03-07-000148

PHASE III

ENVIRONMENTAL ASSESSMENT REPORT

FOR THE

BOB'S SERVICE STATION SITE

STATE HIGHWAY 70

VILLAGE OF FALUN

BURNETT COUNTY, WISCONSIN

SEPTEMBER 1990

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 8040-03-00

PREPARED BY
AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT NO. 91035

PHASE III

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FOR THE

BOB'S SERVICE STATION SITE

VILLAGE OF FALUN

BURNETT COUNTY, WISCONSIN

WDOT PROJECT 8040-03-00

Prepared By: _____ Date: 9-11-90

James J. Mertes
Environmental Project Coordinator
Aqua-Tech, Inc.

Reviewed By: _____ Date: 9/11/90

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

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1.0 SUMMARY

Aqua-Tech, Inc. has completed a Phase III Environmental Assessment for the Bob's Service Station site, State Highway 70, Falun, Burnett County, Wisconsin. The assessment was performed on June 7, 1990, as contracted by the Wisconsin Department of Transportation (WDOT) Risk and Safety Management Section under WDOT Project 8040-03-00.

The purpose of the assessment was to better define the vertical and horizontal extent of petroleum contaminants discovered within the highway right-of-way at the site during an initial investigation conducted November 7, 1989. Additional activities included:

* Two soil borings to a maximum depth of 16.0 feet
* Collection and field screening of subsurface soil samples for volatile organic compounds (VOCs) with a photoionization detector (PID)
* Chemical analysis of one subsurface soil sample for the following parameters: total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene, and xylenes (BTEX); percent solids; pH, and flash point
* Chemical analyses of two groundwater samples for TPH, and/or BTEX

The results of the Phase III investigation indicate that the soils within the existing right-of-way at the site are contaminated with gasoline above the Wisconsin Department of Industry, Labor, and

Human Relations (DILHR) 10 mg/kg (ppm) remedial action level for TPH.

Groundwater petroleum contamination was identified at levels exceeding the Wisconsin Administrative Code N.R. 140.10 enforcement standards.

An estimate to remove and landfill an estimated 833 cubic yards of gasoline contaminated soil and to install additional groundwater monitoring wells is $49,500. Actual costs will depend on the remedial procedure selected and the total amount of soil and groundwater to be remediated.

2.0 SITE BACKGROUND

2.1 Introduction

This section summarizes the activities and results of the previous environmental investigation at the site.

2.2 Previous Investigations

The site has been the subject of a Phase II Environmental Assessment conducted by Aqua-Tech on November 7, 1989. Activities included in the assessment were:

* Regulatory background review
* Site representative interview
* Two soil borings to a maximum depth of 14.0 feet
* Collection and field screening of subsurface soil samples for VOCs
* Chemical analysis of one subsurface soil sample for TPH
* Chemical analyses of two groundwater samples for VOCs

The laboratory results of this investigation indicated that some soils and groundwater within the proposed right-of-way acquisition at the site were contaminated by petroleum products. The contamination was identified primarily in boring B-2 at a depth of 10 to 14 feet.

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 Bob's Service Station site. Individual subsections address the sampling and chain of custody procedures. Rationales for specific assessment activities are also provided.

3.2 Sampling Procedures

On June 7, 1990, Aqua-Tech completed two borings (BS-1, BS-2) and collected one subsurface soil sample and two groundwater samples for laboratory analyses. See Figure 3-1 for boring locations.

Samples were collected from subsurface borings to determine the extent of petroleum product contamination present in the soil and/or groundwater at the site. Suitable boring locations were limited by overhead utilities and State Highway 70.

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.

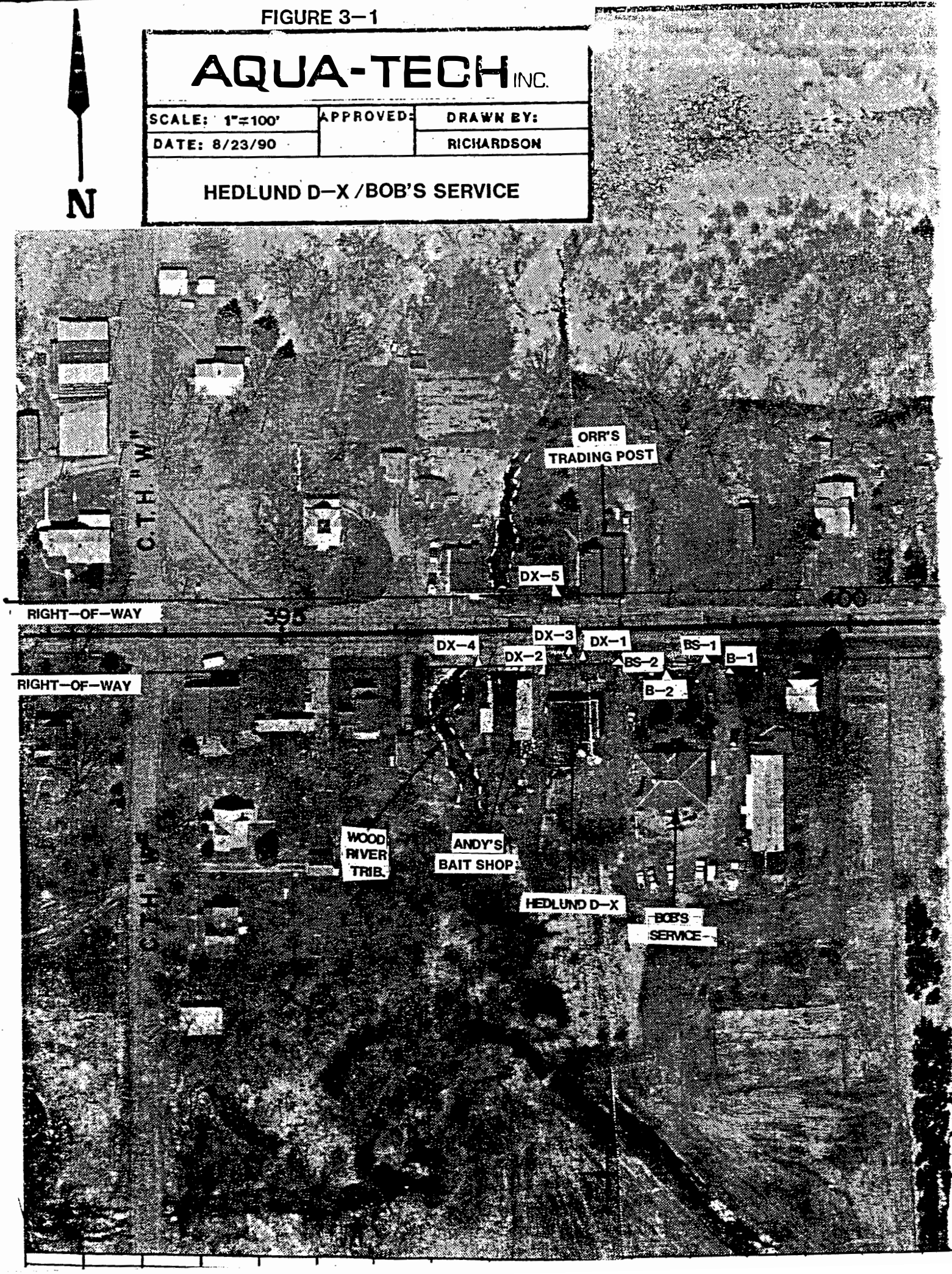
All drilling tools and equipment were washed with high pressure steam equipment prior to the start of sampling work.

FIGURE 3–1

AQUA-TECH INC.

SCALE: 1"=100'	APPROVED:	DRAWN BY:
DATE: 8/23/90		RICHARDSON

HEDLUND D–X /BOB'S SERVICE



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 A.

