Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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Waukesha, WI 53186
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May 28, 2018
File No. 20.0155746.00

Mr. Timothy Zignego
Zignego Ready Mix, Inc.
W226 N2940 Duplainville Road
Waukesha, Wisconsin 53186

Re: Hydrogeological Report for Proposed Town of Burke Development
5356 Felland Road, Town of Burke
Dane County, Wisconsin

Dear Mr. Zignego:

Pursuant to your request, GZA GeoEnvironmental, Inc. (GZA) is pleased to provide this hydrogeologic report to Zignego ready Mix, Inc. ("ZRM") related to proposed groundwater use on the property at 5356 Felland Road, Town of Burke, Dane County, Wisconsin ("Site"). Note that this report is subject to the limitations provided in Attachment 1.

ZRM has proposed development of the Site as a ready-mix concrete plant. At a recent Town meeting, Town of Burke government officials expressed concern over the effect water withdrawal on the Site could have on area groundwater flow patterns. Town of Burke officials expressed concern due to the presence of two landfill properties near the Site: 1) a Town of Burke landfill on the east side of the railroad right-of-way adjacent to the Site to the east, and 2) Waste Management landfills located approximately 1,000 feet north of the Site as shown on Figure 1. The Town of Burke also expressed concern regarding the potential for groundwater withdrawal on the Site to affect area domestic water-supply wells.

GZA reviewed publicly-available documents (e.g. well-construction reports, Wisconsin Geological and Natural History Survey [WGNHS] reports, U.S. Geological Survey [USGS] reports, on-line groundwater quality data, Client water-use data, and Client Site plans) to evaluate area hydrogeological conditions and Site development considerations. The information was used to assess the potential impact groundwater pumping from a well on the Site could have on groundwater flow direction and the potential pumping from the well could impact flow of groundwater migrating from the Town of Burke landfill and water levels in area domestic water-supply wells.

BACKGROUND CONDITIONS

Based on a review of nearby domestic wells (see Attachment 2), geologic conditions consist of approximately 10 to 60 feet of primarily sand and gravel with some clay overlying sandstone and carbonate bedrock. Based on a review of groundwater-quality data for monitoring at the Town of Burke landfill, the main constituent of concern for groundwater beneath the landfill is elevated dissolved iron, likely resulting from the chemical reducing conditions of leachate coming from the landfill.

Based on a 2016 WGNHS groundwater model for Dane County[1], the prolific Cambrian Sandstone aquifer is present beneath the Site (see geological cross section provided in Attachment 3) and consists primarily of the following two water-producing geologic units with the listed hydraulic properties and groundwater flow gradient:

a. More than 500 feet of Mount Simon Sandstone at a hydraulic conductivity of 8.1 feet per day (ft/day) for a transmissivity of more than 4,050 feet squared per day (ft^2/day);

b. More than 100 feet of Wonowoc Formation at a hydraulic conductivity of 5.7 ft/day for a transmissivity of more than 570 ft^2/day; and

c. A groundwater flow direction to the west as shown on Figure 1 under a gradient of approximately 3E-03 feet per foot.

Based on groundwater flow direction, groundwater flows from beneath the Town of Burke landfill to beneath the northern portion of the Site (i.e. the northern portion of the site is down gradient of the Town of Burke landfill).

GROUNDWATER USE

Based on projected production of 40,000 cubic yards (yd^3) of concrete per year and an estimated 30 gallons of water required for each cubic yard of concrete, 1,200,000 gallons of water per year wil be required to produce the 40,000 yd^3 of concrete. The water demand will be required primarily over an approximately 6-month long construction season. The average water production rate for concrete production will be approximately 4.5 gallons per minute (gpm) over the construction season. With concrete plant office use (cleaning trucks, bathrooms, etc.), the average water requirements for the Site will be less than approximately 5 gpm over each construction season. Because of the very large storage capacity of the aquifer, use of the average production rate for evaluating the pumping impact to groundwater rather than higher pumping rates that occur for short periods of time is justified. Water demands will be essentially zero over the other 6 months of each year, and any effect on flow direction during the construction season will be restored to non-pumping conditions during the off season.

CALCULATION OF PUMPING INFLUENCE

The radius of contribution (ROC), or the latera distance from which a well will draw water, can be calculated based on USEPA, 1987[2]. The equation provided for uniform flow on a sloping water table as exists at the Site is:

$$Y(L) = \frac{Q}{2\mathrm{Kbi}} \qquad (1)$$

where:

Y(L) is the lateral (side gradient) distance of capture of groundwater by the well (radius of contribution) in feet;

Q is the average well pumping rate in cubic feet per day or 960 ft^3/day (at 5 gpm);

Kb is the transmissivity of the saturated aquifer in square feet per day or 4,620 ft^2/day (the combined Jordan Sandstone and Wonowoc Formation); and

i is the hydraulic gradient or 3E-03 feet per foot.

[1] Parsen, M.J., Bradbury, K.R., Hunt, R.J., and Feinstein, D.T., 2016, The 2016 groundwater flow model for Dane County, Wisconsin: Wisconsin Geological and Natural History Survey Bulletin 110, 56 p.

[2] US Environmental Protection Agency, 1987, Guidelines for Delineation of Wellhead Protection Areas, USEPA Office of Groundwater Protection

Considering the hydraulic information and water-use information provided above, the ROC from the well location will be approximately 35 feet. The 35-foot ROC from a hypothetical well location on the Site is depicted on Figure 2.

The distance to the furthest extent of the capture zone for down gradient of the well is determined as follows:

$$X(L) = \frac{Q}{2\Pi \mathrm{Kbi}} \qquad (2)$$

where:

X(L) is the downgradient distance to which groundwater is captured by the well in feet;

Q is the well pumping rate in cubic feet per day or 960 ft^3/day (at 5 gpm);

Kb is the transmissivity of the saturated aquifer in square feet per day or 4,620 ft^2/day (combined between the Jordan Sandstone and Wonowoc Formation); and

i is the hydraulic gradient or 3E-03 feet per foot.

