PHASE II½

ENVIRONMENTAL ASSESSMENT

FOR THE

McGLYNN PROPERTY SITE

STATE HIGHWAY 80

UNINCORPORATED VILLAGE OF HUB CITY

TOWN OF HENRIETTA

RICHLAND COUNTY, WISCONSIN

MARCH 1992

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 5042-02-00

PREPARED BY
ADVENT ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246
PORT WASHINGTON, WISCONSIN 53074
AESI PROJECT NO. 92500

PHASE II½

ENVIRONMENTAL ASSESSMENT

FOR THE

McGLYNN PROPERTY SITE

STATE HIGHWAY 80

UNINCORPORATED VILLAGE OF HUB CITY

TOWN OF HENRIETTA

RICHLAND COUNTY, WISCONSIN

Prepared By: Dena M. Hargraves Date: 3/25/92

Dena M. Hargraves
Environmental Specialist
Advent Environmental Services, Inc.

Reviewed By: F. Vance Jackson, Jr. Date: 3/25/92

Z. Vance Jackson, Jr., P.G.
Senior Hydrogeologist
Advent Environmental Services, Inc.

ABBREVIATIONS

AESI	Advent Environmental Services, Inc.
BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	diesel range organic
GRO	gasoline range organic
PAH	polynuclear aromatic hydrocarbon
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
PVOC	petroleum volatile organic compound
QC	quality control
TPH	total petroleum hydrocarbon
UST	underground storage tank
VOC	volatile organic compound
WDILHR	Wisconsin Department of Industry, Labor and Human Relations
WDOT	Wisconsin Department of Transportation

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDIXES

1.0 SUMMARY

Advent Environmental Services, Inc. (AESI) has completed a Phase II½ Environmental Assessment for the McGlynn Property site located on State Highway (STH) 80, in the unincorporated village of Hub City, Richland County, Wisconsin. This assessment was conducted on December 10-13, 1991, for the Wisconsin Department of Transportation (WDOT), Office of Environmental Analysis under Project I.D. 5042-02-00.

AESI purchased the rights to this project from Aqua-Tech, Inc., on August 12, 1991. For the purposes of this report, work performed prior to this date will be referenced to Aqua-Tech, Inc., and work performed after this date, including any recommendations, will be referenced to AESI.

The purpose of this assessment was to define the horizontal and vertical extent of environmental contamination that had been previously identified within the existing WDOT right-of-way at the site. Previous investigations by Aqua-Tech, Inc. included a Phase II Environmental Assessment conducted on June 8, 1990. Construction is scheduled for 1993 and will include curb and gutter work and the installation of storm sewer lines. The assessment included the following:

- Regulatory background review
- Reconnaissance inspection
- Six soil borings to a maximum depth of 9.0 feet
- Installation of three groundwater monitoring wells

- Field screening of subsurface soil samples for volatile organic compounds (VOCs) with a photoionization detector (PID)
- Collection of six subsurface soil samples
- Chemical analyses of six subsurface soil samples for gasoline range organics (GROs), diesel range organics (DROs), polynuclear aromatic hydrocarbons (PAHs), VOCs, and total lead
- Collection of six groundwater samples
- Chemical analyses of six groundwater samples for GROs, DROs, PAHs, VOCs, and total lead

Results of this assessment indicate that soils in the areas surrounding soil borings M-2 and M-3 had detectable levels of phenanthrene (51.0 to 82.0 parts per billion [ppb]). There are currently no established enforcement standards for phenanthrene. Field screening of soil samples from borings M-1 through M-6 did not suggest VOCs at levels above background levels. Laboratory analysis of soil samples MS-1 through MS-6 did not detect GROs or DROs at levels above the 10 parts per million (ppm) Wisconsin Department of Industry, Labor and Human Relations (WDILHR) remedial action guideline for petroleum-contaminated soil. Chemical analysis of the six soil samples did not detect the presence of VOCs or PAHs, except for phenanthrene as noted above. Total lead levels of 3.31 to 15.9 ppm were identified in the soil samples. Previous analytical results indicated soil contamination in soil boring B-1, which is located on the McGlynn Property, and in

soil boring B-2, which is located within the WDOT right-of-way. TPH as gasoline (53 ppm) and as diesel (75 ppm) was identified in soil sample SB-1. TPH as gasoline (59 ppm) and as diesel (14 ppm) was identified in soil sample SB-2.

Groundwater was encountered in all of the test borings at the site at depths ranging from 5.0 to 7.3 feet. Naphthalene was identified by laboratory analysis at a level of 0.28 ppb in groundwater sample MGW-2. This level is below the proposed Preventive Action Limit of 8.0 ppb. The origin of the naphthalene in groundwater sample MGW-2 is unclear. It is uncertain whether this is related to the contamination at the Anderson Property site, which is approximately 250 feet northwest, or is associated with the tanks of the McGlynn Property. Laboratory analysis of groundwater samples MGW-1 through MGW-6 did not detect GROs, DROs, VOCs, total lead, or any additional PAH compounds. Based on the analytical results, groundwater does not appear to be significantly impacted within the proposed construction zone. Previous analytical results indicated groundwater contamination in soil boring B-1 on the McGlynn Property. TPH as diesel (23,100 ppb), benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb) were identified in groundwater samples WB-1(A) and WB-1(B). However, subsequent analytical results suggest that only a minor level of PAH contamination extends into the WDOT right-of-way.

AESI recommends that the contamination previously identified near the edge of the WDOT right-of-way be remediated in conjunction with possible remediation

activities at the adjacent private property. The assessment results indicate that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenathrene identified in soil borings M-2 and M-3. The WDOT contractors should be aware of the possibility of encountering contamination during the construction and trenching activities and that they should monitor the area for any visual or olfactory indications of contamination. If contamination is encountered, AESI personnel should be present on-site to monitor the construction activities. Any contaminated soil encountered at this time could be stockpiled on-site and analyzed for disposal parameters. Construction activities for the storm sewer may encounter the water table as the result of its seasonal fluctuation.

Based on the analytical results and the proposed construction plans, contaminated soil or groundwater should not delay the proposed construction. If remedial activities have not proceeded on the private property by the time of construction, an impermeable barrier, such as several layers of visqueen, should be placed along the edge of the construction zone to isolate the previously identified contamination from the new State Highway 80 roadway. The WDOT should also consider the use of an impermeable backfill material in the storm sewer trenches to prevent the trenches from acting as conduits for the spread of any migrating contamination. Upon completion of remedial activities at the McGlynn Property site,

the groundwater monitoring wells should be abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25.

2.0 SITE DESCRIPTION

2.1 Introduction

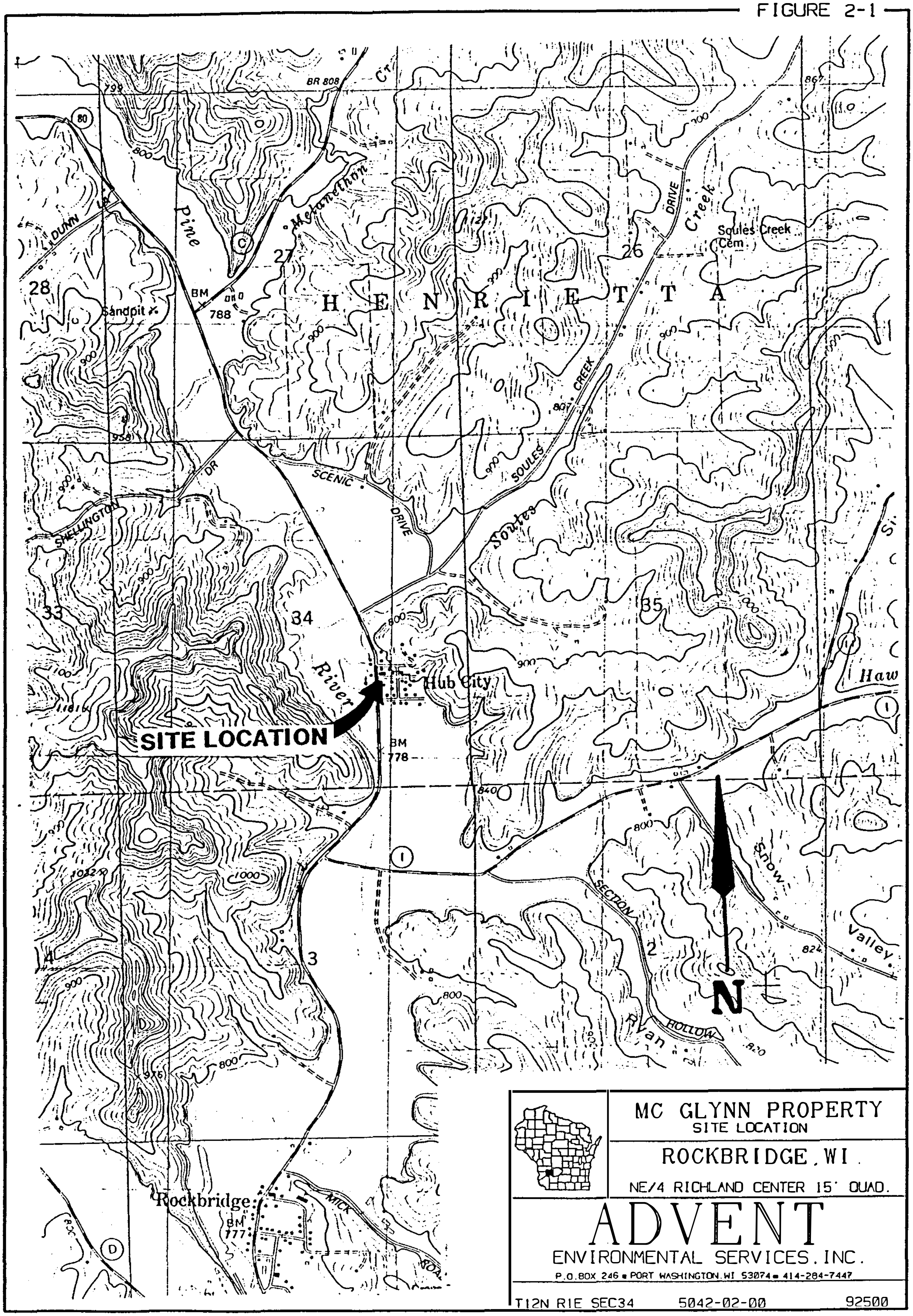
This section describes the location of the site and summarizes the activities and results of previous environmental investigations at the site.

2.2 Summary of Previous Investigation

Aqua-Tech, Inc. was contracted by the WDOT to conduct a Phase II Environmental Assessment for the McGlynn Property site to identify the potential for soil and/or groundwater contamination associated with two underground storage tanks (USTs) at the site (see Figure 2-1). The initial Phase II Environmental Assessment conducted on June 8, 1990, included the following:

* Regulatory background review
* Site representative interview
* Site reconnaissance inspection
* Two soil borings to a maximum depth of 13.0 feet
* Collection and field screening of subsurface soil samples for VOCs
* Chemical analysis of two subsurface soil samples for total petroleum hydrocarbon (TPH) as gasoline and as diesel fuel
* Chemical analysis of one groundwater sample for benzene, toluene, ethylbenzene, and xylenes (BTEX)

FIGURE 2-1



SITE LOCATION
Hub City
HENRIETTA
Rockbridge
Pine
River
Melancthon Cr
Soules Creek
Soules Creek Cem.
SOULES CREEK
SCENIC DR
DRIVE
SHELLINGTON
DUNN LA
Sandpit
BM 788
BM 778
BM 777
BR 808
Snow Valley
SECTION
Ryan HOLLOW
Haw
27
26
28
33
34
35
3
2
4
N
MC GLYNN PROPERTY
SITE LOCATION
ROCKBRIDGE, WI
NE/4 RICHLAND CENTER 15' QUAD.
ADVENT
ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246 • PORT WASHINGTON, WI 53074 • 414-284-7447
T12N R1E SEC34
5042-02-00
92500

Laboratory analysis for the assessment indicated that soils surrounding borings B-1 and B-2 are contaminated by TPH as gasoline and as diesel at levels above the 10 μg/g (ppm) WDILHR remedial action guideline for petroleum contaminated soil. The contamination was present on the McGlynn Property (boring B-1) and on the edge of the existing right-of-way (boring B-2). TPH levels of 75 ppm as diesel and 53 ppm as gasoline were identified in soil sample SB-1. TPH levels of 14 ppm as diesel and 59 ppm as gasoline were identified in soil sample SB-2. Laboratory analysis of one groundwater sample WB-1 indicated TPH as diesel (23,100 ppb) and benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb). These levels exceed the Groundwater Quality Standards in Wiscosnin Administrative Code-Chapter NR 140.10.

Aqua-Tech, Inc. recommended additional investigation to determine the extent of soil and groundwater contamination within the existing WDOT right-of-way.

3.0 BACKGROUND REVIEW

3.1 Introduction

This section includes information obtained from the regulatory background review.

3.2 Regulatory Background Review

A regulatory review of the McGlynn Property site was conducted to ensure that the site and/or surrounding areas have not been identified as causing or having the potential to cause environmental pollution. Records of solid and liquid waste disposal, spills, and leaks are an indication of whether hazardous materials have been introduced to the subsurface. The following sources were referenced during this review:

- U.S. Environmental Protection Agency (U.S. EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) List (June 1991)
- U.S. EPA Facility Index System: Selected Facilities Report List (FINDS) (June 1991)
- U.S. EPA National Priorities List (NPL) (February 1991)
- Wisconsin Department of Natural Resources (WDNR) Registry of Waste Disposal Sites in Wisconsin (February 1990)

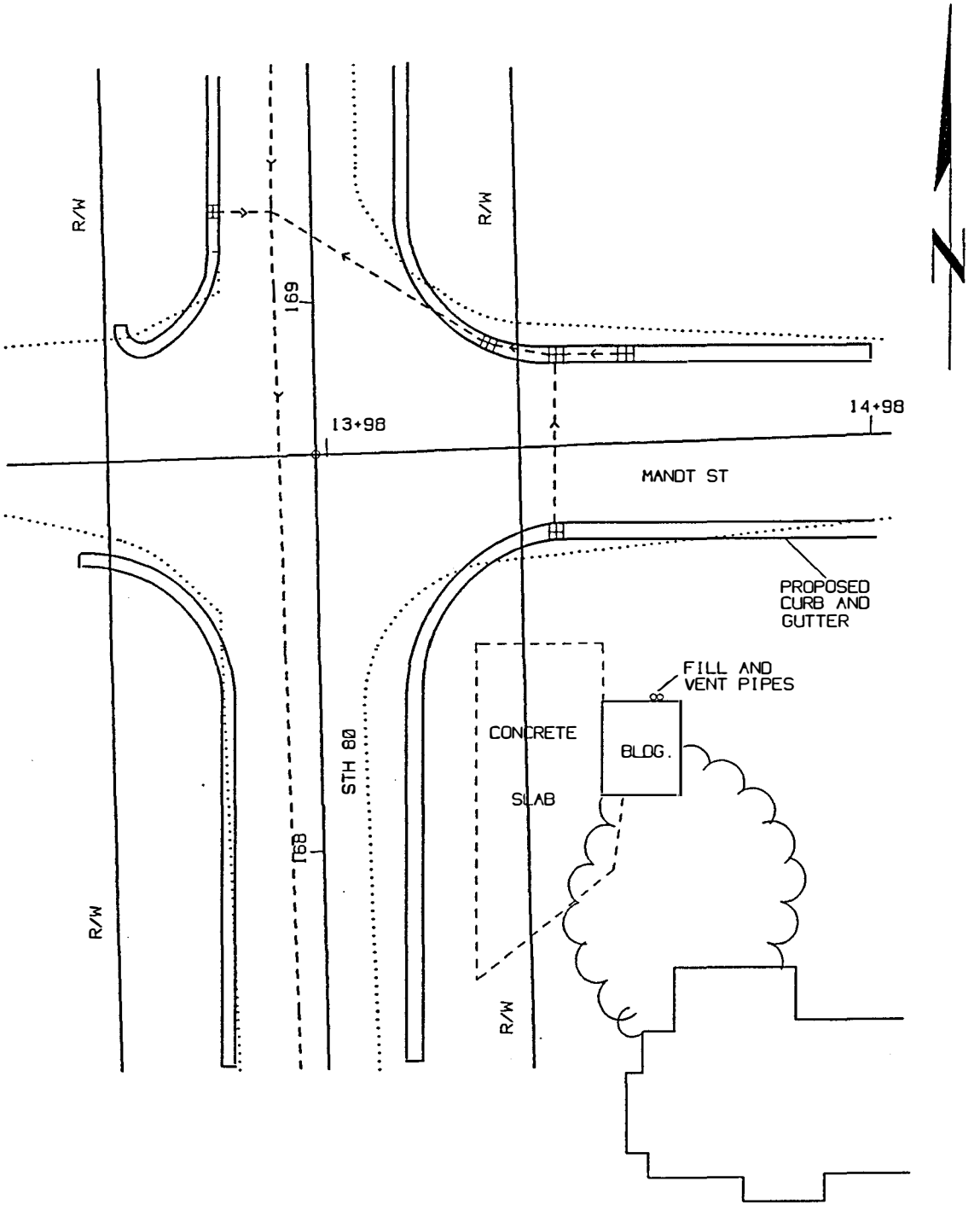
- WDNR Inventory of Sites or Facilities Which May Cause or Threaten to Cause Environmental Pollution (Environmental Repair Program) (July 1987)
- WDNR Statewide Spills and Hazardous Incident Report List (January 1978 to December 1989)
- WDNR List of Leaking Underground Storage Tanks (LUST List) (December 1991)
- Wisconsin Department of Industry, Labor and Human Relations (WDILHR) Computer Inventory of Underground Petroleum Storage Tanks

The McGlynn Property site appears on the LUST list. There is one additional site within a one-mile radius of this site in Richland County that may cause or threaten to cause environmental pollution to the site. This site is the Anderson Property (AESI Project No. 92834), which is approximately 250 feet northwest of the site. Aqua-Tech, Inc., conducted a Phase II Environmental Assessment of the Anderson Property site on June 8, 1990, and AESI conducted a Phase II 1/2 Environmental Assessment of the Anderson Property site December 9 -13, 1991. A listing of this site is included in Appendix B. There are no USTs on record for the McGlynn Property site in the WDILHR computer inventory.

Figure 3-1 depicts the site features at the McGlynn Property site.

See Appendix C for photographs of the site.

FIGURE 3-1



LEGEND:

- - - -STORM SEWER LINES

····· -EXISTING E.O.P.

MC GLYNN PROPERTY

SITE FEATURES

5042-02-00 92500

ADVENT

ENVIRONMENTAL SERVICES, INC.

P.O. BOX 246 • PORT WASHINGTON, WI 53074 • 414-284-7447

DRAFTER	CHECKED	DATE	SCALE
RICHARDSON	DF	12/19/91	1"=30'

4.0 SAMPLING AND ANALYTICAL PROCEDURES

4.1 Introduction

This section outlines procedures followed for collecting soil and groundwater samples, maintaining security and integrity of the samples, and performing chemical analyses of the samples.

4.2 Sampling Procedures

Soil and groundwater samples were collected to determine if soil and groundwater at the site were contaminated.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with a hollow stem auger and a two-inch diameter, 24-inch split spoon sampler. The split spoon sampler was advanced at two foot intervals by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer.

All drilling tools and equipment were high-pressure steam cleaned prior to the start of the sampling work. All sampling tools were also washed with an Alconox™ and reagent water solution between sampling points to prevent cross contamination.

Subsurface soil samples were screened for VOCs with a calibrated HNU Model PI-101 PID immediately after the split spoon sampling tube was opened. Instrument readings (benzene equivalent ppm) and sample

descriptions/remarks were recorded on a soil profile log at the appropriate depth intervals. Results from this screening survey were used to aid in the selection of samples for laboratory analysis.

The following headspace methodologies were used for PID field screening of soil samples:

1. Headspace samples were collected in clean four-ounce glass jars.
2. The jars were filled half full.
3. Immediately after the headspace samples were placed in the jars, the mouths of the jars were covered with heavy gauge aluminum foil.
4. Once the headspace samples were sealed, the samples were agitated for at least 30 seconds to break soil clods and release vapors.
5. After the sample had been agitated, the sample was allowed to equilibrate for 20 minutes at approximately 70°F out of direct sunlight.
6. Following equilibration, the headspace samples were analyzed by inserting the tip of the PID probe through a single, small hole in the foil seal to a position half-way between the

seal and sample surface and then recording the highest instrumental reading.

