

APPENDIX D

RESIDENTIAL WELL LOGS - WEST SIDE OF GILFILLAN LAKE

Minnesota Unique Well No. **664406**

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 12/20/2001
 Update Date 03/11/2005
 Received Date

Well Name W. F. BAUER							Well Depth	Depth Completed	Date Well Completed	
Township	Range	Dir	Section	Subsections	Field Located	Elevation	160 ft.	160 ft.	08/22/2001	
30	22	W	18	DAB		948 ft.	Drilling Method Non-specified Rotary			
Well Address 8 SKI LA NORTH OAKS MN							Drilling Fluid Bentonite	Well Hydrofractured? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No From Ft. to Ft.		
Geological Material							Use	Domestic		
			Color	Hardness	From	To	Casing Type Steel (black or low carbon) Joint Welded Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No No Above/Below ft.			
TOP SOIL					0	2	Casing Diameter			
SAND & GRAVEL					2	47	Weight			
CLAY					47	68	Hole Diameter			
SANDROCK					68	160	4 in. to 126 ft. 10.87 lbs./ft. 8 in. to 126 ft. 7 in. to 160 ft.			
Open Hole							from 126 ft. to 160 ft.			
Screen NO							Make	Type		
Diameter							Slot/Gauze	Length	Set Between	
Static Water Level							85 ft. from Land surface Date Measured 08/22/2001			
PUMPING LEVEL (below land surface)							120 ft. after 1 hrs. pumping 15 g.p.m.			
Well Head Completion							Pileless adapter manufacturer BAKER Model SNAPPY			
Casing Protection							<input checked="" type="checkbox"/> 12 in. above grade			
At-grade (Environmental Wells and Borings ONLY)							<input type="checkbox"/>			
Grouting Information							Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Grout Material: Neat Cement							from 0 to 126 ft. 30 bags			
Nearest Known Source of Contamination							75 feet S direction Septic tank/drain field type			
Well disinfected upon completion?							<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Pump							<input type="checkbox"/> Not Installed Date Installed			
Manufacturer's name RED JACKET							Model number 100 SEW1 HP 1 Volts 230			
Length of drop Pipe 120 ft.							Capacity 10 g.p.m. Type Submersible Material			
Abandoned Wells							Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Variance							Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Well Contractor Certification							McCullough & Sons 82054 License Business Name Lic. Or Reg. No.			
First Bedrock							Aquifer			
Last Strat							Depth to Bedrock ft.			
County Well Index Online Report							664406		Printed 5/3/2005 HE-01205-07	

NO REMARKS

Minnesota Unique Well No.

691729

County Ramsey
 Quad
 Quad ID

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date
 Update Date 09/29/2004
 Received Date 10/30/2003

Well Name PALEN, GREG Township 30 Range 22 Dir W Section 17 Subsections CCC Field Located Elevation ft.							Well Depth	Depth Completed	Date Well Completed	
							200 ft.	200 ft.	06/17/2003	
Well Address 10 SHORE RD W NORTH OAKS MN 55127							Drilling Method Non-specified Rotary			
Geological Material Color Hardness From To SAND/GRAVEL TAN SOFT 0 30 CLAY/GRAVEL GRAY MEDIUM 30 60 SAND/GRAVEL BROWN MEDIUM 60 90 CLAY RED MEDIUM 90 100 SANDROCK WHITE SOFT 100 165 SANDROCK GRAY HARD 165 200							Drilling Fluid Bentonite		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.	
							Use Domestic			
							Casing Type Steel (black or low carbon) Joint Threaded Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No No Above/Below ft.			
							Casing Diameter	Weight	Hole Diameter	
							4 in. to 168 ft.	lbs./ft.	9.25 in. to 168 ft. 4 in. to 200 ft.	
							Open Hole from 168 ft. to 200 ft.			
							Screen NO	Make	Type	
							Diameter	Slot/Gauze	Length	Set Between
							Static Water Level 35 ft. from Land surface Date Measured 06/17/2003			
							PUMPING LEVEL (below land surface) 50 ft. after 1 hrs. pumping 30 g.p.m.			
							Well Head Completion Pitless adapter manufacturer SNAPPY Model <input type="checkbox"/> Casing Protection <input checked="" type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			
REMARKS OLD WELL LOCATED UNDER HOUSE. USED ONLY FOR IRRIGATION PURPOSES							Grouting Information Well Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Grout Material: CONCRETE from 5 to 168 ft. 40 bags			
							Nearest Known Source of Contamination 65 feet E direction Septic tank/drain field type			
							Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
							Pump <input type="checkbox"/> Not installed Date Installed 06/17/2003 Manufacturer's name AERMOTOR Model number T12-100 HP 1 Volts 230 Length of drop Pipe 66 ft. Capacity 15 g.p.m. Type Submersible Material			
First Bedrock Aquifer Last Strat Depth to Bedrock ft.							Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
							Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
							Well Contractor Certification Schroeffer Well 13119 License Business Name Lic. Or Reg. No.			
County Well Index Online Report							691729		Printed 5/3/2005 HE-01205-07	

Minnesota Unique Well No.

691729

County Ramsey
 Quad
 Quad ID

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date
 Update Date 09/29/2004
 Received Date 10/30/2003

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
PALEN, GREG	30	22	W	17	CCC	200 ft.	200 ft.	06/17/2003	13119	Schroepfer Well
Elevation	ft.	Method	Aquifer	Depth to Bedrock	ft.	Open Hole	168 - 200 ft.	Static Water Level	35 ft.	

