

ANNUAL ✓

AUGUST 1998



Tanks and Emergency Response Section
Minnesota Pollution Control Agency

Annual Monitoring Report

Fact Sheet #3.26

April 1996



After the corrective action design (CAD) has been approved, this worksheet should be submitted on an annual schedule. If an active remediation system has been installed, the "Corrective Action Design System Monitoring Worksheet" fact sheet #3.31 should be submitted along with this worksheet. The "Corrective Action Design System Monitoring Worksheet" documents data collection of system emissions and operating parameters, as well as any changes to the system.

Under certain circumstances MPCA staff may request submittal of the monitoring information on a quarterly schedule. This should be conducted according to fact sheet 3.25 "Quarterly Monitoring Report."

Site name and address:

Union Coop Oil Property
Main Street
Hector, Minnesota 55342

MPCA Leak Number:

LEAK #:0068

Date submitted:

7/31/98

Section I. DISCUSSION

Discuss the results of the monitoring performed since the remedial investigation (RI) report or the last progress report has been submitted. Include any notable trends in the discussion.

A gasisz conducted quarterly (ie, 9/4/97, 12/15/97, 3/16/98 and 6/11/98) groundwater quality and vapor monitoring.



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If vapor impacts were reported during the remedial investigation, discuss the results of the vapor monitoring survey completed during this reporting period. Include in your discussion the sampling instrument and sampling method.

Vapor surveys were conducted during the quarterly sampling events, no vapor were detected.

NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the Minnesota Duty Officer (24 hours) at 612/649-5451 (metro and outside Minnesota) or 1-800-422-0798 (Greater Minnesota). TTY users call 612/297-5353 (V/TTY) or 1-800-627-3529 (V/TTY).

Section II. RECOMMENDATIONS

The recommendations section should present recommendations for additional corrective action, modifications to corrective action, additional monitoring or site closure. If cleanup goals have been achieved at the site, recommendations for termination of corrective actions may be presented.

Agassiz recommends continued quarterly groundwater quality and vapor surveys until those values within the impacted wells falls below 100 ppb, at that time Agassiz will submit a report with a request for site closure.

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Section III. TABLES

TABLE 1 GROUNDWATER ANALYTICAL DATA

Well Number	Date	Benzene	Toluene	Ethyl Benzene	Xylene	GRO*	DRO*	Lead*
MW-1	3/23/94	1596	1077	214	681	8.8	0.5	NA
	8/23/94	222	10.6	BDL	604	3.90	0.6	NA
	11/11/94	7520	913	451	1340	17.5	1.0	NA
	2/8/95	8170	2010	582	2460	27.0	NA	<0.005
	5/8/95	18900	17000	1650	9050	81.4	NA	0.015
	8/24/95	10000	9360	1540	7330	57.1	2.23	0.004
	12/4/95	8850	9140	1210	6110	46.1	2.6	<0.004
	3/13/96	5080	5520	1020	4920	28.0	14.8	<0.005
	6/21/96	12600	8180	1290	6070	50.1	3.7	<0.004
	12/10/96	13600	12600	1580	7890	47.9	9.5	<0.004
3/9/96	11600	11700	1330	7570	44.6	20.9	<0.004	
6/3/97	15800	11600	1610	7810	55.2	7.8	<0.004	
9/4/97	5390	3880	480	2850	19.2	1.7	<0.005	
12/15/97	11500	7140	1490	6750	45.5	4.0	<0.005	
3/16/98	9430	8640	1150	5690	41.3	7.8	0.016	
6/11/98	12200	7850	1150	4210	57.4	3.61	<0.005	

Explanation: Values reported in parts per billion; * = Reported in parts per million ; GRO= Gasoline Range Organics; DRO= Diesel Range Organics
 BDL=Below Detection Limits; NA=Not Analyzed; RW - Residential Well; TB - Trip Blank; Laboratory: Midwest Analytical Services, Inc.

TABLE 1 GROUNDWATER ANALYTICAL DATA

Well Number	Date	Benzene	Toluene	Ethyl Benzene	Xylene	GRO*	DRO*	Lead*
MW-2	3/23/94	3.7	2.9	1.3	4.1	BDL	BDL	NA
	8/23/94	BDL	BDL	BDL	BDL	BDL	BDL	NA
	11/11/94	6.5	16.8	2.6	13.6	BDL	0.1	NA
	2/8/95	4.9	1.6	1.2	5.2	BDL	NA	<0.005
	5/8/95	2.0	BDL	BDL	BDL	BDL	NA	<0.004
	8/24/95	BDL	BDL	BDL	BDL	BDL	BDL	<0.001
	12/4/95	BDL	BDL	BDL	BDL	BDL	BDL	<0.004
	3/13/96	2.5	BDL	BDL	BDL	BDL	BDL	<0.005
	6/21/96	BDL	BDL	BDL	BDL	BDL	BDL	<0.004
	12/10/96	1.9	BDL	BDL	BDL	BDL	BDL	<0.004
	3/9/96	BDL	BDL	BDL	BDL	BDL	BDL	<0.004
	6/3/97	1.3	331	10.8	51.7	1.29	BDL	<0.004
	9/4/97	2.2	BDL	BDL	BDL	BDL	BDL	<0.005
	12/15/97	11.3	BDL	BDL	BDL	BDL	BDL	<0.005
	3/16/98	39.7	BDL	BDL	BDL	BDL	BDL	<0.002
	6/11/98	BDL	BDL	BDL	BDL	BDL	BDL	<0.005

Explanation: Values reported in parts per billion; * = Reported in parts per million ; GRO= Gasoline Range Organics; DRO= Diesel Range Organics
BDL -Below Detection Limits; NA=Not Analyzed; RW - Residential Well; TB - Trip Blank; Laboratory: Midwest Analytical Services, Inc.

TABLE 1 GROUNDWATER ANALYTICAL DATA

Well Number	Date	Benzene	Toluene	Ethyl Benzene	Xylene	GRO*	DRO*	Lead*
MW-3	3/23/94	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	8/23/94	BDL	BDL	BDL	BDL	BDL	0.2	NA
	11/11/94	4.9	19.1	3.2	16.6	0.11	BDL	NA
	2/8/95	1.9	4.1	2.2	10.5	BDL	NA	<0.005
	5/8/95	BDL	1.1	BDL	BDL	BDL	NA	<0.004
	12/4/95	BDL	BDL	BDL	BDL	BDL	BDL	<0.004
	8/24/95	BDL	1.4	BDL	BDL	BDL	BDL	<0.001
	3/13/96	BDL	BDL	BDL	BDL	0.83	2.8	<0.005
	6/21/96	BDL	BDL	BDL	BDL	BDL	0.2	<0.004
	12/10/96	BDL	BDL	BDL	BDL	0.22	0.7	<0.004
3/9/96	BDL	BDL	BDL	BDL	BDL	1.2	<0.004	
6/3/97	BDL	1.2	BDL	BDL	0.24	0.3	<0.004	
9/4/97	BDL	BDL	BDL	BDL	0.17	0.5	<0.005	
12/15/97	BDL	BDL	BDL	BDL	BDL	0.16	<0.005	
3/16/98	BDL	BDL	BDL	BDL	0.16	0.3	<0.002	
6/11/98	BDL	BDL	1.1	BDL	0.16	0.43	<0.005	

Explanation: Values reported in parts per billion; * = Reported in parts per million ; GRO= Gasoline Range Organics; DRO= Diesel Range Organics
 BDL=Below Detection Limits; NA=Not Analyzed; RW - Residentail Well; TB - Trip Blank; Laboratory: Midwest Analytical Services, Inc.

TABLE 1 GROUNDWATER ANALYTICAL DATA

Well Number	Date	Benzene	Toluene	Ethyl Benzene	Xylene	GRO*	DRO*	Lead*
MW-4	8/23/94	22.4	31.1	2.75	25.3	BDL	BDL	NA
	9/22/94	BDL	BDL	BDL	BDL	BDL	BDL	NA
	11/11/94	6.9	21.9	2.8	14.8	BDL	BDL	NA
	2/8/95	BDL	0.9	2.0	5.1	BDL	NA	<0.005
	5/8/95	BDL	2.1	BDL	BDL	BDL	NA	<0.004
	8/24/95	1.1	4.2	BDL	BDL	BDL	BDL	<0.001
	12/4/95	1.8	BDL	BDL	BDL	BDL	BDL	<0.004
	3/13/96	BDL	BDL	BDL	BDL	BDL	BDL	<0.005
	6/21/96	BDL	BDL	BDL	BDL	BDL	0.1	<0.004
	12/10/96	BDL	BDL	BDL	BDL	BDL	0.2	<0.004
3/9/96	BDL	BDL	BDL	BDL	BDL	BDL	<0.004	
6/3/97	7.1	BDL	BDL	BDL	BDL	BDL	<0.004	
9/4/97	BDL	1.2	1.2	3.2	BDL	BDL	<0.005	
12/15/97	BDL	BDL	BDL	BDL	BDL	BDL	<0.005	
3/16/98	BDL	BDL	BDL	BDL	BDL	BDL	<0.002	
6/11/98	BDL	BDL	BDL	BDL	BDL	BDL	<0.005	

Explanation: Values reported in parts per billion; * = Reported in parts per million; GRO= Gasoline Range Organics; DRO= Diesel Range Organics
 BDL=Below Detection Limits; NA=Not Analyzed; RW - Residential Well; TB - Trip Blank; Laboratory: Midwest Analytical Services, Inc.

TABLE 1
GROUNDWATER ANALYTICAL DATA

Well Number	Date	Benzene	Toluene	Ethyl Benzene	Xylene	GRO*	DRO*	Lead*
TB	11/11/94	BDL	BDL	BDL	BDL	BDL	NA	NA
TB	2/8/95	BDL	BDL	BDL	BDL	BDL	NA	NA
TB	5/8/95	BDL	BDL	BDL	BDL	BDL	NA	NA
TB	8/24/95	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	12/4/95	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	3/13/96	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	6/21/96	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	12/10/96	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	3/9/97	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	6/3/97	BDL	BDL	BDL	BDL	BDL	BDL	NA
TB	9/4/97	BDL	BDL	BDL	BDL	BDL	NA	NA
TB	12/15/97	BDL	BDL	BDL	BDL	BDL	NA	NA
TB	3/16/98	9.0	34.7	6.4	30.1	0.11	NA	NA
TB	6/11/98	BDL	BDL	BDL	BDL	BDL	NA	NA

Explanation: Values reported in parts per billion; * = Reported in parts per million; GRO = Gasoline Range Organics; DRO = Diesel Range Organics; BDL = Below Detection Limits; NA = Not Analyzed; RW - Residential Well; TB - Trip Blank; Laboratory: Midwest Analytical Services, Inc.

TABLE 2 GROUNDWATER ELEVATIONS

Monitoring Well Number	Date	Top of Casing	Depth to Water	Groundwater Elevation
MW-1	3/23/94	*****	9.16	*****
MW-1	8/23/94	101.74	9.24	92.50
MW-1	11/11/94	101.74	8.85	92.89
MW-1	2/8/95	101.74	10.36	91.38
MW-1	5/8/95	101.74	7.67	94.07
MW-1	8/22/95	101.74	7.66	94.08
MW-1	12/4/95	101.74	8.22	93.52
MW-1	3/12/96	101.74	10.43	91.29
MW-1	6/21/96	101.74	7.97	93.77
MW-1	12/10/96	101.74	8.28	93.46
MW-1	3/9/97	101.74	9.57	92.17
MW-1	6/3/97	101.74	7.67	94.07
MW-1	9/4/97	101.74	7.43	94.31
MW-1	12/15/97	101.74	8.86	92.88
MW-1	3/16/98	101.74	8.40	93.34
MW-1	6/11/98	101.74	7.33	94.41
MW-2	3/23/94	*****	9.52	*****
MW-2	8/23/94	102.11	9.47	92.69
MW-2	11/11/94	102.11	9.55	92.56
MW-2	2/8/95	102.11	10.35	91.76
MW-2	5/8/95	102.11	8.58	93.53
MW-2	8/22/95	102.11	8.78	93.33
MW-2	12/4/95	102.11	9.50	92.61
MW-2	3/12/96	102.11	10.74	91.37
MW-2	6/21/96	102.11	8.79	93.32
MW-2	12/10/96	102.11	10.38	91.73
MW-2	3/9/97	102.11	10.55	91.56
MW-2	6/3/97	102.11	9.68	92.43
MW-2	9/4/97	102.11	9.40	92.71
MW-2	12/15/97	102.11	10.41	91.70
MW-2	3/16/98	102.11	10.35	91.76
MW-2	6/11/98	102.11	9.66	92.45

Explanation: Elevations are given in feet, surveyed from a bench mark given an arbitrary value of 100.00 feet.

