Environmental Engineers and Scientists

Report on Modified Phase I Activities
Clark Oil Station # 1656
Grafton, WI

October, 1993

Prepared For:

Clark Oil & Refining Corp.
8182 Maryland Avenue
St. Louis, MO 63105-3721

Prepared By:

BT^2, Inc.
3118 Watford Way
Madison, WI 53713

BT² inc.

Environmental Engineers and Scientists

October 20, 1993

Mr. Terry Miner
Clark Oil & Refining Corporation
8182 Maryland Avenue
St. Louis, MO 63105-3721

SUBJECT: Report on Modified Phase I Activities at Clark Oil Station 1656 at 102 Washington Street in Grafton, Wisconsin.

Dear Mr. Miner:

This letter serves to inform you of the Modified Phase I activities, results to date and recommedations for Clark Station 1656.

Soil contamination has been detected at this site at concentrations that require remediation. The degree and extent of the soil contamination has been adequately defined. Groundwater contamination has been detected at one location, and the concentration of benzene is above the WDNR Preventive Action Limit.

We recommend the installation of monitoring wells to determine the degree and extent of groundwater contamination.

If you have any questions or comments regarding this letter, please contact me at (608) 277-2840.

Sincerely,
BT ², Inc.

Tom Bergamini

Tom Bergamini
Hydrogeologist

enc.

R2_605A

BT², 2118 W. [illegible] Ln., Madison, WI 53713, Ph. (608)277-2840, FAX 277-2850

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 SITE LOCATION AND KEY INFORMATION

1. Site Owner:	Clark Oil & Refining Corp.
2. Site Address:	Clark Oil Station # 1656 1020 Washington St. Grafton, WI 53024 (414) 377-9941
3. Site Location (**see Figure 1**):	NW1/4, NE1/4, Sec.24, T10N, R21E Latitude 43°19'00"N, Longitude 87°57'00"W
4. Site Contact:	Mr. Terry Miner Clark Oil & Refining Corp. 8182 Maryland Avenue St. Louis, MO 63105-3271 (314) 854-9629
5. Environmental Consultant:	BT ^{2}, Inc. 3118 Watford Way Madison, WI 53713-3251
6. Project Hydrogeologist:	Tom Bergamini (608) 277-2840
7. Purposes of Investigation:	a) Define the nature and extent (horizontal and vertical) of soil contamination in the immediate vicinity of an underground storage tank (UST) system. Determine the horizontal and vertical extent of groundwater contamination. b) Assess the alternative methods for addressing soil and groundwater contamination.

2.0 SITE BACKGROUND

2.1 Case Summary, Actions to Date

New product piping and a vapor recovery system were installed at this site by Badger Oil Equipment, Inc. in May, 1993. In order to expedite the management of any contaminated soil or groundwater encountered during construction, two soil borings were drilled and sampled with a hand auger in the locations shown in **Figure 2** on March 31, 1993. One boring (H1) between the USTs and a dispenser island contained GRO in soil at a concentration of 40.7 mg/kg, and a second boring (H2) between two of the islands contained 128 mg/kg GRO (**see Table 1**). A petroleum product release was reported to Giselle Red at the WDNR Southeastern District Headquarters.

Approval was gained for disposal of soil from this site at the Waste Management Parkview Landfill. On May 5, construction began, and soil samples were collected from the excavations in the locations shown on **Figure 2**. Soil excavation was limited to 50 cubic yards of soil which had to be removed to provide space for new petroleum equipment. No additional overexcavation was performed. Screening of soil samples with a flame-ionization detector (FID) indicated that all excavated soil was contaminated, and it was hauled to the Parkview Landfill. Two soil samples were analyzed by a laboratory for confirmation. A sample collected below the old piping contained GRO at a concentration of 13,729 mg/kg, and a sample collected near the USTs contained 13.6 mg/kg GRO (see **Table 1**). Some of the old product piping was removed on May 5, and it was moderately corroded with no holes or breaks observed. Removal of the old piping and excavation of new piping trenches was completed on May 6. Badger Oil Equipment personnel reported that the remaining piping was moderately corroded, with no holes observed.

A Workplan for a Petroleum Release Investigation was submitted to WDNR in July, 1993. The Modified Phase I Investigation has been conducted in accordance with that workplan.

2.2 Background Geology & Hydrogeology

Clark Station # 1656 is located in the Lake Michigan Basin, and it is underlain by approximately 50 feet of unconsolidated deposits over bedrock (Skinner and Borman, 1973). The unconsolidated deposits are derived primarily from glacial processes.

Silurian Dolomite is present at the bedrock surface below this site. This comprises the Niagara Aquifer, which is the most widely used aquifer in the area. Most wells yield at least 10 gallons per minute (gpm), and some high-capacity wells yield as much as 1200 gpm. Water moves mostly in fractures in the dolomite, so recharge to the aquifer is local and paths of groundwater movement are short (Skinner and Borman, 1973). Below the Niagara Aquifer is the Ordovician Maquoketa Formation, which consists of shale, dolomitic shale and dolomite (Mudrey and others, 1982). The Maquoketa Formation acts as an aquitard between the overlying Niagara Aquifer and the sandstone aquifer below (Skinner and Borman, 1973). The sandstone aquifer is comprised by the following bedrock units (Mudrey and others, 1982):

Ordovician Sinnipee Group (dolomite with some limestone and shale)
Ordovician Ancell Group (sandstone with minor conglomerate, shale and limestone)
Ordovician Prairie du Chien Group (dolomite with some sandstone and shale)
Cambrian sandstones of the Trempealeau, Tunnel City and Elk Mound Groups

The sandstone aquifer yields up to 1500 gpm in high-capacity wells. Most recharge of the aquifer is laterally from the west, but small quantities of water move downward through the Maquoketa shale and

wells that are open to both the Niagara and sandstone aquifers in areas of heavy groundwater usage (Skinner and Borman, 1973).

The unconsolidated deposits at this site are mapped as Ozaukee Member till of the Keewaunee Formation. This till was deposited by the glacier ice of the Lake Michigan Lobe of the Laurentide Ice Sheet approximately 13,000 years ago (Clayton and others, 1991). The Ozaukee Member till is light reddish brown to light gray, hard and blocky to crumbly when dry, and very plastic when wet. The till contains abundant dolomite pebbles and cobbles, and the average composition of the matrix is 13% sand, 47% silt, and 40% clay (Mickelson and others, 1984). The glacial deposits are not a productive aquifer in this area (Skinner and Borman, 1973).

