241050590
ERP

HUFF & HUFF, INC.
Environmental Consultants

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June 12, 1997

Mr. Michael G. Farley
BRR Program Assistant
Wisconsin Department of Natural Resources
Box 12436
4041 N. Richards Street
Milwaukee, Wisconsin 53212

Re: Subsurface Investigation Work Plan
NT Dor-O-Matic; Greendale, Wisconsin
BRRTS#: 02-41-118817
Facility ID#: 241050590

Dear Mr. Farley:

The March 17, 1997 letter you addressed to Mr. John Faye, the plant superintendent at the NT Dor-O-Matic facility in Greendale, Wisconsin, required the submittal of a workplan for the investigation work at the facility. The following is being provided to present the course of action and methodology for the subsurface investigation to be conducted at the site. The information includes a brief site background, the activities that led to the discovery of the impact, and the planned methodology for determining the extent of impact.

1. Site Background

The NT Dor-O-Matic facility is located at 6800 Industrial Loop in Greendale, Wisconsin, as depicted on Figure 1. This site is referred to as the "Main Plant" and is the focus of the subsurface investigation. NT Dor-O-Matic has a second facility located at 6901 Industrial Loop which is referred to as the "Mat Plant". No releases are associated with the Mat Plant. This second site is also depicted on Figure 1.

The area is light industrial located on the southeast side of Greendale. The site is bordered on the southeast and northeast side by industrial facilities. The area from the southwest to northwest drops approximately 30 feet to a low lying area. Dale Creek is an intermittent creek that flows from the north side of the site to the southwest side of the site. Dale Creek then merges with the Root River Parkway through a marsh/wetland area located south of the site.

The Main Plant currently houses automatic door fabrication operations, which historically included a trichloroethylene (TCE) degreaser. Figure 2 depicts the Main Plant layout with the degreaser located on the north side of the facility. Huff & Huff conducted a limited soil and water

investigation at the Main Plant on December 9, 1996 to ascertain if any impact from the degreaser had occurred. Subsurface soil samples were collected in the vicinity of the degreaser. A water sample was collected from one of the boreholes that was left open to observe for water. All samples, including the soil samples and the one ground water sample, were analyzed for volatile organic compounds (VOCs). Figure 3 depicts the sample locations. The sample results are discussed in a following section.

2. Site Geology/Hydrogeology

Wisconsin's regional geology is described on well logs maintained by the Wisconsin Geological and Natural History Survey. Copies of the well logs for the subject region are provided in the Attachments. The logs indicate the regional geology is characterized by predominantly clayey soils. Layers of gravel or sand or both are typically encountered at depths of 20 feet, 45 feet, 65 feet, 80 feet, 110 feet and 140 feet below grade. Limestone bedrock is typically encountered at depths of 150 feet to 200 feet. The logs also report that water is encountered at depths as shallow as ten feet and as deep as 90 feet.

The geology typically encountered during the initial investigation was silty sand to silty clay with sand. Water was encountered in small seams of sand and organic detritus at depths of approximately 6.5 feet and 8 feet, and in silty clay at depths below 11 feet. Based upon the local topography, ground water is expected to flow to the northwest towards Dale Creek.

3. Initial Investigation Sample Results

Table 1 presents a summary of the samples collected. The soil boring denoted as SB-1 was conducted outside the building using split spoon samplers and advanced using a truck-mounted soil probe. The soil boring denoted as H-1 was conducted using a hand auger given the limited accessibility inside the building. One soil sample was sent to the laboratory for analysis from SB-1 (7 to 9 feet deep) and two samples from H-1 (4 to 5 feet and 8 to 9 feet deep). The seven to nine foot depth interval from SB-1 was sent for analysis as this depth interval was considered to be the most likely to contain residual from the degreaser release. This depth interval is below the base of the degreaser pit (approximately five feet) and was wet with water.

Table 2 presents the analytical results from the analysis of the three soil samples. The results are compared to the Soil Screening Levels listed in the "Soil Screening Guidance: Technical Background Document", (USEPA, EPA/540/R-95/128, May, 1996). No compounds were detected in the soil sample from SB-1, which was located approximately 15 feet from the degreaser pit. Eleven compounds were detected in the samples from H-1, mostly compounds associated with the degreaser solvent, TCE, and its degradation products. Xylenes and toluene are petroleum-based constituents and acetone may be a laboratory contaminant since there is no known usage of this chemical at the facility.

TCE was detected in the greatest concentration, with 8.56 mg/kg at eight to nine feet deep and 1.90 mg/kg at four to five feet deep. Comparison to the SSLs indicates that TCE is the only parameter that exceeds the SSLs. The most stringent SSL for TCE is the migration to ground water pathway (0.060 mg/kg). The Wisconsin Department of Natural Resources (WDNR) regulations were reviewed for comparison of the levels detected in the soil samples. Presently, the WDNR has only established risk-based cleanup objectives in NR 720 for petroleum constituents (benzene, toluene, ethylbenzene, xylenes, and dichloroethylene). These risk-based objectives were not exceeded by any of the soil samples collected.

The boring SB-1 was allowed to stay open in order to collect a sample of ground water for analysis. Table 3 presents the analytical results from the ground water sample and compared to the WDNR Ground Water Quality Standards (Wisconsin Adm. Code NR140.10). The only contaminant detected in the ground water was TCE at a concentration of 0.020 mg/l. The use of this sample result needs to be qualified given that standard ground water sampling protocols could not be used, and it has not been established that it was collected from a ground water bearing stratum. Much of the upper soil is fill material.

4. Subsurface Investigation Workplan

Additional subsurface investigation will be conducted to determine the extent of the impact at the site. The investigation will be conducted in a phased approach to determine the outer limits of the TCE impact. The investigation will include at least three borings inside the building and four monitoring wells outside the building if a ground water bearing seam is encountered. Monitoring wells will not be installed unless a saturated sand or gravel lense is encountered within twenty feet of the surface. Soil samples will be collected during the installation of the monitoring wells along the north side of the building to monitor for TCE impact.

Soil Borings

Three soil borings are planned for the areas south, east, and west of the degreaser pit as indicated on Figure 4 (H-11, H-12, and H-13). These borings will be conducted using a hand auger or a manually operated Geo-Probe system. A truck or skid mounted drill rig would not fit inside the building. The 12 inch concrete floor will first be cored to provide access to the subsurface soils. The borings will be conducted to the depth of ground water or auger refusal, whichever occurs first. All attempts will be made to reach a depth of at least 11 feet, the depth at which a concrete pad was encountered in soil boring H-1.

As part of the phased approach, soil borings will be advanced outward from the degreaser pit if field screening results indicate migration in either the south, east, or west direction. The proposed

locations are currently between 15 to 30 feet outside the area of the degreaser pit. Additional borings will be moved out another 15 feet to 30 feet (or a distance easily accessed for conducting a soil boring) to delineate the impact, if required.

Monitoring Wells

Four monitoring wells (MW-101, MW-102, MW-103, and MW-104) are proposed to be installed as located on Figure 4, if ground water is encountered within twenty feet of the surface. The monitoring wells are being installed for three purposes; the delineation of TCE impact in the soil, the delineation of impact in the ground water (if any), and the determination of the local hydraulic gradient. Based upon the topography and local conditions of the site, the hydraulic gradient direction is most likely to be to the north toward Dale Creek.

The monitoring wells will be installed using a truck-mounted rotary drill rig. The hollow-stem augers will be advanced to the depth of the monitoring well. Split-spoon samples will be collected for the entire depth of the boring. The attached well log indicates a typical well installation. The riser pipe and well screen will be constructed of two inch diameter Schedule 40 PVC, as per Wisconsin Administrative Code (WAC) NR 141.07 and 141.09. The top of the ten foot long well screen shall extend two feet above the top of the water table. It is estimated that the depth to ground water is approximately 11 feet. The proposed monitoring wells will therefore be approximately 19 feet deep. The actual depth of the wells will be determined based upon the ground water depth determined in the field.

The wells will be developed after a minimum period of 12 hours after the installation is complete (WAC NR 141.21). Assuming that the wells can not be purged dry, the purging will consist of a 30 minute purge and surge cycle. This will then be followed by a final surge of 10 well volumes or until the water is relatively free of sediment. The collected purge water will be stored in 55 gallons drums until the analytical results from each of the wells can be obtained. If TCE is detected above 0.025 mg/l, the water generated from that well will be disposed of with NT Dor-O-Matic's waste stream. If TCE is not detected above 0.025 mg/l, the uncontaminated ground water will be discharged to the sanitary sewer, along with the facility's process wastewaters.

Field Screening Methodology

The soil samples collected at the site will be screened in the field to determine the potential for TCE impact, utilizing a photoionization detector (PID). A portion of each soil sample collected will be placed in a plastic cup and sealed with a lid. The soil sample and the closed-cup headspace will be allowed to equilibrate for a period of at least fifteen minutes. The tip of the PID will be inserted into a slit made in the lid of the cup to measure the volatile organic compound (VOC) level in the vapor above the soil sample. The maximum meter response on the PID will be recorded for that soil sample.

This field screening methodology will be used as part of the phased approach to the soil sampling. Soils samples that indicate a VOC level at or below background will be used to delineate the extent of the TCE impact.

Soil Sampling for Laboratory Analysis

Soil samples will collected continuously from the soil borings. The portion of the soil sample not used for conducting the field screening will be collected for laboratory analysis. These samples will be placed in a four-ounce glass jar with Teflon lids. Each jar will be labeled with the soil boring ID, the depth interval, the date and time, and the initials of the sampler. The sample jar will then be sealed in a plastic bag and placed in an ice cooler maintained at 4 degrees Celsius.

The samples will then be shipped to the laboratory for analysis. The sample custody will be maintained by a Chain-of-Custody Record. The custody record will be completed by the individual collecting the samples and will remain with the samples until they are analyzed. Samples will be analyzed using SW-846 Method 8260. No soil samples collected below the water table will be delivered to the laboratory for analysis.

The samples delivered to the laboratory for analysis will be dependent upon the filed screening and field observation results. At least one soil sample from each boring will be sent to the laboratory for analysis. The soil sample indicating the highest field screening result and the sample collected from the bottom of the borehole (or the deepest sample indicating background field screening levels) will be sent to the laboratory from soil borings where the field screening results indicate VOC impact.

Ground Water Sampling for Laboratory Analysis

Water samples will be collected from the monitoring wells after the wells have been properly developed. Dedicated disposable bailers will be used for each well. The sample will be collected using the dedicated bailer and placed into two 40 ml glass vials preserved with HCL. Teflon lined caps will be used to seal the vials. After the vials are sealed, they will be labeled, placed into sealed plastic bags, and stored in an ice cooler for shipment to the laboratory. The tag information and Chain-of Custody procedures will be the same as the soil samples. Samples will be analyzed using SW-846 Method 8260.

Sampling QA/QC

Replicate samples will be delivered to the laboratory for analysis as part of the QA/QC program. One replicate soil sample will be collected for every ten soil samples. The number of soil samples delivered to the laboratory will be determined based on the field screening results. One replicate soil

sample will be sent to the laboratory for every ten soil samples (up to fourteen). If more than 14 samples are delivered to the laboratory, additional replicate samples will be included.

