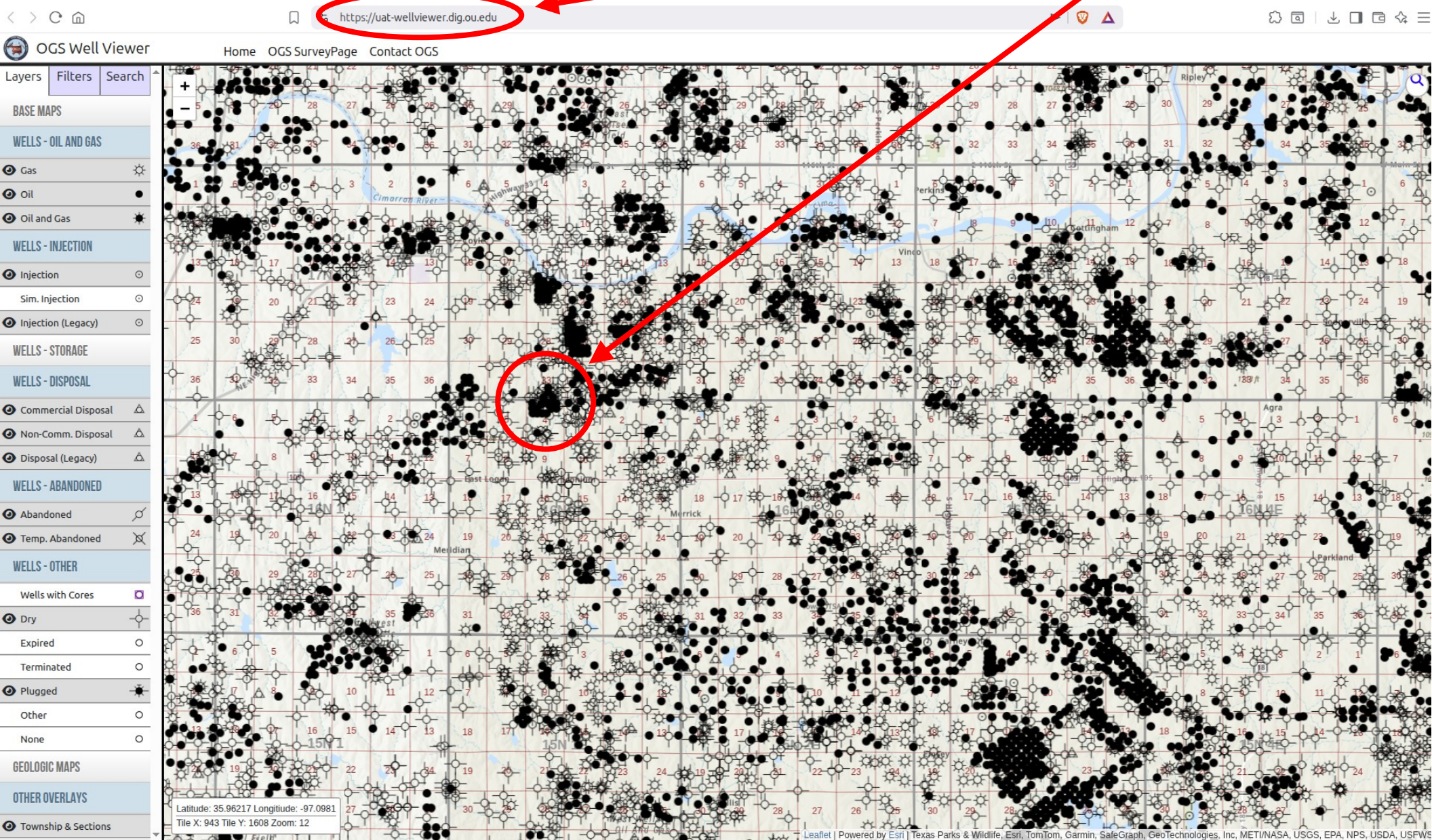


Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- Getting started with QGIS
- *The Future*

Let's go out to the Oklahoma Geological Survey Well Viewer site and pull up **Iconium field** in 17N-1E



OGS has a nice site, with readable well symbols that appear to be properly spotted.

sschad@geologist.com

Layers Filters Search

BASE MAPS

- Imagery w/ Labels
- ☒ Streets
- Topographic
- OSM

WELLS - OIL AND GAS

- ☒ Gas
- ☒ Oil
- ☒ Oil and Gas

WELLS - INJECTION

- ☒ Injection
- Sim. Injection
- ☒ Injection (Legacy)

WELLS - STORAGE

WELLS - DISPOSAL

- ☒ Commercial Disposal
- ☒ Non-Comm. Disposal
- ☒ Disposal (Legacy)