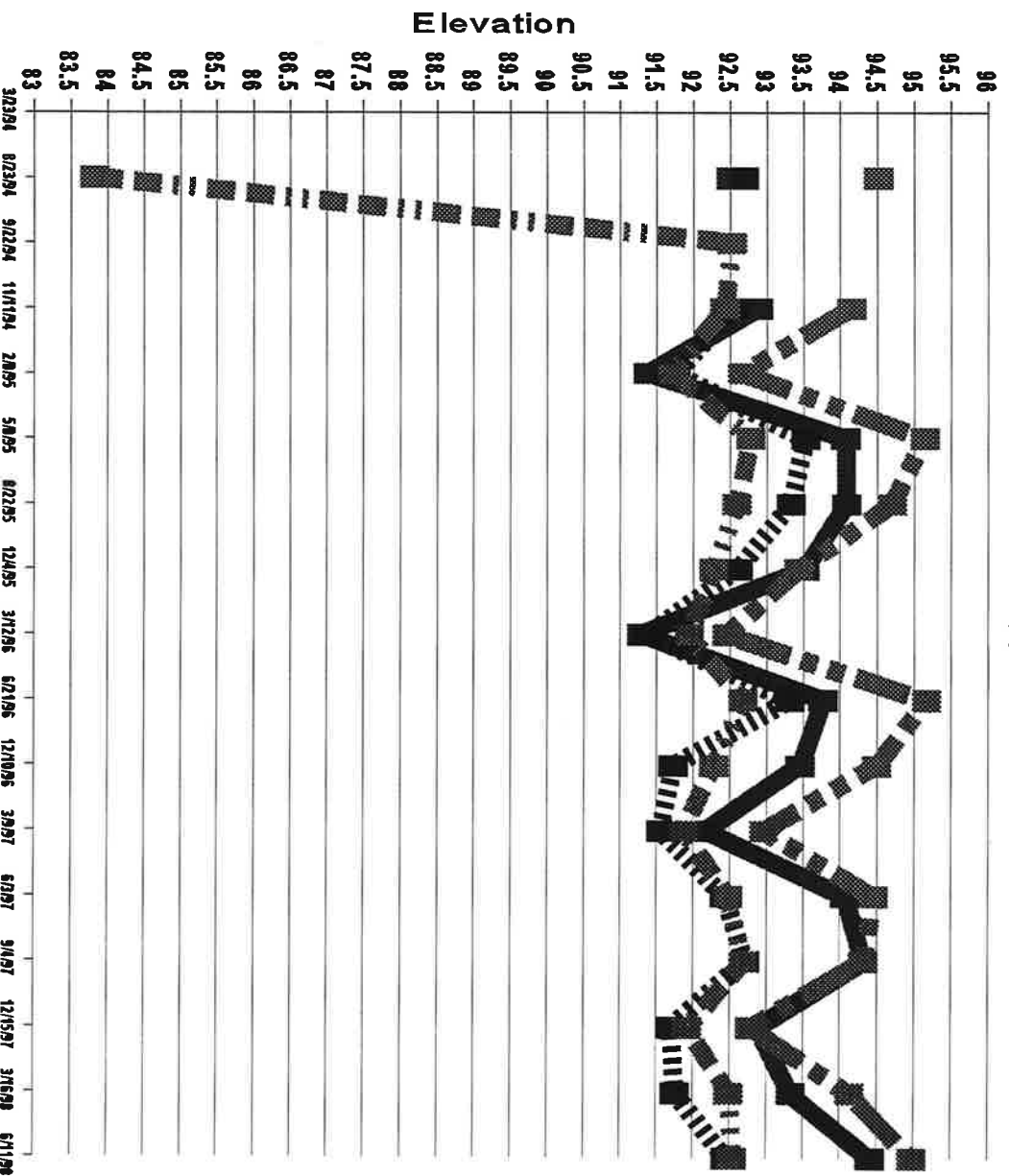
TABLE 2 GROUNDWATER ELEVATIONS

Monitoring Well Number	Date	Top of Casing	Depth to Water	Groundwater Elevation
MW-3	3/23/94	-----	DRY	NA
MW-3	8/23/94	103.02	8.51	94.51
MW-3	11/11/94	103.02	8.87	94.15
MW-3	2/8/95	103.02	10.36	92.66
MW-3	5/8/95	103.02	7.88	95.14
MW-3	8/22/95	103.02	8.32	94.70
MW-3	12/4/95	103.02	9.58	93.44
MW-3	3/12/96	103.02	10.57	92.45
MW-3	6/21/96	103.02	7.85	95.17
MW-3	12/10/96	103.02	8.53	94.49
MW-3	3/9/97	103.02	10.06	92.96
MW-3	6/3/97	103.02	8.57	94.45
MW-3	9/4/97	103.02	8.71	94.31
MW-3	12/15/97	103.02	10.24	92.78
MW-3	3/16/98	103.02	8.89	94.13
MW-3	6/11/98	103.02	8.04	94.98
MW-4	8/23/94	100.50	16.68	83.82
MW-4	9/22/94	100.50	7.98	92.52
MW-4	11/11/94	100.50	8.08	92.42
MW-4	2/8/95	100.50	8.78	91.72
MW-4	5/8/95	100.50	7.72	92.78
MW-4	8/22/95	100.50	7.91	92.59
MW-4	12/4/95	100.50	8.22	92.28
MW-4	3/12/96	100.50	8.56	91.94
MW-4	6/21/96	100.50	7.82	92.68
MW-4	12/10/96	100.50	8.22	92.28
MW-4	3/9/97	100.50	8.63	91.87
MW-4	6/3/97	100.50	8.03	92.47
MW-4	9/4/97	100.50	7.81	92.69
MW-4	12/15/97	100.50	8.58	91.92
MW-4	3/16/98	100.50	8.01	92.49
MW-4	6/11/98	100.50	7.96	92.54

Explanation: Elevations are given in feet, surveyed from a bench mark given an arbitrary value of 100.00 feet.

Table 3

GW Elevation (ft)/Time



Quarterly Sampling Date

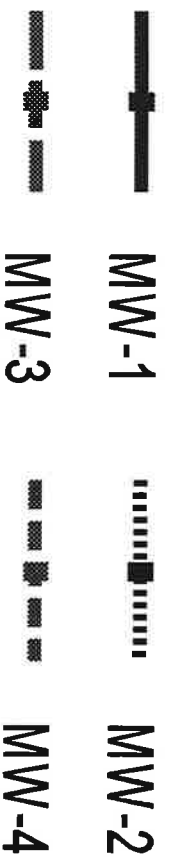
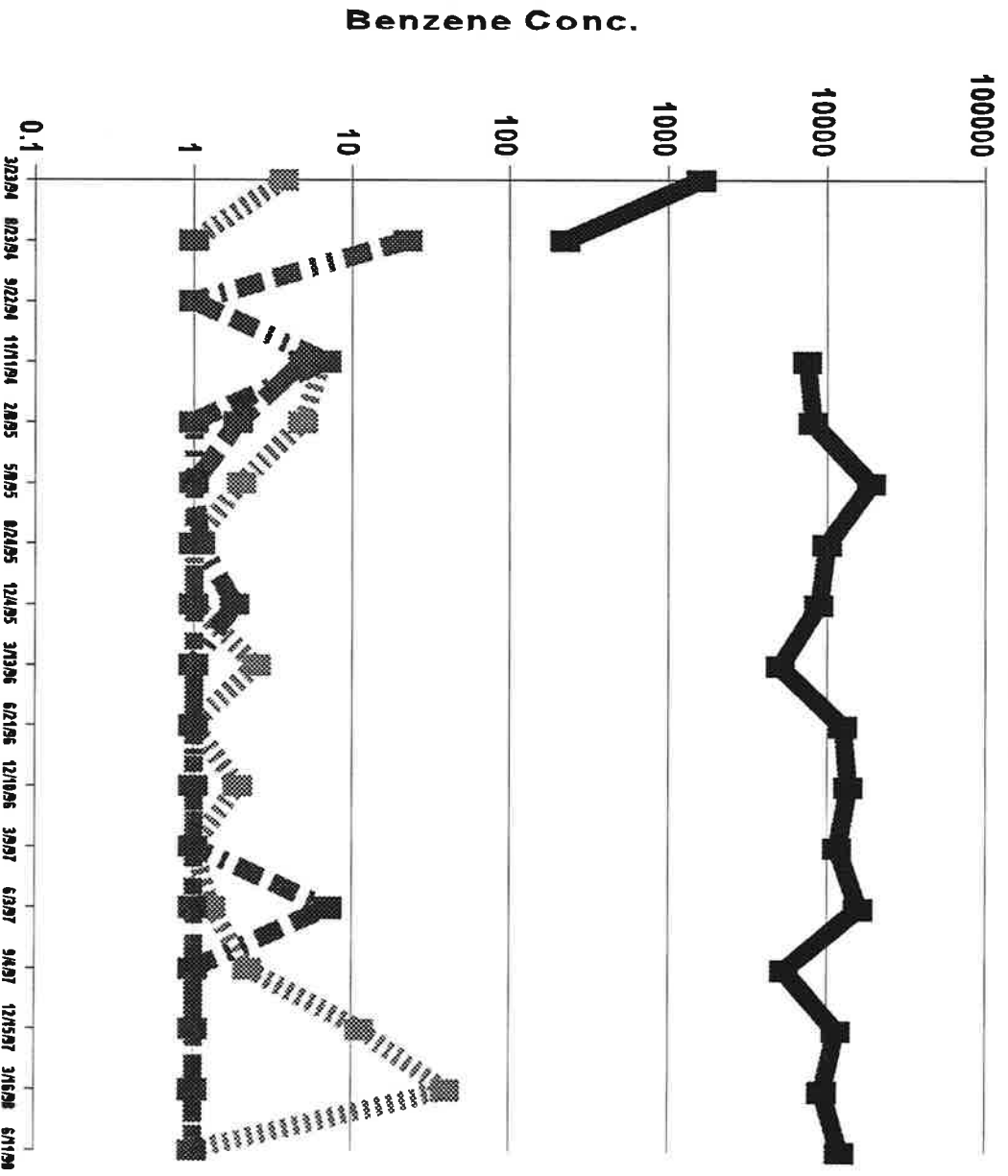


Table 4

GW Benzene Conc. (ppb)/Time



Quarterly Sampling Date

- MW-1
- MW-2
- MW-3
- MW-4

Section IV. FIGURES

Figures - (all maps must include a north arrow, scale and legend) *Approximate scales are not acceptable.*

1. Site location map. Adapt this map from a U.S. Geological Survey 7.5 minute quadrangle and identify the name of the 7.5 minute quadrangle.
2. Site map showing the locations of all groundwater and vapor monitoring points.
3. Updated ground water contour map, using water level elevations from the most recent round of water level measurements. Show all wells at the site, and differentiate wells constructed in different aquifers. Label ground water contours and elevations at each data point used for contouring.
4. Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
5. Hydrograph for all monitoring and recovery wells.
6. Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
7. Table of dissolved oxygen sample results (if collected)