After pedologic logging (See Appendix A), the selected samples were stored in clean four ounce jars and cooled to 4^0C for transport to the laboratory.

Upon completion of sampling, the boreholes were back-filled with bentonite (See Appendix B). Contaminated drill cuttings were stockpiled on the site and covered with an impermeable membrane.

Groundwater Sampling Procedures

Groundwater samples were collected from soil borings BS-1 and BS-2 to determine whether any petroleum components had migrated from the contaminated subsurface soil to groundwater. Samples were collected by inserting a clean disposable PVC bailer down the hollow stem auger and transferring the contents to two 40 ml glass vials and liter amber glass bottles.

After the collection of each water sample, the vials and bottles were sealed, taking care to ensure no air was included, and cooled to 4^0C for transport to the laboratory.

3.3 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 integrity of the samples is maintained during their collection, transportation, and storage through analysis.

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

* 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 is firmly affixed to the sample containers. The sample label provides the following information:

* Location
* Sample Number
* Date and Time of Collection
* Analysis Required

* Name of Sampler

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

Transfer of Custody Shipment

The coolers in which the samples are packed are accompanied by a 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 analytical procedures and results of chemical analyses of subsurface samples for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and xylene (BTEX), percent solids, pH, and flash point.

4.2 Analytical Procedures

All samples were analyzed by Aqua-Tech, Inc., Port Washington, Wisconsin, by the following methods:

TPH	Modified California Gas Chromatography
BTEX (soil)	EPA 8020
(water)	EPA 602
Percent Solids	EPA 160.3
pH	EPA 9045
Flash point	EPA 1020

Analytical 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.

4.3 Results of Chemical Analyses of Aqua-Tech Collected Samples

Chemical analyses of soil samples yielded the following:

* TPH as gasoline was detected at 163 ug/g (ppm) in soil sample BS-2 (6 to 8 feet)

* BTEX components were identified at concentrations up to 22 ug/g xylenes in soil sample BS-2 (6 to 8 feet)

* Flash point was greater than 200^0F and pH was 8.11 in soil sample BS-2 (6 to 8 feet)

All TPH results were calculated on a dry weight basis as required by the Wisconsin Department of Industry, Labor, and Human Relations. See Table 4-1 for complete soil sample results. The original laboratory data are provided in Appendix C.

Chemical analyses of groundwater samples yielded the following:

* BTEX components were identified at levels up to 11,450 ug/1 xylenes in sample WB-2

* TPH as gasoline was identified at 80,700 ug/1 in sample WB-2

See Table 4-2 for complete groundwater results. Original laboratory data are provided in Appendix C.

TABLE 4-1

BOB'S SERVICE STATION SITE

SUBSURFACE SOIL SAMPLE CHEMICAL ANALYSIS RESULTS

COLLECTED: JUNE 7, 1990

Parameter	Soil Sample BS-2 (6-8')
Field Photoionization Detector (ppm)	160
Total Petroleum Hydrocarbons (ug/g) as Gasoline*	163**
Benzene (ug/g)	3.1
Toluene (ug/g)	11.3
Ethylbenzene (ug/g)	2.7
Xylenes (ug/g)	22
Percent solids	70
pH	8.11
Flash Point	>200^{0}F

* All TPH results reported on a dry weight basis.

** Ten ug/g is the maximum level of TPH contamination allowed in soil before remediation is required by the Wisconsin Department of Industry, Labor, and Human Relations.

TABLE 4-2

BOB'S SERVICE STATION SITE

GROUNDWATER CHEMICAL ANALYSES RESULTS

COLLECTED: JUNE 7, 1990

Parameter	Sample WBS-1	Sample WBS-2	Wis. Administrative Code N.R. 140.10 Preventive Action Limit	Wis. Administrative Code N.R. 140.10 Enforcement Standard
TPH as gasoline (ug/l)	---	80,700	----	----
Benzene (ug/l)	<1	720	0.067	0.67
Toluene (ug/l)	<1	3,820	68.6	343
Ethylbenzene (ug/l)	<1	1,900	272	1360
Xylenes (ug/l)	<1	11,450	124	620
Field Photoionization Detector - Headspace (ppm)	0	150	----	----
pH	8.01	7.59	----	----

5.0 DISCUSSION OF ASSESSMENT RESULTS

5.1 Introduction

This section discusses data and information that apply to observed and potential contamination at the Bob's Service Station site.

5.2 Soil

Total petroleum hydrocarbon contamination above the 10 ug/g (ppm) Wisconsin Department of Industry, Labor, and Human Relations remedial action level was identified by laboratory analysis and field screening with a photoionization detector in boring BS-2. (Contamination was identified in boring B-2 during the previous investigation.)

Contamination was identified at the following approximate depths:

Boring BS-2 (gasoline)	4 to 16 feet
Boring B-2 (diesel)	10 to 14 feet

The TPH contamination was quantified as diesel in boring B-2 and as gasoline in boring BS-2. The terms "as diesel" and "as gasoline" do not necessarily indicate the type of petroleum hydrocarbon present. They indicate the closest laboratory standard used to quantitate the sample result.

Careful review of the chromatogram for sample BS-2 analyzed at Aqua-Tech, Inc. did not reveal the potential for a significant level of diesel fuel to be present in the sample. Sample B-2 was quantified as diesel fuel by a separate laboratory (NET Midwest, Inc., Rockford, Illinois).

Gasoline frequently undergoes partial degradation after several years in subsurface soils, sometimes resembling the standard for diesel fuel when analyzed by gas chromatography.

Petroleum contamination within the current WDOT right-of-way extends from approximately the center of the concrete pump island at the Bob's Service Station site, 75 feet west to the property boundary with Hedlund DX. A leaking underground gasoline storage tank was removed from the Hedlund site in approximately 1980.

It is not known how far the contaminated soil extends north under the current State Highway 70 and south on Bob's Service Station property. Current WDOT right-of-way extends 33 feet south of the State Highway 70 centerline at the site.

A soil boring (DX-5) completed for a separate environmental assessment (Hedlund DX Phase III) for the WDOT approximately 100 feet northwest of boring BS-2 did not produce photoionization detector readings above background levels. However, BTEX components were quantified in groundwater collected from the boring.

5.3 Groundwater

Groundwater was encountered in borings BS-1 and BS-2 at 6.5 feet. Gasoline components were identified in groundwater sample WBS-2 (collected from boring BS-2) at levels above the enforcement standards outlined in Wisconsin Administrative Code N.R. 140.10. Petroleum components were not identified in groundwater sample WBS-1.

Petroleum components were identified in a groundwater sample collected from boring B-2 during the previous investigation.

Groundwater contamination within the current WDOT right-of-way appears to extend from approximately the center of the concrete pump island at the site 75 feet west to the property boundary with Hedlund DX. It is not known how far the contaminated groundwater extends north under the current State Highway 70 and south under the Bob's Service Station property.

6.0 RECOMMENDATIONS

After completing the Phase III Environmental investigation at the Bob's Service Station site, Aqua-Tech, Inc. recommends that WDOT meet with the owner of Bob's Service Station and adjacent properties (Hedlund DX, Andy's Bait Shop, Orr's Trading Post), WDNR, and WDILHR to discuss specific clean up responsibilities and funding.

Local property owners may be eligible for a petroleum clean up fund (PECFA) administered by WDILHR. It is recommended that remediation be scheduled in conjunction with State Highway 70 construction.

Remedial procedures available for treating petroleum contaminated soils include active and passive venting systems, asphalt incorporation, low temperature thermal destruction, bioremediation, and landfill disposal. Costs range from $40 to $125 a cubic yard.

Options to remediate the contaminated soil at the site are limited by the soil type (primarily clay), underground utilities, and State Highway 70.

Groundwater monitoring and remedial action will be required by the WDNR to bring groundwater quality standards to levels within Wisconsin Administrative Code Standards.

An estimate cost to initiate remediation at the site follows.