Groundwater is present below this site at a depth of approximately 15 - 20 feet. The groundwater-flow direction is reported to be southeast toward the Milwaukee River. The presence of a dam on the Milwaukee River just south of Washington Street may disturb the local groundwater flow. The resulting flow direction at this site may be south or even southwest. Typical infiltration rates for the soil in this area range from 0.8 to 2.5 inches per hour (Skinner and Borman, 1973).

3.0 MODIFIED PHASE I FIELD ACTIVITIES

On July 13 and 14, 1993, 4 soil borings were installed with a drill rig operated by Burlington Environmental, and soil samples were collected and described by a BT^2, Inc. field geologist. The locations of these borings are shown in **Figure 3**, and soil boring logs are included in **Appendix B**. Soil samples were collected by the method described in the Workplan for a Petroleum Release Investigation submitted to WDNR in July, 1993. All borings were abandoned with 3/8-inch bentonite pellets below the water table and granular bentonite above the water table. WDNR Borehole Abandonment Forms will be included in the final Site Investigation Report.

On August 24, 2 additional borings were drilled with a Geoprobe operated by Metco in the locations shown in **Figure 3**. Soil samples were collected from both borings, and a groundwater sample was collected in one of the borings. Geoprobe borings were advanced by using hydraulic percussion to drive a soil probe into the subsurface. Soil samples were collected in a 1.50-inch-diameter hollow tube. The groundwater sample was obtained with the Geoprobe by advancing a screened probe to the bottom of the borehole and removing water through the center of the hollow extension rods. Clean one-half-inch-diameter polyethylene tubing was lowered to the bottom of the sampling probe, and a vacuum pump was used to draw water into the tubing. The tubing was pinched near the pump and lifted out of the borehole, and the water was then allowed to drain into sample containers. The tubing was discarded after being

used. Approximately 2 tubing-volumes of water (about 100 ml) were purged from the Geoprobe sampler before the sample was collected.

Native soil encountered in borings consists of approximately 7 feet of stratified brown and gray silty clay to silty fine sand overlying poorly stratified to massive sand and gravel. These sediments were probably deposited by the Milwaukee River after the Wisconsin Glaciation. The water table was encountered at a depth of 8.5 feet.

Soil samples were collected for headspace analysis at all sampling intervals. Samples were field screened with a flame-ionization detector (FID) or a photoionization detector (PID) following the procedure described in the workplan. Headspace results are presented on the soil boring logs (**Appendix B**). Headspace concentrations above 10 mg/kg were detected in all borings except GP2. The maximum headspace concentration of 500 mg/kg as isobutylene was detected in samples from 8.5 to 10 feet in B1 and 5 to 7 feet in GP1.

One or two soil samples from each boring were subjected to laboratory analysis. All soil samples were analyzed by Specialized Assays Enviromental of Nashville, Tenneessee. Soil samples were collected for laboratory analysis for Gasoline Range Organics (GRO), Volatile Organic Compounds (VOCs), Petroleum Volatile Organic Compounds (PVOCs), and total lead. Groundwater was sampled for GRO and VOCs. Sample collection and analysis were performed according to the methods described in the workplan.

4.0 RESULTS

Laboratory analysis of soil samples indicates that petroleum contamination is present in soil at this site at concentrations that require remediation. Analytical results for soil samples collected in the Modified Phase I Investigation are summarized in **Table 2**. Gasoline Range Organics (GRO) were detected in soil from 5 to 7 feet in boring GP1 (see **Figure 3**) at a concentration of 904 mg/kg. The concentrations of GRO in all other Modified Phase I borings were below the laboratory detection limit of 11 to 12 mg/kg. Low concentrations of PVOCs were detected in soil from GP1 and GP2, and no PVOCs were detected in soil from B1 - B4.

The Phase I and Modified Phase I results indicate that soil contamination at concentrations above the WDNR action limit of 10 mg/kg is present below the canopy and near the southern ends of the USTs. The horizontal extent of the soil contamination has been adequately defined by soil samples with no or low concentrations of contamination from B1 - B4 and GP2.

The groundwater sample from GP1 was analyzed for GRO and VOCs. The GRO concentration was 100 μg/l, and benzene was present at 3.0 μg/l, which is above the WDNR Preventive Action Limit (PAL). Several other PVOCs were detected, but these compounds were all detected at concentrations below their PAL. Two non-petroleum VOCs were also detected. Isopropylbenzene and n-Propylbenzene were present at 81 μg/l and 230 μg/l, respectively. The laboratory analytical report for groundwater sample GP1 is included in **Appendix A**.

5.0 CONCLUSIONS AND RECOMMENDATIONS

(1) Soil contamination above the WDNR guideline of 10 mg/kg GRO is present below the canopy and near the southern ends of the USTs. The contamination extends downward to the water table.

(2) The extent of soil contamination has been adequately defined.

(3) Groundwater contamination has been detected, and the benzene concentration is above the WDNR Preventive Action Limit. The degree and extent of contamination has not been defined.

(4) The installation of monitoring wells is necessary to define the degree and extent of groundwater contamination. Proposed well locations are shown in **Figure 4**.

6.0 REFERENCES

Clayton, L; J.W. Attig; D.M. Mickelson, and M.D. Johnson, 1991. Glaciation of Wisconsin. Wisconsin Geological and Natural History Survey, Educational Series 36.

Mickelson, D.M.; L. Clayton; R.W. Baker; W.N. Mode; and A.F. Schneider, 1984. Pleistocene Stratigraphic Units of Wisconsin. Wisconsin Geological and Natural History Survey, Miscellaneous Paper 84-1.

Mudrey, M.G.; B.A. Brown; and J.K. Greenberg, 1982. Bedrock Geologic Map of Wisconsin. Wisconsin Geological and Natural History Survey.

Skinner, E.L. and R.G. Borman, 1973. Water Resources of Wisconsin: Lake Michigan Basin. United States Geological Survey, Hydrologic Investigations Atlas HA-432.