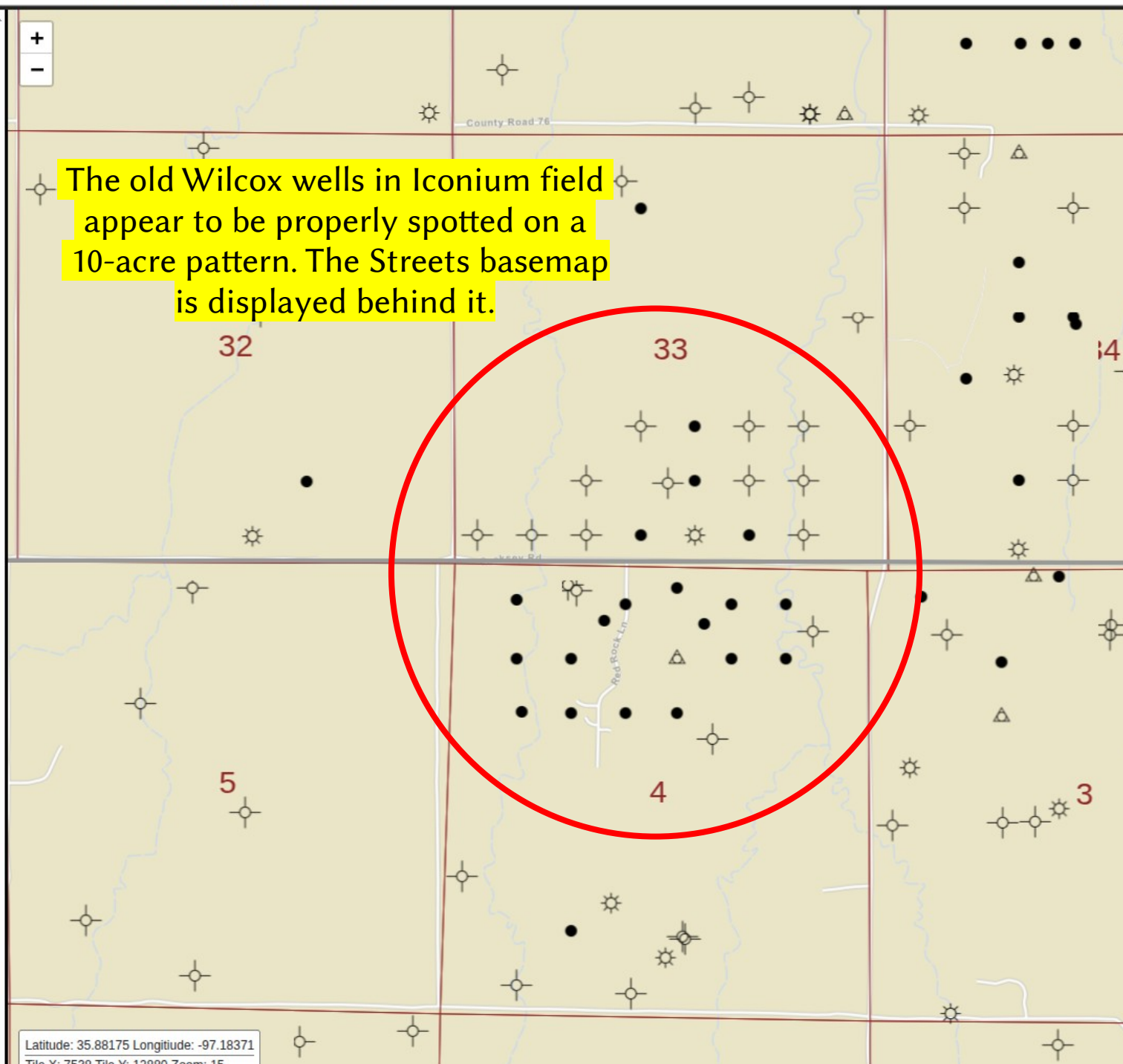
WELLS - ABANDONED

- ☒ Abandoned
- ☒ Temp. Abandoned

WELLS - OTHER

- Wells with Cores
- ☒ Dry
- Expired
- Terminated
- ☒ Plugged
- Other

The old Wilcox wells in Iconium field appear to be properly spotted on a 10-acre pattern. The Streets basemap is displayed behind it.



Layers Filters Search

☐ Electric Log

☐ Mud Log

☐ Core/Sample at OPIC

☐ Core Photo

☐ Core Analysis

☐ 1002A

☐ Horizontal Well Data

Total Depth (Feet)

0 to 99999

Completion Date

n/dd/yyyy to mm/dd/yyyy

Clear

These checkboxes will restrict displayed wells to those with electric logs, etc.

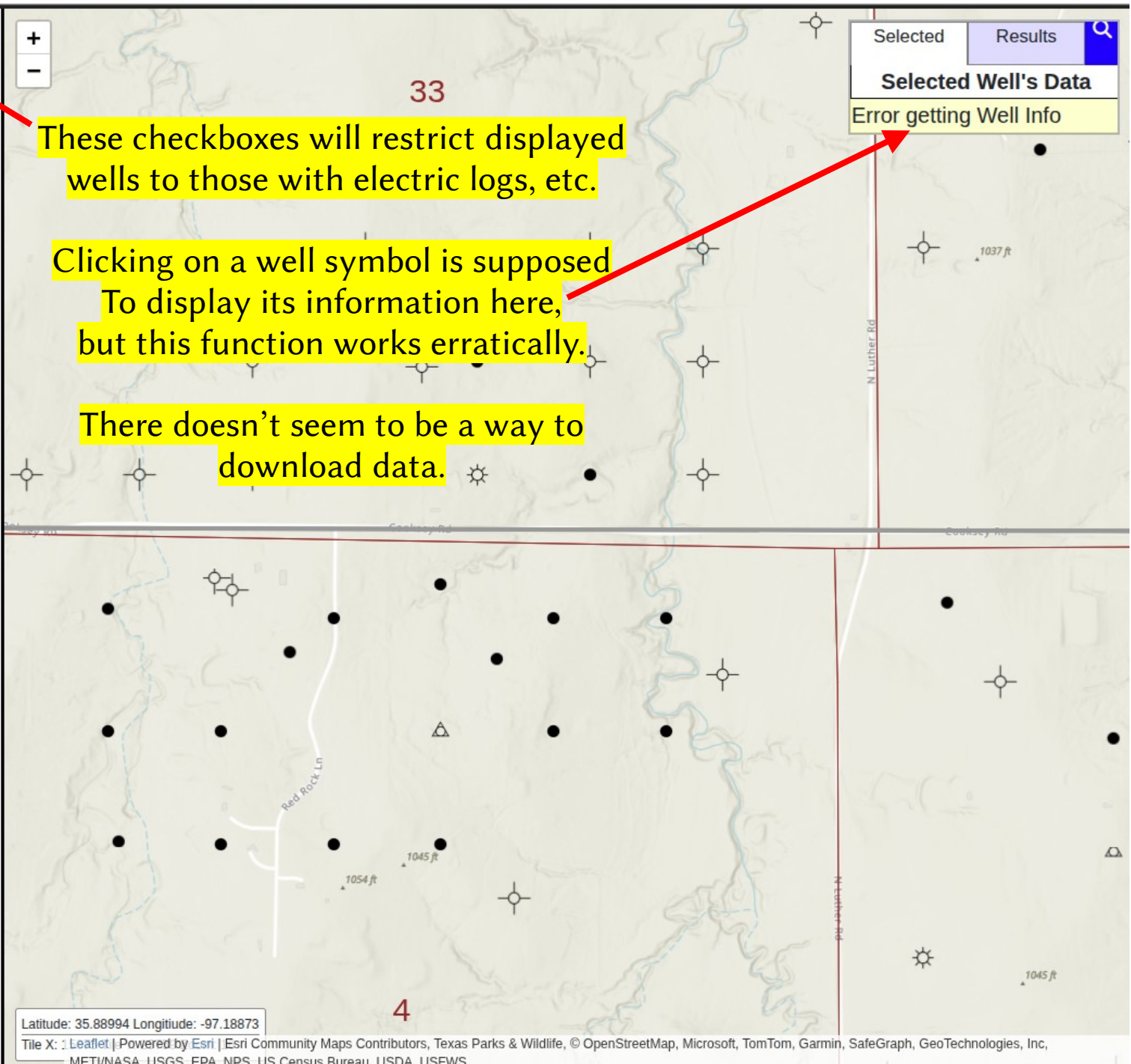
Clicking on a well symbol is supposed to display its information here, but this function works erratically.