One ground water sample will be collected from each of the monitoring wells installed. One replicate sample will be collected with the four ground water samples and included in the samples delivered to the laboratory.

The laboratory providing the sample bottles for the project will include with the sampling kit the trip blanks for the QA/QC program. The trip blanks will originate in the laboratory and remain with the sample containers through the laboratory analysis. The trip blanks will also be analyzed using SW-846 Method 8260.

Section 7.6.3.1 of the Guidance for Conducting Environmental Response Actions manual (WDNR, PUBL SW-157-95, March, 1992) requires the collection of a field blank for ground water sampling. Ground water samples will be collected with dedicated disposable bailers. The bailers are used one time only and then discarded. A new bailer will be used for each of the four wells, thereby eliminating the chance for cross-contamination. A field blank from the ground water bailer is therefore not required.

Decontamination

All drilling equipment, split-spoons, and other sampling equipment will be steam cleaned and/or wire brushed prior to use on the site. The drilling augers will be steam cleaned prior to each use in each borehole. Decontamination procedures will also be used between collection depths of split spoon samples. The decontamination procedures are as follows:

Alconox (laboratory detergent) and potable water wash;
Tap water rinse
Distilled water spray rinse
Air dry
Methanol spray rinse
Air dry
Distilled water spray rinse
Air dry

Proposed Schedule

The following is the proposed schedule for the follow-up investigation at the NT Dor-O-Matic site:

Workplan Task	Proposed Completion Date
Installation of Monitoring Wells and Soil Borings	June 13, 1997
Development of Wells	June 18, 1997
Sampling of Wells	June 23, 1997
Receipt of Analytical Results	July 3, 1997
Report Preparation	July 25, 1997

Conclusion

Four monitoring wells (outside building) will be installed if ground water is encountered and at least three soil borings (inside building) are proposed to be used for the determination of TCE impacts at the NT Dor-O-Matic Main Plant in Greendale, Wisconsin. Additional soil borings will be conducted as necessary to delineate the TCE plume. The proposed sampling locations are depicted on Figure 4. The TCE impact is from the degreaser located in the rear of the building. The initial investigation indicated that only TCE exceeded the SSLs in the soil and was the only contaminant detected in the ground water sample collected from a borehole at the site.

A report will be prepared presenting the results of the subsurface investigation. The VOC levels (if detected) will be compared to the USEPA SSLs for the soil and the WDNR Ground Water Quality Standards for the water.

Please do not hesitate to call if there are any questions.

Sincerely,

James E. Huff, P.E.
Vice-President

JEH:sdl
Enclosures
cc: Mr. Donald Straub, NT Dor-O-Matic
Mr. John Faye, NT Dor-O-Matic

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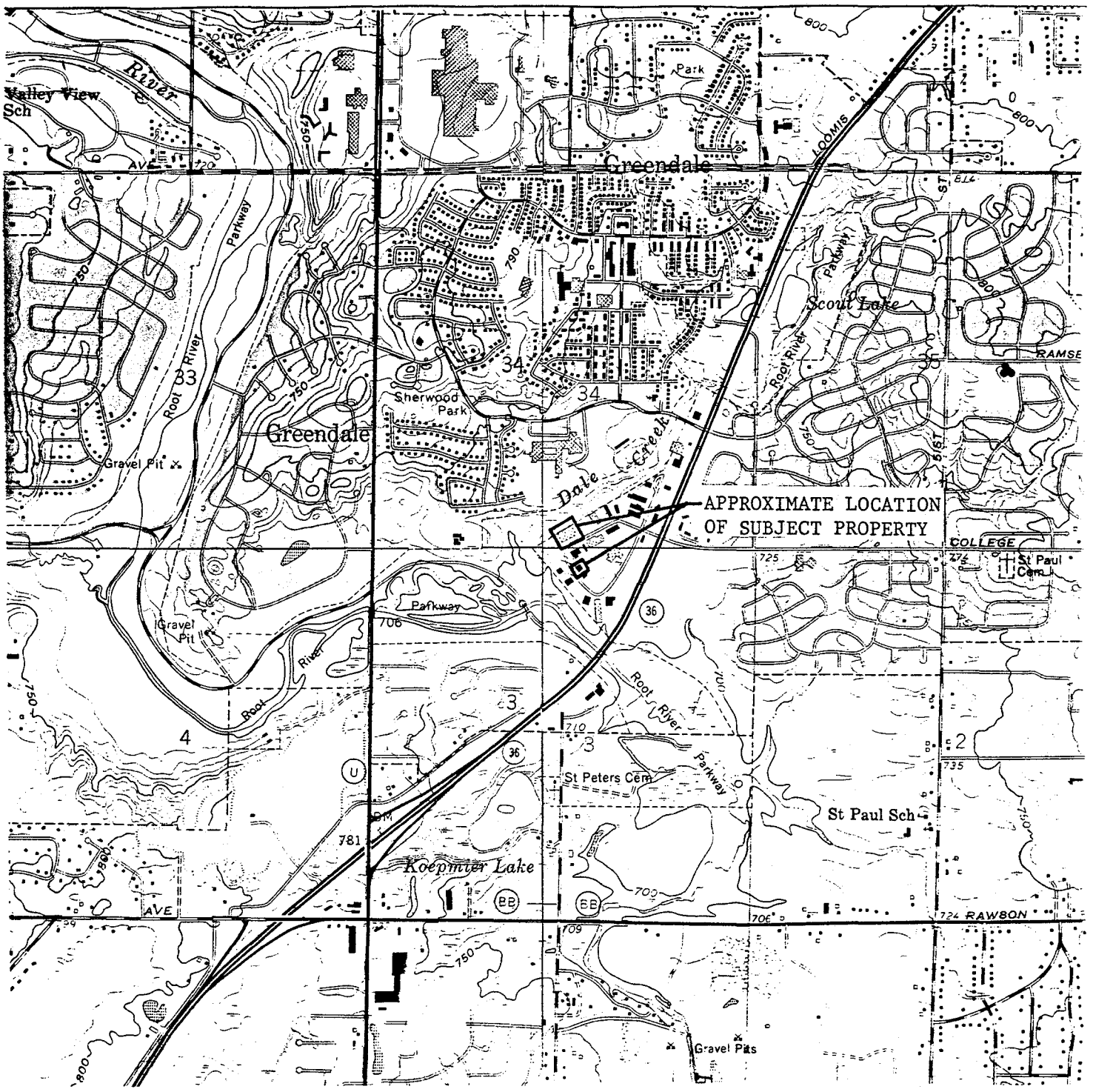


FIGURE 1
SITE LOCATION MAP
NT–DOR–O–MATIC INC.
GREENDALE, WISCONSIN FACILITIES

2000' 0 2000'

NORTH

SOURCE: UNITED STATES DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY
GREENDALE & HALES CORNERS, WISCONSIN QUADRANGLES