TABLES

Table 1

Phase I Soil Analytical Results Summary
Clark Station 1656
(Results in mg/kg)

SAMPLE	DATE	PH	Flash Pt	GRO	BENZENE	TOLUENE	E	XYLENES	MTBE	1,2,4-TMB	1,3,5-TMB	Lead
H1	3/31/93	8.26	none to 200°	40.7	0.21	NA	NA	NA	NA	NA	NA	58.5
H2	3/31/93	9.88	none to 200°	178	0.43	NA	NA	NA	NA	NA	NA	7.32
S4 old piping	5/5/93	NA	NA	13,729	70	321	137	891	<7.3	570	248	691
S6 SE Corner UST exc.	5/5/93	NA	NA	13.6	<0.05	<0.05	<0.05	1.3	<0.05	1.6	0.6	37.4

ABBREVIATIONS

GRO = Gasoline Range Organics
TMB = Trimethylbenzene
PID = Photoionization Detector
E= Ethylbenzene
MTBE = Methyl tert-butyl ether
NA = Not Analyzed

Table 2

Modified Phase I Soil Analytical Results Summary
Clark Station 1656
(Results in mg/kg)

SAMPLE	Depth (ft)	FID/PID[1]	GRO	BENZENE	TOLUENE	E	XYLENES	MTBE	1,2,4-TMB	1,3,5-TMB	Lead
B1 S3	6 - 7.5	300	<12	<0.061	<0.061	<0.061	<0.061	<3.030	<0.061	<0.061	11.6
B2 S3	6 - 7.5	150	<12	<0.058	<0.058	<0.058	<0.058	<2.910	<0.058	<0.058	11.6
B3 S1	1 - 2.5	100	<11	<0.057	<0.057	<0.057	<0.057	<2.830	<0.057	<0.057	98.9
B4 S1	1 - 2.5	100	<12	<0.060	<0.060	<0.060	<0.060	<3.020	<0.060	<0.060	19.8
GP1 S1	5 - 7	500	904	<0.055	<0.055	18.800	90.900	<2.770	78.700	26.600	15.6
GP2 S2	6 - 8	0	<11	<0.057	<0.057	0.103	0.388	<2.850	0.388	0.137	13.8

[1] Field screened with a PID

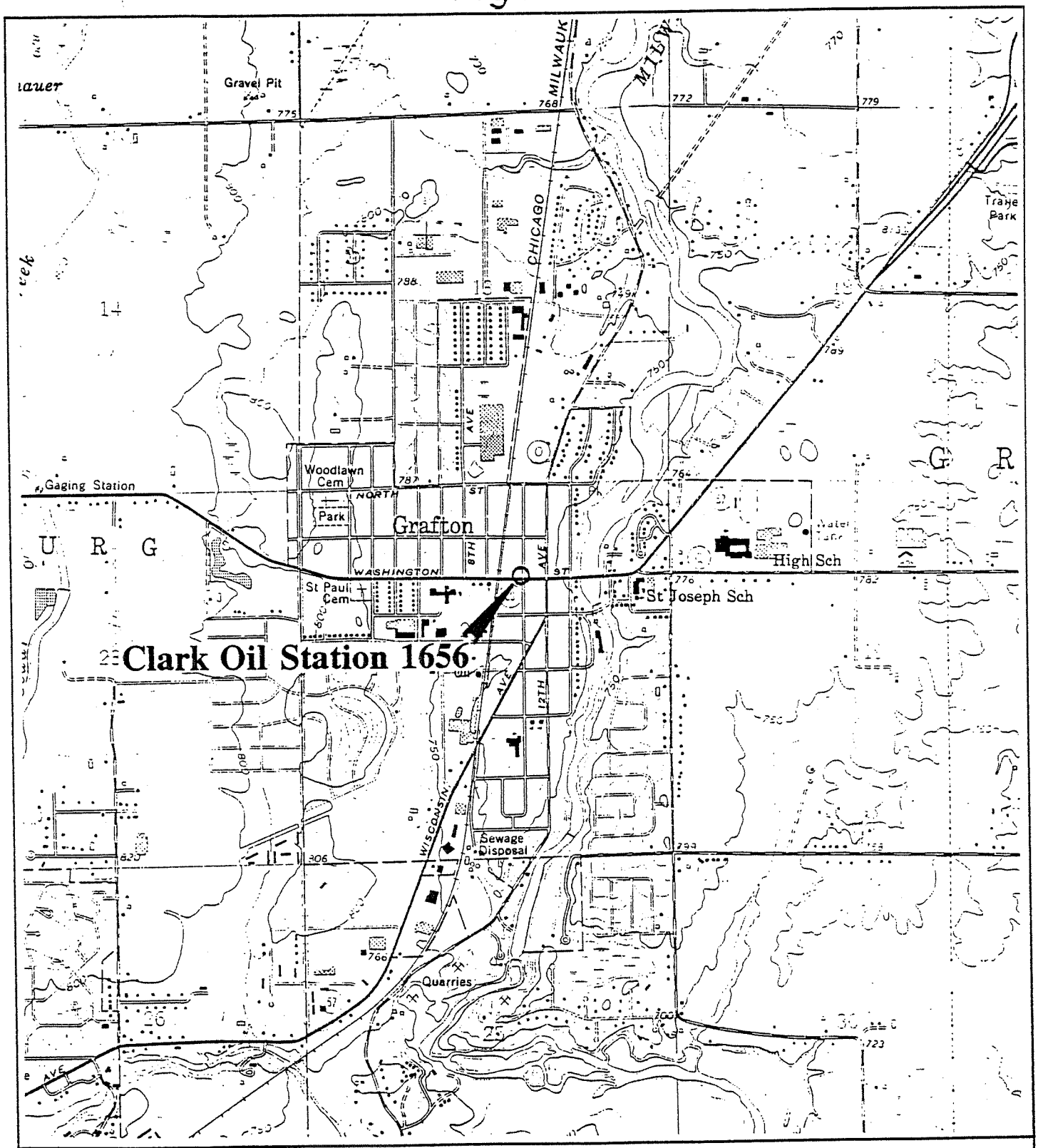
ABBREVIATIONS

PID = Photo-ionization Detector Reading
TMB = Trimethylbenzene
GRO = Gasoline Range Organics
MTBE = Methyl tert-butyl ether
DRO = Diesel Range Organics
NA = Not Analyzed
E = Ethylbenzene