7. The PID was properly maintained and calibrated according to the manufacturer's specifications at the site at least daily before commencing field operations. Results of the calibration were recorded on a calibration log sheet (see Appendix D).

The second sample from each sampling location was a split sample collected at the same depth interval and time as that of the headspace sample.

After pedologic logging, samples selected for chemical analyses were tightly packed into clean, Teflon™-lidded, four-ounce jars and cooled to 4°C for transport to the laboratory.

Groundwater Sampling Procedures

Groundwater samples were collected from soil borings M-2, M-3, and M-4 by inserting a clean disposable polyethylene bailer through 2-inch diameter PVC piping that was inserted down the hollow stem augers. The temporary groundwater monitoring wells were purged of three well volumes through a 0.010-inch PVC screen prior to sampling. The contents of the bailer were then transferred to the appropriate containers. Groundwater samples were collected from soil borings M-1, M-5, and M-6 by inserting a

clean disposable polyethylene bailer through 2-inch diameter PVC piping in the groundwater monitoring wells. The groundwater monitoring well was developed and sampled according to Wisconsin Administrative Code-Chapter NR 141. The contents of the bailer were then transferred to the appropriate containers. The contents were transferred into 40 ml glass vials containing hydrochloric acid (HCl) as a preservative to be tested for VOCs and GROs. Care was taken to ensure no air space was included. The contents were transferred into a one liter amber bottle to be tested for DROs and PAHs. The contents were transferred into a 250 ml polyethylene bottle, filtered, and preserved with nitric acid (HNO_3) to be tested for total lead. The water sample containers were then sealed and cooled to 4°C for transport to the laboratory.

4.3 Procedures for Abandoning a Borehole

After all necessary soil and groundwater samples were collected at a given borehole, the borehole was backfilled with bentonite and abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25. Because previous investigations identified contamination at the site, the cuttings were stockpiled and the wash/purge water was containerized in U.S. Department of Transportation-approved containers, while awaiting approval for disposal at a WDNR-approved facility. Two 30-gallon drums and two 55-gallon drums of wash/purge water and the stockpiled soil

were stored on the east side of the on-site building. Boring abandonment documentation is included in Appendix E.

4.4 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures is to ensure security and integrity of the samples from collection through transportation, storage, and analysis.

Sample identification documents were carefully prepared so that sample identification and chain of custody were maintained and sample disposition was controlled. Sample identification documents included:

- Field Notebooks
- Sample Labels
- Chain of Custody Records

Each sample was labeled, chemically or physically preserved, and sealed immediately after collection. To minimize handling of sampling containers, a label was filled out prior to sample collection. The sample label was completed using waterproof ink and then firmly affixed to the sample container. The sample label provided the following information:

- Sample Number
- Location
- Date and Time of Collection

- Analysis Required
- Name of Sampler

A chain of custody record was fully completed in triplicate by the AESI sampler immediately following sample collection (see Appendix F).

Transfer of Custody Shipment

The samples and chain of custody record were packed in a cooler. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the chain of custody record. This record documented sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification numbers matched those on the chain of custody record. A copy of the chain of custody record was retained by the laboratory until analyses were completed. The record was then transferred to the site file with the analytical results.

5.0 FIELD AND ANALYTICAL RESULTS

5.1 Introduction

This section summarizes results of screening soil and groundwater samples in the field for VOCs and chemical analyses of soil and groundwater samples for GROs, DROs, PAHs, VOCs, and total lead.

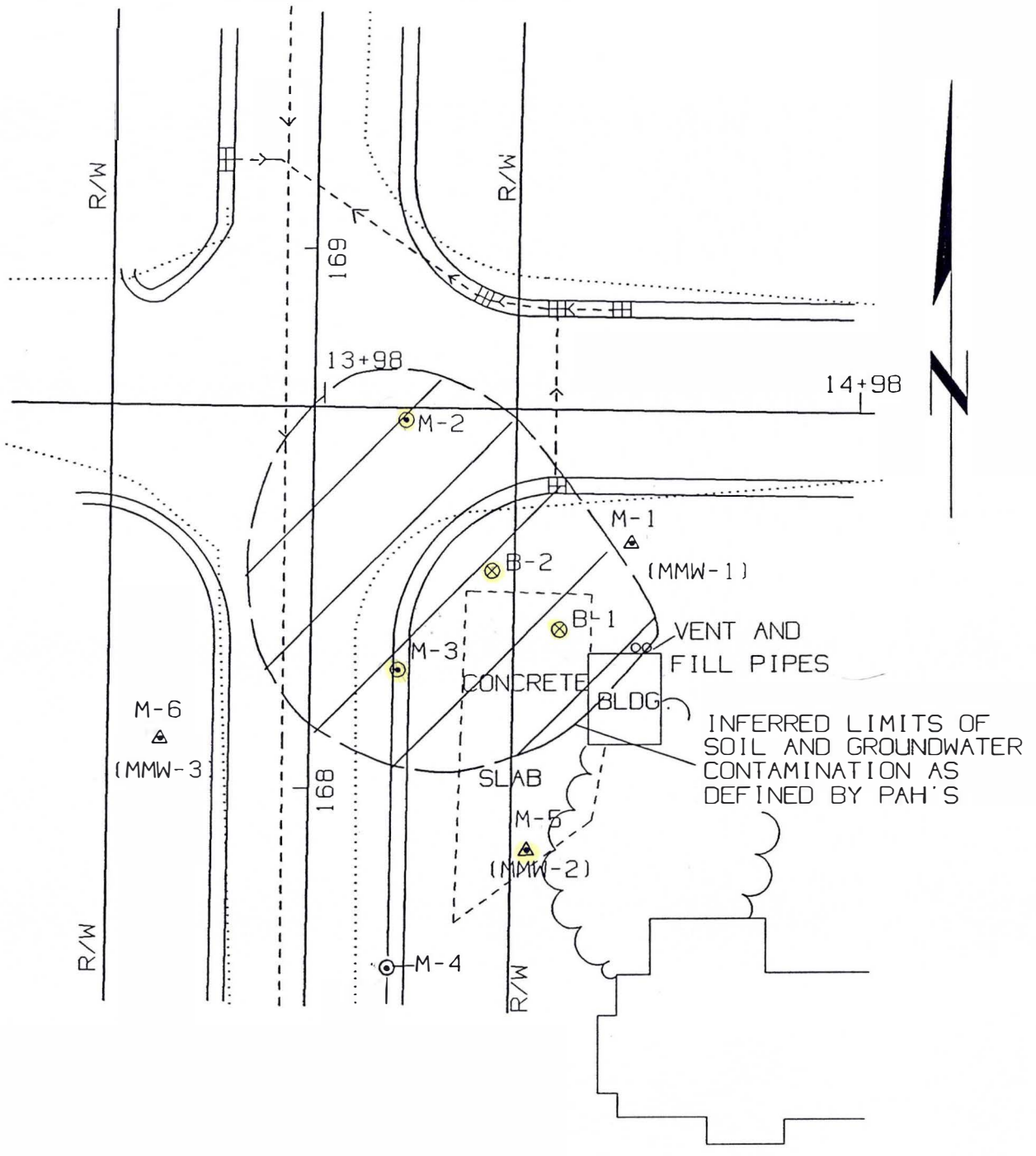
5.2 Sample Locations

On December 10-13, 1991, Dena M. Hargraves of AESI collected six subsurface soil samples and six groundwater samples from borings and monitoring wells completed at the McGlynn Property site. See Figure 5-1 for soil boring and monitoring well locations.

The borings completed at this site are referenced to the following STH 80 centerline survey station locations:

Boring	Sample Location	Offset (feet)
M-1 (MMW-1)	168 + 45	Right 60
M-2	168 + 70	Right 17
M-3	168 + 22	Right 17
M-4	167 + 67	Right 15
M-5 (MMW-2)	167 + 87	Right 41
M-6 (MMW-3)	168 + 09	Left 27

FIGURE 5-1



LEGEND:

⊗-PREVIOUS SOIL BORING

⊙-CURRENT SOIL BORINGS

▲-CURRENT MONITORING WELLS

·····EXISTING E.O.P.

---STORM SEWER LINES

MCGLYNN PROPERTY

SOIL BORING AND MONITORING WELL LOCATIONS

5042-02-00 92500

ADVENT

ENVIRONMENTAL SERVICES, INC.

P.O. BOX 246 ■ PORT WASHINGTON, WI 53074 ■ 414-284-7447

DRAFTER	CHECKED	DATE	SCALE
RICHARDSON		3/18/92	1"=30'

The borings were completed to determine the extent of soil and groundwater contamination at the site and to determine if this zone would affect the proposed construction plans for State Highway 80.

Subsurface soil samples MS-1, MS-3, MS-4, MS-5, and MS-6 were collected from soil borings M-1, M-3, M-4, M-5, and M-6, respectively, from the 3.0 to 5.0 foot depth interval. Subsurface soil sample MS-2 was collected from soil boring M-2 from the 5.0 to 7.0 foot depth interval. All soil samples were collected directly above the groundwater interface.

Groundwater samples were collected at the following depths: MGW-1 (7.3 feet), MGW-2 (7.0 feet), MGW-3 (6.0 feet), MGW-4 (5.0 feet), MGW-5 (6.0 feet), and MGW-6 (5.0 feet). The groundwater samples were collected and analyzed for GROs, DROs, VOCs, PAHs, and total lead identification.

5.3 Results of Field Screening

A summary of the results of field screening subsurface soil samples for VOCs with a PID is as follows:

- Subsurface soil samples from borings M-4, M-5, and M-6 yielded no PID response.
- Subsurface soil samples from borings M-1, M-2, and M-3 yielded PID readings ranging from 0 to 2 ppm.

All PID readings relative to depth for each boring completed at the McGlynn Property site are recorded on soil profile logs (see Appendix E).

5.4 Analytical Methods Utilized for Chemical Analyses of Samples

Davy Laboratories in La Crosse, Wisconsin, analyzed the soil and groundwater samples collected at the McGlynn Property site. Soil and groundwater samples were chemically analyzed using the analytical methods listed in Appendix F.

Each analytical method follows specific quality control (QC) criteria listed in the reference manual describing the method. This includes the selection and calibration of appropriate instruments and the use of QC samples. Daily performance tests and the demonstration of precision and accuracy in the laboratory are required.

5.5 Results of Chemical Analyses of Samples

Soil Samples

Chemical analyses of six soil samples yielded the following results:

* No GROs or DROs were identified in soil samples MS-1, MS-2, MS-3, MS-4, MS-5, and MS-6. All results were calculated on a dry weight basis as required by WDILHR.
* No VOCs were identified in soil samples MS-1, MS-2, MS-3, MS-4, MS-5, and MS-6.

* Total lead levels ranging from 3.31 to 15.9 ppm were identified in the six soil samples. These levels do not pose a significant environmental threat.

* Phenanthrene was identified in soil samples MS-2 and MS-3 at levels of 51.0 ppb and 82.0 ppb, respectively. No other PAHs were identified in the six soil samples.

Table 5-1 contains complete results of the chemical analyses of the soil samples. Original laboratory data are provided in Appendix F. Previous analytical data indicated contamination in soil boring B-1, located on the McGlynn Property, and in soil boring B-2, located on the edge of the existing WDOT right-of-way. Chemical analyses of these soil samples yielded the following results:

* TPH as gasoline was identified in soil samples SB-1 and SB-2 at levels of 53 ppm and 59 ppm, respectively.

* TPH as diesel was identified in soil samples SB-1 and SB-2 at levels of 75 ppm and 14 ppm, respectively.

Groundwater Samples

Chemical analyses of the six groundwater samples yielded the following results:

* No GROs, DROs, total lead, or VOCs were identified in the six groundwater samples.

* Naphthalene was identified in groundwater sample MGW-2 at a level of 0.28 ppb. No other PAHs were identified in the six groundwater samples.

Table 5-2 contains complete results of the chemical analyses of the groundwater samples. Original laboratory data are provided in Appendix F. Previous analytical data indicated groundwater contamination in boring B-1. No groundwater sample was collected from boring B-2. Chemical analyses of the groundwater sample yielded the following results:

* TPH as diesel (23,100 ppb), benzene (1,184 ppb), toluene (570 ppb), ethylbenzene (210 ppb), and xylenes (3,420 ppb) were identified in groundwater sample WB-1(A) and WB-1(B).

TABLE 5-1
RESULTS OF CHEMICAL ANALYSES OF SOIL SAMPLES
McGLYNN PROPERTY SITE
DATES SAMPLED: DECEMBER 10-11, 1991
DATES ANALYZED: JANUARY 6-9, 1992

PARAMETER	SAMPLE NUMBER						LABORATORY DETECTION LIMIT
	MS-1	MS-2	MS-3	MS-4	MS-5	MS-6	
Depth Interval (feet)	3.0-5.0	5.0-7.0	3.0-5.0	3.0-5.0	3.0-5.0	3.0-5.0	---
Total Solids (%)	81.1	86.2	89.7	88.3	87.5	89.4	---
GROs*† (ppm)	ND	ND	ND	ND	ND	ND	1.0
DROs*† (ppm)	ND	ND	ND	ND	ND	ND	1.0
Total Lead * (ppm)	8.01	5.34	15.9	4.76	3.31	5.31	---
VOCs[1] (ppm)	ND	ND	ND	ND	ND	ND	---
PAHs[1] (ppb)	ND	ND	ND	ND	ND	ND	---
Phenanthrene (ppb)	ND	51.0	82.0	ND	ND	ND	2.0

ND Not Detected
ppm parts per million
ppb parts per billion
* All results calculated on a dry weight basis.
† Ten ppm is the maximum level of petroleum contamination allowed in soil before remediation is required by WDILHR.
1 A complete list of VOCs and PAHs analyzed for are included in Appendix E.

TABLE 5-2
RESULTS OF CHEMICAL ANALYSES OF GROUNDWATER SAMPLES
McGLYNN PROPERTY SITE
DATES SAMPLED: DECEMBER 11-13, 1991
DATES ANALYZED: DECEMBER 27, 1991 - JANUARY 3, 1992

	GROs (ppm)	DROs (ppm)	Total Lead (ppm)	VOCs[1] (ppb)	PAHs[1] (ppb)	Naphthalene (ppb)
Sample MGW-1	ND	ND	<0.051	ND	ND	ND
Sample MGW-2	ND	ND	<0.051	ND	ND	0.28
Sample MGW-3	ND	ND	<0.051	ND	ND	ND
Sample MGW-4	ND	ND	<0.051	ND	ND	ND
Sample MGW-5	ND	ND	<0.051	ND	ND	ND
Sample MGW-6	ND	ND	<0.051	ND	ND	ND
Laboratory Detection Limit	0.0342	0.5	---	---	---	0.2
Preventive Action Limit (ppb)	---	---	5	---	---	8 (proposed)
Enforcement Standard (ppb)	---	---	50	---	---	40 (proposed)

ND Not Detected
ppm parts per million
ppb parts per billion
[1] A complete list of VOCs and PAHs analyzed for is provided in Appendix E.

6.0 DISCUSSION OF ASSESSMENT RESULTS

6.1 Introduction

This section discusses field observations and analytical data pertaining to observed or potential contamination that may be attributed to the McGlynn Property site.

6.2 Site History, Regulatory Review, and Reconnaissance Inspection

The site history revealed that possibly two USTs remain at the site, which was formerly a service station. The tanks' age, size, and contents are uncertain; however, it appears that they may have contained regular and ethyl gasoline. The site appears on the WDNR LUST list.

The regulatory review identified one site, the Anderson Property (AESI Project No. 92834), within a one-mile radius of the McGlynn Property site that could environmentally impact the site in an adverse manner. It is uncertain whether this site has affected the project area.

6.3 Soil

Field screening of split spoon samples from borings M-1 through M-6 with a PID failed to detect the presence of VOCs at levels above 2 ppm for the site.

No GROs or DROs were identified by laboratory analyses of the six subsurface soil samples at levels above the 10 ppm WDILHR remedial action guideline for petroleum-contaminated soil.

No VOCs were identified by laboratory analyses of the six subsurface soil samples at levels above the respective laboratory detection limits.

Total lead levels ranging from 3.31 to 15.9 ppm were identified in the six soil samples; however, these levels do not pose a significant environmental threat.

Phenanthrene was identified by laboratory analysis in soil samples MS-2 and MS-3 at levels of 51.0 ppb and 82.0 ppb, respectively. No other PAH compounds were identified in the six soil samples. There are currently no established PAH standards for soil.

The assessment results suggest that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenanthrene identified in soil borings M-2 and M-3 (see Figure 5-1).

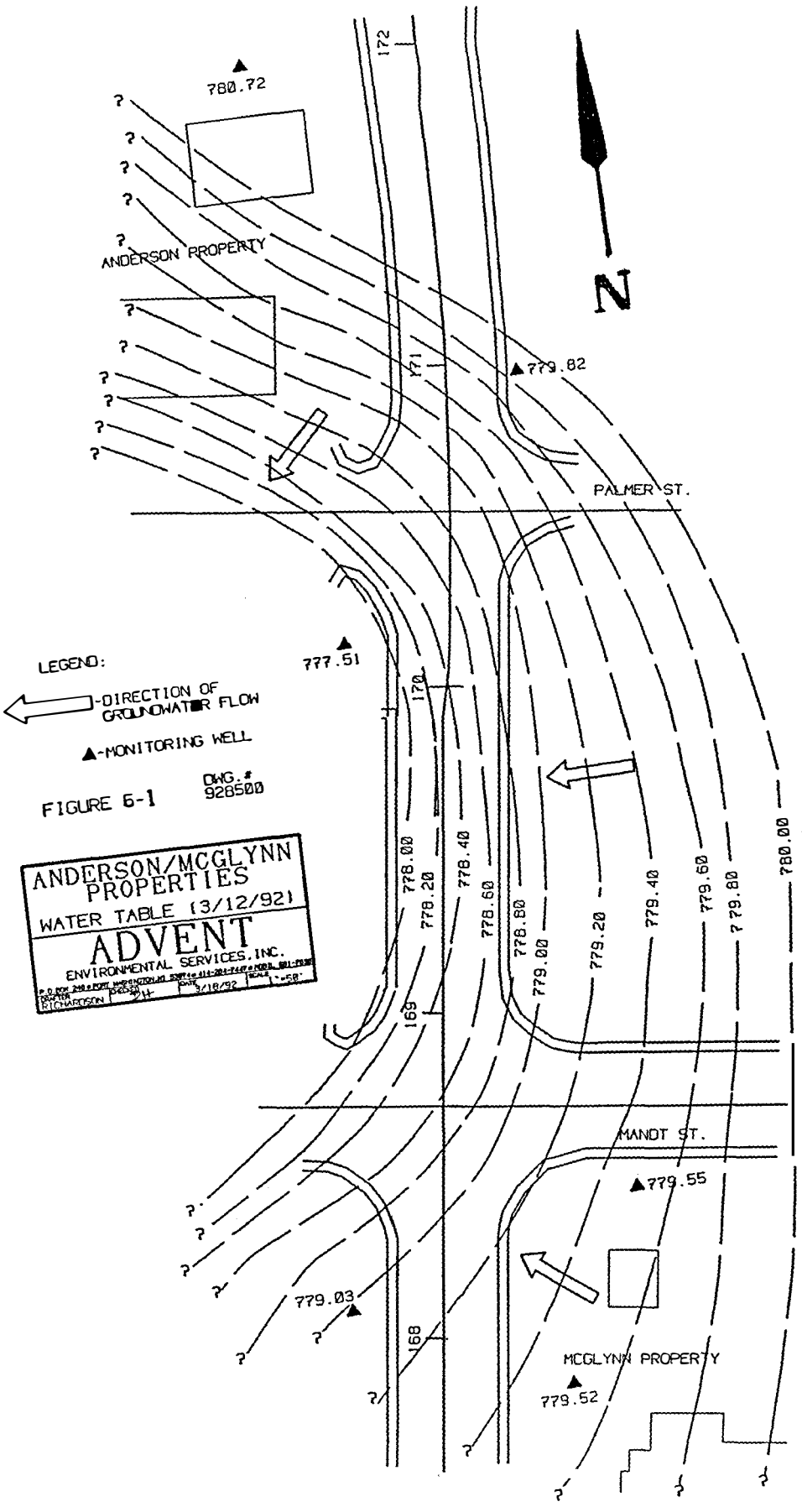
6.4 Groundwater

Groundwater was encountered in all six borings at depths ranging from 5.0 to 7.3 feet. Figure 6-1 illustrates the configuration of the water table at the site. Groundwater flow at the site appears to be to the northwest at a hydraulic gradient of 0.014 foot per foot.