Considering the hydraulic information and water-use information provided above, the furthest distance to down gradient capture by the well will be approximately 11 feet.

CONCLUSIONS AND RECOMMENDATIONS

Because groundwater flows from the Town of Burke landfill to beneath the northern portion of the Site and groundwater from beneath the landfill potentially contains elevated dissolved iron, a production well on the Site should be moved to the south to avoid issues with well maintenance that commonly occur due to iron-rich groundwater. Although the potential to alter the flow of contaminated groundwater from beneath the landfill is low as demonstrated from the calculations presented above, construction of the well to the south on the Site and outside the area down gradient from the landfill would eliminate the potential to alter the flow of contaminated groundwater from beneath the landfill.

As also demonstrated by the influence calculations presented above, the closest domestic well locations are too far away to be affected by pumping from a well on an eastern portion of the Site.

We appreciate the opportunity to provide this report to Zignego Ready Mix. Please feel free to contact the undersigned at (262) 754-2567 or bernard.fenelon@gza.com with any questions.

Very truly yours,
GZA GeoEnvironmental, Inc.

Bernard G. Fenelon, P.G.
Senior Consultant/Hydrogeologist

J:\155700to155799\155746 Zignego T of Burke\Report\FINAL 155746 Hydrogeologic Rpt_Town of Burke, WI 5-28-18.docx

