



241129570
UNSP

August 1, 1997

Attn: Mr. Charles Krohn

Wisconsin Department of Natural Resources
Department of Remediation and Redevelopment
4041 North Richard Street
P.O. Box 12436
Milwaukee, Wisconsin 53212

RE: Ground Water Sampling Report
Mobil Service Station Number 05-PED
4691 South 27th Street
Greenfield, Wisconsin

Dear Mr. Krohn:

Enclosed, please find one original and one copy of the Ground Water Sampling Report for the above referenced site. This document describes ground water monitoring and sampling activities, and analytical results for Mobil Service Station Number 05-PED.

If you should need any additional information or have any comments, please feel free to contract me at (630) 527-1666.

Respectfully submitted,
Handex of Illinois, Inc.

A handwritten signature in cursive script that reads "Christopher Armes".

Christopher S. Armes
Project Hydrogeologist

enclosure



**SEMI-ANNUAL GROUNDWATER SAMPLING REPORT
MARCH 6, 1997 SAMPLING EVENT
MOBIL SERVICE STATION 05-PED
4691 SOUTH 27th STREET
GREENFIELD, WISCONSIN
DNR SITE IDENTIFICATION No. 241129570**

PREPARED FOR:

**MOBIL OIL CORPORATION
JOLIET REFINERY
P.O. BOX 874
JOLIET, ILLINOIS 60434
(815) 423-7668**

PREPARED BY:

**HANDEX OF ILLINOIS, INC.
1701 WEST QUINCY AVENUE, SUITE 31
NAPERVILLE, ILLINOIS 60540
(630) 527-1666**

A handwritten signature in black ink, appearing to read "Christopher S. Armes".

**Christopher S. Armes
Hydrogeologist**

8/01/97
Date

A handwritten signature in black ink, appearing to read "David A. Klinger".

**David A. Klinger
Project Manager**

8/1/97
Date

OBJECTIVES

Handex of Illinois, Inc. (Handex), in accordance with the authorization of Mobil Oil Corporation (Mobil), has evaluated the impact of hydrocarbons to ground water at Mobil Service Station, Number 05-PED. The site is located at 42° 57' 32" north latitude, 87° 57' 05" west longitude, T.6N., R.21E., SE 1/4 of the SE 1/4 of Section 24 as shown on Figure 1. More precisely the site is located at 4691 S. 27th Street, Milwaukee County, Greenfield, Wisconsin. A site plan is presented as Figure 2. The purpose of this report is to present the results of ground water monitoring and sampling conducted during the first quarter of 1997. Certifications of the qualifications of personnel involved in preparing this document are presented in Appendix A.

FIELD INVESTIGATIONS AND RESULTS

On March 6, 1997, monitor wells MW-1 through MW-3, MW-001, MW-005, MW-007, MW-11, and MW-12 were gauged using an electronic interface probe. Liquid-phase hydrocarbons were not detected in any of the monitor wells during gauging. The average depth to ground water measured in the monitor wells at the site was 4.20 feet below land surface. The estimated direction of groundwater is north. A map illustrating the groundwater elevation in each monitor well, and showing the estimated direction of groundwater flow is presented as Figure 3.

A summary of the sample collection, handling, and analysis techniques is presented as Appendix D. Groundwater samples were collected from monitor wells MW-1, MW-2, MW-3, and MW-11 on March 6, 1997. The groundwater samples were submitted to IEA

Laboratory, in Schaumburg, Illinois, for laboratory analyses. The results of these laboratory analyses are summarized in Table 1. The laboratory analytical report sheets are presented in Appendix C.

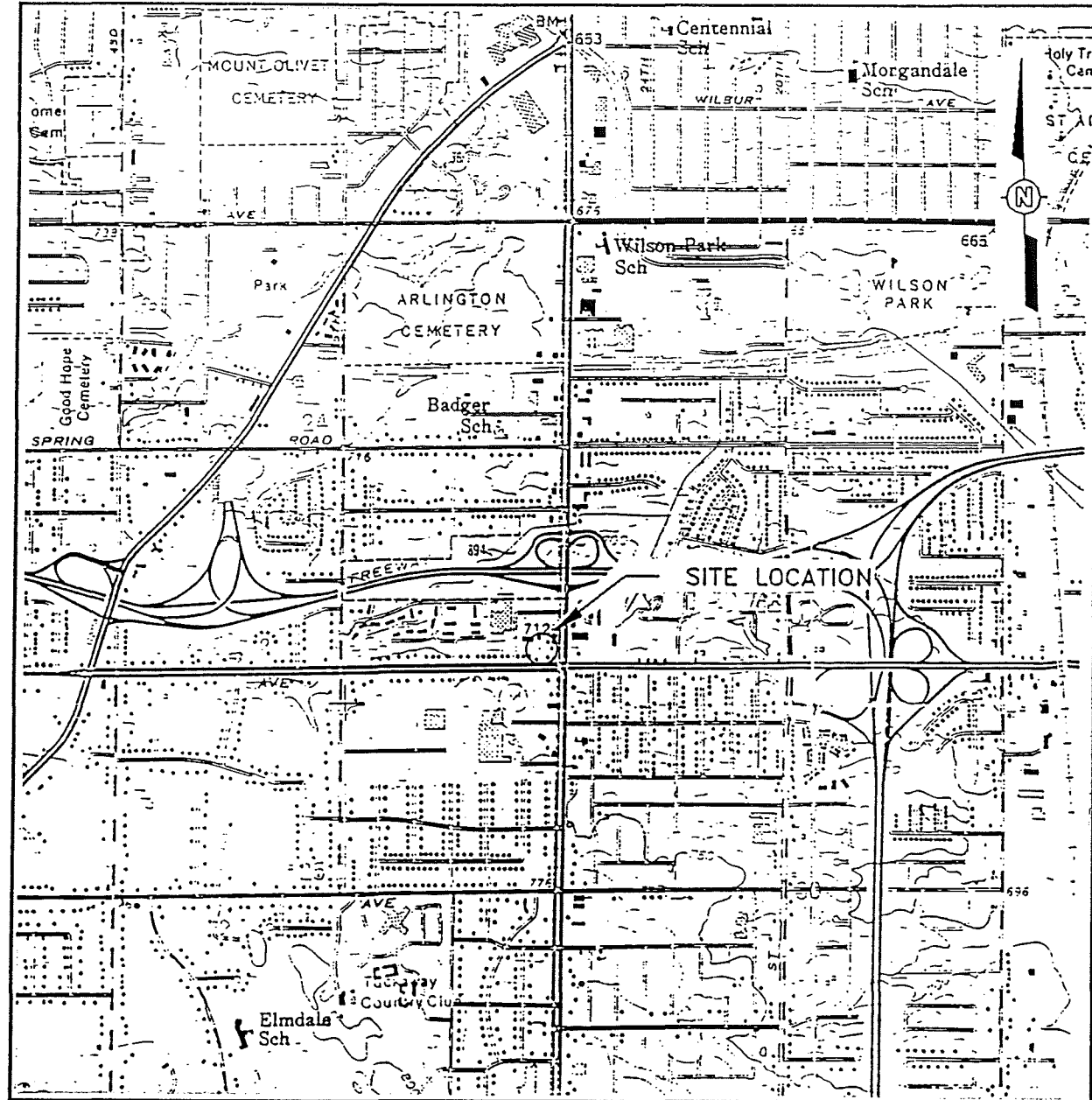
The laboratory results with respects to benzene, toluene, ethylbenzene, and total xylene (BTEX) compounds, and methly-tert-butyl ether (MTBE) concentrations detected in groundwater are shown on Figure 3. Concentrations of MTBE, BTEX constituents, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene are summarized on Table 1. Graphs illustration concentrations of benzene, total BTEX, and MTBE plotted versus groundwater elevations for monitor well MW-3 are presented as Appendix B.