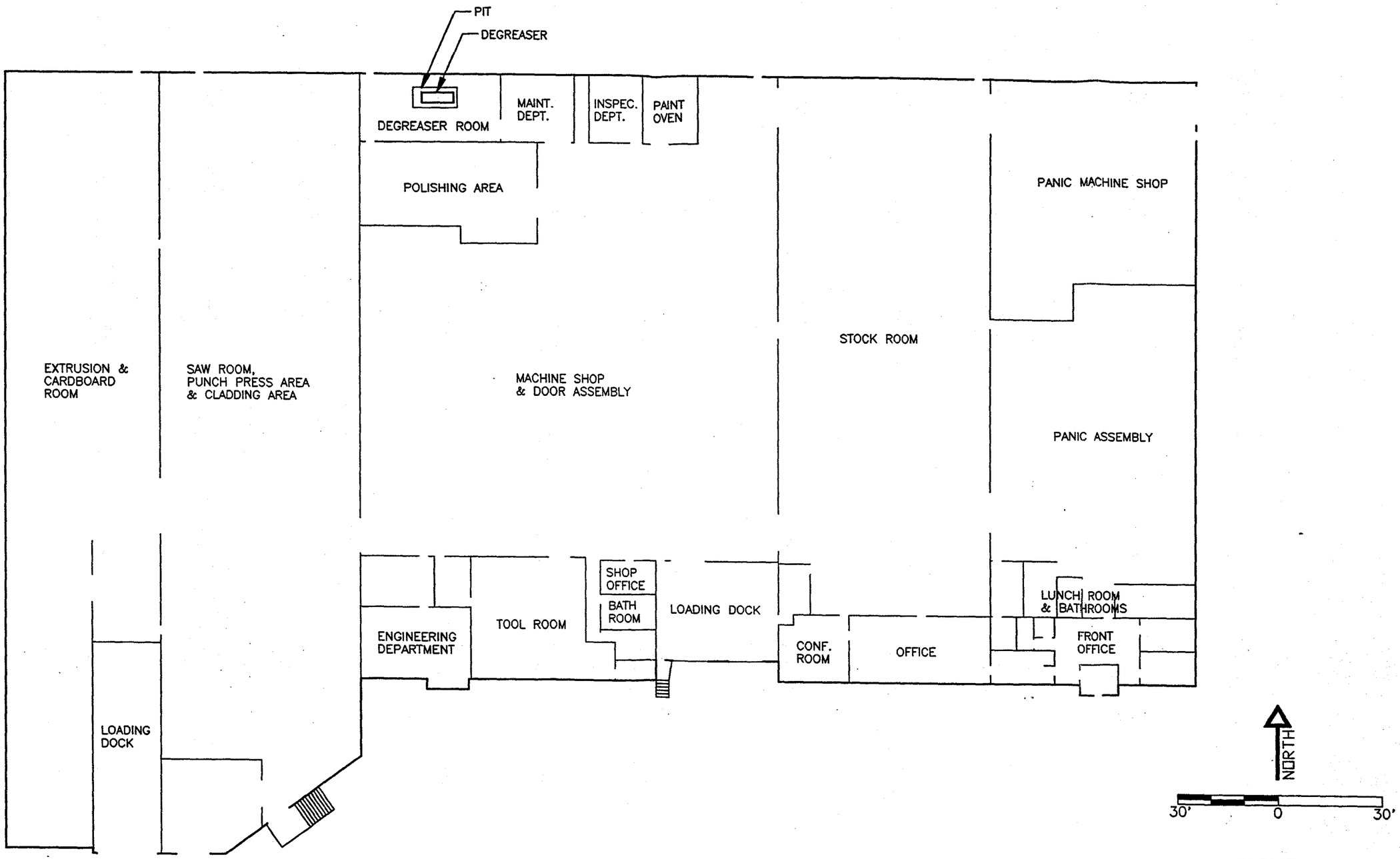


FIGURE 2
MAIN PLANT
PLANT LAYOUT MAP
NT DOR-O-MATIC INC.
GREENDALE, WI FACILITIES

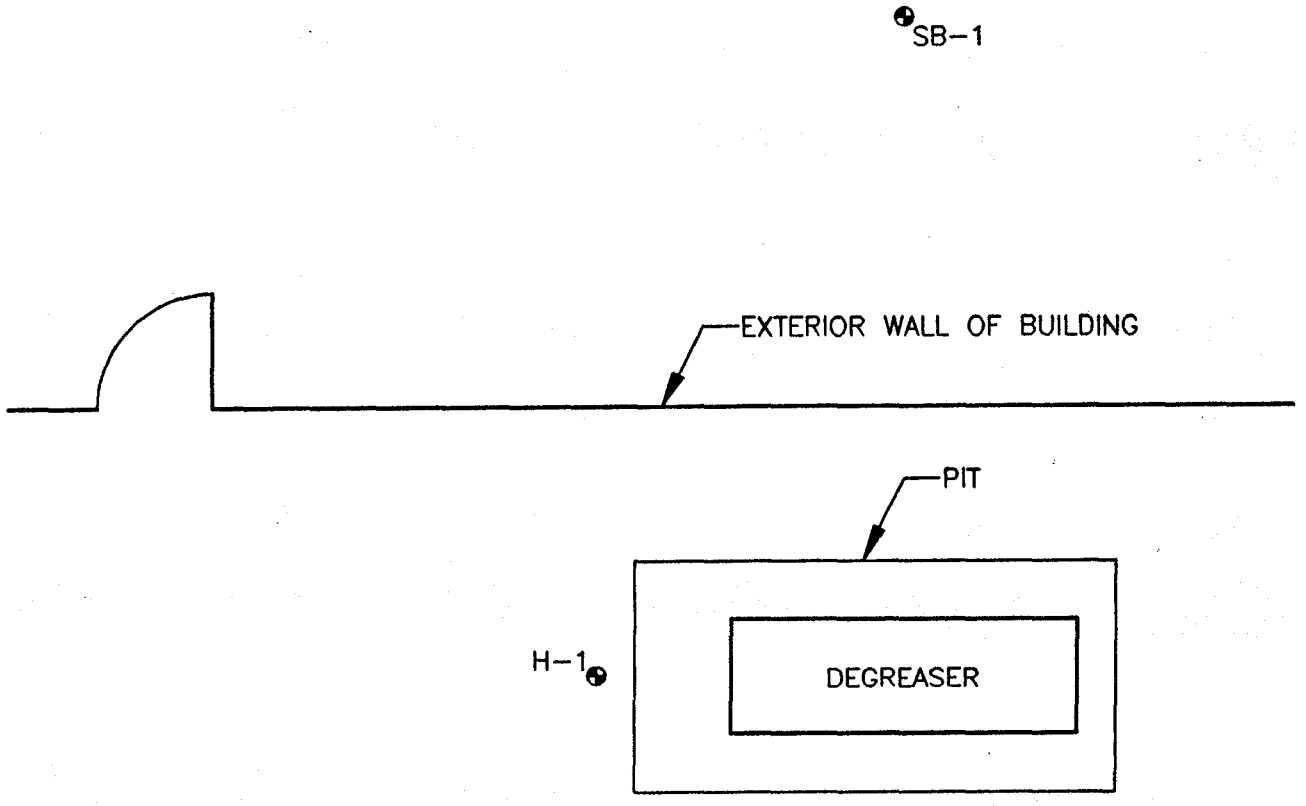


FIGURE 3
INITIAL SOIL AND WATER SAMPLING LOCATIONS

MAIN PLANT
NT DOR-O-MATIC INC.
GREENDALE, WISCONSIN FACILITIES
DECEMBER 9, 1996

CADFILE: NTDO-3
PLOT DATE: 1/21/97

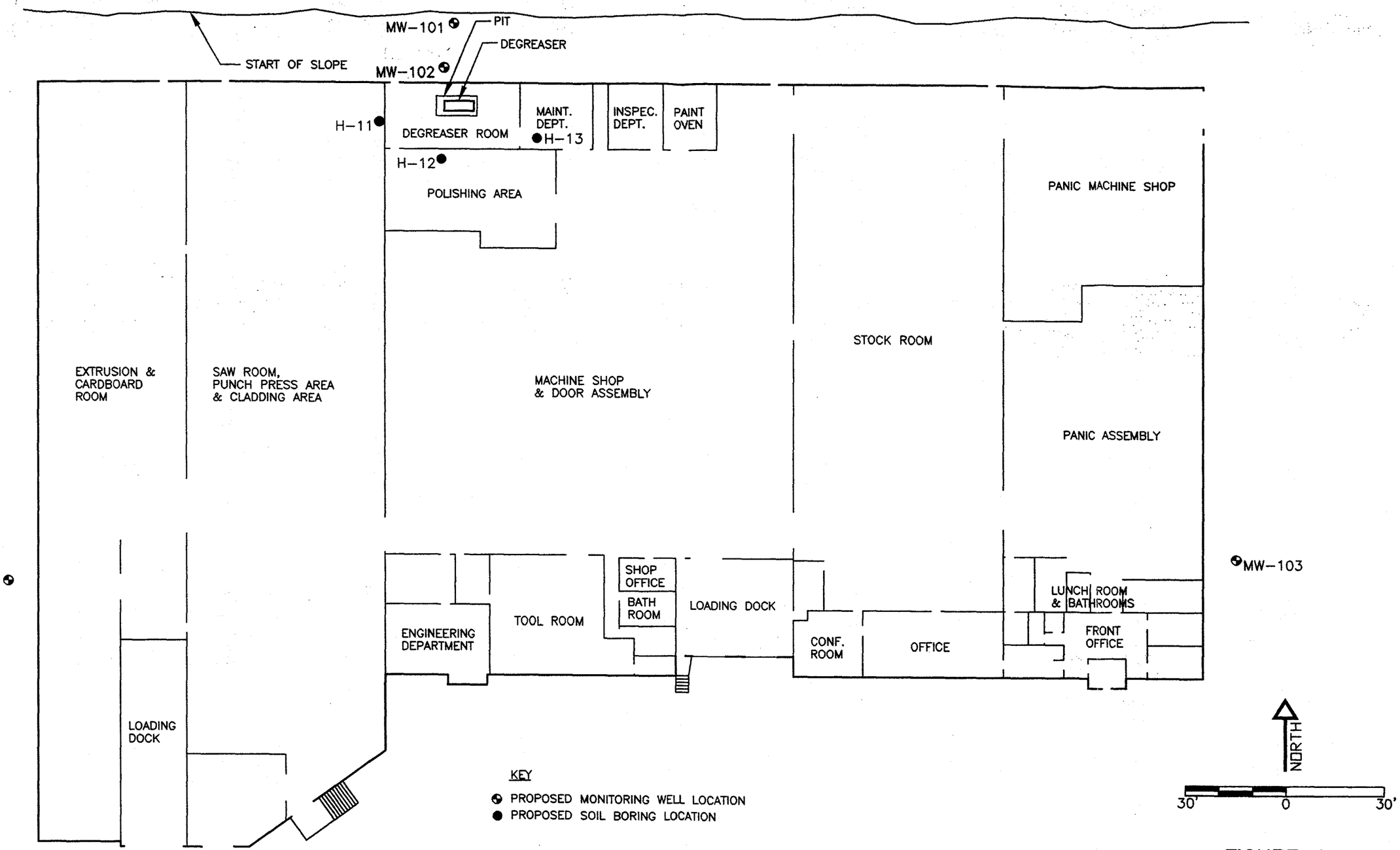


FIGURE 4
PROPOSED SOIL BORING AND MONITORING WELL LOCATIONS
NT DOR-O-MATIC INC.
GREENDALE, WI FACILITIES

CADFILE: NTDO-1

TABLE 1
SAMPLE DESCRIPTIONS

NT Dor-O-Matic Inc.
Greendale, Wisconsin Facilities
Soil and Groundwater Sampling
December 9, 1996

Facility	Boring No.	Depth, ft bgs	Soil Type	PID Reading, ppm (11.7 eV PID)	Sample Analyzed
Main Plant	SB-1	1 - 3	brown silty sand	a/	No
		3 - 5	brown silty sand	a/	No
		5 - 7	brown silty clay, sand seam @ 6.5 ft, wet	a/	No
		7 - 9	brown silty clay w/ organics @ 8 ft, wet	a/	VOCs (8260)
		9 - 11	brown sandy silt / clay, damp	9	No
		11 - 13	brown, grey silty clay w/ sand, wet	10	No
		13 - 15	brown silt w/ sand, wet	a/	No
		water	NA	NA	VOCs (8260)
Main Plant	H-1	4 - 5	brown silty clay w/ sand	250	VOCs (8260)
		8 - 9	brown silty clay w/ sand	200	VOCs (8260)
Mat Plant	H-2	5 - 7	brown, grey silty sand w/ stones, hard	12	VOCs (8260), pH, total metals b/
Mat Plant	H-3	5 - 7	brown, grey silty sand w/ stones, hard	13	VOCs (8260), pH, total metals b/

a/ Inadequate recovery.
b/ Total metals = total lead, total barium, total cadmium, total chromium.

ST

TABLE 2
MAIN PLANT
SOIL SAMPLES

NT Dor-O-Matic Inc.
Greendale, Wisconsin Facilities
December 9, 1996

	SSL b/			Soil Samples		
Constituent a/	Ingestion (mg/kg)	Inhalation (mg/kg)	Migration to Ground Water (mg/kg)	SB-1 7 to 9 ft (mg/kg)	H - 1 4 to 5 ft (mg/kg)	H - 1 8 to 9 ft (mg/kg)
Acetone	7,800.000	100,000.000	16.000	<0.010	0.139	<0.010
Chloroform	100.000	0.300	0.600	<0.001	0.001	<0.001
1,1-Dichloroethane	7,800.000	1,300.000	23.000	<0.001	0.022	0.041
1,1-Dichloroethene	1.000	0.070	0.060	<0.001	0.004	0.001
cis-1,2-Dichloroethene	780.000	1,200.000	0.400	<0.001	0.001	0.001
Dichloromethane	85.000	13.000	0.020	<0.001	<0.001	0.014
Tetrachloroethene	12.000	11.000	0.060	<0.001	0.011	0.059
Toluene	16,000.000	650.000	12.000	<0.001	<0.001	0.005
1,1,1-Trichloroethane	-- c/	1,200.000	2.000	<0.001	0.340	1.500
Trichloroethene	58.000	5.000	0.060	<0.001	**1.900**	**8.560**
Xylenes	160,000.000	410.000	190.000	<0.001	0.002	0.002

a/ Samples analyzed by USEPA SW-846 Method 8260. Complete Laboratory Analytical Report is provided in Appendix B.

b/ Soil Screening Levels as listed in "Soil Screening Guidance: Technical Background Document," (USEPA, EPA /540/R-95/128, May 1996).

c/ No toxicity criteria available for that route of exposure.