Elevated detection limits

FIGURES

Figure 1



Clark Oil Station 1656 – Site Location Map

CEDARBURG, WIS.
SW/4 PORT WASHINGTON 15' QUADRANGLE
N4315—W8752.5/7.5

1959
PHOTOREVISED 1971 AND 1976
AMS 3470 IV SW—SERIES V861

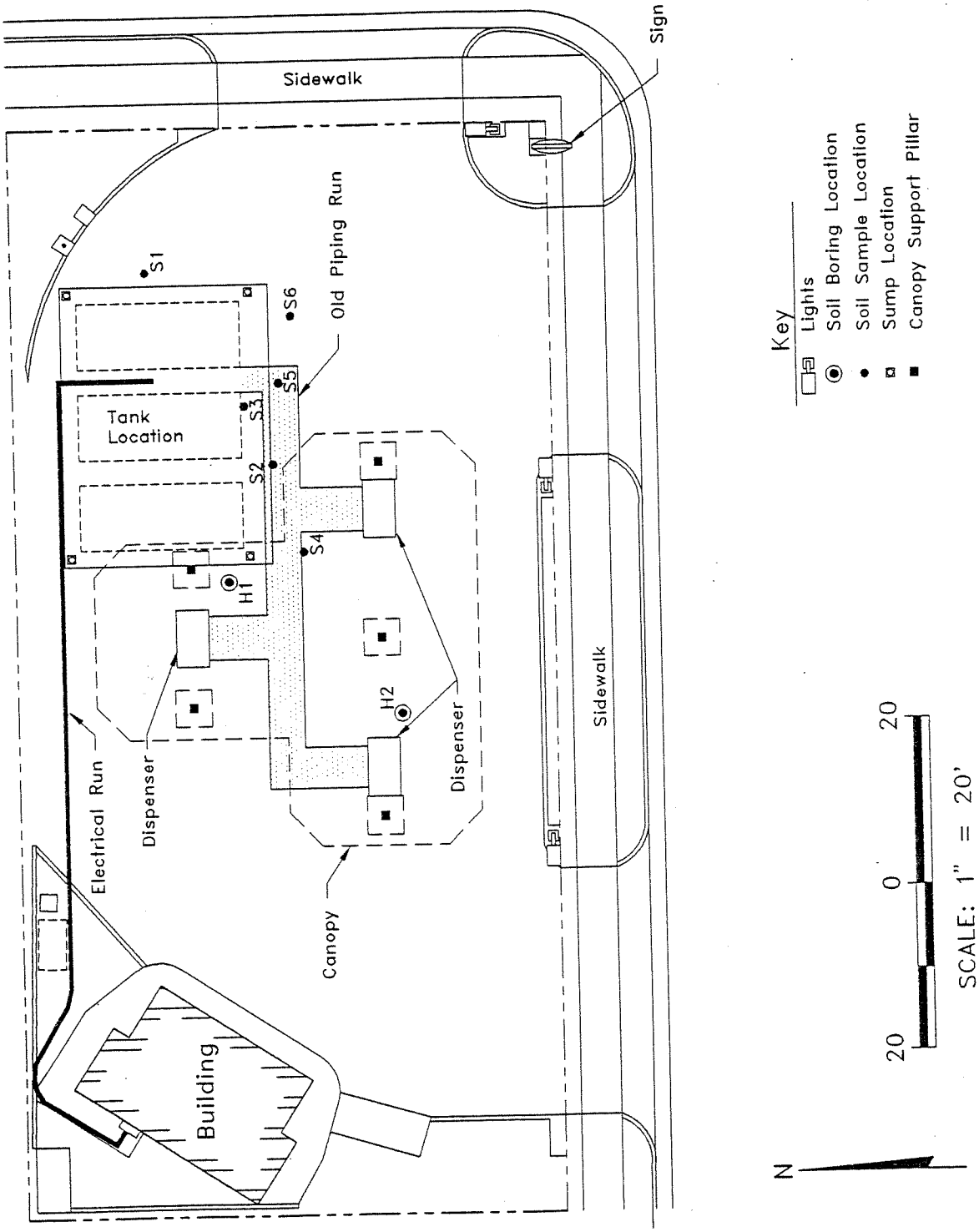
MN
GN
0°39'
11 MILS
0°

WISCONSIN

Scale: 1" = 2000'	fig1.dwg
Project No. 605	6/30/93

BT², Inc.