In addition to the collection of groundwater samples, water quality parameters were collected from the site monitor wells on March 6, 1997. Dissolved oxygen and temperature were collected using a YSI Dissolved Oxygen Meter. Conductivity and pH were collected using a Corning Checkmate 90 conductivity meter. All parameters were analyzed after completion of well sampling activities. A summary of the water quality data is presented as Table 2.

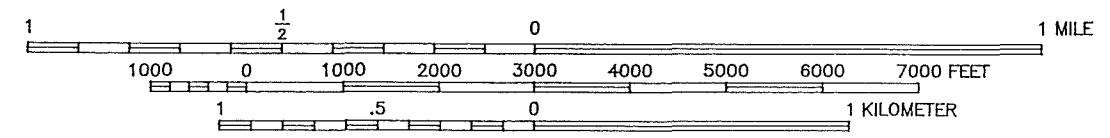
Based upon the results from the water quality parameter sampling at the subject site, it appears that aerobic bioactivity may be contributing to a reduction of PVOC constituents at the site. The groundwater monitoring and sampling program will be continued on a semi-annual basis for the remainder of the year.

FIGURES

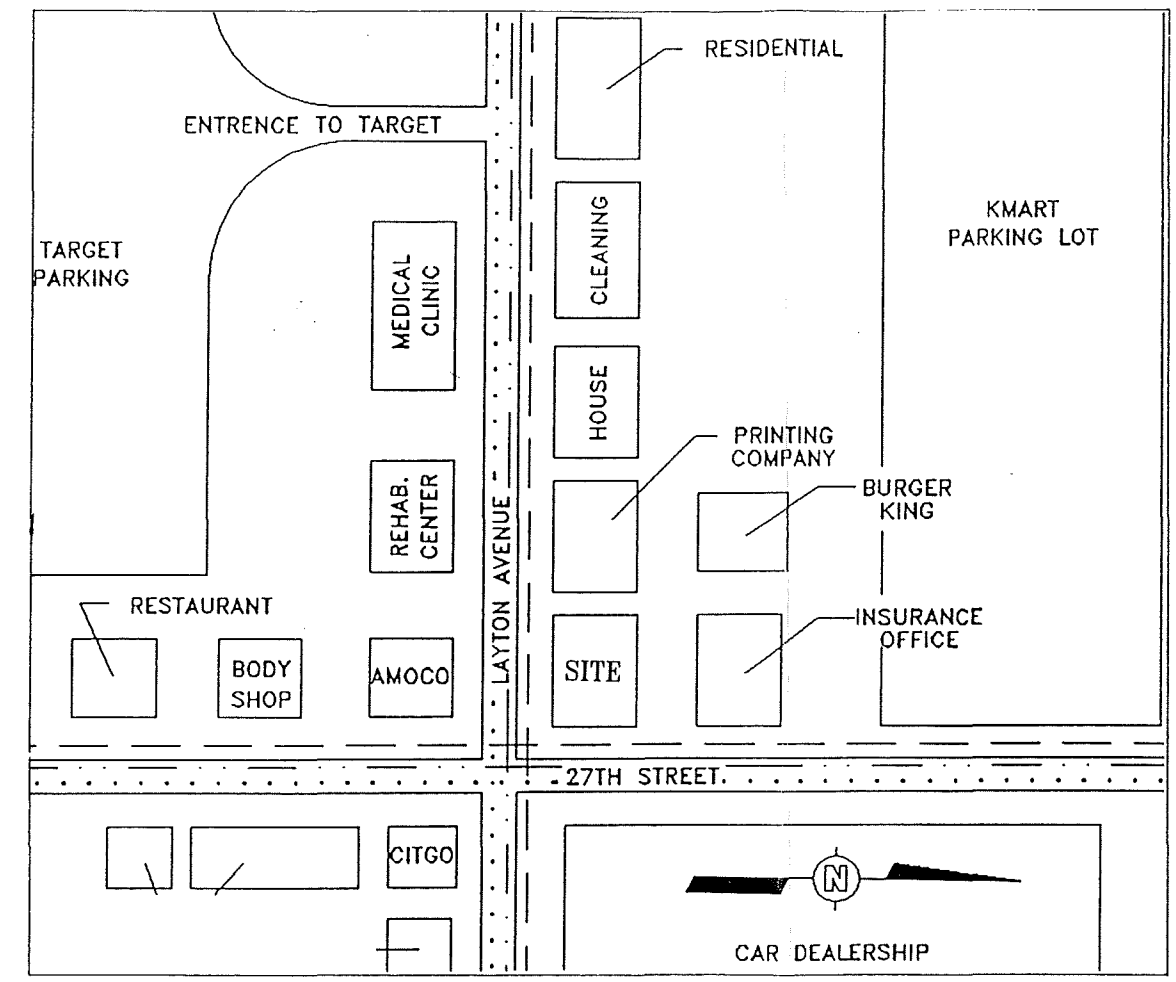
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GREENDALE QUADRANGLE
WISCONSIN - MILWAUKEE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