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

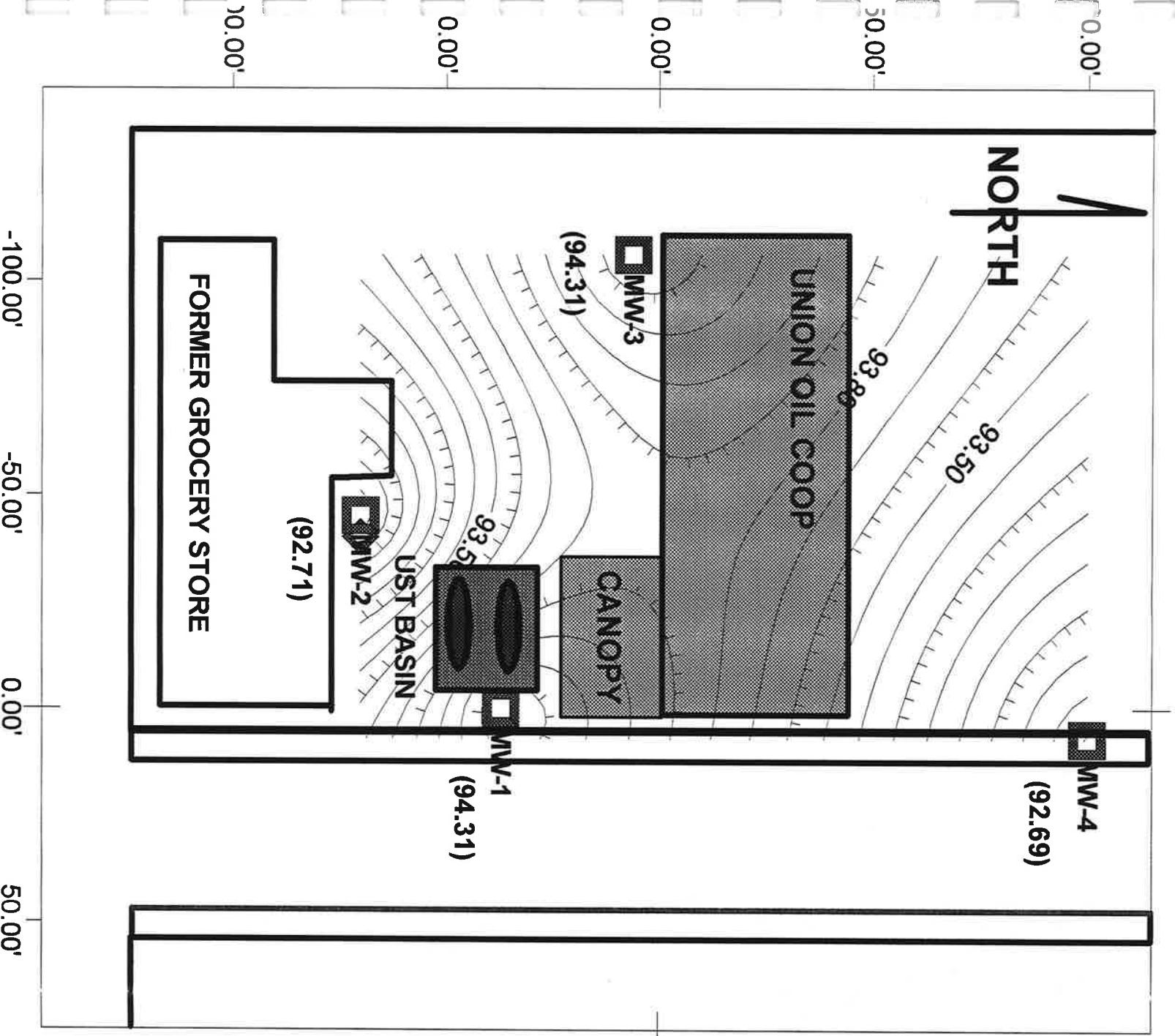


FIGURE 1 GW CONTOUR MAP - 9/4/97

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

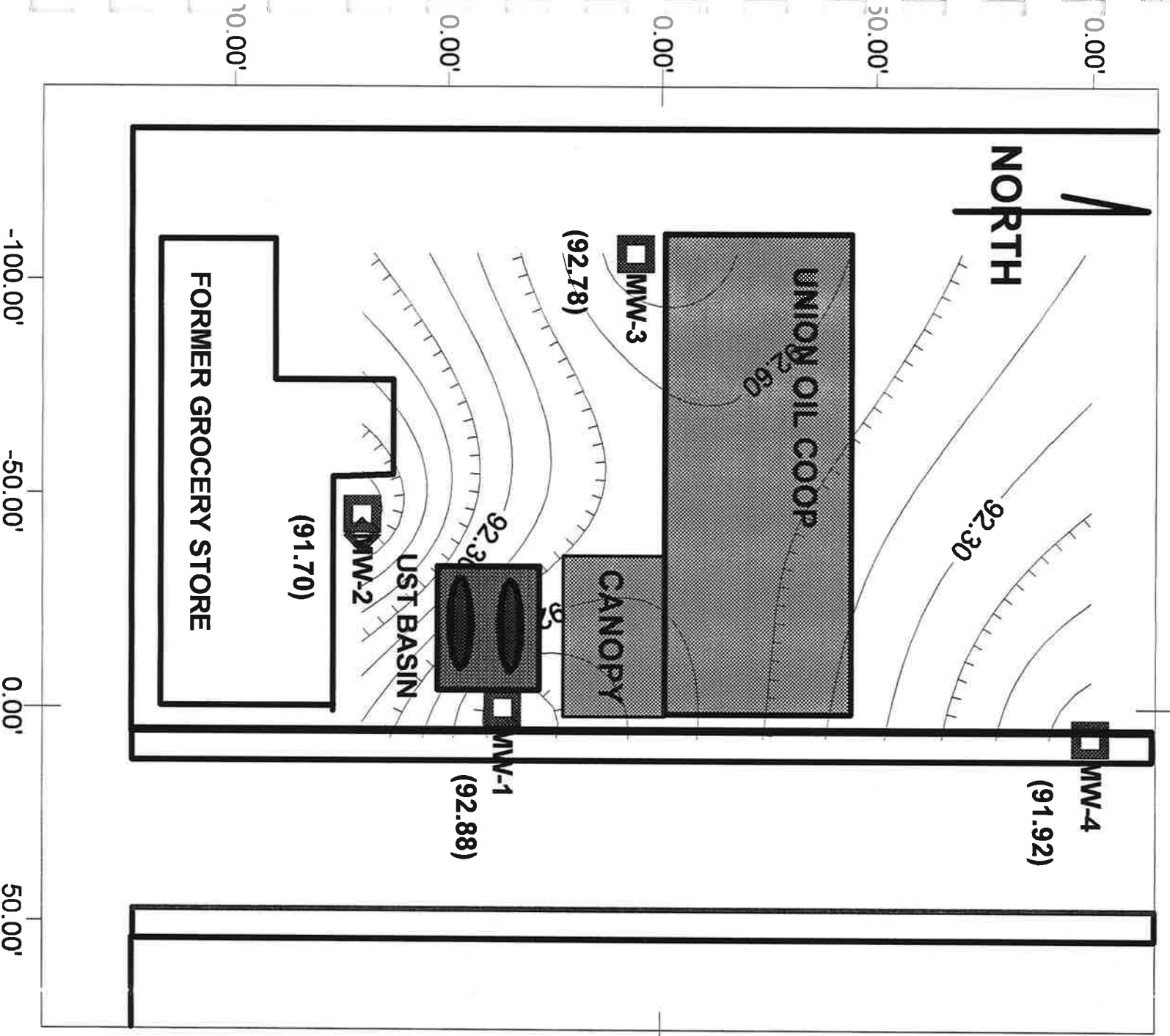


FIGURE 2 GW CONTOUR MAP - 12/15/97

1.6 ft
1.20' contour

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

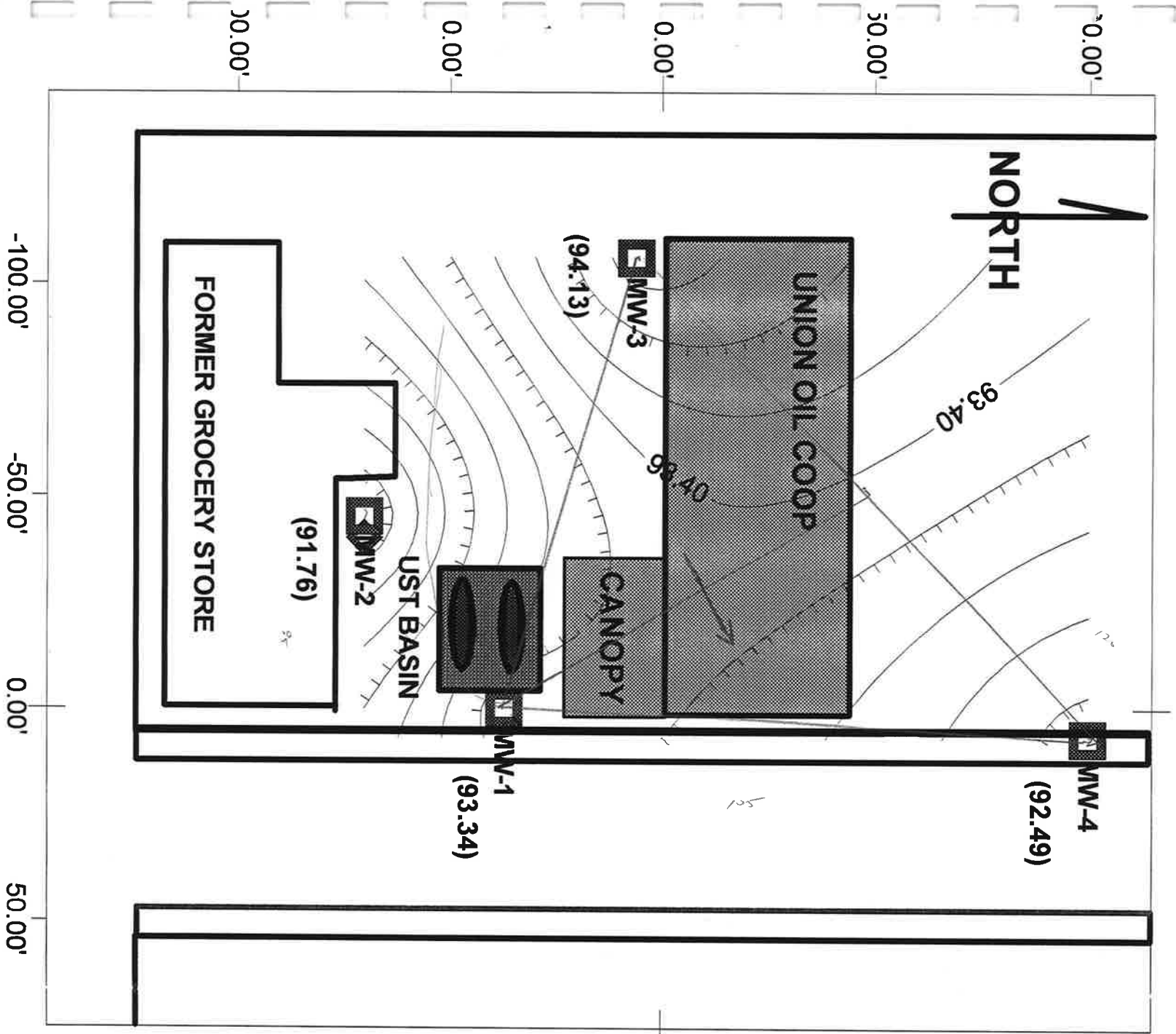


FIGURE 3 GW CONTOUR MAP - 3/16/98

