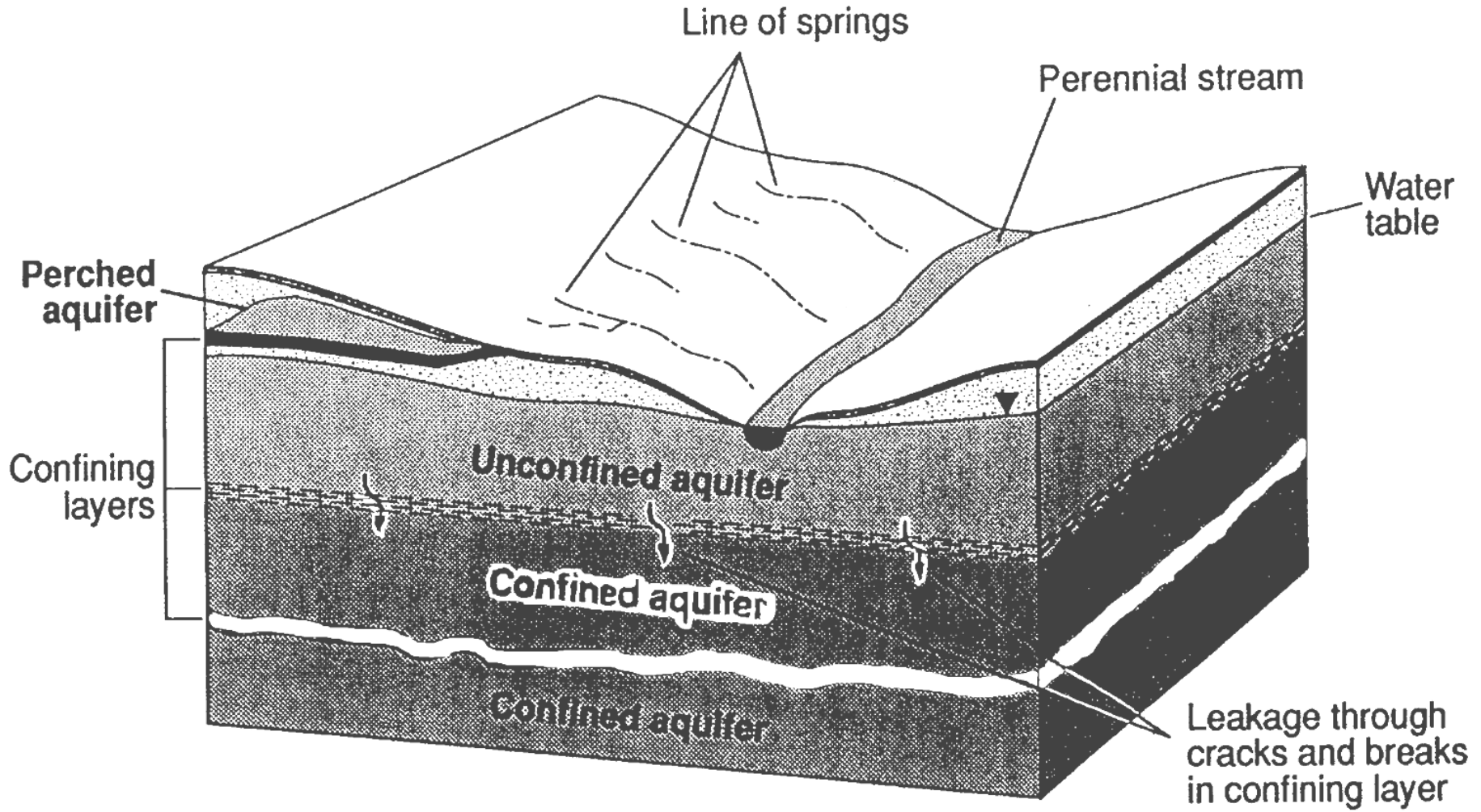


# Large Capacity Well Information in Michigan

**Steve Miller**

**Biosystems and Agricultural Engineering  
Michigan State University**

# Aquifers



# Groundwater Mapping Project

State of Michigan  
**DEQ**  
Department of Environmental Quality

MICHIGAN STATE UNIVERSITY  
**USGS**  
science for a changing world

## Groundwater Mapping Project

<http://gwwmap.rsgis.msu.edu>

### Interactive Map Viewer

The online interactive map viewer was created by MSU Remote Sensing & GIS Research and Outreach Services (RS&GIS). Base map features and image backdrops are included as well as layers specific to this project. With the viewer users can query well databases, find lat/lon coordinates, find addresses and download spatial data.

[Start the Viewer](#)  
Viewer Tutorial

[Browser Help](#)

### Groundwater Information Database

USGS and RS&GIS collaborated on the searchable groundwater database.

[Search the Database](#)      [Bibliography](#)

[Database Tutorial](#)  
[Copyright Information](#)

### Project Reports

Executive Summary (8-18-05)  
Print Quality: 17.1 MB  
Draft Quality: 2.8 MB

Technical Report (3-6-06)  
Full Technical Report: 23.5 MB  
Technical Report by Chapter:  
1 2 3 4 5 6 7 8

[Get Adobe Reader](#)

### Web Resources

[Groundwater Tutorial](#)  
[Groundwater Glossary](#)  
[Groundwater Stewardship Manual](#)  
[Aquifer Basics](#)  
[Glossary of Hydrologic Terms](#)  
[Groundwater Atlas of the United States](#)

### Documents

[PowerPoint Presentation: Intro and Overview of Project](#)

[Basic Ground-Water Hydrology](#)

[Ground Water and Surface Water A Single Resource](#)

[Sustainability of Ground-Water Resources](#)

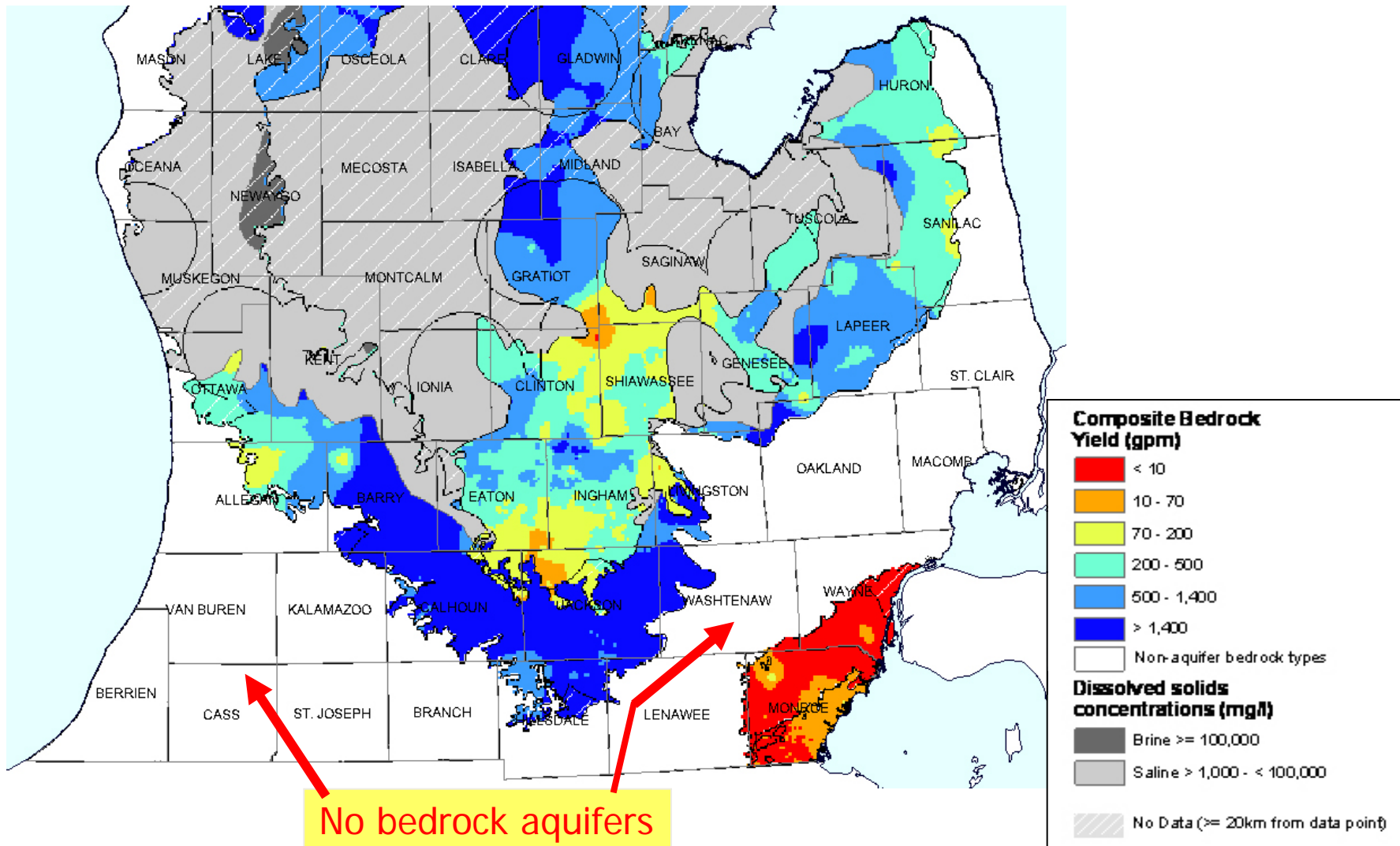
[Flow and Storage in Groundwater Systems](#)

[Groundwater and the Rural Homeowner](#)