Field Located	Location Method	Universal Transverse Mercator (UTM) - NAD83 - Zone 15 -
Program	Input Source	Meters
Unique No. Verified	Input Date	UTM Easting (X)
Geologic Interpretation	Agency (interpretation)	UTM Northing (Y)
		Interpretation Method

Geological Material	Color	Hardness	DEPTH (ft.)		Thickness	ELEVATION						
			From	To		From	To	Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology	
SAND/GRAVEL	TAN	SOFT	0	30								
CLAY/GRAVEL	GRAY	MEDIUM	30	60								
SAND/GRAVEL	BROWN	MEDIUM	60	90								
CLAY	RED	MEDIUM	90	100								
SANDROCK	WHITE	SOFT	100	165								
SANDROCK	GRAY	HARD	165	200								

Minnesota Unique Well No.

413598

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/30/1988
 Update Date 12/10/2003
 Received Date

Well Name JAMES UNDERCOFLER				Well Depth 200 ft.		Depth Completed 200 ft.		Date Well Completed 08/07/1987	
Township 30	Range 22	Dir W	Section 17	Subsections CBCBCA	Field Located Elevation 925 ft.		Drilling Method --		
Well Address 2 THOMPSON LA NORTH OAKS MN				Drilling Fluid --		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.			
Geological Material		Color	Hardness	From	To	Use Domestic			
CLAY		LT. BRN		0	90				
SAND ROCK		WHITE	SOFT	90	120				
SAND ROCK + SHALE		WHT/GRY	SOFT	120	170				
SAND ROCK + SHALE		WHT/GRY	HARD	170	200				
Casing Type				Joint No Information	Drive Shoe?	<input type="checkbox"/> Yes <input type="checkbox"/> No		Above/Below 0 ft.	
Casing Diameter		Weight		Hole Diameter					
4 in. to 170 ft.		lbs./ft.							
Open Hole				from 170 ft. to 200 ft.					
Screen NO		Make	Type						
Diameter		Slot/Gauze	Length	Set Between					
Static Water Level				40 ft. from Land surface		Date Measured 08/07/1987			
PUMPING LEVEL (below land surface)				45 ft. after hrs. pumping 25 g.p.m.					
Well Head Completion				Pitless adapter manufacturer		Model			
<input type="checkbox"/> Casing Protection		<input type="checkbox"/> 12 in. above grade							
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)									
Grouting Information				Well Grouted?		<input type="checkbox"/> Yes <input type="checkbox"/> No			
Nearest Known Source of Contamination				100 feet direction		Septic tank/drain field type			
Well disinfected upon completion?				<input type="checkbox"/> Yes <input type="checkbox"/> No					
Pump <input checked="" type="checkbox"/> Not Installed				Date Installed					
Manufacturer's name MEYERS		Model number J719P		HP 0.75		Volts 220			
Length of drop Pipe 60 ft.		Capacity 18 g.p.m.		Type Submersible		Material			
Abandoned Wells				Does property have any not in use and not sealed well(s)?		<input type="checkbox"/> Yes <input type="checkbox"/> No			
Variance				Was a variance granted from the MDH for this well?		<input type="checkbox"/> Yes <input type="checkbox"/> No			
Well Contractor Certification				Migler Well Co.		62555			
License Business Name						Lic. Or Reg. No.			
First Bedrock St. Peter				Aquifer St. Peter					
Last Strat St. Peter		Depth to Bedrock 90 ft.							
County Well Index Online Report				413598		Printed 5/3/2005 HE-01205-07			

NO REMARKS

Minnesota Unique Well No.

413598

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/30/1988
 Update Date 12/10/2003
 Received Date

Well Name JAMES UNDERCOFLER Township 30 Range 22 Dir W Section 17 Subsections CBCBCA Depth Drilled 200 ft. Depth Completed 200 ft. Date Completed 08/07/1987 Lic/Reg. No. 62555 Driller Name Miggler Well Co.

Elevation 925 ft. Method 7.5 minute topographic map (+/- 5 feet) Aquifer St.Peter Depth to Bedrock 90 ft. Open Hole 170 - 200 ft. Static Water Level 40 ft.

Field Located Location Method Digitized - scale 1:24,000 or larger Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters
 Program COUNTY WELL INDEX Input Source Minnesota Geological Survey UTM Easting (X) 493177
 Unique No. Verified Address verification Input Date UTM Northing (Y) 4992321
 Geologic Interpretation Agency (interpretation) Interpretation Method

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From				
CLAY	LT. BRN		0	90	90	925	835	Till-brown	Clay	
SAND ROCK	WHITE	SOFT	90	120	30	835	805	St.Peter	Sandstone	
SAND ROCK + SHALE	WHT/GRY	SOFT	120	170	50	805	755	St.Peter	Sandstone	Shale
SAND ROCK + SHALE	WHT/GRY	HARD	170	200	30	755	725	St.Peter	Sandstone	Shale

County Well Index Online Well Stratigraphy Report

413598

Printed 5/3/2005

Minnesota Unique Well No.

500485

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 06/13/1991
 Update Date 03/11/2005
 Received Date

Well Name WOLTERS, PAUL Township Range Dir Section Subsections Field Located MGS 30 22 W 17 CCBACD Elevation 915 ft.							Well Depth	Depth Completed	Date Well Completed
							200 ft.	200 ft.	08/30/1989
Drilling Method Non-specified Rotary									
Well Address 6 WEST SHORE RD NORTH OAKS MN 55110				Drilling Fluid Bentonite		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.			
Use Domestic									
Geological Material		Color	Hardness	From	To	Casing Type Steel (black or low carbon) Joint Threaded Drive Shoe? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No No Above/Below 1 ft.			
SAND & GRAVEL				0	30				
CLAY & GRAVEL				30	60				
SAND & GRAVEL				60	89				
CLAY & GRAVEL				89	100				
SANDROCK		WHITE	SOFT	100	165				
SANDROCK		GRAY		165	200				
Casing Diameter			Weight		Hole Diameter				
4 in. to 170 ft.			11 lbs./ft.		7 in. to 170 ft. 4 in. to 200 ft.				
Open Hole from 170 ft. to 200 ft.									
Screen NO Make Type									
Diameter		Slot/Gauze		Length		Set Between			
Static Water Level 60 ft. from Land surface Date Measured 08/30/1989									
PUMPING LEVEL (below land surface) 100 ft. after 3 hrs. pumping g.p.m.									
Well Head Completion Pileless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)									
Grouting Information Well Grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No									
Nearest Known Source of Contamination 95 feet N direction Septic tank/drain field type Well disinfected upon completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model number HP Volts Length of drop Pipe ft. Capacity g.p.m. Type Material									
Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No									
Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No									
Well Contractor Certification McCullough & Sons 82054 License Business Name Lic. Or Reg. No.									
First Bedrock St. Peter Last Strat St. Peter Aquifer St. Peter Depth to Bedrock 100 ft.						County Well Index Online Report			
						500485		Printed 5/3/2005 HE-01205-07	