TABLE 3
MAIN PLANT
WATER SAMPLE

NT Dor-O-Matic Inc.
Greendale, Wisconsin Facilities
December 9, 1996

Constituent a/	Ground Water Quality Standard, b/ (mg/l) Enforcement Std.	PAL	Water Concentration in SB - 1 (mg/l)
Acetone	--- c/	--- c/	<0.010
Chloroform	0.006	0.000600	<0.001
1,1-Dichloroethane	0.850	0.085000	<0.001
1,1-Dichloroethene	0.007	0.000024	<0.001
cis-1,2-Dichloroethene	0.100	0.010000	<0.001
Dichloromethane	0.150	0.015000	<0.001
Tetrachloroethene	0.001	0.000100	<0.001
Toluene	0.343	0.068600	<0.001
1,1,1-Trichloroethane	0.200	0.040000	<0.001
Trichloroethene	0.005	0.000180	**0.020**
Xylenes	0.620	0.124000	<0.001

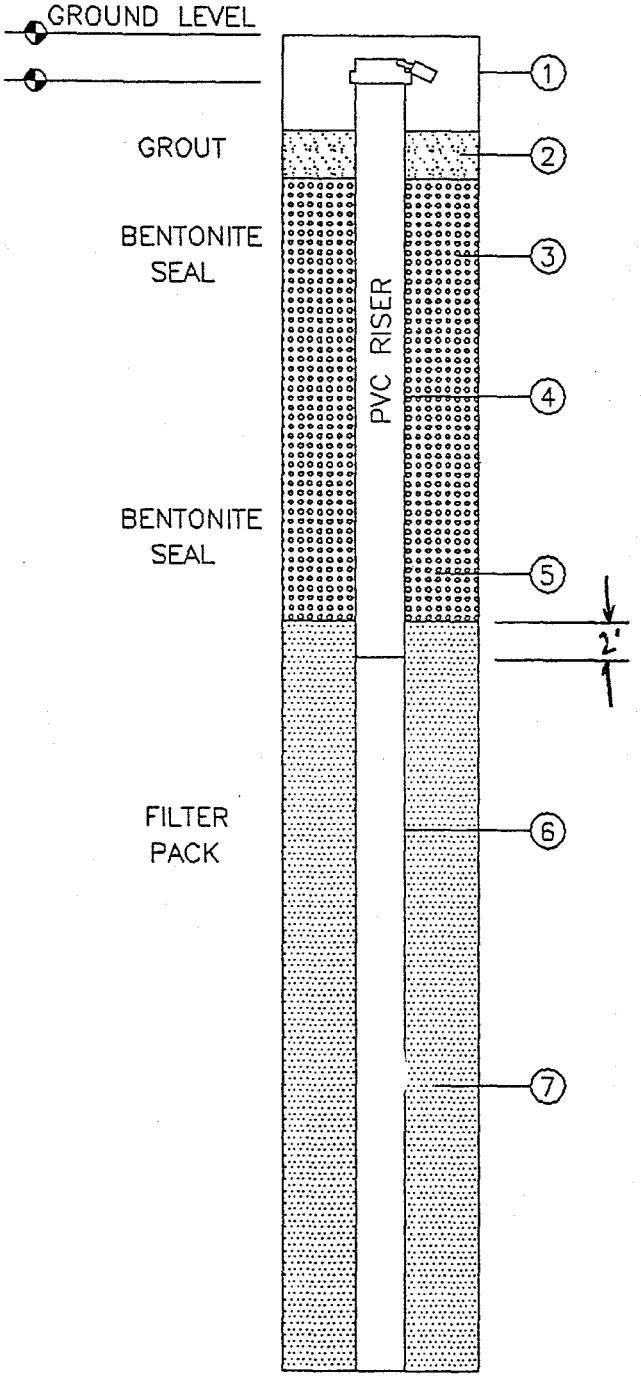
a/ Samples analyzed by USEPA SW-846 Method 8260. Complete Laboratory Analytical Report is provided in Appendix B.

b/ WDNR Ground Water Quality Standards as listed in Wisconsin Administrative Code NR140.10. PAL = Preventive Action Limit

c/ NR140.10 does not list Ground Water Quality Standards for acetone.

PROJECT: NT DOR-O-MATIC
LOCATION: GREENDALE WISCONSIN
DATE:
DRILLED BY:

HUFF & HUFF, INC.
LaGRANGE, IL



1. PROTECTIVE CASING (YES) NO
   LOCKING (YES) NO
2. CONCRETE SEAL (YES) NO
3. TYPE OF SEAL (IF INSTALLED) _____
4. SOLID PIPE TYPE SCH 40 PVC
   SOLID PIPE LENGTH VARIES ft.
   JOINT TYPE SLIP/GLUED [THREADED]
5. TYPE OF LOWER SEAL (IF INSTALLED) BENTONITE
6. SCREEN TYPE SCH 40 PVC
   SLOT SIZE 0.010" LENGTH 10 ft.
   SCREEN DIAMETER 2 in.
7. TYPE OF BACKFILL AROUND SCREEN SAND
8. DRILLING METHOD ROTARY DRILL
9. ADDITIVES USED (IF ANY) _____

* WATER LEVEL ≈11' DATE _____

*ALL DEPTHS MEASURED FROM GROUND SURFACE

County Milwaukee Twp. Greenfield Sec. NWNW 10 X

Greendale Farms Unit #20

TO THE WISCONSIN STATE BOARD OF HEALTH, WELL DRILLING DIVISION, MADISON, WIS.

WELL LOG PREMISES DIAGRAM, and REPORT

For Official Record of the Board

(TO BE USED FOR THAT PURPOSE ONLY)

Owner Farm Security Administration Driller Frank Ackery Sons

(If a joint ownership give name of responsible official. Also name of each individual holding an interest. Use a separate sheet and attach hereto.)

Address Unit #20-76th St.-¼ mile So. Grange Ave Address Hales Corners Wisconsin

(City, village, township, county)

Date of Report April 1 1938

Registration No. 13

Give below the location of the property on which well is drilled.

If incorporated village or city: .....

If unincorporated hamlet Greendale Farms (Name) - Milwaukee (County) - Greenfield (Twp.) - 76th St. (Highway)

If Lake Shore Plat ..... (Name of Plat) Lake Lot Blk. Street

If Subdivision ..... (Name) County Twp. Sec. Lot Blk.

If Farm ..... County Twp. Sec. Highway

If School ..... County Twp. Sec. District

If other public building ..... Kind County Twp. Sec.

WELL LOG and REPORT

Kind of casing and liner in feet. Kind of shoe. Indicate grout, screen, seal, etc.	WELL DIAGRAM Vertical Lines = in. Dia. Horizontal Lines = ft. Depth Use a red line to show casing	Give depth of formations in feet. State if dry or water bearing.	Record of FINAL Pumping Test
5" Std. wrought Steel pipe (Black) 169' pipe driven Forged steel drive shoe	0 2 3 4 5 6 8 9 10 12 14 16 18 24 0		Duration of test. Hours .....
	25 25		Pumping Rate. G. P. M. .....
		Stony Clay	Depth of pump in well. Ft. .....
	50 50		Standing water-level (from surface.) Ft. 90
		70'	
	75 75		Water level when pumping Ft. 100
		Sand	
		90'	Water. End of test. Check: Clear .....
	100 100		Cloudy ..... Turbid .....
		Hard Pan	Was well sterilized before test? Yes X No .....
	150 150	158'	Date .....
		169' Lime Rock - Water bearing	To which Laboratory was sample sent? Madison
	200 200		Date .....
			Was the well sealed on completion? Yes X No .....
	400 400		How high did you leave casing above grade? .....
	800 800		Well was completed 3/10 1938
	1200 1200		Well Driller: Harvey Acker Signature.
			(Be sure to complete the report on the reverse side)

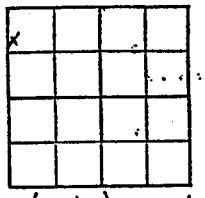
PREMISES DIAGRAM

(See Rules)

Draw a representative sketch of the premises on which this well is located, showing the location of the well with reference to buildings and possible sources of pollution. Indicate the condition of the surroundings by printing descriptive words like high, low, level, slope, lake, river, swamp, forest, meadow, barnyard, cesspool, privy, sewer, etc., at their respective locations and show distance from the well on the sketch. Also show direction of the campass. See Part III of Code for specimen Diagram.

REMARKS: Report blasting and unusual items in this space:

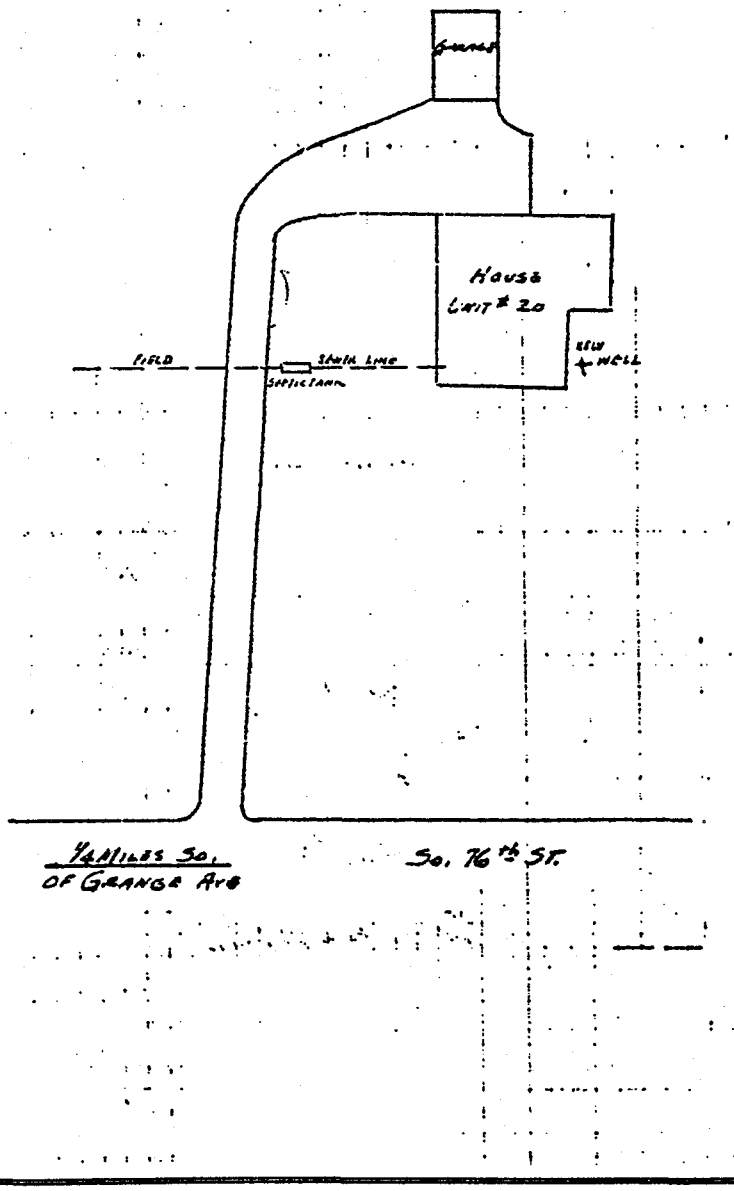
The large square represents one Section of land divided into 40 A. tracts. Indicate position of premises in the Section.



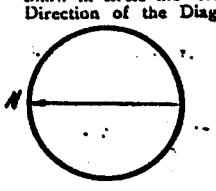
Sec. 34 T. 6 N. R. 21 (E) (W) (Each division equals 10') (If more or less indicate: .....)