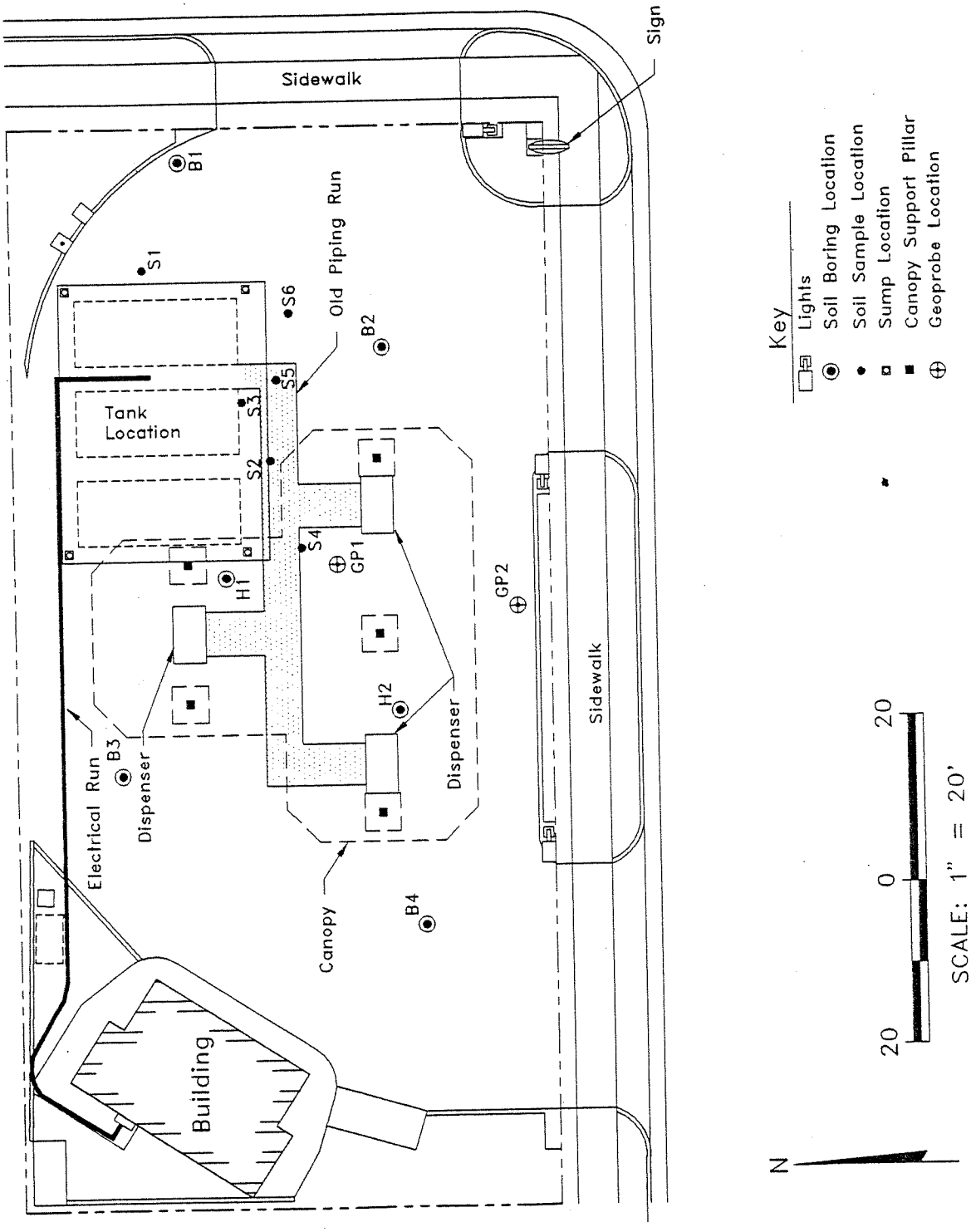
Figure 2



Clark Oil Station 1656 – Site Map

Project No. 605	site-map.dwg	BT^2, Inc.
Drawn By: KP	October 1993	

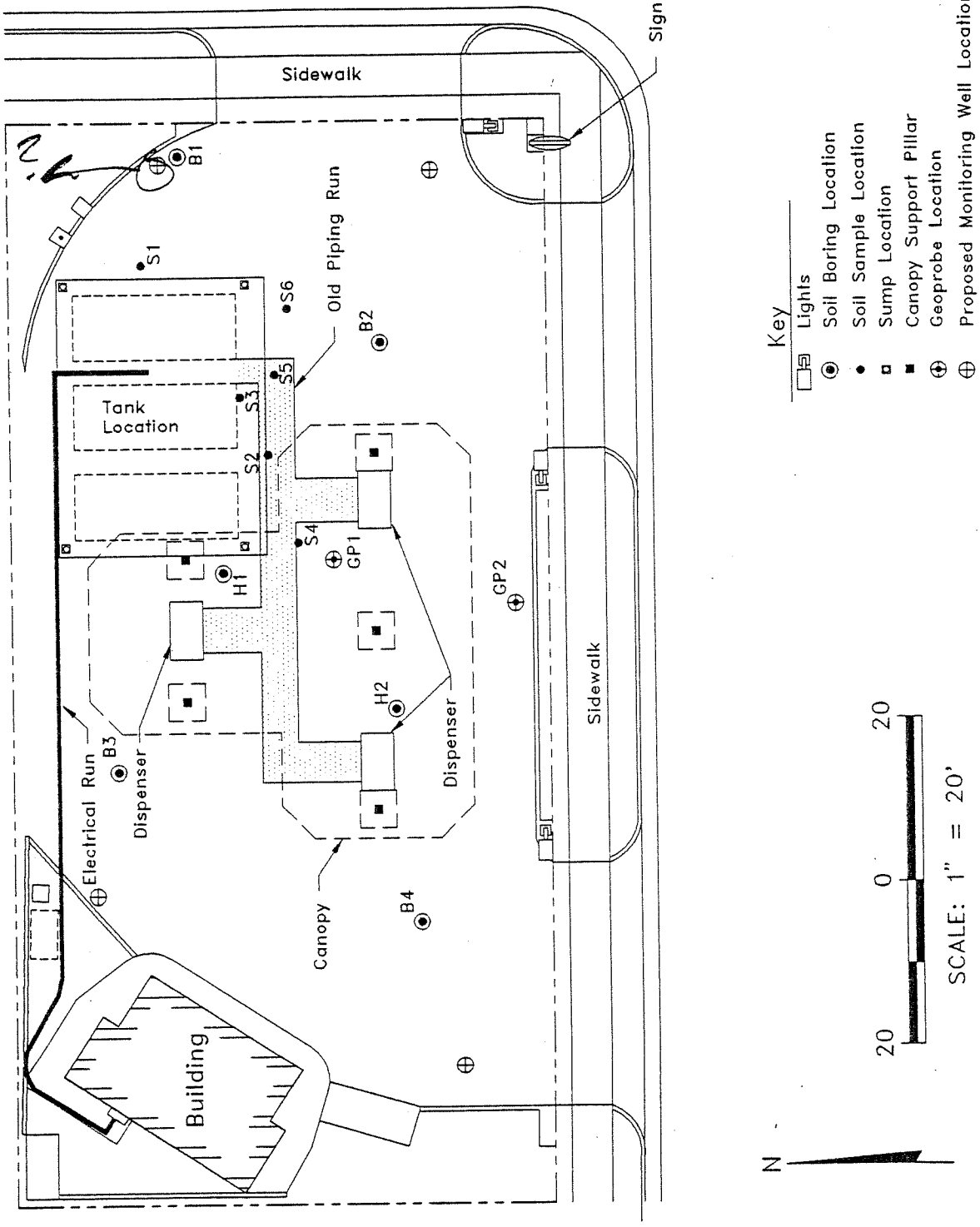
Figure 3



Clark Oil Station 1656 – Soil Boring Location Map

Project No. 605	site-map.dwg	BT^2, Inc.
Drawn By: KP	October 1993	

Figure 4



Clark Oil Station 1656 – Proposed Well Location Map

Project No. 605	site-map.dwg
Drawn By: KP	October 1993

BT^2, Inc.

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
B1-S3

Lab Number: 93-A000828

State Lab Certification: 998020430

Date Collected: 7/13/93

Date Received: 7/16/93

Time Collected: 13:10

Time Received: 9:00

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
Toluene	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
Ethylbenzene	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
Xylenes, total	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
Methyl-t-butylether	< 3030	ug/Kg	3030	50	7/16/93		P.LANE	8020
1,2,4-Trimethylbenzene	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
1,3,5-Trimethylbenzene	< 61	ug/Kg	61	1	7/16/93		P.LANE	8020
Gasoline Range Organics	< 12000	ug/Kg	12100	10000	7/16/93		P.LANE	WDNR M
Lead	11.6	mg/Kg	1.2	1.0	7/19/93		P.LANE	6010
% Dry Weight	82.6	%			7/16/93		P.LANE	

QUALITY CONTROL DATA

Surrogate Recoveries

Surrogate	% Recovery	Target Range
GRO Surrogate, soil	70.	80 - 120

All samples have been corrected for dry weight. All analyses performed at this location.

