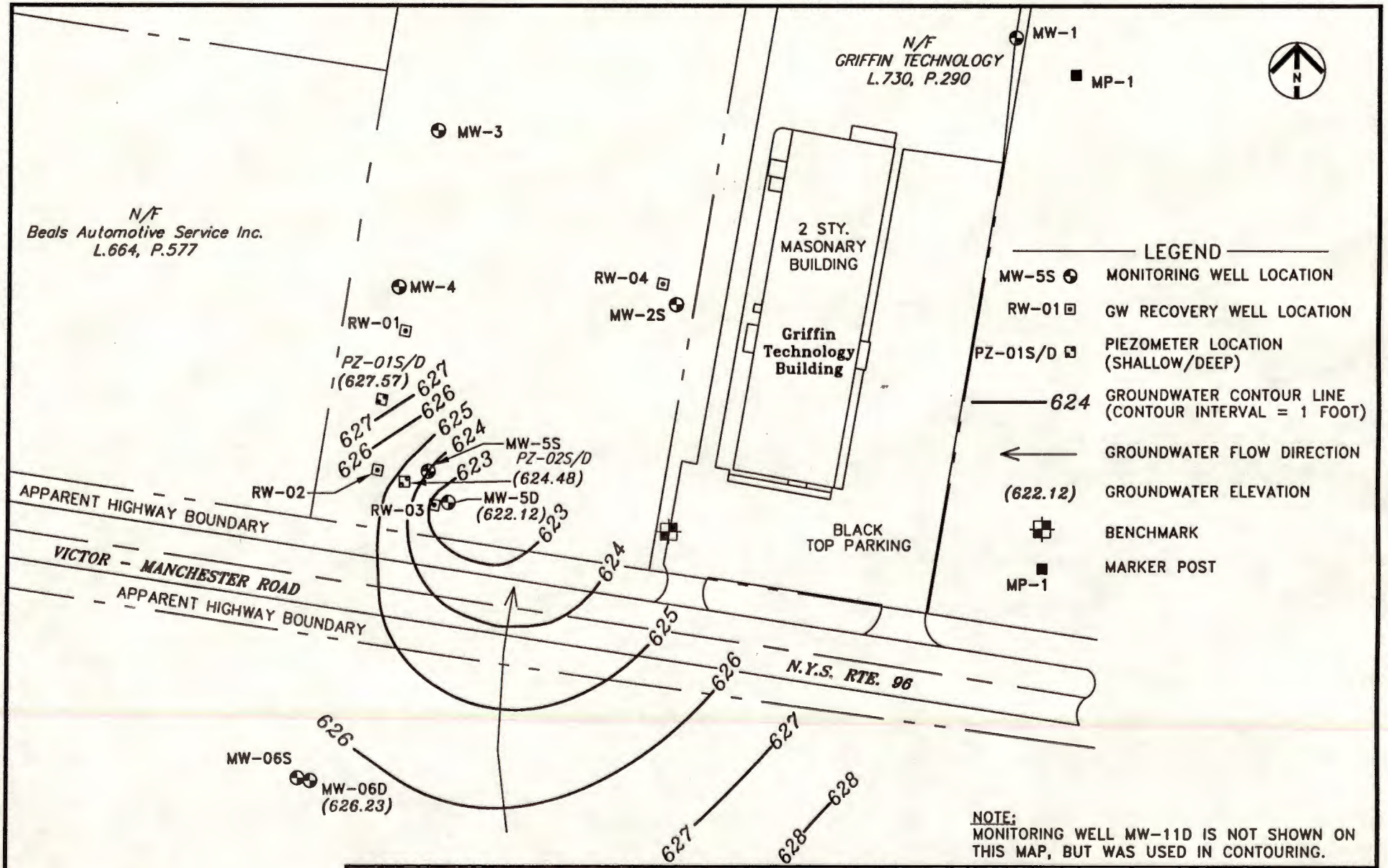
URS Greiner Woodward Clyde



BEDROCK GROUNDWATER CONTOUR MAP
MAY 17, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 9/29/99	FIGURE NO: 3-9

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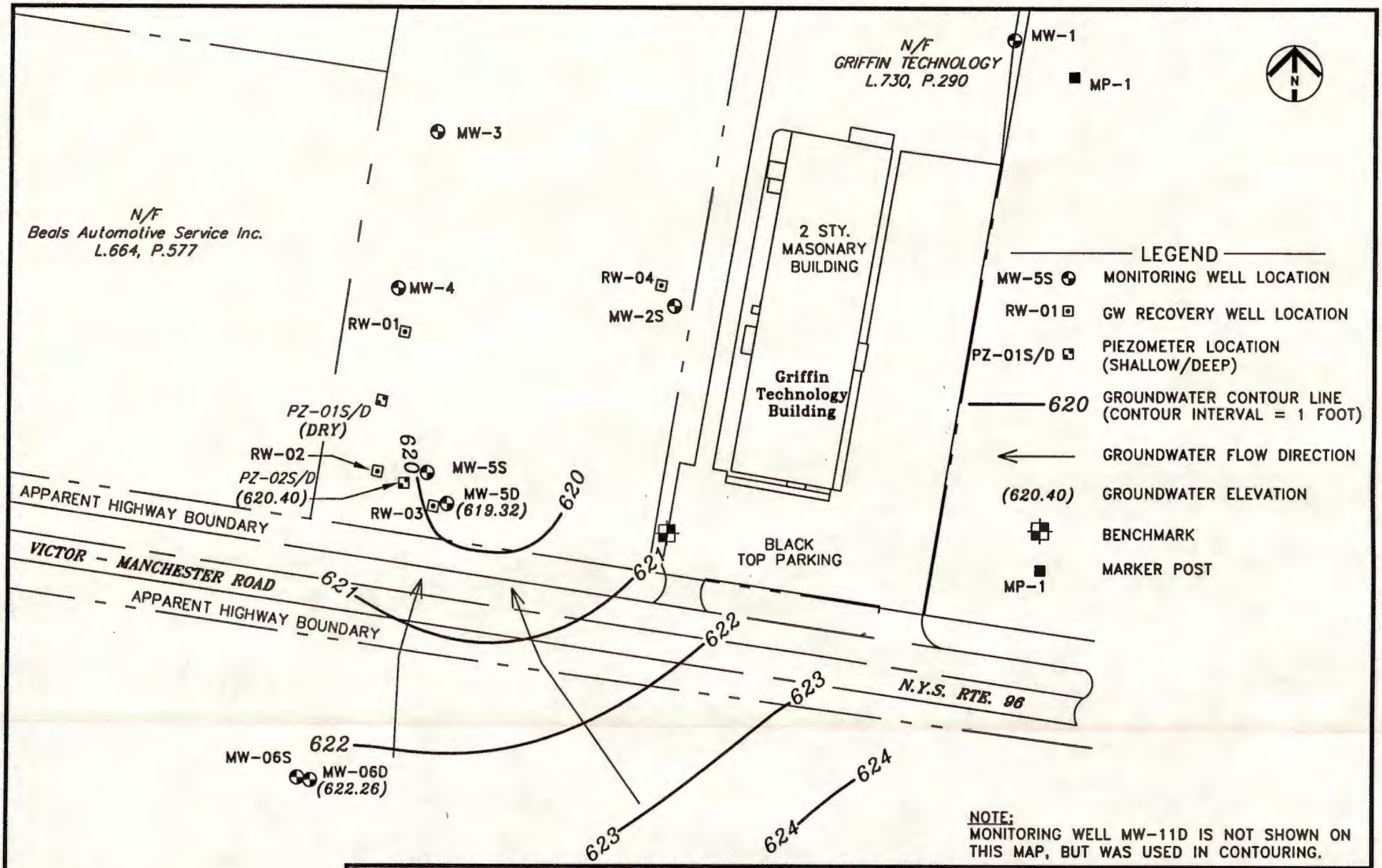
URS Greiner Woodward Clyde