NO REMARKS

Minnesota Unique Well No. 500485		County Quad Quad ID	Ramsey White Bear Lake West 119D	MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD Minnesota Statutes Chapter 1031	Entry Date Update Date Received Date	06/13/1991 03/11/2005
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Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
WOLTERS, PAUL	30	22	W	17	CCBACD	200 ft.	200 ft.	06/30/1989	82054	Mccullough & Sons
Elevation 915 ft. Method 7.5 minute topographic map (+/- 5 feet)		Aquifer St.Peter		Depth to Bedrock 100 ft.		Open Hole 170 - 200 ft.		Static Water Level 60 ft.		
Field Located	Minnesota Geological Survey	Location Method Digitized - scale 1:24,000 or larger		Input Source Minnesota Geological Survey		Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters				
Program	COUNTY WELL INDEX	Input Date		Agency (interpretation) Minnesota Geological Survey		UTM Easting (X) 493373				
Unique No. Verified	Address verification	Input Date		Agency (interpretation) Minnesota Geological Survey		UTM Northing (Y) 4991956				
Geologic Interpretation	Bruce Bloomgren	Input Date		Agency (interpretation) Minnesota Geological Survey		Interpretation Method Geologic study 1:24k to 1:100k				

Geological Material	Color	Hardness	DEPTH (ft.)			ELEVATION			Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From	To					
SAND & GRAVEL			0	30	30	915	885	Sand & larger	Sand	Gravel		
CLAY & GRAVEL			30	60	30	885	855	Pebbly sand/silt/clay	Clay	Gravel		
SAND & GRAVEL			60	89	29	855	826	Sand & larger	Sand	Gravel		
CLAY & GRAVEL			89	100	11	826	815	Pebbly sand/silt/clay	Clay	Gravel		
SANDROCK	WHITE SOFT		100	165	65	815	750	St.Peter	Sandstone			
SANDROCK	GRAY		165	200	35	750	715	St.Peter	Sandstone			

County Well Index Online Well Stratigraphy Report	500485	Printed 5/3/2005
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Minnesota Unique Well No.

407074

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 06/13/1991
 Update Date 12/10/2003
 Received Date

Well Name CRAM, BARCLAY M.					Well Depth	Depth Completed	Date Well Completed
Township	Range	Dir	Section	Subsections	Field Located	MGS	
30	22	W	17	BDCBCB	Elevation	930 ft.	230 ft. 230 ft. 08/02/1985
Well Address 38 OAKS RD E NORTH OAKS MN					Drilling Method --		
Geological Material					Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No	
					Color		
CLAY					Use	Domestic	
SAND					Casing Type	Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.	
CLAY					Casing Diameter	Weight	Hole Diameter
SANDROCK					4 in. to	185 ft.	lbs./ft.
SANDROCK					Open Hole from 185 ft. to 230 ft.		
					Screen NO	Make	Type
					Diameter	Slot/Gauze	Length Set Between
					Static Water Level		
					30 ft. from Land surface Date Measured 08/02/1985		
					PUMPING LEVEL (below land surface)		
					150 ft. after hrs. pumping 30 g.p.m.		
					Well Head Completion		
					Pitless adapter manufacturer Model		
					<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade		
					<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
REMARKS 38 E. OAKS RD.					Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Nearest Known Source of Contamination		
					200 feet S direction Septic tank/drain field type		
					Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Pump <input checked="" type="checkbox"/> Not Installed Date Installed		
					Manufacturer's name RED JACKET Model number 75UI-12BC HP 0.75 Volts 230		
					Length of drop Pipe 100 ft. Capacity g.p.m. Type Submersible Material		
					Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
					Well Contractor Certification		
					McCullough L. Well		82443
					License Business Name		Lic. Or Reg. No.
First Bedrock St.Peter					Aquifer St.Peter		
Last Strat St.Peter					Depth to Bedrock 120 ft.		
County Well Index Online Report					407074		Printed 5/3/2005 HE-01205-07

Minnesota Unique Well No. 407074	County	Ramsey	MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD <i>Minnesota Statutes Chapter 1031</i>	Entry Date	06/13/1991
	Quad	White Bear Lake West		Update Date	12/10/2003
	Quad ID	119D		Received Date	

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
CRAM, BARCLAY M.	30	22	W	17	BDCBCB	230 ft.	230 ft.	08/02/1985	82443	Mccullough L. Well

Elevation	930 ft.	Method	7.5 minute topographic map (+/- 5 feet)	Aquifer	St.Peter	Depth to Bedrock	120 ft.	Open Hole	185 - 230 ft.	Static Water Level	30 ft.
Field Located	Minnesota Geological Survey	Location Method	Digitized - scale 1:24,000 or larger				Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters				
Program	COUNTY WELL INDEX	Input Source	Minnesota Geological Survey				UTM Easting (X) 493660				
Unique No. Verified		Input Date					UTM Northing (Y) 4992602				
Geologic Interpretation		Agency (interpretation)					Interpretation Method				

Geological Material	Color	Hardness	DEPTH (ft.)			ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From	To				
CLAY			0	75	75	930	855	Till	Clay		
SAND			75	82	7	855	848	Sand	Sand		
CLAY			82	120	38	848	810	Till	Clay		
SANDROCK		SOFT	120	185	65	810	745	St.Peter	Sandstone		
SANDROCK		HARD	185	230	45	745	700	St.Peter	Sandstone		

Minnesota Unique Well No.