No GROs, DROs, total lead, or VOCs were identified by laboratory analyses of the six groundwater samples.

Naphthalene was identified in groundwater sample MGW-2 at a level of 0.28 ppb, which is below the proposed Preventive Action Limit of 8 ppb in the Wisconsin Administrative Code-Chapter NR 140. No other PAH compounds were identified in the six groundwater samples.

These data suggest that groundwater contamination may be encountered if utility trench excavations exceed five feet.


780.72
ANDERSON PROPERTY
172
171
779.82
N
PALMER ST.
777.51
LEGEND:
-DIRECTION OF GROUNDWATER FLOW
▲-MONITORING WELL
DWG.# 928500
FIGURE 6-1
ANDERSON/MCGLYNN PROPERTIES
WATER TABLE (3/12/92)
ADVENT
ENVIRONMENTAL SERVICES, INC.
170
169
168
778.00
778.20
778.40
778.60
778.80
779.00
779.20
779.40
779.60
779.80
780.00
MANDT ST.
779.55
779.03
MCGLYNN PROPERTY
779.52

7.0 RECOMMENDATIONS

After completing the Phase II½ Environmental Assessment for the McGlynn Property site, AESI recommends that the contamination previously identified on the edge of the WDOT right-of-way be remediated in conjunction with possible remediation activities at the adjacent private property. The assessment results indicate that the zone of proposed construction may be impacted by the soil contamination previously identified at the McGlynn Property site. This is based on the low levels of phenanthrene identified in soil borings M-2 and M-3. The WDOT contractors should be aware of the possibility of encountering contamination during the construction and trenching activities and that they should monitor the area for any visual or olfactory indications of contamination. If contamination is encountered, AESI personnel should be present on-site to monitor the construction activities. Any contaminated soil encountered at this time could be stockpiled on-site and analyzed for disposal parameters. Construction activities for the storm sewer may encounter the water table as the result of its seasonal fluctuation. The origin of the naphthalene in groundwater sample MGW-2 is unclear. It is uncertain whether this is related to the contamination at the Anderson Property site or associated with the tanks at the McGlynn Property. Based on the analytical results and the proposed construction plans, contaminated soil or groundwater should not delay the proposed construction. If remedial activities have not proceeded on the private property by the time of construction, an impermeable barrier, such as several layers of visqueen, should be placed along the edge of the construction zone to isolate the previously identified contamination from the new State

Highway 80 roadway. The WDOT should also consider the use of an impermeable backfill material in the storm sewer trenches to prevent the trenches from acting as conduits for the spread of any migrating contamination. Upon completion of remedial activities at the McGlynn Property site, the groundwater monitoring wells should be abandoned according to procedures outlined in Wisconsin Administrative Code-Chapter NR 141.25.

APPENDIX A

PHASE II ENVIRONMENTAL ASSESSMENT REPORT
CONDUCTED BY AQUA-TECH, INC. ON JUNE 8, 1990
FOR THE McGLYNN PROPERTY

AQUA-TECH INC.

October 5, 1990

Mr. Kevin Gehrmann
Wisconsin Department of Transportation
Risk and Safety Management
Hill Farms State Office Building
4802 Sheboygan Avenue, Room 751
Madison, WI 53707-7915

Dear Mr. Gehrmann:

Enclosed is the Phase II Environmental Assessment Report for the McGlynn Property site, located on State Highway 80, Hub City, Richland County, Wisconsin, DOT Project No. 5042-02-00.

If you have any questions regarding this report, please do not hesitate to contact me.

Sincerely,

AQUA-TECH INC.

Z. Vance Jackson, Jr.

Z. Vance Jackson, Jr.
Hydrogeologist

ZVJ/lr

Enclosure

CORPORATE
140 S. Park St., Port Washington, WI 53074
[414] 284-5746 FAX [414] 284-0243

TREATMENT FACILITY
340 Robinson Rd. Greer, S.C. 29651
[803] 877-1048 FAX [803] 877-1872

PHASE II

ENVIRONMENTAL ASSESSMENT REPORT

FOR THE

MC GLYNN PROPERTY

STATE HIGHWAY 80

HUB CITY

RICHLAND COUNTY, WISCONSIN

OCTOBER 1990

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 5042-02-00

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT 92500

PHASE II

ENVIRONMENTAL ASSESSMENT REPORT

FOR THE

MC GLYNN PROPERTY

STATE HIGHWAY 80

HUB CITY

RICHLAND COUNTY, WISCONSIN

WDOT PROJECT 5042-02-00

ATI PROJECT 92500

Prepared By: _____ Date: 10-5-90

James H. Cheshire
Environmental Assessment Specialist
Aqua-Tech, Inc.

Reviewed By: _____ Date: 10-5-90

Stephen G. Reuter, C.P.G.
Hydrogeologist
AIPG Certificate #7836
Aqua-Tech, Inc.

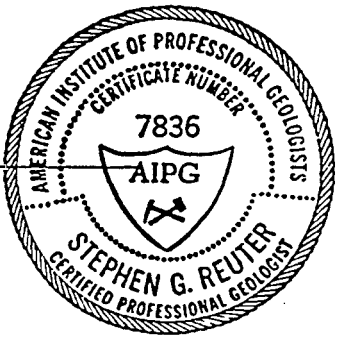


TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDIXES

1.0 SUMMARY

Aqua-Tech, Inc. has completed a Phase II Environmental Assessment for the McGlynn Property as contracted April 26, 1990, by the Wisconsin Department of Transportation (WDOT) Risk and Safety Management Section as part of WDOT Project 5042-02-00.

The purpose of this assessment was to identify possible soil and/or groundwater contamination associated with underground storage tanks at the site. The assessment included the following:

* Regulatory background review
* Site representative interview
* Site reconnaissance inspection
* Two soil borings to a maximum depth of 13.0 feet
* Collection and field screening of subsurface soil samples for volatile organic compounds (VOCs)
* Chemical analyses of two subsurface soil samples for total petroleum hydrocarbons (TPH) as gasoline and as diesel fuel
* Chemical analysis of a groundwater sample for benzene, toluene, ethylbenzene, and xylenes (BTEX)

Results of the assessment indicate that THE SOIL AND GROUNDWATER AT THE SITE AND EXISTING WDOT RIGHT-OF-WAY ARE CONTAMINATED WITH PETROLEUM PRODUCTS. HOWEVER, THE EXTENT OF CONTAMINATION HAS NOT BEEN DEFINED AND FURTHER INVESTIGATION AT THE SITE IS RECOMMENDED.

Chemical analyses of two subsurface soil samples collected at the site revealed TPH levels exceeding the 10 ug/g (ppm) Wisconsin Department of Industry, Labor and Human Relations (WDILHR) remedial

action standard for petroleum contaminated soils which has been adopted by the Wisconsin Department of Natural Resources (WDNR).

Chemical analysis of a groundwater sample collected from boring location B-1 indicated BTEX levels exceeding the Wisconsin Administrative Code -- Chapter N.R. 140 -- Groundwater Quality Standards. No groundwater samples were collected from boring location B-2 completed on the existing WDOT right-of-way at the site. Based on the results of the chemical analysis of soil sample SB-2 collected at the interface of the surface of the groundwater table and chemical analysis of groundwater sample WB-1, the GROUNDWATER ON THE EXISTING RIGHT-OF-WAY IS BELIEVED TO BE CONTAMINATED WITH PETROLEUM PRODUCTS.

Aqua-Tech, Inc. recommends additional investigation is necessary to determine the extent of soil and groundwater contamination. A series of three to six borings are recommended to delineate the contaminant plume on the existing WDOT right-of-way at the site.

Aqua-Tech estimates the cost of the Phase III Assessment to range from $2,750 to $4,500.

2.0 SITE BACKGROUND

2.1 Introduction

This section includes information obtained from the site reconnaissance inspection, regulatory background review, and the site representative interview.

2.2 Site Location

The McGlynn Property site (formerly referred to by the WDOT as the Waldsmith Property) occupies approximately 0.2 acres on the east side of State Highway 80 in the unincorporated village of Hub City, township of Henrietta, Richland County, Wisconsin (Refer to Figure 2-1).

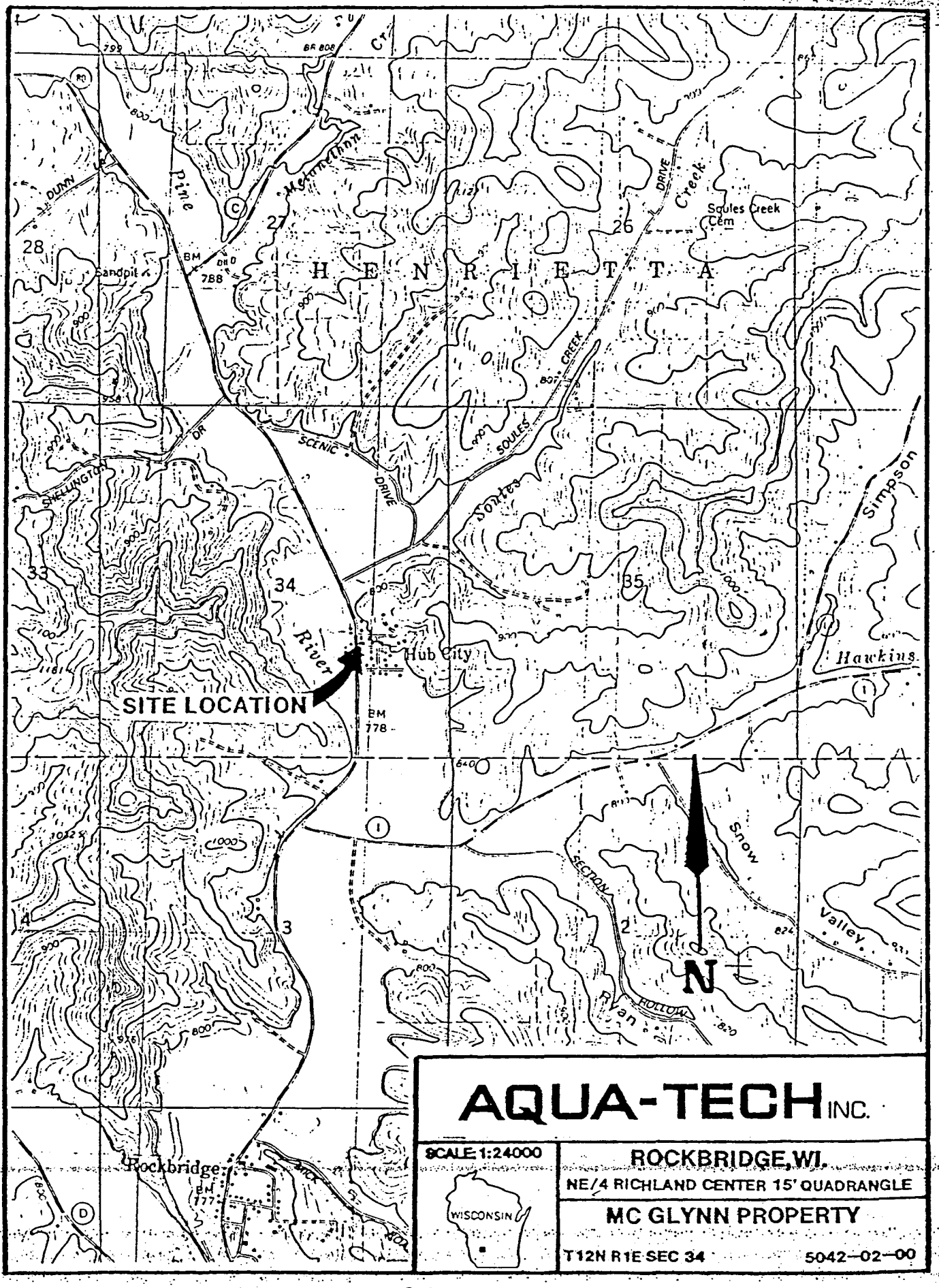
2.3 Geology

The site is located in the Driftless Area of the Western Uplands Province of western Wisconsin. The Driftless Area is the portion of Wisconsin that was not affected by glaciers of the last ice age. The physiography of the region has been determined by differential erosion of Cambrian age sandstone bedrock.

The soils encountered in the test borings range from a silty loam to a coarse sand with some fine gravel.

Groundwater was encountered in both soil borings at depths of 7.0 and 8.75 feet. No direction of groundwater flow was determined from boring water levels. Based on local topography, the groundwater is suspected to flow in a southwesterly to southerly direction across the site toward the Pine River located approximately 1,000 feet to the southwest.

FIGURE 2–1


SITE LOCATION
HENRIETTA
Hub City
Rockbridge
Pine
Heimerlann
Creek
Soules Creek Cem
Soules
Simpson
Hawkins
Snow
Valley
Ryan
Hollow
Section
Scenic
Drive
Dunn
Shellington
Sandpit
River
BM 788
BM 778
BM 777
N
SCALE 1:24000
WISCONSIN
AQUA-TECH INC.
ROCKBRIDGE, WI.
NE/4 RICHLAND CENTER 15' QUADRANGLE
MC GLYNN PROPERTY
T12N R1E SEC 34
5042–02–00

2.4 Site History

According to Mr. Francis Waldsmith, former owner of the property, a hotel was located at the site prior to 1932 or 1933 when the gasoline service station was constructed. The size and contents of the underground storage tanks at the site are unknown. However, Mr. Waldsmith recollects two hand pumps being located at the site and he thinks that the station sold regular and ethyl gasolines. The year the station became inactive remains undetermined, but according to Mr. Waldsmith, the station was not operating at the time his father bought the property in 1958. Mr. Waldsmith does not know of any underground storage tanks ever being removed from the property.

2.5 Regulatory Review

The McGlynn Property site is not listed on the U.S. Environmental Protection Agency's CERCLIS inventory of potential uncontrolled hazardous waste sites. In addition, there are no regulatory response records of the site in the Wisconsin Department of Natural Resources (WDNR) files. These files include the List of Active and Abandoned Landfills, the Wisconsin Inventory of Sites or Facilities Which May Cause or Threaten to Cause Environmental Pollution, and the Statewide Spills and Hazardous Incident Report for the period of January 1978 to December 1989.

There was no release of hazardous materials listed within a one mile radius of the site on the WDNR's Statewide Spills and Hazardous Incident Report.

There are no underground storage tanks listed on the Wisconsin Department of Industry, Labor, and Human Relations computer inventory at the site.

3.0 SITE ASSESSMENT PROCEDURES AND FIELD OBSERVATIONS

3.1 Introduction

This section outlines assessment procedures and field observations for the environmental assessment at the McGlynn Property. Individual subsections address the site representative interview, reconnaissance inspection, and sampling procedures. Rationales for specific assessment activities are also provided. Prior to Aqua-Tech, Inc. completing the soil borings at the site, a right-of-entry agreement was obtained from the property owner by the WDOT on April 26, 1990 (Refer to Appendix A).

3.2 Site Representative Interview

On July 23, 1990, James H. Cheshire of Aqua-Tech, Inc. conducted a telephone interview with Mr. Francis Waldsmith, former owner of the property. The interview was conducted for the purpose of gathering information that would aid in completing the Environmental Assessment at the McGlynn Property.

3.3 Site Reconnaissance Inspection

James H. Cheshire of Aqua-Tech conducted a reconnaissance inspection of the site on June 8, 1990. The reconnaissance inspection included a walk through of the site to determine appropriate sampling locations, taking into consideration underground tank bed location, underground and overhead utilities, and site accessibility.

Reconnaissance Inspection Observations

The McGlynn Property site is located in a mixed commercial/residential area in the unincorporated village of Hub City, Wisconsin.. The site is bounded to the north by Mandt Street. Across Mandt Street to the north is a supper club. The site is bounded to the south by a vacant tavern, to the east by a parking lot with a shack structure, and to the west by State Highway 80. Across State Highway 80 to the west is a single family dwelling. The Pine River is located approximately 1,000 feet west of the site and approximately 1,150 feet south of the site.

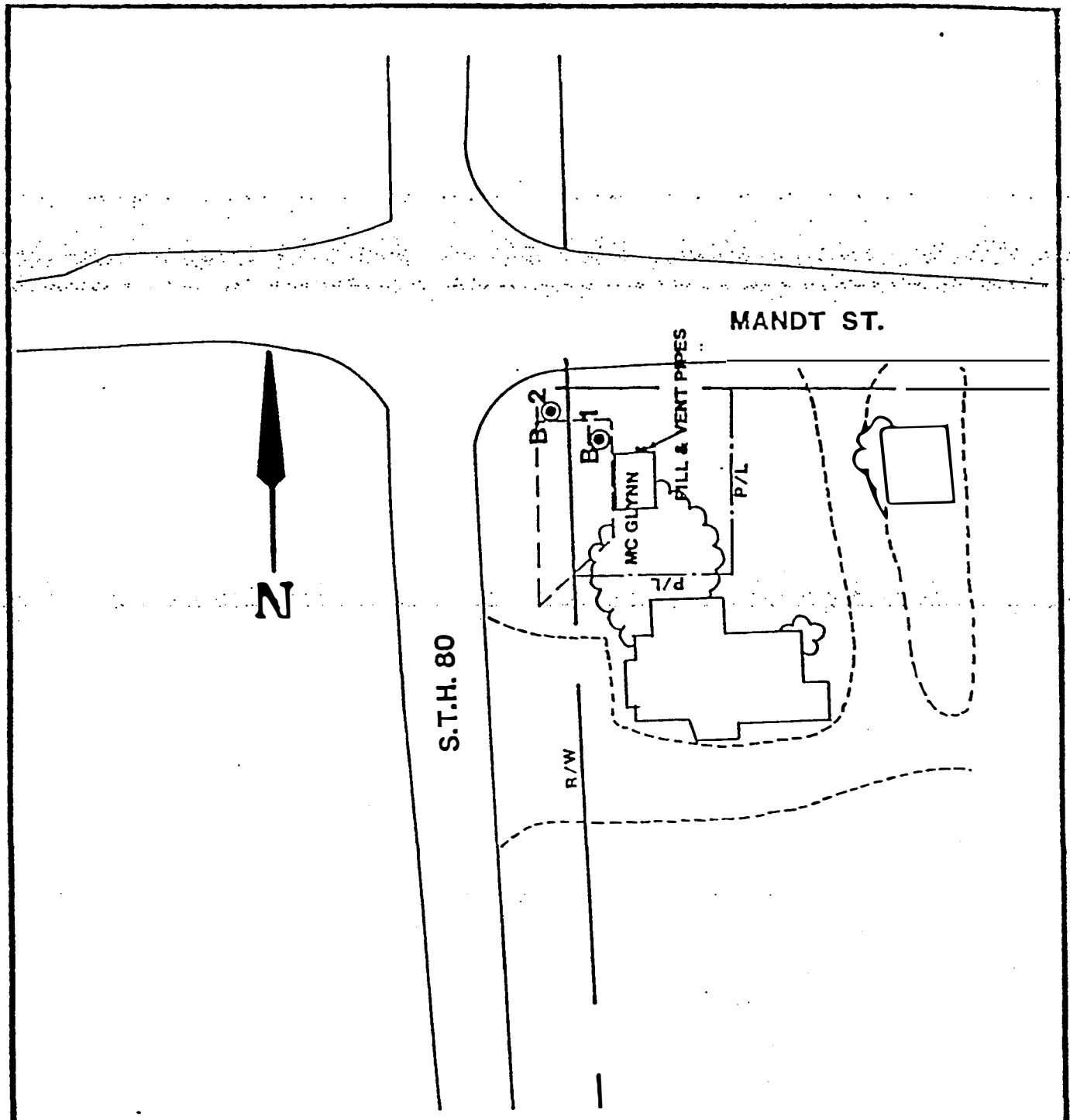
A vent and a fill pipe were observed indicating the presence of an underground storage tank in the location depicted in Figure 3-1. The tank appeared to be empty, but an "old" gasoline odor was apparent in the tank. A one story building (approximately 18 by 13 feet) and a 60 by 25 feet concrete slab were observed which are remnants of the former gasoline station. Remnants of piping believed to be associated with the former pump island were observed in the concrete slab. Much of the concrete slab is now covered with topsoil and sparse grass.