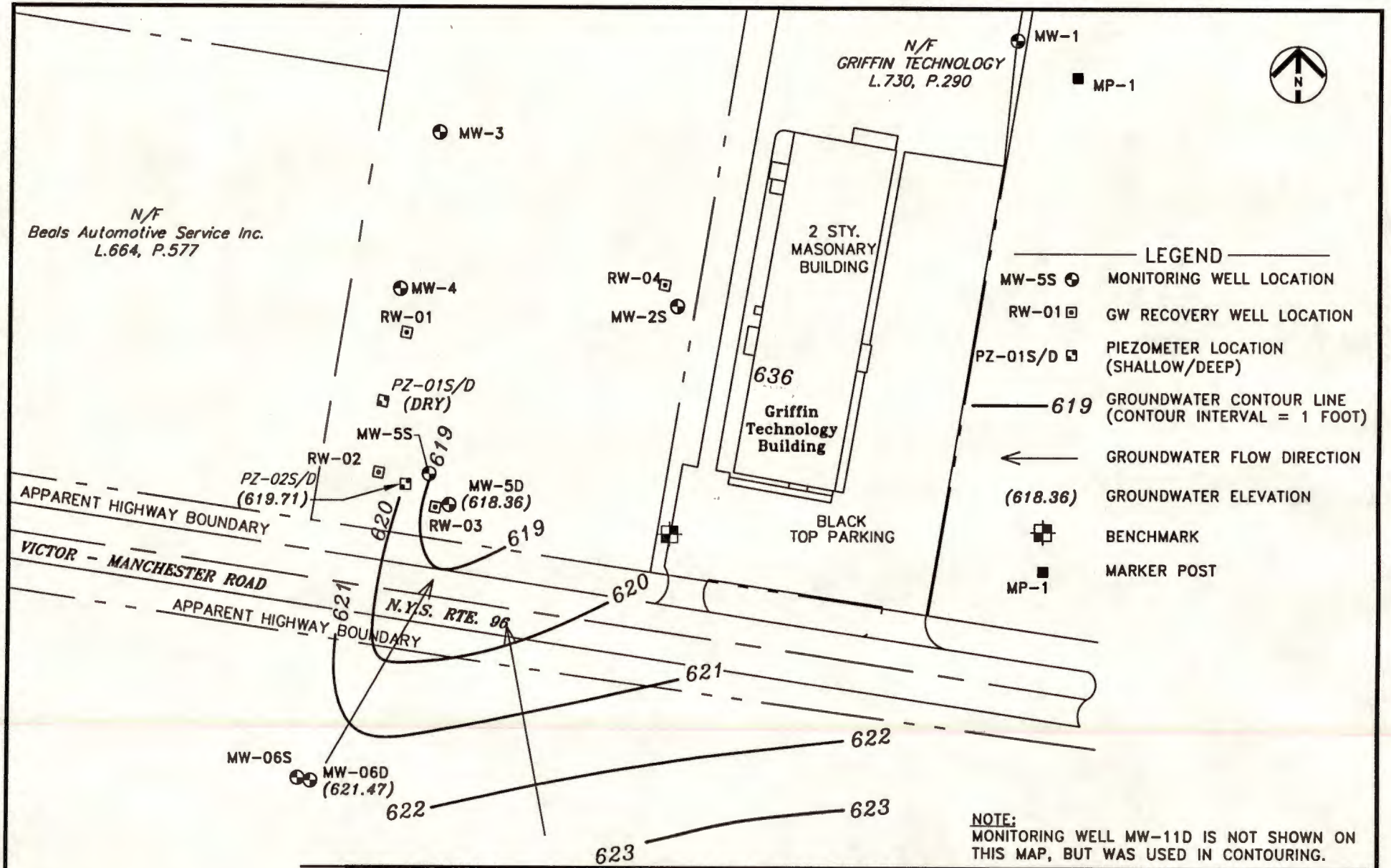


BEDROCK GROUNDWATER CONTOUR MAP
JUNE 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: MMS	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 9/27/99	FIGURE NO: 3-10