BOB'S SERVICE STATION

ESTIMATED REMEDIAL COST OF EXISTING

STATE HIGHWAY 70 RIGHT-OF-WAY

Excavation and Landfill Disposal of Gasoline Contaminated Soil (Based on 833 cubic yards of petroleum contaminated soil at $60 per cubic yard)	$50,000
Backfill and Compaction	5,000
Environmental Consultant to Oversee Excavation	2,000
Chemical Analyses of Ten Soil Samples for Total Petroleum Hydrocarbons	1,000
Project Management and Report Preparation	2,000
Installation of Three Groundwater Monitoring Wells	2,500
TOTAL	$62,500

This estimate assumes an estimated 833 cubic yards of gasoline contaminated soil within the existing WDOT right-of-way to be disposed of at a landfill. Not included are costs for repairing any damaged utilities, restoring asphalt, landscaping, and remediating contamination outside of the current WDOT right-of-way at the site.

Actual cost to remediate the site will depend on the procedure selected and the total amount of contaminated soil to be remediated.

An air stripper to remediate contaminated groundwater will range from $30,000 to $100,000. This cost may be minimized by dividing costs between adjacent contaminated sites.

APPENDIX A

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

SOIL PROFILE LOG

PROJECT: **BOB'S SERVICE STATION**
LOCATION: FALUN, WI
PROJECT#: 8040-03-00
ATI WO#: 91035

BORING BS-1 (32.5' S OF CENTERLINE) SURFACE ELEVATION _____

SAMPLES NO.	(bpf) MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	0.0' - 0.4' GRAVEL 0.4' - 2.0' SAND AND GRAVEL
	5 8 7 3		0		2.0' - 4.0' MEDIUM GRAINED BROWN SAND
	2 2 2 4		0	5.0	4.0' - 14.0' GREY CLAY
WBS-1	3 5 7 9		0		
				10.0	
	2 3 5 6		0		
	2 2 3 4		0		14.0' - 15.0' SAND AND GRAVEL
				15.0	TERMINATED BORING AT 15.0' *WATER SAMPLE WBS-1: HNU = 0
				20.0	

WATER LEVEL OBSERVATIONS

WHILE DRILLING ----
DEPTH TO WATER 6.5'▼
DEPTH TO CAVE-IN ----

GENERAL INFORMATION

START DATE 6/07/90 COMPLETION DATE 6/07/90
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: _____

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

SOIL PROFILE LOG

PROJECT: **BOB'S SERVICE STATION**
LOCATION: FALUN, WI
PROJECT#: 8040-03-00
ATI WO#: 91035

BORING BS-2 (32.0' S OF CENTERLINE) SURFACE ELEVATION _____

SAMPLES NO.	(bpf) MOISTURE	REC	PID LEVELS (PPM)	DEPTH (FT)	DESCRIPTION AND REMARKS
				0.0	0.0' - 0.4' GRAVEL 0.4' - 3.0' MEDIUM BROWN SAND
			0		3.0' - 12.0' GREY CLAY
			20		
			150	5.0 ▼	
WBS-2			160		
BS-2					
			100		
			10		
				10.0	
			30		
			80		12.0' - 16.0' MEDIUM BROWN SAND
			1	15.0	
				16.0	TERMINATED BORING AT 16.0'
					*SOIL SAMPLE BS-2: HNU = 160PPM *WATER SAMPLE WBS-2: HNU = 150 PPM
				20.0	

WATER LEVEL OBSERVATIONS

WHILE DRILLING ----
DEPTH TO WATER 6.5' ▼
DEPTH TO CAVE-IN ----

GENERAL INFORMATION

START DATE 6/07/90 COMPLETION DATE 6/07/90
DRILLING METHOD: HOLLOW STEM AUGERS; SPLIT SPOON SAMPLING
LOGGER: Jm

APPENDIX B

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE ABANDONMENT

Form 3300-5 Rev. 6-87

(1) GENERAL INFORMATION

Well/Drillhole Location: BS-1

County: BURNETT

__ 1/4 of __ 1/4 of Sec. ____; T. ____ N; R. ____ ☐ E ☐ W

(If applicable)

____ Gov't Lot ____ Grid Number

Civil Town Name: BOB'S SERVICE STATION

Street Address of Well: 400 feet E. of St. Hwy 70 + RANGE LINE ROAD

City, (Village): FALUN WI. BURNETT City.

Date of Abandonment: 6-7-90

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner

Street or Route

City, State, Zip Code

Well Number and/or Name (If Applicable)

Reason For Abandonment: TEST BORING FOR STATE HWY 70 Improvement

WELL/DRILLHOLE INFORMATION

(3) Original Well/Drillhole Construction Completed on (Date): 6-7-90

☐ Water Well ☒ Drillhole

Construction Report Available? ☒ Yes ☐ No Attached

Construction Type:

☒ Drilled ☐ Driven (Sandpoint) ☐ Dug ☐ Other (Specify)

Well Type: N/A

☐ Unconsolidated Formation Well ☐ Bedrock Well

Total Well Depth (ft.) ____ Casing Diameter (ins.) ____

Casing Depth (ft.) ____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown

If Yes, To What Depth? ____ Feet

(4) Depth to Water (Feet) 6.5'

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 Drillhole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material

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

(6) Acceptable Sealing Materials

Neat Cement Grout; Concrete Grout; Concrete; Clay Slurry; Sodium Bentonite Slurry

(7) Kind of Sealing Material	From (Ft.)	To (Ft.)	No. Yards or Sacks Sealant	Mix Ratio or Mud Weight
Bentonite	Surface	15.0		100 gal

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work: Aqua Tech Enc

Signature of Person Doing Work: James J. Mueller — Date Signed: 6-7-90

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 ____

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE ABANDONMENT

Form 3300-5 Rev. 6-87

(1) GENERAL INFORMATION

Well/Drillhole Location: BS-2

County: BURNETT

___ 1/4 of ___ 1/4 of Sec. ___; T. ___ N; R. ___ ☐ E ☐ W

(If applicable)

___ Gov't Lot ___ Grid Number

Civil Town Name: BS-5 SERVICE STATION

Street Address of Well: 400 feet E of St. H. 70 & RANGE Line ROAD

City, Village: FALUN WI

Date of Abandonment: 6-7-90

(2) FACILITY NAME

Original Well Owner (If Known)

Present Well Owner

Street or Route

City, State, Zip Code

Well Number and/or Name (If Applicable)

Reason For Abandonment: TEST BORING FOR STATE Highway 70 Improvement

WELL/DRILLHOLE INFORMATION

(3) Original Well/Drillhole Construction Completed on (Date): 6-7-90

☐ Water Well
☒ Drillhole

Construction Report Available? ☒ Yes ☐ No Attached

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

Well Type: N/A
☐ Unconsolidated Formation Well ☐ Bedrock Well

Total Well Depth (ft.) ___ Casing Diameter (ins.) ___

Casing Depth (ft.) ___

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

(4) Depth to Water (Feet) 6.5'

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 Drillhole Retopped?	☐ Yes	☐ No

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

(6) Acceptable Sealing Materials
Neat Cement Grout; Concrete Grout; Concrete; Clay Slurry; Sodium Bentonite Slurry

(7) Kind of Sealing Material	From (Ft.)	To (Ft.)	No. Yards or Sacks Sealant	Mix Ratio or Mud Weight
Bentonite	Surface	16.0		10%

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work: Aqua Tech Inc

Signature of Person Doing Work: [signature] Date Signed: 6-7-90

Street or Route: 140 S. Pine 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

DNR/COUNTY

APPENDIX C

AQUA-TECH GROCE LABORATORIES

CORPORATE
Aqua-Tech, Inc.
140 S. Park St., Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
91035	Dot/Bobs Service Station