DRAW PREMISES DIAGRAM BELOW.

(See Sec. 32 and Illustrations Part III Well Drilling Code)



Show in circle the "North" Direction of the Diagram.



Note: Additional copies of this form may be obtained at 5c per copy in lots of 10 or more. Send remittance with order to State Board of Health, Well Drilling Division, Madison.

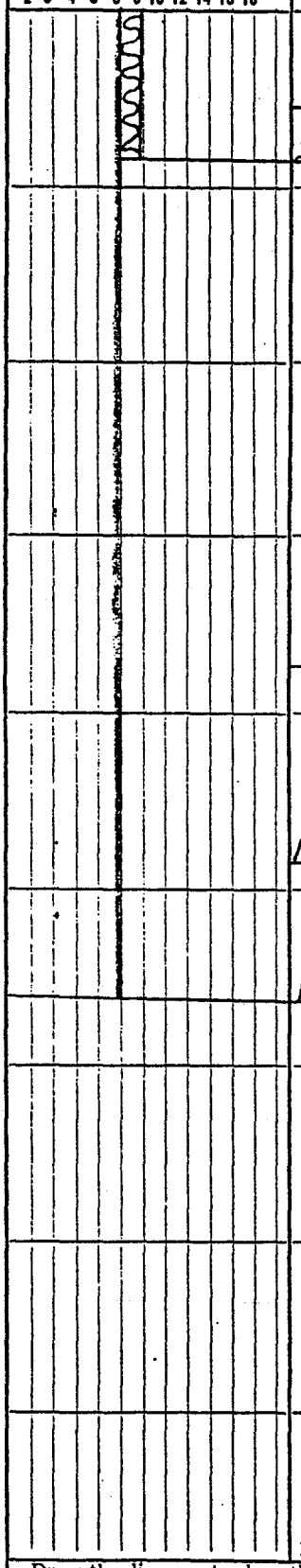
WELL LOG *and* REPORT

In this column indicate the kind of casing, liner, shoe and other accessories used.

Std. O.H. steel pipe.
"Youngstown"
"Forged steel shoe."

Key:-
| : casing Pipe.
SSS : mud grout.

WELL DIAGRAM
Use a red line to show casing or liner pipe. Use black for drill or borehole.



Draw the diagram to show the right half only

In this column state the kind of formations penetrated, their thickness in feet and if water bearing.

Top soil and red clay. 13'

Blue clay - 81'

Sand - 46'

Gravel - 19'
(Water Bearing)

Record of FINAL Pumping test

Duration of test
Hours 9

Pumping rate
G.P.M. 21

Depth of pump in well. Ft. 46

Standing water-level (from surface)
Ft. 2

Water-level when pumping Ft. 8

Water. End of test.
Clear ←
Cloudy
Turbid

Was the well sterilized?
Yes ← No

To which laboratory was sample sent?
Wenosha
Date 5-13-40

Was the well sealed on completion?
Yes ← No

How high did you leave the casing-pipe above grade?
14"

Well was completed
Date 5-13-40

Well Driller
Norman Zahn
Signature

JUN 10 1940

WELL CONSTRUCTION REPORT
WISCONSIN STATE BOARD OF HEALTH
WELL DRILLING DIVISION

Note: Section 32 of the Wisconsin Well Drilling Sanitary Code, having the force and effect of law, provides that within thirty days after completion of every well the driller shall submit a report covering all essential details of construction to the State Board of Health on a form provided by the Board.

Owner Milwaukee Co. Park Commission Driller Fabs Bros. ✓

Street or RFD Court House - Room 302 Post Office 8620 W. National Av. West Allis, Wis.

Post Office Milwaukee, Wis. Date 6-7-40 Permit No. 416

LOCATION OF PREMISES

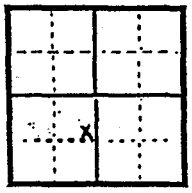
Milwaukee County Greenfield Town

Negroe Camps.
Describe further by subdivision, plat, district, lake, lot,

Highway H.V. is the nearest principal
block, nearest principal highway, etc., whichever apply.

Highway

The square below represents a section of land divided into 40 acre tracts. Mark the position of the premises in the section.



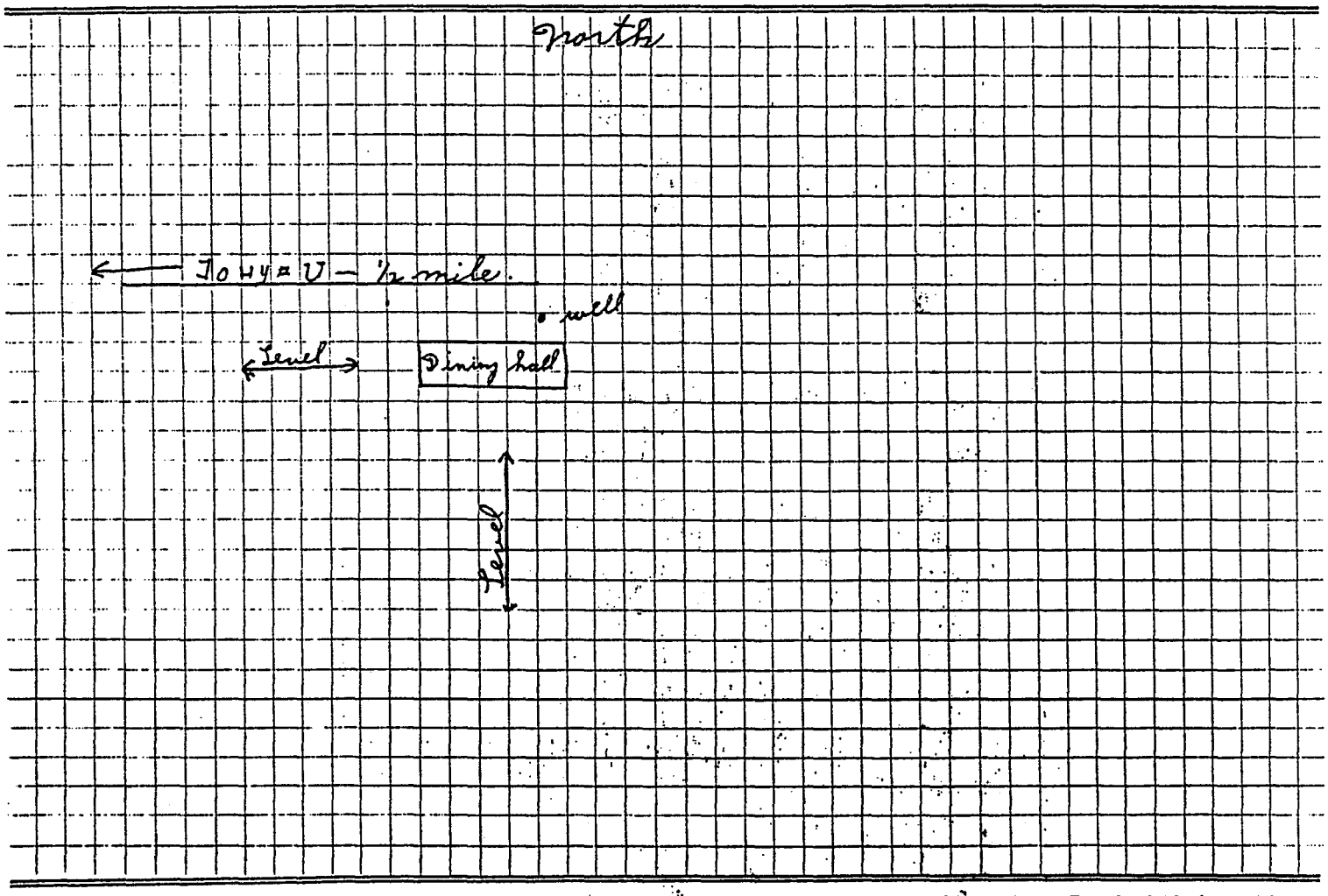
Sec. 34

Twp. 6

Range 21 { E / W

DIAGRAM OF PREMISES

See discussion and illustration in Part III Well Drilling Code. In making the diagram in the space below consider 10 ft. as the distance between lines. Be sure to indicate NORTH.



Additional copies of this form may be obtained in lots of 12 for 25¢. Send remittance with order to State Board of Health, Well Drilling Division, Madison, Wis.

County Milwaukee Twp. Greenfield 34-6-21 Sec. W½ SW¼

Greendale Farms Unit #22

TO THE WISCONSIN STATE BOARD OF HEALTH, WELL DRILLING DIVISION, MADISON, WIS.

WELL LOG PREMISES DIAGRAM, and REPORT

For Official Record of the Board

(TO BE USED FOR THAT PURPOSE ONLY)

Owner Farm Security Administration (If a joint ownership give name of responsible official. Also name of each individual holding an interest. Use a separate sheet and attach hereto.) Driller Knaack & Son Co.

Address Unit #22 - 76th St - 1 mi. So. of Grange Ave (City, village, township, county) Address 1423 No. 51 St. Milwaukee, Wis.

Date of Report Jan. 15 1938

Registration No. 22

Give below the location of the property on which well is drilled.

If incorporated village or city: _____

If unincorporated hamlet Greendale Farms - Milwaukee - Greenfield - 76th St. (Name, County, Twp., Street and No.)

If Lake Shore Plat _____ (Name of Plat, Lake, Lot, Blk., Street)

If Subdivision _____ (Name, County, Twp., Sec., Lot, Blk.)

If Farm _____ (County, Twp., Sec., Highway)

If School _____ (County, Twp., Sec., District)

If other public building _____ (Kind, County, Twp., Sec.)

WELL LOG and REPORT

Kind of casing and liner in feet. Kind of shoe. Indicate grout, screen, seal, etc.	WELL DIAGRAM Vertical Lines = in. Dia. Horizontal Lines = ft. Depth Use a red line to show casing	Give depth of formations in feet. State if dry or water bearing.	Record of FINAL Pumping Test
5" Std. Wrought Steel pipe (Block 163'-7" pipe driven	0 2 3 4 5 6 8 10 12 14 16 18 24	10' Clay	Duration of test. Hours 6
Forged steel drive shoe	25	39' Sandy clay	Pumping Rate. G. P. M. 5
	50	60' Sandy clay	Depth of pump in well. Ft. 100
	75	75' Stony clay	Standing water-level (from surface.) Ft. 88
	100	90' dry gravel 96' Hard pan 110' Dry gravel	Water level when pumping Ft. _____
	125	125' Stony Clay	Water. End of test. Check: Clear X Cloudy _____ Turbid _____
	150	165' Sandy Gravel 175' Rock	Was well sterilized before test? Yes X No _____ Date _____
	200		To which Laboratory was sample sent? Madison Date 1-27-38
	400		Was the well sealed on completion? Yes X No _____
	600		How high did you leave casing above grade? In pit
	1100		Well was completed 1-5 1938
			Well Driller: F. Sabuster Signature.
			(Be sure to complete the report on the reverse side)

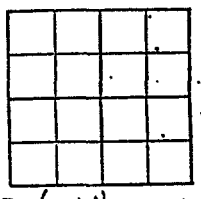
PREMISES DIAGRAM

(See Rules)

Draw a representative sketch of the premises on which this well is located, showing the location of the well with reference to buildings and possible sources of pollution. Indicate the condition of the surroundings by printing descriptive words like high, low, level, slope, lake, river, swamp, forest, meadow, barnyard, cesspool, privy, sewer, etc., at their respective locations and show distance from the well on the sketch. Also show direction of the compass. See Part III of Code for specimen Diagram.