Q:\6E06191\9THQTR\990615D.DWG

URS Greiner Woodward Clyde



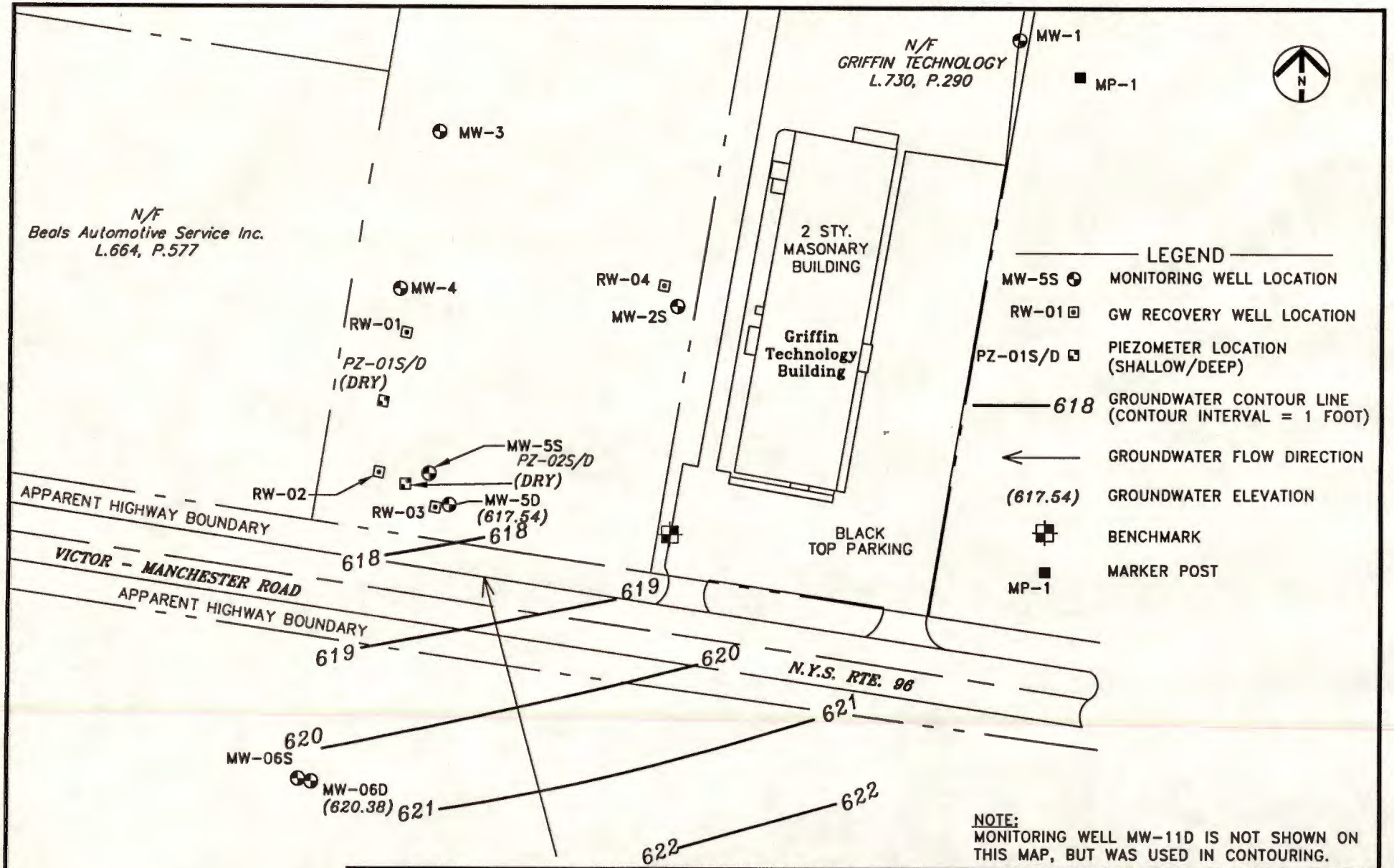
NOTE:
MONITORING WELL MW-11D IS NOT SHOWN ON THIS MAP, BUT WAS USED IN CONTOURING.

BEDROCK GROUNDWATER CONTOUR MAP
JULY 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-11

G:\6E06191\9THQTR\990715D.DWG

URS Greiner Woodward Clyde



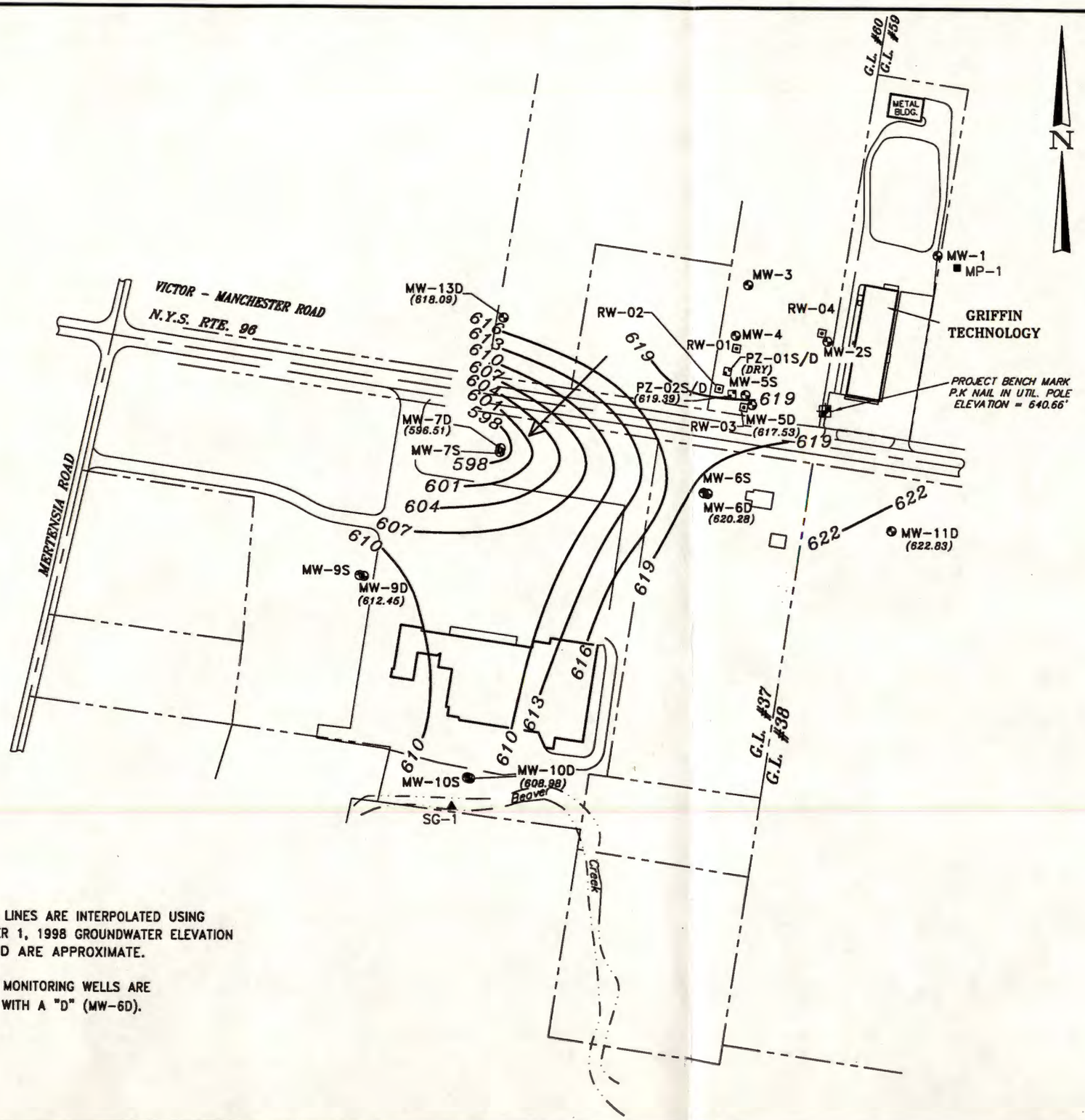
NOTE:
MONITORING WELL MW-11D IS NOT SHOWN ON THIS MAP, BUT WAS USED IN CONTOURING.