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

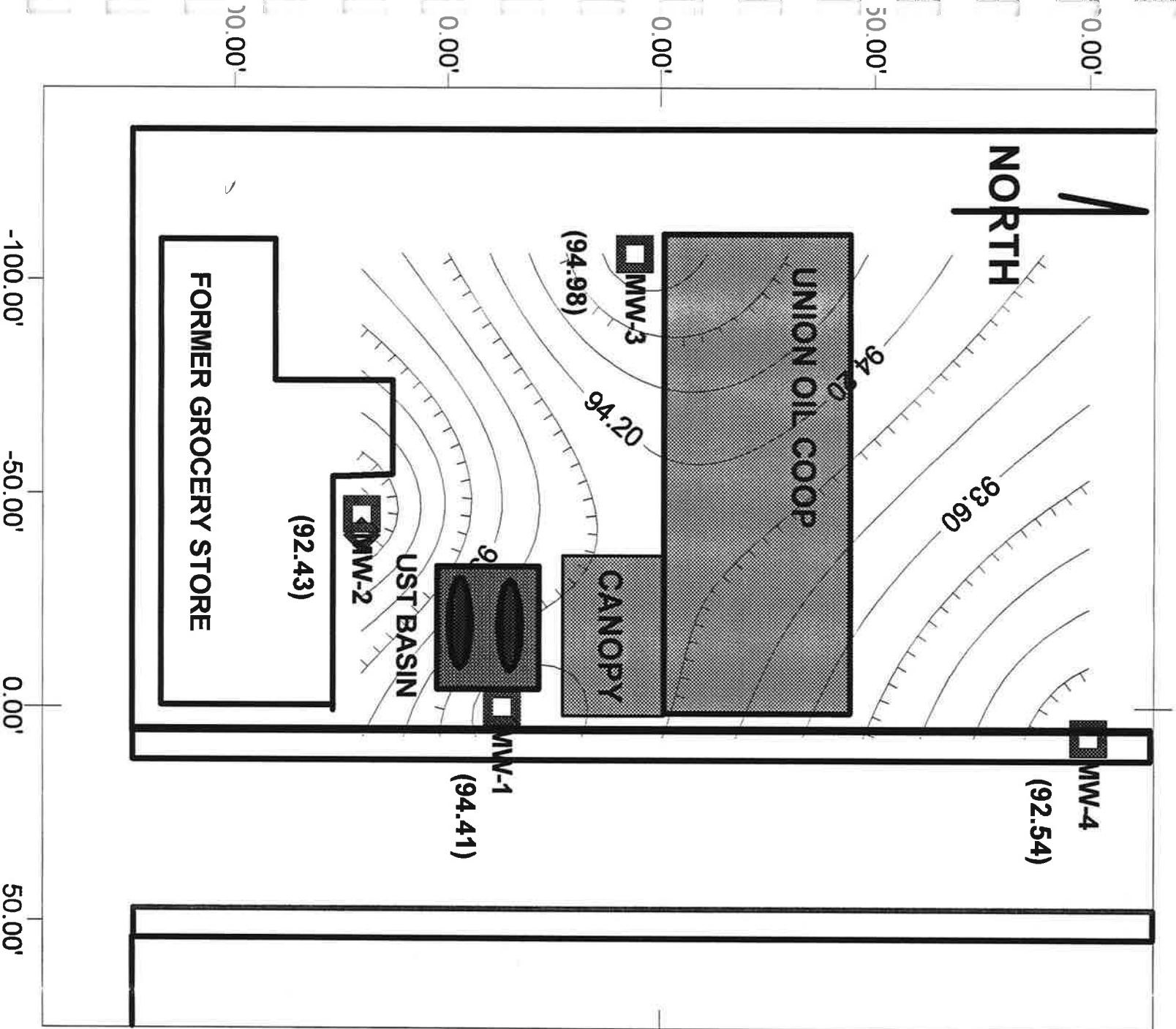


FIGURE 4 GW CONTOUR MAP - 6/11/98

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

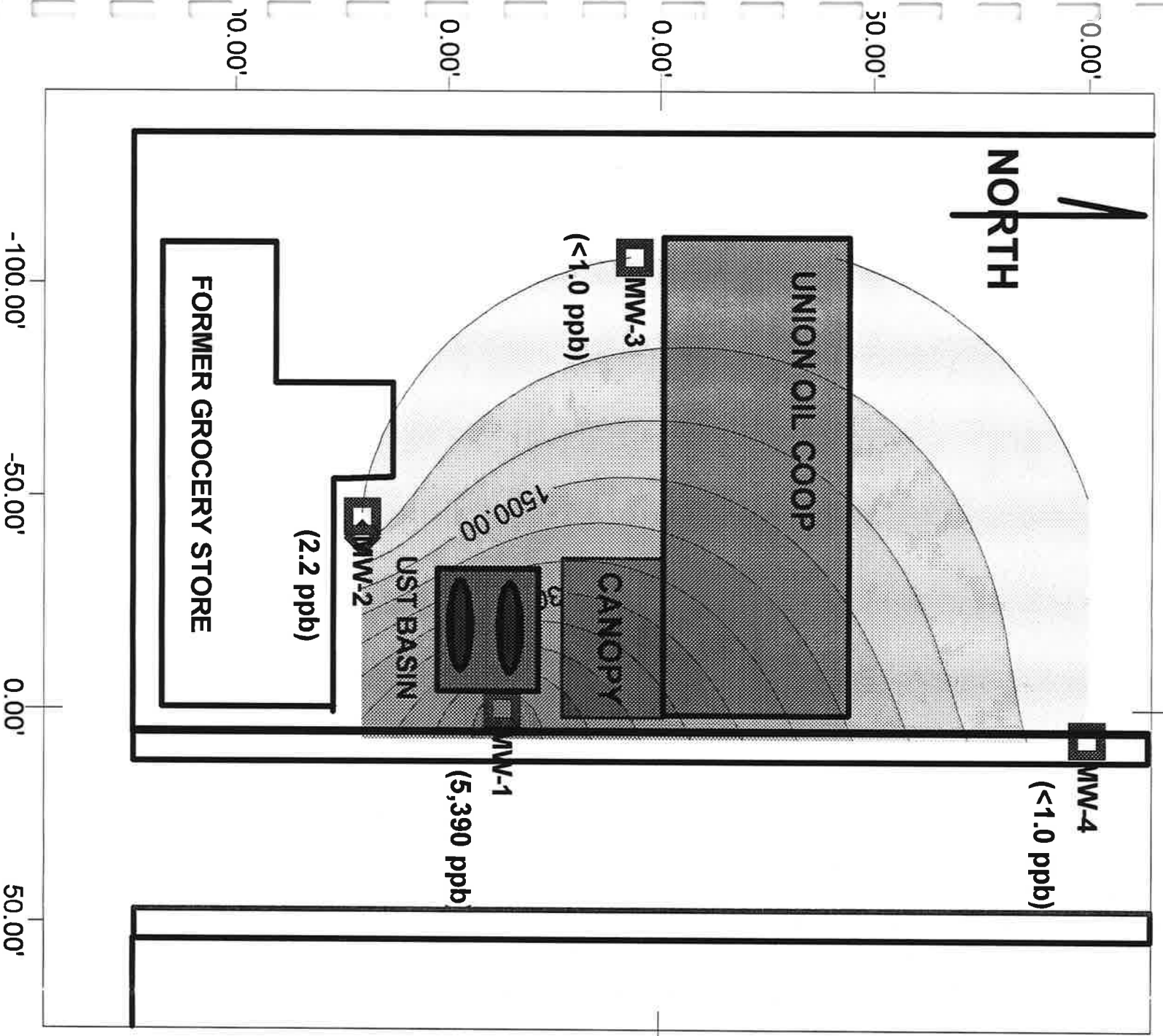


FIGURE 5 GW BENZENE CONC. MAP - 9/4/97

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

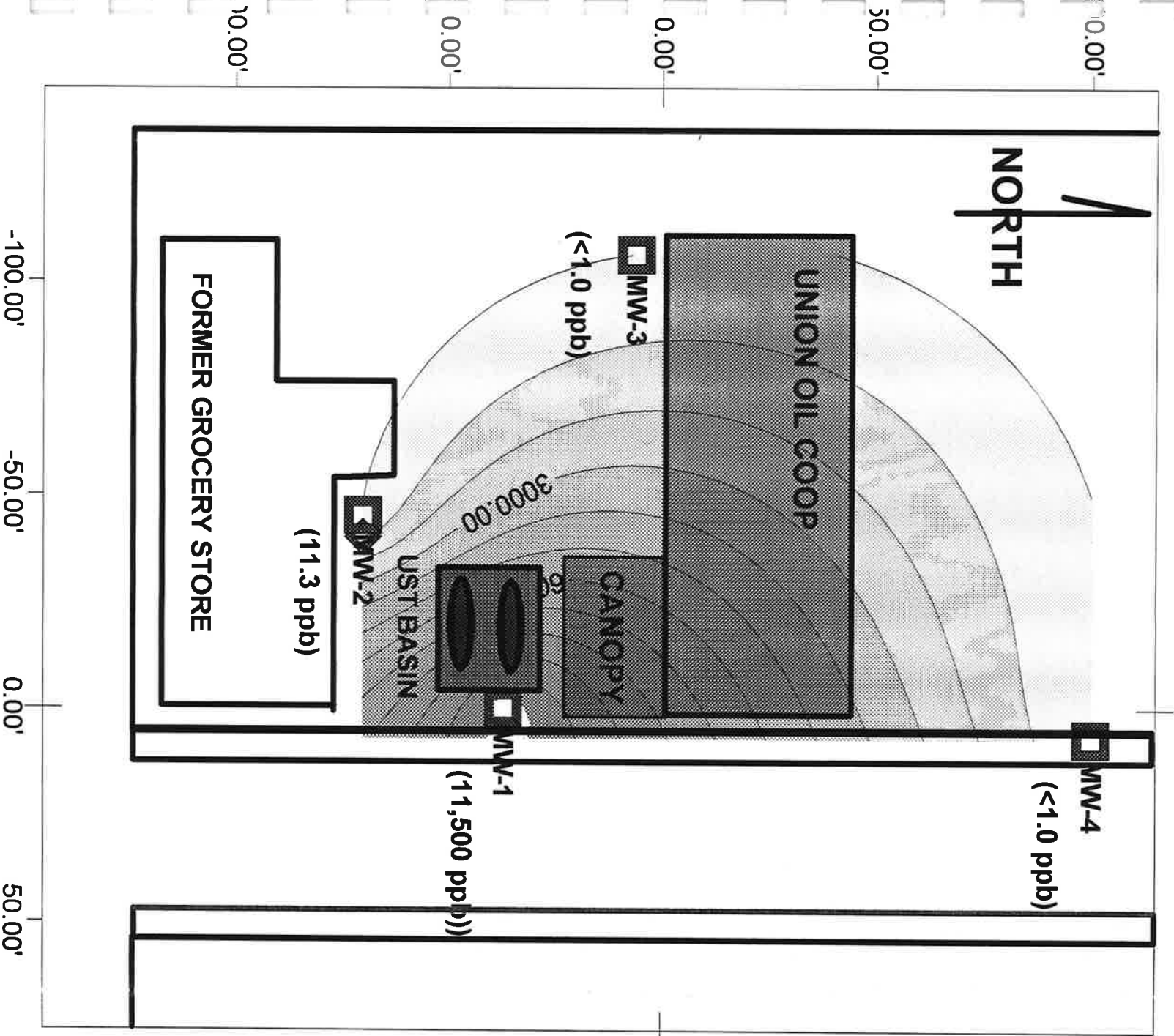


FIGURE 6 GW BENZENE CONC. MAP - 12/15/97

