POST-REMEDIATION GROUNDWATER MONITORING REPORT

SECOND SEMI-ANNUAL 1998 SAMPLING EVENT

Vibratech, Inc.
Buffalo, New York

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Vibratech, Inc.
Buffalo, New York

Conestoga-Rovers & Associates
2055 Niagara Falls Boulevard
Niagara Falls, New York 14304

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1.0 INTRODUCTION

In 1996, Vibratech, Inc. (Vibratech) sold its facility located at 537 East Delavan Avenue in Buffalo, New York (Site). The facility had been used for manufacture of vibration dampers and rotary shock adsorbers for the trucking and railroad industries.

During environmental investigations conducted prior to the sale of the property, an area of soil contamination was discovered along a railroad spur on the south portion of the property. The chemicals of concern are volatile organic compounds (VOCs), specifically: 1,1-dichloroethane; 1,2-dichloroethane; cis-1,2-dichloroethene; trans-1,2-dichloroethene; toluene; 1,1,1-trichloroethane; trichloroethene; vinyl chloride; and total xylenes. The former area of soil contamination is shown on Figure 1.1.

These VOCs were also detected in groundwater. Figure 1.2 shows total VOC concentrations in Site monitoring wells.

In 1995-1996, the contaminated soil was excavated and disposed off-Site or treated on-Site using soil vapor extraction (SVE). This remedial action removed the source of groundwater contamination. Remaining chemical presence in groundwater is expected to naturally attenuate over time.

A post-remediation groundwater monitoring program was developed to continue to monitor VOC presence in groundwater. The program is described in a report written by Conestoga-Rovers & Associates (CRA) entitled "Post-Remediation Groundwater Monitoring Plan", dated April 1997. The plan provides for groundwater sample collection from three downgradient monitoring wells designated MW-2, MW-6, and MW-7. Groundwater samples are analyzed for selected VOCs using SW-846 Method 8620. The frequency of groundwater sampling specified in the Post-Remediation Groundwater Monitoring Plan is as follows:

i) quarterly for the first four quarters (first year);
ii) semi-annually during the second year; and
iii) annually during years three through five.

At the end of five years, the monitoring program will be re-evaluated. An earlier re-evaluation may be conducted but no changes from the above will be implemented without the consent of the New York State Department of Environmental Conservation (NYSDEC).

This report presents the results of the post-remediation sampling event which took place during the first quarter of 1998. This represents the completion of the fourth consecutive quarterly sampling event (item i, above). In accordance with the Post-Remediation Groundwater Monitoring Plan, the program will now move to semi-annual sampling (item ii, above). The next scheduled sampling event will therefore constitute the second semi-annual event and will be conducted during the first half of 1999.

2.0 WORK PERFORMED

CRA conducted the second semi-annual period 1998 groundwater sampling event at the Former Vibratech Facility at 537 East Delavan Avenue in Buffalo, New York on October 5, 1998.

Monitoring wells MW-2, MW-6, and MW-7 were sampled in accordance with the Post-Remediation Groundwater Monitoring Plan dated April 1997. During the sampling event, CRA personnel observed an oily-like, floating layer in monitoring well MW-6. The thickness of the layer was estimated to be approximately 0.2 feet. The oily material did not reappear immediately after purging and was not sampled. If the material reaccumulates, it will be sampled during the first semi-annual period of 1999.

A blind duplicate sample was collected at MW-2 and identified as DRS-100598-MW-9. A matrix spike and matrix spike duplicate was not collected because of the presence of the floating layer in MW-6 and the insufficient volume of water in MW-7. Samples were picked up by Columbia Analytical Services (CAS) on October 6, 1998. Samples were analyzed using SW-846 Method 8260.

3.0 RESULTS

3.1 DATA QUALITY

CRA performed an assessment and validation of the laboratory's analytical results. The data reported by CRA was determined to be acceptable for use without qualification. Appendix A contains the Analytical Data Quality Assessment and Validation Report.