BEDROCK GROUNDWATER CONTOUR MAP
AUGUST 16, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-12

Q:\6E06191\9THQTR\990816D.DWG

URS Greiner Woodward Clyde



NOTE:
CONTOUR LINES ARE INTERPOLATED USING SEPTEMBER 1, 1998 GROUNDWATER ELEVATION DATA AND ARE APPROXIMATE.

BEDROCK MONITORING WELLS ARE DENOTED WITH A "D" (MW-6D).

LEGEND

- MONITORING WELL
- STAFF GAUGE
- —619— GROUNDWATER CONTOUR (INTERVAL = 3 FEET)
- (622.83) GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- MARKER POST
- (N.M.) NOT MEASURED
- BENCHMARK

References:

1.) Map prepared by Paul V. Crandall P.L.S. titled "LANDS OF R.D. PRODUCTS INC." Last dated June 17, 1983. Job #83138.

2.) Map prepared by Paul V. Crandall P.L.S. titled "GRIFFIN TECHNOLOGY 6132 VICTOR-MANCHESTER ROAD, SOIL BORINGS & MONITORING WELLS" Last dated June 19, 1991. Job #911767.

3.) Map prepared by Paul V. Crandall P.L.S. titled "MAP SHOWING LANDS OF JAMES V. ALAIMO - ANTHONY S. ALAIMO, M.D. - STEPHEN L. ALAIMO, M.D. - SAMUEL R. ALAIMO & JOSEPH W. ALAIMO ESTATE TO BE CONVEYED" Last dated August 25 1993. Job #932113.

4.) Map prepared by Blasland & Bouck Engineers, P.C. titled "GRIFFIN TECHNOLOGY INC. VICTOR, NEW YORK OFF-SITE GROUND-WATER EVALUATION PROGRAM - PROPOSED MONITORING WELL LOCATION" Last dated July 1993.

5.) Map prepared by CRANDALL SURVEYORS, titled "GRIFFIN TECHNOLOGY INC. - ON - SITE / OFF - SITE GROUND WATER EVALUATION PROGRAM - PART OF GRIFFIN TECHNOLOGY PROPERTY NORTH OF N.Y.S. ROUTE 96 & JOHN W. & JANE A. WADE PROPERTY SOUTH OF N.Y.S. ROUTE 96. Last dated 12-22-1994. Job #942296

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 200 ft.

URS Greiner Woodward Clyde

30775 Bainbridge Road, Suite 200
Solon, Ohio 44139

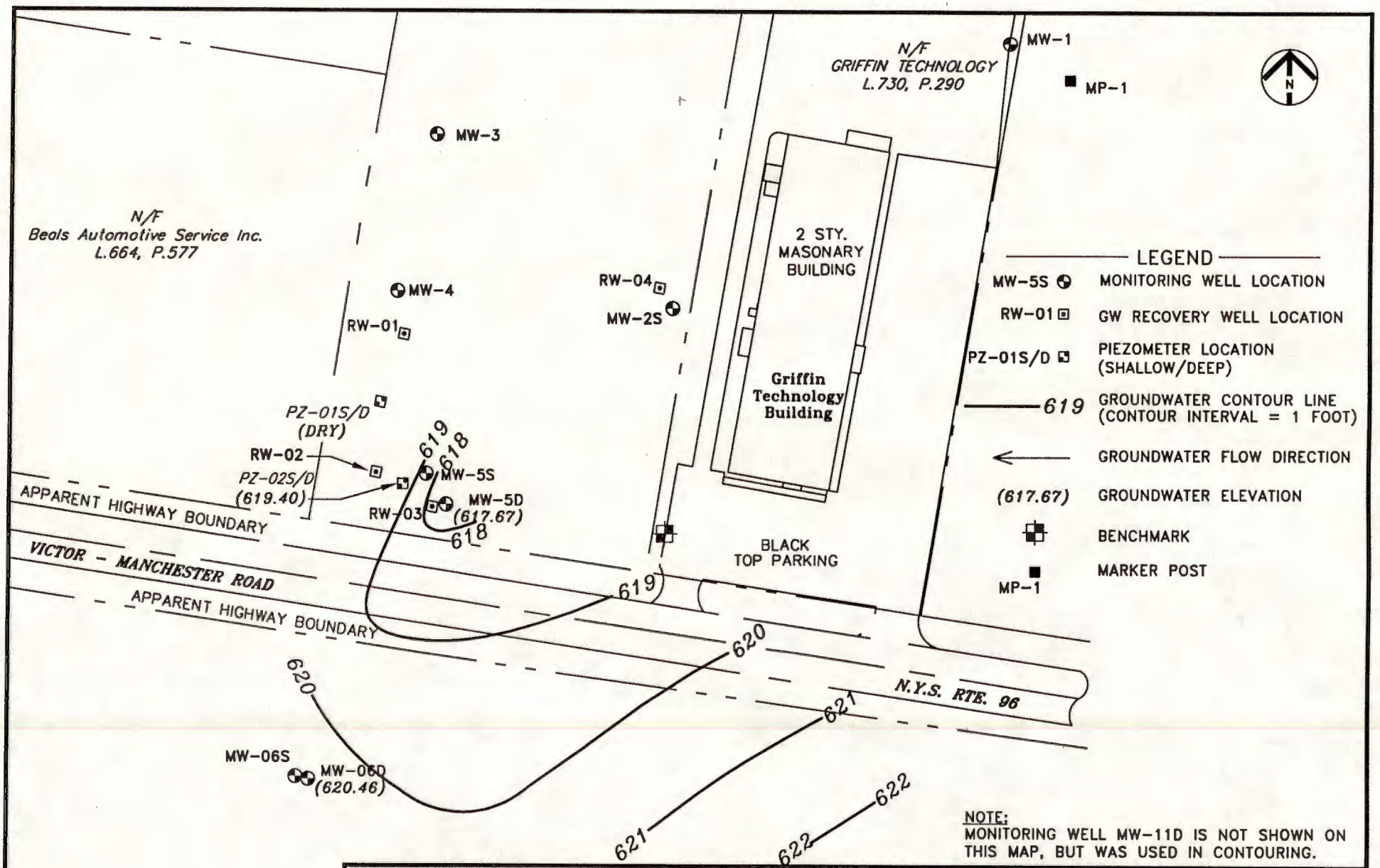
CLIENT: DIEBOLD, INC.