Attachments: Figures
Attachments

FIGURES

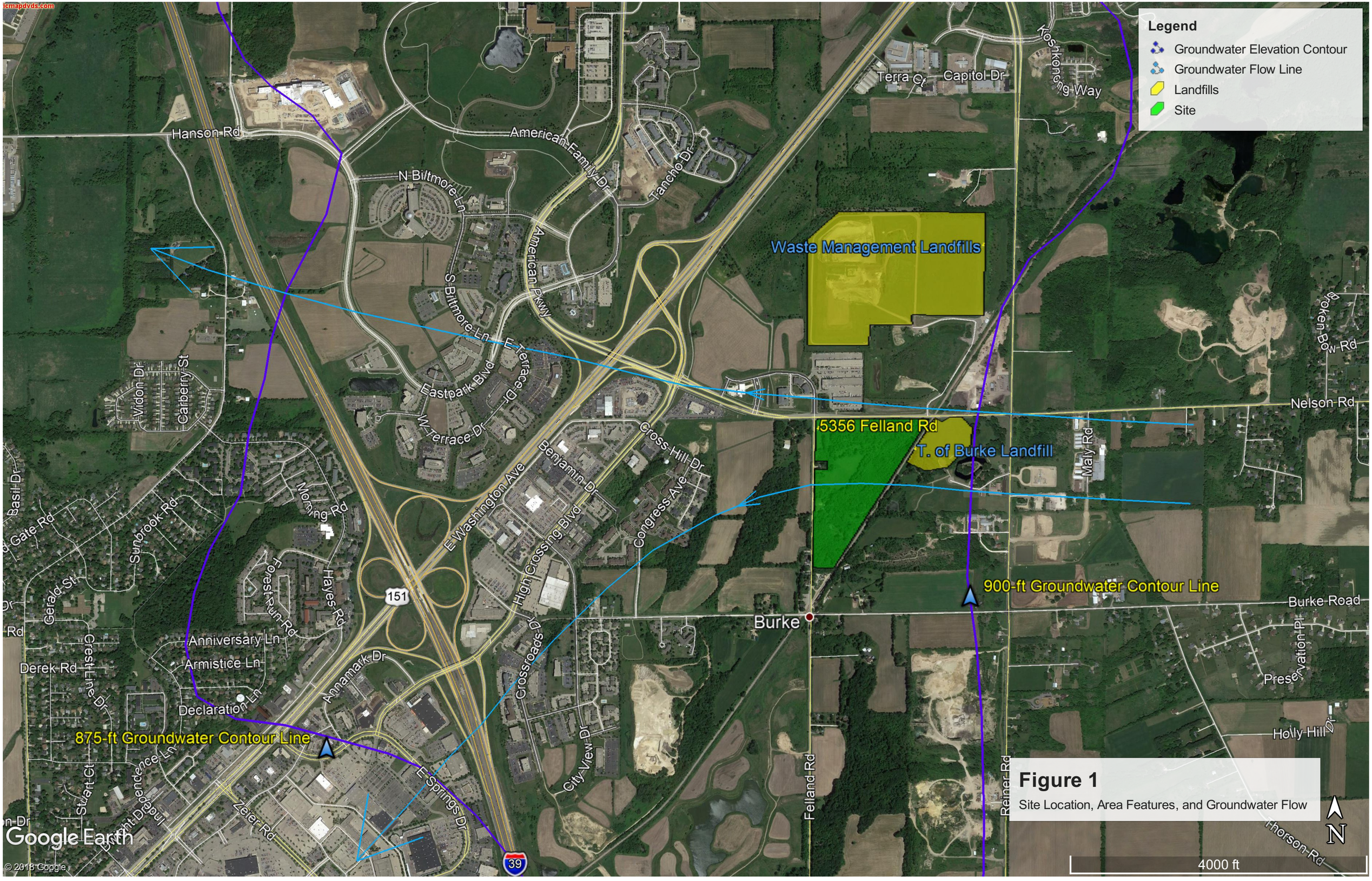


Figure 1

Site Location, Area Features, and Groundwater Flow

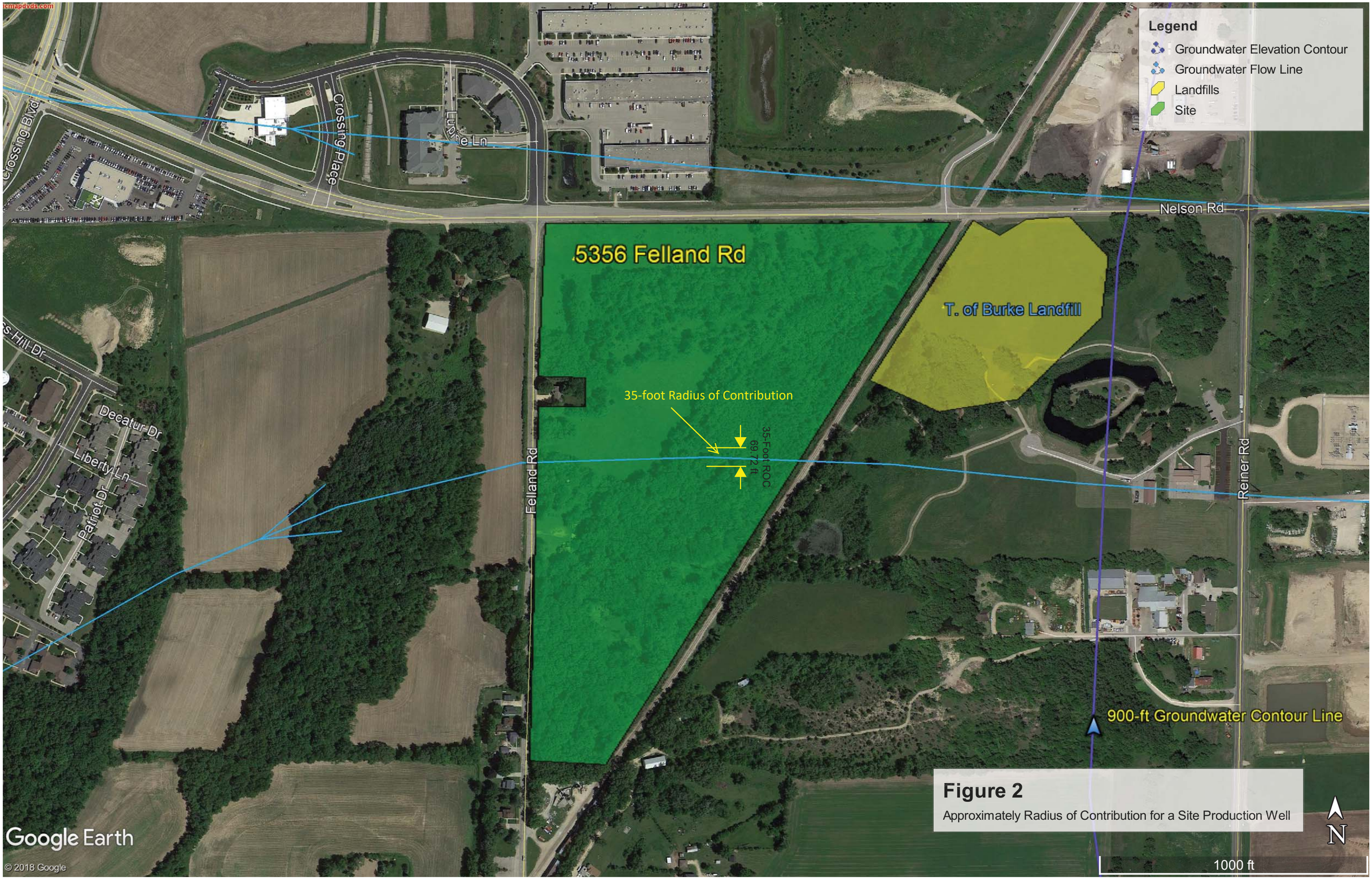


Figure 2

Approximately Radius of Contribution for a Site Production Well

Attachment 1

Limitations

HYDROGEOLOGIC LIMITATIONS

USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during our work. Conditions other than described in this report may be found at the subject location(s).

3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all its objectives or that the findings of this study will be upheld by a local, state or federal agency.

4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

SCREENING AND ANALYTICAL TESTING

8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in

soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.

9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.

10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. If Client or others authorized to use this report obtain additional information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, based on this evaluation, may modify the conclusions stated in this report.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes if conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

Attachment 2

Area Domestic Well Construction Reports

State of Wisconsin
Department of Natural Resources
Private Water Supply
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. 2-79

JUN 8 1981

1. COUNTY: Dane
CHECK (✓) ONE: ☑ Town ☐ Village ☐ City
Name: Burke

2. LOCATION: ¼ Section or Gov't. Lot: SW | Section: 23 | Township: T8N | Range: R10E
OR – Grid or Street No. | Street or Road Name:
AND – If available subdivision name, lot & block No.:

3. NAME ☐ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Sheldon Wood
ADDRESS: 3686 Burke Rd
POST OFFICE: Madison WI ZIP CODE:

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
15'										

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	Manure Hopper or Retention or Pneumatic Tank
											None		Seepage Pit; Seepage Bed None; Seepage Trench	

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

Temporary Manure Stack or Platform	Watertight Liquid Manure Tank or Basin	Manure Pressure Pipe	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Manure Storage Basin; Concrete Floor Only; Concrete Floor and Partial Concrete Walls	Other (Describe)

5. Well is intended to supply water for: Home

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	Surface	81			
6	81	225			

7. CASING, LINER, CURBING AND SCREEN
Material, Weight, Specification

Dia. (in.)	Mfg. & Method of Assembly	From (ft.)	To (ft.)
6	Std Blck Pipe .280 Wall Weld JTS A-53	Surface	81

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Mud + Cuttings	Surface	8
Cement	8	81