3.2 ANALYTICAL RESULTS

The following chemicals were detected in samples collected during the second half of 1998:

Chemical	*MW-2*	*MW-2 (Duplicate)*	*MW-6*	*MW-7*
1,1-Dichloroethane	300	300	150	ND
cis-1,2-Dichloroethene	67	64	60	ND
Toluene	5.0	5.1	60	ND
1,1,1-Trichloroethane	8.9	9.0	ND	ND
Vinyl chloride	40	34	58	ND
o-Xylene	5.3	5.4	ND	ND

Notes:
ND Non-detect.

Figure 3.1 presents the results of the first semi-annual 1998 sampling event conducted during the second half of 1998. Figure 3.2 presents total VOC concentration versus time graphs for monitoring wells MW-2, MW-6, and MW-7. These graphs show the following:

i) Total VOC concentrations in the historically most contaminated monitoring well (MW-2) have steadily decreased from 1,718 µg/L (prior to remediation) to 837 µg/L/683 µg/L (First Quarter 1998) to 426 µg/L (Second Semi-Annual 1998).

ii) Total VOC concentrations in well MW-6, located near the margin of the contaminant plume, had increased following remediation from 27 µg/L to 433 µg/L (Third Quarter 1997). Since Third Quarter 1997 the VOC concentrations had declined. Total VOC concentrations fell to 159.7 µg/L during the Fourth Quarter 1997 and declined further to 103 µg/L during First Quarter

1998. The total VOC concentrations increased from 103 µg/L during First Quarter 1998 to 268 µg/L (Second Semi-Annual 1998).

iii) VOCs have never been detected in well MW-7, located on the downgradient side of the Winchester Avenue sewer.

The concentration trends will continue to be monitored and discussed in subsequent reports.