LOCATION: FARMINGTON, ONTARIO COUNTY, NEW YORK

BEDROCK GROUNDWATER CONTOUR MAP SEPTEMBER 2, 1999

DRAWN BY:	CHECKED BY:	PROJECT NO:	DATE:	FIGURE NO:
MMS	MTS	6E06191	11-24-99	3-13

O:\6E06191\GIS\99GW99DP



BEDROCK GROUNDWATER CONTOUR MAP
SEPTEMBER 15, 1999
GRIFFIN TECHNOLOGY, INC. FARMINGTON, NEW YORK

DRAWN BY: AMK	CHECKED BY: LMH	PROJECT NUMBER: 6E06191	DATE: 11/15/99	FIGURE NO: 3-14

Q:\6E06191\9THQTR\9909150.DWG

URS Greiner Woodward Clyde

Columbia Analytical Services inc.

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.

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

Columbia Analytical Services inc.

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

COLUMBIA ANALYTICAL SERVICES

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	PQL	RESULT	UNITS
DATE ANALYZED : 09/27/99			
ANALYTICAL DILUTION: 2.50			
ACETONE	20	50 U	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	UG/L
2-BUTANONE (MEK)	10	25 U	UG/L
CARBON DISULFIDE	10	25 U	UG/L
CARBON TETRACHLORIDE	5.0	13 U	UG/L
CHLOROBENZENE	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 U	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	25 U	UG/L
STYRENE	5.0	13 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
TETRACHLOROETHENE	5.0	13 U	UG/L
TOLUENE	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	450	UG/L
VINYL 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
TOLUENE-D8	(88 - 110 %)	99	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	96	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 328337 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 42916

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 09/27/99			
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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
TOLUENE-D8	(88 - 110 %)	99	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	94	%

COLUMBIA ANALYTICAL SERVICES, INC.
1 Lovejoy St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 9-15-99 PAGE 1 OF 1

PROJECT NAME Griffin FRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30795 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-9-15-99	9-15-99	11:38	324424	WATER	2											X								

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URS WCC
Date/Time 9-15-99 13:05

RECEIVED BY:
Signature Gregory O. Gemerio
Printed Name Gregory O. Gemerio
Firm CAS
Date/Time 9-15-99 13:05

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time 9/15/99 1305

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 11.1
Submission No: 9-202

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Griffon Submission Number 9-202

Cooler received on 9-15-99 and opened on 9-15-99 by [signature]

1. Were custody seals on outside of cooler? YES NO
   If yes, how many and where? _____
2. Were signature & date correct? YES NO
3. Were custody papers properly filled out (ink, signed, etc)? YES NO
4. Did all bottles arrive in good condition (unbroken)? YES NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? YES NO
6. Did all bottle labels and tags agree with custody papers? YES NO
7. Were correct bottles used for the tests indicated? YES NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? YES NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 11.1 * _____ _____ _____ _____

Is the temperature within 4 ± 2° C?:	Yes ☐	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☒	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 9-15-99 13:10

Thermometer ID: 161 **Circle One:** Temp Blank (Sample Bottle) Cooler Temp.

Explain any discrepancies: * Client delivered, took cooler with him. Took temp by putting probe between 2 VOA Vials

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4.

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

Columbia Analytical Services inc.

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.

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

1 Mustard St.• Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services Inc.

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

COLUMBIA ANALYTICAL SERVICES

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 : 08/24/99			
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
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	7.5	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	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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	15	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	480 E	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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	101	%
TOLUENE-D8	(88 - 110 %)	103	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	107	%

COLUMBIA ANALYTICAL SERVICES

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			
ANALYTICAL DILUTION: 5.00			
ACETONE	20	100 U	UG/L
BENZENE	5.0	25 U	UG/L
BROMODICHLOROMETHANE	5.0	25 U	UG/L
BROMOFORM	5.0	25 U	UG/L
BROMOMETHANE	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
1,1-DICHLOROETHENE	5.0	25 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	25 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	25 U	UG/L
1,2-DICHLOROPROPANE	5.0	25 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	25 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	25 U	UG/L
ETHYLBENZENE	5.0	25 U	UG/L
2-HEXANONE	10	50 U	UG/L
METHYLENE CHLORIDE	5.0	25 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	50 U	UG/L
STYRENE	5.0	25 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	25 U	UG/L
TETRACHLOROETHENE	5.0	25 U	UG/L
TOLUENE	5.0	25 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	25 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	25 U	UG/L
TRICHLOROETHENE	5.0	490	UG/L
VINYL CHLORIDE	5.0	25 U	UG/L
O-XYLENE	5.0	25 U	UG/L
M+P-XYLENE	5.0	25 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
TOLUENE-D8	(88 - 110 %)	104	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	99	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 319362 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 41913

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
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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	96	%
TOLUENE-D8	(88 - 110 %)	104	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	94	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 319364 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 41913

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	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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	109	%
TOLUENE-D8	(88 - 110 %)	109	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	89	%

COLUMBIA ANALYTICAL SERVICES, INC.
1[illegible]rd St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 8-16-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-8-16-99	8-16-99	10:55	316348	Water	2											X								

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm ORS WCC
Date/Time 8-16-99 11:50

RECEIVED BY:
Signature [illegible]
Printed Name [illegible]
Firm CAS
Date/Time 8/16/99 1150

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature [illegible]
Printed Name Gregory O. Emerson
Firm CAS
Date/Time 8-16-99 11:50

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: WC 6.0°C
Submission No: 8-200

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client WCC4 Submission Number 8-200

Cooler received on 5/16/99 and opened on 5/16/99 by BC

1. Were custody seals on outside of cooler? YES (NO) Client Delivered
   If yes, how many and where? _____
2. Were signature & date correct? (YES) NO
3. Were custody papers properly filled out (ink, signed, etc)? (YES) NO
4. Did all bottles arrive in good condition (unbroken)? (YES) NO
5. Were all bottle labels complete (*i.e.* analysis, preservation, etc)? (YES) NO
6. Did all bottle labels and tags agree with custody papers? (YES) NO
7. Were correct bottles used for the tests indicated? (YES) NO
8. Were VOA vials checked for absence of air bubbles, and noted if so? (YES) NO
9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R
10. Temperature of cooler(s) upon receipt: 6°

Is the temperature within 4 ± 2° C?:	Yes ☒	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 5/16/99 1153

Thermometer ID: 161 **Circle One:** Temp Blank Sample Bottle (Cooler Temp.)