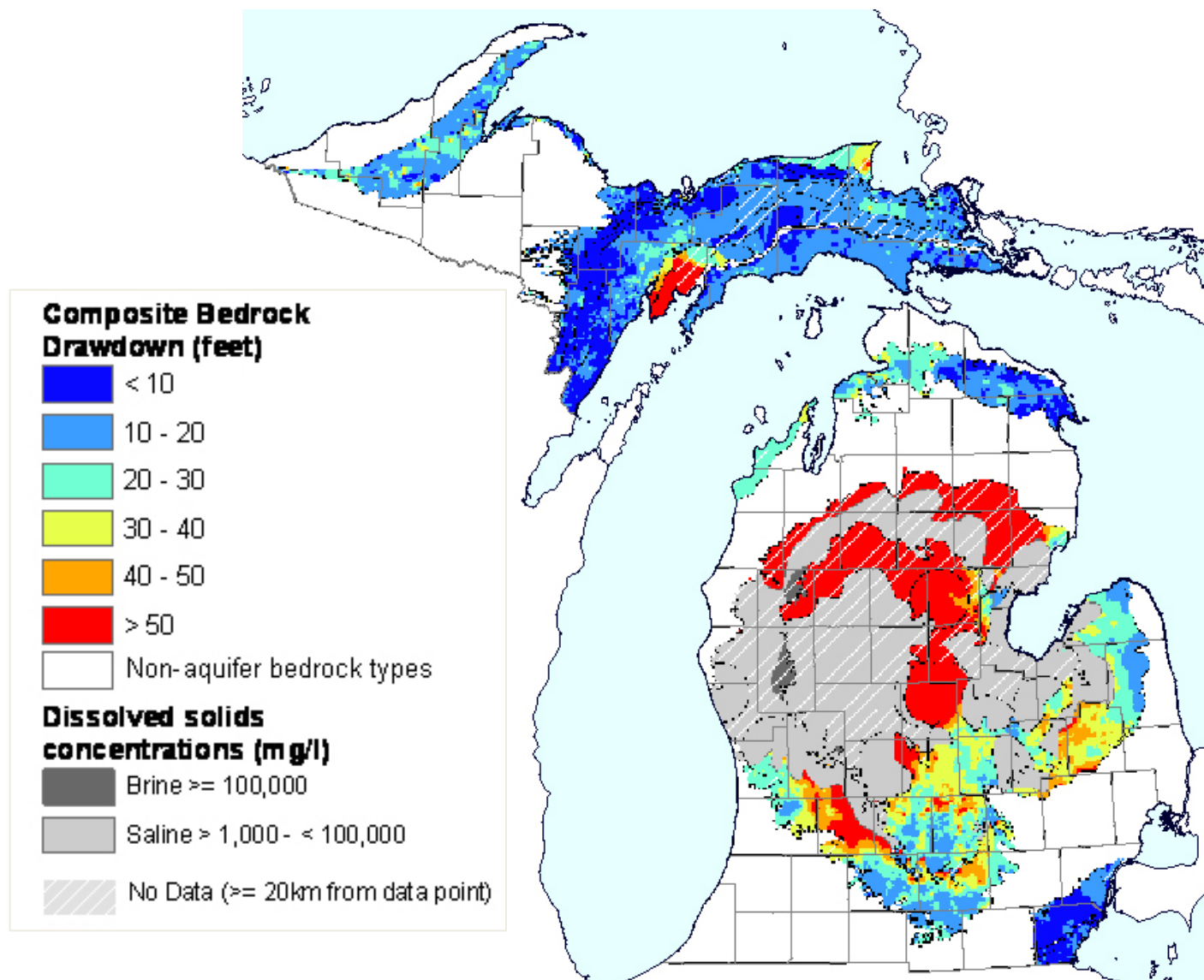
[The Importance of Ground Water in the Great Lakes Region](#)

[Ground-Water-Level Monitoring and the Importance of Long-Term](#)