SCHEMATIC OF SURROUNDING AREA
NOT TO SCALE

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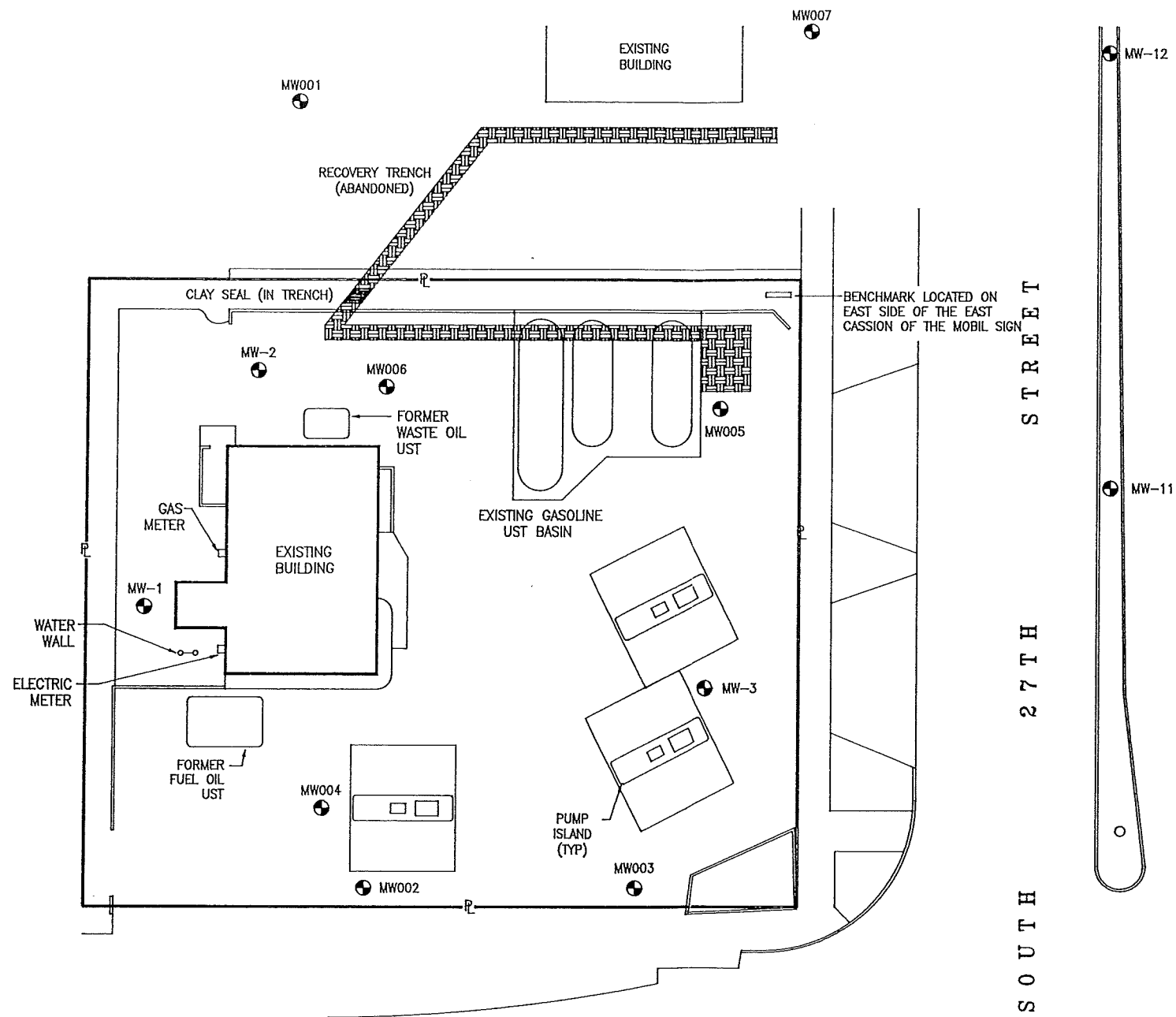
MOBIL OIL CORPORATION
Marketing & Refining Division - U.S.
Marketing Operations Department
Environmental Engineering Group
Fairfax, Virginia 22037

SITE LOCATION MAP
SERVICE STATION # 05-PED
4691 S. 27TH STREET
GREENFIELD, WISCONSIN

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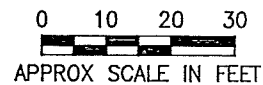
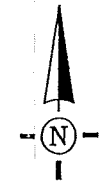
FIGURE
1