Laboratory Supervisor

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
B2-S3

Lab Number: 93-A000829

State Lab Certification: 998020430

Date Collected: 7/13/93

Date Received: 7/16/93

Time Collected: 14:50

Time Received: 9:00

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
Toluene	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
Ethylbenzene	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
Xylenes, total	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
Methyl-t-butylether	< 2910	ug/Kg	2910	50	7/16/93		P.LANE	8020
1,2,4-Trimethylbenzene	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
1,3,5-Trimethylbenzene	< 58	ug/Kg	58	1	7/16/93		P.LANE	8020
Gasoline Range Organics	< 12000	ug/Kg	11600	10000	7/16/93		P.LANE	WDNR M
Lead	11.6	mg/Kg	1.2	1.0	7/19/93		P.LANE	6010
% Dry Weight	85.9	%			7/16/93		P.LANE	

QUALITY CONTROL DATA

Surrogate Recoveries

Surrogate	% Recovery	Target Range
GRO Surrogate, soil	74.	80 - 120

All samples have been corrected for dry weight. All analyses performed at this location.

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
B3-S1

Lab Number: 93-A000830

State Lab Certification: 998020430

Date Collected: 7/13/93

Date Received: 7/16/93

Time Collected: 16:40

Time Received: 9:00

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
Toluene	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
Ethylbenzene	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
Xylenes, total	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
Methyl-t-butylether	< 2830	ug/Kg	2830	50	7/16/93		P.LANE	8020
1,2,4-Trimethylbenzene	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
1,3,5-Trimethylbenzene	< 57	ug/Kg	57	1	7/16/93		P.LANE	8020
Gasoline Range Organics	< 11000	ug/Kg	11300	10000	7/16/93		P.LANE	WDNR M
Lead	98.9	mg/Kg	1.1	1.0	7/19/93		P.LANE	6010
% Dry Weight	88.3	%			7/16/93		P.LANE	

QUALITY CONTROL DATA

Surrogate Recoveries

Surrogate	% Recovery	Target Range
GRO Surrogate, soil	98.	80 - 120

All samples have been corrected for dry weight. All analyses performed at this location.

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
B4-S1

Lab Number: 93-A000831

State Lab Certification: 998020430

Date Collected: 7/14/93

Date Received: 7/16/93

Time Collected: 9:15

Time Received: 9:00

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
Toluene	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
Ethylbenzene	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
Xylenes, total	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
Methyl-t-butylether	< 3020	ug/Kg	3020	50	7/16/93		P.LANE	8020
1,2,4-Trimethylbenzene	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
1,3,5-Trimethylbenzene	< 60	ug/Kg	60	1	7/16/93		P.LANE	8020
Gasoline Range Organics	< 12000	ug/Kg	12100	10000	7/16/93		P.LANE	WDNR
Lead	19.8	mg/Kg	1.2	1.0	7/19/93		P.LANE	6010
% Dry Weight	82.7	%			7/16/93		P.LANE	

QUALITY CONTROL DATA

Surrogate Recoveries

Surrogate	% Recovery	Target Range
GRO Surrogate, soil	81.	80 - 120

All samples have been corrected for dry weight. All analyses performed at this location.

SPECIALIZED ASSAYS
ENVIRONMENTAL

COPY
COPY
COPY 02

300 12th Ave., South
Nashville, TN. 37203
615-726-0177
FAX 615-726-3404

REFERRING CLIENT

CLARK Account: 5469
BT-2, Inc.
Tom Bergamini
3118 Watford Way,
Madison, WI 53713
Ph: 608-277-2840 Fax: 608-277-2850

BILLING CONTROL NUMBER [FOR LAB USE ONLY] 93-042163

PROJECT # BT² #605

P.O. #

SAMPLERS [Signature] Trena D'Bannister

PROJECT NAME CLARK #1656, Grafton, WI

FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT	ANALYSIS REQUESTED
880907	B1-S3	7/13/93	1310		X	4	GRO/PVOC, Dry Wt, Pb
880908	B2-S3	"	1450		X	4	"
880909	B3-S1	"	1640		X	4	"
880910	B4-S1	7/14/93	0915		X	4	"

Relinquished by: [Signature]	Date / Time	Received by: [Signature]
Trena D'Bannister	7/15/93 1600	
Relinquished by: [Signature]	Date / Time	Received by: [Signature]
Relinquished by: [Signature]	Date / Time	Received by: [Signature]
Relinquished by: [Signature]	Date / Time	Received by: [Signature]

Received for Laboratory by: Eric Johnson — Date / Time 7/16/93 09

Remarks:
Fax results to 608-277-2850
Mail COC/results to client above and results only to Clark Oil, 8182 Maryland Ave St. Louis, MO 63105-3721, Attn: Terry Miner.

For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

Shipped on ice via Federal Express: Airbill No. 5870266673

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Ave., South
Nashville, TN. 37203
615-726-0177
FAX 615-726-3404

REFERRING CLIENT

Account: ~~5470~~ 5469
BT-2, Inc.
Tom Bergamini
3118 Watford Way,
Madison, WI 53713
Ph: 608-277-2840 Fax: 608-277-2850

BILLING CONTROL NUMBER [FOR LAB USE ONLY] 93-043580

PROJECT # 605

P.O. #

SAMPLERS [Signature] Trevor P Bamsta

PROJECT NAME Clark #1656

FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# CONT	ANALYSIS REQUESTED
386511	GP1-S1	8/24/93	1630		X	2	GRO/PVOC, PB, Dry WT
386512	GP2-S2		1815		X	2	" " "
386513	GP1-W1		1705		X	2	VOC (8021) W/HCl
	GP1-W1	↓	1705		X	2	GRO/PVOC (no preservative)

Relinquished by: [Signature]	Date / Time	Received by: [Signature]	Received for Laboratory by:	Date / Time
Trevor P Bamsta	8/25/93 1600		Joe C. Lane Jr.	8/26/93 13:1[illegible]
Relinquished by: [Signature]	Date / Time	Received by: [Signature]	Remarks	
Relinquished by: [Signature]	Date / Time	Received by: [Signature]	Copy of COC with results. Fax results.	
Relinquished by: [Signature]	Date / Time	Received by: [Signature]	18°C	