# Yield from Bedrock Aquifers

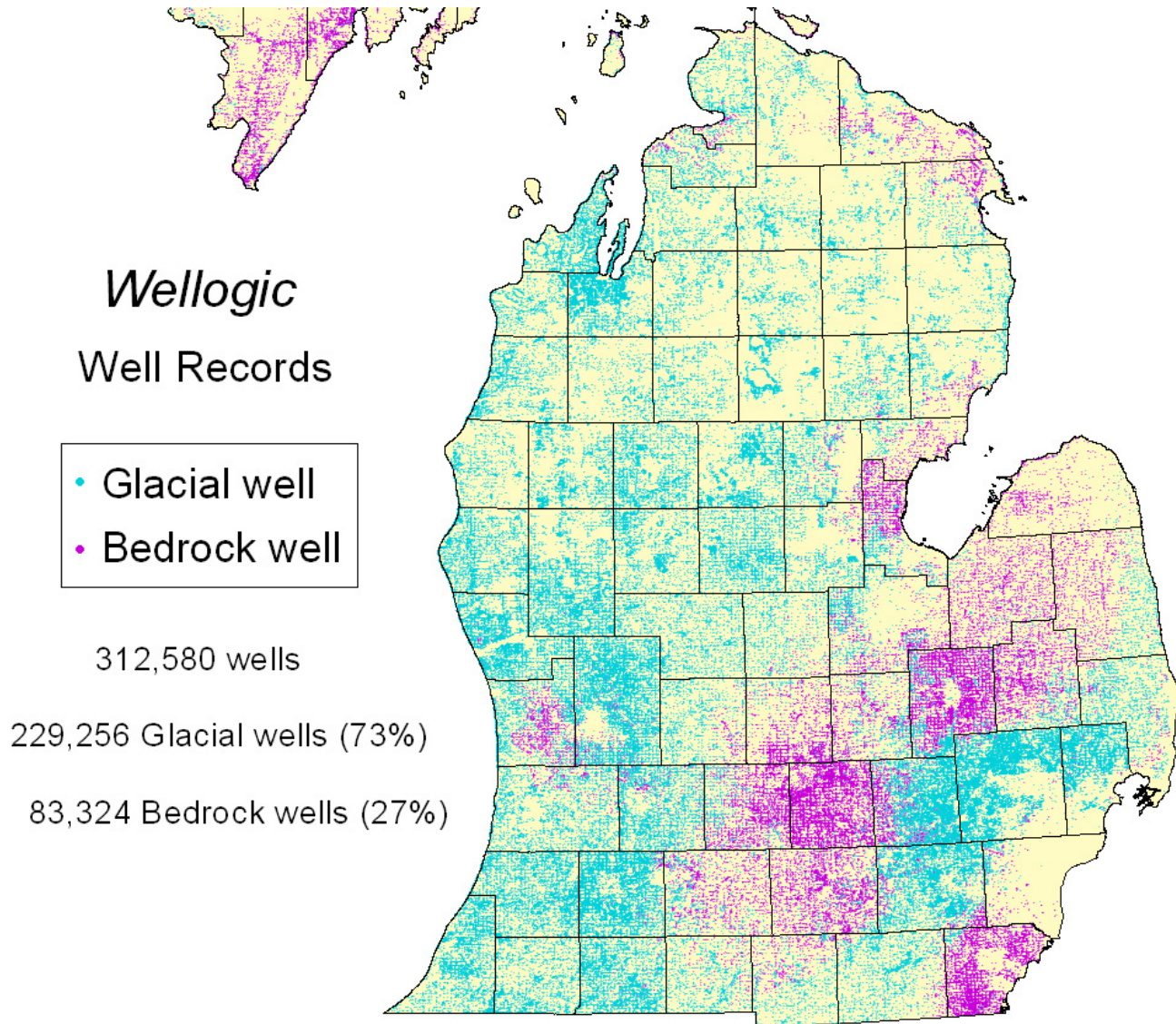


# Drawdown from Bedrock Aquifers

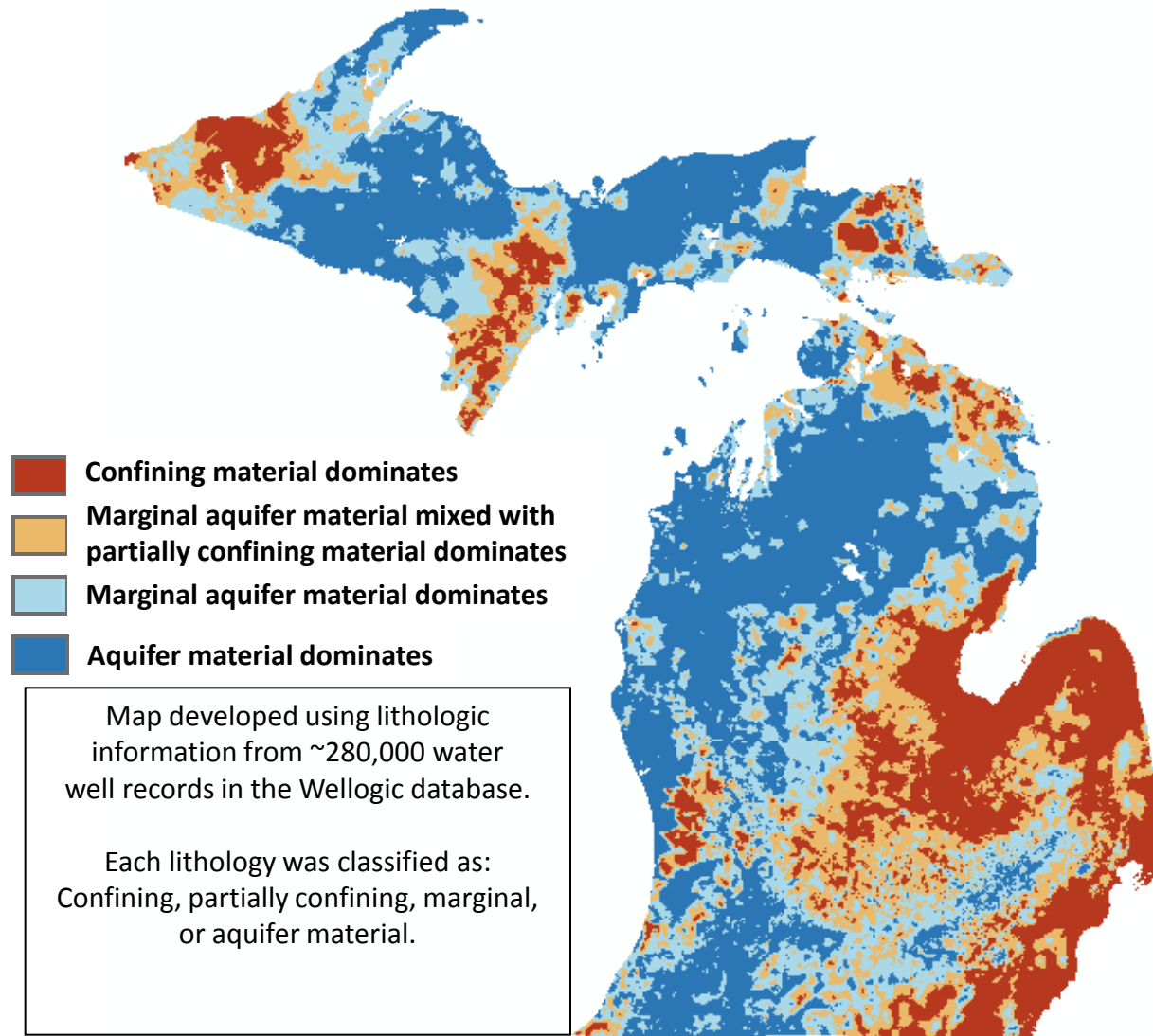




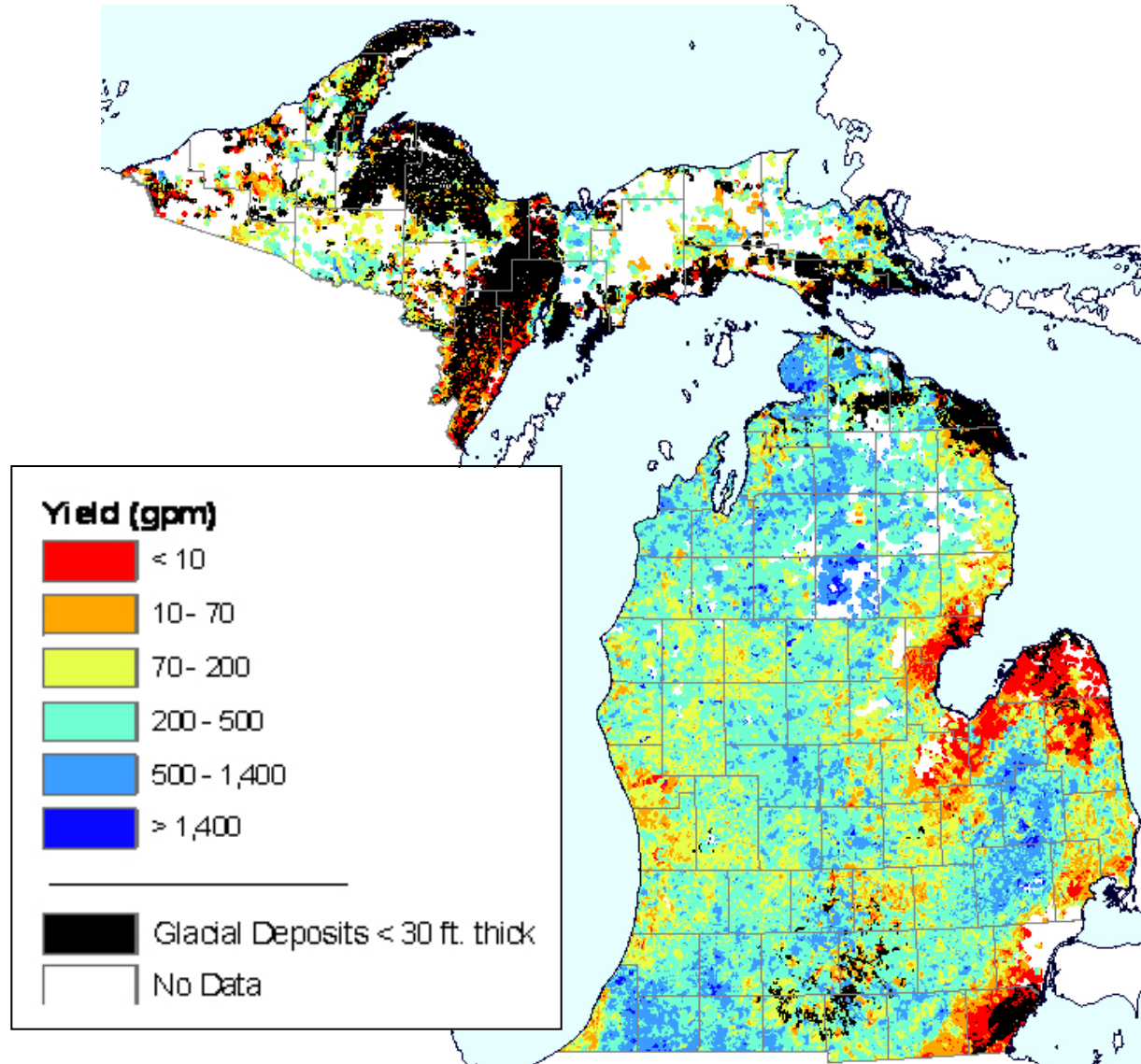
# Aquifers



# Glacial Aquifer Characterization

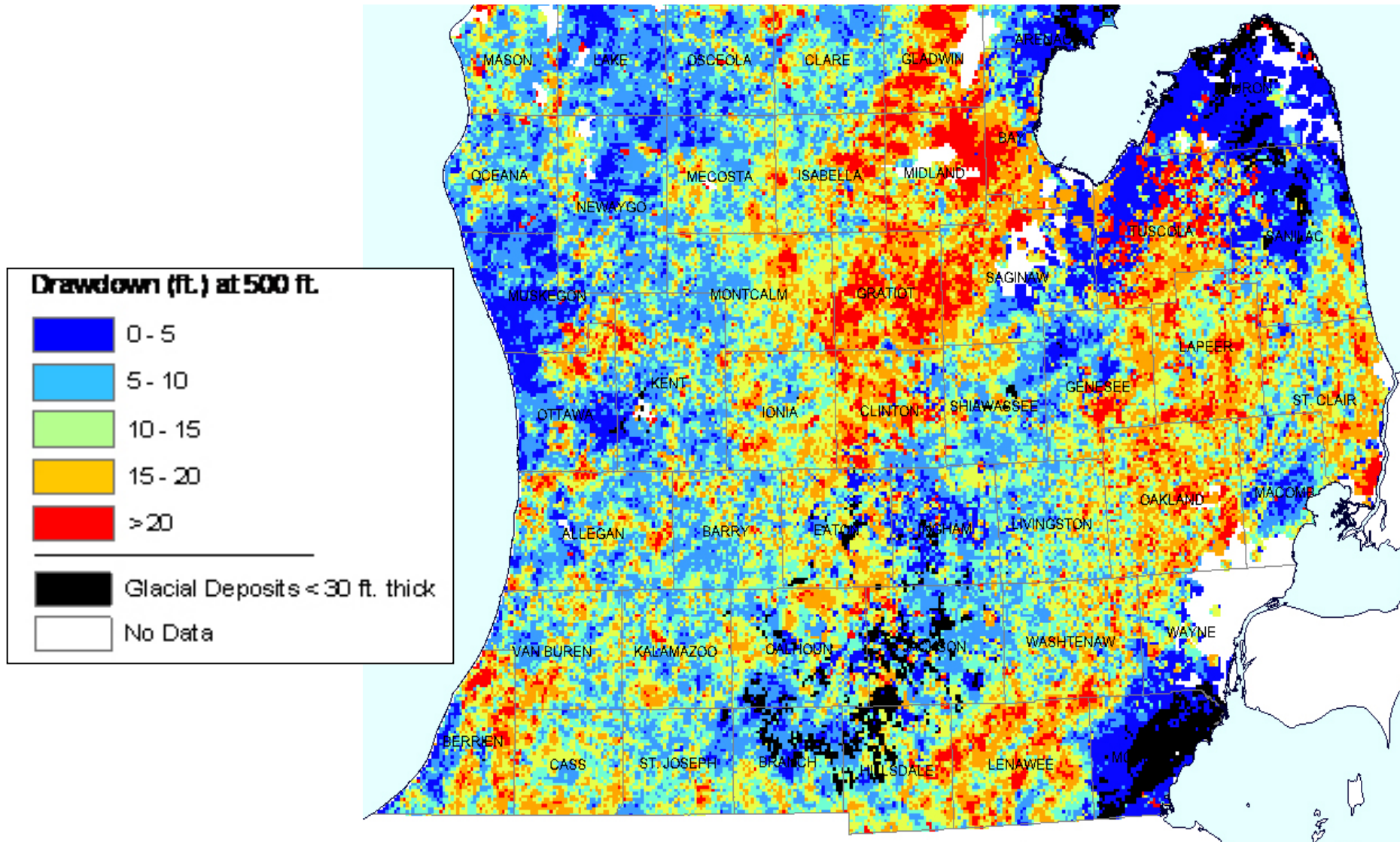


# Yield from Glacial Aquifers



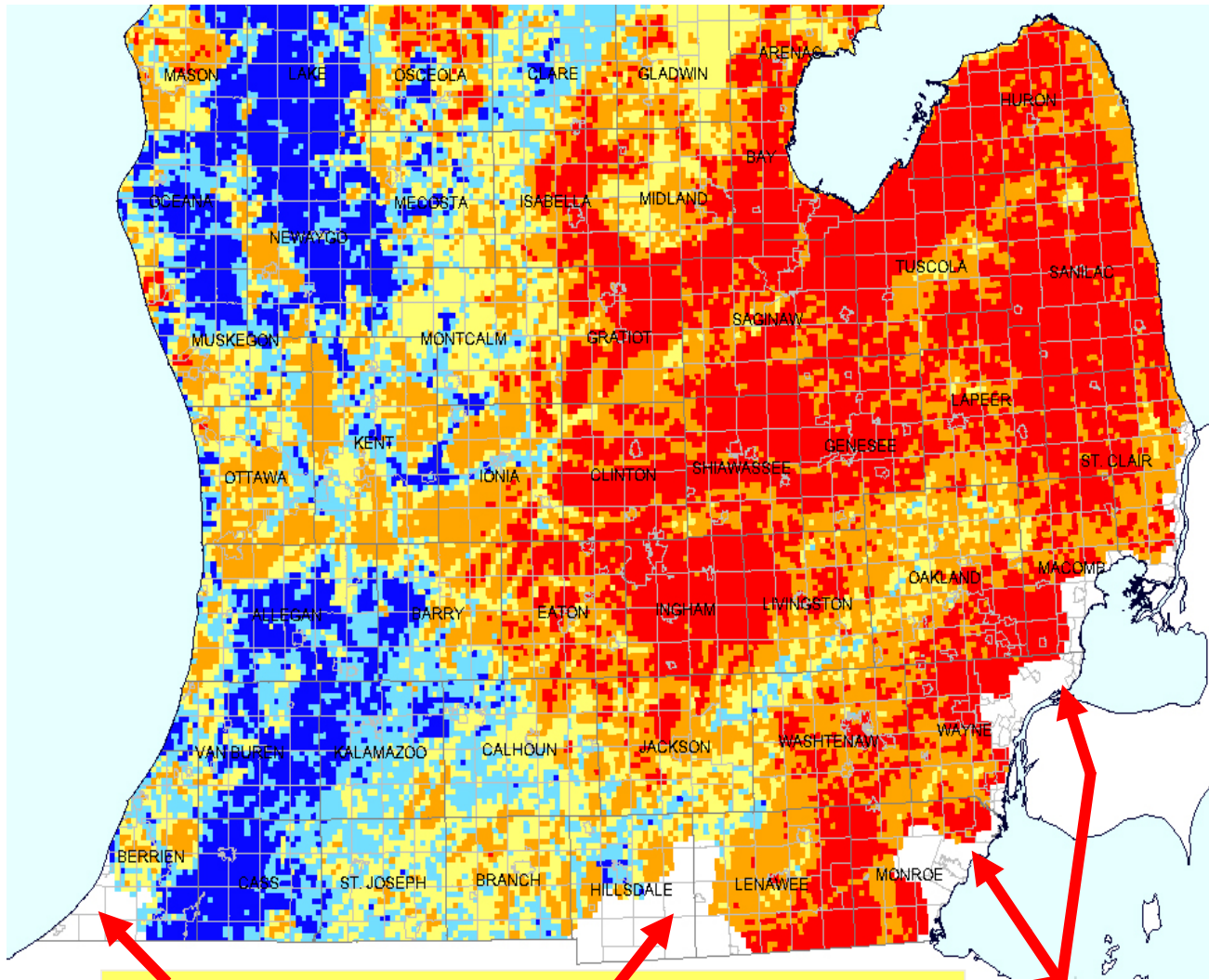
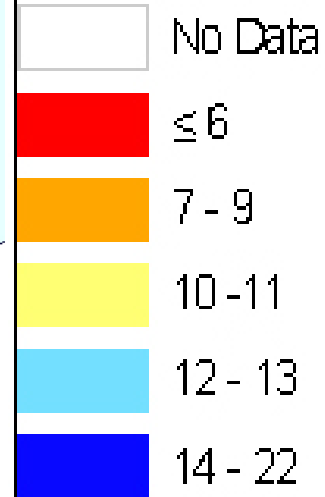