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

Columbia Analytical Services inc.

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

Service Manager for:
Mark Wilson
Client Service Manager

Enc.

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

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services Inc.

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

COLUMBIA ANALYTICAL SERVICES

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

DATE ANALYZED : 07/27/99
ANALYTICAL DILUTION: 2.50

ANALYTE	PQL	RESULT	UNITS
ACETONE	20	50 U	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	UG/L
2-BUTANONE (MEK)	10	25 U	UG/L
CARBON DISULFIDE	10	25 U	UG/L
CARBON TETRACHLORIDE	5.0	13 U	UG/L
CHLOROBENZENE	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
,2-DICHLOROETHANE	5.0	13 U	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	25 U	UG/L
STYRENE	5.0	13 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
TETRACHLOROETHENE	5.0	13 U	UG/L
TOLUENE	5.0	13 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	14	UG/L
1,1,2-TRICHLOROETHANE	5.0	13 U	UG/L
TRICHLOROETHENE	5.0	510	UG/L
VINYL 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	93	%
OLUENE-D8	(88 - 110 %)	102	%
IBROMOFLUOROMETHANE	(86 - 118 %)	94	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled :
Date Received:
Order #: 312929
Submission #:
Sample Matrix: WATER
Analytical Run 41015

DATE ANALYZED : 07/27/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	100	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	91	%

COLUMBIA ANALYTICAL SERVICES, INC.
[redacted]ustard St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 7-15-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
EFF-7-15-99	7-15-99	11:57	308203	WATER	2											X								

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URS WCC
Date/Time 7-15-99 12:40

RECEIVED BY:
Signature Brian Gallen
Printed Name Brian Gallen
Firm CAS
Date/Time 7/15/99 1240

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date ____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 14.2°C
Submission No: 7225

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services inc.

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.

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

1 Mustard St. • Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475
65 Ramapo Valley Rd. • Suite 16 • Mahwah, NJ 07430 • Tele:(201)512-3292 • Fax:(201)512-3362

Columbia Analytical Services Inc.

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

COLUMBIA ANALYTICAL SERVICES

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	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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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	170	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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	94	%
TOLUENE-D8	(88 - 110 %)	101	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	102	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 288411 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 37517

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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	95	%
TOLUENE-D8	(88 - 110 %)	100	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	101	%

COLUMBIA ANALYTICAL SERVICES, INC.
1 Mustard Suite 250, P.O. Box 90859, Rochester, NY 14609-0859
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(800) 695-7222

DATE 4-14-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624	GC/MS SVOA's ☐ 8270A ☐ 625	GC VOA's ☐ 8010/8020 ☐ 601/602	PESTICIDES/PCB's ☐ 8080 ☐ 608	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	PRESERVATION pH > 12	PRESERVATION Other
EFF-4-14-99	4-14-99	12:55	285173	WATER	2											X									

RELINQUISHED BY:
Signature Bob Fabian
Printed Name Bob Fabian
Firm URS WCC
Date/Time 4-14-99 13:40

RECEIVED BY:
Signature Brian Colley
Printed Name Brian Colley
Firm CAS
Date/Time 4/14/99 1340

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 5°
Submission No: 9904-198

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

65 RAMAPO VALLEY ROAD
MAHWAH, NJ 07430
201-512-3292
FAX 201-512-3362

309 WEST RIDLEY AVE.
RIDLEY PARK, PA 19078
610-521-3083
FAX 610-521-4589

Columbia Analytical Services Inc.
Cooler Receipt And Preservation Check Form

Project/Client Griffin Submission Number 4-198

Cooler received on 4/14/99 and opened on 4/14/99 by BC

1.	Were custody seals on outside of cooler?	YES	NO
	If yes, how many and where? Clear tape Delivered		
2.	Were signature & date correct?	YES	NO
3.	Were custody papers properly filled out (ink, signed, etc)?	YES	NO
4.	Did all bottles arrive in good condition (unbroken)?	YES	NO
5.	Were all bottle labels complete (*i.e.* analysis, preservation, etc)?	YES	NO
6.	Did all bottle labels and tags agree with custody papers?	YES	NO
7.	Were correct bottles used for the tests indicated?	YES	NO
8.	Were VOA vials checked for absence of air bubbles, and noted if so?	YES	NO

9. Where did the bottles originate? CAS/A CAS/K CAS/S CAS/L CAS/X CAS/J CAS/R

10. Temperature of cooler(s) upon receipt: 5°

Is the temperature within 4 ± 2° C?:	Yes ☑	Yes ☐	Yes ☐	Yes ☐	Yes ☐
If No, Explain Below	No ☐	No ☐	No ☐	No ☐	No ☐

Date/Time Temperatures Taken: 4/14/99 1340

Thermometer ID: 134 **Circle One:** Temp Blank Sample Bottle Cooler Temp.

Explain any discrepancies: _____

		YES	NO	Sample I.D.	Reagent	Vol. Added
pH	Reagent					
12	NaOH					
2	HNO_3					
2	H_2SO_4					
5-9*	P/PCBs (608 only)					

YES = All samples OK
NO = Samples were preserved at lab as listed
*If pH adjustment is required, use NaOH and/or H_2SO_4

VOC Vial pH Verification (Tested after Analysis) Following Samples Exhibited pH > 2				

CLIENT NOTIFICATION: _____

Columbia Analytical Services inc.

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' QA Department/Laboratory Director prior to report submittal.

Columbia Analytical Services Inc.