SAMPLERS: *(Signature)*

LAB NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	BETX + MTBE	TPH - Diesel	Total solids	TPH - Gas			REMARKS
W2926A	6/7/90	9:45AM		X	WBS-1	2	X						Water
W2926B	6/7/90	11:00AM		X	BS-2 6-8'	1	X	X	X				Soil
W2926C	6/7/90	11:15AM		X	WBS-2	2	X						Water
W2926D	6/7/90	11:15AM		X	WBS-2	1		X		X			Water

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
	6-10-90		
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	
		Paul Shimek	6-11-90

Report to:
Name Jim Merton / Aqua-Tech
Street 140 S. Park St.
City Port Washington State WI Zip 53074
Phone no. ( )

Remarks

2 week turnaround
Indicate Methods
Relinquished Chain of Custody

Remarks

AQUA-TECH
GROCE LABORATORIES

ANALYTICAL LABORATORY REPORT

Sample #: W2926 A-D

Customer: Bob's Service Station

Date Sampled: 6-7-90

Date Received: 6-11-90

Date Wanted: 6-21-90

Lab Director Approval: Bruce F. Vaden 6-20

ATI Contact Name: _____

Sample Description

PARAMETER	WBS-1 2926 A	BS-2 2926 B	WBS-2 2926 C	WBS-2 2926 D	Tech ID	Date Analysis Completed
total solids	—	70%	—	—	PS	6-12-90
TPH-gasoline	—	163 µg/g (1.0)	—	80,700 µg/l* (500)	RH	6-12-90
Flashpoint	—	>200°F	—	—		
pH	8.01	8.11	7.59	—	PS	6-12-90
Benzene	ND (1.0) µg/l	3.1 µg/g (1.0)	720 µg/l (500)	—	RH	6-16-90
Toluene	ND (1.0)	11.3 µg/g (1.0)	3820 µg/l (500)	—		
Ethyl benzene	ND (1.0)	2.7 µg/g (1.0)	900 µg/l (500)	—		
Xylene	ND (1.0)	22 µg/g (1.0)	11,450 µg/l (500)	—		
		RH 6-15-90				

* Test results may be biased by; sample was collected in 1 liter jar with headspace.

ND = Not Detected

Detection Limit is in ( )

CORPORATE
Aqua Tech, Inc.
1405 S. Park St. Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd Greer, SC 29651
(803) 877-1048 FAX (803) 877-1672

ATTACHMENT A

AQUA-TECH
GROCE LABORATORIES

January 31, 1990

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

Dear Mr. Gehrmann:

Enclosed please find the Environmental Site Assessment Report for the Bob's Service Station site, located on State Highway 70 in Falun, Wisconsin, Project No. 8040-03-00.

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

Sincerely,

AQUA-TECH, INC.

James J. Mertes
Technical Specialist

JJM/rk

Enclosure

CORPORATE
Aqua Tech, Inc.
140 S. Park St. Port Washington, WI 53074
(414) 284-5746 FAX (414) 284-0243

TREATMENT FACILITY
Groce Laboratories, Inc.
340 Robinson Rd. Greer, SC 29651
(803) 877-1048 FAX (803) 877-1872

ENVIRONMENTAL SITE ASSESSMENT REPORT

FOR THE

BOB'S SERVICE STATION SITE

STATE HIGHWAY 70

FALUN, WISCONSIN

JANUARY 1990

PREPARED FOR THE

WISCONSIN DEPARTMENT OF TRANSPORTATION

PROJECT 8040-03-00

AQUA-TECH, INC.
140 SOUTH PARK STREET
PORT WASHINGTON, WISCONSIN 53074
ATI PROJECT NO. 91035

SIGNATURE PAGE

FOR THE

ENVIRONMENTAL SITE ASSESSMENT REPORT

FOR THE

BOB'S SERVICE STATION SITE

STATE HIGHWAY 70

FALUN, WISCONSIN

WDOT PROJECT 8040-03-00

Prepared By: _____ Date: 1/31/90

Robert A. Ehlert
Field Technician
Aqua-Tech, Inc.

Reviewed By: _____ Date: 1-31-90

James J. Mertes
Technical Specialist
Aqua-Tech, Inc.

_____ Date: 1/31/90

Z. Vance Jackson, Jr.
Hydrogeologist
Aqua-Tech, Inc.

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1.0 SUMMARY

Aqua-Tech, Inc. has completed a phase II environmental site assessment of the Bob's Service Station site on State Highway 70, in Falun, Wisconsin. This assessment was contracted November 13, 1989 by the Wisconsin Department of Transportation (WDOT) Risk and Safety Management Section as part of WDOT Project 8040-03-00.

The purpose of the site assessment was to identify possible environmental contamination, within WDOT's proposed right-of-way associated with the underground storage tanks located at the site. The assessment included the following:

* Regulatory background review
* Site representative interview
* Two subsurface soil borings to a maximum depth of 14 feet
* Collection and field screening of the subsurface soil samples for volatile organic compounds
* Chemical analysis of one subsurface soil sample for total petroleum hydrocarbons (TPH)
* Chemical analysis of two groundwater samples for volatile organic compounds

The laboratory results of this investigation indicate that THE SOILS AND GROUNDWATER WITHIN THE PROPOSED WDOT RIGHT-OF-WAY ACQUISITION AT THE SITE ARE CONTAMINATED BY PETROLEUM PRODUCT.

Aqua-Tech recommends that more EXTENSIVE MONITORING BE CONDUCTED at the site to determine the extent of contamination and the type of remediation necessary. Monitoring should be conducted in cooperation with property owners near the site after consulting with Wisconsin Department of Natural Resources officials.

2.0 SITE BACKGROUND

2.1 Introduction

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

2.2 Site Location

Bob's Service Station is an active vehicle service and gasoline station located on less than one acre of land in the unincorporated village of Falun, Wisconsin. It occupies a parcel of land on the south side of State Highway 70 approximately 400 feet east from the intersection of State Highway 70 and Range Line Road in Burnett County, Wisconsin (See Figure 2-1).