# Drawdown from Glacial Aquifers



# Recharge to Glacial Aquifers

## Recharge - in/year

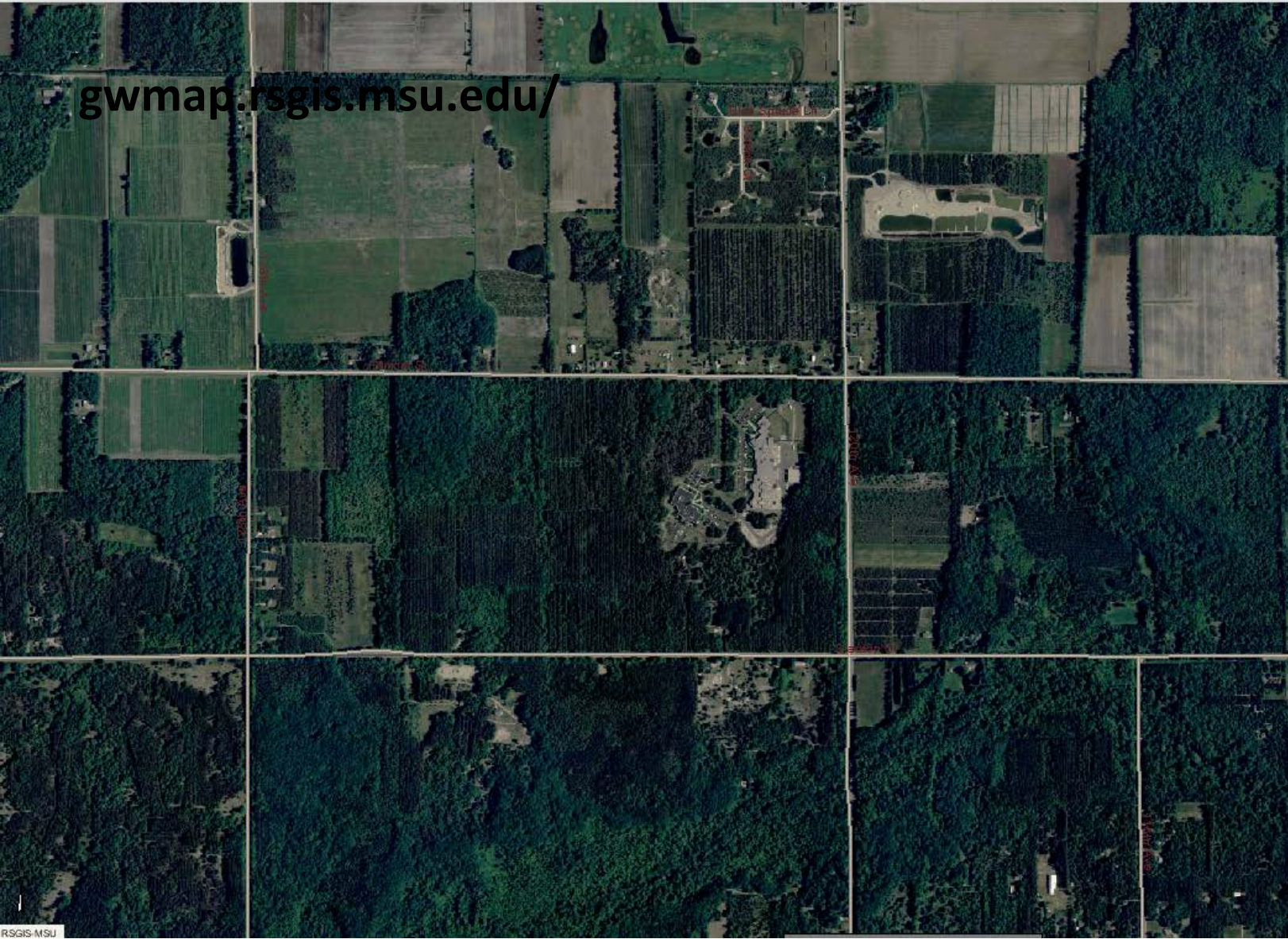


No recharge estimates due to lack of data



FULL EXTENT	PREV ZOOM	SELECT BOX	SELECT LINE	SELECT BUFFER	QUERY FEATURE	MAP LEGEND	DISPLAY OPTIONS
ZOOM IN	ZOOM OUT	FIND FEATURE	FIND ADDRESS	LAT/LON ID	LAT/LON SEARCH	TOPO LEGEND	TOOL HELP
MOVE MAP	IDENTIFY	MEASURE	CLEAR	OBSERV. WELLS	FLOW GAGES	PRINT MAP	EXTRACT LAYERS

gwmap.rsgis.msu.edu/



**ACTIVE:**  
 RIVER

- VISIBILITY:**
- Base Map
  - Environmental
  - Ground Water Inventory
  - Image Backdrops
    - 2005 AERIALS
    - 1998 AERIALS
    - SATELLITE
    - TOPO MAP
    - LANDUSE
  - Secondary Map Features

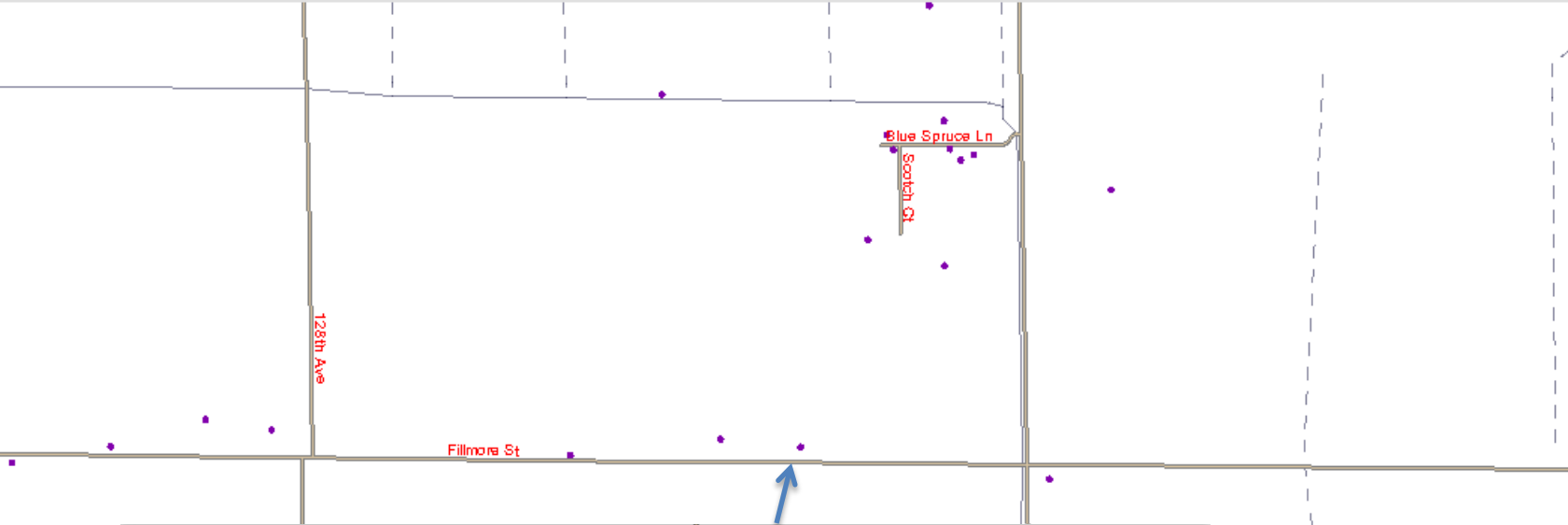
- LAYER HELP:**
- Click to open/close group.
  - Click to show group/layer.
  - Click to hide layer.
  - Scale-dependent layer.
  - Click to show entire group.
  - Click for layer information.
  - Raster layer information (no database).
  - Click for raster identify.