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SOUTH 27TH STREET

L A Y T O N A V E N U E



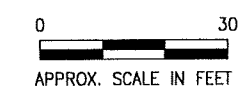
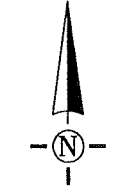
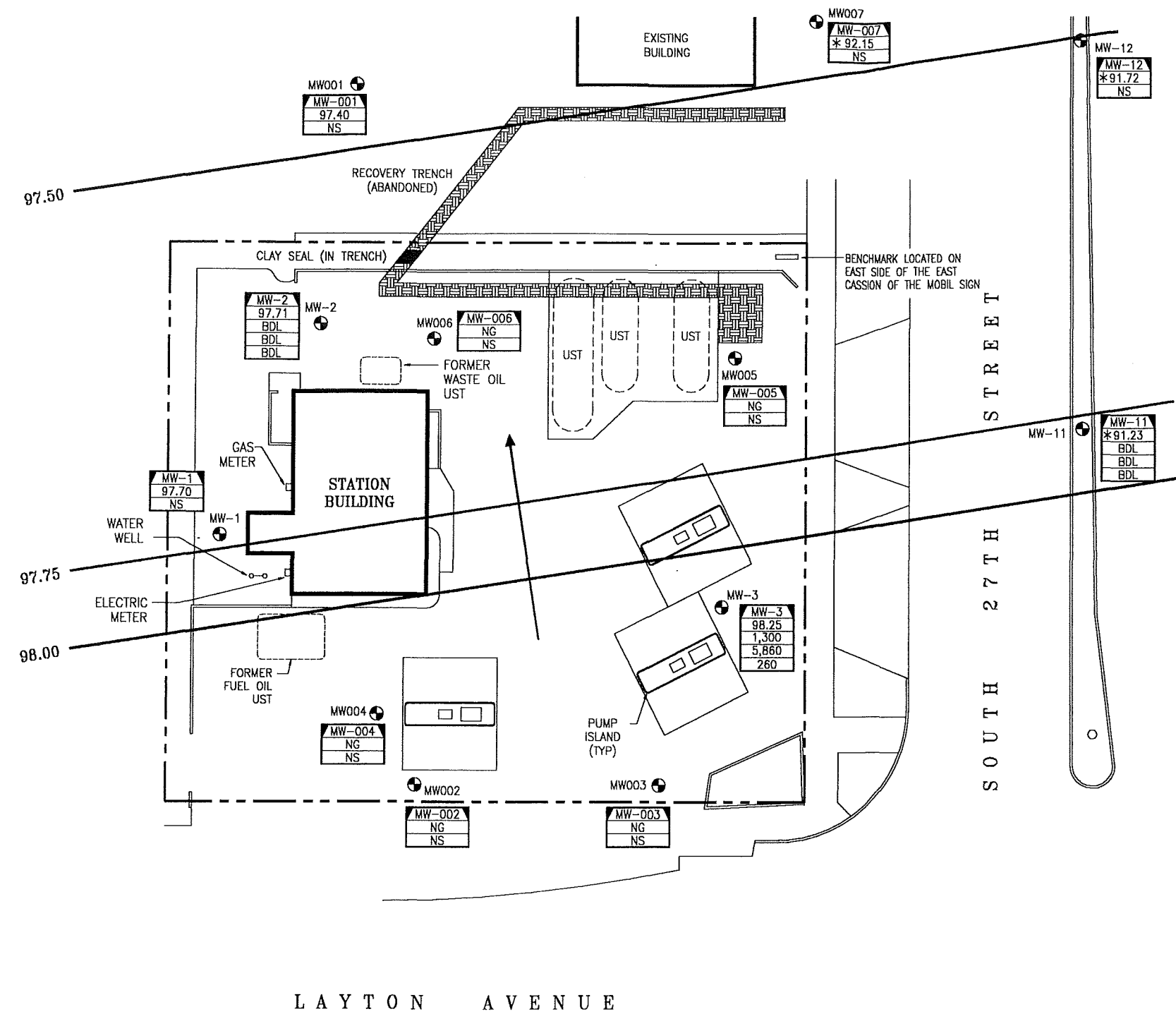
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Marketing Operations Department
Environmental Engineering Group
Fairfax, Virginia 22037

SITE MAP
SERVICE STATION # 05-PED
4691 SOUTH 27TH STREET
GREENFIELD, WISCONSIN

LEGEND		FIGURE 2
●	MONITORING WELL LOCATION	
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LEGEND						
	PROPERTY BOUNDARY					
	MONITORING WELL LOCATION					
	DESTROYED MONITORING WELL LOCATION					
	GROUNDWATER ELEVATION CONTOUR (CONTOUR INTERVAL = 0.50 ft.)					
	GROUNDWATER FLOW DIRECTION					
<table border="1"> <tr><td>MW-2</td></tr> <tr><td>97.71</td></tr> <tr><td>BDL</td></tr> <tr><td>BDL</td></tr> <tr><td>BDL</td></tr> </table>	MW-2	97.71	BDL	BDL	BDL	MONITORING WELL NUMBER RELATIVE GROUNDWATER ELEVATION (ft.) BENZENE CONCENTRATION (ug/l) TOTAL BTEX CONCENTRATION (ug/l) MTBE CONCENTRATION (ug/l)
MW-2						
97.71						
BDL						
BDL						
BDL						
3/6/97	GROUNDWATER SAMPLING & GAUGING DATE					
BDL	BELOW DETECTION LIMITS					
NG	NOT GAUGED					
NS	NOT SAMPLED					
*	NOT USED TO GENERATE GROUNDWATER CONTOURS					

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Fairfax, Virginia 22037

GROUNDWATER ELEVATION & BENZENE/TOTAL BTEX CONCENTRATION MAP
MOBIL SERVICE STATION # 05-PED
4691 S. 27TH STREET
GREENFIELD, MILWAUKEE COUNTY, WISCONSIN