2.3 Site Geology

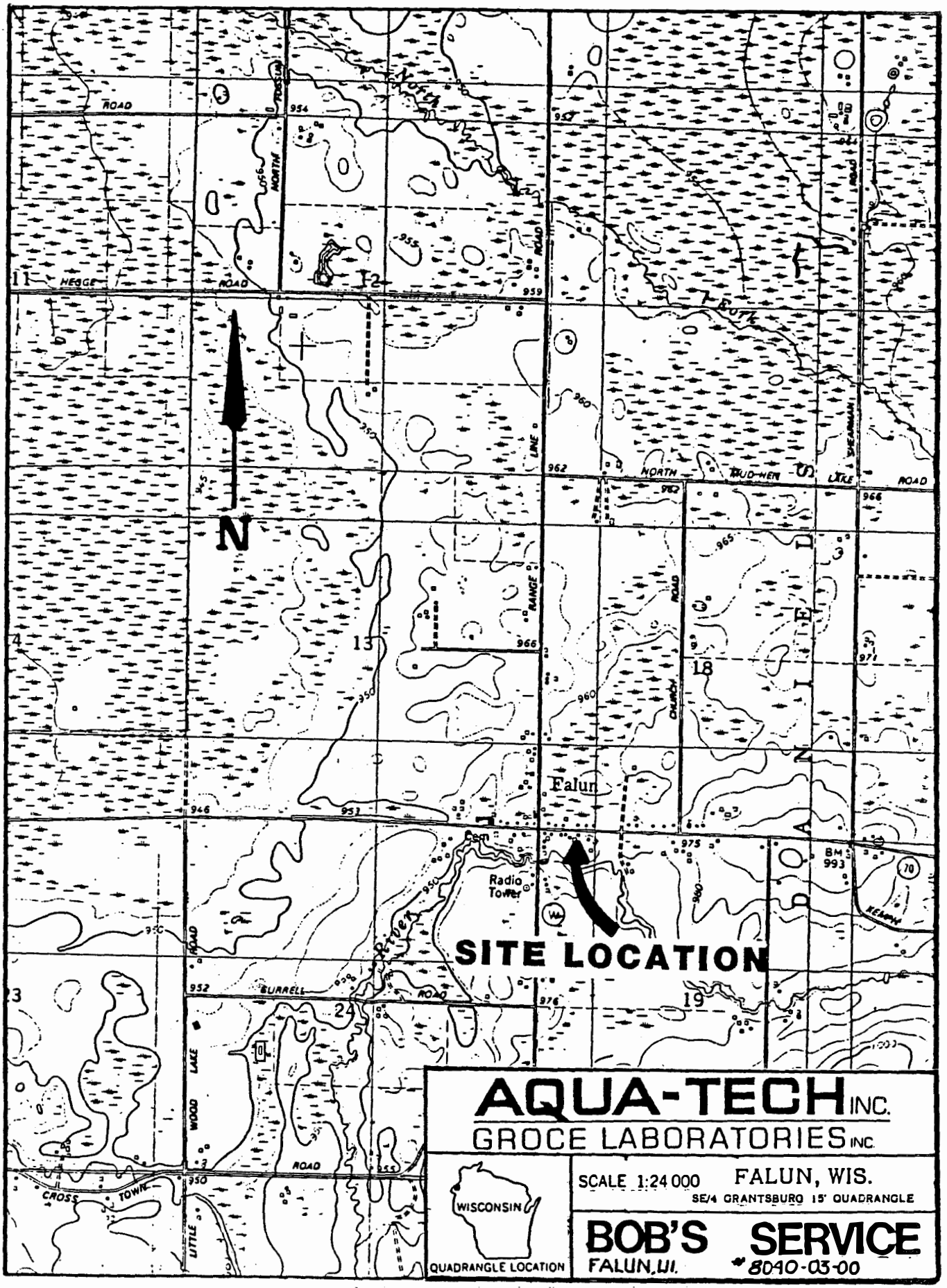
The site forms part of the pitted outwash left behind by the retreat of the Wisconsinan (Woodfordian) ice sheets. The site occupies what became Glacial Lake Duluth as glaciation waned. Consequiently, glaciation has been the primary agent determining the geology and physiography of the site.

The soils encountered in the test borings consist of glacially derived medium-coarse sands, gravels and grey clays.

Bedrock in the area is buried to varying depths by glacial deposits. Regionally, it consists of Cambrian age sandstones interbedded with some dolomite and shale.

Figure 2-1

SITE LOCATION



Surface topography at the site is flat (less than 1 percent slope) with adjacent topography sloping gently south toward the Wood River approximately 400 feet from the site.

Groundwater was encountered in test borings at depths of 11 to 12 feet, however, no hydraulic gradient was established. Based on the surface topography, groundwater appears to be flowing south across the Bob's Service Station site.

2.4 Site History

The property was the site of a creamery from 1931 to 1975. The site was purchased and converted to a gasoline and service station in 1975 by Robert Anderson, owner.

Two coated steel 10,000 gallon underground storage tanks containing leaded and unleaded gasoline were installed in 1975. The tanks are registered with the Wisconsin Department of Industry, Labor, and Human Relations (DILHR) Fire Prevention Section. See Appendix A for DILHR Inventory Forms.

2.5 Regulatory Review

The Bob's Service Station 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 files. These files include Wisconsin's 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 June 1989.

3.0 SITE ASSESSMENT PROCEDURES AND FIELD OBSERVATIONS

3.1 Introduction

This section outlines site assessment procedures and field observations of the environmental site assessment at Bob's Service Station site in Falun, Wisconsin. Individual subsections address the site representative interview, reconnaissance inspection, and sampling and chain of custody procedures. Rationales for specific assessment activities are also provided.

3.2 Site Representative Interview

James J. Mertes of Aqua-Tech, Inc. conducted an on-site interview with Robert Anderson, owner of the Bob's Service Station site on November 7, 1989. The purpose of the interview was to gain information useful in completing the environmental site assessment.

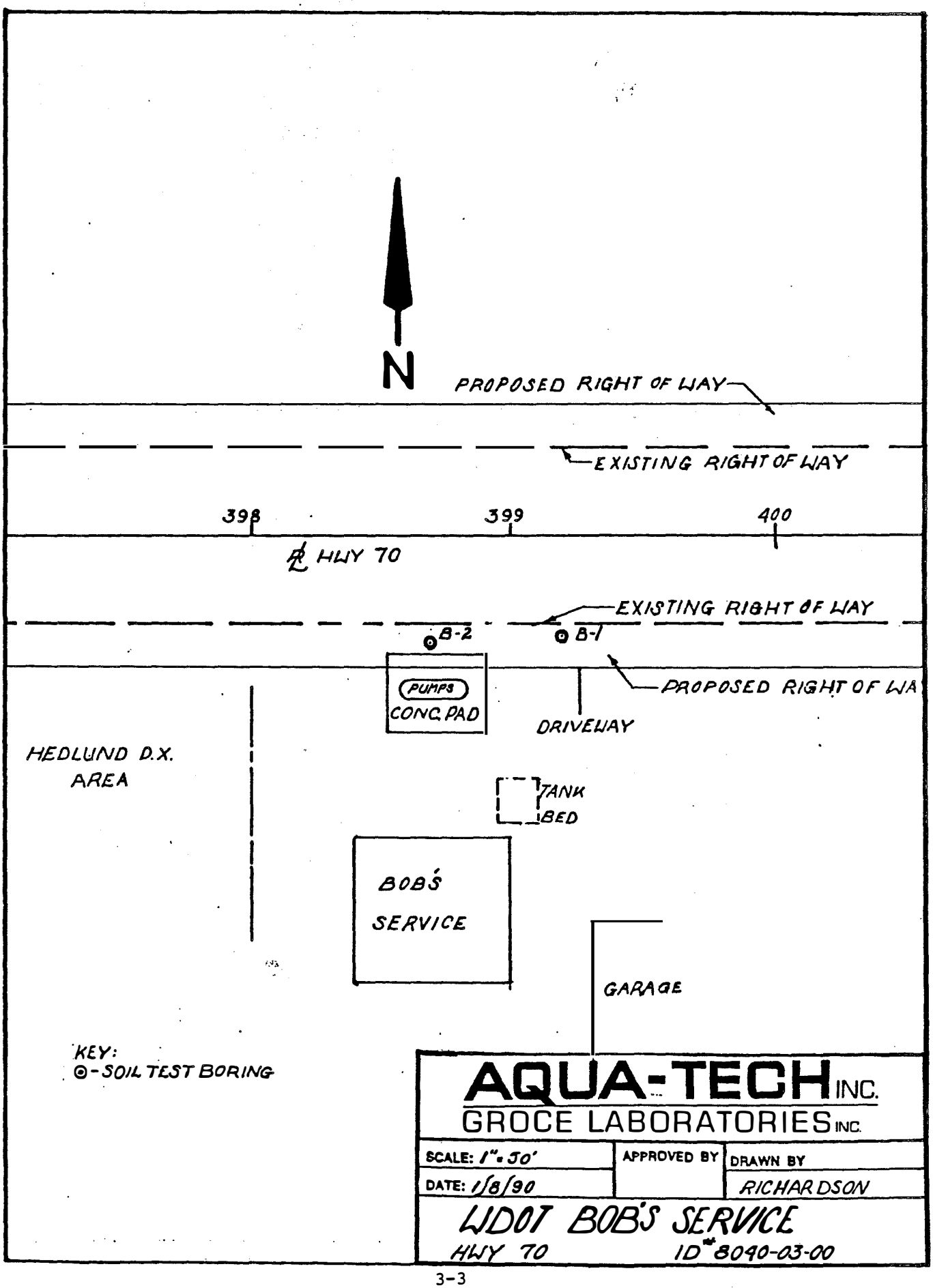
3.3 Reconnaissance Inspection

A reconnaissance inspection of Bob's Service Station site and surrounding areas was conducted on November 7, 1989. The reconnaissance inspection included a walk through of the site to determine appropriate sampling locations, taking into consideration the tank bed location, underground and overhead utilities, and site accessibility.