13916

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name WILLIAM BOLLENBACH JR.								Well Depth	Depth Completed	Date Well Completed
Township	Range	Dir	Section	Subsections	Field Located	MGS	250 ft.	250 ft.	05/00/1956	
30	22	W	17	CABBAA	Elevation	922 ft.	Drilling Method --			
Well Address 1 POPLAR LA NORTH OAKS MN								Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.	
Geological Material								Use	Domestic	
CLAY					Color	Hardness	From	To		
SANDY CLAY							0	62		
SANDROCK							62	138		
SANDROCK & SOAPSTONE							138	164		
SOAPSTONE							164	169		
SANDROCK							169	175		
SHAKOPEE							175	215		
							215	250		
Casing Type								Joint	No Information	Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.
Casing Diameter								Weight	Hole Diameter	
6 in. to 165 ft.								lbs./ft.		
Open Hole								from 165 ft. to 250 ft.		
Screen NO								Make	Type	
Diameter								Slot/Gauze	Length	Set Between
Static Water Level								39 ft. from Land surface Date Measured 05/00/1956		
PUMPING LEVEL (below land surface)								42 ft. after hrs. pumping 15 g.p.m.		
Well Head Completion								Pitless adapter manufacturer Model		
<input type="checkbox"/> Casing Protection								<input type="checkbox"/> 12 in. above grade		
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)										
Grouting Information								Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Nearest Known Source of Contamination								_feet _direction _type		
Well disinfected upon completion?								<input type="checkbox"/> Yes <input type="checkbox"/> No		
Pump <input checked="" type="checkbox"/> Not Installed								Date Installed		
Manufacturer's name AURORA								Model number ___ HP 1.5 Volts 220		
Length of drop Pipe 63 ft.								Capacity 27 g.p.m Type Submersible Material		
Abandoned Wells								Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Variance								Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Well Contractor Certification								Keys Well Co. 62012		
License Business Name								Lic. Or Reg. No.		
First Bedrock St.Peter								Aquifer Multiple		
Last Strat Prairie Du Chien Group								Depth to Bedrock 138 ft.		
County Well Index Online Report								13916		
								Printed 5/3/2005 HE-01205-07		

NO REMARKS

Minnesota Unique Well No.

13916

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name WILLIAM BOLLENBACH JR. Township 30 Range 22 Dir W Section 17 Subsections CABBAA Depth Drilled 250 ft. Depth Completed 250 ft. Date Completed 05/00/1956 Lic/Reg. No. 62012 Driller Name Keys Well Co.

Elevation 922 ft. Method 7.5 minute topographic map (+/- 5 feet) Aquifer Multiple Depth to Bedrock 138 ft. Open Hole 165 - 250 ft. Static Water Level 39 ft.

Field Located Minnesota Geological Survey Location Method Digitized - scale 1:24,000 or larger Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters
 Program COUNTY WELL INDEX Input Source Minnesota Geological Survey UTM Easting (X) 493658
 Unique No. Verified Input Date UTM Northing (Y) 4992537
 Geologic Interpretation Agency (interpretation) Interpretation Method

Geological Material	ColorHardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
		From	To	Thickness	From				
CLAY		0	62	62	922	860	Unknown deposit type	Clay	
SANDY CLAY		62	138	76	860	784	Unknown deposit type	Clay	
SANDROCK		138	164	26	784	758	St.Peter	Sandstone	
SANDROCK & SOAPSTONE		164	169	5	758	753	St.Peter	Sandstone	Siltstone
SOAPSTONE		169	175	6	753	747	St.Peter	Siltstone	Shale
SANDROCK		175	215	40	747	707	St.Peter	Sandstone	
SHAKOPEE		215	250	35	707	672	Prairie Du Chien Group	Dolomite	

County Well Index Online Well Stratigraphy Report

13916

Printed 5/3/2005

Minnesota Unique Well No.