Photographs of the site are provided in Appendix B.

3.4 Sampling Procedures

Samples were collected from borings at locations selected during the reconnaissance inspection to determine whether environmental contamination exists at the site. On

FIGURE 3–1



NOTE:–
⊙ –SOIL TEST BORING

---- DRIVEWAY & GRASS BOUNDARY

AQUA-TECH INC.

SCALE: 1"=50'	APPROVED:	DRAWN BY:
DATE: 7/26/90	J.H.E.	RICHARDSON

MC GLYNN PROPERTY

5042-02-00

June 8, 1990, two soil borings were completed at the site in the locations depicted in Figure 3-1.

Soil Sampling Procedures

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with hollow stem augers and a two inch diameter, 24 inch split spoon sampler. The split spoon sampler was advanced at two foot intervals by conventional methods, including the attachment of the sampler to an AW rod and standard 140 pound hammer.

All drilling tools and equipment were washed with high pressure steam equipment prior to the start of sampling work. All sampling equipment was decontaminated with an alconox and reagent water solution between sampling points to prevent cross contamination.

A preliminary survey was conducted by screening samples with a photoionization detector (PID) immediately upon opening the split spoon sampling tube. Results from the survey were used to select the most contaminated soils from each boring for laboratory analysis. Data from the preliminary survey are recorded on the soil profile logs in Appendix C.

Prior to the start of the assessment, the PID was calibrated according to the manufacturers specifications and recorded on a calibration log sheet. A copy of the calibration log sheet is provided in Appendix D.

After pedologic logging (See Appendix C), the selected samples were stored in clean, teflon-capped four ounce jars and cooled to 4°C for transport to the laboratory.

Upon completion of sampling, the boreholes were completely backfilled with bentonite according to Chapter N.R. 141.25 of the Wisconsin Administrative Code and WDNR form 3300-5B is provided in Appendix C. The soil cuttings were stockpiled on and covered with an impermeable membrane at the site.

Groundwater Sampling Procedures

Groundwater samples were collected by inserting a clean, disposable PVC bailer down the hollow stem auger and transferring the contents to sample containers. The samples were cooled to 4°C for transport to the laboratory.

3.5 Chain of Custody Procedures

This section describes procedures used for sample identification and chain of custody. The purpose of these procedures is to ensure that the quality of the samples is maintained during collection, transportation, storage and analysis.

Sample identification documents are carefully prepared so that sample identification and chain of custody are maintained and sample disposition is controlled. Sample identification documents included:

* Field Notebooks
* Sample Labels

* Chain of Custody Records

Each sample is labeled, physically preserved, and sealed immediately after collection. To minimize handling of sample containers, labels are filled out prior to sample collection. The sample label is completed using waterproof ink and firmly affixed to the sample containers. The sample label provides the following information:

* Location
* Sample Number
* Data and Time of Collection
* Analysis Required
* Name of Sampler

A chain of custody record (See Appendix E) is fully completed in triplicate by the Aqua-Tech sampler immediately following sample collection.

Transfer of Custody Shipment

The cooler in which the samples are packed is accompanied by the chain of custody record. When transferring samples, the individuals relinquishing and receiving them sign, date, and note the time on the chain of custody record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain of custody record. A copy of the completed chain of custody record is retained by the

laboratory until analyses are complete. The record is then transferred to the site file with the analytical results.

4.0 ANALYTICAL PROCEDURES AND RESULTS

4.1 Introduction

This section includes results of chemical analyses of Aqua-Tech collected soil samples and groundwater samples for total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and xylenes (BTEX).

4.2 Analytical Procedures

The samples were analyzed by Aqua-Tech, Inc. in Port Washington, Wisconsin. The TPH analyses were conducted using a gas chromatograph (GC) equipped with a flame-ionization detector according to the Modified California Method. The BTEX analyses were conducted with a GC equipped with a photoionization detector according to U.S. EPA Method 601/602.

Methodology references contain specific quality control (QC) criteria associated with the particular methods. These specific requirements include calibration and QC samples and are described in detail within the methods. Daily performance tests and demonstration of precision and accuracy are required. Specifics of the analytical methodologies utilized are available from the laboratory.

4.3 Results of Chemical Analyses of Aqua-Tech Collected Samples

Chemical analyses for TPH of soil samples SB-1 and SB-2 collected from boring locations B-1 and B-2, respectively, revealed the following:

SB-1:

TPH as gasoline:	53 ug/g
TPH as diesel fuel:	75 ug/g
duplicate:	86 ug/g

SB-2:

TPH as gasoline:	58 ug/g
duplicate	32 ug/g
TPH as diesel fuel:	14 ug/g

The laboratory analytical detection limit for TPH as gasoline in soil is 1.0 ug/g. The detection limit for TPH as diesel fuel in soil is 10 ug/g.

Chemical analysis for BTEX of groundwater sample WB-1(A) revealed the following estimated concentrations in ug/l (ppb):

Benzene:	1,184 ug/l
Toluene:	570 ug/l
Ethylbenzene:	210 ug/l
Xylenes:	3,420 ug/l

The laboratory analytical detection limit for BTEX is 1.0 ug/l. The results of the BTEX analysis are estimated concentrations because the concentrations exceeded the instrument calibration range due to large amounts of solids present in the water sample.

Chemical analysis of groundwater sample WB-1(B) for TPH detected the following:

TPH as diesel fuel:	23,100 ug/l

The laboratory analytical detection limit for TPH in groundwater is 50 ug/l.

The complete results of the chemical analyses are provided in Table 4-1. The original analytical data are provided in Appendix F.

TABLE 4-1

RESULTS OF THE CHEMICAL ANALYSES OF

AQUA-TECH COLLECTED SOIL AND GROUNDWATER SAMPLES

Parameter	Sample Number SB-1	Sample Number SB-2	Sample Number WB-1(A)	Sample Number WB-1(B)
Sample Description	Soil Boring B-1	Soil Boring B-1	Groundwater Boring B-1	Groundwater Boring B-1
Depth interval (feet)	5.0-7.0	7.0-9.0	---	---
Total Solids (%)	84	86	---	---
TPH as Diesel Fuel	75 ug/g[1]	14 ug/g	---	23,100 ug/l[2]
duplicate	86 ug/g	----	---	---
spike	----	126%	---	---
TPH as Gasoline	53 ug/g	59 ug/g	---	---
duplicate	----	32 ug/g	---	---
Benzene[3]	----	----	1,184 ug/l*	---
Toluene[3]	----	----	570 ug/l*	---
Ethylbenzene[3]	----	----	210 ug/l*	---
Xylenes[3]	----	----	3,420 ug/l*	---

[1] The remedial action standard for TPH in soils as prescribed by the WDILHR and the WDNR is 10 ug/g (ppm). The laboratory analytical detection limit for TPH as gasoline is 1.0 ug/g and for TPH as diesel fuel 10 ug/g.

[2] There is no remedial action standard for TPH in groundwater. The laboratory analytical detection limit for TPH is 50 ug/l.

[3] The remedial action standards for BTEX in groundwater as prescribed by the Wisconsin Administrative Code are included in Table 5-1. The laboratory analytical detection limit for BTEX is 1.0 ug/l (ppb).

* Response for this parameter exceeded instrument calibration range because of large amounts of solids in sample. Concentrations listed are estimated.

5.0 DISCUSSION OF ASSESSMENT RESULTS

5.1 Introduction

This section discusses data and information that apply to observed and potential contamination that may be attributable to the McGlynn Property site. In addition, potential migration pathways of contaminants are discussed if warranted.

5.2 Soil

Chemical analyses of soil samples SB-1 and SB-2 detected total petroleum hydrocarbon (TPH) concentrations above the 10 ppm remedial action standard for petroleum contaminated soils prescribed by the Wisconsin DILHR. The extent of contamination is unknown, but the contamination is known to be present on the existing WDOT right-of-way. Boring B-2 was completed approximately 30 feet east of the existing State Highway 80 centerline on the existing WDOT right-of-way.

Field screening of the soils with a photoionization detector (PID) revealed volatile organic compound (VOC) levels ranging from 5 to 200 ppm in boring B-1 and from 0 to 110 ppm in boring B-2. Results of the PID field screening survey suggest that the contaminated soil on the existing WDOT right-of-way is caused by migration of the petroleum contaminants at the interface of the groundwater table. No VOCs were detected upon field screening of soil samples collected above the groundwater interface in boring B-2.

5.3 Groundwater

Results of the chemical analysis of groundwater sample WB-1 indicate that the groundwater at the site is contaminated with benzene, toluene, ethylbenzene, and xylenes (BTEX) above the Preventive Action Standard prescribed by the Wisconsin Administrative Code Chapter N.R. 140.10 (See Table 5-1). No groundwater samples were collected from boring B-2. However, based on the results of soil sample SB-2 collected at the interval where the groundwater table was encountered (7.0 to 9.0 feet), the groundwater on the existing WDOT right-of-way at the site is believed to be contaminated. The direction of groundwater flow and the extent of groundwater contamination have not been determined.

TABLE 5-1

PUBLIC HEALTH GROUNDWATER QUALITY STANDARDS

WISCONSIN ADMINISTRATIVE CODE

CHAPTER N.R. 140 SUBCHAPTER II

GROUNDWATER QUALITY STANDARDS

Substance	Enforcement Standard (micrograms per liter)	Preventative Action (micrograms per liter)
Benzene	0.67	0.067
Ethylbenzene	1360	272
Toluene	343	68.6
Xylenes	620	124

6.0 RECOMMENDATIONS

After completing the Phase II Environmental Assessment for the McGlynn Property, Aqua-Tech recommends that further investigation to determine the extent of soil and groundwater contamination is necessary. Aqua-Tech recommends that a series of three to six borings be completed to delineate the contaminated plume on the existing WDOT right-of-way. Aqua-Tech estimates the cost of the Phase III assessment to range from approximately $2,750 to $4,500.

APPENDIX A

RIGHT OF ENTRY

Wisconsin Department of Transportation

The undersigned grants to the State of Wisconsin, Department of Transportation, it's agents and contractors, the right to enter upon the following described lands for the purpose of conducting an Environmental Site Assessment. On the property of Francis P. Waldsmith (Richland County Wisconsin), this site assessment will consist of drilling holes for soil testing purposes in the area described as follows:

Said area lies between a line (parallel to existing R/W line) lying one foot in front of the abandoned gas station building and the existing Right of Way line (see attached exhibit).

The holes will then be filled and capped at the surface with material matching the surrounding ground.

By accepting this Right of Entry, the State of Wisconsin agrees, as required by Wisconsin law, to pay any liabilities arising out of the exercise of its rights of entry whenever those liabilities result from an act or omission of a State of Wisconsin officer, employee, or agent acting within the scope of his or her State of Wisconsin authority.

The Right of Entry shall expire upon completion of the Environmental Site Assessment.

~~Francis P. Waldsmith~~ Thaddeus & Susan McGlynn

		Thaddeus McGlynn	
(Owner)	(Date)	(Owner)	(Date)
		Susan McGlynn	
(Owner)	(Date)	(Owner)	(Date)

Janice R. Crooks

(Agent, for the State of Wisconsin)

Project 5042-02-00 Highway STH 80 County Richland Parcel

APPENDIX B

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: McGlynn Property PAGE 1 OF 1

DATE: 6/8/90

TIME: 9:50 am

DIRECTION OF PHOTOGRAPH:

Southeast

WEATHER CONDITIONS:

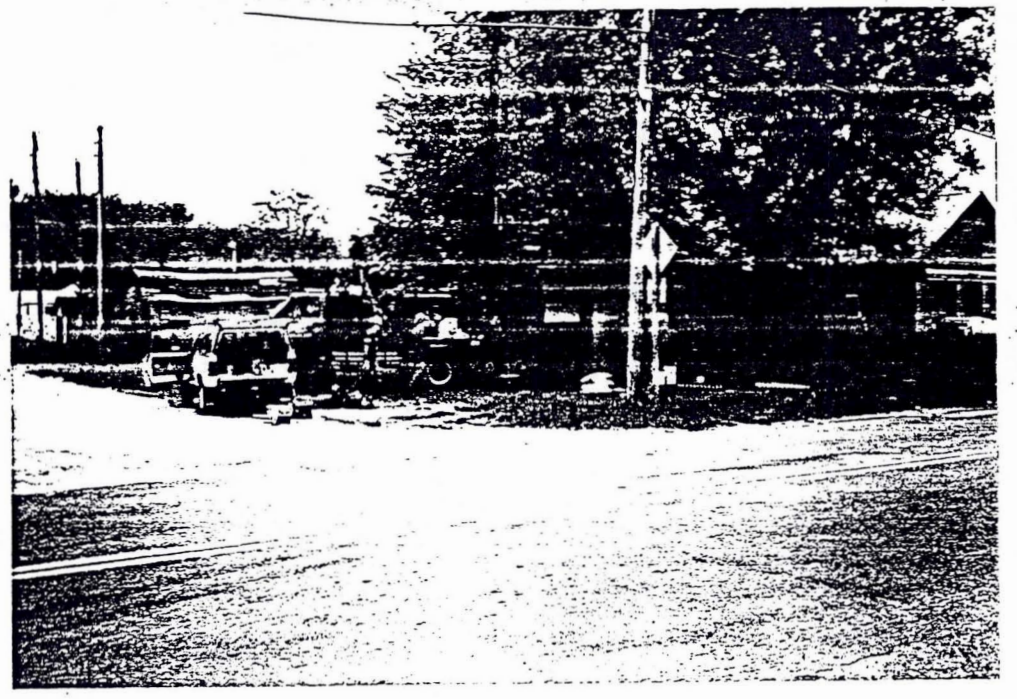
Overcast, 60°F

PHOTOGRAPHED BY:

Jim Cheshire

SAMPLE ID: (If Applicable):

SB-1, WB-1(A), WB-1(B)



DESCRIPTION: View of boring B-1 in progress from across State Highway 80.

DATE: 6/8/90

TIME: 10:15 am

DIRECTION OF PHOTOGRAPH:

Northeast

WEATHER CONDITIONS:

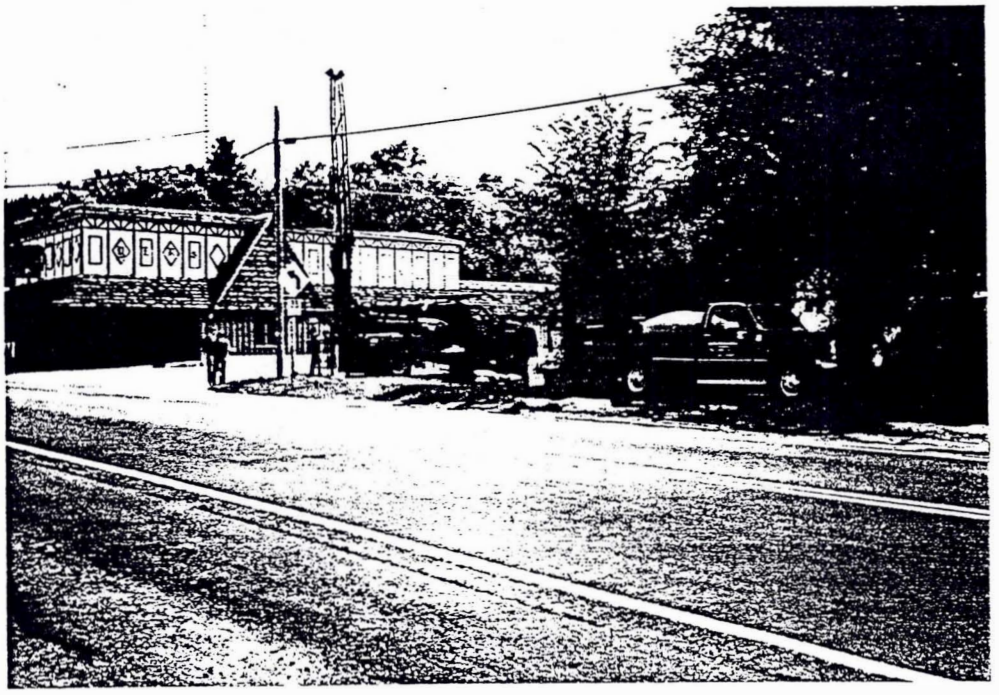
Overcast, 60°F

PHOTOGRAPHED BY:

Jim Cheshire

SAMPLE ID: (If Applicable):

SB-2



DESCRIPTION: View of boring B-2 in progress from across State Highway 80.

APPENDIX C

AQUA-TECH, INC
140 S. PARK ST.
PORT WASHINGTON, WI 53074
TELEPHONE:
(414) 284-5746
(414) 375-0407 (MILW METRO)

SOIL PROFILE LOG

PROJECT: **MC GLYNN**
LOCATION: STH 80, HUBCITY
RICHLAND COUNTY, WI
PROJECT#: 5042-02-00
ATI WO#: 92500

BORING B-1 SURFACE ELEVATION _____

SAMPLES NO.	MOISTURE (bpf)	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	6" TOPSOIL AND 4" CONCRETE
		N/R			
	MOIST		5		3.0' - 4.0' LT BROWN SILTY SAND W/SOME GRAVEL
			50		4.0' - 5.5' LT RED-BROWN FINE TO MEDIUM SAND
				5.0	
SB-1			200		5.5' - 9.0' LIGHT BROWN SILT W/FINE SAND
			110		
	WET		190		9.0' - 13.0' LIGHT RED-BROWN SILTY FINE SAND W/FINE GRAVEL
			15	10.0	
			160		
			25		
				13.0	TERMINATED BORING AT 13.0'
				15.0	*SOIL SAMPLE SB-1: 5.0' - 7.0' = 200PPM *GROUNDWATER SAMPLES WB-1(A): 2 X 40 ml WB-1(B): 1 X 1 LITER
				20.0	

WATER LEVEL OBSERVATIONS

WHILE DRILLING 8.0'
DEPTH TO WATER 8.9'
DEPTH TO CAVE-IN ----

GENERAL INFORMATION

START DATE 6/08/90 COMPLETION DATE 6/08/90
DRILLING METHOD: 2 1/4" HOLLOW STEM AUGER; SPLIT SPOON SAMPLING
LOGGER: James H. Chesshire

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5B Rev. 7-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: B-1

County: Richland

NW 1/4 of SE 1/4 of Sec. 34; T. 12 N; R. 1 ☒ E ☐ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name: Henrietta

Street Address of Well: State Highway 80

City, Village: Hub City

(2) FACILITY NAME

Original Well Owner (If Known): N/A

Present Well Owner

Street or Route

City, State, Zip Code

Facility Well No. and/or Name (If Applicable): B-1

WI Unique Well No.

Reason For Abandonment: Exploratory Soil Boring Complete

Date of Abandonment: 6-8-90

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 6-8-90

☐ Monitoring Well
☐ Water Well
☐ Drillhole
☒ Borehole

Construction Report Available? ☒ Yes ☐ No

Soil Profile log

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 13.0 (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (ft.) N/A

Was Well Annular Space Grouted? ☐ Yes ☒ No ☐ Unknown
If Yes, To What Depth? N/A Feet

(4) Depth to Water (Feet) 8.75ft.

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain N/A

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☐ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☐ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

NA

(5) Required Method of Placing Sealing Material

☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials — For monitoring wells and monitoring well boreholes only

☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☐ Chipped Bentonite
☐ Bentonite Pellets
☒ Granular Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Granular Bentonite	Surface	13.0	≈4	—

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: James H. Cheshire (Aqua-Tech, Inc.)

Signature of Person Doing Work: James H. Cheshire — Date Signed: 7-9-90

Street or Route: 140 S. Park St.