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

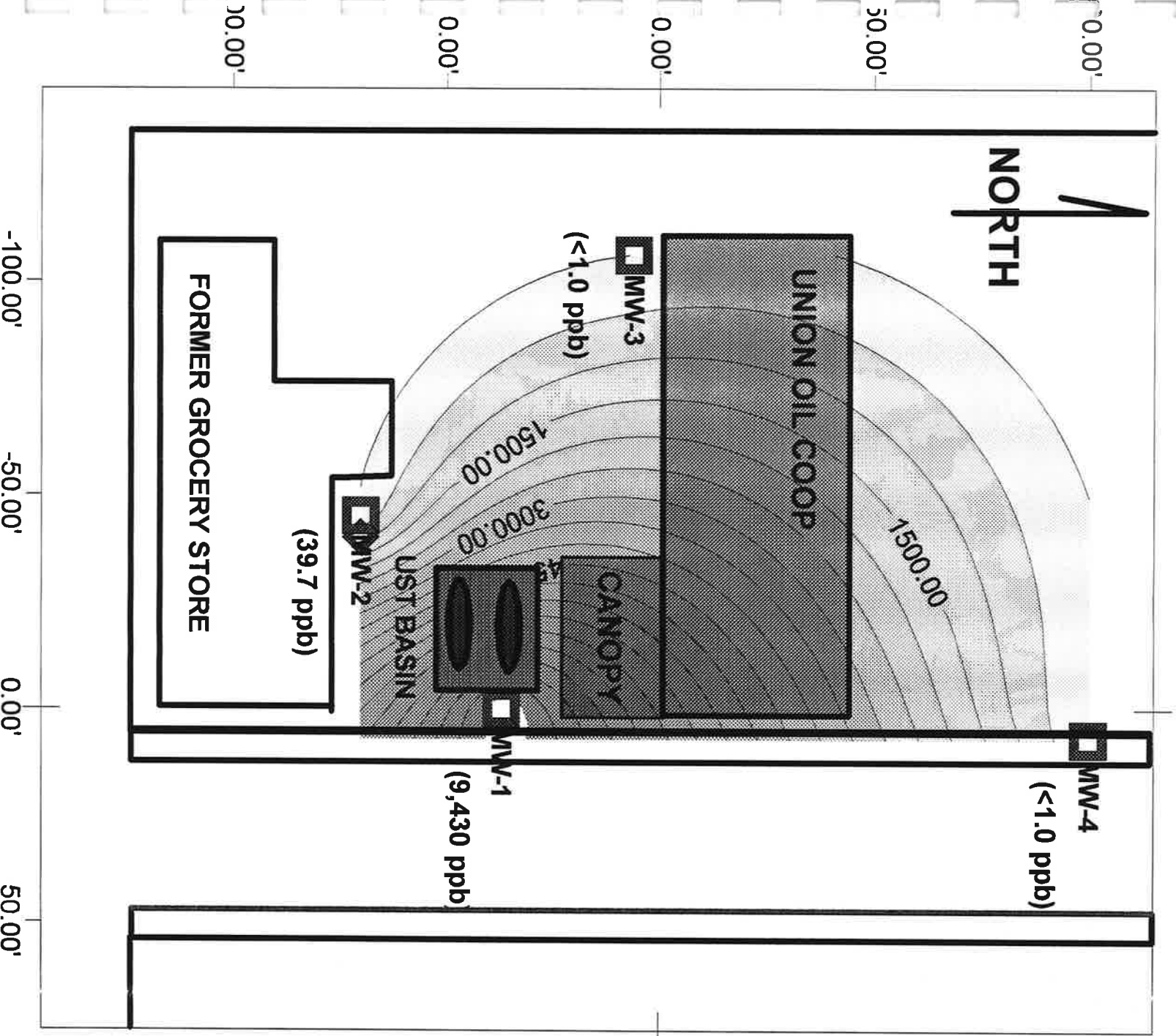


FIGURE 7 GW BENZENE CONC. MAP - 3/16/98

AGASSIZ ENVIRONMENTAL SYSTEMS, INC.

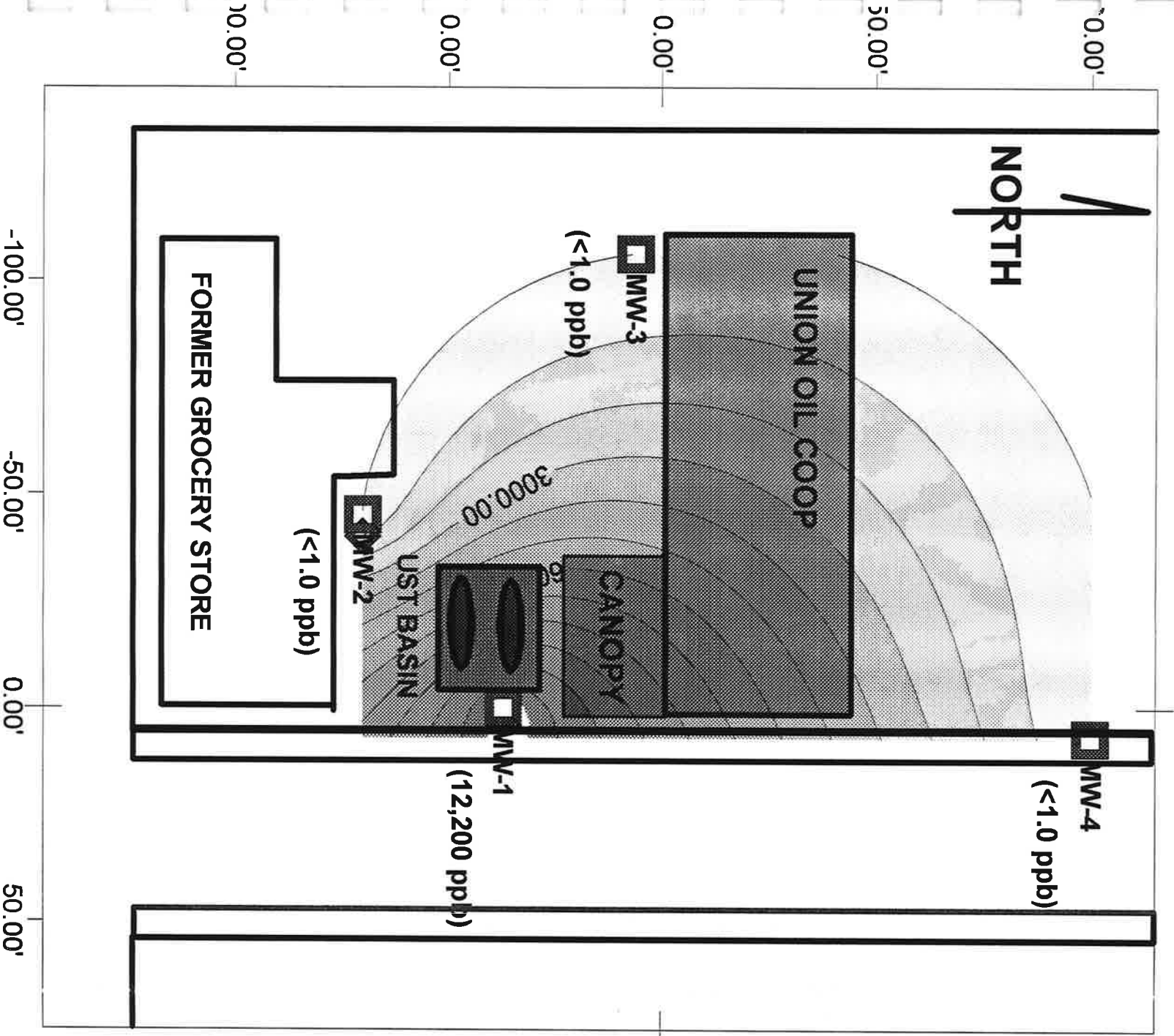
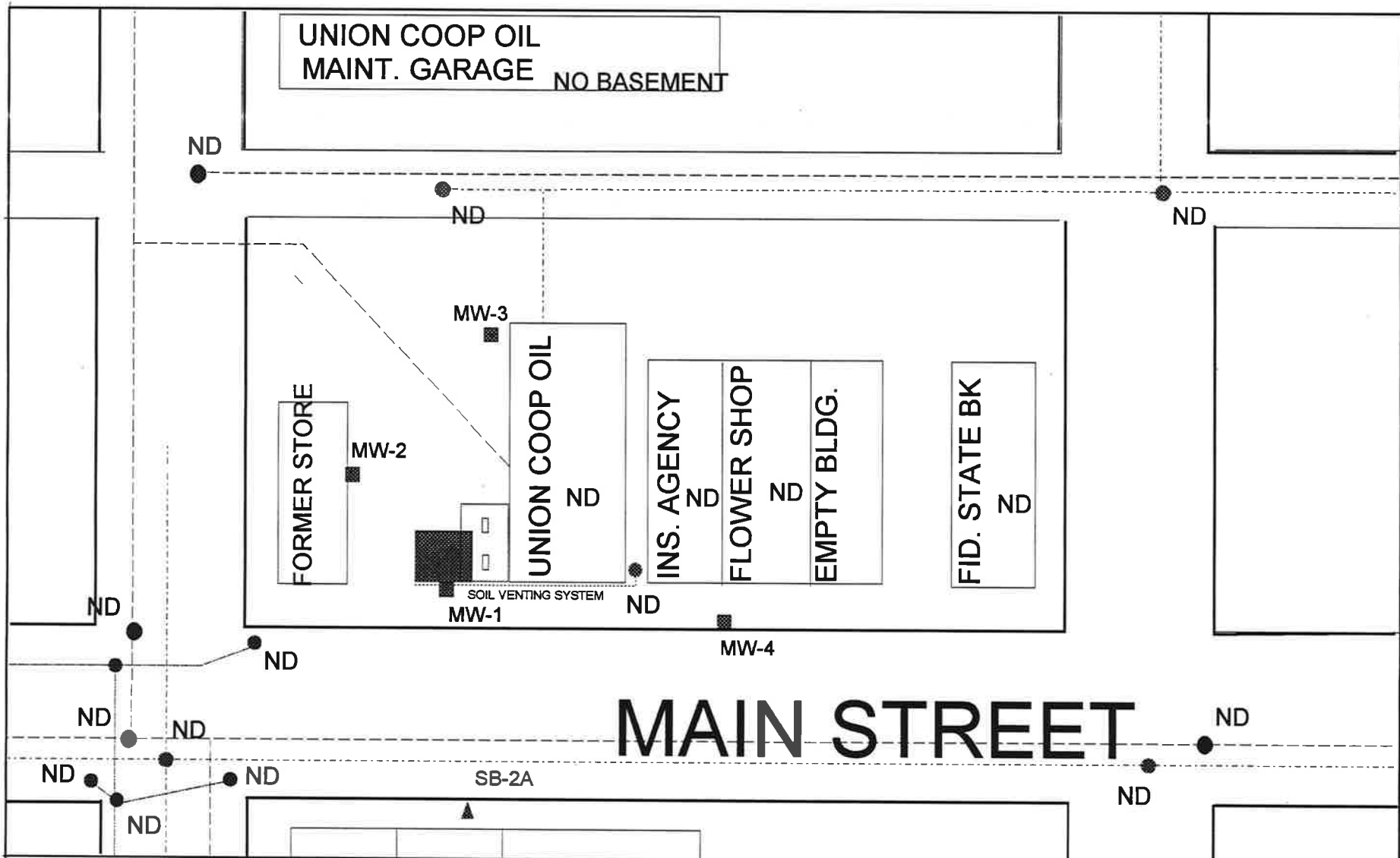


FIGURE 8 GW BENZENE CONC. MAP - 6/11/98



- - - - - SANITARY SEWERS
 ——— STORM SEWERS
 - - - - - WATER MAINS
 ■ MONITORING WELLS
 ▲ SOIL BORINGS
 ● ● ● MANHOLES/BASINS
 ■ TANK BASIN