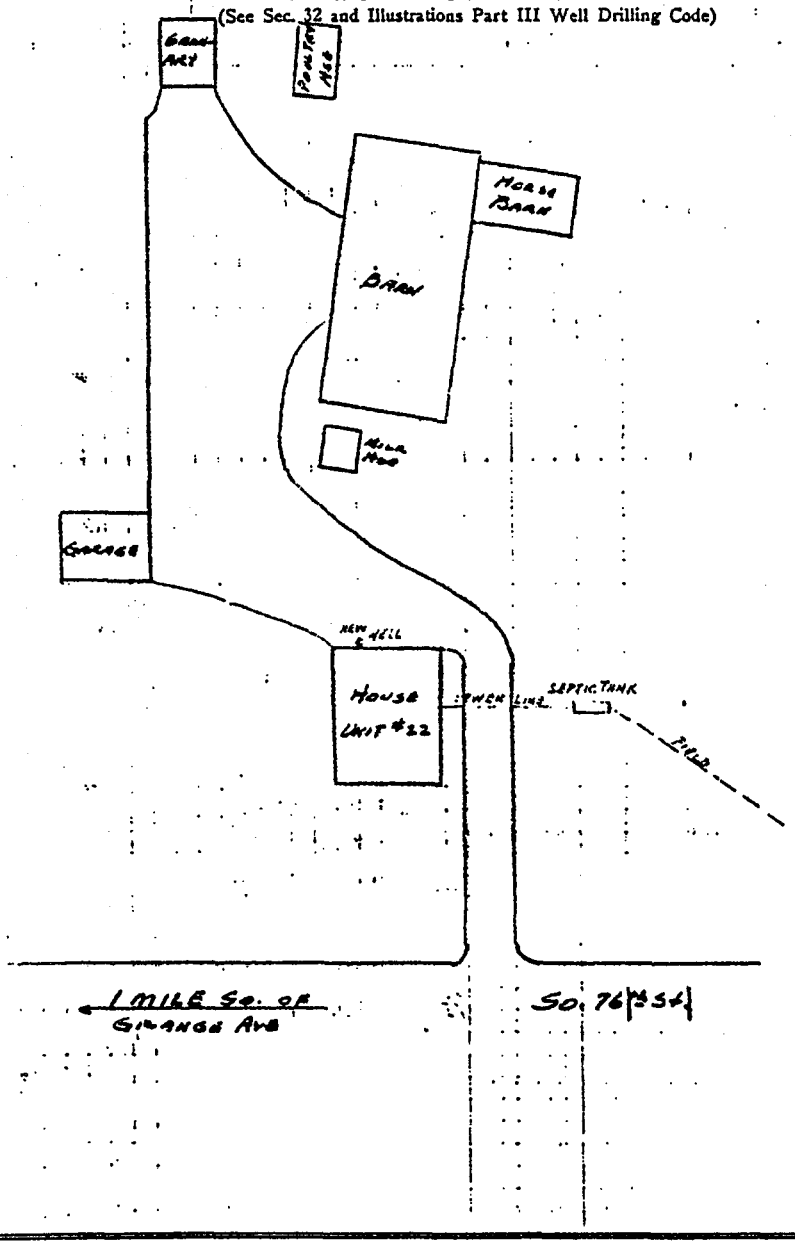
REMARKS: Report blasting and unusual items in this space:

The large square represents one Section of land divided into 40 A.-tracts. Indicate position of premises in the Section.

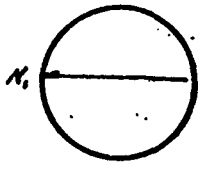


Sec. 34 T. 6 N. R. 21 (E) (W) (Each division equals 10') (If more or less indicate: .....)

DRAW PREMISES DIAGRAM BELOW.
(See Sec. 32 and Illustrations Part III Well Drilling Code)



Show in circle the "North" Direction of the Diagram.



Note: Additional copies of this form may be obtained at 5c per copy in lots of 10 or more. Send remittance with order to State Board of Health, Well Drilling Division, Madison.

County Milwaukee Twp. 5 Franklin 3-5-21 Sec. 3

SW, SW, Section 3 T5N R21E

TO THE WISCONSIN STATE BOARD OF HEALTH, WELL DRILLING DIVISION, MADISON, WIS.

WELL LOG PREMISES DIAGRAM, and REPORT

For Official Record of the Board

(TO BE USED FOR THAT PURPOSE ONLY)

Owner Peter Potts (If a joint ownership give name of responsible official. Also name of each individual holding an interest. Use a separate sheet and attach hereto.)

Address Helen Corners Wis. (City, village, township, county)

Driller Norman Fohr

Address 904 S 23 Milwaukee

Date of Report Feb 18 1939

Registration No. 476

Give below the location of the property on which well is drilled.

If incorporated village or city: ____ Name ____ Lot ____ Blk. ____ Street and No. ____

If unincorporated hamlet ____ Name ____ County ____ Twp. ____ Highway ____

If Lake Shore Plat ____ Name of Plat ____ Lake ____ Lot ____ Blk. ____ Street ____

If Subdivision ____

If Farm Milwaukee (County) Franklin (Twp.) 3 (Sec.) CTH (Highway) ____ (Blk.)

If School ____ County ____ Twp. ____ Sec. ____ District ____

If other public building ____ Kind ____ County ____ Twp. ____ Sec. ____

WELL LOG and REPORT

Kind of casing and liner in feet. Kind of shoe. Indicate grout, screen, seal, etc.	WELL DIAGRAM Vertical Lines = in. Dia. Horizontal Lines = ft. Depth Use a red line to show casing	Give depth of formations in feet. State if dry or water bearing.	Record of FINAL Pumping Test
86 ft - 5" steel pipe forged steel shoe.	0 2 3 4 5 6 8 10 12 14 16 18 24	red clay 15 ft.	Duration of test. Hours 6
	25	blue clay 50 ft.	Pumping Rate. G. P. M. 15
	50		Depth of pump in well. Ft. 74
	75	10 ft. sand & clay.	Standing water-level (from surface.) Ft. 70
	100	9 ft. hard pan 2 ft. gravel	Water level when pumping Ft. 72
	150		Water. End of test. Check: Clear ____ Cloudy ✓ Turbid ____
	200		Was well sterilized before test? Yes ✓ No ____ Date Feb 8-39
	400		To which Laboratory was sample sent? Kenosha Date Feb 13-39
	600		Was the well sealed on completion? Yes ✓ No ____
	1100		How high did you leave casing above grade? 2 ft. Well was completed Feb 13 1939

Well Driller: Norman Fohr Signature.

(Be sure to complete the report on the reverse side)

PREMISES DIAGRAM

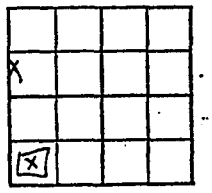
(See Rules)

Draw a representative sketch of the premises on which this well is located, showing the location of the well with reference to buildings and possible sources of pollution. Indicate the condition of the surroundings by printing descriptive words like high, low, level, slope, lake, river, swamp, forest, meadow, barnyard, cesspool, privy, sewer, etc., at their respective locations and show distance from the well on the sketch. Also show direction of the compass. See Part III of Code for specimen Diagram.

REMARKS: Report blasting and unusual items in this space:

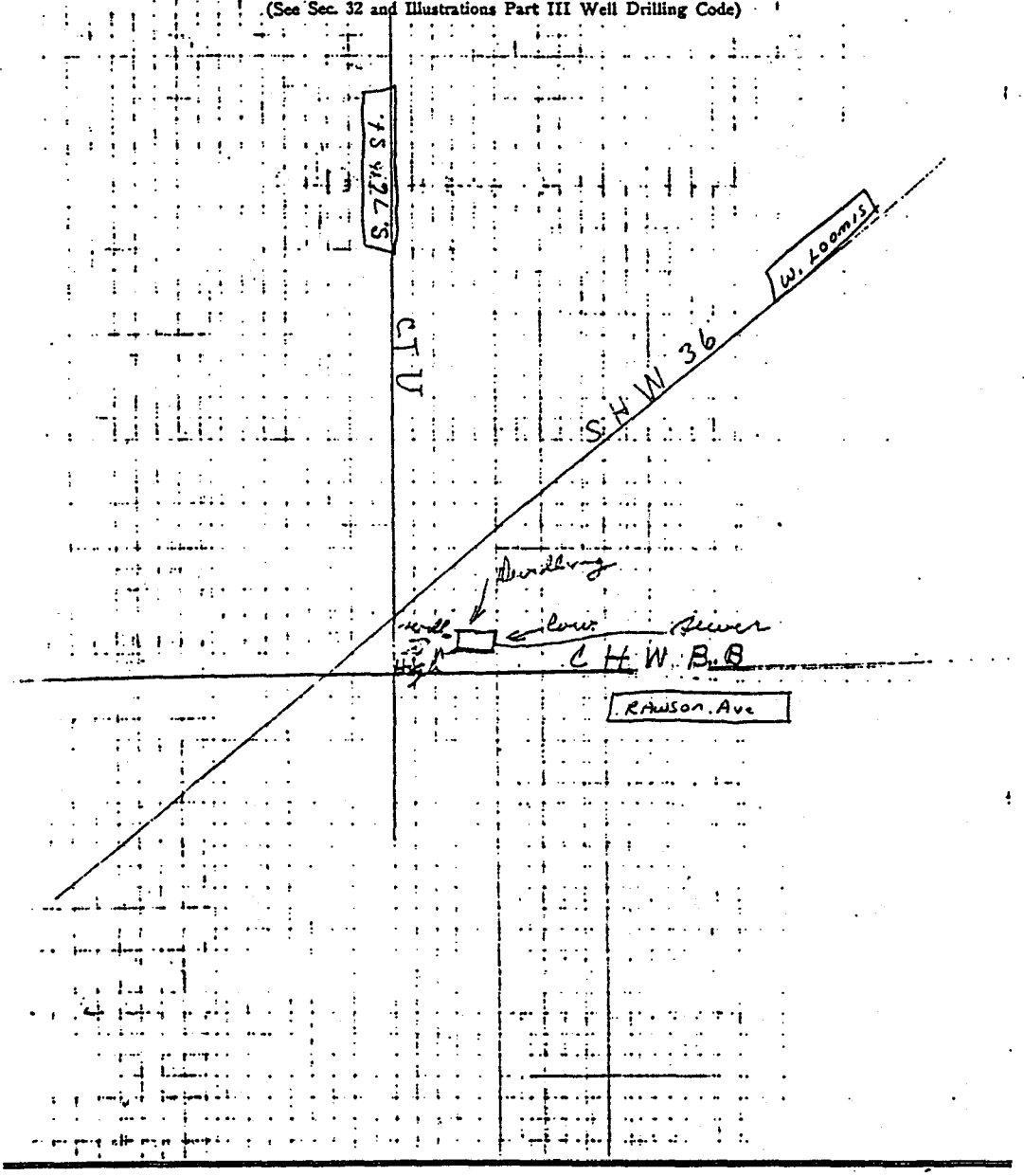
Building is not completed
Plumbing and septic tank
not yet installed

The large square represents one Section of land divided into 40 A. tracts. Indicate position of premises in the Section.