Telephone Number: (414) 284-5746

City, State, Zip Code: Port Washington, WI 53074

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

AQUA-TECH, INC
140 S. PARK ST.
PORT WASHINGTON, WI 53074
TELEPHONE:
(414) 284-5746
(414) 375-0407 (MILW METRO)

SOIL PROFILE LOG

PROJECT: MC GLYNN
LOCATION: STH 80, HUBCITY
RICHLAND COUNTY, WI
PROJECT#: 5042-02-00
ATI WO#: 92500

BORING B-2 SURFACE ELEVATION

SAMPLES NO.	MOISTURE (bpf)	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	TOPSOIL
	MOIST		0		1.0' - 2.0' DK BRN SILTY LOAM TOPSOIL W/GRAVEL
			0		2.0' - 4.0' LIGHT RED-BROWN CLAYEY SILT
			0	5.0	4.0' - 7.0' LT BRN TO RD-BRN SILTY FINE SAND
SB-2	WET		110		7.0' - 8.0' LT BRN TO RD-BRN CLAYEY SILT W/SAND
			110	10.0	8.0' - 11.0' LT RD-BRN CSE SAND W/FINE GRAVEL
				11.0	TERMINATED BORING AT 11.0'
					*SOIL SAMPLE SB-2: 7.0' - 9.0'
				15.0	
				20.0	

WATER LEVEL OBSERVATIONS

WHILE DRILLING 7.0'
DEPTH TO WATER 7.0'
DEPTH TO CAVE-IN ----

GENERAL INFORMATION

START DATE 6/08/90 COMPLETION DATE 6/08/90
DRILLING METHOD: 2 1/4" HOLLOW STEM AUGER; SPLIT SPOON SAMPLING
LOGGER: James H. Chaskis

APPENDIX D

AQUA-TECH
GROCE LABORATORIES

The HNU Photoionization Meter was calibrated to 55 ppm at a span setting of 10.0 with a 10.2 eV lamp.

Job Name and # Raymond Henry (# 92498); Wallsmith (# 9500); Anderson (# TD 834)

HNU I.D. # Unit A

DATE 6-7-90 TIME 7:30 p.m.

SIGNATURE James H. Cheshire

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd Street, SC 29551

APPENDIX E

GROCE LABORATORIES | [redacted]TE
[redacted]tch, Inc.
140 S. Park St., Port Washington, 53074
(414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
9252	[illegible]

SAMPLERS: (Signature) James H. Cheshire

James H. Cheshire

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH	TPH Ultrasonic Extract	TPH Ultrasonic Fuel	BTEX	2174	REMARKS
												PIA (cont.)
W2929A	6-8-90	9:30		X	SB-1 5.0-7.0'	1		X				200 ml
W2929B	6-8-90	10:00		X	WB-1(A)	2			X			
W2929C	6-8-90	10:00		X	WB-1(B)	1		O	X			
W2929D	6-8-90	11:20		X	SB-2 7.0-9.0'	1	X	X				110

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
James H. Cheshire	6-11-90 9:30		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	
		[illegible]	9:30am 6-11-90

Report to:
Name Jim Cheshire
Street
City State Zip
Phone no. ( )

Remarks

ATI 6-11-90

Remarks

Distribution: White - Accompanies Shipment; Yellow - Laboratory File; Pink - Coordinator Field Files

APPENDIX F

AQUA-TECH
GROCE LABORATORIES

ANALYTICAL LABORATORY REPORT

6-25-90

Sample #: W2929 A-D

Customer: Mc Glynn

Date Sampled: 6-8-90

Date Received: 6-11-90

Date Reported: 6-22-90

Lab Director Approval: Bruce D Hohn

AQ Contact Name:

Sample Description

PARAMETER	2929 A	2929 B	2929 C	2929 D	Tech ID	Date Analysis Completed
total solids	84%	—	—	86%	PS	6-12-90
TPH-gasoline	53 mg/kg (100 mg/kg)	—	—	59 mg/kg (100 mg/kg)	TRH	6-13-90
	@			Dup-32 mg/kg		6-13-90
TPH-diesel	75 mg/kg (10 mg/kg)	—	23,100 mg/L (50 mg/L)	14 mg/kg 10 mg/kg	PS	6-21-90
	dup 86 mg/kg			spike 126%		
Benzene	—	1184 mg/L* (1.0 mg/L)		—	TRH	6-21-90
Toluene	—	570 mg/L*	—	—		
Eth. Benzene	—	210 mg/L*	—	—		
Xylene	—	3420 mg/L*	—	—		

ND = not Detected

Detection Limit is in ( )

* Estimated concentration; Sample concentration for this parameter exceeded instrument calibration range. Sample could not be diluted due to large amount of solids present.

APPENDIX B

WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR)
LIST OF LEAKING UNDERGROUND STORAGE TANKS (LUST) LIST

ADDRESS:	CITY:	DATE REPORTED	PRI	CASE STATUS:	SUBSTANCE:	RESPONSIBLE PARTY:	RESPONSIBLE PARTY ADDRESS:
CHARLES STREET	WESTFIELD	7/12/90	3	FIELD INVESTIGATION	FUEL OIL	WESTFIELD SCHOOLS	303 THOMAS ST, WESTFIELD,WI 53964
303 THOMAS ST	WESTFIELD	6/29/90	3	FIELD INVESTIGATION	FUEL OIL	WESTFIELD SCHOOLS	303 THOMAS ST WESTFIELD, WI
HWY 171	AKAN	8/27/90	1	FIELD INVESTIGATION	OTHER	AKAN, TOWNSHIP OF	RT 1 BOX 206,BLUE RIVER,WI 53518
CTY D&I WITH CTY N	BLOOM CITY	10/12/90	3	FIELD INVESTIGATION	LEADED GAS	WARREN,LAUREL	1211 KING ST,JANESVILLE,WI 54646
P O BOX 96	GOTHAM	10/11/90	1	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	DJ'S KWIK STOP	P O BOX 96,GOTHAM,WI 53540
HWY 80	HUB CITY	10/09/90	2	UNKNOWN	OTHER	ANDERSON FRED	RT 3 RICHLAND CENTER WI 53581
HWY 80	HUB CITY	10/24/90	2	UNKNOWN	OTHER	MCGLYNN, THADDEUS	RT 3,RICHLAND CENTER,WI 53581
MAIN STREET	LONE ROCK	5/22/91	2	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	DANCO PRAIRIE FS	5371 FARMCO DRIVE,MADISON,WI 53713
RT 3 HWY 80	RICHLAND	10/09/90	2	UNKNOWN	OTHER	HENRY RAYMOND	RT 3 RICHLAND CENTER WI 53581
710 S CHURCH ST	RICHLAND CENTER	8/08/90	4	UNKNOWN	UNKNOWN HYDROCARBO	BILLS SERVICE	710 S CHURCH ST RICHLAND CENTER
177 E GAGE ST	RICHLAND CENTER	8/08/90	4	NO ACTION	UNKNOWN HYDROCARBO	BROADBENT OIL	177 E GAGE ST BOX 674,RICHLAND CENTER,
HWY 14	RICHLAND CENTER	11/11/91	4	NO ACTION	FUEL OIL	BRUSH CREEK SCHOOL	125 S CENTRAL AVE, RICHLAND CENTER,WI
HWY 14	RICHLAND CENTER	4/25/90	1	LONG TERM MONITORING	MULTIPLE SUBSTANCE	KOLLER PETROLEUM	241 BALTIMORE SPRING GREEN WI 53588
HWY 14 & CTY TRUNK O	RICHLAND CENTER	9/18/89	3	FIELD INVESTIGATION	UNLEADED GAS	JACOBSON BENDER OIL CO R. BENDER	RT 2 RICHLAND CENTER WI
420 W SEMINARY ST	RICHLAND CENTER	6/21/90	4	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	LEYDA, JIM	343 E COURT ST,RICHLAND CENTER,WI 53581
196 W COURT ST	RICHLAND CENTER	6/02/88	1	FIELD INVESTIGATION	VOCS	RICHLAND CO BANK	BOX 677,RICHLAND CENTER, WI 53581
HWY 80 SOUTH	RICHLAND CENTER	11/11/91	4	NO ACTION	FUEL OIL	RICHLAND MIDDLE SCHOOL	125 S CENTRAL AVE, RICHLAND CENTER,WI
287 CENTRAL	RICHLAND CENTER	5/16/90	1	FIELD INVESTIGATION	OTHER	RICHLAND CONSUMER COOP	165 W HAZELTINE AVE RICHLAND CENTER
RT 3	RICHLAND CENTER	11/05/90	2	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	ROCKBRIDGE,TOWN OF	RT 3,RICHLAND CENTER, WI 53581
HWY 14 WEST	RICHLAND CENTER	11/05/90	4	FIELD INVESTIGATION	UNLEADED GAS	U.W. RICHLAND CTR	HWY 14 WEST,RICHLAND CENTER,WI 53581
HWY 56 & 131	VIOLA	2/21/84	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	BENDER, WILLIAM & ANN	PO BOX 25, VIOLA, WI 54664
ROUTE 2 CTY HWY G	VIOLA	5/17/91	4	FIELD INVESTIGATION	DIESEL	S&S CYCLE, INC	RT 2 BOX 215 CTY HWY G,VIOLA, WI 54664
CTY A & D-1 BLK SO.	WEST LIMA	4/29/91	4	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	ORGANIC G.R.E.E.N.	106275 WESTERN AVE, CHICAGO, IL 60643
RR 3 STH 80	YUBA	8/17/90	1	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	SOMMERS, ROBERT	RR 3 STH 80,YUBA,WI 54672
1313 PARK AVE	BELOIT	11/01/91	4	NO ACTION	MULTIPLE SUBSTANCE	ABC SUPPLY	822 BROAD ST, BELOIT, WI 53511
202 SHIRLAND AVE	BELOIT	4/19/88	4	FIELD INVESTIGATION			
1231 INMAN PKWY	BELOIT	7/17/90	3	FIELD INVESTIGATION	FUEL OIL	BELOIT TURNER HIGH SCHOOL	1231 INMAN PKWY BELOIT, WI
435 WOODWARD AVE	BELOIT	11/08/89	1	FIELD INVESTIGATION	UNLEADED GAS	BORGERDING ESTATE	1000 E DEAN RD, MILWAUKEE,WI 53217
701 LAWTON AVE	BELOIT	8/19/89	1	REMEDIAL ACTION	DIESEL	COLT INDUSTRIES	701 LAWTON AVE,BELOIT, WI 53511
2212 PRAIRIE AVE	BELOIT	11/16/90	1	FIELD INVESTIGATION	UNLEADED GAS	DEWEY'S WRECKER SERVICE	2212 N PRAIRIE ST, BELOIT, WI 53512
2810 KENNEDY DRIVE	BELOIT	7/23/91	3	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	FRITO-LAY INC	7701 LEGACY DRIVE, PLANO, TX 75086
1421 MADISON RD	BELOIT	6/14/89	2	NO ACTION	UNLEADED GAS	KERR MCGEE ROLLETTE	1421 MADISON RD BELOIT
500 E GRAND AVE	BELOIT	5/08/90	2	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	M & I BANK BELOIT	500 E GRAND AVE, BELOIT, WI 53511
I90 & 43	BELOIT	7/01/89	3	UNKNOWN	MULTIPLE SUBSTANCE	PILOT OIL DAVE BOLUS	PO BOX 10146 KNOXVILLE, TN
1409 MANCHESTER ST	BELOIT	8/27/90	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	RYDER TRUCK RENTAL	1409 MANCHESTER ST,BELOIT,WI 53511
RT 1 TOWN HALL ROAD	BELOIT	8/07/90	4	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	TURTLE HIGHWAY SHOP	RT 1 TOWN HALL RD BELOIT, WI
856 E 4TH ST	BELOIT	3/12/90	4	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	VICK HANSENS	856 4TH ST,BELOIT, WI 53511
1500 4TH ST	BELOIT	10/04/90	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	WEISER MOTORS, INC.	1500 FOURTH ST,BELOIT,WI 53511
500 TOWN LINE RD	BELOIT	2/15/89	3	FIELD INVESTIGATION		WP & L JOSEPH SHEFCHECK	222 W WASHINGTON AVE MADISON WI
201 ALLEN STREET	CLINTON	6/28/90	4	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	CALABRESE, JOHN	608 MEADOW TRAC, DEERFIELD,WI 53551
601 MILWAUKEE ST	CLINTON	6/05/90	2	REMEDIAL ACTION	UNKNOWN HYDROCARBO	WACEK-SMITH ASSOCIATES	601 MILWAUKEE ST CLINTON, WI
135 MILWAUKEE RD	CLINTON	1/17/90	4	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	DOUG'S STANDARD	135 MILWAUKEE RD,CLINTON,WI 53525
CO TRK X	CLINTON	3/02/90	2	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	VERN'S AUTOMOTIVE	CLINTON, WI
405 E FULTON	EDGERTON		1	FIELD INVESTIGATION	FUEL OIL	DORSEY TRAILERS	1201 PEACH TREE, ATLANTA, GA
101 NORTH SWIFT ST	EDGERTON	4/02/90	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	OREN'S AUTO BODY & CAR WASH	101 N SWIFT ST,EDGERTON, WI 53534
122 W LAWTON ST	EDGERTON	12/06/89	4	NO ACTION	UNLEADED GAS	TERRA INTERNATIONAL	BOX 4500,LIMA, OHIO 45802
102 MAPLE ST	EVANSVILLE	9/04/90	4	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	UNION CO-OP	102 MAPLE ST EVANSVILLE WI 53536
352 E. CENTRE STREET	FOOTVILLE	6/06/89	3	EMERGENCY RESPONSE	UNKNOWN HYDROCARBO	UNKNOWN	
3420 MILTON AVE	JANESVILLE	7/09/91	2	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	AMOCO OIL CORP	5001 W 80TH ST, MINNEAPOLIS,MN 55437
100 W MILWAUKEE	JANESVILLE	7/18/90	4	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	BANK ONE	100 W MILWAUKEE,JANESVILLE,WI 53547
4023 NEWVILLE RD	JANESVILLE	1/25/91	3	FIELD INVESTIGATION	OTHER	BELOIT BEVERAGE-MARK MORELLA	1530 GALE DR,BELOIT,WI 53511
423 WEST DELAVAN	JANESVILLE	7/23/91	4	NO ACTION	UNKNOWN HYDROCARBO	BOBO'S TAVERN	423 WEST DELAVAN, JANESVILLE,WI 53545
600 W MILWAUKEE	JANESVILLE	5/31/90	1	FIELD INVESTIGATION	MULTIPLE SUBSTANCE	CAMBECK PETROLEUM	PO BOX 1446,JANESVILLE, WI 53547-1446
3222 OLD HUMES RD	JANESVILLE	12/04/90	1	FIELD INVESTIGATION	UNKNOWN HYDROCARBO	CAMPBELL,JIM	P O BOX 1446,JANESVILLE,WI 53547-1446

APPENDIX C

SITE PHOTOGRAPHS

FIELD PHOTOGRAPHY LOG SHEET

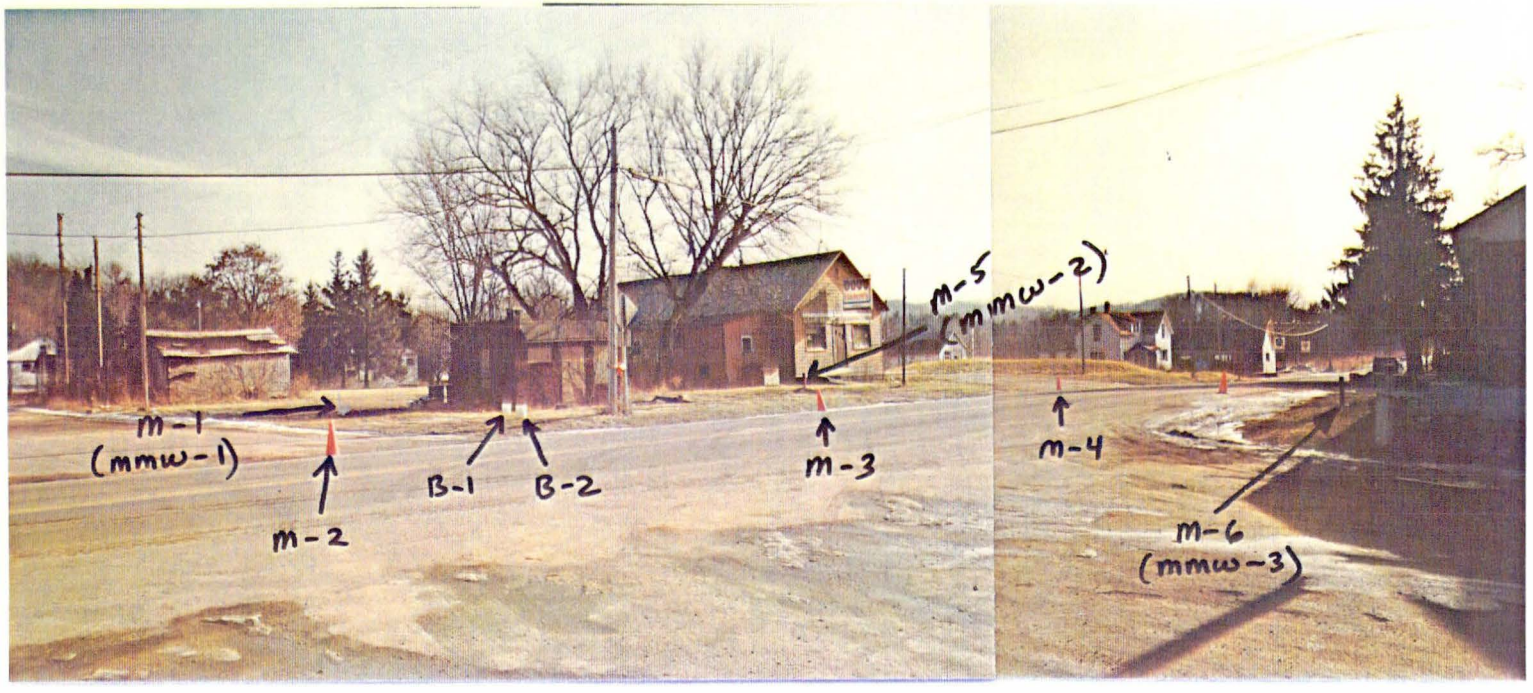
SITE NAME: McGlynn Property (AESI #92500) **PAGE** 1 **OF** 2

DATE: 12/11/91 **TIME:** 1:30 p.m. **DIRECTION OF PHOTOGRAPH:** Southeast

WEATHER CONDITIONS: 40°F, Sunny

PHOTOGRAPHED BY: Dena Hargraves

DESCRIPTION: The McGlynn Property showing the previous soil boring locations (B-1 and B-2), the recent soil boring locations (M-1, M-2, M-3, M-4, M-5, and M-6), and the monitoring well locations (MMW-1, MMW-2, and MMW-3). State Highway 80 runs through the center of the photo and Mandt Street is in the foreground and on the left edge of the photo.



FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: McGlynn Property (AESI #92500) PAGE 2 OF 2

DATE: 12/11/91

TIME: 1:30 p.m.

DIRECTION OF PHOTOGRAPH:

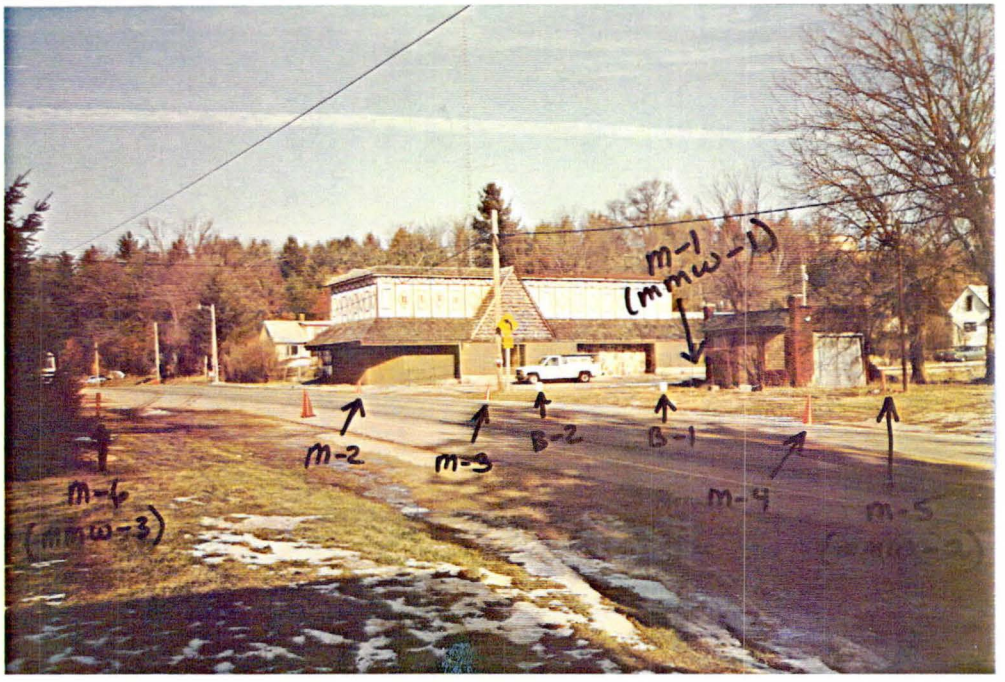
Northeast

WEATHER CONDITIONS:

40°F, Sunny

PHOTOGRAPHED BY:

Dena Hargraves



DESCRIPTION: The McGlynn Property showing the previous soil boring locations, the recent soil boring locations, and the monitoring well locations. State Highway 80 runs through the center of the photo and the white truck is parked on Mandt Street.