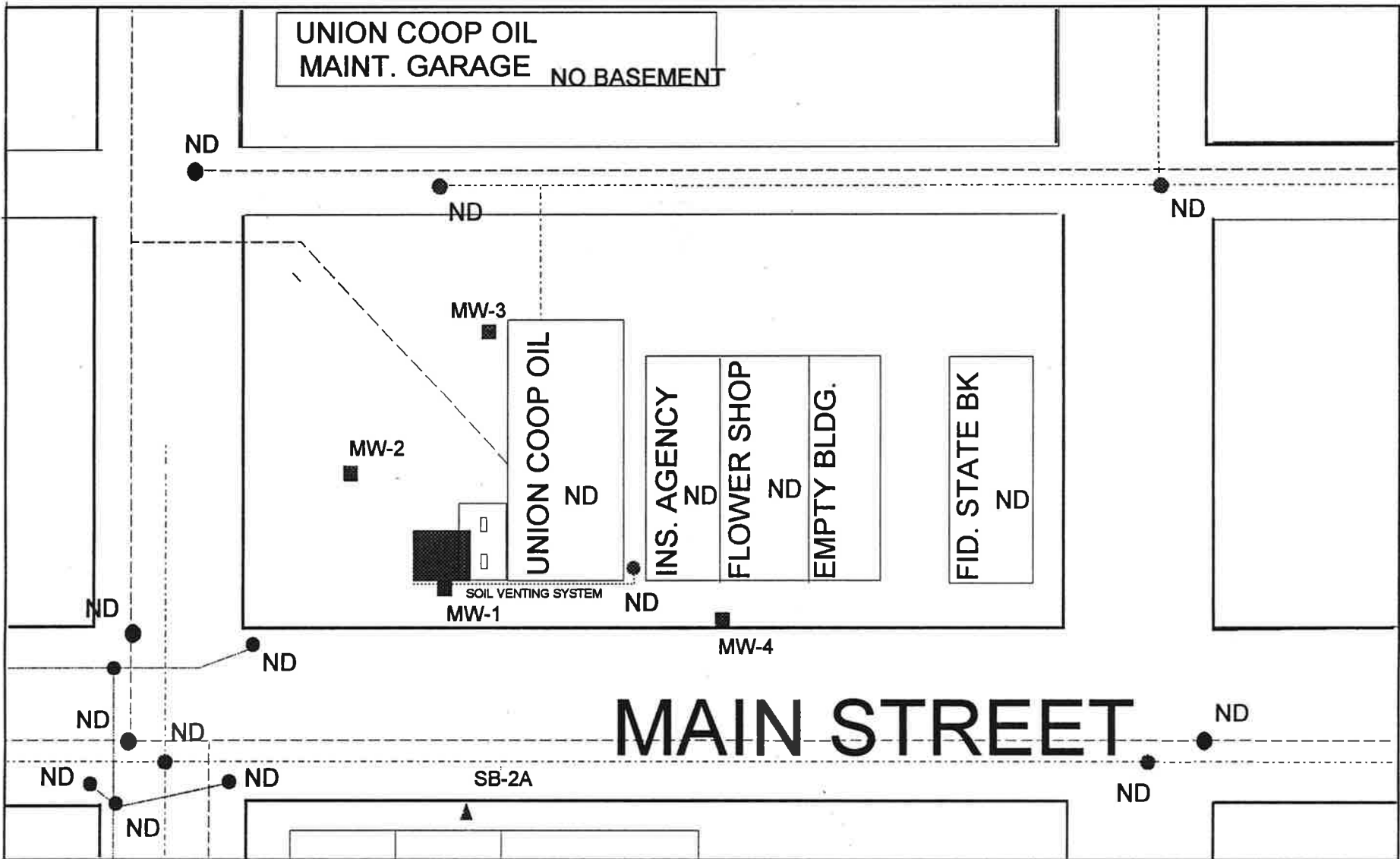
1' = 50'

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AGASSIZ ENVIRONMENTAL SYSTEMS

FIGURE:10 VAPOR SURVEY MAP - 12/15/97

PROJECT # 4002 - UNION COOP DRAWN BY: WCS DATE: 7/16/98



- - - - - SANITARY SEWERS
 - - - - - STORM SEWERS
 - - - - - WATER MAINS
 ■ MONITORING WELLS
 ▲ SOIL BORINGS
 ● ● ● MANHOLES/BASINS
 ■ TANK BASIN

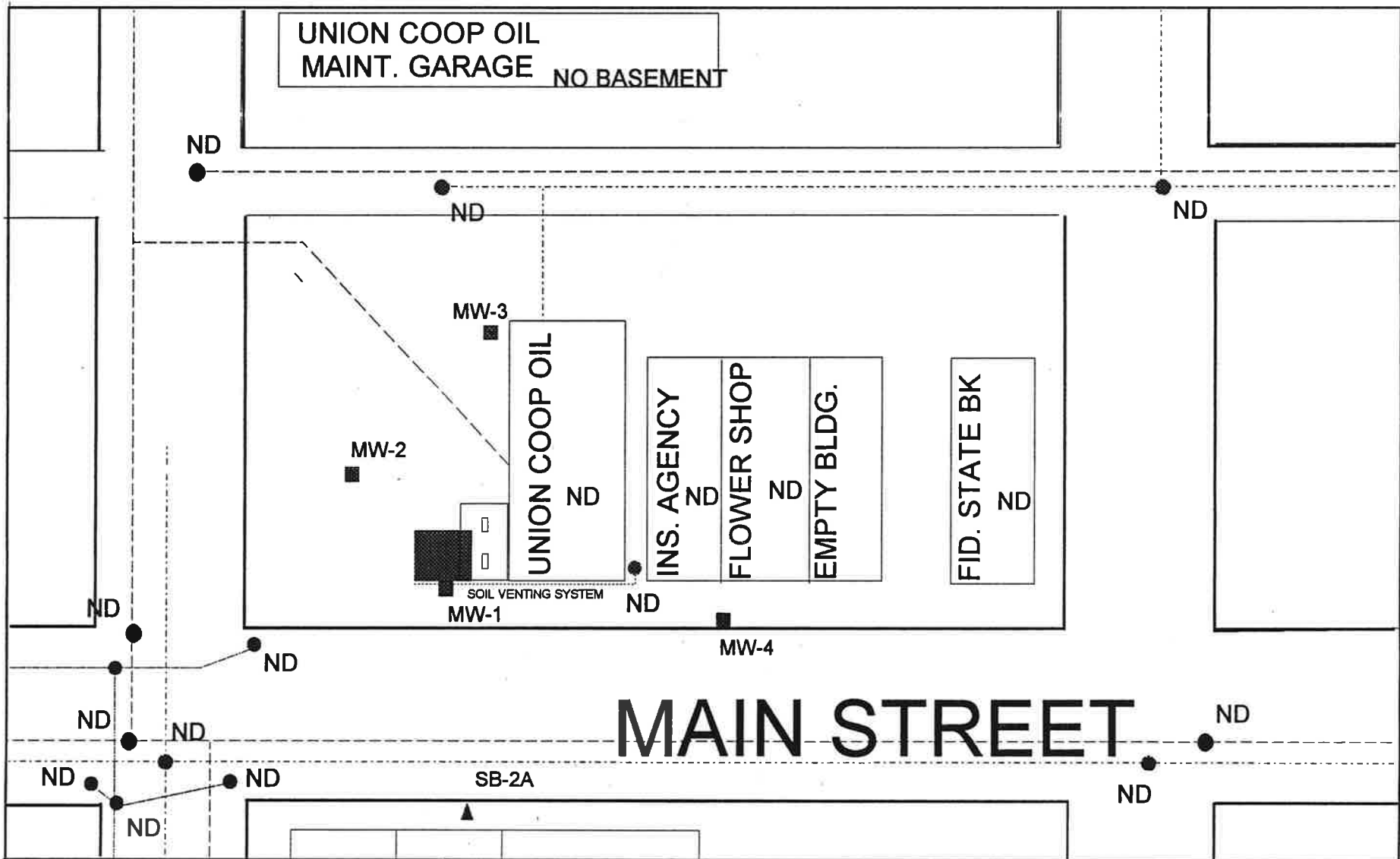
1' = 50'

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AGASSIZ ENVIRONMENTAL SYSTEMS

FIGURE:11 VAPOR SURVEY MAP - 3/16/98

PROJECT # 4002 - UNION COOP DRAWN BY: WCS DATE: 7/16/98



MAIN STREET

- SANITARY SEWERS
- STORM SEWERS
- WATER MAINS
- MONITORING WELLS
- ▲ SOIL BORINGS
- ● ● MANHOLES/BASINS
- TANK BASIN

1' = 50'

AGASSIZ ENVIRONMENTAL SYSTEMS

FIGURE:12 VAPOR SURVEY MAP - 6/11/98

PROJECT # 4002 - UNION COOP

DRAWN BY: WCS

DATE: 7/16/98

April 1994

Section V. APPENDICES

The appendices section of the report contains sufficient information to document all activities completed since the last report. All reproduced data must be legible. In general this should include all applicable information required for the Appendices section of a RI report.

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TTY users call 612/282-5332 or 1-800-657-3864 (voice/TTY).

Printed on recycled paper containing at least 10 percent fibers from paper recycled by consumers.

SAMPLING DATA

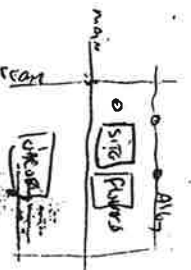
PROJECT #: 4002 - HECTON CO. OF CREEK Jim Blunke
 DATE: 6-11-98 WEATHER SERVICE: OVERCAST 65°F

MW-1				
	TOC to Total	20.95	- TOC to Water: 7.33	= Total Water:
	Total Water:	13.62	X .163 X 5 = 11.10	(Water to be removed)
MW-2				
	TOC to Total	22.03	- TOC to Water: 9.66	= Total Water:
	Total Water:	12.37	X .163 X 5 = 10.08	(Water to be removed)
MW-3				
	TOC to Total	21.35	- TOC to Water: 8.04	= Total Water:
	Total Water:	13.31	X .163 X 5 = 10.85	(Water to be removed)
MW-4				
	TOC to Total	18.44	- TOC to Water: 7.96	= Total Water:
	Total Water:	10.48	X .163 X 5 = 8.54	(Water to be removed)
MW-5				
	TOC to Total		- TOC to Water:	= Total Water:
	Total Water:		X .163 X 5 =	(Water to be removed)
MW-6				
	TOC to Total		- TOC to Water:	= Total Water:
	Total Water:		X .163 X 5 =	(Water to be removed)
MW-7				
	TOC to Total		- TOC to Water:	= Total Water:
	Total Water:		X .163 X 5 =	(Water to be removed)
MW-8				
	TOC to Total		- TOC to Water:	= Total Water:
	Total Water:		X .163 X 5 =	(Water to be removed)

COC # 25641 (GRD-BTEX-MTBE, DRD, Diss Pb)

WATER SAVERY RESULTS: UTILITIES ON MAIN: CEMX STORM-C-6^s, MANHOLES NO SAMPLING NO

SAMPLING
 TELEPHONE
 C-B IN PARKING LOT NEAR MW-3 NO
 MANHOLE IN ALLEY NO CATCH BASIN IN ALLEY NO
 CEMEX BASIN NO FLOWERS BY JURY NO IN BASIN.
 JACOBY DRIVE NO AT ORIGIN



RECEIVED JUL - 6 1998

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008
LAB (612) 689-2175
METRO (612) 444-9270
FAX (612) 689-3660



LAKES SUPERIOR LABORATORIES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



205 WEST 2ND STREET
SUITE 105
DULUTH, MN 55802
LAB (218) 722-9884
FAX (218) 722-9964

Analytical Report

June 26, 1998

Bill Storm
Agassiz Environmental Systems, Inc.
29385 Isabel Street
Chisago City, MN 55013

Chain of Custody

Project ID: 4002-Hector CO-OP
Chain of Custody: 25641
Date Received: 6/12/98 1:57:57 PM by Katie Christenson

Sample Information

SampleID	Description	Date	Matrix
30196	MW-1	6/11/98	Water
30197	MW-2	6/11/98	Water
30198	MW-3	6/11/98	Water
30199	MW-4	6/11/98	Water
30200	Trip Blank	6/11/98	Water

Analytical results are listed on the following page(s).