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	4
Clay + Gravel	4	25
Gravel	25	35
Lime Rock	35	142
Sand Stone	142	225

10. TYPE OF DRILLING MACHINE USED
☐ Cable Tool ☑ Rotary-hammer w/drilling mud & air ☐ Jetting with
☐ Rotary-air w/drilling mud ☐ Rotary-hammer & air ☐ Air ☐ Water
☐ Rotary-w/drilling mud ☐ Reverse Rotary

Well construction completed on May 30 19 81

11. MISCELLANEOUS DATA
Yield Test: 2 Hrs. at 20 GPM
Depth from surface to normal water level 155 Ft.
Depth of water level when pumping 195 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 12 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 5-30-81 19

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: Sam Landy Gilbert Registered Well Driller
3115

Business Name and Complete Mailing Address: Rte 2 Randolph Wi 53956

Well Construction Report For WISCONSIN UNIQUE WELL NUMBER AB317

State of Wisconsin
Department of Natural Resources
Private Water Supply — WS/2
Box 7921
Madison, WI 53707

SEP 13 1989

Property Owner: DENNIS JONES Telephone Number: (608) 249-3383
Mailing Address: 5003 FELLAND RD.
City: MADISON State: WIS. Zip Code: 53704
County: DANE 13 County Well Location Permit No.: W3051 Well Completion Date: 08/18/89 (M M D D Y Y)

Well Constructor (Business Name): LOREN SCHELHAMER License #: 366
Address: 2987 BURKE RD
City: SUN PRAIRIE State: WIS. Zip Code: 53590

1. Location (Please type or print using a black pen.)
☒ Town ☐ City ☐ Village of BURKE
Fire # (if available)
Grid or Street Address or Road Name and Number (if available): BURKE RD.
Subdivision Name: Lot #: Block #:
Gov't Lot # ____ or S-W¼ of S-E ¼ of Section 23 ; T 8 N; R 10 ☒ E ☐ W

2. Mark well location in correct 40-acre parcel of section.
N / W / E / S — X

3. Well Type
☒ New ☐ Replacement ☐ Reconstruction/Rehabilitation
of well constructed in 19 89
Reason for new, reconstructed, replaced, or rehabilitated well? HOME
☒ Drilled ☐ Driven Point ☐ Jetted ☐ Other

4. Well serves 1 # of homes and/or _____ (ex: barn, restaurant, church, school, industry, etc.)
High Capacity Well? ☐ Yes ☒ No
High Capacity Property? ☐ Yes ☒ No

5. Well Located on Highest Point of Property, Consistent with the General Layout and Surroundings? ☒ Yes ☐ No
Well Located in Floodplain? ☐ Yes ☒ No
Distance In Feet From Well To Nearest:
1200 1. Landfill
14 2. Building Overhang
60 3. Septic or Holding Tank
100 4. Sewage Absorption Unit
— 5. Nonconforming Pit
— 6. Buried Home Heating Oil Tank
— 7. Buried Petroleum Tank
— 8. Shoreline/Swimming Pool
10' 9. Downspout/Yard Hydrant
— 10. Privy
14 11. Foundation Drain to Clearwater
— 12. Foundation Drain to Sewer
— 13. Building Drain ☒ Cast Iron or Plastic ☐ Other
25' 14. Building Sewer ☐ Gravity ☒ Pressure ☐ Cast Iron or Plastic ☐ Other
— 15. Collector Sewer
— 16. Clearwater Sump
— 17. Wastewater Sump
— 18. Paved Animal Barn Pen
— 19. Animal Yard or Shelter
— 20. Silo — Type _____
— 21. Barn Gutter
— 22. Manure Pipe ☐ Gravity ☐ Pressure ☐ Cast Iron or Plastic ☐ Other
— 23. Other Manure Storage _____
Other NR 112 Waste Source
— 24. _____

6. Drillhole Dimensions

Dia. (in.)	From (ft.)	To (ft.)
10"	surface	42'
6"	42'	250'

Method of constructing upper enlarged drillhole. (If applicable ✓ more than one.)
☐ 1. Rotary — Mud Circulation
☐ 2. Rotary — Air
☐ 3. Rotary — Foam
☐ 4. Reverse Rotary
☒ 5. Cable-tool Bit 6" in. dia.
☒ 6. Temp. Outer Casing 10" in. dia.
Removed? ☒ Yes ☐ No
If no, explain _____
☐ 7. Other _____

7. Casing, Liner, Screen

Dia. (in.)	Material, Weight, Specification *Mfgr & Method of Assembly	From (ft.)	To (ft.)
6"	18.97# ASTM	surface	42'
	A-53 WELDED		

Dia. (in.)	screen type and material	From	To

8. [redacted] nt or Other Sealing Material

Method	Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
[redacted]	CEMENT			
	WELL CUTTINGS → PORTLAND CEMENT	surface	10'	
		10'	42'	12

9. Geology

	Type, Caving/Noncaving, Color, Hardness, Etc.	From (ft.)	To (ft.)
SG	SAND + GRAVEL	surface	10'
L	LIME ROCK	10'	250'

10. Static Water Level
70 ft. below ground surface

11. Pump Test
Pumping Level 75 ft. below surface
Pumping at 12 GPM for 18 hours

12. Well Is:
20 in. ☒ Above ☐ Below Grade
Developed? ☒ Yes ☐ No
Disinfected? ☒ Yes ☐ No
Capped? ☒ Yes ☐ No

13. Were all unused, noncomplying, or unsafe wells properly filled with sealant? ☐ Yes ☐ No If no, explain _____

14. Signature of Well Constructor: Loren Schelhamer LS Date Signed: 9-1-89
Signature of Drill Rig Operator: Dennis R. Jones DRJ Date Signed: 9/1/89

Make additional comments on reverse side about geology.