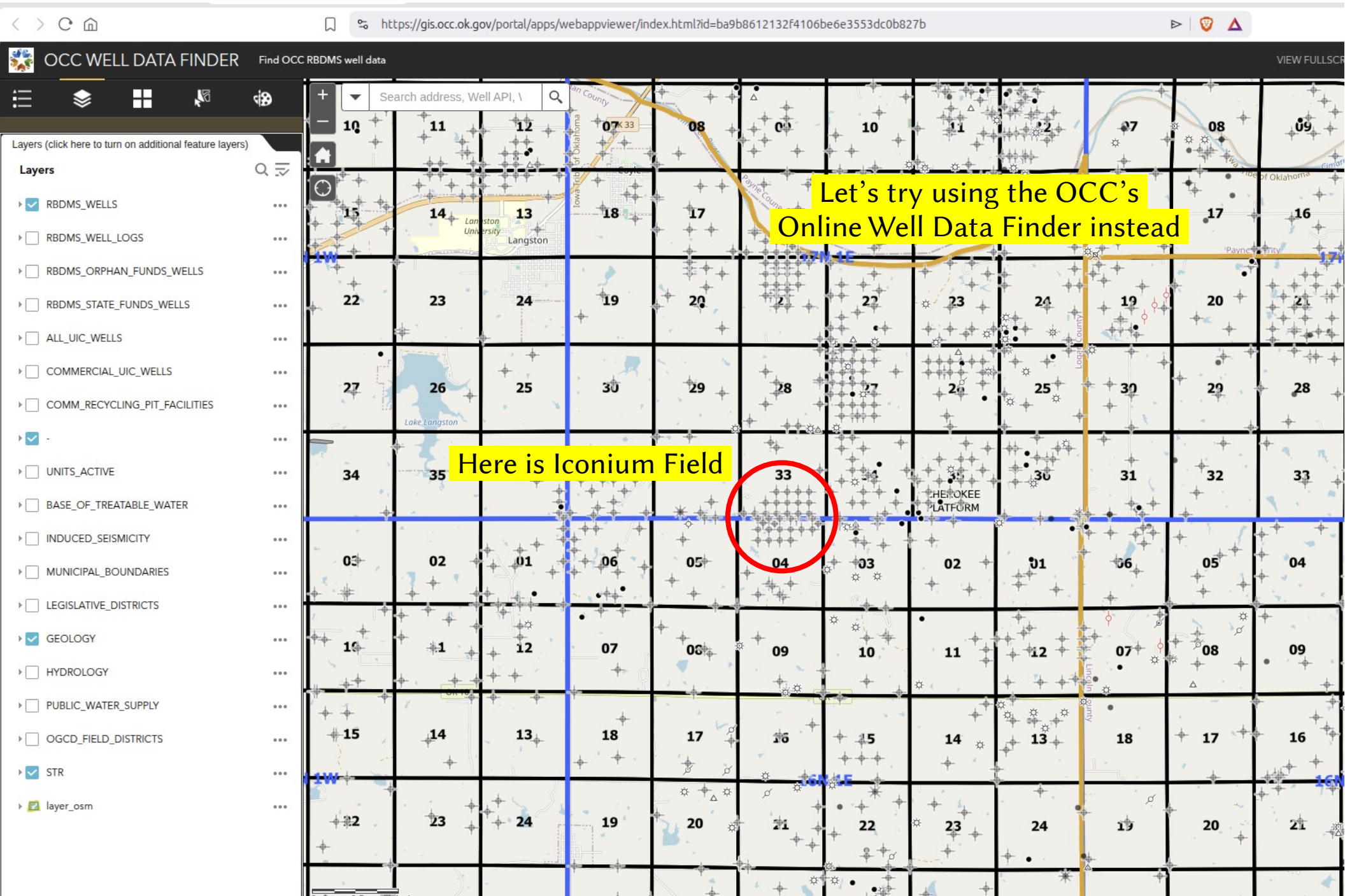
There doesn't seem to be a way to download data.