Auto Refresh  
 Refresh Map

[Back to start page](#)  
[Contact information](#)



FULL EXTENT	PREV ZOOM	SELECT BOX	SELECT LINE	SELECT BUFFER	QUERY FEATURE	MAP LEGEND	DISPLAY OPTIONS
ZOOM IN	ZOOM OUT	FIND FEATURE	FIND ADDRESS	LAT/LON ID	LAT/LON SEARCH	TOPO LEGEND	TOOL HELP
MOVE MAP	IDENTIFY	MEASURE	CLEAR	OBSERV. WELLS	FLOW GAGES	PRINT MAP	EXTRACT LAYERS



**ACTIVE:**  
RIVER

**VISIBILITY:**

- Base Map
- Environmental
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- WELLOGIC DB
- WATERSHEDS
- WETLANDS
- SOILS
- WATER QUALITY
- Location & Yield of Aq
- Supplemental Well Data
- RECHARGE
- Groundwater Levels
- Stream Flow
- Conflict Areas
- GW-Depend. Natural F
- Non-Ag. Groundwater
- AG. WATER USE BY T
- Image Backdrops
- Secondary Map Features

**LAYER HELP:**

- Click to open/close group.
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- Click to show entire group.
- Click for layer information.
- Raster layer information (no d
- Click for raster identify.

Auto Refresh  
**Refresh Map**

[Back to start page](#)  
[Contact information](#)

Query/Selection Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/displayAttributeData.htm

SIC.WELL_ZIP	ENVIRO.ENVIRO.WELL_LOGIC.WELL_DEPTH	ENVIRO.ENVIRO.WELL_LOGIC.WELL_TYPE	ENVIRO.EN
28		HOSHLD	



Query/Selection Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/displayAttributeData.htm

**WELLS COMPLETE DB**

Rec	WELLID	IMPORT_ID	COUNTY	TOWNSHIP	TOWN_RANGE	SECTION	OWNER_NAME	WELL_A
1	<a href="#">70000004849</a> <a href="#">Lith Info</a>		Ottawa	Olive	08N 15W	4	Joe Bush	12140 Star

**ACTIVE:**

WELLS COMPLETE DB

**VISIBILITY:**

- Base Map
- Environmental
- Ground Water Inventory
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Lith Info Results - Mozilla Firefox

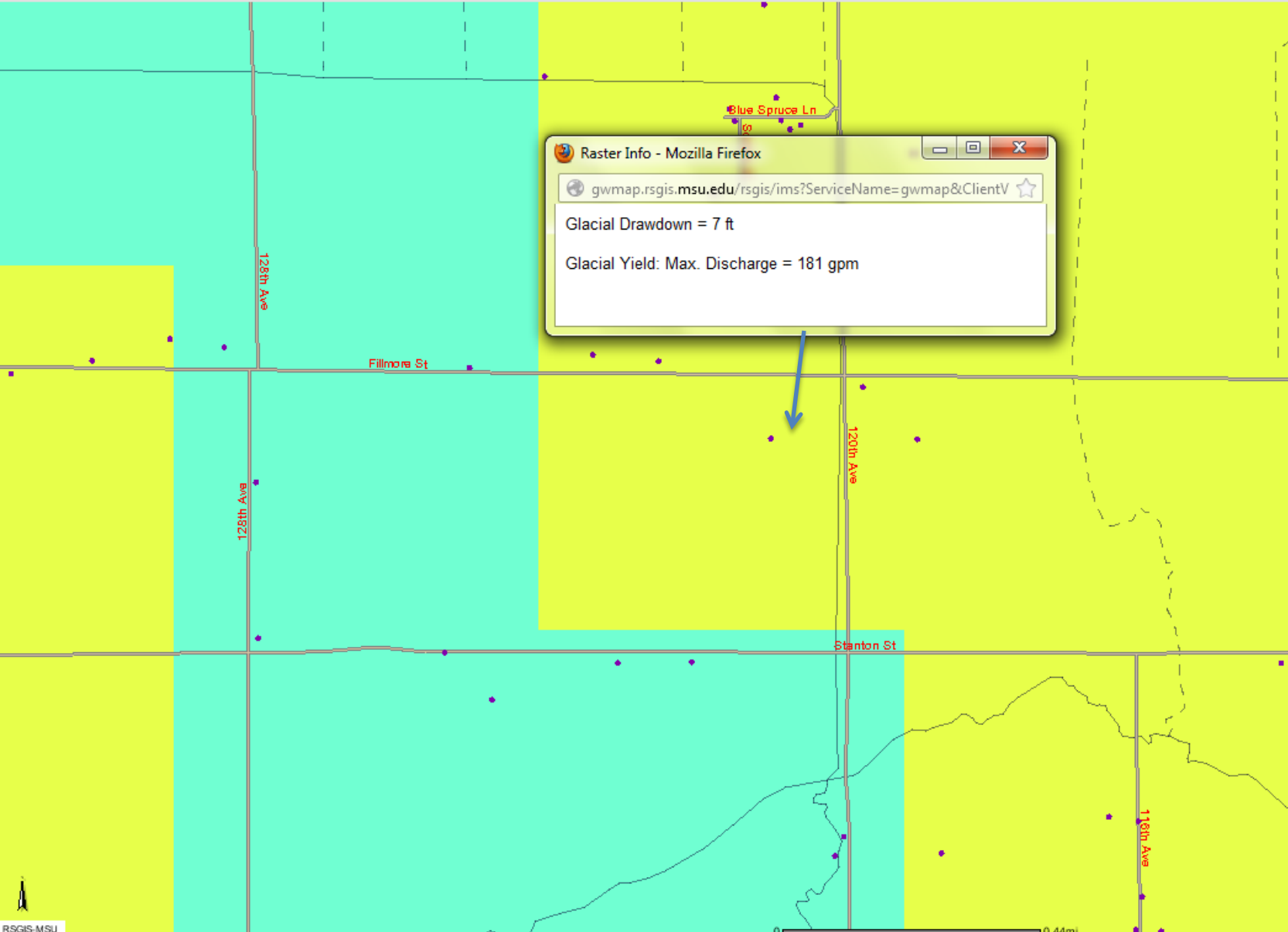
File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/wellid\_process2.asp?wellid=70000004849&submit=Submit

WELLID	SEQNO	PRIMLITH	LITHMOD	DEPTH	THICKNESS	AQTYPE	CLASS	EFFECT	MAQTYPE
70000004849	1	Sand	Dry	18	18	D	AQ	0	AQ
70000004849	2	Sand	Coarse	57	39	D	AQ	0	AQ

18th Ave

FULL EXTENT	PREV ZOOM	SELECT BOX	SELECT LINE	SELECT BUFFER	QUERY FEATURE	MAP LEGEND	DISPLAY OPTIONS
ZOOM IN	ZOOM OUT	FIND FEATURE	FIND ADDRESS	LAT/LON ID	LAT/LON SEARCH	TOPO LEGEND	TOOL HELP
MOVE MAP	IDENTIFY	MEASURE	CLEAR	OBSERV. WELLS	FLOW GAGES	PRINT MAP	EXTRACT LAYERS



Raster Info - Mozilla Firefox

gwwmap.rsgis.msu.edu/rsgis/ims?ServiceName=gwwmap&ClientV

Glacial Drawdown = 7 ft

Glacial Yield: Max. Discharge = 181 gpm

**ACTIVE:**

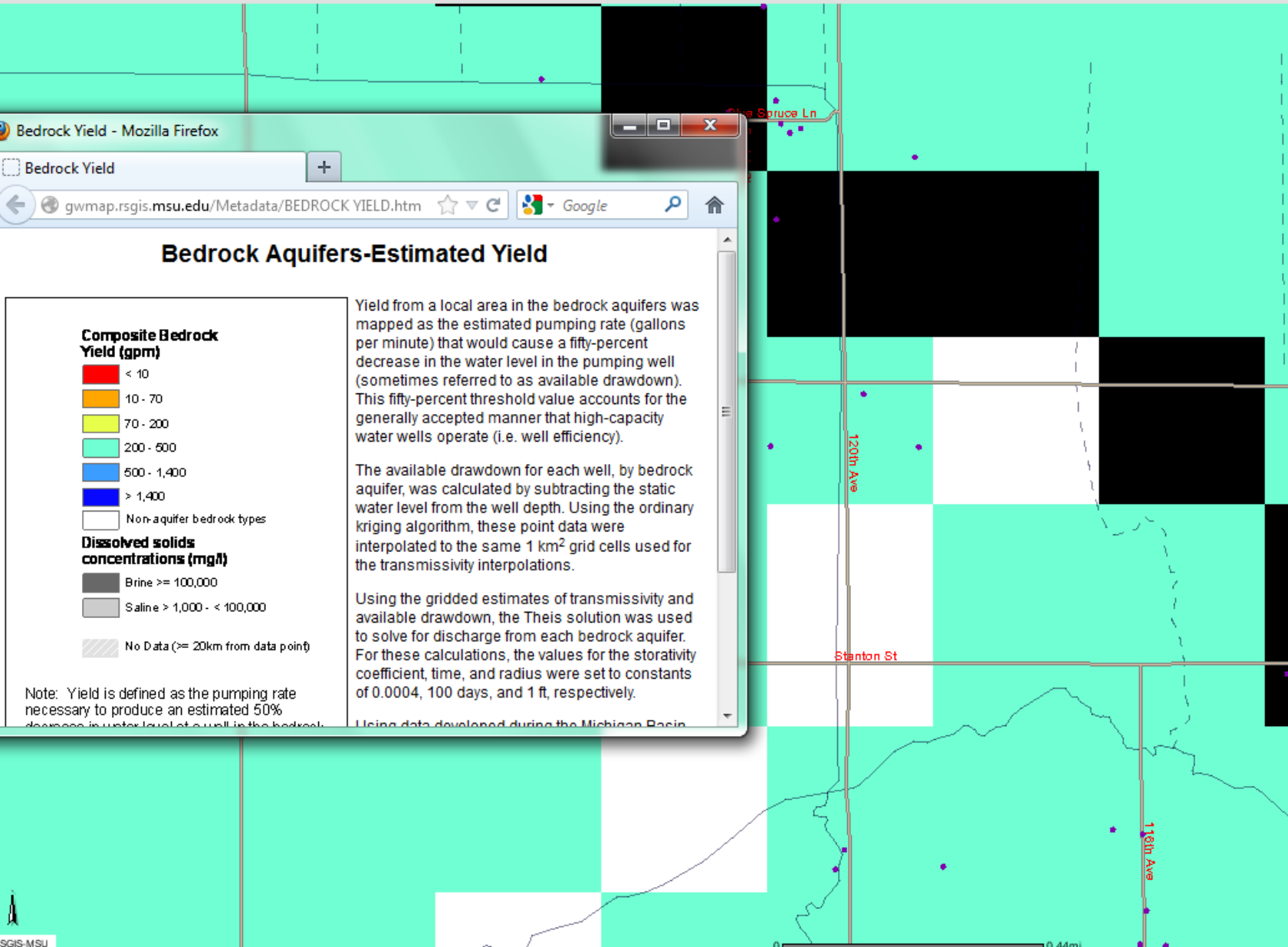
RIVER

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  - GLACIAL YIELD ⓘ
  - GLACIAL TRANSMISSIVITY
  - GLACIAL DRAWDOWN
  - BEDROCK YIELD
  - BEDROCK TRANSMISSIVITY
  - BEDROCK DRAWDOWN
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- Raster layer information (no data)
- Click for raster identify.