For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
GP1-S1

Lab Number: 93-A002051

State Lab Certification: 998028043

Date Collected: 8/24/93

Date Received: 8/26/93

Time Collected: 16:30

Time Received: 13:10

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MCL	Date	Time	Analyst	Method
Benzene	< 55	ug/Kg	55	1	8/30/93	18:13	JM	8020
Toluene	< 55	ug/Kg	55	1	8/30/93	18:13	JM	8020
Ethylbenzene	18800	ug/Kg	55	1	8/30/93	18:13	JM	8020
Xylenes, total	90900	ug/Kg	55	1	8/30/93	18:13	JM	8020
Methyl-t-butylether	< 2770	ug/Kg	2770	50	8/30/93	18:13	JM	8020
1,2,4-Trimethylbenzene	78700	ug/Kg	55	1	8/30/93	18:13	JM	8020
1,3,5-Trimethylbenzene	26600	ug/Kg	55	1	8/30/93	18:13	JM	8020
Gasoline Range Organics	904000	ug/Kg	11100	10000	8/30/93	18:13	JM	WDNR
Lead	15.6	mg/Kg	1.1	1.0	8/31/93		RS	6010
% Dry Weight	90.2	%			8/26/93		P.LANE	

All samples have been corrected for dry weight. All analyses performed at this location.

Laboratory Supervisor

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample: CLARK STORE #1656
GP2-S2

Lab Number: 93-A002052

State Lab Certification: 99802043

Date Collected: 8/24/93

Date Received: 8/26/93

Time Collected: 18:15

Time Received: 13:10

Sample type: Soil

Preservative:

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	< 57	ug/Kg	57	1	8/30/93	18:13	JM	8020
Toluene	< 57	ug/Kg	57	1	8/30/93	18:13	JM	8020
Ethylbenzene	103.	ug/Kg	57	1	8/30/93	18:13	JM	8020
Xylenes, total	388.	ug/Kg	57	1	8/30/93	18:13	JM	8020
Methyl-t-butylether	< 2850	ug/Kg	2850	50	8/30/93	18:13	JM	8020
1,2,4-Trimethylbenzene	388.	ug/Kg	57	1	8/30/93	18:13	JM	8020
1,3,5-Trimethylbenzene	137.	ug/Kg	57	1	8/30/93	18:13	JM	8020
Gasoline Range Organics	< 11000	ug/Kg	11400	10000	8/30/93	18:13	JM	WDNR
Lead	13.8	mg/Kg	1.1	1.0	8/31/93		RS	6010
% Dry Weight	87.6	%			8/26/93		P.LANE	

All samples have been corrected for dry weight. All analyses performed at this location.

Laboratory Supervisor

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample Location: GP1-W1
CLARK STORE #1656

Lab Number: 93-A002053

State Lab Certification: 998020430

Date Collected: 8/24/93

Date Received: 8/26/93

Time Collected: 17:05

Time Received: 13:10

Sample type: Water

Preservative: HCl

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
Benzene	3.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
Toluene	18.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
Ethylbenzene	2.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
Xylenes, total	14.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
Methyl-t-butylether	< 50	ug/l	50.0	50.0	9/ 1/93	18:04	JM	8020
1,2,4-Trimethylbenzene	2.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
1,3,5-Trimethylbenzene	2.0	ug/l	1.0	1.0	9/ 1/93	18:04	JM	8020
Gasoline Range Organics	0.1	mg/l	0.1	0.10	9/ 1/93	18:04	JM	WDNR M
Benzene	0.003	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Bromobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
n-Butylbenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
sec-Butylbenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
tert-Butylbenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Chlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
2-Chlorotoluene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
4-Chlorotoluene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2-Dichlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,3-Dichlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,4-Dichlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Ethylbenzene	0.002	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Isopropylbenzene	0.081	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
4-Isopropyltoluene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Napthalene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
n-Propylbenzene	0.230	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Styrene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Toluene	0.018	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2,3-Trichlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2,4-Trichlorobenzene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2,4-Trimethylbenzene	0.002	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,3,5-Trimethylbenzene	0.002	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
m,p-Xylenes	0.010	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample Location: GP1-W1
CLARK STORE #1656

Lab Number: 93-A002053

State Lab Certification: 998020430

Date Collected: 8/24/93

Date Received: 8/26/93

Time Collected: 17:05

Time Received: 13:10

Sample type: Water

Preservative: HCl

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
o-Xylene	0.004	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Hexachlorobutadiene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Bromochloromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Bromodichloromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Bromoform	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Bromomethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Carbon tetrachloride	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Chloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Chloroform	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Chloromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Dibromochloromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2-Dibromoethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Dibromomethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2,3-Trichloropropane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Vinyl chloride	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Dichlorodifluoromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1-Dichloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2-Dichloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1-Dichloroethene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
cis-1,2-Dichloroethene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
trans-1,2-Dichloroethene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2-Dichloropropane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,3-Dichloropropane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
2,2-Dichloropropane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1-Dichloropropene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
cis-1,3-Dichloropropene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
trans-1,3-Dichloropropene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Methylene chloride	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1,1,2-Tetrachloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1,2,2-Tetrachloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021

SPECIALIZED ASSAYS
ENVIRONMENTAL

300 12th Avenue South
Nashville, Tennessee 37203

ANALYTICAL REPORT

BT-2
3118 Watford Way
Madison, WI 53713

Sample Location: GP1-W1
CLARK STORE #1656

Lab Number: 93-A002053

State Lab Certification: 998020430

Date Collected: 8/24/93

Date Received: 8/26/93

Time Collected: 17:05

Time Received: 13:10

Sample type: Water

Preservative: HCl

Analyte	Result	Units	PQL	MDL	Date	Time	Analyst	Method
1,1,1-Trichloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,1,2-Trichloroethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Trichloroethene	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
Trichlorofluoromethane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021
1,2-Dibromo-3-chloropropane	< 0.001	mg/l	0.001	0.001	9/ 1/93	15:53	JM	8021

QUALITY CONTROL DATA

Surrogate Recoveries

Surrogate	% Recovery	Target Range
GRO Surrogate	118.	70 - 130

Laboratory Supervisor

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		GP1

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Metco Harry Shear	8/24/93	8/24/93	geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam. 1.5 Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.
Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
4.5 Feet N ☐ S ☒ 62 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
				concrete								
S1			5	light gray clayey silt; trace to little medium sand to medium gravel; increasing sand content at 7'	ML			500		M		slight weathered gasoline odor
S2				approximately 4" silty fine sand to fine gravel at about 8.5' (saturated)				40		M/W		slight weathered gasoline odor
S3			10	light gray silt; some medium sand to coarse gravel				60		W		slight weathered gasoline odor
				end of boring at 11'								
			15									
			20									
			25									