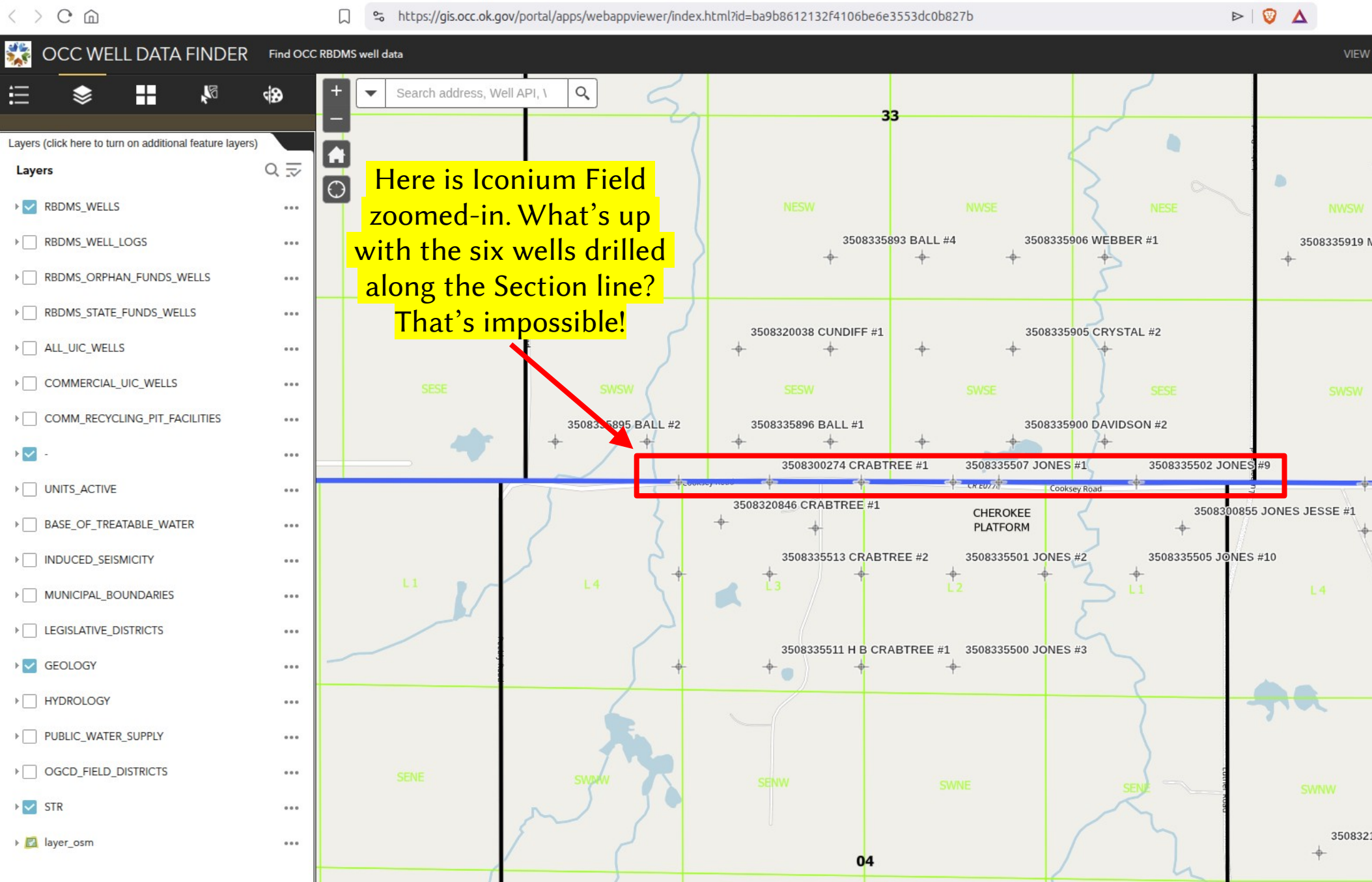
Selected Results

Selected Well's Data

Error getting Well Info







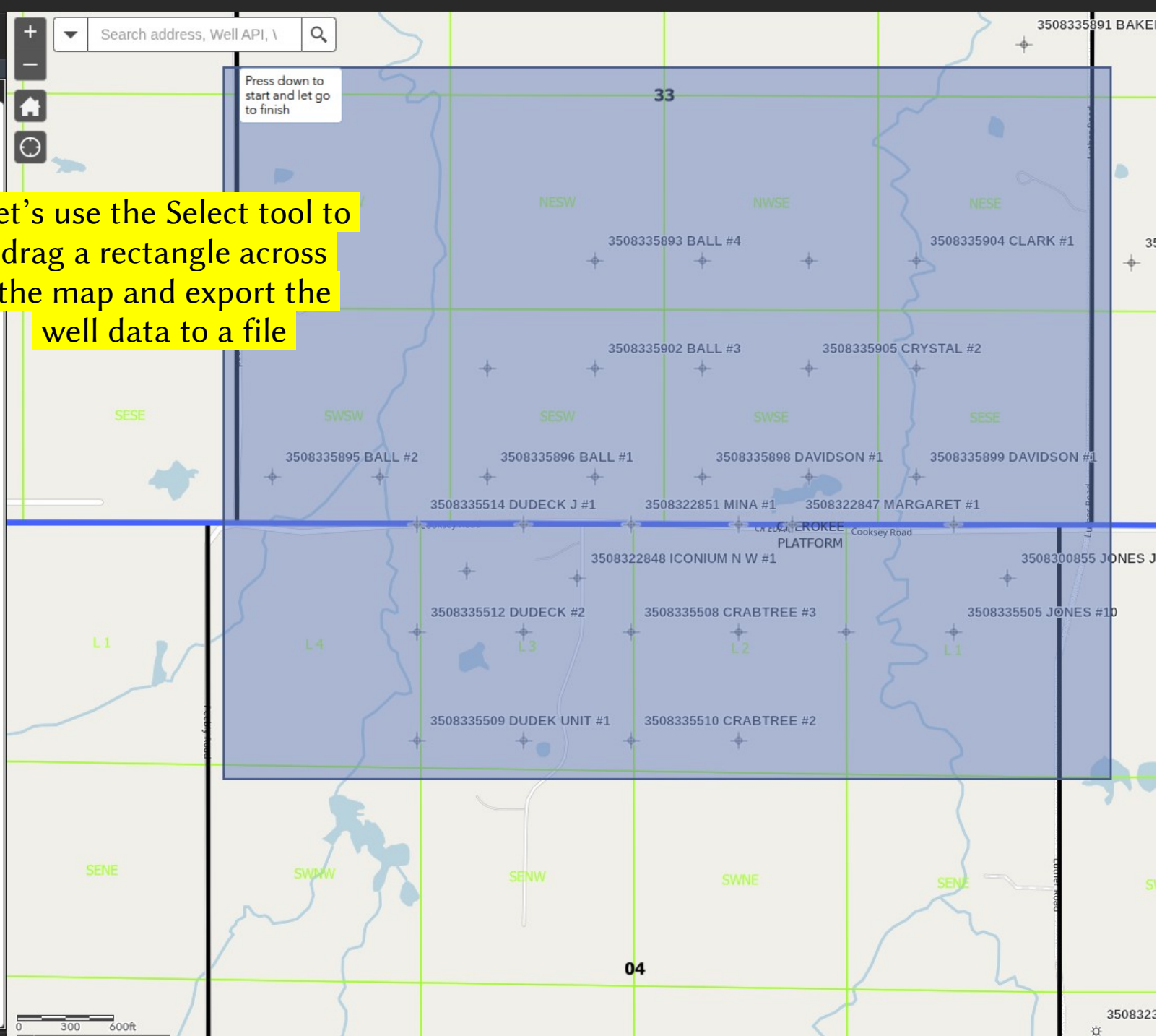
Select Tool

Select Clear

Layer

- ☒ RBDMS_WELLS 0 ...
- ☐ RBDMS_WELLS_LF_LOGS 0 ...
- ☐ RBDMS_ORPHAN_FUNDS_WELLS 0 ...
- ☐ RBDMS_STATE_FUNDS_WELLS 0 ...
- ☐ ALL_UIC_WELLS 0 ...
- ☐ COMMERCIAL_UIC_WELLS 0 ...
- ☐ COMM_RECYCLING_PIT_FACILITIES 0 ...
- ☒ 0 ...
- ☐ UNITS_ACTIVE 0 ...
- ☐ BTW_Points 0 ...
- ☐ BTW_Contour 0 ...
- ☐ AOI_20150318 0 ...
- ☐ AOI_20150624 0 ...
- ☐ AOI_20150702 0 ...
- ☐ Medford_EQ_20151203 0 ...
- ☐ Medford3mi_20151203 0 ...
- ☐ Medford6mi_20151203 0 ...
- ☐ Medford10mi_20151203 0 ...
- ☐ Medford15mi_20151203 0 ...
- ☐ Byron_EQ_20151203 0 ...
- ☐ Byron3mi_20151203 0 ...

Let's use the Select tool to drag a rectangle across the map and export the well data to a file