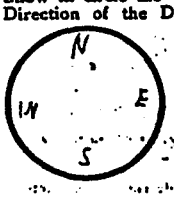


Sec. 3 T. 5 R. 21 (E) ~~(W)~~ (Each division equals 10') (If more or less indicate: _____)

DRAW PREMISES DIAGRAM BELOW.
(See Sec. 32 and Illustrations Part III Well Drilling Code)



Show in circle the "North" Direction of the Diagram.



Note: Additional copies of this form may be obtained at 5c per copy in lots of 10 or more. Send remittance with order to State Board of Health, Well Drilling Division, Madison.

STATE OF WISCONSIN

WELL CONSTRUCTOR'S REPORT — **DEPARTMENT OF RESOURCE DEVELOPMENT** — Wel 6

1. COUNTY: Milwaukee — CHECK ONE: ☐ Town ☐ Village ☒ City — NAME: Franklin

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.): 7074 So. 76th St. Franklin

3. OWNER AT TIME OF DRILLING: Peter Potts — SW SW SW sec 3 T5N R21E

4. OWNER'S COMPLETE MAIL ADDRESS: 7074 So. 76th St. Franklin

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
15						15		

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		40			50				

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: Home

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	20	6	20	241

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	19.45 lb. T.C.	Surface	223
	Black iron		

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Clay slurry	Surface	20

10. FORMATIONS

Kind	From (ft.)	To (ft.)
clay (stoney)	Surface	35
Gravel	35	55
clay (stoney)	55	70
Gravel	70	95
clay (sandy)	95	170
clay (stoney)	170	200
Hardpan	200	223
Limestone	223	241

Well construction completed on: 11/20 1968

11. MISCELLANEOUS DATA

Yield test: 4 Hrs. at 10 GPM

Depth from surface to normal water level: 84 ft.

Depth to water level when pumping: 96 ft.

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Madison laboratory on: 11/20 1968

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, subsurface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Kenneth J Sweeney — Registered Well Driller

COMPLETE MAIL ADDRESS: 6887 So Northcape Rd. Hales Corners

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

NOTE:
White Copy – Division's Copy
Green Copy – Driller's Copy
Yellow Copy – Owner's Copy

WELL CONSTRUCTOR'S REPORT
Form 3300–15 Rev. 12-76

OCT 21 1981

1. COUNTY: MILW. | CHECK (✓) ONE: ☐ Town ☐ Village ☒ City | Name: FRANKLIN

2. LOCATION: ¼ Section: SE, SW, SW | Section: 3 | Township: T5N | Range: R21E

OR – Grid or Street No.: 7220 | Street Name: W. PARKSON, AVE

AND – If available subdivision name, lot & block No.:

3. NAME ☐ OWNER ☒ AGENT AT TIME OF DRILLING CHECK (✓) ONE: MOHR-SCHMENN

ADDRESS: 13620 W. CAPITAL, DR.

POST OFFICE: BROOKFIELD, WIS

4. Distance in feet from well to nearest: (Record answer in appropriate block)	Building	Sanitary Bldg. Drain C.I.	Sanitary Bldg. Drain Other	Sanitary Bldg. Sewer C.I.	Sanitary Bldg. Sewer Other	Floor Drain Connected To: C.I. Sewer	Floor Drain Connected To: Other Sewer	Storm Bldg. Drain C.I.	Storm Bldg. Drain Other	Storm Bldg. Sewer C.I.	Storm Bldg. Sewer Other
	10	45		60		50					

Street Sewer San.	Street Sewer Storm	Other Sewers C.I.	Other Sewers Other	Foundation Drain Connected to: Sewer	Foundation Drain Connected to: Sewage Sump	Foundation Drain Connected to: Clearwater Dr.	Foundation Drain Connected to: Clearwater Sump	Sewage Sump C.I.	Sewage Sump Other	Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit
150													Seepage Pit / Seepage Bed / Seepage Trench

Privy	Pet Waste Pit	Pit: Nonconforming Existing	Subsurface Pumproom Nonconforming Existing	Barn Gutter	Animal Barn Pen	Animal Yard	Silo With Pit	Glass Lined Storage Facility	Silo w/o Pit	Earthen Silage Storage Trench Or Pit
		Well / Pump / Tank								

Temporary Manure Stack	Watertight Liquid Manure Tank	Solid Manure Storage Structure	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Other (Give Description)

5. Well is intended to supply water for: BOWLING ALLEY

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	30	6⅝	30	360

7. CASING, LINER, CURBING AND SCREEN

Dia. (in.)	Material, Weight, Specification & Method of Assembly	From (ft.)	To (ft.)
7	NEW, STEEL, DLK	Surface	199
	T+C #26		
	ASTM-A-53		
	V.S.P		

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
CLAY SLURRY	Surface	30

9. FORMATIONS

Kind	From (ft.)	To (ft.)
CLAY	Surface	108
GRAVEL	108	160
SAND	160	199
LIMESTONE	199	360

10. TYPE OF DRILLING MACHINE USED

☒ Cable Tool ☐ Rotary-air w/drilling mud ☐ Rotary-w/drilling mud ☐ Rotary-hammer w/drilling mud & air ☐ Rotary-hammer & air ☐ Reverse Rotary ☐ Jetting with Air / Water

Well construction completed on: May 28 19 81

11. MISCELLANEOUS DATA

Yield Test: 18 Hrs. at 50 GPM

Depth from surface to normal water level: 52 Ft.

Depth of water level when pumping: 160 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Madison, Wis laboratory on Oct 20 19 81

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, method of finishing the well, amount of cement used in grouting, blasting, etc., should be given on reverse side.

Signature: Henry Hartman Registered Well Driller

Complete Mail Address: 1956 N. Lincoln, ave plot 684417

WELL CONSTRUCTOR'S REPORT

Wel–6

JAN 7 1970

WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY: Milwaukee

CHECK ONE: ☐ Town ☐ Village ☒ City

NAME: Franklin

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.)

7412 Old Loomis Road NW SW Sec 3 T5N R21E

3. OWNER AT TIME OF DRILLING

Fred Hopp

4. OWNER'S COMPLETE MAIL ADDRESS

7412 Old Loomis Road Franklin

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
12						12		

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		60			68				

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: Home

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	20	6	20	285

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	New black steel pipe	Surface	180
	threaded & coupled		
	19.45 lbs.		

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
P. clay	Surface	20

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	75
Sand	75	90
Hardpan	90	180
Limestone	180	285

Well construction completed on 11–17 1969

11. MISCELLANEOUS DATA

Yield test: 5 Hrs. at 15 GPM

Depth from surface to normal water level 85 ft.

Depth to water level when pumping 90 ft.

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Madison laboratory on: 11–19 19 69

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, subsurface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Richard Koschi Registered Well Driller

COMPLETE MAIL ADDRESS: 12665 W. Lisbon Rd. Brookfield, Wis. 53005

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS
				plot 62441C.

Wel 6

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee — Town ☐ Village ☐ Franklin City ☒ (Check one and give name)

2. Location 6776 So. 76th Street, NW NW SW Sec 3 T5 R21E
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☒ or Agent ☐ Raymond Rapp
Name of individual, partnership or firm

4. Mail Address 6776 So. 76th Street, Milwaukee, Wisconsin
Complete address required

5. From well to nearest: Building 15 ft; sewer --- ft; drain 25 ft; septic tank 50 ft; dry well or filter bed 50 ft; abandoned well --- ft.

6. Well is intended to supply water for: home

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	40			
6	40	252			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Steel	0	197

9. GROUT:

Kind	From (ft.)	To (ft.)
Clay slur	0	40

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Sand and gravel	0	34
Clay and sand	34	114
Clay and gravel	114	197
Rock	197	252

RECEIVED
NOV 20 1959
ENVIRONMENTAL SANITATION

Construction of the well was completed on: November 10, 1959

The well is terminated 8 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No ---

Was the well sealed watertight upon completion? Yes X No ---

11. MISCELLANEOUS DATA:

Yield test: 8 Hrs. at 8 GPM.

Depth from surface to water-level: 85 ft.

Water-level when pumping: 85 ft.

Water sample was sent to the state laboratory at: Madison City on Nov. 10, 1959

Signature [signature] Registered Well Driller

6125 W. Fond du Lac Ave., Milwaukee 18, Wisconsin
Complete Mail Address

Please do not write in space below

Rec'd ---------- No. ----------

Ans'd ----------

Interpretation ----------

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ----------

NOV 8 1971

WELL CONSTRUCTOR'S REPORT

Wel–6

WHITE COPY – DIVISION'S COPY
GREEN COPY – DRILLER'S COPY
YELLOW COPY – OWNER'S COPY

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
Box 450
Madison, Wisconsin 53701

1. COUNTY: Milw — CHECK ONE: ☐ Town ☐ Village ☒ City — NAME: Franklin

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.): 6940 So 68th St. NW SW SE Sec. 3 T5N R21E

3. OWNER AT TIME OF DRILLING: John O'Malley

4. OWNER'S COMPLETE MAIL ADDRESS: 9110 So 46th St. Franklin

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
12								

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		50			50	150		175	

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: Home & stable

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	20	6	20	138

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	19-45 lb T.C.	Surface	125
	Black iron		

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Clay slurry	Surface	20

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay (stony)	Surface	55
Clay (sandy)	55	90
Muck sand	90	105
Clay (sandy)	105	115
Limestone Fakon	115	126
Limestone	125	138

Well construction completed on 11/3 1971

11. MISCELLANEOUS DATA

Yield test: 6 Hrs. at 15 GPM

Depth from surface to normal water level 35 ft.

Depth to water level when pumping 37 ft.

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Madison laboratory on: 11/3 1971

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, subsurface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: Kenneth J. Sweeney — Registered Well Driller

COMPLETE MAIL ADDRESS: 11221 W. St. Martins Rd Fr.

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS
				plot

REV. 11-68

SWNWSE sec 3 T5N R21E

Wel 6

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee. Town ☐ Village ☑ Greendale City ☐ Check one and give name

2. Location 6666 South 68th St. Name of street and number of premise or Section, Town and Range numbers

RECEIVED
SEP 14 1959
ENVIRONMENTAL SANITATION

3. Owner ☑ or Agent ☐ Gerald Casey. Name of individual, partnership or firm

4. Mail Address 5502 Avena Ct. Greendale, Wis. Complete address required

5. From well to nearest: Building 15 ft; sewer — ft; drain — ft; septic tank 50 ft; dry well or filter bed 50 ft; abandoned well — ft.