APPENDIX D

HNU PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

ADVENT

ENVIRONMENTAL SERVICES, INC.

PHOTOIONIZATION DETECTOR CALIBRATION DOCUMENTATION

SITE NAME: McGlynn Property **DATE:** 12/10/91, 12/11/91

SIGNATURE: Dana M Haupers **TIME:** 6:00 AM, 7:00 AM

AMBIENT TEMPERATURE: 30°, 21°

SAMPLE EQUILIBRATION TEMPERATURE: 70°

WEATHER CONDITIONS: Sunny / Slight Breeze, Sunny

HNU Model PI 101, Advent Environmental Services, Inc. number 4 was calibrated with 250 parts per million Isobutylene calibration gas which is equivalent in response to 55 parts per million benzene at a gain setting of 7.88, 7.98 with a 10.2 electron volt (Ev) lamp.

ERRATIC READINGS: —

REPAIRS OR CLEANING: —

PROCEDURE FOR DAILY CALIBRATION CHECK

A. Battery check - Attach probe to unit. Turn function switch to BATT. The needle should be in the green region. If not, recharge the battery.

B. Allow unit to operate on STANDBY until the unit has reached ambient conditions or until a stable reading is obtained.

C. Zero set - Instrument should be zeroed on site if possible. Turn function switch to STANDBY. Listen to make sure fan is operating. Set the zero point with the ZERO set control.

D. Calibration - Attach calibration gas to end of probe extension. Adjust SPAN control setting to obtain the necessary meter reading. If meter does not respond, or if the correct reading cannot be adjusted, the unit must be serviced or cleaned.

The above calibration procedure is taken from Calibration Procedure, section 3.4, of the Instruction Manual, Trace Gas Analyzer, HNU Model 101, December, 1985.

APPENDIX E

SOIL PROFILE LOGS AND
WDNR WELL/DRILLHOLE ABANDONMENT FORMS (3300-S)

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074
(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-1 **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
	DRY 3 5 4 4		0		0.0' - 4.0' BROWN SANDY SILT
MS-1	MOIST 3 3 4 11		0		
	WET 7 6 9 3		1	5.0	4.0' - 8.0' RED/BROWN SILTY FINE/MEDIUM-GRAINED SAND, GREY LENSES
MGW-1	WET 5 7 13 14		1		8.0' - 9.0' RED/BROWN SILTY MEDIUM-GRAINED SAND, SOME FINE GRAVEL
				10.0	
				15.0	
				20.0	BORING TERMINATED @ 9.0'
				25.0	*SOIL SAMPLE: MS-1 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 7.3' *NO BEDROCK ENCOUNTERED *HEADSPACE = 1 *INSTALLATION OF MMW-1

WATER LEVEL OBSERVATIONS

WHILE DRILLING 9.0
DEPTH TO WATER 7.3
DEPTH TO CAVE-IN 8.0

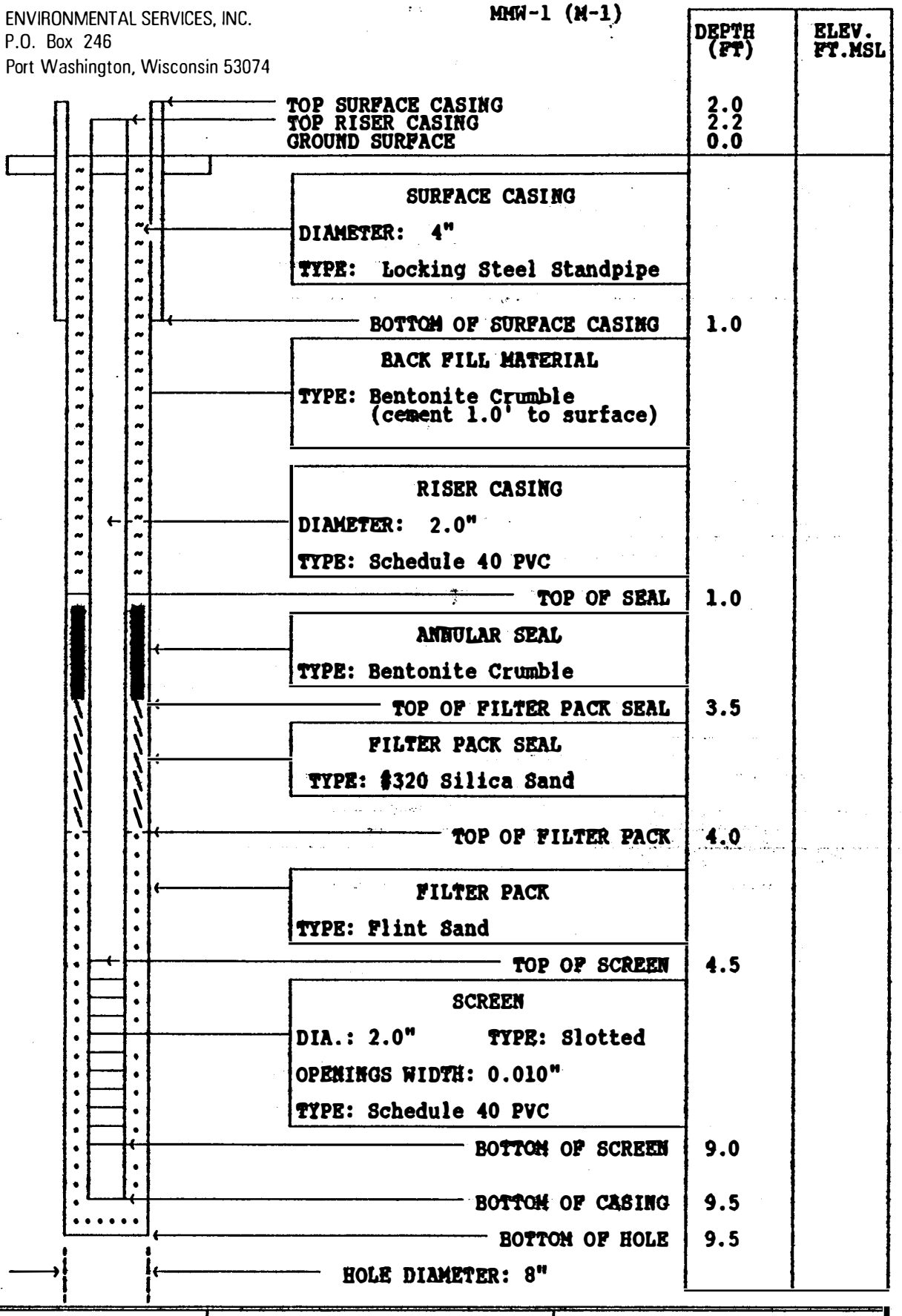
GENERAL INFORMATION

START DATE 12/10/91 COMPLETION DATE 12/10/91
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: Dana M. Hargraves

MONITOR WELL DETAIL

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

MMW-1 (M-1)



	DEPTH (FT)	ELEV. FT.MSL
TOP SURFACE CASING	2.0	
TOP RISER CASING	2.2	
GROUND SURFACE	0.0	
BOTTOM OF SURFACE CASING	1.0	
TOP OF SEAL	1.0	
TOP OF FILTER PACK SEAL	3.5	
TOP OF FILTER PACK	4.0	
TOP OF SCREEN	4.5	
BOTTOM OF SCREEN	9.0	
BOTTOM OF CASING	9.5	
BOTTOM OF HOLE	9.5	

SCALE: AS SHOWN	PREPARED BY: DENA HARGRAVES	INSTALLATION DATE:12/10/91
PROJECT NAME: MCGLYNN PROPERTY		
AESI JOB#: 92500		

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: McGlynn Property	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: mmw-1
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or	Wis. Unique Well Number / DNR Well Number: _____ / _____
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 12/10/91 (m m d d y y)
Distance Well Is From Waste/Source Boundary: 17 ft.	Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 34, T. 12 N, R. 1 ■E. ☐W.	Well Installed By: (Person's Name and Firm): Dena M. Hargraves; Advent Environmental Services, Inc
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ■ Upgradient s ☐ Sidegradient; d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 786.96 ft. MSL
B. Well casing, top elevation 787.21 ft. MSL
C. Land surface elevation 785.36 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

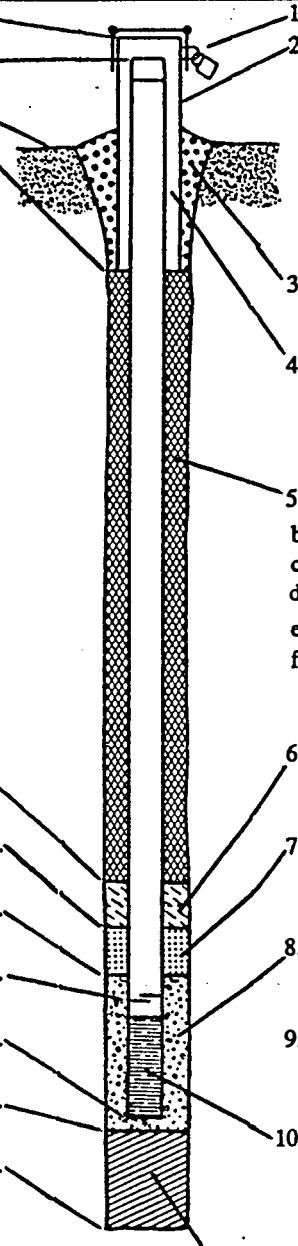
14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ___ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 3.5 ft.
G. Filter pack, top _____ ft. MSL or 4.0 ft.
H. Screen joint, top _____ ft. MSL or 4.5 ft.
I. Well bottom _____ ft. MSL or 9.5 ft.
J. Filter pack, bottom _____ ft. MSL or 9.5 ft.
K. Borehole, bottom _____ ft. MSL or 9.5 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.0 in.



1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 3.0 ft.
c. Material: Steel ■ 04; Other ☐ _____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ ___; Other ☐ _____
5. Annular space seal: a. Granular Bentonite ■ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite ..... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ■ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. #320 Silica Sand
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. 0.80-1.2mm red flint sand
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ _____
10. Screen material: same
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ■ 14; Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dena M. Hargraves	Advent Environmental Services Inc

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
McGlynn Property	Richland	mmw-1

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	53	_____	_____

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	■ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 11.5 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 3.9 gal.

7. Volume of water removed from well 15.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? ☐ Yes ■ No
(If yes, attach results) N/A

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 8.40 ft.	8.65 ft.
Date	b. 12/13/91 (m m d d y y)	12/13/91 (m m d d y y)
Time	c. 2:00 ☐ a.m. ■ p.m.	7:00 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.2 inches	0.2 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15	Clear ■ 20 Turbid ☐ 25
(Describe)	rust colored	clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Dena M. Hargraves

Firm: Advent Environmental Services, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Dena M. Hargraves

Print Initials: D M H

Firm: Advent Environmental Services, Inc

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-2 **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	0.0' - 0.5' BLACK TOP
	DRY 8 8 8 11		1		0.5' - 4.5' BROWN SANDY SILT
	DRY 8 10 10 8		1		4.5' - 8.0' RED/BROWN SILTY FINE/MEDIUM-GRAINED SAND
MS-2	WET 4 6 8 11		0	5.0	
MCW-2	WET 10 11 11 14		0		8.0' - 9.0' RED/BROWN COARSE-GRAINED SAND, SOME CRUSHED ROCK
				10.0	
				15.0	
				20.0	
				25.0	

BORING TERMINATED @ 9.0'

*SOIL SAMPLE: MS-2 5.0' - 7.0'
*GROUNDWATER ENCOUNTERED @ 7.0'
*NO BEDROCK ENCOUNTERED
*HEADSPACE = 1

WATER LEVEL OBSERVATIONS

WHILE DRILLING 8.0
DEPTH TO WATER 7.0
DEPTH TO CAVE-IN

GENERAL INFORMATION

START DATE 12/11/91 COMPLETION DATE 12/11/91
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: Dina M Haynes

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: M-2

County: Richland

NW 1/4 of SE 1/4 of Sec. 34 ; T. 12 N; R. 1 ☒ E ☐ W

(If applicable) _____ Gov't Lot _____ Grid Number

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name: Town of Henrietta

Street Address of Well: State Highway 80

City, Village: Hub City

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner

Street or Route

City, State, Zip Code

Facility Well No. and/or Name (If Applicable): M-2

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Soil Test Borings

Date of Abandonment: 12/11/91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 12/11/91

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Soil Profile log

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify)

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 9.0 (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (ft.) N/A

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) 7.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☐ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☐ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Hole Plug	Surface	9.0		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Advent Environmental Services, Inc.

Signature of Person Doing Work	Date Signed
Dana M. Hausraves	12/18/91
Street or Route: P.O. Box 246	Telephone Number: (414) 284-7447
City, State, Zip Code: Port Washington, WI 53074	

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

DNR/COUNTY

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-3 **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	0.0' - 0.5' BLACK TOP
	DRY 3 7 4 4		2		0.5' - 2.0' BR N SANDY SILT
MS-3	MOIST 4 8 8 9		1		2.0' - 6.0' RED/BROWN SILTY MEDIUM-GRAINED SAND
MGW-3	WET 3 4 8 9		1	5.0	6.0' - 8.0' RED/BROWN MEDIUM-GRAINED SAND
	WET 11 15 10 12		1		8.0' - 9.0' RED/BROWN COARSE-GRAINED SAND
				10.0	
				15.0	
				20.0	
				25.0	

BORING TERMINATED @ 9.0'

*SOIL SAMPLE: MS-3 3.0' - 5.0'
*GROUNDWATER ENCOUNTERED @ 6.0'
*NO BEDROCK ENCOUNTERED
*HEADSPACE = 2

WATER LEVEL OBSERVATIONS

WHILE DRILLING 7.0
DEPTH TO WATER 6.0
DEPTH TO CAVE-IN

GENERAL INFORMATION

START DATE 12/11/91 COMPLETION DATE 12/11/91
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: Dennis M Hargreaves

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: M-3

County: Richland

NW 1/4 of SE 1/4 of Sec. 34 ; T. 12 N; R. 1 ☒ E ☐ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name: Town of Henrietta

Street Address of Well: State Highway 80

City, Village: Hub City

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner

Street or Route

City, State, Zip Code

Facility Well No. and/or Name (If Applicable): M-3

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Soil Test Borings

Date of Abandonment: 12/11/91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 12/11/91

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Soil Profile log

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify)

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 9.0 (From groundsurface) Casing Diameter (ins.) N/A

Casing Depth (ft.) N/A

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) 6.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☐ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☐ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Hole Plug	Surface	9.0		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work: Advent Environmental Services, Inc.

Signature of Person Doing Work: Dena M. Hargraves
Date Signed: 12/18/91
Street or Route: P.O. Box 246
Telephone Number: (414) 284-7447
City, State, Zip Code: Port Washington, WI 53074

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-4 **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
					0.0' - 0.5' BLACK TOP
	DRY 6 6 6 7		0		0.5' - 6.0' TAN/BROWN MEDIUM-GRAINED SANDY SILT
MS-4	MOIST 4 11 7 11		0		
MGW-4	WET 5 6 8 7		0	5.0	
					6.0' - 7.0' RED/BROWN MEDIUM\COARSE-GRAINED SAND
	WET 4 8 11 4		0		7.0' - 9.0' BROWN\RED COARSE-GRAINED SAND
				10.0	
				15.0	
				20.0	
				25.0	

BORING TERMINATED @ 9.0'

*SOIL SAMPLE: MS-4 3.0' - 5.0'
*GROUNDWATER ENCOUNTERED @ 5.0'
*NO BEDROCK ENCOUNTERED
*HEADSPACE = 0

WATER LEVEL OBSERVATIONS

WHILE DRILLING 6.0
DEPTH TO WATER 5.0
DEPTH TO CAVE-IN

GENERAL INFORMATION

START DATE 12/11/91 COMPLETION DATE 12/11/91
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: Dana M Hargraves

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT

Form 3300-5W 11-89

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION

Well/Drillhole/Borehole Location: M-4

County: Richland

NW 1/4 of SE 1/4 of Sec. 34 ; T. 12 N; R. 1 ☒ E ☐ W

(If applicable) Gov't Lot _____ Grid Number _____

Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.

Civil Town Name: Town of Henrietta

Street Address of Well: State Highway 60

City, Village: Hub City

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner

Street or Route

City, State, Zip Code

Facility Well No. and/or Name (If Applicable): M-4

WI Unique Well No.: _ _ _ _ _ _

Reason For Abandonment: Soil Test Boring

Date of Abandonment: 12/11/91

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On

(Date) 12/11/91

☐ Monitoring Well
☐ Water Well
☒ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Soil Profile log

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify)

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth (ft.) 9.0 Casing Diameter (ins.) N/A
(From groundsurface)

Casing Depth (ft.) N/A

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) 5.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☐ No	☒ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☐ Yes	☐ No
Did Sealing Material Rise to Surface?	☐ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☐ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☐ Dump Bailer ☐ Other (Explain)

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite - Cement Grout

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
Bentonite Hole Plug.	Surface	9.0		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work
Advent Environmental Services, Inc.