Reviewed By

Brian Anderson

Brian Anderson
Lead Inorganic Chemist

Chad Holzmagel

Chad Holzmagel
Operations Manager

MIDWEST ANALYTICAL SERVICES

June 26, 1998

Page 2

COC 25641

Date Analyzed: 06-17-98

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO	
						(µg/L)	(µg/L)
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)
MDL:	10.0	1.0	1.0	1.0	3.0	0.1	0.1
30196 MW-1	274	12200	7850	1150	4210	57.4	3.61
30197 MW-2	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30198 MW-3	BDL	BDL	BDL	1.1	BDL	0.16	0.43
30199 MW-4	BDL	BDL	BDL	BDL	BDL	BDL	BDL
30200 Trip Blank	BDL	BDL	BDL	BDL	BDL	BDL	

Parameter:	Dissolved Lead (mg/L)	Date Analyzed
30196 MW-1	< 0.005	06-17-98
30197 MW-2	< 0.005	06-17-98
30198 MW-3	< 0.005	06-17-98
30199 MW-4	< 0.005	06-17-98

BDL = Below Detection Limit; MDL = Method Detection Limit



330 SO. CLEVELAND ST.
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**CHAIN OF CUSTODY RECORD
AND
REQUEST FOR ANALYSIS**

(Instructions on Back of Form)

DULUTH OFFICE:
205 WEST 2ND STREET
DULUTH, MN 55802
PHONE (218) 722-9884
FAX (218) 722-9964

NO 25641

CLIENT: **AGASSIZ ENVIRONMENTAL**
 NAME: **Jim Blumke**
 PROJECT ID: **4002 - IICOR CO OP**
 REPORTS TO BE SENT TO: **Bill Stark**
 REMARKS:

NO. OF CONTAINERS	COMP.	GRAB	DATE	TIME	MATRIX			SAMPLE NO.	LABORATORY I.D. NO.	SAMPLE IDENTIFICATION
					WATER	SOIL	OTHER			
5	X	4/11			X				30196	NW 1
5	X				X				30197	NW-2
5	X				X				30198	NW-3
5	X				X				30199	NW 4
1	X				X				30200	TRIP Blank

DATE REQUIRED	TURNAROUND TIME REQUIRED:	REFINISHED BY: (Signature)	DATE / TIME	REFINISHED BY: (Signature)	DATE / TIME	REFINISHED BY: (Signature)	DATE / TIME	REFINISHED BY: (Signature)	DATE / TIME
<input type="checkbox"/> NORMAL <input type="checkbox"/> RUSH	<input type="checkbox"/> WATER DETECTION LIMITS								

Comments: **Client Temperature**
 Date / Time: **5-12-11**
 Received for Laboratory by: (Signature) **James Blumke**
 Received by: (Signature) _____
 Date / Time _____
 Received by: (Signature) _____
 Date / Time _____
 Received by: (Signature) _____
 Date / Time _____

DATE REQUIRED

TURNAROUND TIME REQUIRED:
 NORMAL RUSH

CHECK HERE FOR DRINKING WATER DETECTION LIMITS

SHADED AREAS FOR LABORATORY USE ONLY

PRESERVATIVE	OTHER	ICE	H ₂ SO ₄	HNO ₃	HCl	OTHER	MTBE	Fcol. or Tcol.	TSS	BOD or CBOD	RCRA 8 METALS	Pb (Dis) or Total	pH	VOC (MNH45)	BTEX	DRO	GRO (Include BTEX)
		X			X		X					X				X	X
		X			X							X				X	X
		X			X							X				X	X
		X			X							X				X	X
		X			X							X				X	X

Sample

SAMPLING DATA

PROJECT #: 4002 - Hector Cop
 DATE: 3-16-88
 CREW: Jim Blumke
 WEATHER SERVICE: Cloudy, 33°F

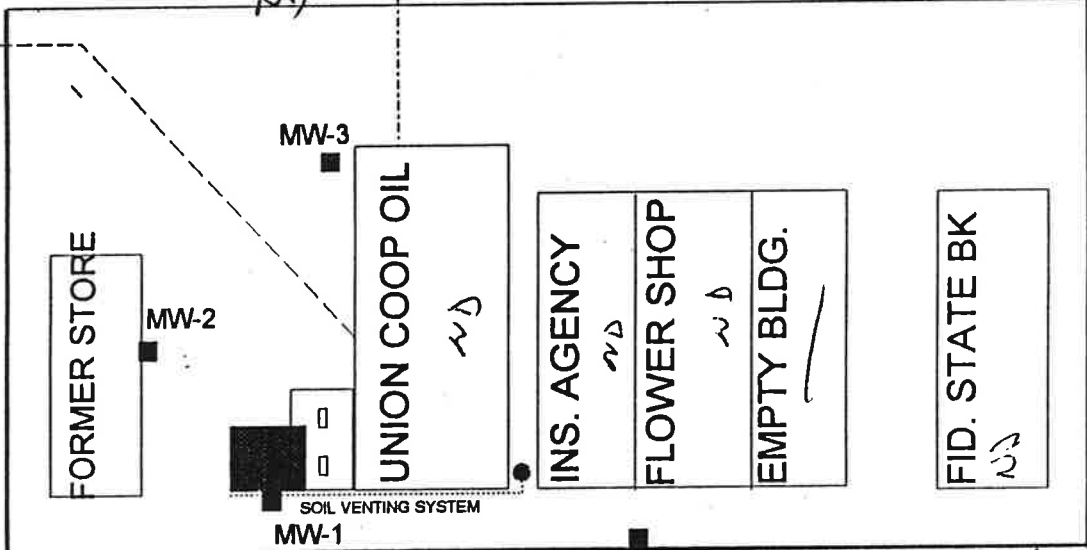
MMW-1	TOC to Total	20.95	-TOC to Water: 8.40	= Total Water:
	Total Water:	12.55	X .163 X 5= 10.23	(Water to be removed)
MMW-2	TOC to Total	22.03	-TOC to Water: 10.35	= Total Water:
	Total Water:	11.68	X .163 X 5= 9.52	(Water to be removed)
MMW-3	TOC to Total	21.35	-TOC to Water: 8.84	= Total Water:
	Total Water:	12.46	X .163 X 5= 10.15	(Water to be removed)
MMW-4	TOC to Total	18.44	-TOC to Water: 8.01	= Total Water:
	Total Water:	10.43	X .163 X 5= 8.50	(Water to be removed)
MMW-5	TOC to Total		-TOC to Water:	= Total Water:
	Total Water:		X .163 X 5=	(Water to be removed)
MMW-6	TOC to Total		-TOC to Water:	= Total Water:
	Total Water:		X .163 X 5=	(Water to be removed)
MMW-7	TOC to Total		-TOC to Water:	= Total Water:
	Total Water:		X .163 X 5=	(Water to be removed)
MMW-8	TOC to Total		-TOC to Water:	= Total Water:
	Total Water:		X .163 X 5=	(Water to be removed)

Code # 24665 (GRO, MTR, OR, diss Pl)

MMW 4 (Main ST)

40 403 402

UNION COOP OIL
MAINT. GARAGE NO BASEMENT



MAIN STREET

SB-2A

- SANITARY SEWERS
- STORM SEWERS
- WATER MAINS
- MONITORING WELLS
- ▲ SOIL BORINGS
- ● ● MANHOLES/BASINS
- TANK BASIN

1' = 50'

AGASSIZ ENVIRONMENTAL SYSTEMS

3-16-98 VAPOR SURVEY PID

PROJECT # 4002 - UNION COOP JMB

330 SO. CLEVELAND ST.
PO. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

LAB
METRO
FAX

(612) 689-2175
(612) 444-9270
(612) 689-3660

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156



Analytical Report

March 30, 1998

Bill Storm
Agassiz Environmental Systems, Inc.
29385 Isabel Street
Chicago City, MN 55013

RECEIVED APR - 1 1998

Chain of Custody


Project ID: 4002 - Hector Coop
Chain of Custody: 24665
Date Received: 3/17/98 2:12:51 PM by Chad Holznagel


Sample Information

SampleID	Description	Date	Matrix
26420	MW-1	3/16/98	Water
26421	MW-2	3/16/98	Water
26422	MW-3	3/16/98	Water
26423	MW-4	3/16/98	Water
26424	Trip Blank	3/16/98	Water

Analytical results are listed on the following page(s).

Reviewed By


Brian Anderson
Lead Inorganic Chemist


Lon Jones
Organics Group Leader

MIDWEST ANALYTICAL SERVICES

March 30, 1998

Page 2

COC 24665

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)
MDL:	10.0	1.0	1.0	1.0	3.0	0.1
26420 MW-1	<500	9430	8640	1150	5690	41.3
26421 MW-2	11.6	39.7	BDL	BDL	BDL	BDL*
26422 MW-3	BDL	BDL	BDL	BDL	BDL	0.16
26423 MW-4	BDL	BDL	BDL	BDL	BDL	0.3
26424 Trip Blank	BDL	9.0	34.7	6.4	30.1	0.11

BDL = Below Detection Limit, MDL = Method Detection Limit

* = Peaks present in range but below detection limit

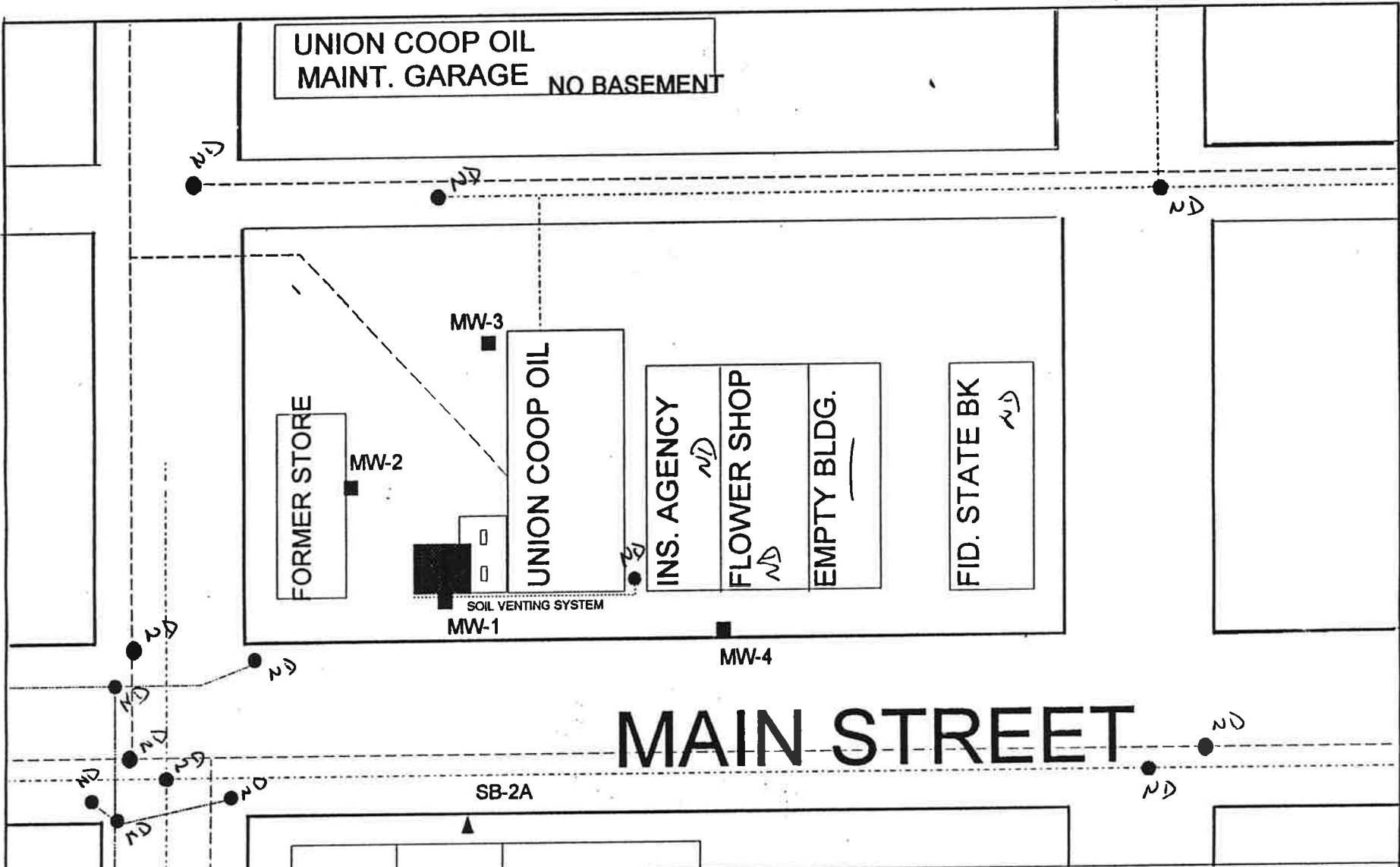
Parameter	Dissolved Lead (mg/L)	Date Analyzed
26420 MW-1	0.016	03-24-98
26421 MW-2	<0.002	03-24-98
26422 MW-3	<0.002	03-24-98
26423 MW-4	<0.002	03-24-98

SAMPLING DATA

PROJECT #: 4002 - HEETZM COOP. CREW: Jim Blumke
 DATE: 12.15.97 WEATHER SERVICE: sunny, 40°F

MW-1								
	TOC to Total	20.95	-TOC to Water:	8.86	= Total Water:			
	Total Water:	12.89	X .163 X 5 =	2.07	(Water to be removed)			
MW-2								
	TOC to Total	22.03	-TOC to Water:	10.41	= Total Water:			
	Total Water:	11.62	X .163 X 5 =	9.47	(Water to be removed)			
MW-3								
	TOC to Total	21.35	-TOC to Water:	10.24	= Total Water:			
	Total Water:	11.11	X .163 X 5 =	9.05	(Water to be removed)			
MW-4								
	TOC to Total	18.44	-TOC to Water:	8.58	= Total Water:			
	Total Water:	9.86	X .163 X 5 =	8.04	(Water to be removed)			
MW-5								
	TOC to Total		-TOC to Water:		= Total Water:			
	Total Water:		X .163 X 5 =		(Water to be removed)			
MW-6								
	TOC to Total		-TOC to Water:		= Total Water:			
	Total Water:		X .163 X 5 =		(Water to be removed)			
MW-7								
	TOC to Total		-TOC to Water:		= Total Water:			
	Total Water:		X .163 X 5 =		(Water to be removed)			
MW-8								
	TOC to Total		-TOC to Water:		= Total Water:			
	Total Water:		X .163 X 5 =		(Water to be removed)			

COC # 21572 (GRU, MTBE, ORO, diss Pb)



UNION COOP OIL
MAINT. GARAGE NO BASEMENT

FORMER STORE

UNION COOP OIL

INS. AGENCY

FLOWER SHOP

EMPTY BLDG.