Select Tool

Select Clear

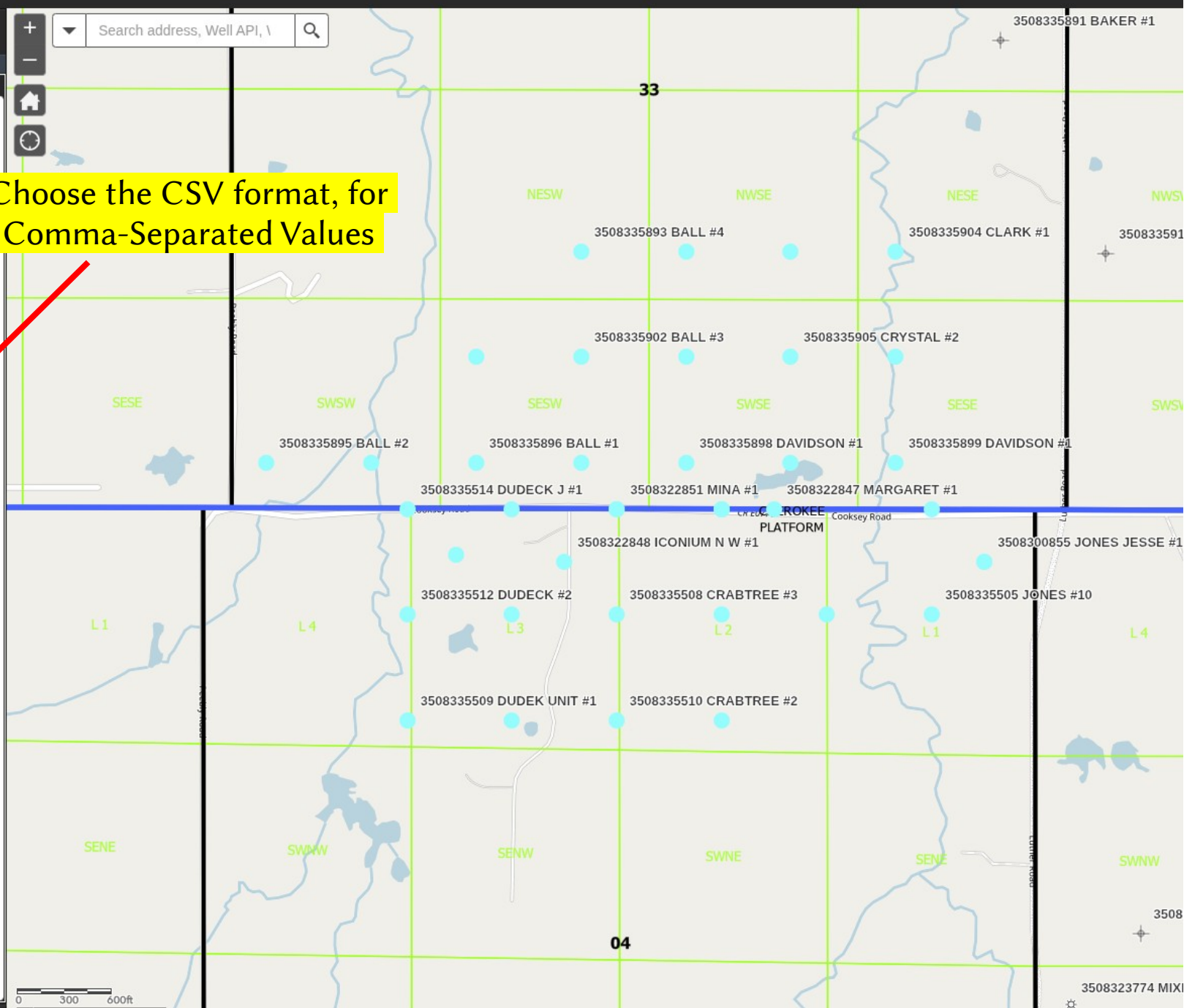
Layer

- ☒ RBDMS_WELLS 38
- ☐ RBDMS_WEL
- ☐ RBDMS_ORP
- ☐ RBDMS_STAT
- ☐ ALL_UIC_WE
- ☐ COMMERCIA
- ☐ COMM_REC
- ☒ -
- ☐ UNITS_ACTIV
- ☐ BTW_Points
- ☐ BTW_Contou
- ☐ AOI_2015031
- ☐ AOI_2015062
- ☐ AOI_2015070
- ☐ Medford_EQ_20151203
- ☐ Medford3mi_20151203 0
- ☐ Medford6mi_20151203 0
- ☐ Medford10mi_20151203 0
- ☐ Medford15mi_20151203 0
- ☐ Byron_EQ_20151203 0
- ☐ Byron3mi_20151203 0

Selection actions

- Zoom to
- Pan to
- Flash
- Export to CSV file**
- Export to feature collection
- Export to GeoJSON
- Statistics...
- Create layer
- Save to My Content
- View in Attribute Table
- Clear selection