6. Well is intended to supply water for: Grill.

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	15			
6	15	132			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6"	Steel 19.45	0	132

9. GROUT:

Kind	From (ft.)	To (ft.)
Mud	0	15

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Clay, Gravel + Stones	0	32
Gray Clay	32	41
Sand	41	70
Clay	70	129
Gravel	129	132

RECEIVED
OCT 1 5 1959
ENVIRONMENTAL SANITATION

Construction of the well was completed on: Aug 25th 1959

The well is terminated 8 inches ☑ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes ✓ No ——

Was the well sealed watertight upon completion? Yes ✓ No ——

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 20 GPM.

Depth from surface to water-level: 30 ft.

Water-level when pumping: 65 ft.

Water sample was sent to the state laboratory at: Madison City on Sept 2nd 1959.

Signature Matt. C. Berres. Registered Well Driller

4605 N. 124 St. Butler, Wis. Complete Mail Address

Please do not write in space below

Rec'd SEP 3 1959 No. 30581

Ans'd ——

Interpretation SAFE

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ——

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County MILWAUKEE — Town ☒ / Village ☐ / City ☐ GREENFIELD (Check one and give name)

2. Location 6708 So 68 — NW, NW, SE, Sec. 3 — T5N R21E
Name of street and number of premise or Section, Town and Range number

RECEIVED APR 14 1954 WISCONSIN STATE BOARD OF HEALTH ENVIRONMENTAL SECTION

3. Owner ☒ or Agent ☐ FRANCIS SCHNEIDER
Name of individual, partnership or firm

4. Mail Address 6708 So 68 MILWAUKEE
Complete address required

5. From well to nearest: Building 20 ft; sewer ← ft; drain ← ft; septic tank 50 ft; dry well or filter bed 75 ft; abandoned well ← ft.

6. Well is intended to supply water for: HOUSEHOLD

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	25			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	STEEL	0	46

9. GROUT:

Kind	From (ft.)	To (ft.)
PUDDLE CLAY	0	25

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
BLUE CLAY	25	25
HARD PAN	19	44
GRAVEL	2	46

Construction of the well was completed on: 4-13 19 54

The well is terminated 6 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No

Was the well sealed watertight upon completion? Yes X No

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 10 GPM.

Depth from surface to water-level: 12 ft.

Water-level when pumping: 15 ft.

Water sample was sent to the state laboratory at: MADISON (City) on 4-13 19 54

Signature Harvey Acker (Registered Well Driller) Hales Corners R. 3 (Complete Mail Address)

Please do not write in space below

Rec'd Apr 14 1954 No. 7512

Ans'd

Interpretation SAFE

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.	0				
48 hrs.	0				
Confirm					
B. Coli	0/5				

Examiner

plot 250

STATE OF WISCONSIN

WELL CONSTRUCTOR'S REPORT — DEPARTMENT OF RESOURCE DEVELOPMENT — W.O. 8214 — Wel 6

1. COUNTY: Milwaukee

CHECK ONE: ☒ Town ☐ Village ☐ City — NAME: Franklin

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.)
6708 South 68th Street ~~SW 1/4~~ Sec 3 T5N R21E — NW, NW, SE, Sec. 3

3. OWNER AT TIME OF DRILLING
[redacted]
Francis Schweppe

4. OWNER'S COMPLETE MAIL ADDRESS
6708 South 68th Street, Milwaukee, Wisconsin 53132

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
15	--	--	--	--	--	--	--	--

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
--	--	55	--	--	--	--	--	--	--

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)
--above indicates none

6. Well is intended to supply water for:
House

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
7-7/8	Surface	189			
6	189	203			

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	New Std. Black Steel	Surface	189
	P.E. 18.97#		

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Bentonite & cuttings	Surface	189

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	4
Gravel & Boulders	4	15
Clay	15	60
Gravel and sand	60	67
Clay	67	120
Sandy clay	120	140
Hardpan	140	187
Limestone	187	203

Well construction completed on 10/21 19 68

11. MISCELLANEOUS DATA

Yield test: 1 Hrs. at 20 GPM

Depth from surface to normal water level 23 ft.

Depth to water level when pumping 60 ft.

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Madison laboratory on: 10/21 19 68

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, subsurface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE
Richard Berkholtz
Richard Berkholtz, Pres. Registered Well Driller

COMPLETE MAIL ADDRESS
Berkholtz Drilling Co. Inc.
1170 Forest Lane, Brookfield, Wisconsin 53005

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS

pl. r 25'

STATE OF WISCONSIN

WELL CONSTRUCTOR'S REPORT — **DEPARTMENT OF RESOURCE DEVELOPMENT** — Wel 6

1. COUNTY: Milwaukee — CHECK ONE: ☐ Town ☒ Village ☐ City — NAME: Greendale

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers, when available.): 6750 W. Loomis Rd — SWNE Sec. 3 T5N R21E

3. OWNER AT TIME OF DRILLING: Greendale Land Co.

4. OWNER'S COMPLETE MAIL ADDRESS: 6500 Northway Greendale, Wisconsin 53129

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING	SANITARY SEWER C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	FLOOR DRAIN TILE	FOUNDATION DRAIN SEWER CONNECTED	FOUNDATION DRAIN INDEPENDENT	WASTE WATER DRAIN C. I.	WASTE WATER DRAIN TILE
15			35			15		

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		60			75				

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: Home

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	10			
6	10	154			

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Steel Casing 19.45# T.&C.	Surface	144

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Drillcuttings	Surface	10

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay & Gravel	Surface	8
Gravel	8	32
Clay	32	50
Sand & Gravel	50	64
Stony Clay	64	80
Clay	80	95
Sandy Clay	95	144
Lime Rock	144	154

Well construction completed on: April 1, 1968

Well is terminated 8 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

11. MISCELLANEOUS DATA

Yield test: 5 Hrs. at 20 GPM

Depth from surface to normal water level: 17 ft.

Depth to water level when pumping: 18 ft.

Water sample sent to: Madison — laboratory on: April 1, 1968

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, subsurface pumprooms, access pits, etc., should be given on reverse side.

SIGNATURE: David J. Ackerer — Registered Well Driller

COMPLETE MAIL ADDRESS: 10981 W. Forest Home Ave. Hales Corners Wis.

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS

Wel. 6

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee — Town ☒ Village ☐ City ☐ Greendale (Check one and give name)
2. Location Hy 36 & 68 th St. / SWNWNE Sec. 3 T5N R21E (Name of street and number of premise or Section, Town and Range numbers)
3. Owner ☒ or Agent ☐ A. Jolly (Name of individual, partnership or firm)
4. Mail Address 5600 No. Grange Avee (Complete address required)
5. From well to nearest: Building 21 ft; sewer 32 ft; drain 35 ft; septic tank ___ ft; dry well or filter bed ___ ft; abandoned well ___ ft.
6. Well is intended to supply water for: Home

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7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
12	top	25			
6	25	276			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	steel	top	176

9. GROUT:

Kind	From (ft.)	To (ft.)
Drill Cuttings	top	25

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Red Clay	top	176
Lime Rock	176	276

11. MISCELLANEOUS DATA:

Yield test: 9 Hrs. at 12 GPM.

Depth from surface to water-level: 10 ft.

Water-level when pumping: 30 ft.

Water sample was sent to the state laboratory at: Madison (City) on April 16 1956

Construction of the well was completed on: 2/4 1956

The well is terminated 8 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes X No ___

Was the well sealed watertight upon completion? Yes X No ___

Signature C. W. Mueller (Registered Well Driller) — 9132 So 13 St Mil Wis (Complete Mail Address)

Please do not write in space below

Rec'd APR 18 1956 No. 10533

Ans'd

Interpretation SAFE SAFE

Drilled by George Dowell

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.	0				
Confirm					
B. Coli	0/5				

Examiner

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee — Town ☐ Village ☐ City ☐ Greenfield — Check one and give name

2. Location ?? 315 Southway Road — S½ Sec. 34 T6N R21E
Name of street and number or premise or Section, Town and Range number

3. Owner ☒ or Agent ☐ Joseph Abramski
Name of individual, partnership or firm

4. Mail Address 315 Southway Road
Complete address required

RECEIVED JAN 10 1955 ENVIRONMENTAL SANITATION

5. From well to nearest: Building 15 ft; sewer ____ ft; drain ____ ft; septic tank ____ ft; dry well or filter bed ____ ft; abandoned well ____ ft.

6. Well is intended to supply water for: Home

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	40	6	40	165

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Std. Wt. Steel	0	105

9. GROUT:

Kind	From (ft.)	To (ft.)
Mud cuttings	0	45

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Black soil	0	1
Yellow clay	1	15
Blue clay	15	100
Hard pan	100	105
Rock	105	165

11. MISCELLANEOUS DATA:

Yield test: 5 Hrs. at 20 GPM.

Depth from surface to water-level: 65 ft.

Water-level when pumping: 65 ft.

Water sample was sent to the state laboratory at: Kenosha City on Jan. 10 19 53

Construction of the well was completed on: January 9 1953

The well is terminated 8 inches ☐ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes x No ____

Was the well sealed watertight upon completion? Yes x No ____

Signature [signature] Registered Well Driller

7570 South Howell Ave., Milwaukee 7, Wis. Complete Mail Address

Please do not write in space below

Rec'd ____ No. ____

Ans'd ____

Interpretation ____

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli					

Examiner ____

Wel 6

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

1. County Milwaukee — Town ☐ Village ☒ City ☐ Hales Corners (Check one and give name)

SE, SE, SE, Sec. 34 T6N R21E

2. Location 6160 College Ave Lot #1.2.3. Blk 4
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☒ or Agent ☐ George J. Kehm
Name of individual, partnership or firm

RECEIVED
SEP 24 1956
ENVIRONMENTAL SANITATION

4. Mail Address Muskego Center Wis
Complete address required

5. From well to nearest: Building 17 ft; sewer 65 ft; drain 17 ft; septic tank ____ ft; dry well or filter bed ____ ft; abandoned well ____ ft.

6. Well is intended to supply water for: Home

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	0	41	6	41	228

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Standard weight Black	0	41

9. GROUT:

Kind	From (ft.)	To (ft.)
Cement	41	22
Clay Slurry	0	22

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Clay (strong)	0	22
Limestone	22	228

Construction of the well was completed on: Sept 17 19 56

The well is terminated 8 inches ☒ above, below ☐ the permanent ground surface.

Was the well disinfected upon completion? Yes ____ No X

Was the well sealed watertight upon completion? Yes X No ____

11. MISCELLANEOUS DATA:

Yield test: 4½ Hrs. at 10 GPM.

Depth from surface to water-level: 33 ft.

Water-level when pumping: 110 ft.

Water sample was sent to the state laboratory at: ____ (City) on Sept 17 1956

Signature Kenneth J. Sweeney (Registered Well Driller) 6887 N. Cape Rd Hales Corners, Wis (Complete Mail Address)

Please do not write in space below

Rec'd SEP 18 1956 No. 34104

Ans'd ____

Interpretation ____

SAFE

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.					
48 hrs.					
Confirm					
B. Coli	0				

Examiner ____

plot 25°