FIGURES

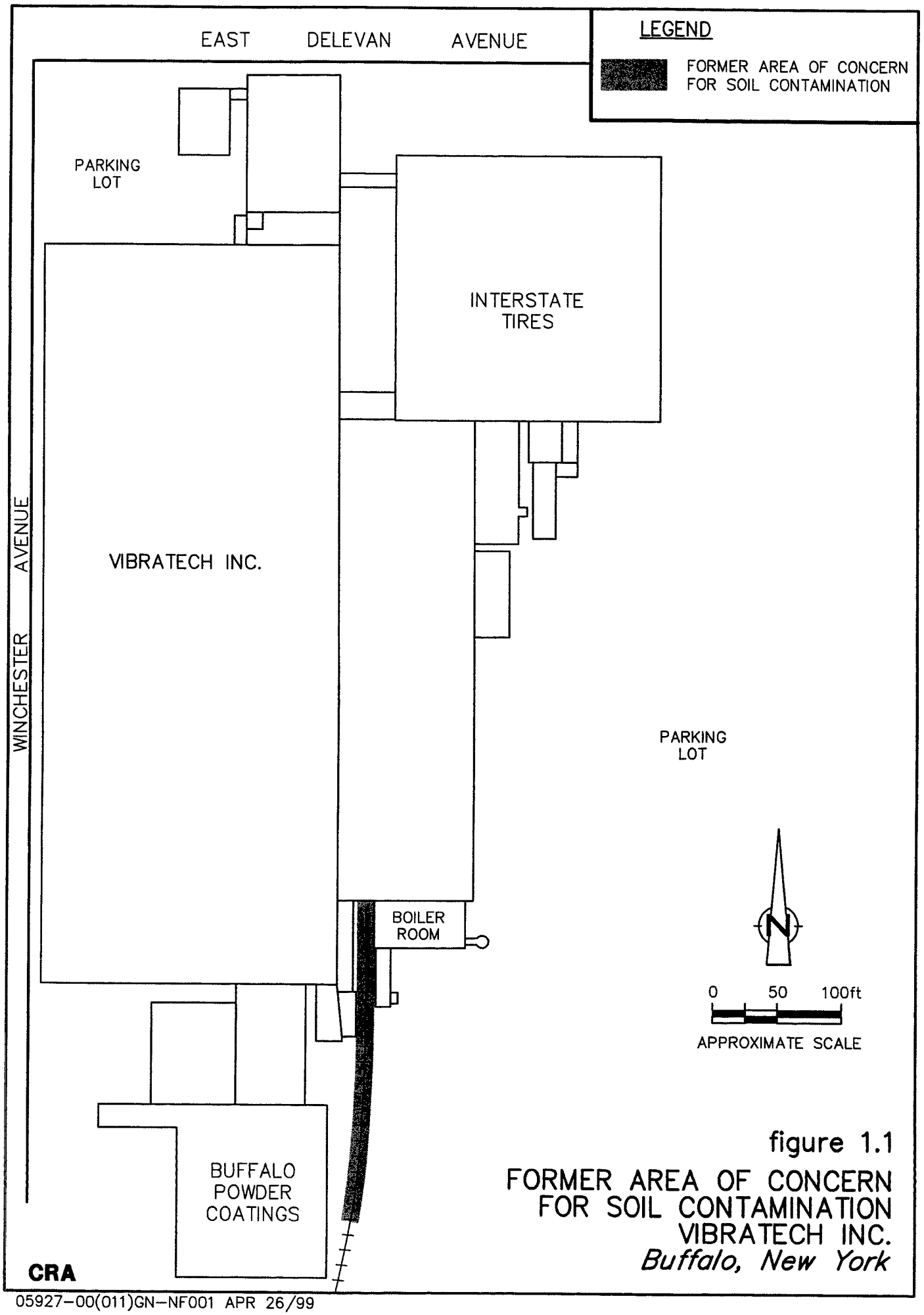

figure 1.1

FORMER AREA OF CONCERN
FOR SOIL CONTAMINATION
VIBRATECH INC.
Buffalo, New York

05927-00(011)GN-NF001 APR 26/99

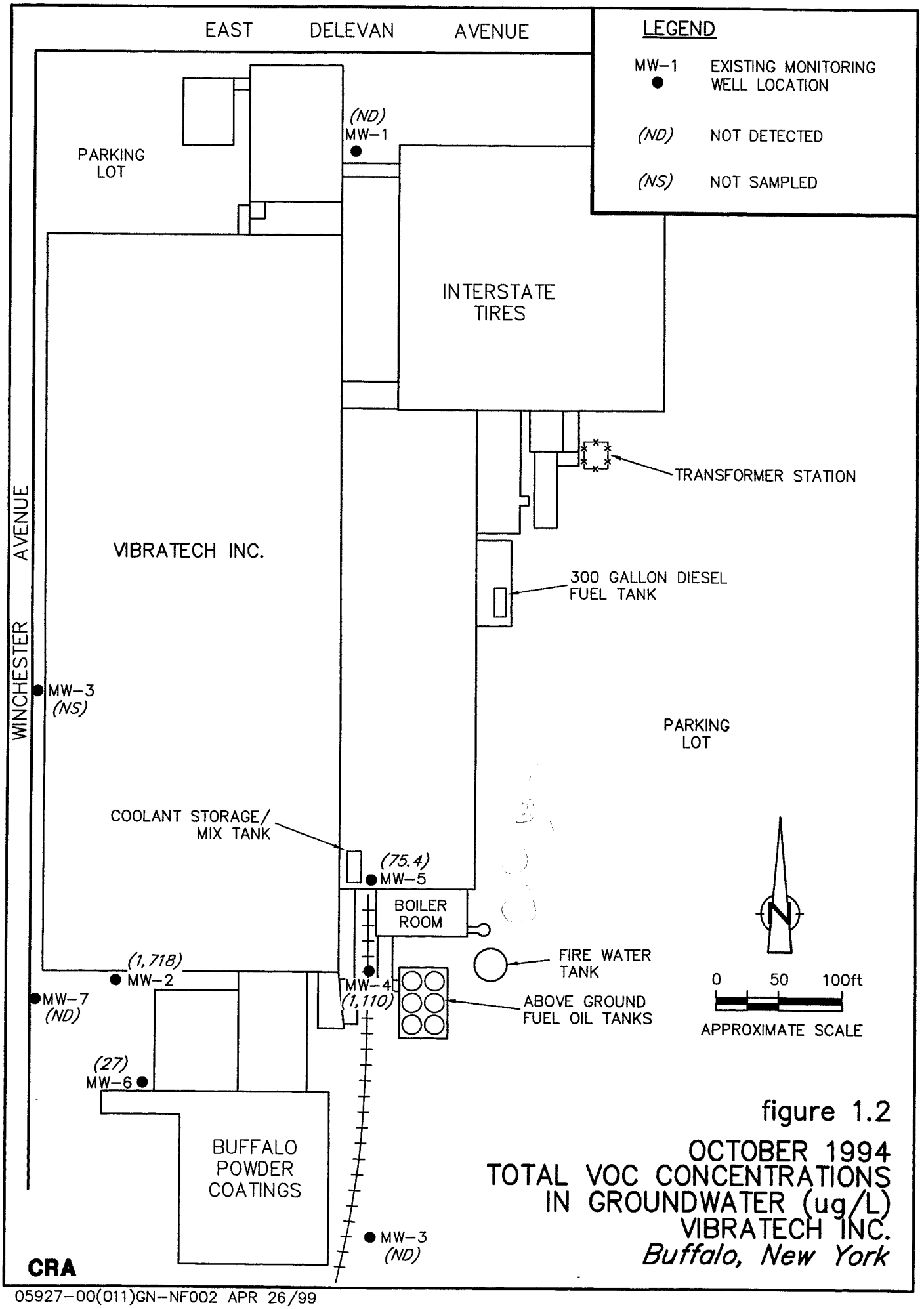

figure 1.2

OCTOBER 1994
TOTAL VOC CONCENTRATIONS
IN GROUNDWATER (ug/L)
VIBRATECH INC.
Buffalo, New York

05927-00(011)GN-NF002 APR 26/99

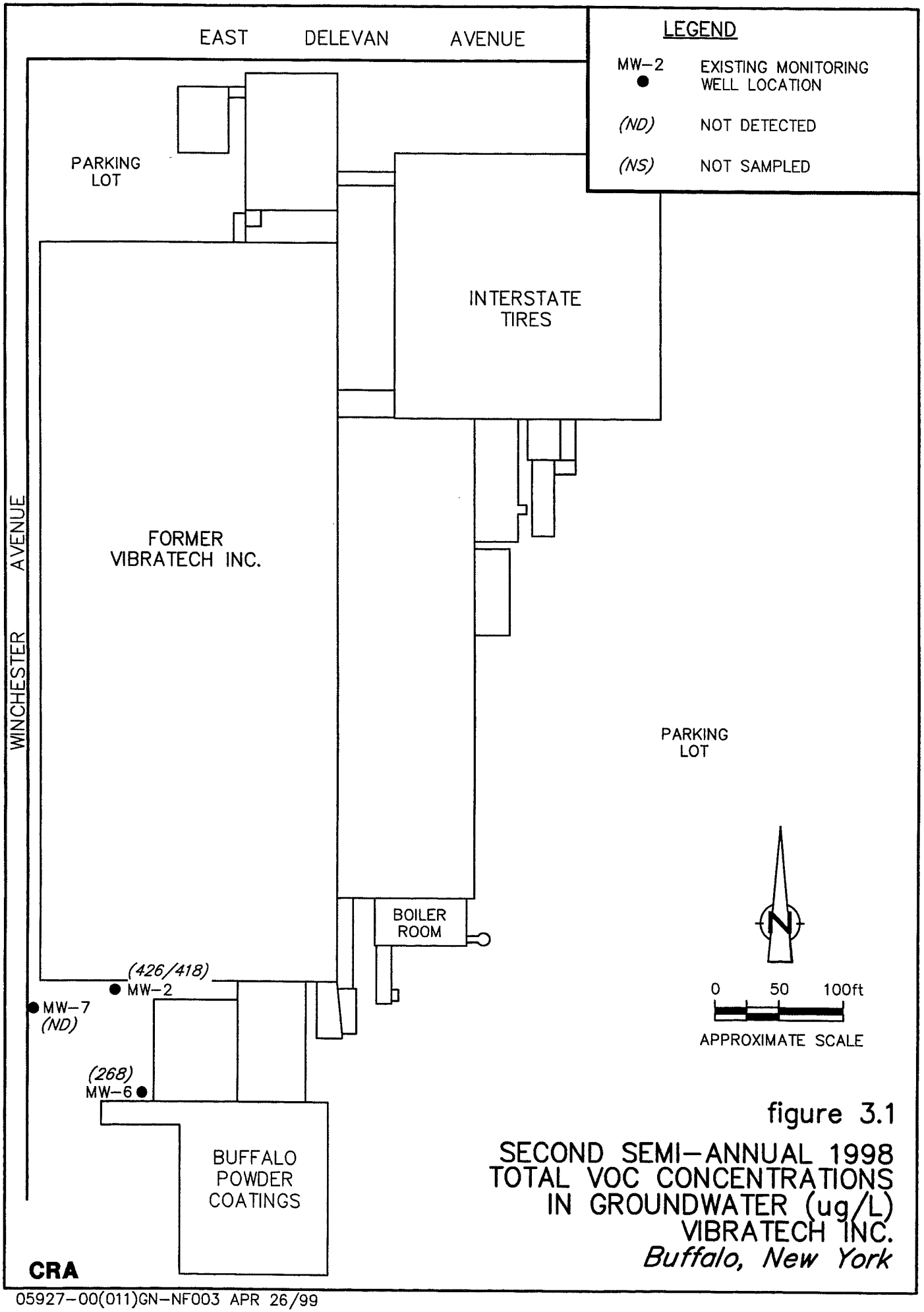

figure 3.1

SECOND SEMI-ANNUAL 1998