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RIVER

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  - Location & Yield of A
    - GLACIAL YIELD
    - GLACIAL TRANS
    - GLACIAL DRAW
    - BEDROCK YIELD
    - BEDROCK TRAN
    - BEDROCK DRAW
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- Click for raster identify.

Bedrock Drawdown - Mozilla Firefox

Bedrock Drawdown

gwwmap.rsgis.msu.edu/Metadata/BEDROCK DRAWDOWN.htm

### Bedrock Aquifers-Estimated Drawdown

**Composite Bedrock Drawdown (feet)**

- < 10
- 10 - 20
- 20 - 30
- 30 - 40
- 40 - 50
- > 50
- Non-aquifer bedrock types

**Dissolved solids concentrations (mg/l)**

- Brine  $\geq 100,000$
- Saline  $> 1,000 - < 100,000$
- No Data ( $\geq 20$ km from data point)

Drawdown at 500 ft. was calculated for each cell using the estimated yield values from Figure 3, assuming 100 days of continuous pumping and a storativity of 0.004.

The Theis equation was modified to solve for drawdown within each 1 km<sup>2</sup> grid cell using the previously estimated yield and transmissivity grids to calculate the drawdown impact 500 feet from a pumping well. For these calculations, the values for the storativity coefficient, time, and radius were set to constants of 0.0004, 100 days, and 500 feet, respectively.

This estimated drawdown is assumed to be caused by one well in each cell with no other influence. This procedure simulates the effect that pumping one well at its estimated yield rate for 100 days continuously in any particular 1 km<sup>2</sup> grid cell would have in that cell. This analysis does NOT represent what would happen if multiple wells were pumping simultaneously (a very common occurrence).

In parts of Michigan, the estimated yields are so small that groundwater withdrawals do not cause a significant drawdown 500 feet away. The aquifer characteristics in other locales allow for large yields, but produce a large drawdown. In other places, the aquifer properties support large yields with only limited drawdown impacts. Elsewhere, bedrock aquifers are such that both the estimated yields and the associated drawdown amounts are moderate. The white areas on the map are generally characterized by bedrock units that normally do not serve as aquifers.



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RIVER

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- Click to show entire group.





FULL  
EXTENT  
ZOOM  
IN  
MOVE  
MAP

Query/Selection Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

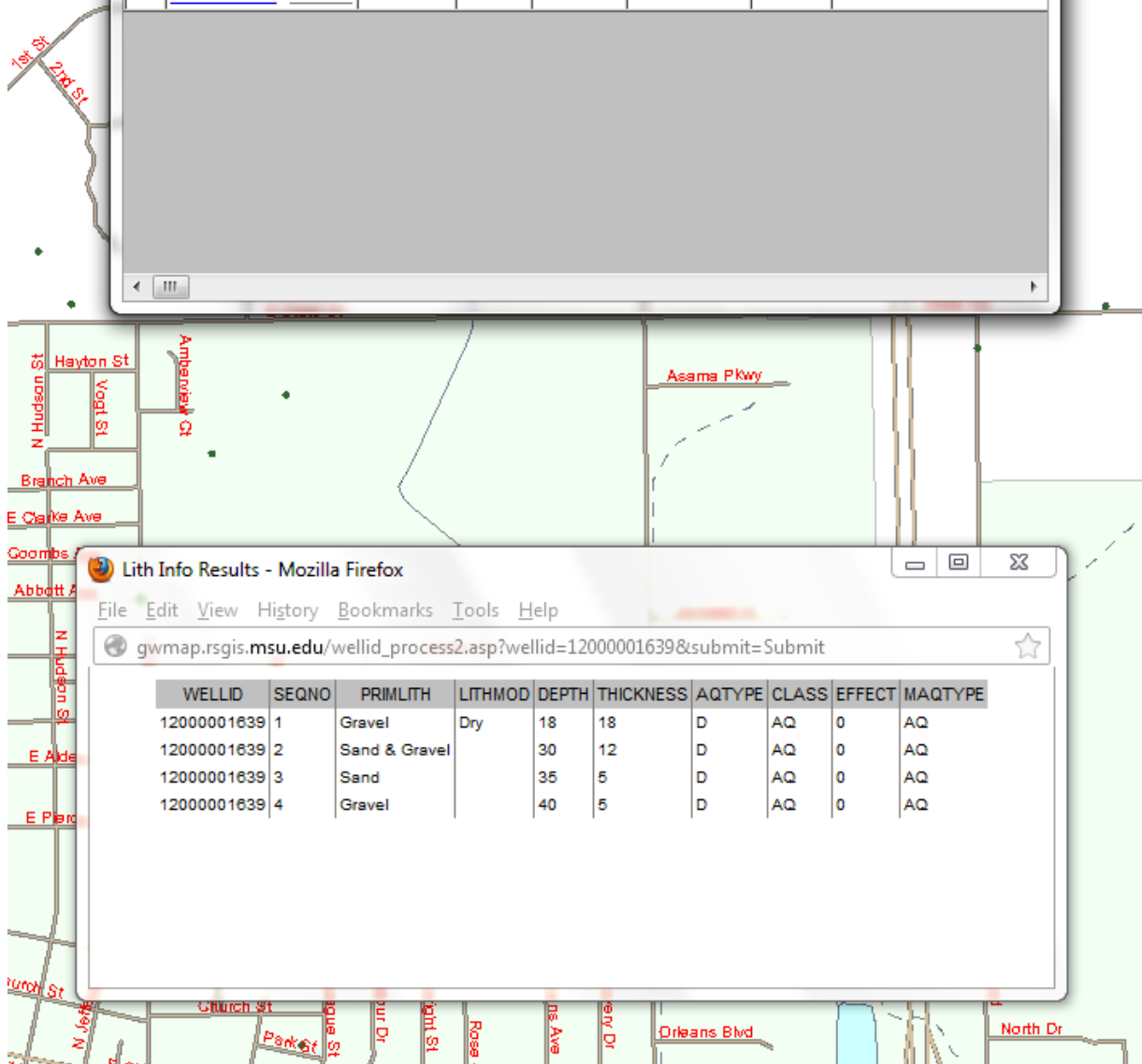
gwwmap.rsgis.msu.edu/displayAttributeData.htm

**WELLS COMPLETE DB**

Rec	WELLID	IMPORT_ID	COUNTY	TOWN SHIP	TOWN_RANGE	SECTION	OWNER_NAME
1	<a href="#">12000001639</a>	Lith Info	Branch	Coldwater	06S 06W	15	BRANCH AREA CAREER CE

ACTIVE:  
WELLS COMPLETE DB

- VISIBILITY:**
- Base Map
  - AIR FIELDS
  - ALL ROADS
  - CITY
  - COUNTY
  - DRAIN
  - LAKE
  - RAILROAD
  - RIVER
  - RIVERPOLY
  - STATE ROADS
  - VILLAGE
  - Environmental
  - Ground Water Inventory
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Lith Info Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/wellid\_process2.asp?wellid=12000001639&submit=Submit

WELLID	SEQNO	PRIMLITH	LITHMOD	DEPTH	THICKNESS	AQTYPE	CLASS	EFFECT	MAQTYPE
12000001639	1	Gravel	Dry	18	18	D	AQ	0	AQ
12000001639	2	Sand & Gravel		30	12	D	AQ	0	AQ
12000001639	3	Sand		35	5	D	AQ	0	AQ
12000001639	4	Gravel		40	5	D	AQ	0	AQ

# Well information

You can get scanned well logs off of the internet (1999 and older) by Township and section at:

[www.deq.state.mi.us/well-logs](http://www.deq.state.mi.us/well-logs)

Well logs that are 2000 and newer are available on WELLOGIC at:

<http://wellviewer.rsgis.msu.edu/>

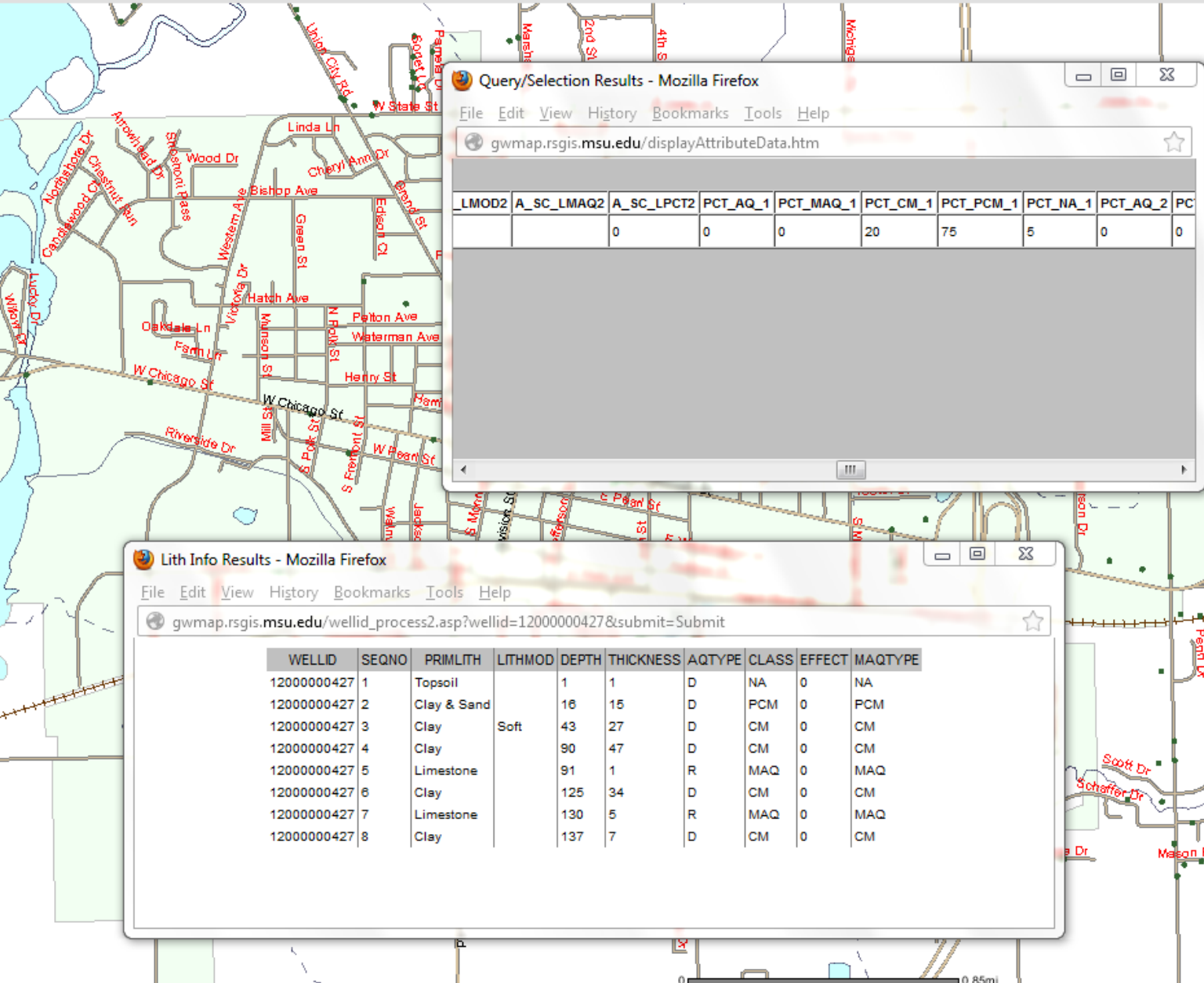






DESCRIPTION 1 (primary color)	DESCRIPTION 2 (primary material)	ASSESSMENT CLASS	DESCRIPTION 3 (secondary descriptor)	ASSESSMENT QUALIFIER	DESCRIPTION 4 (descriptor/formation)
BLACK	BASALT	MAQ	BROKEN	Down	ALPENA LS
BLACK & GRAY	BOULDERS	AQ	CEMENTED	Up	AMHERSTBURG FM
BLACK & WHITE	CLAY	CM	CLAYEY	Up	ANTRIM SHALE
BLUE	CLAY & BOULDERS	CM	CLEAN	No Effect	BASS ISLAND GROUP
BROWN	CLAY & COBBLES	CM	COARSE	No Effect	BAYPORT LS
CREAM	CLAY & GRAVEL	PCM	DENSE	No Effect	BEDFORD SHALE
DARK GRAY	CLAY & SAND	PCM	DIRTY	Up	BELL SHALE
GRAY	CLAY & SILT	PCM	DOLOMITIC	No Effect	BEREA SS
GRAY & WHITE	CLAY & STONES	PCM	DRY	No Effect	BLACK
GREEN	CLAY GRAVEL SAND	PCM	FILL	No Effect	BLACK & GRAY
LIGHT BROWN	CLAY GRAVEL SILT	PCM	FINE	No Effect	BLACK & WHITE
LIGHT GRAY	CLAY GRAVEL STONES	PCM	FINE TO COARSE	No Effect	BLACK RIVER GROUP
ORANGE	CLAY SAND GRAVEL	PCM	FINE TO MEDIUM	No Effect	BLUE
PINK	CLAY SAND SILT	PCM	FIRM	No Effect	BOIS BLANC FM
RED	CLAY SILT GRAVEL	PCM	FRACTURED	Down	BROKEN
RUST	CLAY SILT SAND	PCM	GRAVELY	Down	BROWN
TAN	COAL	PCM	GUMMY	No Effect	BURNT BLUFF GROUP
TAN & GRAY	COBBLES	AQ	HARD	No Effect	CABOT HEAD SHALE
WHITE	CONGLOMERATE	MAQ	HEAVING/QUICK	No Effect	CATARACT GROUP
YELLOW	DEBRIS		KARST	Down	CEMENTED

FULL EXTENT	PREV ZOOM	SELECT BOX	SELECT LINE	SELECT BUFFER	QUERY FEATURE	MAP LEGEND	DISPLAY OPTIONS
ZOOM IN	ZOOM OUT	FIND FEATURE	FIND ADDRESS	LAT/LON ID	LAT/LON SEARCH	TOPO LEGEND	TOOL HELP
MOVE MAP	IDENTIFY	MEASURE	CLEAR	OBSERV. WELLS	FLOW GAGES	PRINT MAP	EXTRACT LAYERS



Query/Selection Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/displayAttributeData.htm

LMOD2	A_SC_LMAQ2	A_SC_LPCT2	PCT_AQ_1	PCT_MAQ_1	PCT_CM_1	PCT_PCM_1	PCT_NA_1	PCT_AQ_2	PC
		0	0	0	20	75	5	0	0

Lith Info Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/wellid\_process2.asp?wellid=12000000427&submit=Submit

WELLID	SEQNO	PRMLITH	LITHMOD	DEPTH	THICKNESS	AQTYPE	CLASS	EFFECT	MAQTYPE
12000000427	1	Topsoil		1	1	D	NA	0	NA
12000000427	2	Clay & Sand		16	15	D	PCM	0	PCM
12000000427	3	Clay	Soft	43	27	D	CM	0	CM
12000000427	4	Clay		90	47	D	CM	0	CM
12000000427	5	Limestone		91	1	R	MAQ	0	MAQ
12000000427	6	Clay		125	34	D	CM	0	CM
12000000427	7	Limestone		130	5	R	MAQ	0	MAQ
12000000427	8	Clay		137	7	D	CM	0	CM

ACTIVE:  
WELLS COMPLETE DB

VISIBILITY:

- Base Map
- Environmental
- Ground Water Inventory
- Geology
  - ? WELLOGIC DB
  - ? WATERSHEDS
  - ? WETLANDS
  - ? SOILS
  - ? WATER QUALITY
- Location & Yield of Aquifers
- Supplemental Well Data
  - ? WELLS COMPLETE DB
  - ? WELLS HYDRO. PROP. DE
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LAYER HELP:

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- Click to show entire group.
- ? Click for layer information.
- ? Raster layer information (no database)
- ? Click for raster identify.

Auto Refresh

Refresh Map



# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

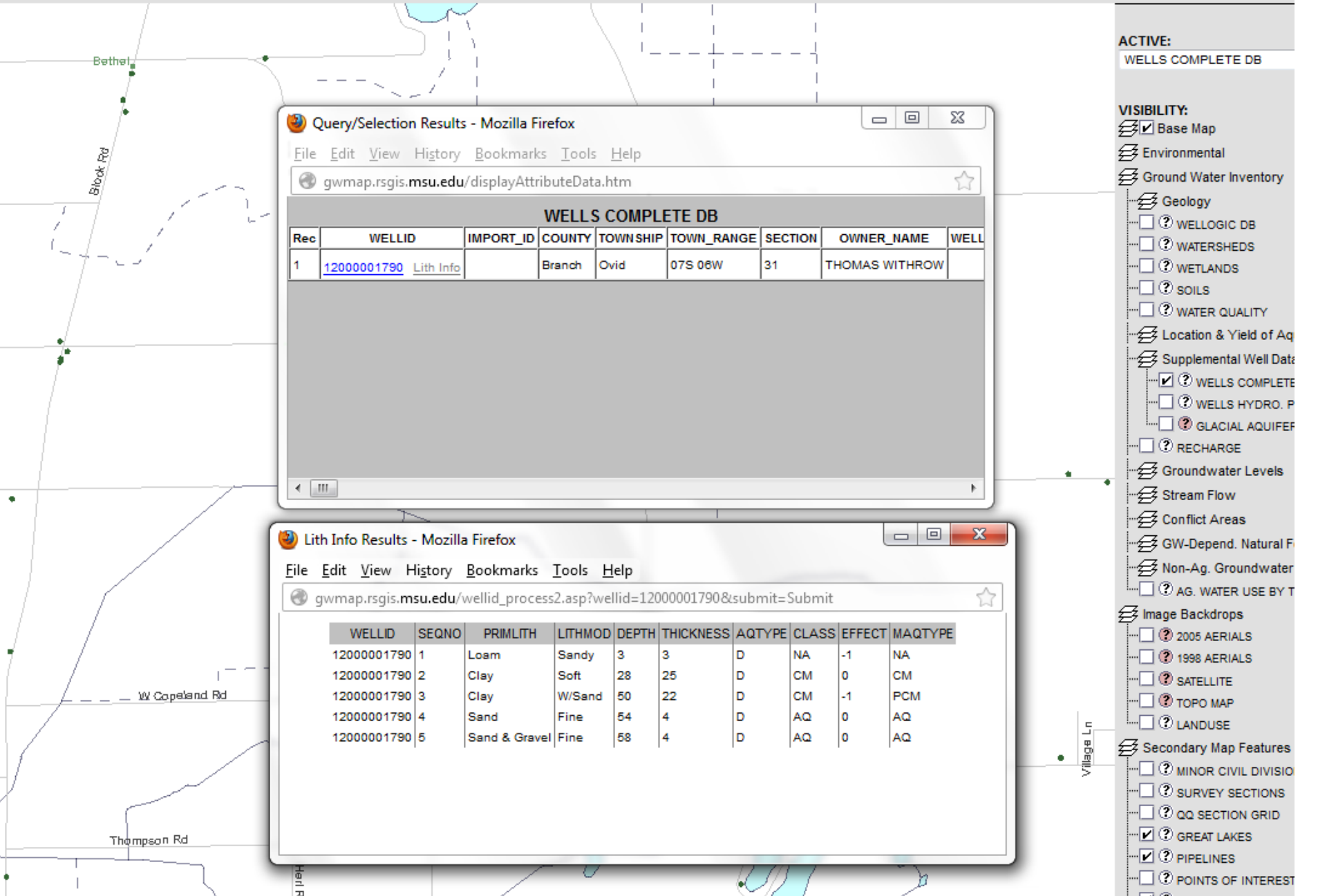
Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 22939	<b>County:</b> Branch		<b>Township:</b> Coldwater	
<b>Well ID:</b> 12000000427	<b>Town/Range:</b> 06S 06W	<b>Section:</b> 24	<b>Well Status:</b> Active	<b>WSSN:</b>	<b>Source ID/Well No:</b>
	<b>Distance and Direction from Road Intersection:</b> 2 MILES EAST OF COLDWATER ON CHICAGO ROAD				
	<b>Well Owner:</b> JIM MAXSON				
	<b>Well Address:</b> 628 E. CHICAGO ROAD COLDWATER , MI 49036		<b>Owner Address:</b> 684 E. CHICAGO ROAD COLDWATER, MI 49036		
<b>Elevation:</b>					
<b>Latitude:</b> 41.934991					
<b>Longitude:</b> -84.958482					
<b>Method of Collection:</b> Address Matching-House Number					