Reconnaissance Inspection Observations

The Bob's Service Station site is located in a rural commercial district interspersed with residential housing in Falun, Wisconsin. The site is bounded to the north by State Highway 70. The boundaries to the south, west and east are surveyed property lines. The site is surrounded by adjacent

FIGURE 3-1
Site Features and Sampling L ations



14 foot depth interval approximately 15 feet north of the pump island.

Soil samples were not collected for laboratory analysis from boring B-1 because no VOCs were indicated by screening the soils with a photoionization meter.

Subsurface soil samples were collected with a truck-mounted rotary drill equipped with hollow stem augers and 2 inch diameter, 24 inch split spoon sampler. The split spoon sampler was advanced 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 tools were washed with an alconox and reagent water solution between sample points to prevent cross-contamination within the boring.

A preliminary survey was conducted by screening samples with a photoionization meter 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 is recorded on the soil profile logs in Appendix C.

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

Upon completion of sampling, the boreholes were backfilled with bentonite mixture and surface concrete was patched where necessary.

Subsurface soil sample B-2 was analyzed for total petroleum hydrocarbons (TPH) at the NET Midwest laboratory in Rockford, Illinois by the California GC Method.

Groundwater Sampling Procedures

Groundwater samples WB-1 and WB-2 were collectd to determine whether any gasoline components had migrated from the tank bed area via groundwater (See Figure 3-1). Samples were collected from borings B-1 and B-2 respectively, by inserting a clean stainless steel bailer down the hollow stem augers and transferring the contents to two 40 ml. glass vials. The vials were then sealed, taking care to ensure no air was included, and cooled to 4°C for transport to the laboratory.

All water samples were analyzed for volatile organic compounds by the NET Midwest laboratory in Rockford, Illinois by EPA Method 8240.

3.4 Chain of Custody Procedures

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

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

identification documents included:

* Field Notebooks
* Sample Labels
* Chain of Custody Records

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

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

A Chain of Custody Record (See Appendix D) was fully completed in duplicate by the Aqua-Tech sampler immediately following sample collection.

Transfer of Custody Shipment

The coolers in which the samples were packed were accompanied by the Chain of Custody Record. When transferring samples, the individuals relinquishing and receiving them signed, dated, and noted the time on the Chain of Custody Record. This record documents sample custody.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the sample identification number matched that on the Chain of Custody Record. A copy of the completed 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.

4.0 ANALYTICAL PROCEDURES AND RESULTS

4.1 Introduction

This section includes results of chemical analysis of the subsurface soil sample and groundwater sample for total petroleum hydrocarbons (TPH) and volatile organic compounds respectively.

4.2 Analytical Procedures

Samples were analyzed by the NET Midwest laboratory in Rockford, Illinois by methods referenced in Section 3.3.

Methodology references contain specific 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.

4.3 Results of Chemical Analysis of Aqua-Tech Collected Samples

Chemical analysis of the soil sample yielded the following results:

* Subsurface sample B-2 was contaminated at the level of 20 ug/g TPH as diesel

All results are calculated on a dry weight basis as required by the Wisconsin Department of Industry, Labor and Human Relations (DILHR). See Table 4-1 for complete soil sample analysis results. Original laboratory data is provided in Appendix E.

TABLE 4-1

BOB'S SERVICE STATION SITE

SUBSURFACE SOIL SAMPLE ANALYSIS RESULTS

Soil Sample	Depth Interval (feet)	Field Photoionization level (ppm)	TPH* ug/g
B-2	12 - 14	2	20 (as diesel)

* Results reported on a dry weight basis.

** 10 ug/g is the maximum amount of TPH contaminants allowed in soil before remediation is required by the Wisconsin Department of Industry, Labor and Human Relations (DILHR).

Chemical analysis of groundwater samples yielded the following :

* No volatile organic compounds (VOC's) were identified in sample WB-1 above the laboratory detection limits.
* Petroleum components were identified in sample WB-2 at the following levels: benzene (4.3 ug/l), ethylbenzene (5.2 ug/l), and xylenes (5.0 ug/l).

See Table 4-2 for complete groundwater analysis results. Original laboratory data is provided in Appendix F.

TABLE 4-2

BOB'S SERVICE STATION SITE

GROUNDWATER SAMPLE ANALYSIS RESULTS**

Groundwater Sample	Field Photoionization level (ppm)	Benzene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)
WB-1	0	< 1.0	< 1.0	< 1.0
WB-2	6	4.3	5.2	5.0

** Samples were analyzed for additional volatile organic compounds. No compounds were identified above the laboratory detection limits. Original laboratory data is provided in Appendix F.

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 Bob's Service Station site.

5.2 Soil

TPH as diesel contamination was identified in boring B-2 at the site above the DILHR 10 ug/g remedial action level.

No volatile organic compounds were identified by field screening subsurface soil samples with a photoionization meter from boring B-1.

Extensive petroleum contamination was identified at a former gasoline and service station (Hedlund DX) bordering the Bob's Service Station site to the west. Based on the location of borings and contaminant levels identified, this suggests contamination may be migrating to the Bob's Service Station site from off site. However, TPH was qualified as diesel at Bob's Service Station and TPH was qualified as gasoline at the bordering property.

Soil appeared to be contaminated only near or below the water table at the Bob's Service Station site, suggesting that contaminants are migrating via groundwater.

5.3 Groundwater

The groundwater table was encountered in the test borings at depths of 11 to 12 feet. Laboratory analysis of sample WB-2 revealed a benzene level of 4.3 ug/g. This

exceeds the Wisconsin Administrative Code NR 140 Groundwater Quality Enforcement Standard as outlined in Table 4-3.

No groundwater contaminants were identified in sample WB-1 collected east of WB-2 within the proposed WDOT right-of-way.

TABLE 4-3

WISCONSIN ADMINISTRATIVE CODE

CHAPTER N.R. 140

GROUNDWATER QUALITY STANDARDS

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

6.0 RECOMMENDATIONS

After completing the initial environmental assessment at the Bob's Service Station site, Aqua-Tech recommends that additional soil and groundwater monitoring be conducted to determine the most practical solution for site remediation.

Soil and groundwater contamination have been identified within the proposed right-of-way acquisition at the site. Substantial contamination has been identified on property bordering the Bob's Service Station site to the west (Hedlund DX) by a separate assessment conducted by Aqua-Tech. It is recommended that additional monitoring be conducted in coordination with site owners and the Wisconsin Department of Natural Resources to define the areal extent of contamination.

An estimate for the cost of site remediation is not possible until the extent of contamination has been identified. However, it is recommended that remediation be undertaken on the WDOT right-of-way and proposed right-of-way at the same time that surrounding properties are remediated.

APPENDIX A

Wisconsin Department of
Industry, Labor and
Human Relations

For Office Use Only:
Tank ID # 07023 58

UNDERGROUND
PETROLEUM PRODUCT
TANK INVENTORY

Send Completed Form To:
Safety & Buildings Div.
Fire Prevention Section
P.O. Box 7969
Madison, WI 53707
Telephone (608) 266-7874

Instructions

This form is to be completed pursuant to Section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored, currently store or will store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

RECEIVED
FEB 24 1986
SAFETY & BLDGS. DIV.