TOTAL VOC CONCENTRATIONS
IN GROUNDWATER (ug/L)
VIBRATECH INC.
Buffalo, New York

CRA

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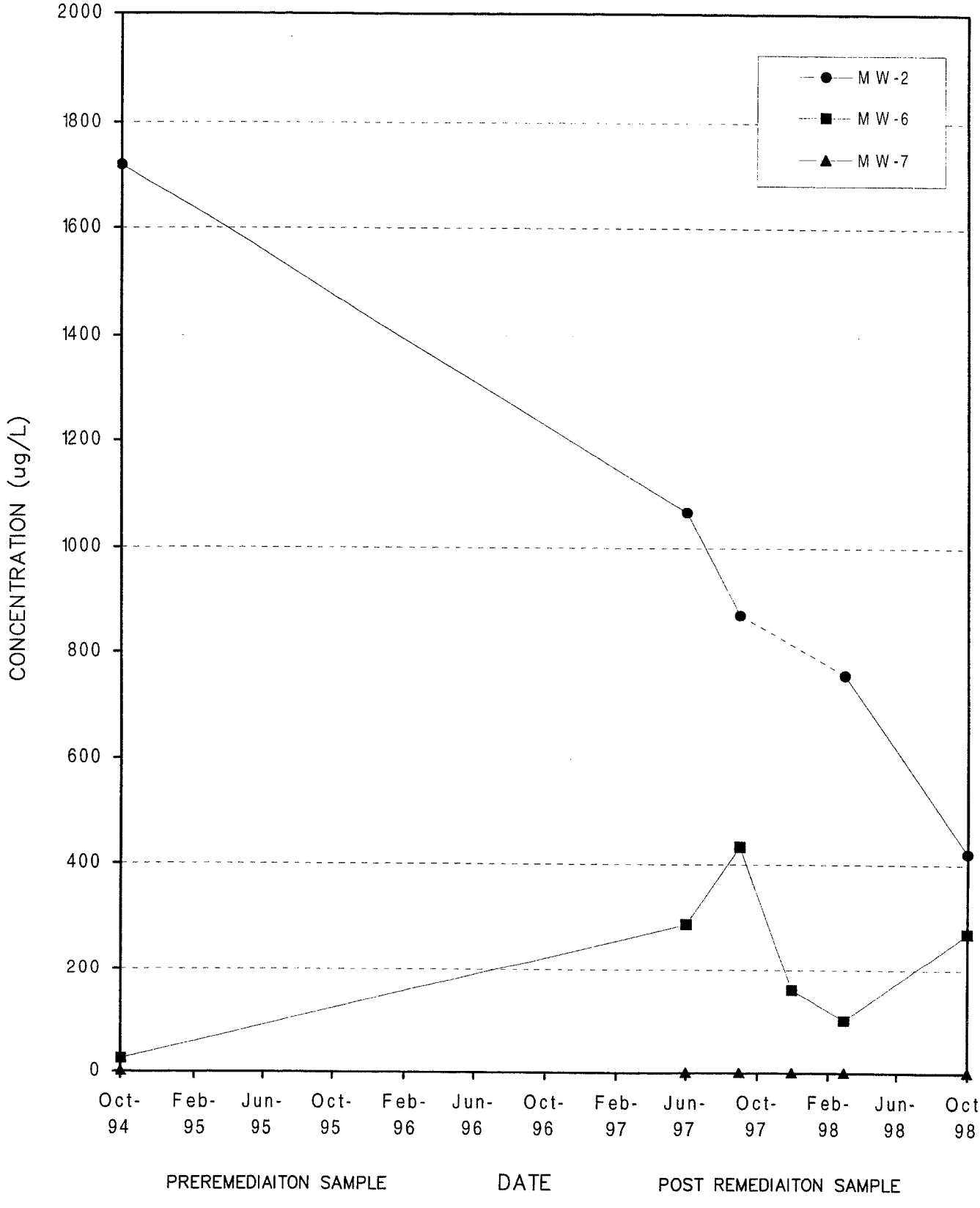

figure 3.2

TOTAL VOC CONCENTRATIONS IN GROUNDWATER VERSUS TIME
VIBRATECH INC.
Buffalo, New York

CRA

05927-00(011)EX-NF001 APR 26/99

APPENDIX A

ANALYTICAL DATA QUALITY ASSESSMENT AND VALIDATION

CONESTOGA-ROVERS & ASSOCIATES
2055 Niagara Falls Blvd., Suite Three
Niagara Falls, NY 14304

TELEPHONE: (716) 297-6150
FAX: (716) 297-2265

MEMORANDUM

TO: Kelly McIntosh

REF. NO.: 5927

FROM: Paul McMahon/mk/17

DATE: November 17, 1998

C.C.: Bryan Foulke

RE: Analytical Data Quality Assessment and Validation
Groundwater Sampling
Vibratech Site, Buffalo, New York
October 1998

The following details an assessment and validation of analytical results reported by Columbia Analytical Services, Inc. (CAS) for environmental samples collected in October 1998 from the Vibratech Site (Site). The samples collected were submitted for Site-specific volatile organic compounds (VOCs) as follows:

Parameter	*Matrix*	*Investigative Samples*	*Field Duplicates*	*MS/MSD*	*Total*
VOCs	Water	3	1	1/1	6

Notes:
MS/MSD - Matrix Spike/Matrix Spike Duplicate.

Samples were analyzed by Method 8260, referenced from "Test Methods for Evaluating Solid Waste", SW-846, 3rd Edition, 1986.