13917

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

<p>Well Name</p> <p>Township Range Dir Section Subsections Field Located MGS 30 22 W 17 CBACAA Elevation 930 ft.</p> <p>Well Address 44 OAKS RD E MN</p> <p>Geological Material</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:10%;">Color</th> <th style="width:10%;">Hardness</th> <th style="width:10%;">From</th> <th style="width:10%;">To</th> </tr> </thead> <tbody> <tr> <td>CLAY</td> <td></td> <td></td> <td>0</td> <td>23</td> </tr> <tr> <td>SAND</td> <td></td> <td></td> <td>23</td> <td>52</td> </tr> <tr> <td>HARDPAN</td> <td></td> <td></td> <td>52</td> <td>65</td> </tr> <tr> <td>CLAY</td> <td></td> <td></td> <td>65</td> <td>90</td> </tr> <tr> <td>SAND & CLAY MIXED</td> <td></td> <td></td> <td>90</td> <td>130</td> </tr> <tr> <td>ST. PETER SANDSTONE</td> <td></td> <td>SOFT</td> <td>130</td> <td>186</td> </tr> <tr> <td>SHALY SANDSTONE</td> <td></td> <td>HARD</td> <td>186</td> <td>230</td> </tr> </tbody> </table>		Color	Hardness	From	To	CLAY			0	23	SAND			23	52	HARDPAN			52	65	CLAY			65	90	SAND & CLAY MIXED			90	130	ST. PETER SANDSTONE		SOFT	130	186	SHALY SANDSTONE		HARD	186	230	<p>Well Depth 230 ft. Depth Completed 230 ft. Date Well Completed 06/17/1966</p> <p>Drilling Method --</p> <p>Drilling Fluid -- Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.</p> <p>Use Domestic</p> <p>Casing Type Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;">Casing Diameter</th> <th style="width:20%;">Weight</th> <th style="width:40%;">Hole Diameter</th> </tr> </thead> <tbody> <tr> <td>4 in. to 186 ft.</td> <td>lbs./ft.</td> <td></td> </tr> </tbody> </table> <p>Open Hole from ft. to ft.</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:15%;">Screen</th> <th style="width:15%;">Make</th> <th style="width:15%;">Type</th> <th style="width:15%;">Diameter</th> <th style="width:15%;">Slot/Gauze</th> <th style="width:15%;">Length</th> <th style="width:15%;">Set Between</th> </tr> </thead> <tbody> <tr> <td> </td> </tr> </tbody> </table> <p>Static Water Level 72 ft. from Land surface Date Measured 06/17/1966</p> <p>PUMPING LEVEL (below land surface) 0 ft. after hrs. pumping 20 g.p.m.</p> <p>Well Head Completion Pitless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)</p> <p>Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Nearest Known Source of Contamination _feet _direction _type Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model number HP Volts Length of drop Pipe _ft. Capacity _g.p.m. Type Material</p> <p>Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Well Contractor Certification License Business Name Lic. Or Reg. No.</p>	Casing Diameter	Weight	Hole Diameter	4 in. to 186 ft.	lbs./ft.		Screen	Make	Type	Diameter	Slot/Gauze	Length	Set Between							
	Color	Hardness	From	To																																																									
CLAY			0	23																																																									
SAND			23	52																																																									
HARDPAN			52	65																																																									
CLAY			65	90																																																									
SAND & CLAY MIXED			90	130																																																									
ST. PETER SANDSTONE		SOFT	130	186																																																									
SHALY SANDSTONE		HARD	186	230																																																									
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Screen	Make	Type	Diameter	Slot/Gauze	Length	Set Between																																																							
<p>NO REMARKS</p>																																																													
<p>First Bedrock St.Peter Last Strat St.Peter</p> <p>Aquifer St.Peter Depth to Bedrock 130 ft.</p>																																																													
<p>County Well Index Online Report</p>	<p>13917</p>																																																												
	<p>Printed 5/3/2005 HE-01205-07</p>																																																												

Minnesota Unique Well No.

13917

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name			
	30	22	W	17	CBACAA	230 ft.	230 ft.	06/17/1966					
Elevation	930 ft.	Method	7.5 minute topographic map (+/- 5 feet)			Aquifer	St.Peter	Depth to Bedrock	130 ft.	Open Hole	- ft.	Static Water Level	72 ft.
Field Located	Minnesota Geological Survey		Location Method			Digitized - scale 1:24,000 or larger		Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters					
Program	COUNTY WELL INDEX		Input Source		Minnesota Geological Survey		UTM Easting (X) 493459						
Unique No. Verified			Input Date				UTM Northing (Y) 4992453						
Geologic Interpretation			Agency (interpretation)				Interpretation Method						

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From				
CLAY			0	23	23	930	907	Unknown deposit type	Clay	
SAND			23	52	29	907	878	Unknown deposit type	Sand	
HARDPAN			52	65	13	878	865	Unknown deposit type	Hardpan	
CLAY			65	90	25	865	840	Unknown deposit type	Clay	
SAND & CLAY MIXED			90	130	40	840	800	Unknown deposit type	Sand	Clay
ST. PETER SANDSTONE		SOFT	130	186	56	800	744	St.Peter	Sandstone	
SHALY SANDSTONE		HARD	186	230	44	744	700	St.Peter	Sandstone	Shale

Minnesota Unique Well No.

13919

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/11/2003
 Received Date

Well Name LASCO, HENRY A.
 Township Range Dir Section Subsections Field Located MGS
 30 22 W 17 CBBBCB Elevation 930 ft.

Well Depth 237 ft. Depth Completed 237 ft. Date Well Completed 09/07/1962

Well Address
 1 BUFFALO LA
 NORTH OAKS MN

Drilling Method --
 Drilling Fluid -- Well Hydrofractured? Yes No
 From Ft. to Ft.

Geological Material	Color	Hardness	From	To
CLAY	BROWN		0	30
SAND	BROWN		30	100
ST. PETER SANDROCK	YELLOW	SOFT	100	175
ST. PETER SANDROCK	WHITE	HARD	175	237

Use Domestic

Casing Type Joint No Information Drive Shoe? Yes No Above/Below 0 ft.

Casing Diameter 4 in. to 177 ft. Weight lbs./ft. Hole Diameter

Open Hole from 177 ft. to 237 ft.

Screen NO	Make	Type	Diameter	Slot/Gauze	Length	Set Between

Static Water Level
 50 ft. from Land surface Date Measured 09/07/1962

PUMPING LEVEL (below land surface)
 50 ft. after hrs. pumping 20 g.p.m.

Well Head Completion
 Pitless adapter manufacturer Model
 Casing Protection 12 in. above grade
 At-grade (Environmental Wells and Borings ONLY)

NO REMARKS

Grouting Information Well Grouted? Yes No

Nearest Known Source of Contamination
 ___feet ___direction ___type
 Well disinfected upon completion? Yes No

Pump Not Installed Date Installed
 Manufacturer's name MEYERS Model number ___ HP 0.75 Volts
 Length of drop Pipe 68 ft. Capacity ___g.p.m Type Submersible Material

Abandoned Wells Does property have any not in use and not sealed well(s)? Yes No

Variance Was a variance granted from the MDH for this well? Yes No

First Bedrock St.Peter Aquifer St.Peter
 Last Strat St.Peter Depth to Bedrock 100 ft.

Well Contractor Certification
 Zuercher Well Co. 62028
 License Business Name Lic. Or Reg. No.