Signature of Person Doing Work: Dena M. Haugrave
Date Signed: 12/18/91
Street or Route: P.O. Box 246
Telephone Number: (414) 284-7447
City, State, Zip Code: Port Washington, WI 53074

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-5 — **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
	DRY 2 3 3 4		0		0.0' - 4.0' BROWN SANDY SILT
MS-5	MOIST 4 8 5 8		0		
MGW-5	WET 4 8 10 7		0	5.0	4,0' - 8.0' BROWN/RED SILTY FINE\MEDIUM-GRAINED SAND
	WET 4 9 17 15		0		8.0' - 9.0' BROWN\RED COARSE-GRAINED SAND
				10.0	
				15.0	
				20.0	
				25.0	

BORING TERMINATED @ 9.0'

*SOIL SAMPLE: MS-5 3.0' - 5.0'
*GROUNDWATER ENCOUNTERED @ 6.0'
*NO BEDROCK ENCOUNTERED
*HEADSPACE = 0
*INSTALLATION OF MMW-2

WATER LEVEL OBSERVATIONS

WHILE DRILLING 7.0
DEPTH TO WATER 6.0
DEPTH TO CAVE-IN

GENERAL INFORMATION

START DATE 12/11/91 COMPLETION DATE 12/11/91

DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING

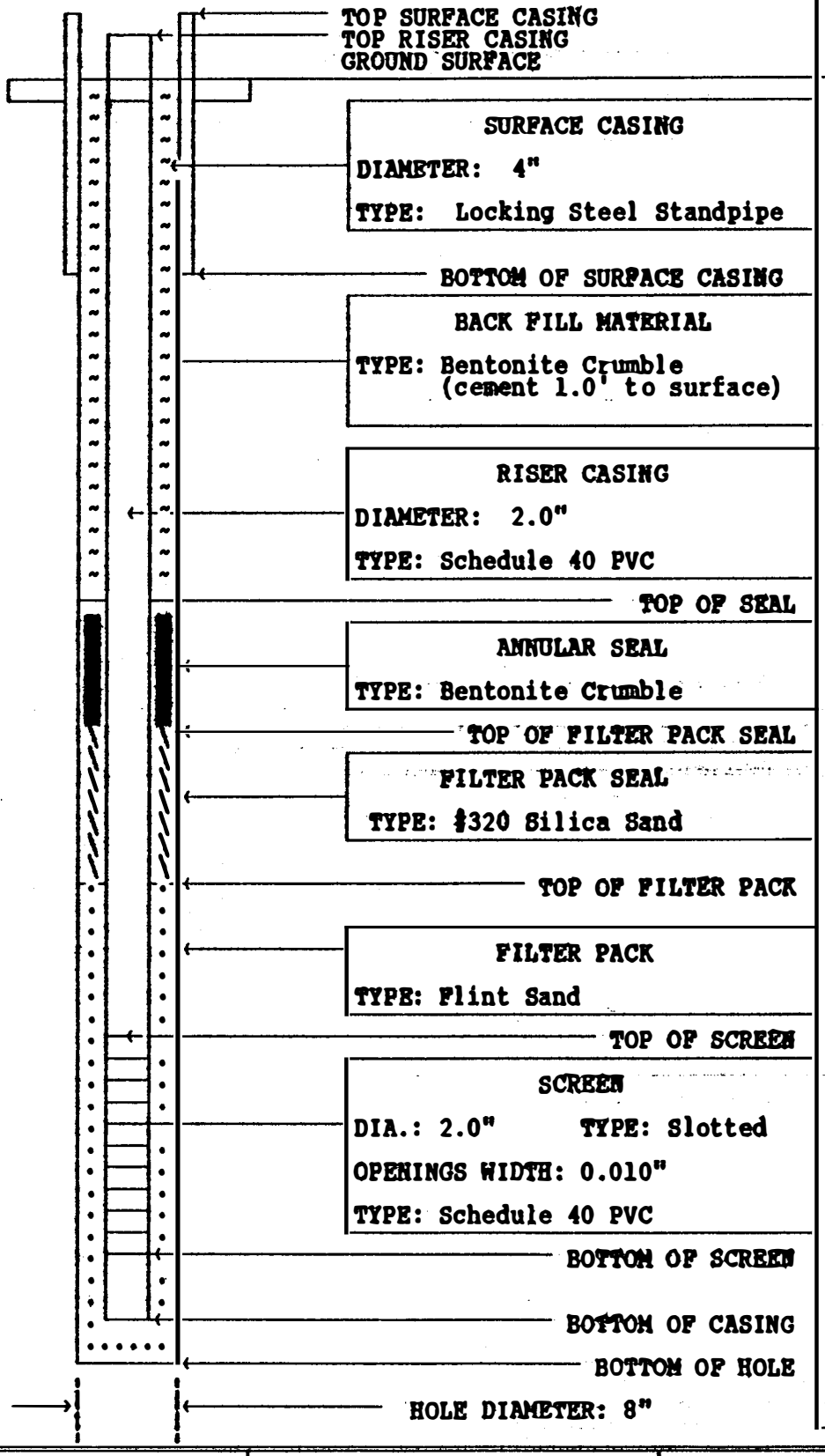
LOGGER: Dana M Hargraves

MONITOR WELL DETAIL

A D V E N T

ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

MW-2 (M-5)



	DEPTH (FT)	ELEV. FT.MSL
TOP SURFACE CASING	2.0	
TOP RISER CASING	2.1	
GROUND SURFACE	0.0	
BOTTOM OF SURFACE CASING	1.0	
TOP OF SEAL	1.0	
TOP OF FILTER PACK SEAL	3.5	
TOP OF FILTER PACK	4.0	
TOP OF SCREEN	4.5	
BOTTOM OF SCREEN	9.0	
BOTTOM OF CASING	9.5	
BOTTOM OF HOLE	9.5	

SCALE: AS SHOWN	PREPARED BY: DENA HARGRAVES	INSTALLATION DATE:12/11/91
PROJECT NAME: MCGLYNN PROPERTY		
AESI JOB#: 92500		

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: McGlynn Property	Local Grid Location of Well: _____ ft. ☐N ☐S, _____ ft. ☐E ☐W	Well Name: MMW-2
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or	Wis. Unique Well Number / DNR Well Number: _____
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 12/11/91 (m m / d d / y y)
Distance Well Is From Waste/Source Boundary: 45 ft.	Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 34, T. 12 N, R. 1 ■ E ☐ W	Well Installed By: (Person's Name and Firm): Dena M. Hargraves; Advent Environmental Services, Inc
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ■ Sidegradient; d ☐ Downgradient n ☐ Not Known	

A. Protective pipe, top elevation 786.44 ft. MSL
B. Well casing, top elevation 786.62 ft. MSL
C. Land surface elevation 784.66 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ _____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis):
N/A

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 3.5 ft.
G. Filter pack, top _____ ft. MSL or 4.0 ft.
H. Screen joint, top _____ ft. MSL or 4.5 ft.
I. Well bottom _____ ft. MSL or 9.5 ft.
J. Filter pack, bottom _____ ft. MSL or 9.5 ft.
K. Borehole, bottom _____ ft. MSL or 9.5 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.0 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 3.0 ft.
c. Material: Steel ■ 04; Other ☐ _____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ _____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ _____; Other ☐ _____
5. Annular space seal: a. Granular Bentonite ■ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite .... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ■ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ _____
7. Fine sand material: Manufacturer, product name & mesh size
a. #320 Silica Sand
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. 0.80 - 1.2mm rod flint sand
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ _____
10. Screen material: same
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01; Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ■ 14; Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dena M. Hargraves	Advent Environmental Services, Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT
Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
McGlynn Property	Richland	MMW-2
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well Number**
_____	53	_____ / _____

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	■ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 11.5 ft.

5. Inside diameter of well 3.00 in.

6. Volume of water in filter pack and well casing 4.5 gal.

7. Volume of water removed from well 25.0 gal.

8. Volume of water added (if any) 0.6 gal.

9. Source of water added N/A

10. Analysis performed on water added? ☐ Yes ■ No
(If yes, attach results) N/A

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 8.30 ft.	8.15 ft.
Date	b. 12/12/91 (m m d d y y)	12/13/91 (m m d d y y)
Time	c. 4:00 ☐ a.m. ■ p.m.	7:00 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.3 inches	0.1 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe) brown to rust colored	Clear ■ 20 Turbid ☐ 25 (Describe) clear
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Dena M. Hargraves

Firm: Advent Environmental Services, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Dena M Hargraves

Print Initials: D M H

Firm: Advent Environmental Services, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

(414) 284-7447

SOIL PROFILE LOG

PROJECT: MCGLYNN PROPERTY

LOCATION: STATE HIGHWAY 80
HUB CITY, WI

PROJECT#: 5042-02-00

AESI WO#: 92500

BORING M-6 **SURFACE ELEVATION**

SAMPLES NO.	MOISTURE (BLOWS)	REC	PID LEVELS (PPM) HEADSPACE	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	
	DRY 2 3 6 6		0		0.0' - 2.0' BROWN SANDY SILT
					2.0' - 3.0' BROWN/RED SANDY SILT
MS-6	MOIST 4 6 12 16		0		3.0' - 4.5' BRW/RED SILTY FG/M-GRAINED SAND
				5.0	4.5' - 7.0' BROWN/RED SILTY MEDIUM-GRAINED SAND
MGW-6	WET 7 9 6 5		0		
	WET 6 10 11 15		0		7.0' - 9.0' BROWN\RED COARSE-GRAINED SAND WITH SOME ROCK
				10.0	
				15.0	
				20.0	BORING TERMINATED @ 9.0'
				25.0	*SOIL SAMPLE: MS-6 3.0' - 5.0' *GROUNDWATER ENCOUNTERED @ 5.0' *NO BEDROCK ENCOUNTERED *HEADSPACE = 0 *INSTALLATION OF MMW-3

WATER LEVEL OBSERVATIONS

WHILE DRILLING 6.0

DEPTH TO WATER 5.0

DEPTH TO CAVE-IN

GENERAL INFORMATION

START DATE 12/11/91 COMPLETION DATE 12/11/91

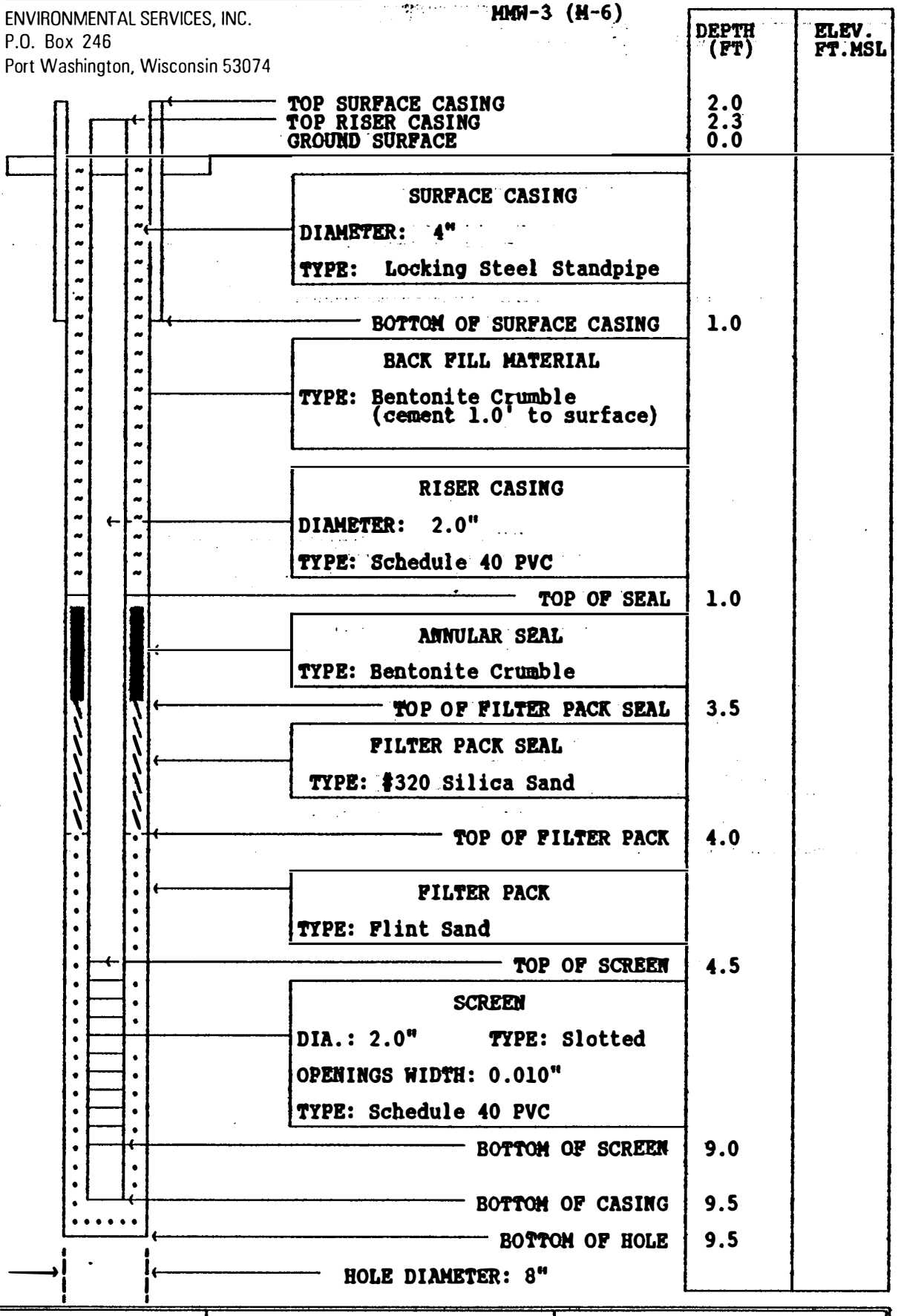
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING

LOGGER: Dana M Haugens

MONITOR WELL DETAIL

A D V E N T
ENVIRONMENTAL SERVICES, INC.
P.O. Box 246
Port Washington, Wisconsin 53074

MMW-3 (M-6)



	DEPTH (FT)	ELEV. FT.MSL
TOP SURFACE CASING	2.0	
TOP RISER CASING	2.3	
GROUND SURFACE	0.0	
BOTTOM OF SURFACE CASING	1.0	
TOP OF SEAL	1.0	
TOP OF FILTER PACK SEAL	3.5	
TOP OF FILTER PACK	4.0	
TOP OF SCREEN	4.5	
BOTTOM OF SCREEN	9.0	
BOTTOM OF CASING	9.5	
BOTTOM OF HOLE	9.5	

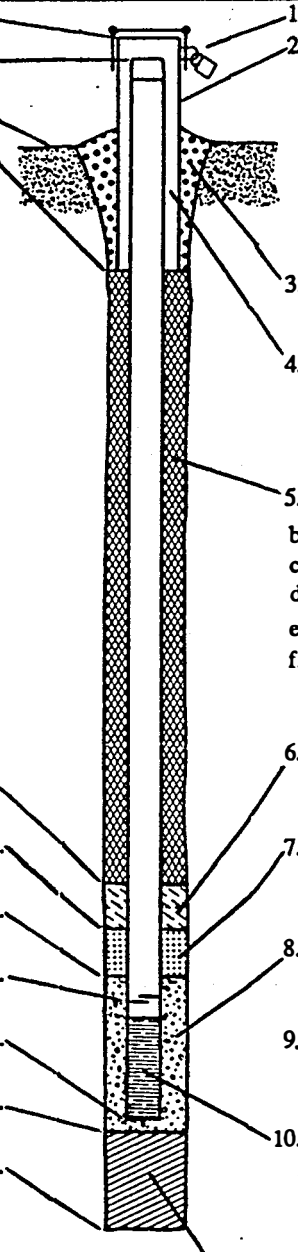
SCALE: AS SHOWN	PREPARED BY: DENA HARGRAVES	INSTALLATION DATE:12/11/91
PROJECT NAME: MCGLYNN PROPERTY		
AESI JOB#: 92500		

State of Wisconsin
Department of Natural Resources

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 4-90

Facility/Project Name: McGlynn Property	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: MMW-3
Facility License, Permit or Monitoring Number: _____	Grid Origin Location: Lat. _____ Long. _____ or	Wis. Unique Well Number / DNR Well Number: _____ / _____
Type of Well: Water Table Observation Well ■ 11; Piezometer ☐ 12	St. Plane _____ ft. N, _____ ft. E.	Date Well Installed: 12/11/91 (m m d d y y)
Distance Well Is From Waste/Source Boundary: 90 ft.	Section Location of Waste/Source: NW 1/4 of SE 1/4 of Sec. 34, T. 12 N, R. 1 ☐E. ■W.	Well Installed By: (Person's Name and Firm): Dena M. Hargraves; Advent Environmental Services, Inc.
Is Well A Point of Enforcement Std. Application? ☐ Yes ☐ No	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient; d ■ Downgradient n ☐ Not Known	



A. Protective pipe, top elevation 785.82 ft. MSL
B. Well casing, top elevation 786.00 ft. MSL
C. Land surface elevation 783.85 ft. MSL
D. Surface seal, bottom _____ ft. MSL or 1.0 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ■ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis attached? ☐ Yes ■ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ■ 41; Other ☐ ___
_____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ■ 99

16. Drilling additives used? ☐ Yes ■ No
Describe _____

17. Source of water (attach analysis):
N/A.

E. Bentonite seal, top _____ ft. MSL or 1.0 ft.
F. Fine sand, top _____ ft. MSL or 3.5 ft.
G. Filter pack, top _____ ft. MSL or 4.0 ft.
H. Screen joint, top _____ ft. MSL or 4.5 ft.
I. Well bottom _____ ft. MSL or 9.5 ft.
J. Filter pack, bottom _____ ft. MSL or 9.5 ft.
K. Borehole, bottom _____ ft. MSL or 9.5 ft.
L. Borehole, diameter 8.0 in.
M. O.D. well casing 2.38 in.
N. I.D. well casing 2.00 in.

1. Cap and lock? ■ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: 4.0 in.
b. Length: 3.0 ft.
c. Material: Steel ■ 04; Other ☐ ___
_____
d. Additional protection? ☐ Yes ■ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ■ 01; Other ☐ ___
_____
4. Material between well casing and protective pipe: Bentonite ■ 30; Annular space seal ☐ ___; Other ☐ ___
_____
5. Annular space seal: a. Granular Bentonite ■ 33
b. _____ Lbs/gal mud weight ... Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight ..... Bentonite slurry ☐ 31
d. _____ % Bentonite .... Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ■ 08
6. Bentonite seal: a. Bentonite granules ■ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite pellets ☐ 32
c. _____ Other ☐ ___
7. Fine sand material: Manufacturer, product name & mesh size
a. #320 Silica Sand ___
b. Volume added _____ ft^3
8. Filter pack material: Manufacturer, product name and mesh size
a. 0.80 - 1.2mm red flint sand ___
b. Volume added _____ ft^3
9. Well casing: Flush threaded PVC schedule 40 ■ 23; Flush threaded PVC schedule 80 ☐ 24
_____ Other ☐ ___
10. Screen material: same ___
a. Screen type: Factory cut ■ 11; Continuous slot ☐ 01
_____ Other ☐ ___
b. Manufacturer _____
c. Slot size: 0.010 in.
d. Slotted length: 5.0 ft.
11. Backfill material (below filter pack): None ■ 14
_____ Other ☐ ___

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm
Dena M Hargraves	Advent Environmental Services, Inc.

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch.144, Wis Stats., failure to file this form may result in a forfeiture of not less than $10, nor more than $5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than $10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 4-90

Route to: Solid Waste ☐ Haz. Waste ☐ Wastewater ☐
Env. Response & Repair ☐ Underground Tanks ■ Other ☐ _____

Facility/Project Name	County Name	Well Name
McGlynn Property	Richland	mmw-3

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well Number
_____	53	_____	_____

1. Can this well be purged dry? ☐ Yes ■ No

2. Well development method

surged with bailer and bailed	■ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well 120 min.

4. Depth of well (from top of well casisng) 11.5 ft.

5. Inside diameter of well 3.00 in.

6. Volume of water in filter pack and well casing 5.2 gal.

7. Volume of water removed from well 45.0 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added N/A

10. Analysis performed on water added? ☐ Yes ■ No
(If yes, attach results) N/A

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7.65 ft.	7.65 ft.
Date	b. 12/12/91 (m m d d y y)	12/13/91 (m m d d y y)
Time	c. 6:00 ☐ a.m. ■ p.m.	7:00 ■ a.m. ☐ p.m.
12. Sediment in well bottom	0.1 inches	0.0 inches
13. Water clarity	Clear ☐ 10 Turbid ■ 15 (Describe) rust colored	Clear ■ 20 Turbid ☐ 25 (Describe) clear

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Dena M. Hargraves

Firm: Advent Environmental Services, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Dena M. Hargraves

Print Initials: D M H

Firm: Advent Environmental Services, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

APPENDIX F

CHAIN OF CUSTODY AND LABORATORY DOCUMENTATION

ADVENT

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

CHAIN OF CUSTODY RECORD

Use Black Ink Only, Press Hard

PROJ. NO	PROJECT NAME
92500	McGlynn Property

SAMPLERS: *(Signature)* Dona M Hargraves

AESI Lab No.	Date (Yr 91)	Time	Sample Station ID	Total Number of Containers	GRO	DRO	PAH	VOC	Total Pb	Total solids	Analysis	Comments:
			Filtered (Yes/No)		N	N	N	N	N	N		
			Preserved (Code)		A	A	A	A	A	A		
			Refrigerated (Yes/No)		Y	Y	Y	Y	Y	Y		
			Sample type (Grab/Composite)		G	G	G	G	G	G		
			Sample sources (WW, GW, DW, other)		soil	soil	soil	soil	soil	soil		
21044	12/10	4:40	MS-1 (3-5)	3	X	X	X	X	X	X		
21045	12/11	8:00	MS-2 (5-7)	3	X	X	X	X	X	X		
21046	12/11	8:45	MS-3 (3-5)	3	X	X	X	X	X	X		
21047	12/11	9:45	MS-4 (3-5)	3	X	X	X	X	X	X		
21048	12/11	10:50	MS-5 (3-5)	3	X	X	X	X	X	X		
21049	12/11	12:00	MS-6 (3-5)	3	X	X	X	X	X	X		

Preservation Code:
A - None D - NaOH
B - HNO_3 E - HCL
C - H_2SO_4 F - _____

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Dona M Hargraves	12/14/91 1:30		
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Michael Koepke	12/17/91 10AM	Don [illegible]	12-17 10:00
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	

Report to: Dona Hargraves
Name _____
Street _____
City _____ State _____ Zip _____
Phone no. ( ) _____
Fax no. ( ) _____

Remarks:

Receipt pH _____

Receipt temp _____

DAVY LABORATORIES

115 South 6th Street
P.O. Box 2076
La Crosse WI 54602-2076
(608) 782-3130
FAX: (608) 784-6611

Division of Davy Engineering Co.

Advent Environmental Services, Inc.
P.O. Box 246
Port Washington, Wisconsin 53074

January 14, 1992

Client No. 11797-B
Project No. 92500

Attn: Dena Hargraves

INTRODUCTION:

Six soil samples were received on December 17, 1991. The client requested that the samples be analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Volatile Organic Compounds (VOC), Polynuclear Aromatic Hydrocarbons (PAH) and total lead and total solids.