This Individual Tank Registration Applies To (check one):

1. [X] Tank still in active use
2. [ ] Inoperative or abandoned tank with product still in tank
3. [ ] Inoperative or abandoned tank with no known product in tank
4. [ ] Location for which tank has been removed
5. [ ] New tank to be installed (provide date): _____

A. IDENTIFICATION

1. Name of Installation: Bobs Service
Street Address of Installation: RT Box 715
[X] City [ ] Village [X] Town of: Daniels
State: Wi | Zip Code: 54872 | County: Burnett 07

2. Name for Mailing if Different Than #1
Mailing Address if Different Than #1
[ ] City [ ] Village [ ] Town of:
State | Zip Code | County

3. Name of Contact Person: Robert P Anderson
Street Address: RT 1 Box 719
[ ] City [ ] Village [ ] Town of: Siren
State: Wi | Zip Code: 54872 | County: Burnett
Telephone Number (include area code): 1-715-689-2445 OR 2584

4. Name of Owner if Different from #3
Street Address
[ ] City [ ] Village [ ] Town of:
State | Zip Code | County
Telephone Number (include area code)

5. Fire Department Name and ID #: Grantsburg Wi
6. Tank Age (date installed, if known; or years old): 1975
7. If Tank Abandoned, Give Date (mo / day / yr):
8. Tank Capacity (in gallons): 10 000
9. Tank Manufacturer's Name, if known: Brown

B. TANK CONSTRUCTION:

1. [ ] Bare Steel
2. [ ] Cathodically Protected Steel
3. [X] Coated Steel
4. [ ] Fiberglass
5. [ ] Other (specify): _____

C. TANK CONTENTS:

1. [ ] Diesel
2. [X] Leaded Gasoline
3. [ ] Unleaded Gasoline
4. [ ] Fuel Oil
5. [ ] Gasohol
6. [ ] Other (specify): _____

D. TYPE OF USER (check one):

1. [X] Gas Station
2. [ ] Bulk Storage
3. [ ] Utility
4. [ ] Mercantile
5. [ ] Industrial
6. [ ] Government
7. [ ] School
8. [ ] Residential
9. [ ] Agricultural
10. [ ] Other (specify): _____

Signature of Person Completing Form: Robt P Anderson
Date Completed: 2-11-86

SBD-7437 (N. 04/85)

Wisconsin Department of Industry, L. or and Human Relations

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Send Completed Form To:
Safety & Buildings Div.
Fire Prevention Section
P.O. Box 7969
Madison, WI 53707
Telephone (608) 266-7874

For Office Use Only:
Tank ID # 07023 57

Instructions

This form is to be completed pursuant to Section 101.142, Wis. Stats., to register all underground tanks in Wisconsin that have stored, currently store or will store petroleum or regulated substances. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. **A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner.**

RECEIVED
FEB 24 1986
SAFETY & BLDGS. DIV.

This Individual Tank Registration Applies To (check one):

1. [X] Tank still in active use
2. [ ] Inoperative or abandoned tank with product still in tank
3. [ ] Inoperative or abandoned tank with no known product in tank
4. [ ] Location for which tank has been removed
5. [ ] New tank to be installed (provide date): _____

A. IDENTIFICATION

1. Name of Installation: Bob's Service
Street Address of Installation: RT 1 Box 719
[ ] City [ ] Village [X] Town of: DANIELS
State: WI | Zip Code: 54872 | County: BARNETT

2. Name for Mailing if Different Than # 1
Mailing Address if Different Than #1
[ ] City [ ] Village [ ] Town of:
State | Zip Code | County

3. Name of Contact Person: Robert P Anderson
Street Address: RT 1 Box 719
[ ] City [ ] Village [ ] Town of: SIREN
State: WI | Zip Code: 54872 | County: BARNETT
Telephone Number (include area code): 1-715-689-2445 or 2584

4. Name of Owner if Different from #3
Street Address
[ ] City [ ] Village [ ] Town of:
State | Zip Code | County
Telephone Number (include area code)

5. Fire Department Name and ID #: GRANTSBURG WI

6. Tank Age (date installed, if known; or years old): 1975

7. If Tank Abandoned, Give Date (mo / day / yr)

8. Tank Capacity (in gallons): 10,000

9. Tank Manufacturer's Name, if known: BROWN

B. TANK CONSTRUCTION:

1. [ ] Bare Steel
2. [ ] Cathodically Protected Steel
3. [X] Coated Steel
4. [ ] Fiberglass
5. [ ] Other (specify): _____

C. TANK CONTENTS:

1. [ ] Diesel
2. [ ] Leaded Gasoline
3. [X] Unleaded Gasoline
4. [ ] Fuel Oil
5. [ ] Gasohol
6. [ ] Other (specify): _____

D. TYPE OF USER (check one):

1. [X] Gas Station
2. [ ] Bulk Storage
3. [ ] Utility
4. [ ] Mercantile
5. [ ] Industrial
6. [ ] Government
7. [ ] School
8. [ ] Residential
9. [ ] Agricultural
10. [ ] Other (specify): _____

Signature of Person Completing Form: Robert P Anderson
Date Completed: 2-11-86

SBD-7437 (N. 04/85)

APPENDIX B

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Bob's Service Station, Falun, Wisconsin PAGE 1 OF 2

U.S. EPA ID:

DATE: > 11/7/89

TIME: > 1:30 P.M.

DIRECTION OF PHOTOGRAPH:
> South

WEATHER CONDITIONS:
> Clouds
> 45°F

PHOTOGRAPHED BY:
> Mitch Evenson

SAMPLE ID (if applicable):
> N/A

DESCRIPTION: > View showing west side of Bob's Service Station, Hedland DX is
> in the right foreground.
>

DATE: > 11/7/89

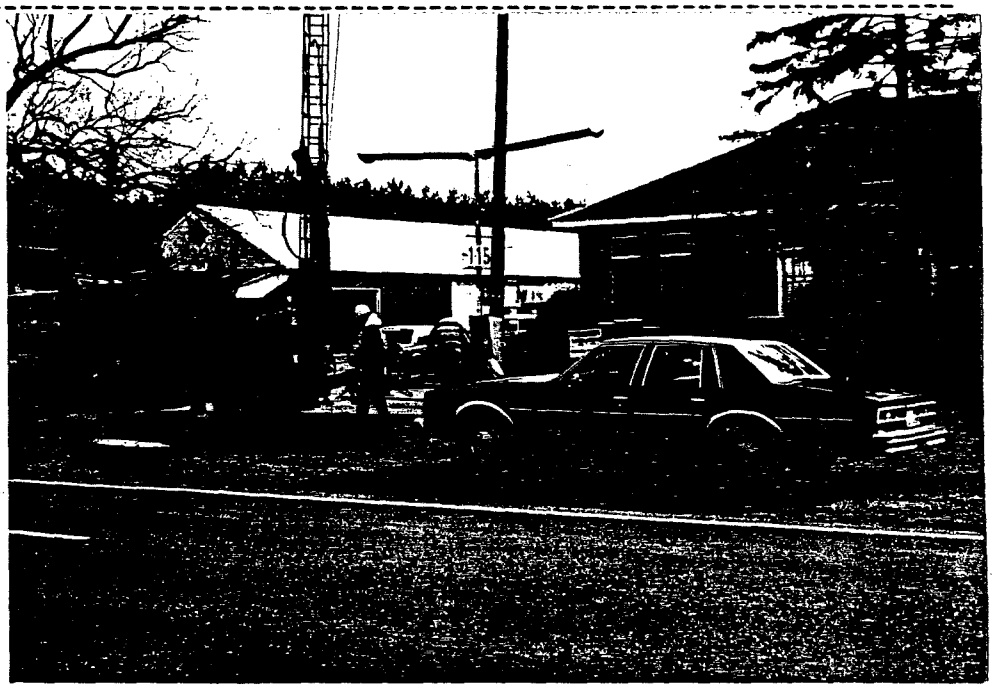
TIME: > 1;30 P.M.