County Well Index Online Report **13919** Printed 5/3/2005 HE-01205-07

Minnesota Unique Well No.

13920

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103J

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name F. O'NEILL							Well Depth	Depth Completed	Date Well Completed	
Township	Range	Dir	Section	Subsections	Field Located	MGs	218 ft.	218 ft.	08/24/1965	
30	22	W	17	CBCAAA	Elevation	930 ft.	Drilling Method --			
Well Address 15 WEST SHORE RD MN							Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.		
Geological Material							Use	Domestic		
CLAY					Color	Hardness	From	To		
GRAVEL							0	4		
CLAY							4	56		
GRAVEL & SAND							56	75		
LOOSE SANDROCK							75	92		
SHALE & SANDROCK							92	180		
SANDROCK					HARD		180	190		
							190	218		
Casing Type							Joint No Information	Drive Shoe?	<input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.	
Casing Diameter							Weight	Hole Diameter		
4 in. to 180 ft.							lbs./ft.			
Open Hole							from 180 ft. to 218 ft.			
Screen NO							Make	Type		
Diameter							Slot/Gauze	Length	Set Between	
Static Water Level							49 ft. from Land surface Date Measured 08/24/1965			
PUMPING LEVEL (below land surface)							0 ft. after hrs. pumping 20 g.p.m.			
Well Head Completion							Pitless adapter manufacturer Model			
							<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade			
							<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)			
Grouting Information							Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Nearest Known Source of Contamination							_feet _direction _type			
Well disinfected upon completion?							<input type="checkbox"/> Yes <input type="checkbox"/> No			
Pump <input checked="" type="checkbox"/> Not Installed							Date Installed			
Manufacturer's name							Model number HP 0 Volts			
Length of drop Pipe _ft.							Capacity 20 g.p.m Type Submersible Material			
Abandoned Wells							Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Variance							Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Well Contractor Certification							Salverda Well Co. 82006 License Business Name Lic. Or Reg. No.			
First Bedrock St.Peter							Aquifer St.Peter			
Last Strat St.Peter							Depth to Bedrock 92 ft.			
County Well Index Online Report							13920		Printed 5/3/2005 HE-01205-07	

NO REMARKS

Minnesota Unique Well No.

13920

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
F. O'NEILL	30	22	W	17	CBCAAA	218 ft.	218 ft.	08/24/1965	82006	Salverda Well Co.

Elevation 930 ft. Method 7.5 minute topographic map (+/- 5 feet) Aquifer St.Peter Depth to Bedrock 92 ft. Open Hole 180 - 218 ft. Static Water Level 49 ft.

Field Located Minnesota Geological Survey Location Method Digitized - scale 1:24,000 or larger Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters

Program COUNTY WELL INDEX Input Source Minnesota Geological Survey UTM Easting (X) 493366

Unique No. Verified Input Date UTM Northing (Y) 4992372

Geologic Interpretation Agency (interpretation) Interpretation Method

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology	
			From	To	Thickness	From					To
CLAY			0	4	4	930	926	Unknown deposit type	Clay		
GRAVEL			4	56	52	926	874	Unknown deposit type	Gravel		
CLAY			56	75	19	874	855	Unknown deposit type	Clay		
GRAVEL & SAND			75	92	17	855	838	Unknown deposit type	Gravel	Sand	
LOOSE SANDROCK			92	180	88	838	750	St.Peter	Sandstone		
SHALE & SANDROCK			180	190	10	750	740	St.Peter	Shale	Sandstone	
SANDROCK		HARD	190	218	28	740	712	St.Peter	Sandstone		

Minnesota Unique Well No. 13921		County Quad Quad ID	Ramsey White Bear Lake West 119D	MINNESOTA DEPARTMENT OF HEALTH WELL AND BORING RECORD Minnesota Statutes Chapter 1031		Entry Date Update Date Received Date	08/14/1991 12/11/2003
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Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
VOGT, KEITH W.	30	22	W	17	CBDBCB	211 ft.	211 ft.	10/10/1970	82006	Salverda Well Co.
Elevation 920 ft.		Method 7.5 minute topographic map (+/- 5 feet)			Aquifer St.Peter	Depth to Bedrock 99 ft.	Open Hole 174 - 211 ft.	Static Water Level 43 ft.		
Field Located	Minnesota Geological Survey	Location Method Digitized - scale 1:24,000 or larger				Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters				
Program	COUNTY WELL INDEX	Input Source Minnesota Geological Survey				UTM Easting (X) 493401				
Unique No. Verified		Input Date				UTM Northing (Y) 4992313				
Geologic Interpretation		Agency (interpretation)				Interpretation Method				

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From				
CLAY & BOULDERS			0	18	18	920	902	Unknown deposit type	Clay	Boulder
GRAVEL			18	26	8	902	894	Unknown deposit type	Gravel	
WATER SAND			26	69	43	894	851	Unknown deposit type	Sand	
HARDPAN			69	80	11	851	840	Unknown deposit type	Hardpan	
WATER SAND			80	99	19	840	821	Unknown deposit type	Sand	
SANDROCK			99	211	112	821	709	St.Peter	Sandstone	

County Well Index Online Well Stratigraphy Report	13921	Printed 5/3/2005
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Minnesota Unique Well No.