DRAWN BY:	M. SMITH
CHECKED BY:	-
SCALE:	1" = 30'
DATE:	7/23/97
DRAWING FILE:	114123

FIGURE
3

TABLES

TABLE 2
GROUND WATER LABORATORY ANALYTICAL RESULTS AND MONITORING DATA
SERVICE STATION #05-PED

ANALYTICAL RESULTS IN ug/L or ppb

Well Number	TOC Elevation (ft. MSL)	Sample Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	1,2,4 Trimethyl-benzene	1,3,5 Trimethyl-benzene	GRO	TOTAL LEAD	D.O. (mg/l)	DTW (ft)	Ground Water Elev. (ft)	
MW-1	103.18	12/17/91	ND	ND	ND	ND	ND								5.22	97.96
		3/24/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0				
		10/6/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			5.09	98.09
		10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.89	5.41	97.77
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70.0			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.0	1.20	7.27	95.91
		3/13/96	ND	ND	ND	ND	ND	ND	ND	2.0	ND	ND	84.0	4.80	7.08	96.10
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.0	7.41	5.70	97.48
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.0	3.80	6.77	96.41
		11/13/96	5.0	ND	3.0	8.0	16.0	ND	5.0	ND	ND	50.0	7.70	7.40	95.78	
3/6/97											1.90	5.48	97.70			
MW-2	101.73	12/17/91	ND	ND	ND	ND	ND								3.99	97.74
		3/24/93														
		10/6/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			4.11	97.62
		10/27/94														
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.30	7.03	94.70
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	39.0			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	36.0	2.50	5.88	95.85
		3/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210.0	4.90	5.55	96.18
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	24.0	2.06	3.96	97.77
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	35.0	1.20	6.15	95.58
		11/13/96	ND	2.0	ND	10.0	12.0	ND	ND	12.0	ND	50.0	7.20	5.88	95.85	
3/6/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	29.0	4.83	4.02	97.71		
MW-3	101.51	12/17/91	1600.0	520.0	710.0	4300.0	7130.0	ND							3.79	97.72
		3/24/93														
		10/6/93	1600.0	1400.0	1200.0	2320.0	6520.0	220.0	1400.0	420.0	1400.0	ND			2.95	98.56
		10/27/94	2000.0	400.0	2000.0	4400.0	8800.0	170.0	1400.0	330.0	18000.0					
		3/20/95	2100.0	400.0	2000.0	5660.0	10160.0	140.0	1900.0	490.0	19000.0	9.3	7.30	5.02	96.49	
		6/27/95	1900.0	360.0	1800.0	4200.0	8260.0	380.0	1700.0	580.0	21000.0	46.0				
		10/2/95	2200.0	400.0	2300.0	4320.0	9220.0	410.0	2000.0	660.0	27000.0	56.0	1.30	4.29	97.22	
		3/13/96	1900.0	290.0	1600.0	3900.0	7690.0	380.0	1900.0	640.0	34000.0	66.0	5.30	4.31	97.20	
		6/12/96	2100.0	390.0	2200.0	4350.0	9040.0	540.0	1900.0	650.0	21000.0	27.0	2.06	3.16	98.35	
		8/14/96	1400.0	230.0	1400.0	2970.0	6000.0	340.0	1300.0	430.0	15000.0	80.0	1.40	3.93	97.58	
		11/13/96	2000.0	380.0	2300.0	4900.0	9580.0	440.0	2600.0	850.0	29000.0	320.0	5.10	4.38	97.13	
3/6/97	1300.0	250.0	1000.0	3310.0	5860.0	260.0	2300.0	7300.0	23000.0	ND	1.20	3.26	98.25			

TABLE 2
GROUND WATER LABORATORY ANALYTICAL RESULTS AND MONITORING DATA
SERVICE STATION #05-PED

ANALYTICAL RESULTS IN ug/L or ppb

Well Number	TOC Elevation (ft. MSL)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE	1,2,4 Trimethylbenzene	1,3,5 Trimethylbenzene	GRO	TOTAL LEAD	D.O. (mg/l)	DTW (ft)	Ground Water Elev. (ft)	
MWV-001	100.54	10/6/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		6.30	94.24	
		10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.60	10.07	90.47	
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100.0			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.10	10.19	90.35	
		3/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	490.0	7.70	9.81	90.73
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.40	9.75	90.79
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	260.0		12.44	88.10
		11/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	37.0	5.10	4.35	96.19
		3/6/97													3.14	97.40
MWV-007	96.85	10/6/93	ND	ND	ND	ND	ND	2.7	ND	ND	ND	ND	ND		4.09	92.76
		10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.0			
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.70	4.56	92.29	
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.5			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.10	4.22	92.63	
		3/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.80	5.75	91.10	
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.40	3.91	92.94	
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.10	4.18	92.67	
		11/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	54.0	6.40	4.81	92.04
		3/6/97													4.70	92.15
MWV-11	100.54	10/6/93	1.8	6.7	ND	2.3	10.8	ND	ND	ND	ND	ND	ND		6.30	94.24
		10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.40	10.01	90.53
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.40	10.19	90.35
		3/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.60	9.81	90.73
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.81	9.75	90.79
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.40	12.44	88.10
		11/13/96	2.0	ND	ND	ND	2.0	ND	ND	ND	ND	ND	53.0	5.00	8.78	91.76
		3/6/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.047	5.52	9.31	91.23
MWV-12	98.18	10/6/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		7.86	90.32
		10/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
		3/20/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.80	13.00	85.18
		6/27/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
		10/2/95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.70	11.32	86.86
		3/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.20	11.04	87.14

**TABLE 2
GROUND WATER LABORATORY ANALYTICAL RESULTS AND MONITORING DATA
SERVICE STATION #05-PED**

ANALYTICAL RESULTS IN ug/L or ppb

Well Number	TOC Elevation (ft. MSL)	Sample Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	MTBE	1,2,4 Trimethyl-benzene	1,3,5 Trimethyl-benzene	GRO	TOTAL LEAD	D.O. (mg/l)	DTW (ft)	Ground Water Elev. (ft)
		6/12/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.92	13.16	85.02
		8/14/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.20	13.01	85.17
		11/13/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.20	6.09	92.09
		3/6/97												6.46	91.72

Notes:

Shaded areas indicates data not available.

ND - Not detected above the laboratory method detection limit.

TABLE 2

FIELD SAMPLING PARAMETERS
 MOBIL SERVICE STATION No. 05-PED
 GREENFIELD, WISCONSIN

WELL NUMBER	DATE	TEMPERATURE (°F)	pH	DISSOLVED OXYGEN (mg/l)	CONDUCTIVITY (µs)
MW-1	3/20/95	59.9	7.59	5.89	1470
	10/2/95	62.5	7.56	1.20	2450
	3/13/96	58.0	8.18	4.80	3420
	6/12/96	65.2	2.79	7.41	2590
	8/14/96	77.0	7.84	3.80	2740
	11/13/96	61.6	5.27	7.77	2330
	3/6/97	43.8	12.96	1.20	3970
MW-2	3/20/95	62.8	7.71	7.30	1400
	10/2/95	62.1	7.73	2.50	2870
	3/13/96	59.2	7.67	4.90	2530
	6/12/96	62.4	7.09	2.06	3240
	8/14/96	77.0	7.64	1.20	2070
	11/13/96	63.8	5.02	7.20	2540
	3/6/97	44.4	12.23	4.83	1802
MW-3	3/20/95	68.9	7.17	7.30	1400
	10/2/95	66.8	7.27	1.30	5250
	3/13/96	66.3	7.36	5.30	3780
	6/12/96	62.4	7.09	2.06	3240
	8/14/96	74.9	7.59	1.40	3230
	11/13/96	63.9	5.43	5.10	2690
	3/6/97	43.8	12.96	1.20	3970
MW-001	3/20/95	50.0	6.66		2740
	10/2/95	59.2	7.64	2.60	1120
	3/13/96	64.5	8.00	3.10	3340
	6/12/96	60.2	7.27	7.70	2940
	8/14/96	59.1	7.50	2.40	2090
	11/13/96	55.6	5.20	5.10	2690
	3/6/97				
MW-007	3/9/93	51.0	6.88		2490
	3/20/95	59.9	7.48	2.70	1840
	10/2/95	65.5	8.00	3.10	3340
	3/13/96	60.2	7.67	5.80	4260
	6/12/96	59.7	7.50	2.40	2090
	8/14/96	69.1	7.70	3.10	4040
	11/13/96	57.1	5.23	6.40	4810
	3/6/97				