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

Signature Trent A Bomstad Firm BT^2, Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		GP2

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Metco Harry Shear	8/24/93	8/24/93	geoprobe

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam.
					1.5 Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.
Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
26.5 Feet N ☐ S ☒ 56.5 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. PID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
				concrete								
S1			5	brown to gray mottled fine to coarse sandy silt; some fine to coarse gravel	ML			0		M		
S2				gray silt; some clay; some fine to coarse sand; little fine gravel; gray silty medium to coarse sand and gravel (7.8')				0		M		
			10	end of boring at 8'								
			15									
			20									
			25									

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

Signature [signature] Firm BT², Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		B1

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Burlington Environmental Chris Heber	7/13/93	7/13/93	4.25" HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam. Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.
Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
14 Feet N ☒ S ☐ 111 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
				6" concrete; gravel base; dark gray to black silty clay								
S1	7	4, 2, 4		light gray silty clay to clayey silt; trace medium sand and fine gravel	CL			50		M		
S2	12	7, 9, 13	5	light brown sandy silt to silty very fine sand (weakly stratified at 1.5-2" intervals)	SM/ML			100		M		slight weathered gasoline odor
S3	13	3, 5, 13		light brown to gray mottled 6-7'; 1" thick silty fine sand lens at 7-7.5'; silt appears wet at 6'; sand is wet at 7'				300		M/W		weathered gasoline odor
S4	18	4, 12, 16		light gray fine to medium sand; little silt; weakly stratified; .125-.25" thick lenses of medium sand at 2" intervals below 9'; .25" silt lens at 9'	SM			500		S		relatively fresh gasoline odor
			10	end of boring at 10'								
			15									
			20									
			25									

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

Signature _____ Firm BT², Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30

State of Wisconsin
Department of Natural Resources

Route To:
- ☐ Solid Waste
- ☐ Emergency Response
- ☐ Wastewater
- ☐ Haz. Waste
- ☒ Underground Tanks
- ☐ Water Resources
- ☐ Other

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		B2

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Burlington Environmental Chris Heber	7/13/93	7/13/93	4.25" HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam. Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.

Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
10.5 Feet N ☐ S ☒ 88.5 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
S1	10	2, 3, 4		6" concrete; brown fine sandy silt fill alternating 2-3" layers of tan fine sandy clay, clayey silt, and fine to medium sand; trace silt	ML/SC SP			5		M		no odor
S2	6	22,24, 8	5	brown-gray mottled silty clay; trace medium to coarse sand; scattered cobbles; petroleum odor on tip of spoon	CL			12		M		slight weathered gasoline odor
S3		8, 19, 27		gray fine to medium sand; some silt; weakly stratified; .5" lenses of medium sand 1" intervals; wet at 7'	SM			150		M/W		moderate weathered gasoline odor
S4		9, 21, 7	10	gray coarse sand to coarse dolomite gravel; little to some fine sand and silt	GM			150		W		slight weathered gasoline odor
				end of boring at 10'								
			15									
			20									
			25									

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

Signature _____ Firm BT^2, Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		B3

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Burlington Environmental Chris Heber	7/13/93	7/13/93	4.25" HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam. Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.
Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
22 Feet N ☒ S ☐ 36.5 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
S1	11	3, 3, 4		6" concrete; brown silty sand and gravel fill brown to black organic silt; little medium to coarse sand; trace fine gravel; trace roots	ML			150		M		slight gasoline odor
S2	12	8, 4, 6	5	brown-gray mottled silty clay; little to some fine to coarse sand; scattered cobbles and coarse gravel	CL			100		M		slight weathered gasoline odor
S3		4, 8, 14		light brown silty fine to coarse sand and gravel	SM			80		M/W		slight weathered gasoline odor
S4		10,21, 19	10	light brown fine to coarse gravel; some silt; some fine to coarse sand	GM			80		W	very	slight weathered gasoline odor
				end of boring at 10'								
			15									
			20									
			25									

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

Signature _____ Firm BT², Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solid Waste
☐ Emergency Response
☐ Wastewater
☐ Haz. Waste
☒ Underground Tanks
☐ Water Resources
☐ Other _____

SOIL BORING LOG INFORMATION
Form 4400-122 10-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Clark Oil Station 1656 #605		B4

Boring Drilled By (Firm name and name of crew chief)	Drilling Started	Drilling Completed	Drilling Method
Burlington Environmental Chris Heber	7/14/93	7/14/93	4.25" HSA

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Static Water Level Feet MSL	Surface Elevation Feet MSL	Borehole Diam. Inches

Boring Location
State Plane _____ N, _____ E
NW 1/4 of NE 1/4 of Section 24 ,T 10 N., R. 21 E.
Lat. 43° 19' 00"
Long. 87° 57' 00"

Local Grid Location (If applicable)
14 Feet N ☐ S ☒ 18 Feet E ☒ W ☐

County	DNR County Code	Civil Town/City/or Village
Ozaukee	46	Grafton

Sample Number	Sample Length Recovered	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Max. FID	Soil Properties: Standard Penetration	Soil Properties: Moisture Content	Soil Properties: P 200	RQD / Comments
				8" concrete; brown silty sand and gravel (fill)								
S1	12	3, 5, 8		dark brown-gray to black organic silt; trace medium sand; trace roots (buried topsoil)	ML			70		M		no odor
S2	2	12,11, 16	5	pushed dolomite cobble 3.5-5'; light brown silt; some clay; little fine to coarse sand; fine gravel; cobbles to 6" in cuttings; wet at 6'	ML			3		M		no odor
S3	1	4, 12, 15						1		W		no odor
S4	12	6, 13, 30		light brown silt to fine sand; little to some fine sand to fine gravel; fine to medium sand lens; no gravel 8-8.5'; some fine to coarse gravel 8.5-10'; some silt and fine to corse gravel 9-9.5'; fine to medium sand	SM			.5		M/W		no odor
S5	19	7, 14, 23	10					1		W		no odor
				end of boring at 10'								
			15									
			20									
			25									

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

Signature _____ Firm BT^2, Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 for each violation. Fined not less than $10 or more than $100 or imprisoned not less than 30