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

COLUMBIA ANALYTICAL SERVICES

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 U	UG/L
BENZENE	5.0	10 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	20 U	UG/L
CARBON DISULFIDE	10	20 U	UG/L
CARBON TETRACHLORIDE	5.0	10 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
1,1-DICHLOROETHANE	5.0	10 U	UG/L
1,2-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
TRANS-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
TRANS-1,3-DICHLOROPROPENE	5.0	10 U	UG/L
ETHYLBENZENE	5.0	10 U	UG/L
2-HEXANONE	10	20 U	UG/L
METHYLENE CHLORIDE	5.0	10 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	20 U	UG/L
STYRENE	5.0	10 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	10 U	UG/L
TETRACHLOROETHENE	5.0	10 U	UG/L
TOLUENE	5.0	10 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	10 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	10 U	UG/L
TRICHLOROETHENE	5.0	250	UG/L
VINYL CHLORIDE	5.0	10 U	UG/L
O-XYLENE	5.0	10 U	UG/L
M+P-XYLENE	5.0	10 U	UG/L

SURROGATE RECOVERIES	QC LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	100	%
TOLUENE-D8	(88 - 110 %)	102	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	99	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled : **Order #:** 297528 **Sample Matrix:** WATER
Date Received: **Submission #:** **Analytical Run** 38891

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 05/28/99			
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
,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-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	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	98	%
TOLUENE-D8	(88 - 110 %)	99	%
BROMOFLUOROMETHANE	(86 - 118 %)	99	%

COLUMBIA ANALYTICAL SERVICES, INC.
[redacted]istard St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN [redacted] CUSTODY/LABORATORY ANALYSIS REQ[redacted]ST FORM

(800) 695-7222

DATE 5-17-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30715 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-5-17-99	5-17-99	11:23	293345	WATER	2											X								

ANALYSIS REQUESTED

RELINQUISHED BY:
Bob Fabian
Signature Bob Fabian
Printed Name URS WCC
Firm 5-17-99 12:20
Date/Time

RECEIVED BY:
Jonya Hawk
Signature Jonya Hawk
Printed Name CAS
Firm 5.17.99 @ 1220
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Brian Collom
Signature Brian Collom
Printed Name CAS
Firm 5/17/99 @ 1220
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
X Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
X 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 8.6°C
Submission No: 5-269

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: X TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services inc.

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.

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

1 Mustard St.• Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

Columbia Analytical Services Inc.

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

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			
ANALYTICAL DILUTION: 2.50			
ACETONE	20	50 U	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	UG/L
2-BUTANONE (MEK)	10	25 U	UG/L
CARBON DISULFIDE	10	25 U	UG/L
CARBON TETRACHLORIDE	5.0	13 U	UG/L
CHLOROBENZENE	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
,2-DICHLOROETHANE	5.0	13 U	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	25 U	UG/L
STYRENE	5.0	13 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	13 U	UG/L
TETRACHLOROETHENE	5.0	13 U	UG/L
TOLUENE	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	370	UG/L
VINYL 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	99	%
OLUENE-D8	(88 - 110 %)	99	%
IBROMOFLUOROMETHANE	(86 - 118 %)	97	%

COLUMBIA ANALYTICAL SERVICES

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

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled :
Date Received:
Order #: 303507
Submission #:
Sample Matrix: WATER
Analytical Run 39587

DATE ANALYZED : 06/22/99
ANALYTICAL DILUTION: 1.00

ANALYTE	PQL	RESULT	UNITS
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	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	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 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 LIMITS		
4-BROMOFLUOROBENZENE	(86 - 115 %)	97	%
TOLUENE-D8	(88 - 110 %)	96	%
DIBROMOFLUOROMETHANE	(86 - 118 %)	96	%

COLUMBIA ANALYTICAL SERVICES, INC.
[redacted]stard St., Suite 250, Rochester, NY 14609-6925
(716) 288-5380 • FAX (716) 288-8475

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

(80[redacted]695-7222

DATE 6-15-99 PAGE 1 OF 1

PROJECT NAME Griffin IRM
PROJECT MANAGER/CONTACT Mark Schmidt
COMPANY/ADDRESS 30775 Bainbridge Rd.
Solon, Ohio
TEL (440) 349-2708 FAX (440) 349-1514
SAMPLER'S SIGNATURE Bob Fabian

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	FOR OFFICE USE ONLY LAB I.D.	SAMPLE MATRIX	# OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ 95-1	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ 95-2	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES/PCB's ☐ 8081 ☐ 608 ☐ 95-3	STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP	STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP	TCLP ☐ METALS ☐ VOA's ☐ SVOA's ☐ H/P	WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.	METALS, TOTAL (LIST BELOW)	METALS, DISSOLVED (LIST BELOW)	8240							PRESERVATION pH < 2.0	pH > 12	Other
EFF-6-15-99	6-15-99	10:49	299613	WATER	2											X									

RELINQUISHED BY:
Signature: Bob Fabian
Printed Name: Bob Fabian
Firm: CAS
Date/Time: 6-15-99 11:31

RECEIVED BY:
Signature: Tonya Hawk
Printed Name: Tonya Hawk
Firm: CAS
Date/Time: 6-15-99 @ 1131

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
__ 24 hr. __ 48 hr. __ 5 day
__ Standard (10-15 working days)
__ Provide Verbal Preliminary Results
__ Provide FAX Preliminary Results
Requested Report Date ____

REPORT REQUIREMENTS
__ 1. Routine Report
__ 2. Routine Rep. w/CASE Narrative
__ 3. EPA Level III Validatable Package
__ 4. N.J. Reduced Deliverables Level IV
__ 5. NY ASP/CLP Deliverables
__ 6. Site specific QC.

INVOICE INFORMATION:
P.O. #:
Bill To:

SAMPLE RECEIPT:
Shipping Via: Client
Shipping #:
Temperature: 6 °C
Submission No: 6-195

SPECIAL INSTRUCTIONS/COMMENTS:
METALS
ORGANICS: ☐ TCL ☐ PPL ☐ AE Only ☐ BN Only ☐ Special List

Columbia Analytical Services inc.

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.

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

1 Mustard St.• Suite 250 • Rochester, NY 14609 • Tele:(716)288-5380 • Fax:(716)288-8475

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.