For sample identification and location, a sample collection summary is presented in Table 1. A summary of the analytical results is presented in Table 2. Evaluation of the data was based on information obtained from finished data sheets, blank data, and recovery data from matrix, blank, and surrogate spikes. Quality Assurance/Quality Control (QA/QC) criteria by which these data have been assessed are referenced from the SW-846 method of analysis and the "National Functional Guidelines for Organic Data Review" (February 1994), both prepared by the United States Environmental Protection Agency (USEPA).

ANALYTICAL ASSESSMENT AND VALIDATION

All samples were properly transported and stored at 4°C (±2°C). The samples were preserved with hydrochloric acid to a pH of less than two. All analyses were performed within the SW-846 recommended holding time of 14 days.

The surrogate compounds 4-bromofluorobenzene, toluene-d_8, and dibromofluoromethane were added to all samples, blanks, and QC samples. All recoveries were acceptable, indicating good analytical efficiency.

Laboratory method blank analyses yielded non-detect results for all compounds of interest, indicating that laboratory contamination was not a factor for this investigation.

Internal standard analyses were performed per the method. All percent recoveries and retention times were acceptable, indicating good analytical performance.

One MS/MSD analysis was performed on sample DRS-100598-MW2. All percent recoveries and relative percent differences (RPDs) were within the control limits, indicating that good analytical accuracy and precision were achieved.

A blank spike containing all compounds of interest was analyzed. All percent recoveries were within the control limits, indicating good analytical accuracy.

FIELD QA/QC RESULTS

Due to laboratory error, the trip blank submitted with the samples was not analyzed.

One field duplicate sample was collected and submitted "blind" to the laboratory for analysis, as indicated in Table 1. The results showed acceptable agreement with the original sample, demonstrating good sampling and analytical precision.

CONCLUSION

The data reported by CAS are acceptable without qualification.

TABLE 1

SAMPLE COLLECTION SUMMARY
VIBRATECH, INC.
BUFFALO, NEW YORK
OCTOBER 1998

Sample Identification	*Sample Location*	*Sample Matrix*	*Collection Date*	*Collection Time*	*Sample Analyses**	*Comments*
DRS-100598-MW2	MW2	Water	10/05/98	1115	Site-Specific Volatiles	MS/MSD
DRS-100598-MW6	MW6	Water	10/05/98	1130	Site-Specific Volatiles	
DRS-100598-MW7	MW7	Water	10/05/98	1140	Site-Specific Volatiles	
DRS-100598-MW9	MW9	Water	10/05/98	1125	Site-Specific Volatiles	Field Duplicate of MW2

Notes:

* Site-Specific Volatiles:
1,1-Dichloroethane, 1,2-Dichloroethane, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, Toluene, 1,1,1-Trichloroethane, Trichloroethene, Vinyl Chloride, o-Xylene, m&p-Xylene.

MS Matrix Spike.

MSD Matrix Spike Duplicate.

TABLE 2

ANALYTICAL RESULTS SUMMARY
VIBRATECH, INC.
BUFFALO, NEW YORK
OCTOBER 1998

	Sample ID:	*DRS-100598-MW2*	*DRS-100598-MW9*	*DRS-100598-MW6*	*DRS-100598-MW7*
	Collection Date:	*10/05/98*	*10/05/98* (*Dup of DRS-100598-MW2*)	*10/05/98*	*10/05/98*
Parameters	*Units*				
Volatiles					
1,1-Dichloroethane	µg/L	300	300	150	5.0 U
1,2-Dichloroethane	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	µg/L	67	64	60	5.0 U
trans-1,2-Dichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	µg/L	5.0	5.1	5.0 U	5.0 U
1,1,1-Trichloroethane	µg/L	8.9	9.0	5.0 U	5.0 U
Trichloroethene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U
Vinyl chloride	µg/L	40	34	58	5.0 U
o-Xylene	µg/L	5.3	5.4	5.0 U	5.0 U
m&p-Xylene	µg/L	5.0 U	5.0 U	5.0 U	5.0 U

Notes:
Dup Field Duplicate.
U Non-detect at the associated value.