Choose the CSV format, for
Comma-Separated Values



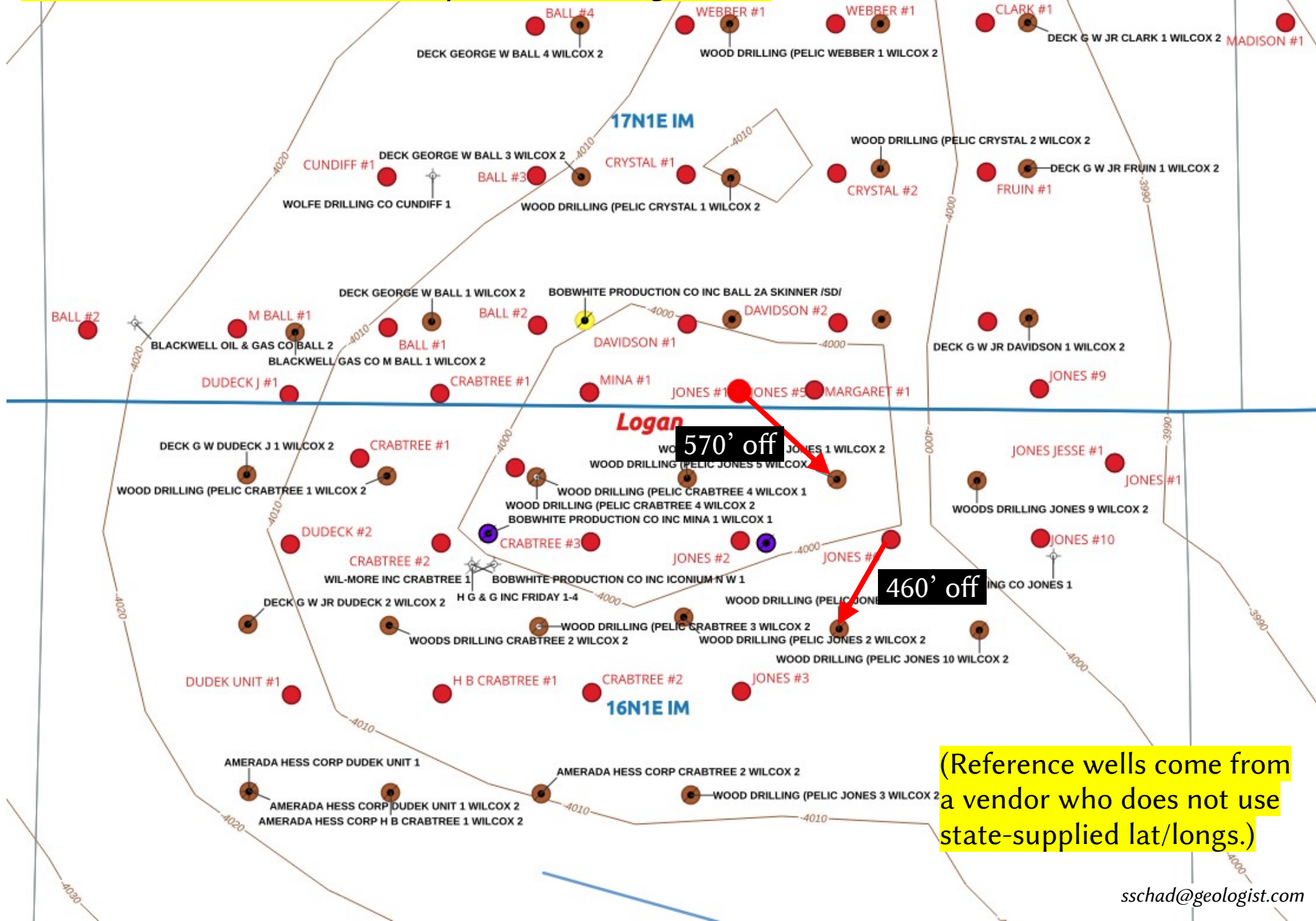
Here's the downloaded file. You get operator and well names, locations, and little else.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	OBJECTID	API	WELL_NAME	WELL_NUM	OPERATOR	WELLSTATUS	WELLTYPE	SYMBOL_CLASS	SH_LAT	SH_LON	COUNTY	SECTION	TOWNSHIP	RANGE	QTR4	QTR3	QTR2	QTR1	PM	FOOTAGE_EW	EW_F	
2	201422	3508300274	CRABTREE	#1	HOEN EXPLORATION COMPANY INC	PA	DRY	PLUGGED	35.8985718	-97.205608	LOGAN	4	16N	01E		NW	NE	NW	IM	990	E	
3	201610	3508300481	JONES	#1	OTC/OCC NOT ASSIGNED	PA	NT	PLUGGED	35.8976659	-97.1955828	LOGAN	4	16N	01E			CNE	NE	IM	660	E	
4	201913	3508300855	JONES JESSE	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.8976659	-97.1955828	LOGAN	4	16N	01E			CNE	NE	IM	660	W	
5	201993	3508320038	CUNDIFF	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9011931	-97.2063685	LOGAN	33	17N	01E		NW	SE	SW	IM	0		
6	202750	3508320846	CRABTREE	#1	OTC/OCC NOT ASSIGNED	PA	NT	PLUGGED	35.8978	-97.2068	LOGAN	4	16N	01E			NE	NW	IM	2080	W	
7	204537	3508322847	MARGARET	#1	BOBWHITE PRODUCTION CO INC	PA	NT	PLUGGED	35.8985722	-97.2000385	LOGAN	4	16N	01E		N2	NW	NE	IM	660	W	
8	204538	3508322848	ICONIUM N W	#1	BOYCE PRODUCING CORPORATION	PA	TM	PLUGGED	35.8976654	-97.2044941	LOGAN	4	16N	01E			CNE	NW	IM	1980	W	
9	204540	3508322851	MINA	#1	BOBWHITE PRODUCTION CO INC	PA	NT	PLUGGED	35.898572	-97.2033802	LOGAN	4	16N	01E		NE	NE	NW	IM	2053	W	
10	206589	3508335500	JONES	#3	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8949462	-97.2011524	LOGAN	4	16N	01E		NW	SW	NE	IM	330	W	
11	206590	3508335501	JONES	#2	OTC/OCC NOT ASSIGNED	PA	SWD	PLUGGED	35.8967592	-97.2011524	LOGAN	4	16N	01E		SW	NW	NE	IM	0		
12	206591	3508335502	JONES	#9	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8985723	-97.1966967	LOGAN	4	16N	01E		NW	NE	NE	IM	990	E	
13	206592	3508335503	JONES	#5	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8985721	-97.2011524	LOGAN	4	16N	01E		NW	NW	NE	IM	990	W	
14	206593	3508335504	JONES	#6	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8967593	-97.1989246	LOGAN	4	16N	01E		SE	NW	NE	IM	990	W	
15	206594	3508335505	JONES	#10	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8967594	-97.1966967	LOGAN	4	16N	01E		SW	NE	NE	IM	990	E	
16	206595	3508335506	CRABTREE	#4	OTC/OCC NOT ASSIGNED	PA	NT	PLUGGED	35.898572	-97.2033802	LOGAN	4	16N	01E		NE	NE	NW	IM	330	E	
17	206596	3508335507	JONES	#1	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8985721	-97.2011524	LOGAN	4	16N	01E		NW	NW	NE	IM	330	W	
18	206597	3508335508	CRABTREE	#3	OTC/OCC NOT ASSIGNED	PA	NT	PLUGGED	35.896759	-97.2033802	LOGAN	4	16N	01E		SE	NE	NW	IM	330	E	
19	206598	3508335509	DUDEK UNIT	#1	AMERADA HESS CORPORATION	PA	OIL	PLUGGED	35.8949456	-97.2078358	LOGAN	4	16N	01E		NE	SW	NW	IM	990	W	