DIRECTION OF PHOTOGRAPH:
> Southeast

WEATHER CONDITIONS:
> Clouds
> 45°F

PHOTOGRAPHED BY:
> Mitch Evenson

SAMPLE ID (if applicable):
> N/A



DESCRIPTION: > View of pump islands and close proximity to STH 70.
>
>

FIELD PHOTOGRAPHY LOG SHEET

SITE NAME: Bob's Service Station, Falun, Wisconsin PAGE 2 OF 2

U.S. EPA ID:

DATE: > 11/7/89

TIME: > 1:30 P.M.

DIRECTION OF PHOTOGRAPH:
> Southeast

WEATHER CONDITIONS:
> Clouds
> 45°F

PHOTOGRAPHED BY:
> Mitch Evenson

SAMPLE ID (if applicable):
> ---

DESCRIPTION: > View showing nearest residence to site.
>
>

DATE: >

TIME: >

DIRECTION OF PHOTOGRAPH:
>

WEATHER CONDITIONS:
>
>

PHOTOGRAPHED BY:
>

SAMPLE ID (if applicable):
>

DESCRIPTION: >
>
>

APPENDIX C

Aqua Tech

SOIL PROFILE LOG

Project Bob's Service Station

Location Falun, Wisconsin

8040-03-00

Aqua-Tech, Incorporated
140 S. Park Street
Port Washington, WI 53074
Telephone:
(414) 284-5746
(414) 375-0407 (Milw Metro)

Boring # B-1

Surface Elevation ----

SAMPLES No.	Moisture	Rec	HNU Levels (ppm)	Depth (ft)	Description and Remarks
	Dry		0	0.0	0.0' - 3.0' Sand and Gravel
			0	5.0	3.0' - 6.0' Sand
			0	10.0	6.0' - 11.0' Grey Clay
WB-1	Wet		0	12.0	11.0' - 12.0' Gravel and Sand

Terminated Boring at 12.0'
No Bedrock Encountered
Groundwater Encountered at 11.0'
Groundwater Sample WB-1
Collected at 11.0' - 12.0'

Water Level Observations

While Drilling ----
Depth to Water 11.0'
Depth to Cave-in -----

General Information

Start Date 11/7/89
Completion Date 11/7/89
Drilling Method Hollow Stem Auger
HNU Split Spoon Sampler
Logger

Aqua Tech

SOIL PROFILE LOG

Project Bob's Service Station
Location Falun, Wisconsin
8040-03-00

Aqua-Tech, Incorporated
140 S. Park Street
Port Washington, WI 53074
Telephone:
(414) 284-5746
(414) 375-0407 (Milw Metro)

Boring # B-2 Surface Elevation ---

SAMPLES No.	Moisture	Rec	HNU Levels (ppm)	Depth (ft)	Description and Remarks
	Dry		0	0.0	0.0' - 3.0' Sand With Clay
			0	5.0	3.0' - 6.0' Sand
			0		6.0' - 10.0' Grey Clay
			1	10.0	10.0' - 14.0' Sand
WB-2 B-2	Wet		2	14.0	
				15.0	Terminated Boring at 14.0' No Bedrock Encountered. Groundwater Encountered at 12.0' Groundwater HNU Level 6 ppm Soil Sample B-2 Collected at 12.0' - 14.0'

Water Level Observations

While Drilling ----
Depth to Water 12.0'
Depth to Cave-In ----

General Information

Start Date 11/7/89
Completion Date 11/7/89
Drilling Method Hollow Stem Auger
HNU Split Spoon Sampler
Logger

APPENDIX D

AQUA-TECH, INC.
140 S. Park Street
Port Washington, WI 53074
Phone (414) 284-5746

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
	DOT - Bob's Service Sta

SAMPLERS: *(Signature)*
J Mentz, M. Ehmsen

LAB NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	TPH	601/602	50 Unit				REMARKS	HNU
67911	11-7-89			X	WB-1			X					water	0
67912	11-7-89			X	WB-2			X					water	6
67913	11-7-89			X	B-2 12-14'		X						soil	2

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
J Mentz	11-7-89		
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Date / Time
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	
	11/9/89 1230	Donna Myers	

Remarks

Report to:
Name J Mentz
Street Aqua Tech
City _____ State ____ Zip ____
Phone no. (___) _____

Remarks

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

APPENDIX E

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

12-01-89

Sample No: 67913

SAMPLE DESCRIPTION: B-2 12-14', Grab Soil
DOT-Bob's Service Station

Date Taken: 11-07-89

Date Received: 11-09-89 1230

Tot.Pet.Hydrocarbons (GC)	20.	(as diesel)	ug/g

Toni Gartner, Manager
Rockford Division

APPENDIX F

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-21-89

Sample No: 67911

SAMPLE DESCRIPTION: WB-1, Grab Water
DOT-Bobs Service Station

Date Taken: 11-07-89

Date Received: 11-09-89 1230

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	<1.0	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethyl vinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
Dichlorodifluoromethane	<10.	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L

Toni Gartner, Manager
Rockford Division

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Rockford Division
3548 35th Street
Rockford, IL 61109
Tel: (815) 874-2171
Fax: (815) 874-5622

ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-21-89

Sample No: 67911

SAMPLE DESCRIPTION: WB-1, Grab Water
DOT-Bobs Service Station

Date Taken: 11-07-89

Date Received: 11-09-89 1230

Ethylbenzene	<1.0	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes	<1.0	ug/L

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ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-21-89

Sample No: 67912

SAMPLE DESCRIPTION: WB-2, Grab Water
DOT-Bobs Service Station

Date Taken: 11-07-89

Date Received: 11-09-89 1230

VOLATILE COMPOUNDS

Acrolein	<10.	ug/L
Acrylonitrile	<10.	ug/L
Benzene	4.3	ug/L
Bromodichloromethane	<1.0	ug/L
Bromoform	<1.0	ug/L
Bromomethane	<10.	ug/L
Carbon tetrachloride	<1.0	ug/L
Chlorobenzene	<1.0	ug/L
Chloroethane	<10.	ug/L
2-Chloroethyl vinyl ether	<1.0	ug/L
Chloroform	<1.0	ug/L
Chloromethane	<10.	ug/L
Dibromochloromethane	<1.0	ug/L
1,2-Dichlorobenzene	<1.0	ug/L
1,3-Dichlorobenzene	<1.0	ug/L
1,4-Dichlorobenzene	<1.0	ug/L
Dichlorodifluoromethane	<10.	ug/L
1,1-Dichloroethane	<1.0	ug/L
1,2-Dichloroethane	<1.0	ug/L
1,1-Dichloroethene	<1.0	ug/L
trans-1,2-Dichloroethene	<1.0	ug/L
cis-1,2-Dichloroethene	<1.0	ug/L
1,2-Dichloropropane	<1.0	ug/L
cis-1,3-Dichloropropene	<1.0	ug/L
trans-1,3-Dichloropropene	<1.0	ug/L

Toni Gartner, Manager
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ANALYTICAL REPORT

Mr. Mitch Evenson
AQUA-TECH INC.
140 South Park Street
Port Washington WI 53074

11-21-89

Sample No: 67912

SAMPLE DESCRIPTION: WB-2, Grab Water
DOT-Bobs Service Station

Date Taken: 11-07-89

Date Received: 11-09-89 1230

Ethylbenzene	5.2	ug/L
Methylene chloride	<5.0	ug/L
1,1,2,2-Tetrachloroethane	<1.0	ug/L
Tetrachloroethene	<1.0	ug/L
Toluene	<1.0	ug/L
1,1,1-Trichloroethane	<1.0	ug/L
1,1,2-Trichloroethane	<1.0	ug/L
Trichloroethene	<1.0	ug/L
Trichlorofluoromethane	<1.0	ug/L
Vinyl chloride	<10.	ug/L
Xylenes	5.0	ug/L

Toni Gartner, Manager
Rockford Division