TABLE 2

FIELD SAMPLING PARAMETERS
 MOBIL SERVICE STATION No. 05-PED
 GREENFIELD, WISCONSIN

WELL NUMBER	DATE	TEMPERATURE (°F)	pH	DISSOLVED OXYGEN (mg/l)	CONDUCTIVITY (µs)
MW-11	3/9/93	59.0	6.11		7860
	3/20/95	59.9	7.14	2.40	3640
	10/2/95	59.4	6.88	3.40	13820
	3/13/96	52.6	7.74	4.60	9665
	6/12/96	57.7	7.26	4.81	13210
	8/14/96	64.7	7.26	0.40	1046
	11/13/96	52.8	5.75	5.00	10880
	3/6/97	46.7	13.37	5.52	10590
MW-12	3/9/93	50.0	6.30		1190
	3/20/95	58.8	7.23	2.80	330
	10/2/95	58.9	7.44	4.70	9960
	3/13/96	53.6	7.88	6.20	7880
	6/12/96	57.4	7.30	5.92	9600
	8/14/96	62.6	7.84	3.20	7260
	11/13/96	51.3	5.69	7.20	8980
	3/6/97				

NOTES:

Shaded areas indicates that data was not collected.


APPENDICES

APPENDIX A

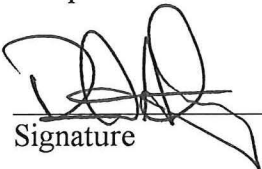
PERSONNEL QUALIFICATIONS CERTIFICATION

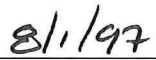
I, **Christopher S. Armes**, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.


Signature


Date

I, **David A. Klinger**, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

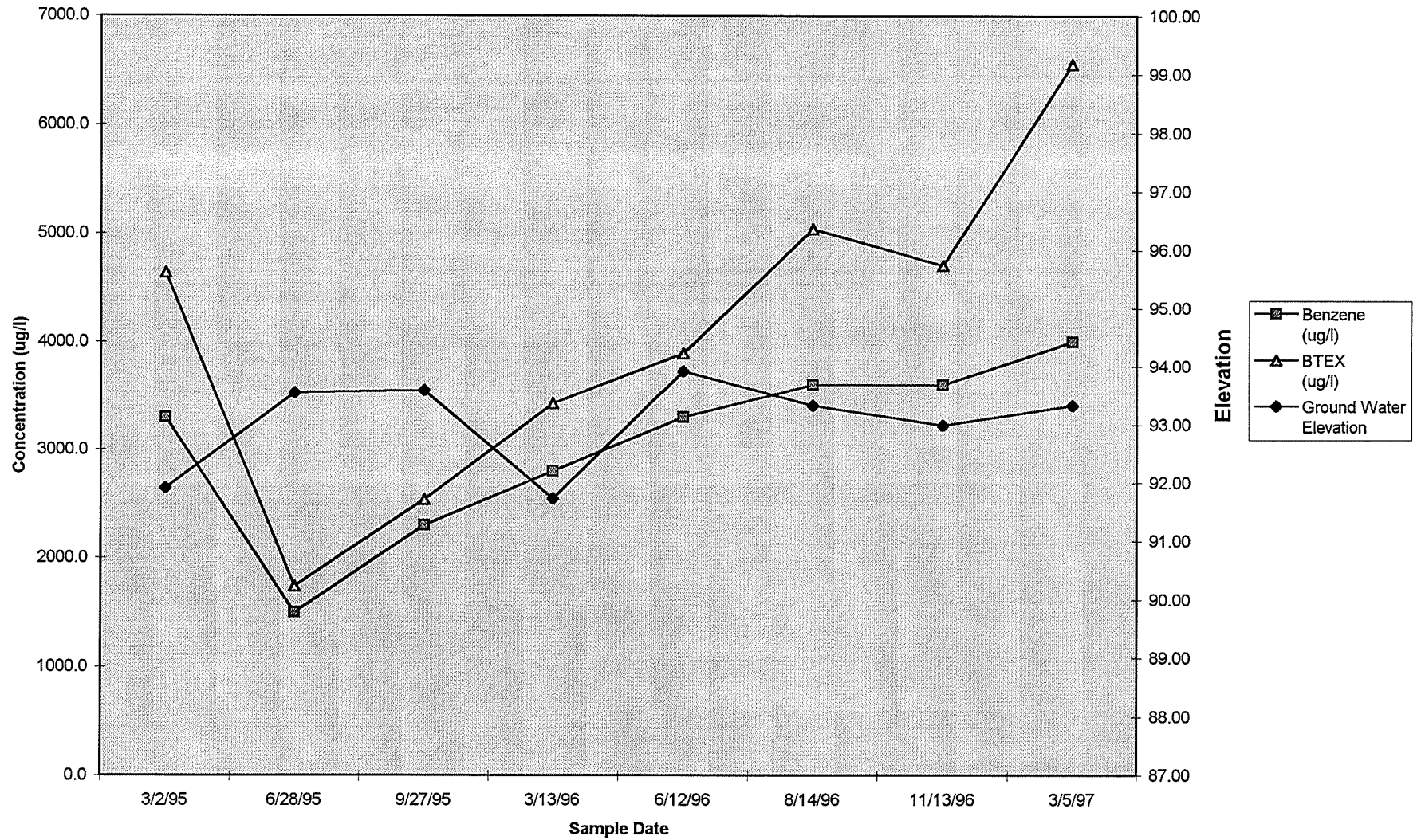

Signature


Date

APPENDIX B

CONCENTRATION VS GROUNDWATER ELEVATION GRAPH

05-PED Hydrograph MW-3 Chart 1



APPENDIX C
CHEMICAL ANALYTICAL REPORT



IEA
An Aquarion Company

126 West Center Court
Schaumburg, Illinois 60195

Phone 1-800-933-2580
Fax 847-705-1567

March 20, 1997

Handex of Illinois
Chris Armes
1701 W. Quincy
Suite 31
Naperville, IL 60540

Dear Chris Armes:

Please find enclosed the analytical results of the samples received at our laboratory on March 07, 1997. This report contains sections addressing the following information at a minimum:

- Definitions
- Analytical Methodology
- State certifications
- Analytical Results
- Chain-of-custody (if applicable)

IEA Project#: L72970672	Client Project: 05-PED
	Purchase Order#:
IEA Quote#:	Site:

Copies of this analytical report and supporting data are maintained in our files for three years; samples are retained for two weeks unless special arrangements have been made. Unless specifically indicated, all analytical testing was performed at this laboratory and no portion of the testing was subcontracted.

We appreciate your selection of our services and welcome any questions or suggestions you may have relative to this report. Please contact Jim Dowse at (800) 933-2580 for any additional information. Thank you for utilizing our services, we hope you will consider us for your future analytical needs.

I have reviewed and approved the enclosed data for final release.

Sincerely

Larry D. Lewis
Director of Operations
IEA-Illinois Laboratory

MAR 26 1997

Monroe,
Connecticut
203-261-4468

N. Billerica,
Massachusetts
508-667-1400

Whippany,
New Jersey
201-428-8181

Cary,
North Carolina
919-677-0090



printed on recycled paper

Sample Summary

IEA-Illinois	
Laboratory ID	Client ID
L72970672-001	MW-2
L72970672-002	MW-3
L72970672-003	MW-11
L72970672-004	TRIP BLANK
L72970672-005	FIELD BLANK

CLIENT:Handex of Illinois
 CLIENT PROJECT#:05-PED
 SITE:
 CLIENT P.O.#:-
 IEA PROJECT#:L72970672
 MATRIX:WATER
 METHOD:8020

Petroleum Volatile Organic Compounds
 WI Cert.#: 999756670

LAB ID#	CLIENT ID	ANALYTE	RESULT	PQL	UNITS	DILUTION FACTOR
L72970672-001	MW-2	MTBE	U	2	ug/L	1
		Benzene	U	1	ug/L	1
		Toluene	U	2	ug/L	1
		Ethylbenzene	U	2	ug/L	1
		m&p-Xylene	U	2	ug/L	1
		O-Xylene	U	2	ug/L	1
		1,3,5-Trimethylbenzene	U	2	ug/L	1
		1,2,4-Trimethylbenzene	U	2	ug/L	1
		Surrogate Recovery	77%	77-114	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				
L72970672-002	MW-3	MTBE	260	10	ug/L	5
		Benzene	1300	5	ug/L	5
		Toluene	250	10	ug/L	5
		Ethylbenzene	1000	10	ug/L	5
		m&p-Xylene	2800	10	ug/L	5
		O-Xylene	510	10	ug/L	5
		1,3,5-Trimethylbenzene	730	10	ug/L	5
		1,2,4-Trimethylbenzene	2300	10	ug/L	5
		Surrogate Recovery	122%	H 71-121	ug/L	5
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				
L72970672-003	MW-11	MTBE	U	2	ug/L	1
		Benzene	U	1	ug/L	1
		Toluene	U	2	ug/L	1
		Ethylbenzene	U	2	ug/L	1
		m&p-Xylene	U	2	ug/L	1
		O-Xylene	U	2	ug/L	1
		1,3,5-Trimethylbenzene	U	2	ug/L	1
		1,2,4-Trimethylbenzene	U	2	ug/L	1
		Surrogate Recovery	90%	71-121	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031997		
	DATE ANALYZED:	03/19/97				

CLIENT:Handex of Illinois
 CLIENT PROJECT#:05-PED
 SITE:
 CLIENT P.O.#:-
 IEA PROJECT#:L72970672
 MATRIX:WATER
 METHOD:8020

Petroleum Volatile Organic Compounds
 WI Cert.#: 999756670

LAB ID#	CLIENT ID	ANALYTE	RESULT	PQL	UNITS	DILUTION FACTOR
L72970672-004	TRIP BLANK					
		MTBE	U	2	ug/L	1
		Benzene	U	1	ug/L	1
		Toluene	U	2	ug/L	1
		Ethylbenzene	U	2	ug/L	1
		m&p-Xylene	U	2	ug/L	1
		O-Xylene	U	2	ug/L	1
		1,3,5-Trimethylbenzene	U	2	ug/L	1
		1,2,4-Trimethylbenzene	U	2	ug/L	1
		Surrogate Recovery	101%	71-121	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				
L72970672-005	FIELD BLANK					
		MTBE	U	2	ug/L	1
		Benzene	U	1	ug/L	1
		Toluene	U	2	ug/L	1
		Ethylbenzene	U	2	ug/L	1
		m&p-Xylene	U	2	ug/L	1
		O-Xylene	U	2	ug/L	1
		1,3,5-Trimethylbenzene	U	2	ug/L	1
		1,2,4-Trimethylbenzene	U	2	ug/L	1
		Surrogate Recovery	101%	71-121	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				

CLIENT:Handex of Illinois
 CLIENT PROJECT#:05-PED
 SITE:
 CLIENT P.O.#:-
 IEA PROJECT#:L72970672
 MATRIX:WATER
 METHOD:WDR

Gasoline Range Organics (GRO)
 WI Cert.#: 999756670

LAB ID#	CLIENT ID	ANALYTE	RESULT	PQL	UNITS	DILUTION FACTOR
L72970672-001	MW-2	Gasoline Range Organics (GRO)	U	100	ug/L	1
		Surrogate Recovery	76%	75-125	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				
L72970672-002	MW-3	Gasoline Range Organics (GRO)	23000	500	ug/L	5
		Surrogate Recovery	132%	H 75-125	ug/L	5
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				
L72970672-003	MW-11	Gasoline Range Organics (GRO)	U	100	ug/L	1
		Surrogate Recovery	97%	75-125	ug/L	1
	DATE SAMPLED:	03/06/97	METHOD BLANK:	VW031897		
	DATE ANALYZED:	03/18/97				