20	206599	3508335510	CRABTREE	#2	AMERADA HESS CORPORATION	PA	OIL	PLUGGED	35.894946	-97.2033802	LOGAN	4	16N	01E	C	NE	SE	NW	IM	2310	W	
21	206600	3508335511	H B CRABTREE	#1	AMERADA HESS CORPORATION	PA	OIL	PLUGGED	35.8949458	-97.205608	LOGAN	4	16N	01E		NW	SE	NW	IM	990	E	
22	206601	3508335512	DUDECK	#2	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8967585	-97.2078358	LOGAN	4	16N	01E		SE	NW	NW	IM	990	W	
23	206602	3508335513	CRABTREE	#2	OTC/OCC NOT ASSIGNED	PA	NT	PLUGGED	35.8967588	-97.205608	LOGAN	4	16N	01E		SW	NE	NW	IM	990	E	
24	206603	3508335514	DUDECK J	#1	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8985715	-97.2078358	LOGAN	4	16N	01E		NE	NW	NW	IM	990	W	
25	206948	3508335892	WEBBER	#1	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.9030064	-97.2019121	LOGAN	33	17N	01E		SW	NW	SE	IM	330	W	
26	206949	3508335893	BALL	#4	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9030063	-97.2041403	LOGAN	33	17N	01E		SE	NE	SW	IM	330	E	
27	206950	3508335894	BALL	#2	BOBWHITE PRODUCTION CO INC	PA	NT	PLUGGED	35.8993804	-97.2041403	LOGAN	33	17N	01E		SE	SE	SW	IM	330	E	
28	206951	3508335895	BALL	#2	BLACKWELL GAS COMPANY	PA	NT	PLUGGED	35.8993796	-97.2108249	LOGAN	33	17N	01E		SW	SW	SW	IM	330	W	
29	206952	3508335896	BALL	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.8993802	-97.2063685	LOGAN	33	17N	01E		SW	SE	SW	IM	990	E	
30	206953	3508335897	M BALL	#1	BLACKWELL GAS COMPANY	PA	DRY	PLUGGED	35.8993799	-97.2085967	LOGAN	33	17N	01E		SE	SW	SW	IM	1035	W	
31	206954	3508335898	DAVIDSON	#1	OTC/OCC NOT ASSIGNED	PA	GAS	PLUGGED	35.8993805	-97.2019121	LOGAN	33	17N	01E		SW	SW	SE	IM	330	W	
32	206955	3508335899	DAVIDSON	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.8993807	-97.1974557	LOGAN	33	17N	01E		SW	SE	SE	IM	990	E	
33	206956	3508335900	DAVIDSON	#2	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.8993807	-97.1996839	LOGAN	33	17N	01E		SE	SW	SE	IM	990	W	
34	206957	3508335901	CRYSTAL	#1	OTC/OCC NOT ASSIGNED	PA	OIL	PLUGGED	35.9011935	-97.2019121	LOGAN	33	17N	01E		NW	SW	SE	IM	0		
35	206958	3508335902	BALL	#3	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9011933	-97.2041403	LOGAN	33	17N	01E		NE	SE	SW	IM	330	E	
36	206959	3508335903	FRUIN	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9011937	-97.1974557	LOGAN	33	17N	01E		NW	SE	SE	IM	990	E	
37	206960	3508335904	CLARK	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9030066	-97.1974557	LOGAN	33	17N	01E		SW	NE	SE	IM	990	E	
38	206961	3508335905	CRYSTAL	#2	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9011936	-97.1996839	LOGAN	33	17N	01E		NE	SW	SE	IM	990	W	
39	206962	3508335906	WEBBER	#1	OTC/OCC NOT ASSIGNED	PA	DRY	PLUGGED	35.9030065	-97.1996839	LOGAN	33	17N	01E		SE	NW	SE	IM	990	W	
40																						
41																						