DN 2116

DNR/WGNHS ORIGINAL

WELL CONSTRUCTION REPORT Form 3300-77A Rev. 8-87

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

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

WELL CONSTRUCTION REPORT
Form 3300-15 Rev. 8-80

RECEIVED-DNR
DEC 30 1987
WATER SUPPLY

1. COUNTY Dane

CHECK (✓) ONE: ☒ Town ☐ Village ☐ City — Name: Burke

2. LOCATION ¼ Section or Gov't. Lot: SE, SE | Section: 23 | Township: 8N. | Range: 10E. ✓

OR – Grid or Street No. | Street or Road Name: Reiner Road

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

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Daniel Jones

ADDRESS: 5337 Reiner Road

POST OFFICE: Madison, Wisconsin | ZIP CODE: 53704

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

Building	Sanitary Bldg. Drain		Sanitary Bldg. Sewer		Floor Drain Connected To:		Storm Bldg. Drain		Storm Bldg. Sewer	
	C.I.	Other	C.I.	Other	C.I. Sewer	Other Sewer	C.I.	Other	C.I.	Other
74'										

Street Sewer		Other Sewers		Foundation Drain Connected to:				Sewage Sump		Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit	Manure Hopper or Retention or Pnuematic Tank
San.	Storm	C.I.	Other	Sewer		Sewage Sump		C.I.	Other					
				Clearwater Dr.		Clearwater Sump					65'		Seepage Pit Seepage Bed 53' Seepage Trench	

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

Temporary Manure Stack or Platform	Watertight Liquid Manure Tank or Basin	Manure Pressure Pipe	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Manure Storage Basin Concrete Floor Only Concrete Floor and Partial Concrete Walls	Other (Describe)
			108'			Landfill Variance Received

5. Well is intended to supply water for: Shop

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8 3/4"	Surface	71'			
6"	71'	158'			

7. CASING, LINER, CURBING AND SCREEN
Material, Weight, Specification

Dia. (in.)	Mfg. & Method of Assembly	From (ft.)	To (ft.)
6"	New, Black Steel	Surface	71'
	18.97 lbs. per ft.		
	1780 P.S.I. ASTM-A 53 Gr. B		
	P.E. Venezuela		

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Mud & Cuttings	Surface	6'
Cement	6'	71'

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay Loam	Surface	4'
Clay	4'	9'
Gravel	9'	28'
Clay & Gravel	28'	45'
Sandstone	45'	94'
Limestone	94'	114'
Sandstone	114'	158'

Well Const. Complies with variance J.K.H.

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

11. MISCELLANEOUS DATA

Yield Test: 3 Hrs. at 15 GPM

Depth from surface to normal water level 35 Ft.

Depth of water level when pumping 42 Ft. Stabilized ☒ Yes ☐ No

Well construction completed on November 11, 19 87

Well is terminated 12 inches ☒ above ☐ below final grade

Well disinfected upon completion ☒ Yes ☐ No

Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Wisconsin State Lab.of Hygiene, Madison laboratory on Npvember 12, 19 87

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: Larry J. Slager
Larry J. Slager
Registered Well Driller

Business Name and Complete Mailing Address:
Zoellner Central WEll Drilling
P.O. Box 405, Brandon, Wisconsin 53919

DN 2117

State of Wisconsin
Department of Natural Resources
Private Water Supply
Box 7921
Madison, Wisconsin 53707

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

WELL CONSTRUCTION REPORT
Form 3300–15 3-87

RECEIVED-DNR
DEC 30 1987
WATER SUPPLY

1. COUNTY: Dane
CHECK (✓) ONE: ☒ Town ☐ Village ☐ City
Name: Burke

2. LOCATION
¼ Section or Gov't. Lot: SE, SE,
Section: 23
Township: 8N.
Range: 10E.
OR – Grid or Street No.:
Street or Road Name: Reiner Road
AND – If available subdivision name, lot & block No.:

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE
Daniel Jones
ADDRESS: 5337 Reiner Road
POST OFFICE: Madison, Wisconsin
ZIP CODE: 53704

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

Building	Sanitary Bldg. Drain		Sanitary Bldg. Sewer		Floor Drain Connected To:		Storm Bldg. Drain		Storm Bldg. Sewer	
	C.I.	Other	C.I.	Other	C.I. Sewer	Other Sewer	C.I.	Other	C.I.	Other
90'										

Street Sewer		Other Sewers		Foundation Drain Connected to:		Sewage Sump		Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit	Manure Hopper or Retention or Pnuematic Tank
San.	Storm	C.I.	Other	Sewer	Sewage Sump	C.I.	Other				Seepage Pit	
				Clearwater Dr.	Clearwater Sump				103'		Seepage Bed 131'	
											Seepage Trench	

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

Temporary Manure Stack or Platform	Watertight Liquid Manure Tank or Basin	Manure Pressure Pipe	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Manure Storage Basin	Other (Describe)
					Concrete Floor Only	Landfill
					Concrete Floor and Partial Concrete Walls	Variance Received

5. Well is intended to supply water for: House

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
3 3/4"	Surface	74'			
6"	74'	138'			

7. CASING, LINER, CURBING AND SCREEN
Material, Weight, Specification

Dia. (in.)	Mfg. & Method of Assembly	From (ft.)	To (ft.)
6"	New, Black Steel	Surface	74'
	18.97 lbs.per ft.		
	1780 P.S.I. ASTM-A 53 Gr.B		
	P.E. Venezuela		

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Mud & Cuttings	Surface	6'
Cement	6'	74'

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay Loam	Surface	4'
Clay	4'	16'
Gravel	16'	28'
Clay & Gravel	28'	40'
Sandstone	40'	92'
Limestone	92'	110'
Sandstone	110'	138'
Well not complete with variance 9.RM.		