SAMPLE IDENTIFICATION:

The samples were collected on December 10 and 11, 1991. The samples were collected by the Dena Hargraves at the McGlynn Property under Project No. 92500. The samples were delivered to the laboratory on December 17, 1991 by the client. Upon arrival at the laboratory, the samples were given the following identification numbers:

DAVY LAB NO.	SAMPLE SITE
21044	MS-1
21045	MS-2
21046	MS-3
21047	MS-4
21048	MS-5
21049	MS-6

METHODOLOGY:

The samples were analyzed according to the method outlined in the Leaking Underground Fuel Tank Manual published by the State of California. The Wisconsin Department of Natural Resources references this method for the analysis of Total Petroleum Hydrocarbons (TPH) either as Gasoline, Diesel, or Fuel Oil.

DIESEL RANGE ORGANICS (DRO) -

The sample for the determination of Diesel Range Organics (DRO) was extracted three times with carbon disulfide. The extracts were then dried and concentrated to 1-ml with carbon disulfide. A portion of the samples were injected into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas obtained were compared with known standards.

GASOLINE RANGE ORGANICS (GRO) -

The samples were analyzed for Gasoline Range Organics (GRO) by extracting a portion of the sample with methanol. A portion of the extract was then injected into 5-ml of organic free water and purged for 11-min. using helium as the purge gas.

Following the purge cycle, each sample was desorbed into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas were compared with known standards.

DAVY LABORATORIES

115 South 6th Street
P.O. Box 2076
La Crosse WI 54602-2076
(608) 782-3130
FAX: (608) 784-6611

Division of Davy Engineering Co.

VOLATILE ORGANIC COMPOUNDS (VOC) -

Volatile Organic Compounds were determined on each sample using EPA SW 846 Method 8021 for the analysis. The samples were extracted with methanol and a portion of the extract was injected into 5-ml of organic free water. Each sample was then purged for eleven minutes using helium as the purge gas.

Each sample was then desorbed to a Tracor Model 540 GC equipped with a Hall/PID detector in series. Quantitation was based on the response of standards through the use of linear regression curves.

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) -

The samples were analyzed for PAH following EPA Method 610. A HPLC equipped with an ultraviolet and fluroescence detector in series was used for the analysis.

INORGANIC ANALYSIS -

The samples were analyzed for total lead and total solids based on EPA Methodology as given in SW-846. The samples were extracted according to the method. Following extraction, each sample was then digested in a strong acid solution. Following digestion, the samples were analyzed for lead using a Perkin-Elmer Model 2100 AA. The response of the analyte in the sample was compared to a standard curve. Quantitation was based on a linear regression analysis.

RESULTS:

The results for the VOC and PAH analyses are given in Table 1 and 2, respectively. The results of the analyses for GRO, DRO, total lead, and total solids in the samples are given below:

SAMPLE NO.	GRO (ppm)	DRO (ppm)	TOTAL SOLIDS(%)	TOTAL LEAD(ppm)	DATE EXTRACTED	DATE ANALYZED
21044-MS-1	ND	ND	81.1	8.01	121991	010692
21045-MS-2	ND	ND	86.2	5.34	121891	010692
21046-MS-3	ND	ND	89.7	15.9	121991	010992
21047-MS-4	ND	ND	88.3	4.76	121991	010792
21048-MS-5	ND	ND	87.5	3.31	121991	010792
21049-MS-6	ND	ND	89.4	5.31	121991	010792

< - means "less than"
a - calculated on a "dry weight basis"
Minimum Detection Limit - WATER: GRO = 0.0342 ppm, DRO = 0.5 ppm; SOIL: GRO = 1 ppm, DRO = 1 ppm

Submitted by:

DAVY LABORATORIES

Paul A. Harris, Director

The laboratory analyses reported were determined in accordance with current methodology. The results are only representative of the samples received; conditions can be expected to vary at different times and under different sampling conditions.

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B
Sample: MS-1

Sample No.: 21044
Date Analyzed: 010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B
Sample: MS-2

Sample No.: 21045
Date Analyzed: 010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B
Sample: MS-3

Sample No.: 21046
Date Analyzed: 010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B
Sample: MS-4

Sample No.: 21047
Date Analyzed: 010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.: 11797-B
Sample: MS-5

Sample No.: 21048
Date Analyzed: 010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (mg/kg)

Client No.:	11797-B	Sample No.:	21049
Sample:	MS-6	Date Analyzed:	010792

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.001	0.007
Bromobenzene	ND	0.001	0.007
Bromochloromethane	ND	0.001	0.007
Bromodichloromethane	ND	0.001	0.007
Bromoform	ND	0.001	0.007
Bromomethane	ND	0.069	0.483
n-Butylbenzene	ND	0.001	0.007
sec-Butyl benzene	ND	0.001	0.007
tert-butyl benzene	ND	0.004	0.028
Carbon Tetrachloride	ND	0.001	0.007
Chlorobenzene	ND	0.001	0.007
Chloroethane	ND	0.006	0.042
Chloroform	ND	0.001	0.001
Chloromethane	ND	0.002	0.014
2-Chlorotoluene	ND	0.001	0.007
4-Chlorotoluene	ND	0.001	0.007
1,2-Dibromo-3-Chloropropane	ND	0.188	1.32
Dibromochloromethane	ND	0.019	0.133
1,2-Dibromoethane	ND	0.050	0.350
Dibromomethane	ND	0.138	0.966
1,2-Dichlorobenzene	ND	0.003	0.021
1,3-Dichlorobenzene	ND	0.001	0.007
1,4-Dichlorobenzene	ND	0.001	0.007
Dichlorodifluoromethane	ND	0.003	0.021
1,1-Dichloroethane	ND	0.004	0.028
1,2-Dichloroethane	ND	0.002	0.014
1,1-Dichloroethene	ND	0.004	0.028
cis-1,2-Dichloroethene	ND	0.001	0.007
trans-1,2-Dichloroethene	ND	0.004	0.028
Dichloromethane	ND	0.001	0.007
1,2-Dichloropropane	ND	0.002	0.014
1,3-Dichloropropane	ND	0.003	0.021
2,2-Dichloropropane	ND	0.001	0.007
1,1-Dichloropropene	ND	0.001	0.007
Ethyl Benzene	ND	0.001	0.007
Hexachlorobutadiene	ND	0.001	0.007
Isopropyl Benzene	ND	0.003	0.021
p-Isopropyl toluene	ND	0.002	0.014
Methyl-tert-butyl-ether	ND	0.002	0.014
Naphthalene	ND	0.004	0.028
n-Propyl benzene	ND	0.001	0.007
Styrene	ND	0.001	0.007
1,1,1,2-Tetrachloroethane	ND	0.001	0.007
1,1,2,2-Tetrachloroethane	ND	0.001	0.007
Tetrachloroethene	ND	0.003	0.021
Toluene	ND	0.001	0.007
1,2,3-Trichlorobenzene	ND	0.002	0.014
1,2,4-Trichlorobenzene	ND	0.002	0.014
1,1,1-Trichloroethane	ND	0.002	0.014
1,1,2-Trichloroethane	ND	0.004	0.016
Trichloroethene	ND	0.001	0.007
Trichlorofluoromethane	ND	0.002	0.014
1,2,3-Trichloropropane	ND	0.025	0.175
1,3,5 Trimethyl benzene	ND	0.002	0.014
1,2,4-Trimethylbenzene	ND	0.001	0.007
Vinyl Chloride	ND	0.003	0.021
m/p-Xylene	ND	0.001	0.007
o-Xylene	ND	0.002	0.014

NOTES:
a - LOD = Limit of Detection b - LOQ = Limit of Quantitation c - ND = Not Detected d - BQL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21044
Sample Site: MS-1

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21045
Sample Site: MS-2

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	51.0
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21046
Sample Site: MS-3

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	82.0
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21047
Sample Site: MS-4

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21048
Sample Site: MS-5

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/kg)

Client No. 11797-B
Sample No. 21049
Sample Site: MS-6

	Detection Limit	Method Blank	Sample Results
Acenaphthene	2.0	ND	ND
Acenapthylene	40.0	ND	ND
Anthracene	2.0	ND	ND
Benzo(a)anthracene	2.0	ND	ND
Benzo(b)fluoranthene	2.0	ND	ND
Benzo(k)fluoroanthene	2.0	ND	ND
Benzo(ghi)perylene	10.0	ND	ND
Benzo(a)pyrene	2.0	ND	ND
Chrysene	2.0	ND	ND
Dibenzo(a,h)anthracene	10.0	ND	ND
Fluoranthene	2.0	ND	ND
Fluorene	2.0	ND	ND
Indeno(1,2,3-c,d)pyrene	10.0	ND	ND
Naphthalene	10.0	ND	ND
Phenanthrene	2.0	ND	ND
Pyrene	10.0	ND	ND

ND = Not Detected
BDL = Below Detection Limit

AES

ENVIRONMENTAL SERVICES, INC.
P.O. BOX 246, PORT WASHINGTON, WI 53074
414-284-7447

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

Use Black Ink Only, Press Hard

PROJ. NO	PROJECT NAME
92500	McGlynn Property

SAMPLERS: *(Signature)* Dena M Haugeveen

AESI Lab No.	Date (Yr 91)	Time	Sample Station ID	Total Number of Containers	GRO	DRO	PAH	VOC	Total Pb			Analysis / Comments
21027	12/11	8:10	mGW-2 3 Vials 1L. Liter	5	X	X	X	X	X			3-40ml vials GRO VOC / 1L PAH DRO / 250 ml - Pb
21028	12/11	9:10	mGW-3 3 Vials 1pl.	5	X	X	X	X	X			" ↑ Split composite volumes
21029	12/11	10:10	mGW-4 3 Vials 1pl.	5	X	X	X	X	X			"
21030	12/13	8:30	mGW-1 (monitor well) 3 Vials 1 Liter 1pl.	6	X	X	X	X	X			3-40ml vials GRO VOC / 1L PAH / 1L DRO / 250 ml - Pb
21031	12/13	9:00	mGW-5 (monitor well) 3 Vials 1pl 2 Liter	6	X	X	X	X	X			"
21032	12/13	8:00	mGW-6 (monitor well) 3 Vials 1pl 2 Liter	6	X	X	X	X	X			"

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Dena M Haugeveen	12/14/91 1:30		
Michael Koepke	12/17/91 10AM	Don Pz	12-17 10:00
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	

Report to: Dena Haugeveen
Name
Street
City State Zip
Phone no. ( )
Fax no. ( )

Remarks:
total Pb 3 samples need to be filtered + preserved

Receipt pH
Receipt temp

DAVY LABORATORIES

115 South 6th Street
P.O. Box 2076
La Crosse WI 54602-2076
(608) 782-3130
FAX: (608) 784-6611

Division of Davy Engineering Co.

Advent Environmental Services, Inc.
P.O. Box 246
Port Washington, Wisconsin 53074

January 14, 1992

Client No. 11795
Project No. 92500

Attn: Dena Hargraves

INTRODUCTION:

Six water samples were received on December 17, 1991. The client requested that the samples be analyzed for Gasoline Range Organics (GRO), Diesel Range Organics (DRO), Volatile Organic Compounds (VOC), Polynuclear Aromatic Hydrocarbons (PAH) and total lead.

SAMPLE IDENTIFICATION:

The samples were collected on December 11 and 13, 1991. The samples were collected by the Dena Hargraves at the McGlynn Property under Project No. 92500. The samples were delivered to the laboratory on December 17, 1991 by the client. Upon arrival at the laboratory, the samples were given the following identification numbers:

DAVY LAB NO.	SAMPLE SITE
21027	MGW-2
21028	MGW-3
21029	MGW-4
21030	MGW-1
21031	MGW-5
21032	MGW-6

METHODOLOGY:

The samples were analyzed according to the method outlined in the Leaking Underground Fuel Tank Manual published by the State of California. The Wisconsin Department of Natural Resources references this method for the analysis of Total Petroleum Hydrocarbons (TPH) either as Gasoline, Diesel, or Fuel Oil.

DIESEL RANGE ORGANICS (DRO) -

The sample for the determination of Diesel Range Organics (DRO) was extracted three times with carbon disulfide. The extracts were then dried and concentrated to 1-ml with carbon disulfide. A portion of the samples were injected into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas obtained were compared with known standards.

GASOLINE RANGE ORGANICS (GRO) -

The samples were analyzed for Gasoline Range Organics (GRO) by taking a 5-ml portion of the sample and then purging for 11-minutes using helium as the carrier gas.

Following the purge cycle, each sample was desorbed into a Perkin-Elmer Sigma 2B GC equipped with a FID detector. Fuel standards from the EPA are used to calibrate the system. A minimum of eight peak areas are used to quantitate the sample response. Total peak areas were compared with known standards.

VOLATILE ORGANIC COMPOUNDS (VOC) -

Volatile Organic Compounds were determined on each sample using EPA SW 846 Method 8021 for the analysis. A 5- ml portion of each water sample was purged for 11-minutes using helium as the purge gas.

Each sample was then desorbed to a Tracor Model 540 GC equipped with a Hall/PID detector in series. Quantitation was based on the response of standards through the use of linear regression curves.

DAVY LABORATORIES

115 South 6th Street
P.O. Box 2076
La Crosse WI 54602-2076
(608) 782-3130
FAX: (608) 784-6611

Division of Davy Engineering Co.

POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) -
The samples were analyzed for PAH following EPA Method 610. A HPLC equipped with an ultraviolet and fluroescence detector in series was used for the analysis.

INORGANIC ANALYSIS -
The samples were analyzed for total lead based on EPA Methodology as given in SW-846. The samples were extracted according to the method. Following extraction, each sample was then digested in a strong acid solution. Following digestion, the samples were analyzed for lead using a Perkin-Elmer Model 2100 AA. The response of the analyte in the sample was compared to a standard curve. Quantitation was based on a linear regression analysis.

RESULTS:
The results for the VOC and PAH analyses are given in Table 1 and 2, respectively. The results of the analyses for GRO, DRO, and total lead in the samples are given below:

SAMPLE NO.	SAMPLE SITE	GRO (ppm)	DRO (ppm)	TOTAL LEAD(ppm)	DATE EXTRACTED	DATE ANALYZED
21027	MGW-2	ND	ND	<0.051	122391	010392
21028	MGW-3	ND	ND	<0.051	122391	010392
21029	MGW-4	ND	ND	<0.051	122391	010392
21030	MGW-1	ND	ND	<0.051	122391	010392
21031	MGW-5	ND	ND	<0.051	122391	010392
21032	MGW-6	ND	ND	<0.051	122391	010392

< - means "less than"
a - calculated on a "dry weight basis"
Minimum Detection Limit - WATER: GRO = 0.0342 ppm
DRO = 0.5 ppm
SOIL: GRO = 1 ppm
DRO = 1 ppm

Submitted by:

DAVY LABORATORIES

Paul A. Harris, Director

The laboratory analyses reported were determined in accordance with current methodology. The results are only representative of the samples received; conditions can be expected to vary at different times and under different sampling conditions.

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21030

Sample Site: MGW-1 Date Analyzed: 122791

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection
b - LOQ = Limit of Quantitation
c - ND = Not Detected
d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21027

Sample Site: MGW-2 Date Analyzed: 122791

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection
b - LOQ = Limit of Quantitation
c - ND = Not Detected
d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21028

Sample Site: MGW-3 Date Analyzed: 122791

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection
b - LOQ = Limit of Quantitation
c - ND = Not Detected
d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21029

Sample Site: MGW-4 Date Analyzed: 122791

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection b - LOQ = Limit of Quantitation
c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21031

Sample Site: MGW-5 Date Analyzed: 123091

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection b - LOQ = Limit of Quantitation
c - ND = Not Detected d - BQL = Below Detection Limit

Table 1 - Volatile Organic Compounds (ug/l).

Client No: 11795 Sample No: 21032

Sample Site: MGW-6 Date Analyzed: 123191

	Result	LOD(a)	LOQ(b)
Benzene	ND	0.01	0.07
Bromobenzene	ND	0.01	0.07
Bromochloromethane	ND	0.02	0.14
Bromodichloromethane	ND	0.02	0.14
Bromoform	ND	0.02	0.14
Bromomethane	ND	1.10	7.70
n-Butylbenzene	ND	0.04	0.28
sec-Butyl benzene	ND	0.10	0.70
tert-butyl benzene	ND	0.10	0.70
Carbon Tetrachloride	ND	0.01	0.07
Chlorobenzene	ND	0.01	0.07
Chloroethane	ND	0.10	0.70
Chloroform	ND	0.02	0.14
Chloromethane	ND	0.03	0.21
2-Chlorotoluene	ND	0.02	0.14
4-Chlorotoluene	ND	0.02	0.14
1,2-Dibromo-3-Chloropropane	ND	4.00	28.0
Dibromochloromethane	ND	0.03	0.21
1,2-Dibromoethane	ND	3.00	21.0
Dibromomethane	ND	2.20	15.4
1,2-Dichlorobenzene	ND	0.05	0.35
1,3-Dichlorobenzene	ND	0.02	0.14
1,4-Dichlorobenzene	ND	0.01	0.07
Dichlorodifluoromethane	ND	0.05	0.35
1,1-Dichloroethane	ND	0.07	0.49
1,2-Dichloroethane	ND	0.03	0.21
1,1-Dichloroethene	ND	0.07	0.49
cis-1,2-Dichloroethene	ND	0.05	0.35
trans-1,2-Dichloroethene	ND	0.06	0.42
Dichloromethane	ND	0.02	0.14
1,2-Dichloropropane	ND	0.01	0.07
1,3-Dichloropropane	ND	0.05	0.35
2,2-Dichloropropane	ND	0.05	0.35
1,1-Dichloropropene	ND	0.06	0.36
Ethyl Benzene	ND	0.01	0.07
Hexachlorobutadiene	ND	0.01	0.07
Isopropyl Benzene	ND	0.07	0.49
p-Isopropyl toluene	ND	0.02	0.14
Methyl-tert-butyl-ether	ND	0.06	0.42
Naphthalene	ND	0.06	0.42
n-Propyl benzene	ND	0.01	0.07
Styrene	ND	0.02	0.14
1,1,1,2-Tetrachloroethane	ND	0.01	0.07
1,1,2,2-Tetrachloroethane	ND	0.01	0.07
Tetrachloroethene	ND	0.04	0.28
Toluene	ND	0.01	0.07
1,2,3-Trichlorobenzene	ND	0.02	0.14
1,2,4-Trichlorobenzene	ND	0.03	0.21
1,1,1-Trichloroethane	ND	0.03	0.21
1,1,2-Trichloroethane	ND	0.06	0.42
Trichloroethene	ND	0.01	0.07
Trichlorofluoromethane	ND	0.03	0.21
1,2,3-Trichloropropane	ND	0.50	3.50
1,3,5 Trimethyl benzene	ND	0.05	0.35
1,2,4-Trimethylbenzene	ND	0.01	0.07
Vinyl Chloride	ND	0.04	0.28
m/p-Xylene	ND	0.02	0.14
o-Xylene	ND	0.02	0.14

NOTES: a - LOD = Limit of Detection b - LOQ = Limit of Quantitation
c - ND = Not Detected d - BQL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21030
Sample Site: MGW-1

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21027
Sample Site: MGW-2

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	0.28
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21028
Sample Site: MGW-3

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21029
Sample Site: MGW-4

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21031
Sample Site: MGW-5

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit

Table 2 - Polynuclear Aromatic Hydrocarbons (PAH) Analysis (ug/l)

Client No. 11795
Sample No. 21032
Sample Site: MGW-6

	Detection Limit	Method Blank	Sample Results
Acenaphthene	0.04	ND	ND
Acenapthylene	0.8	ND	ND
Anthracene	0.04	ND	ND
Benzo(a)anthracene	0.04	ND	ND
Benzo(b)fluoranthene	0.04	ND	ND
Benzo(k)fluoroanthene	0.04	ND	ND
Benzo(ghi)perylene	0.2	ND	ND
Benzo(a)pyrene	0.04	ND	ND
Chrysene	0.04	ND	ND
Dibenzo(a,h)anthracene	0.2	ND	ND
Fluoranthene	0.04	ND	ND
Fluorene	0.04	ND	ND
Indeno(1,2,3-c,d)pyrene	0.2	ND	ND
Naphthalene	0.2	ND	ND
Phenanthrene	0.04	ND	ND
Pyrene	0.2	ND	ND

ND = Not Detected
BDL = Below Detection Limit