<b>Drilling Method:</b> Rotary	<b>Pump Installed:</b> No
<b>Well Depth:</b> 137.00 ft.	<b>Pressure Tank Installed:</b> No
<b>Well Type:</b> Unknown	<b>Pressure Relief Valve Installed:</b> No
<b>Well Use:</b> Test well	
<b>Date Completed:</b> 4/29/2000	
<b>Casing Type:</b> PVC plastic	<b>Height:</b> 2.00 ft. above grade
<b>Casing Joint:</b> Unknown	
<b>Casing Fitting:</b> Shale packer/trap	
<b>Diameter:</b> 5.00 in. to 43.00 ft. depth 4.00 in. to 137.00 ft. depth	
<b>Borehole:</b> 8.00 in. to 43.00 ft. depth	

<b>Static Water Level:</b> 15.00 ft. Below Grade	<b>Well Yield Test:</b> Pumping level 130.00 ft. at 3 GPM	<b>Yield Test Method:</b> Air	Formation Description		Thickness	Depth to Bottom
			Topsoil	1.00	1.00	
<b>Screen Installed:</b> No	<b>Intake:</b> Unscreened Sand/Gravel		Yellow Clay & Sand	15.00	16.00	
			Gray Clay Soft	27.00	43.00	
			Blue Clay	47.00	90.00	
			Limestone	1.00	91.00	
			Blue Clay	34.00	125.00	
			Limestone	5.00	130.00	
			Blue Clay	7.00	137.00	

FULL EXTENT	PREV ZOOM	SELECT BOX	SELECT LINE	SELECT BUFFER	QUERY FEATURE	MAP LEGEND	DISPLAY OPTIONS
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  - 2005 AERIALS
  - 1998 AERIALS
  - SATELLITE
  - TOPO MAP
  - LANDUSE
- Secondary Map Features
  - MINOR CIVIL DIVISIO
  - SURVEY SECTIONS
  - QQ SECTION GRID
  - GREAT LAKES
  - PIPELINES
  - POINTS OF INTEREST

Query/Selection Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/displayAttributeData.htm

**WELLS COMPLETE DB**

Rec	WELLID	IMPORT_ID	COUNTY	TOWNSHIP	TOWN_RANGE	SECTION	OWNER_NAME	WELL
1	<a href="#">12000001790</a> <small>Lith Info</small>		Branch	Ovid	07S 06W	31	THOMAS WITHROW	

Lith Info Results - Mozilla Firefox

File Edit View History Bookmarks Tools Help

gwwmap.rsgis.msu.edu/wellid\_process2.asp?wellid=12000001790&submit=Submit

WELLID	SEQNO	PRIMLITH	LITHMOD	DEPTH	THICKNESS	AQTYPE	CLASS	EFFECT	MAQTYPE
12000001790	1	Loam	Sandy	3	3	D	NA	-1	NA
12000001790	2	Clay	Soft	28	25	D	CM	0	CM
12000001790	3	Clay	W/Sand	50	22	D	CM	-1	PCM
12000001790	4	Sand	Fine	54	4	D	AQ	0	AQ
12000001790	5	Sand & Gravel	Fine	58	4	D	AQ	0	AQ





# Water Well And Pump Record



Completion is required under authority of Part 127 Act 368 PA 1978.

Failure to comply is a misdemeanor.

Import ID:

<b>Tax No:</b>	<b>Permit No:</b> 17748	<b>County:</b> Branch		<b>Township:</b> Ovid	
<b>Well ID: 12000001790</b>		<b>Town/Range:</b> 07S 06W	<b>Section:</b> 31	<b>Well Status:</b> Active	<b>WSSN:</b>
		<b>Distance and Direction from Road Intersection:</b> .2 MILES E. OF MAST RD ON S. SIDE NETTLEMAN RD			
		<b>Well Owner:</b> THOMAS WITHROW			
<b>Elevation:</b>		<b>Well Address:</b>		<b>Owner Address:</b>	
<b>Latitude:</b> 41.81845554				636.5 MAST RD	
<b>Longitude:</b> -85.05197979				COLDWATER, MI 49036	
<b>Method of Collection:</b> Interpolation-Map					

<b>Drilling Method:</b> Rotary	<b>Well Use:</b> Household	<b>Pump Installed:</b> Yes	<b>Pump Installation Only:</b> No
<b>Well Depth:</b> 58.00 ft.	<b>Date Completed:</b> 9/28/1996	<b>Pump Installation Date:</b>	HP: 0.75
<b>Well Type:</b> New	<b>Height:</b>	<b>Manufacturer:</b> Grundfos	<b>Pump Type:</b> Submersible
<b>Casing Type:</b> PVC plastic		<b>Model Number:</b> SP1	<b>Pump Capacity:</b>
<b>Casing Joint:</b> Welded		<b>Drop Pipe Length:</b> 54.00 ft.	<b>Pump Voltage:</b>
<b>Casing Fitting:</b> None		<b>Drop Pipe Diameter:</b>	<b>Drilling Record ID:</b>
<b>Diameter:</b> 5.00 in. to 50.00 ft. depth		<b>Draw Down Seal Used:</b> No	
<b>Borehole:</b> 8.00 in. to 58.00 ft. depth		<b>Pressure Tank Installed:</b> Yes	
		<b>Pressure Tank Type:</b> Unknown	
		<b>Manufacturer:</b> Other	
		<b>Model Number:</b> WM-6	<b>Tank Capacity:</b> 19.0 Gallons
		<b>Pressure Relief Valve Installed:</b> No	

<b>Static Water Level:</b> 5.00 ft. Below Grade			
<b>Well Yield Test:</b>	<b>Yield Test Method:</b> Test pump		
Pumping level 50.00 ft. after 1.00 hrs. at 4 GPM			
	<b>Formation Description</b>	<b>Thickness</b>	<b>Depth to Bottom</b>
	Brown Loam Sandy	3.00	3.00
	Gray Clay Soft	25.00	28.00
	Gray Clay W/Sand	22.00	50.00
<b>Screen Installed:</b> Yes	<b>Filter Packed:</b> No	Sand Fine Wet/Moist	4.00
<b>Screen Diameter:</b> 4.00 in.	<b>Blank:</b> 1.50 ft. Above	Sand & Gravel Fine Wet/Moist	4.00
<b>Screen Material Type:</b> Stainless steel-wire wrapped			

# Water Division

## Scanned Water Well Record Retrieval System 12/13/2012

### Search By Search Results

**County:**

COUNTY

**Township:**

TOWNSHIP

**TownRange:**

TOWNRANGE

**Section:**

All

Select

**Town: Range:**

**Section**

Select

**About This Website:**

Nearly 1 million water well records are accessible through this search program. There is no charge for the access. Water well records contain construction data on individual water wells (private residential, public water supply wells irrigation wells, industrial wells, and test wells). **Most records are from 1965 through 1999.** Historic records (those submitted before the 1965 state legislation was passed which mandated submittal of well records by water well drilling contractors) are also available.

This set of files may not be complete. County or district health department files may contain additional records that are not in these files.

To view these well records you will need to download [Adobe Acrobat](#). This is a free program.

**How to Perform a Search:**

Fill in the entry fields at the left. The minimum search criteria are **County, Township** or **Town & Range** Numbers.

Use the pick lists to select the **County** and **Township**. To minimize search errors, the township names are linked to the corresponding county, and the town & range numbers are linked to the township names.

You can also enter the town and range numbers by typing them into the separate **Town** and **Range** fields.

Type in the **Section** number (between 1 and 36) where the well is located.

When you have completed entering the well location data, click on **Select** to complete the search.

Once the well record file has been retrieved, **click on the link** to retrieve the well records. The file link will appear under the heading "File Name and Size". An example of a link is shown below:

[03N02W13 INGHAM.pdf 1446.6 kb](#)  
(Town 03N, Range 02W, Section 13, Ingham County, File size = 1446.6 kb)

**Search Tips:**

- The location information for your property can be found on your deed or property tax bill. County maps and plat books are also helpful.
- Some of the well records in the database are oil and gas well records. These two page records may contain some useful geological data.
- Older well records with limited location description (Town and Range) have been scanned into a **Historic Records** file, and those records with missing or inaccurate locational information have been scanned into an **Unverified Records** file. These files are also available in the search results.
- To begin a new search, click on the back button and enter new search criteria.

### Search By

### Search Results

**County:**COUNTY **Township:**TOWNSHIP **TownRange:**TOWNRANGE **Section:**All **Town: Range:****Section****Drinking Water Wells for Branch County**

## File Name and Size

07S06W31 BRANCH.pdf 403.5 kB

## Other References

[Historic Records 31 kB](#)[Unverified Records 4787.5 kB](#)

## Transfer Rates

Modem	Rate
56.6	400 kB/min
33.3	250 kB/min
28.8	200 kB/min

Questions or comments pertaining to this database should be directed to [ladouceura@michigan.gov](mailto:ladouceura@michigan.gov) or [pager1@michigan.gov](mailto:pager1@michigan.gov).

Y 2 3 1977



*STOWN H. A. S. Ladd, PE*  
**NORTHERN COMPANY**

INCORPORATED

0550

INDIANAPOLIS • MISHAWAKA • LANSING

TEST  
 PERMANENT

Job No. 16951

WELL-LOG No. 3 CITY Union City

County Branch

Owner Union City

Township Union

Section \_\_\_\_\_

Location \_\_\_\_\_

State Michigan

From Land Description 12' west of existing well in park.

From Street or Road \_\_\_\_\_

*55/100*

FORMATION FOUND - DESCRIBE FULLY	FROM NATURAL GROUND LEVEL			
	Depth to Top of Stratum	Depth to Bottom of Stratum	Thickness of Stratum	Static Water Level
Sand & Gravel	0	10	10	
Gravelly clay	10	63	53	
Coarse sand & Gravel	63	67	7	
Med. Sand	67	70	3	
Med. Sand & Gravel	70	80	10	
Gravelly clay	80	83	3	
Coarse sand & Gravel	83	124	41	
Coarse gravel	124	134	10	

Questions?