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 November 11, 19 87

11. MISCELLANEOUS DATA
Yield Test: 3 Hrs. at 15 GPM
Depth from surface to normal water level 30 Ft.
Depth of water level when pumping 38 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 12 inches ☒ above ☐ below final grade
Well disinfected upon completion ☒ Yes ☐ No
Well sealed watertight upon completion ☒ Yes ☐ No

Water sample sent to Wisconsin State Lab.of Hygiene, Madison laboratory on November 12, 19 87

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.
plot

Signature: Larry J. Slager
Larry J. Slager
Registered Well Driller

Business Name and Complete Mailing Address
Zoellner Central WEll Drilling
P.O.Box 405,Brandon,Wisconsin 53919

2118

State of Wisconsin
Department of Natural Resources
Private Water Supply
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. 2-79

JUN 3 1985

1. COUNTY: Dane

CHECK (✓) ONE: ☒ Town ☐ Village ☐ City Name: Burke

2. LOCATION: ¼ Section or Gov't. Lot: SE¼-NE¼ | Section: 23 | Township: 8N | Range: 10E

OR – Grid or Street No. | Street or Road Name:

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

3. NAME ☒ OWNER ☐ AGENT AT TIME OF DRILLING CHECK (✓) ONE: Daniel K. Jones d/b/a Burke Truck & Equip Co.

ADDRESS: 5337 Reiner Road

POST OFFICE: Madison, WI | ZIP CODE: 53704

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

Building	Sanitary Bldg. Drain		Sanitary Bldg. Sewer		Floor Drain Connected To:		Storm Bldg. Drain		Storm Bldg. Sewer	
	C.I.	Other	C.I.	Other	C.I. Sewer	Other Sewer	C.I.	Other	C.I.	Other
---										

Street Sewer		Other Sewers		Foundation Drain Connected to:				Sewage Sump		Clearwater Sump	Septic Tank	Holding Tank	Sewage Absorption Unit	Manure Hopper or Retention or Pneumatic Tank
San.	Storm	C.I.	Other	Sewer		Sewage Sump		C.I.	Other		---		Seepage Pit	
				Clearwater Dr.		Clearwater Sump							Seepage Bed	
													Seepage Trench	No Field

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	Earthen Manure Basin
		Well										
		Pump										
		Tank										

Temporary Manure Stack or Platform	Watertight Liquid Manure Tank or Basin	Manure Pressure Pipe	Subsurface Gasoline or Oil Tank	Waste Pond or Land Disposal Unit (Specify Type)	Manure Storage Basin Concrete Floor Only Concrete Floor and Partial Concrete Walls	Other (Describe)

5. Well is intended to supply water for: Residence

6. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	Surface	63	6	63	156

7. CASING, LINER, CURBING AND SCREEN
Material, Weight, Specification

Dia. (in.)	Mfg. & Method of Assembly	From (ft.)	To (ft.)
6	Seideman PE ASTM	Surface	
	A-120 (LTV) 18.97#		63
	per foot welded		

8. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Drilling Mud	Surface	63

9. FORMATIONS

Kind	From (ft.)	To (ft.)
Top Soil	Surface	1
Sand, Gravel & Boulders	1	50
Clay, Gravel	50	60
Gravel	60	62
Sandstone	62	70
Sandstone & Red Shale	70	80
Sandstone (some streaks		
of shale)	80	156

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 5/6 19 85

11. MISCELLANEOUS DATA

Yield Test: 2 Hrs. at 25 GPM

Depth from surface to normal water level 50 Ft.

Depth of water level when pumping 60 Ft. Stabilized ☒ Yes ☐ No

Well is terminated 12 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 5/7 19 85

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: William J Leeber III Registered Well Driller

Business Name and Complete Mailing Address: Four Lakes Well Drilling Co. 4918 Ver[illegible] Road Madison, WI 53711

2119

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

T8N R10E

1. County Dane (S½ S½, Section 23) Town ☑ Burke Village ☐ City ☐ Check one and give name 810-10E

2. Location Gilman & Droster Sub., Burke Station, Lot 1 & Part of Lot 2
Name of street and number of premise or Section, Town and Range numbers

3. Owner ☑ or Agent ☐ Elmer F. Busse
Name of individual, partnership or firm

4. Mail Address 2106 Rusk St., Madison, Wis.
Complete address required

5. From well ~~to nearest Building~~ Well is in basement ft; sewer ____ ft; drain ____ ft; septic tank ____ ft; dry well or filter bed 125 ft; abandoned well ____ ft.

6. Well is intended to supply water for: Factory, Dog Food

RECEIVED APR 26 1950 WISCONSIN CONSERVATION DEPARTMENT

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8	0	45			
6	45	88			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	Standard Steel Pipe	0	45

9. GROUT:

Kind	From (ft.)	To (ft.)
Slurry Fill cement	0	8
	8	45

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Gravel	0	24
Sandstone	24	45
Limestone	45	88

Construction of the well was completed on: 4/15 19 50

The well is terminated 24 inches ☑ above, ~~below ☐ the permanent ground surface.~~ basement floor

Was the well disinfected upon completion? Yes ✓ No ____

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

11. MISCELLANEOUS DATA:

Yield test: 24 Hrs. at 7 GPM.

Depth from surface to water-level: 25 ft.

Water-level when pumping: 25 ft.