0001

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

Customer Sample Code	Laboratory Sample Code	Analytical Requirements* 95ASP PROTOCOL					
		*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	+ DL				
MW9S	321629	X					
MW9D	321630	X					
MW10S	321631	X					
MW10D	321632	X					
MW11D	321633	X					
MW13D	321634	X					
DUP	321635	X					
TRIP	321636	X					

*Check Appropriate Boxes
*CLP, Non-CLP
*HSL, Priority Pollutant
NCF1

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

LABORATORY SAMPLE ID	MATRIX	DATE COLLECTED	DATE REC'D AT LAB	LOW LEVEL MED LEVEL	DATE ANALYZED
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 5/91

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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: 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 Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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 ~~1~~ ~~JB~~	U	B
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	
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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: 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 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.

MW3

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: 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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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 1 JB~~	~~U B~~	
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)	1	J	
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	170		
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW3

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: 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)

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.

MW5D

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: 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: 2.00 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
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~~		U	B
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)	2	J		
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	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		
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		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW5D

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: 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: 2.00 (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.

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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 ~~4~~ DJB		U	B
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)	20	U		
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	6	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		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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)

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.

MW6S

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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	~~2~~ 10 JB	~~U~~	B
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)	4	J	
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	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	110		
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW6S

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)

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.

MW6D

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 Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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~~	U	B
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)	2	J	
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	7	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	110		
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW6D

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 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.

MW7S

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: 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: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	C	M
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	~~U~~		
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)	4	J		
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	4	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	230	E		
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		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW7S

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: 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: _____(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.

MW7SDL

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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~~	U	B
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	

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW7SDL

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)

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.

MW7D

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: 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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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	~~1~~ 10 ~~JB~~	~~U~~	~~B~~
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		
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	

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW7D

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: 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

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

EPA SAMPLE NO.

MW9S

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: 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 Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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~~	U	B
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	
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW9S

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: 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 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.

MW9D

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: 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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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~~	U	B
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	
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW9D

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: 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
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW10S

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: 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 Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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~~	~~U B~~	
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	7	J	
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW10S

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: 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 Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) 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~~	~~U~~	~~B~~
75-15-0	Carbon Disulfide	~~10~~ ~~1~~ ~~J~~	~~U~~	~~B~~
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	7	J	
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	

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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 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.

MW11D

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: (ug/L or ug/Kg) 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~~	U	B
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	
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	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW11D

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)

Number TICs found: 0

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

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

EPA SAMPLE NO.

MW13D

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) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
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~~	U	B	
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)	2	J		
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	3	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	140			
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		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW13D

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) Dilution Factor: 1.0

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

Number TICs found: 0

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

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

EPA SAMPLE NO.

DUP

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: 321635

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

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: (ug/L or ug/Kg) 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~~ 1 JB	~~U~~	~~B~~
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	
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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EPA SAMPLE NO.

DUP

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: 321635

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

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
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP 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: 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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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
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
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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP 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: 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)

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.

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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	4	J B
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
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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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)

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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2A

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 SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01	VBLK01	100	94	100		0
02	VBLK01MS	100	96	100		0
03	MW5D	102	92	100		0
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
15	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						

	QC LIMITS
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

3A

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 LIMITS RPD	QC LIMITS 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

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5DMS

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: 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 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
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	1	JB
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	53	
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	1	J
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	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	260	E
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	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	50	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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
75-15-0	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
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	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	260	E
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	52	
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	54	
108-90-7	Chlorobenzene	52	
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

(2)

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 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

Client SDG: MW1
Fraction: VOA
Client Smp ID: VBLK01MS
Operator: TTRAVER
SampleType: BS
Quant Type: ISTD

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

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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
75-15-0	Carbon Disulfide	10	U
75-35-4	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
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	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	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	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (Total)	10	U

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK01

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 SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME 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
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COMMENTS:

FORM IV VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK01

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: 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: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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	1	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
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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK01

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: 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: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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30.					

4A
VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

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 ANALYZED
01	MW1	321622	Q4202	1706
02	MW3	321623	Q4203	1731
03	MW6S	321625	Q4204	1755
04	MW6D	321626	Q4205	1820
05	MW7S	321627	Q4206	1846
06	MW7D	321628	Q4207	1913
07	MW9S	321629	Q4208	1939
08	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
15				
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COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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

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 (mm) Dilution Factor: 1.0

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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

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 (mm) Dilution Factor: 1.0

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

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	321627DL	Q4223	1253
02	COOLER BLANK	321844	Q4224	1318
03				
04				
05				
06				
07				
08				
09				
10				
11				
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COMMENTS:

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (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
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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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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): 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	72507		6.86		497487		8.51		434490		13.23	
	UPPER LIMIT	145014		7.36		994974		9.01		868980		13.73	
	LOWER LIMIT	36254		6.36		248744		8.01		217245		12.73	
	EPA SAMPLE NO.												
01	VBLK01	70156		6.87		496725		8.51		421436		13.23	
02	VBLK01MS	70786		6.86		503254		8.50		432256		13.23	
03	MW5D	66294		6.86		473719		8.50		401744		13.23	
04	MW5DMS	68906		6.86		490094		8.50		419107		13.23	
05	MW5DMSD	67261		6.86		483460		8.50		412243		13.23	
06	MW5DDL	65394		6.86		467311		8.50		394790		13.22	
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
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

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

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	68575	6.86	463168	8.50	402354	13.23
	UPPER LIMIT	137150	7.36	926336	9.00	804708	13.73
	LOWER LIMIT	34288	6.36	231584	8.00	201177	12.73
	EPA SAMPLE NO.						
01	VBLK02	57681	6.86	405584	8.50	352182	13.22
02	MW1	66893	6.85	474494	8.50	407873	13.22
03	MW3	64940	6.86	453050	8.50	392580	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	TRIP BLANK	66674	6.86	436125	8.50	382482	13.23
16							
17							
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

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

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): 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	70785		6.86		489879		8.50		421986		13.23	
	UPPER LIMIT	141570		7.36		979758		9.00		843972		13.73	
	LOWER LIMIT	35393		6.36		244940		8.00		210993		12.73	
	EPA SAMPLE NO.												
01	VBLK03	68073		6.86		482355		8.51		415397		13.23	
02	MW7SDL	64948		6.85		460301		8.50		400982		13.22	
03	COOLER BLANK	64709		6.86		460751		8.50		402001		13.22	
04													
05													
06													
07													
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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

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

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:

1. Interim Remedial Measure Program Appendix B: Quality Assurance Project Plan (QAPP). July 1996. Prepared by Woodward-Clyde Consultants.

2. 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 Samples:			
MW-5D	acetone	2JB	10U
2. VBLK02	acetone	2J	
Associated Samples:			
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

J detected below quantitation limit, result is estimated

U 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 µg/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 VOC-free, 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.