13922

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name WILLIAM BLOEDL							Well Depth 216 ft.		Depth Completed 216 ft.		Date Well Completed 02/08/1966		
Township Range Dir Section Subsections Field Located MGS Elevation 30 22 W 17 CCBAAC 912 ft.							Drilling Method --						
Well Address 8 WEST SHORE RD MN							Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.				
Geological Material Color Hardness From To CLAY 0 10 WATER SAND 10 45 CLAY BLUE 45 90 SANDROCK 90 216							Use Domestic						
							Casing Type Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.						
							Casing Diameter 4 in. to 164 ft.		Weight lbs./ft.		Hole Diameter		
							Open Hole from 164 ft. to 216 ft.						
							Screen NO Make Type						
							Diameter		Slot/Gauze		Length Set Between		
							Static Water Level ft. from Date Measured						
							PUMPING LEVEL (below land surface) 0 ft. after hrs. pumping 20 g.p.m.						
							Well Head Completion Pillless adapter manufacturer Model <input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade <input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)						
NO REMARKS							Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No						
							Nearest Known Source of Contamination _feet _direction _type Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No						
							Pump <input type="checkbox"/> Not Installed Date Installed Manufacturer's name Model number HP Volts Length of drop Pipe ft. Capacity g.p.m. Type Material						
							Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No						
First Bedrock St.Peter Aquifer St.Peter Last Strat St.Peter Depth to Bedrock 90 ft.							Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No						
County Well Index Online Report							Well Contractor Certification License Business Name		Lic. Or Reg. No.				
							13922		Printed 5/3/2005 HE-01205-07				

Minnesota Unique Well No.

13922

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name			
WILLIAM BLOEDL	30	22	W	17	CCBAAC	216 ft.	216 ft.	02/08/1966					
Elevation	912 ft.	Method	7.5 minute topographic map (+/- 5 feet)			Aquifer	St.Peter	Depth to Bedrock	90 ft.	Open Hole	164 - 216 ft.	Static Water Level	ft.
Field Located	Minnesota Geological Survey		Location Method			Digitized - scale 1:24,000 or larger		Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters					
Program	COUNTY WELL INDEX		Input Source			Minnesota Geological Survey		UTM Easting (X) 493351					
Unique No. Verified			Input Date					UTM Northing (Y) 4992135					
Geologic Interpretation			Agency (interpretation)					Interpretation Method					

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From				
CLAY			0	10	10	912	902	Unknown deposit type	Clay	
WATER SAND			10	45	35	902	867	Unknown deposit type	Sand	
CLAY	BLUE		45	90	45	867	822	Unknown deposit type	Clay	
SANDROCK			90	216	126	822	696	St.Peter	Sandstone	

Minnesota Unique Well No.

13923

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name C. ARNER								Well Depth	Depth Completed	Date Well Completed
Township	Range	Dir	Section	Subsections	Field Located	MGS	230 ft.	230 ft.	11/25/1966	
30	22	W	17	CCBCBA	Elevation	925 ft.	Drilling Method --			
Well Address 5 WEST SHORE RD MN								Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No From Ft. to Ft.	
Geological Material								Use Domestic		
SAND & CLAY	Color		Hardness		From	To	Casing Type Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.			
SAND & GRAVEL	BROWN				0	35	Casing Diameter Weight Hole Diameter			
CLAY	BROWN				35	60	5 in. to 173 ft. lbs./ft.			
SANDROCK	BLUE				60	78	Open Hole from 173 ft. to 230 ft.			
SANDROCK	WHITE		SOFT		78	173	Screen NO Make Type			
SANDROCK	GRAY		HARD		173	230	Diameter Slot/Gauze Length Set Between			
NO REMARKS								Static Water Level		
								84 ft. from Land surface Date Measured 11/25/1966		
								PUMPING LEVEL (below land surface)		
								94 ft. after hrs. pumping 28 g.p.m.		
								Well Head Completion		
								Pitless adapter manufacturer Model		
								<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade		
								<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
								Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No		
								Nearest Known Source of Contamination		
								_feet _direction _type		
								Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No		
								Pump <input checked="" type="checkbox"/> Not Installed Date Installed		
								Manufacturer's name STA-RITE Model number ___ HP 1 Volts		
								Length of drop Pipe 95 ft. Capacity 20 g.p.m Type Submersible Material		
								Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
								Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
First Bedrock St.Peter								Well Contractor Certification		
Last Strat St.Peter								Zuercher Well Co. 62028		
Aquifer St.Peter								License Business Name Lic. Or Reg. No.		
Depth to Bedrock 78 ft.								County Well Index Online Report		
								13923		Printed 5/3/2005 HE-01205-07

Minnesota Unique Well No.

13923

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name
C. ARNER	30	22	W	17	CCBCBA	230 ft.	230 ft.	11/25/1966	62028	Zuercher Well Co.

Elevation 925 ft. Method 7.5 minute topographic map (+/- 5 feet) Aquifer St.Peter Depth to Bedrock 78 ft. Open Hole 173 - 230 ft. Static Water Level 84 ft.

Field Located Minnesota Geological Survey Location Method Digitized - scale 1:24,000 or larger Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters
 Program COUNTY WELL INDEX Input Source Minnesota Geological Survey UTM Easting (X) 493231
 Unique No. Verified Input Date UTM Northing (Y) 4992065
 Geologic Interpretation Agency (interpretation) Interpretation Method

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology
			From	To	Thickness	From				
SAND & CLAY	BROWN		0	35	35	925	890	Unknown deposit type	Sand	Clay
SAND & GRAVEL	BROWN		35	60	25	890	865	Unknown deposit type	Sand	Gravel
CLAY	BLUE		60	78	18	865	847	Unknown deposit type	Clay	
SANDROCK	WHITE	SOFT	78	173	95	847	752	St.Peter	Sandstone	
SANDROCK	GRAY	HARD	173	230	57	752	695	St.Peter	Sandstone	

County Well Index Online Well Stratigraphy Report

13923

Printed 5/3/2005

Minnesota Unique Well No.