Water sample was sent to the state laboratory at: Madison (City) on 4/21 1950

Signature Four Lakes Well Drilling Co. 146 S. Marquette St. Madison, Wis.
Harold Kearney
Registered Well Driller — Complete Mail Address

Please do not write in space below

Rec'd APR 21 1950 No. 4161

Ans'd ____

Interpretation Safe

	10 ml	10 ml	10 ml	10 ml	10 ml
Gas—24 hrs.	0				
48 hrs.	0	0	0	0	0
Confirm					
B. Coli	0	0	0	0	<2

Examiner ____

all measurements from basement floor

11641

JUN 29 1944

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

1. County Dane (Town / ~~Village~~ / ~~City~~) Burke

2. Location SW-SE¼ Sec. 23 T 8N. R 10E

3. Owner ~~or Agent~~ W. J. Lieu

4. Address R. F. D. # 1.

5. Sewer — ft; drain — ft; septic tank — ft; disposal ~~well~~ Bury ft — ft; barnyard — ft; abandoned well — ft; other — ft. Explain on obverse side.

DRILLHOLE OR EXCAVATION

Dia. (in.)	From (ft.)	To (ft.)
6	0	85

CASING PIPE, LINER PIPE OR CURBING

Dia. (in.)	Kind	From (ft.)	To (ft.)
5	Stand. weight	0	54

FORMATIONS

Kind	From (ft.)	To (ft.)
Sand & gravel	0	40
Sandstone.	40	85

GROUT

Kind	From (ft.)	To (ft.)
None.		

Yield test: 1/4 Hrs. at 15 GPM.
To static water-level 20 ft.
Drawdown - - - - - - None ft.
Water sample was sent to the State Laboratory at Madison
Construction of the well was completed on March 3 1944
The well is terminated 12 inches (above) (~~below~~) the permanent grade.
Was the well disinfected upon completion? - - - - Yes ✓ No ___
Was the well sealed watertight upon completion? - - Yes ✓ No ___

This report was prepared by or under the supervision of:

Henry Lambrecht
Registered Well Driller

Permit No. 201 Date 6/25 1944

(over)

11643

JUL 13 1944

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

1. County Dane (Town / ~~Village~~ / City) Burke.
2. Location SW – SE ¼ Sec. 23 T 8 N R 10 E
3. Owner or Agent Mr. Clock.
4. Address Burke
5. Sewer 60 ft; drain — ft; septic tank — ft; disposal privy unit 60 ft; barnyard — ft; abandoned well — ft; other — ft. Explain on obverse side.

DRILLHOLE OR EXCAVATION

Dia. (in.)	From (ft.)	To (ft.)
5	0	85

CASING PIPE, LINER PIPE OR CURBING

Dia. (in.)	Kind	From (ft.)	To (ft.)
5	Wrought steel	0	57

FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	0	18
Sand & Gravel	18	32
Sandstone	32	85

GROUT

Kind	From (ft.)	To (ft.)

Yield test: 8 Hrs. at 15 GPM.
To static water-level 18 ft.
Drawdown - - - - - - 0 ft.
Water sample was sent to the State Laboratory at Madison
Construction of the well was completed on March 22 1944
The well is terminated 16 inches (above)(~~below~~) the permanent grade.
Was the well disinfected upon completion? - - - - Yes ✓ No ___
Was the well sealed watertight upon completion? - - Yes ✓ No ___
This report was prepared by or under the supervision of:

Henry Arnpriester
Registered Well Driller

Permit No. 201 Date 7/11 1944

(over)

11644

WELL CONSTRUCTOR'S REPORT — **WISCONSIN STATE BOARD OF HEALTH** — Wel 6

1. COUNTY: Dane — CHECK ONE: ☒ Town ☐ Village ☐ City — NAME: Burke

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.)
Sec. 23 SE¼ SE¼ T8N - R10E

3. OWNER AT TIME OF DRILLING
Oblee Hoyer

4. OWNER'S COMPLETE MAIL ADDRESS
Nelson Rd

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
8'								

CLEAR WATER DRAIN C. I.	CLEAR WATER DRAIN TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		55			30			✓	

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

6. Well is intended to supply water for: Private Home

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	32			
6	32	146			

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Std steel Casing 19.45 #per ft	Surface	51

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Drill Cutting	Surface	12
Neat Cement	12	32

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay & stone	Surface	7
Sand & Clay-Boulders	7	29
Sand	29	40
Rock	40	146

11. MISCELLANEOUS DATA

Yield test: 24 Hrs. at 14 GPM

Depth from surface to normal water level: 41 ft.

Depth to water level when pumping: 41 ft.

Well construction completed on March 4 1967

Well is terminated 10 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: March 2 1967

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: Wm. O. Delmes Registered Well Driller

COMPLETE MAIL ADDRESS: 811 Gary St. Madison

Please do not write in space below

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

11645

WELL CONSTRUCTOR'S REPORT

Wel–6

JAN 6 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: Dane

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

2. LOCATION (Number and Street or ¼ section, section, township and range. Also give subdivision name, lot and block numbers when available.)
SE¼ of SE¼ of Sec. 23 T. 8-N R. 10-E

3. OWNER AT TIME OF DRILLING: Dan Jones.

4. OWNER'S COMPLETE MAIL ADDRESS: 5337 Reiner Rd. Sun Prairie, Wis.

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
unimproved lot								

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

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

6. Well is intended to supply water for: Future Home

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	20	6	63	137
8	20	63			

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Std Blk Pipe	Surface	63
	18.97 .280 wall		
	weld jts		
	Rotary method		
	New Steel	Plain End	

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Bentonite & Drill Cuttings	Surface	63

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	20
Sand & Gravel	20	60
Sand Rock	60	137

Well construction completed on: Sept 6 1969

11. MISCELLANEOUS DATA

Yield test: 3 Hrs. at 20 GPM

Depth from surface to normal water level: 35 ft.

Depth to water level when pumping: 95 ft.

Well is terminated 10 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: Sept 8 1969

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: Sam Vander Stelin, Jr. Registered Well Driller

COMPLETE MAIL ADDRESS: R#2 Randolph Wis, 53956

Please do not write in space below

COLIFORM TEST RESULT	GAS — 24 HRS.	GAS — 48 HRS.	CONFIRMED	REMARKS
11644				874076 plot

REV. 11–68

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH

See Instructions on Reverse Side

RECEIVED
FEB 23 1949
BUREAU SAN. ENG.