Purgeable Aromatics
Blank Spike/Blank Spike Duplicate

Matrix: Water

Date Analyzed: 3/17/97

IEA Sample ID: VW031797

Compound	Spike Added (ug/L)	Blank Concentration (ug/L)	Blank Spike Concentration (ug/L)	% Recovery
Benzene	50	<1	51	102%
Toluene	50	<1	52	104%

Compound	Spike Added (ug/L)	Blank Spike Dup Concentration (ug/L)	% Recovery	% Difference
Benzene	50	51	102%	0%
Toluene	50	51	102%	2%

% Recovery Limits: 75-125%

% Difference Limits: +/- 20 %

Gasoline Range Organics

Blank Spike/Blank Spike Duplicate

Matrix: Water

Date Analyzed: 3/17/97

Spike Added (µg/L)	Blank Concentration (µg/L)	Blank Spike Concentration (µg/L)	% Recovery
500	<100	502	100%

Spike Added (µg/L)	Blank Spike Dup Concentration (µg/L)	% Recovery	% Difference
500	473	95%	6%

% Recovery Limits: 80-120%

% Difference Limits: +/- 20 %

QC Sample:L72970665-001
Sample Weight:45
Sample Volume:50
Prep Batch#:2218
Matrix:WATER

|| Quality Control Data Sheet ||
|| Associated Samples ||

	Laboratory ID	
	L72970672-001	
	L72970672-002	
	L72970672-003	

QC Sample:PB-2218
Sample Weight:45
Sample Volume:50
Prep Batch#:2218
Matrix:WATER

Quality Control Data Sheet
Prep Blank

Laboratory	I.D.	Date	Time	Element	Meth.	Prep Blank Result	Acceptable Prep Blank
	PB-2218	03/11/97	14:23:00	Lead	6010	0.00148	+/-0.025

|| Quality Control Data Sheet ||
 || Laboratory Control Sample ||

QC Sample:LCS-2218
 Sample Weight:45
 Sample Volume:50
 Prep Batch#:2218
 Matrix:WATER

Laboratory				LCS			
I.D.	Date	Time	Element	Meth.	Result	Known	%Rec
LCS-2218	03/11/97	14:27:00	Lead	6010	0.52848	0.5000	105.6
Acceptable Limits:							80-120%

Quality Control Data Sheet

QC Sample:L72970665-001

Date Analyzed:03/11/97

Sample Weight:45

Sample Volume:50

Prep Batch#:2218

Matrix:WATER

Element	Meth.	Orig.Samp.	Sample Duplicate Result	%RPD	Matrix Spike Spk.Samp.	Amt.Spkd	%Rec.	Matrix Spk Duplicate Spk.Samp.	Amt.Spkd	%Rec	%RPD	Serial Dilution Result	%RPD	Post Spike Result	Amt.Spkd	%Rec
Lead	6010	0.048	< 0.027*	NoCalc	0.5443	0.500	99.092	0.531	0.500	96.47401	2.67734	< 0.13	<50xPQL			
Acceptable Limits:				<20%	80-120%			80-120%			<20%	<10%		75-125%		

* Test not performed



IEA
An Aquarion Company

126 WEST CENTER COURT
SCHAUMBURG, ILLINOIS 60195
PH # 800-933-2580
FAX # 847-705-1567

CHAIN OF CUSTODY RECORD

NO. 9059

Page 1 of 1

REGULATORY CLASSIFICATION - PLEASE SPECIFY

NPDES DRINKING WATER RCRA OTHER _____

COMPANY		CONTACT PERSON		PROJECT I.D.	PHONE #	FAX #	P.O. #							
Handex of IL		Chris Ames		OS-PED	630/527-1666	630/527-8174								
ADDRESS				MATRIX	# OF CONTAINERS	PRESERVED Y/N	REQUESTED PARAMETERS					DELIVERABLES		
1761 W. Quincy St 31							PVOCL	GRD	Lead	Temp				<input type="checkbox"/> Routine <input type="checkbox"/> Rush (Specify) <input type="checkbox"/> Special Request (attach specifics)
CITY	STATE	ZIP												
Naperville	IL	60540												
DATE	TIME	SAMPLE I.D.										(COMMENTS)		
3/6/97	8:00	MW-2		W	3							Lead needs to be filtered		
3/6/97	8:20	MW-3		W	3									
3/6/97	8:30	MW-11		W	3									
		Trip blank		W	1									
		Field blank		W	1									
		Temp/blank		W	1							40 ml has HCL		
RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED BY		DATE / TIME		REMARKS ON SAMPLE RECEIPT			IEA QUOTE NO.			
Christopher Ames		3/7/97 8:00						<input type="checkbox"/> BOTTLE INTACT <input type="checkbox"/> CUSTODY SEALS <input type="checkbox"/> PRESERVED <input type="checkbox"/> SEALS INTACT <input type="checkbox"/> CHILLED <input type="checkbox"/> SEE REMARKS						
Ed G. [Signature]		3-7-97												
RELINQUISHED BY (SIGNATURE)		DATE / TIME		RECEIVED FOR LAB BY		DATE / TIME		IEA USE ONLY						
				[Signature]		2/2/97 1035		<input checked="" type="checkbox"/> RECEIVED ON ICE OR TEMP. 30C						

APPENDIX D

METHODS OF INVESTIGATION - GROUNDWATER

All monitor wells were included in the groundwater monitoring and sampling program. The collection of groundwater was conducted in accordance with NR Chapter 716.13. The wells were purged of four well volumes or until dry, whichever occurs first, using dedicated PVC bailers. Purge water generated is disposed of via granulated activated carbon (GAC) on site. Groundwater samples are collected using disposable teflon bailers and cord to minimize the risk of cross contamination. After collection, the samples were placed in a laboratory prepared sample containers, place in a cooler with ice and shipped, under chain-of-custody protocol, to the project laboratory with 24 hours. Groundwater samples are submitted for analysis of Petroleum Volatile Organic Compounds (PVOCs) by EPA Method 8020.