FID. STATE BK

MAIN STREET

SB-2A

SOIL VENTING SYSTEM

- SANITARY SEWERS
 - STORM SEWERS
 - WATER MAINS
 - MONITORING WELLS
 - ▲ SOIL BORINGS
 - ● ● MANHOLES/BASINS
 - TANK BASIN
- 1' = 50'
- N

AGASSIZ ENVIRONMENTAL SYSTEMS

JMB 12.15.97 Vapor Survey

PROJECT # 4002 - UNION COOP

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

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(612) 689-3660



MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156

January 9, 1998

RECEIVED JAN 13 1998

Bill Storm
Agassiz Environmental Systems, Inc.
29385 Isabel Street
Chisago City, MN 55013

Project ID: 4002-Hector Coop
Chain of Custody: 21572
Date Sampled: 12-15-97
Date Received: 12-16-97
Matrix: Water
Sample Identification:
Lab ID: 24138 MW-1
24139 MW-2
24140 MW-3
24141 MW-4
24142 Trip Blank

Samples were analyzed for GRO and DRO by the Wisconsin Modified GRO and DRO procedures.
The results are reported on the following page.

Sincerely,

Chad Holzmagel
Chemist

Brian Anderson
Inorganic Group Leader

MIDWEST ANALYTICAL SERVICES

January 9, 1998

Page 2

COC 21572

Date Analyzed: 12-22-97

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO	
						(µg/L)	(mg/L)
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)
MDL:	10.0	1.0	1.0	1.0	3.0	0.1	0.1
24138 MW-1	< 500	11500	7140	1490	6750	45.5	4.0
24139 MW-2	16.1	11.3	BDL	BDL	BDL	BDL*	BDL*
24140 MW-3	BDL	BDL	BDL	BDL	BDL	0.16	0.7
24141 MW-4	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24142 Trip Blank	BDL	BDL	BDL	BDL	BDL	BDL	

Parameter:	Dissolved Lead (mg/L)	Date Analyzed
24138 MW-1	< 0.005	01-08-98
24139 MW-2	< 0.005	01-08-98
24140 MW-3	< 0.005	01-08-98
24141 MW-4	< 0.005	01-08-98

BDL = Below Detection Limit, MDL = Method Detection Limit

* = Peaks present in range but below detection limit.

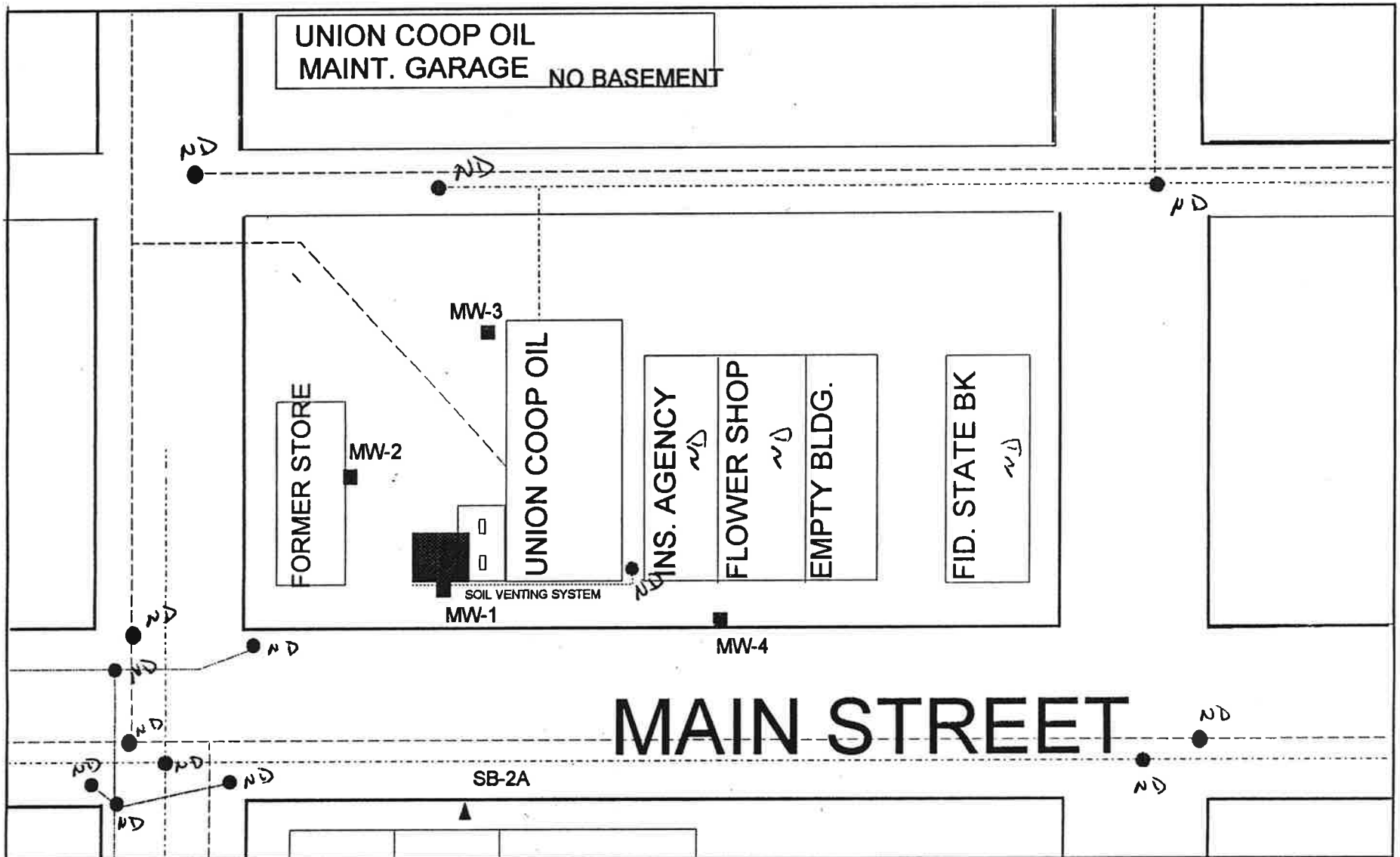
NOTE: Samples will be retained 30 days from the date of report or until the holding time for analyzed parameters expires, whichever comes first. Samples will be returned if requested within that time.

SAMPLING DATA

PROJECT #: 4002 - HECTOR COOP CREW: Jim Blumke
 DATE: 9.04.97 WEATHER SERVICE: mostly cloudy, windy, 60°F

MW-1					
	TOC to Total	20.95	-TOC to Water: 7.43	= Total Water:	
	Total Water:	13.52	X.163 X 5= 11.02	(Water to be removed)	
MW-2					
	TOC to Total	22.03	-TOC to Water: 9.40	= Total Water:	
	Total Water:	12.63	X.163 X 5= 10.29	(Water to be removed)	
MW-3					
	TOC to Total	21.35	-TOC to Water: 8.71	= Total Water:	
	Total Water:	12.64	X.163 X 5= 10.30	(Water to be removed)	
MW-4					
	TOC to Total	18.44	-TOC to Water: 7.81	= Total Water:	
	Total Water:	10.63	X.163 X 5= 8.66	(Water to be removed)	
MW-5					
	TOC to Total		-TOC to Water:	= Total Water:	
	Total Water:		X.163 X 5=	(Water to be removed)	
MW-6					
	TOC to Total		-TOC to Water:	= Total Water:	
	Total Water:		X.163 X 5=	(Water to be removed)	
MW-7					
	TOC to Total		-TOC to Water:	= Total Water:	
	Total Water:		X.163 X 5=	(Water to be removed)	
MW-8					
	TOC to Total		-TOC to Water:	= Total Water:	
	Total Water:		X.163 X 5=	(Water to be removed)	

COG # 21480 GRO(BTex), mTBE, DRD, diss P5



UNION COOP OIL
MAINT. GARAGE NO BASEMENT

FORMER STORE

UNION COOP OIL

INS. AGENCY

FLOWER SHOP

EMPTY BLDG.

FID. STATE BK

SOIL VENTING SYSTEM
MW-1

MW-2

MW-3

MW-4

MAIN STREET

SB-2A

- SANITARY SEWERS
- STORM SEWERS
- WATER MAINS
- MONITORING WELLS
- ▲ SOIL BORINGS
- ● ● MANHOLES/BASINS
- TANK BASIN

1' = 50'

AGASSIZ ENVIRONMENTAL SYSTEMS

7.04.99 VAPOR SURVEY, PID meter

JMB

PROJECT # 4002 - UNION COOP

330 SO. CLEVELAND ST.
P.O. BOX 349
CAMBRIDGE, MN 55008

MIDWEST ANALYTICAL SERVICES

MINNESOTA CERTIFIED LABORATORY
NUMBER 027-059-156

LAB
METRO
FAX

(612) 689-2175
(612) 444-9270
(612) 689-3660



September 24, 1997

Bill Storm

Agassiz Environmental Systems, Inc.
29385 Isabel Street
Chisago City, MN 55013

RECEIVED SEP 26 1997

Project ID: 4002-Hector Coop
Chain of Custody: 21480
Date Sampled: 09-04-97
Date Received: 09-05-97
Date Analyzed: 09-10-97
Matrix: Water
Sample Identification:
Lab ID: 20197 MW-1
20198 MW-2
20199 MW-3
20200 MW-4
20201 Trip Blank

Samples were analyzed for GRO and DRO by the Wisconsin Modified GRO and DRO procedures and for lead by atomic absorption spectrophotometry. The results are reported on the following page.

Sincerely,

Lon Jones
Organic/Bio Group Leader

Brian Anderson 9/24
Brian Anderson
Inorganic Group Leader

MIDWEST ANALYTICAL SERVICES

September 24, 1997

Page 2

COC 21480

Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO DRO
Units:	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L) (mg/L)
MDL:	10.0	1.0	1.0	1.0	3.0	0.1 0.1
20197 MW1	<250	5390	3880	480	2850	19.2 1.7
20198 MW2	BDL	2.2	BDL	BDL	BDL	BDL* BDL*
20199 MW3	BDL	BDL	BDL	BDL	BDL	0.17 0.5
20200 MW-4	BDL	BDL	1.2	1.2	3.2	BDL* BDL*
20201 Trip Blank	BDL	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit, MDL = Method Detection Limit

* = Peaks present in range but below detection limit.

Parameter:	Dissolved Lead (mg/L)	Date Analyzed
20197 MW1	<0.005	09-09-97
20198 MW2	<0.005	09-09-97
20199 MW3	<0.005	09-09-97
20200 MW4	<0.005	09-09-97

NOTE: Samples will be retained 30 days from the date of report or until the holding time for analyzed parameters expires, whichever comes first. Samples will be returned if requested within that time.