13924

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name							Well Depth		Depth Completed		Date Well Completed							
Township	Range	Dir	Section	Subsections	Field Located	MGS	235 ft.		235 ft.		09/23/1961							
30	22	W	17	CCBCCD	Elevation	930 ft.	Drilling Method -											
Well Address							Drilling Fluid		Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No									
3 WEST SHORE RD NORTH OAKS MN							-		From Ft. to Ft.									
Geological Material							Color	Hardness	From	To								
SAND & CLAY									0	75								
SAND & GRAVEL									75	82								
SANDROCK								SOFT	82	155								
SANDROCK							GRAY		155	184								
SANDROCK							GRAY	HARD	184	230								
SHAKOPEE ROCK									230	235								
Use							Domestic											
Casing Type							Joint No Information		Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No		Above/Below 0 ft.							
Casing Diameter							Weight		Hole Diameter									
4 in. to 184 ft.							lbs./ft.											
Open Hole							from 184 ft. to 235 ft.											
Screen NO							Make		Type									
Diameter							Slot/Gauze		Length		Set Between							
Static Water Level							ft. from Date Measured											
PUMPING LEVEL (below land surface)							0 ft. after hrs. pumping 20 g.p.m.											
Well Head Completion							Pitless adapter manufacturer		Model									
<input type="checkbox"/> Casing Protection							<input type="checkbox"/> 12 in. above grade											
<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)																		
NO REMARKS							Grouting Information					Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No						
							Nearest Known Source of Contamination							_feet _direction _type				
							Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Pump							<input checked="" type="checkbox"/> Not Installed Date Installed											
							Manufacturer's name Model number ___ HP ___ Volts											
							Length of drop Pipe ___ ft. Capacity 20 g.p.m Type Material											
Abandoned Wells							Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Variance							Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No											
Well Contractor Certification							License Business Name				Lic. Or Reg. No.							
County Well Index Online Report							13924		Printed 5/3/2005 HE-01205-07									

Minnesota Unique Well No.

13924

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 1031

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name	Township	Range	Dir	Section	Subsections	Depth Drilled	Depth Completed	Date Completed	Lic/Reg. No.	Driller Name				
	30	22	W	17	CCBCCD	235 ft.	235 ft.	09/23/1961						
Elevation	930 ft.		Method	7.5 minute topographic map (+/- 5 feet)			Aquifer	Multiple	Depth to Bedrock	82 ft.	Open Hole	184 - 235 ft.	Static Water Level	ft.

Field Located	Minnesota Geological Survey	Location Method	Digitized - scale 1:24,000 or larger	Universal Transverse Mercator (UTM) - NAD83 - Zone 15 - Meters
Program	COUNTY WELL INDEX	Input Source	Minnesota Geological Survey	UTM Easting (X) 493214
Unique No. Verified		Input Date		UTM Northing (Y) 4992006
Geologic Interpretation		Agency (interpretation)		Interpretation Method

Geological Material	Color	Hardness	DEPTH (ft.)		ELEVATION		Stratigraphy	Primary Lithology	Secondary Lithology	Minor Lithology	
			From	To	Thickness	From					To
SAND & CLAY			0	75	75	930	855	Unknown deposit type	Sand	Clay	
SAND & GRAVEL			75	82	7	855	848	Unknown deposit type	Sand	Gravel	
SANDROCK		SOFT	82	155	73	848	775	St.Peter	Sandstone		
SANDROCK		GRAY	155	184	29	775	746	St.Peter	Sandstone		
SANDROCK		GRAYHARD	184	230	46	746	700	St.Peter	Sandstone		
SHAKOPEE ROCK			230	235	5	700	695	Prairie Du Chien Group	Dolomite		

Minnesota Unique Well No.

13926

County Ramsey
 Quad White Bear Lake West
 Quad ID 119D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
 Minnesota Statutes Chapter 103I

Entry Date 08/14/1991
 Update Date 12/10/2003
 Received Date

Well Name R.J. MORDAUNT						Well Depth	Depth Completed	Date Well Completed
Township	Range	Dir	Section	Subsections	Field Located	MGS		
30	22	W	17	CCDADD	Elevation	920 ft.	228 ft.	228 ft.
Well Address						Drilling Method --		
37 ROBB FARM RD MN						Drilling Fluid	Well Hydrofractured? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Geological Material						From Ft. to Ft.		
SAND & CLAY						0 30		
SAND						30 95		
SANDROCK						SOFT 95 164		
SANDROCK						HARD 164 180		
ROCK						HARD 180 228		
Use Domestic						Casing Type Joint No Information Drive Shoe? <input type="checkbox"/> Yes <input type="checkbox"/> No Above/Below 0 ft.		
Casing Diameter						Weight	Hole Diameter	
6 in. to 164 ft.						lbs./ft.		
Open Hole from 164 ft. to 228 ft.						Screen NO Make Type		
						Diameter	Slot/Gauze	Length Set Between
						Static Water Level		
						45 ft. from Land surface Date Measured 05/11/1972		
						PUMPING LEVEL (below land surface)		
						0 ft. after hrs. pumping 20 g.p.m.		
						Well Head Completion		
						Pitless adapter manufacturer Model		
						<input type="checkbox"/> Casing Protection <input type="checkbox"/> 12 in. above grade		
						<input type="checkbox"/> At-grade (Environmental Wells and Borings ONLY)		
						Grouting Information Well Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No		
						Nearest Known Source of Contamination		
						_feet _direction _type		
						Well disinfected upon completion? <input type="checkbox"/> Yes <input type="checkbox"/> No		
						Pump <input checked="" type="checkbox"/> Not Installed Date Installed		
						Manufacturer's name REDA Model number __ HP 1 Volts		
						Length of drop Pipe _ft. Capacity 25 g.p.m Type Submersible Material		
						Abandoned Wells Does property have any not in use and not sealed well(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
						Variance Was a variance granted from the MDH for this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		
						Well Contractor Certification		
						Gangl Well Co.		62136
						License Business Name		Lic. Or Reg. No.
First Bedrock St.Peter						Aquifer St.Peter		
Last Strat St.Peter						Depth to Bedrock 95 ft.		
County Well Index Online Report						13926		Printed 5/3/2005 HE-01205-07

NO REMARKS