1. County Dane { Town ☒ / Village ☐ / City ☐ } Burke
Check one and give name

2. Location NW ¼ of Section 23, T. 8 N., R. 10 E. SW-10E
Name of street and number of premise or Sec. Tn. and R. numbers

3. Owner ☒ or Agent ☐ J. A. "Brother" Gallagher
Name of individual, partnership or firm

4. Mail Address 629 W. Olin Ave., Madison 5, Wis.
Complete address required

5. From well to nearest: Building 6 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: Drinking water for employees at gravel pit

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)
6	0	75

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind	From (ft.)	To (ft.)
6	Wrought steel	0	56

9. GROUT:

Kind	From (ft.)	To (ft.)

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Sand and gravel	42	42
Soft sandstone	14	56
Firm sandstone	19	75

6" forged steel drive shoe used. Myers ½ horsepower jet pump furnished and installed in five foot pit.

11. MISCELLANEOUS DATA:

Yield test: 4 Hrs. at 15 GPM.

Depth from surface to water: 50 ft.

Water-level when pumping: 57 ft.

Water sample sent to laboratory at Madison on ____ 19____

Construction of the well was completed on August 30, 1948

The well is terminated 54 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 Henry Armbrucht
Registered Well Driller

HENRY ARMBRICHT

844 E. Dayton St.
Complete Mail Address

Madison 3, Wis.

DN
11647

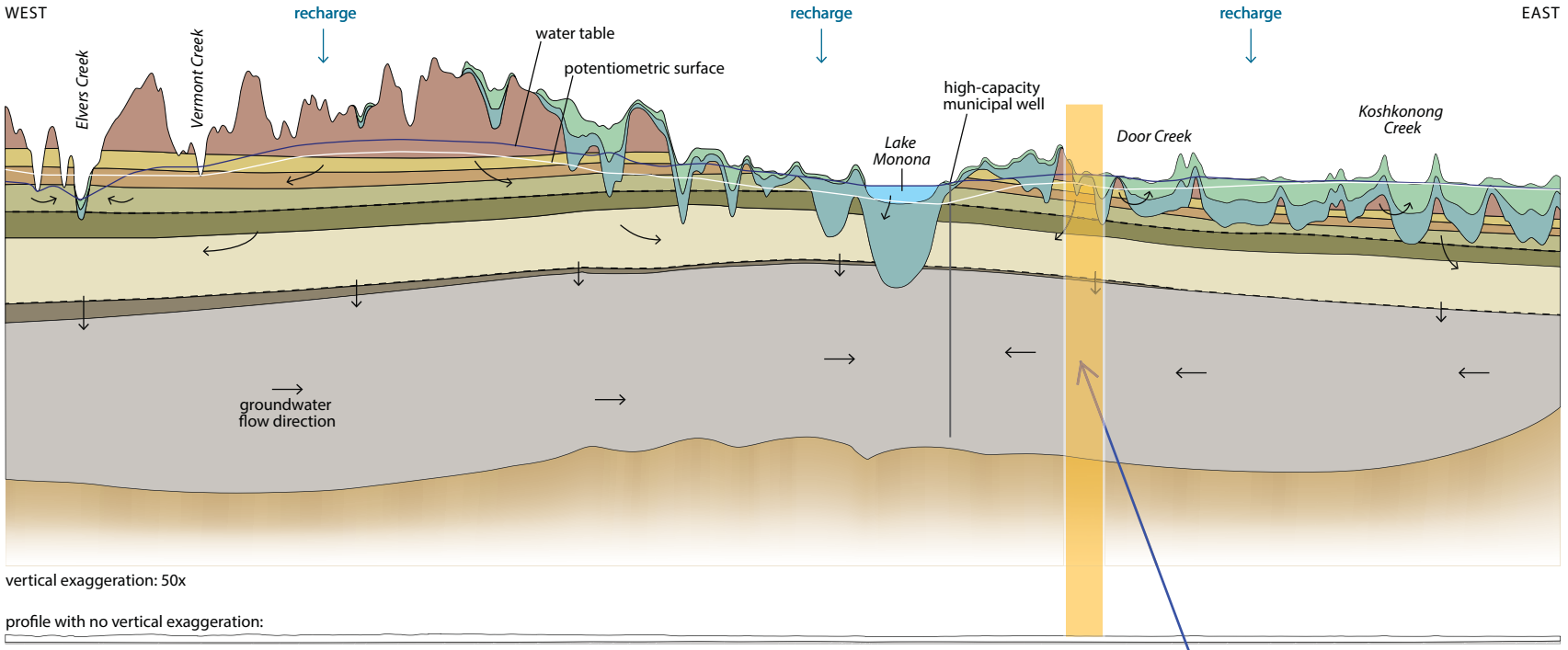
SEE OTHER SIDE

Attachment 3

Geological Cross Section

(Figure 5 of the 2016 WGNHS Dane County Groundwater Model referenced above)

Figure 5. Conceptual model of the groundwater system shown with and without vertical exaggeration.



Model layer, name

1 Unlithified I[a]
2 Unlithified II[b]
3 Upper bedrock
4 Jordan
5 St. Lawrence
6 Tunnel City—upper
7 Tunnel City—*fracture layer*
8 Tunnel City—lower
9 Wonewoc
10 Wonewoc—*fracture layer*
11 Eau Claire
12 Mount Simon
Precambrian

[a] *Unlithified I = fine-grained lake deposits within glacial Lake Yahara area; elsewhere, till and meltwater stream deposits*

[b] *Unlithified II = till and meltwater stream deposits*