How accurate are the state's lat/longs for well locations?

Wells exported from the OCC are red dots (reference map made with QGIS).

The locations are off. Some wells plot in the wrong section!



(Reference wells come from a vendor who does not use state-supplied lat/longs.)

Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- Getting started with QGIS
- *The Future*

Let's take the data file exported from the OCC, clean it up a bit, and use a program that I wrote thirty years ago to spot wells from their legal descriptions.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	SECTION	TOWNSHIP	RANGE	SPOT	STATUS	WELLNAME										
2	4	16N	01E	NW NE NW	D&A	CRABTREE #1										
3	4	16N	01E	NE NE	AOIL	JONES #1										
4	4	16N	01E	NE NE	D&A	JONES JESSE #1										
5	33	17N	01E	NW SE SW	D&A	CUNDIFF #1										
6	4	16N	01E	2080FWL 1980FSL	AOIL	CRABTREE #1										
7	4	16N	01E	660FWL 2072FSL	AOIL	MARGARET #1										
8	4	16N	01E	NE NW	TM	ICONIUM N W #1										
9	4	16N	01E	2053FWL 2112FSL	AOIL	MINA #1										
10	4	16N	01E	NW SW NE	AOIL	JONES #3										
11	4	16N	01E	SW NW NE	ASWD	JONES #2										
12	4	16N	01E	NW NE NE	AOIL	JONES #9										
13	4	16N	01E	NW NW NE	AOIL	JONES #5										
14	4	16N	01E	SE NW NE	AOIL	JONES #6										
15	4	16N	01E	SW NE NE	AOIL	JONES #10										
16	4	16N	01E	NE NE NW	AOIL	CRABTREE #4										
17	4	16N	01E	NW NW NE	AOIL	JONES #1										
18	4	16N	01E	SE NE NW	AOIL	CRABTREE #3										
19	4	16N	01E	NE SW NW	AOIL	DUDEK UNIT #1										
20	4	16N	01E	NE SE NW	AOIL	CRABTREE #2										
21	4	16N	01E	NW SE NW	AOIL	H B CRABTREE #1										
22	4	16N	01E	SE NW NW	AOIL	DUDECK #2										
23	4	16N	01E	SW NE NW	AOIL	CRABTREE #2										
24	4	16N	01E	NE NW NW	AOIL	DUDECK J #1										
25	33	17N	01E	SW NW SE	AOIL	WEBBER #1										
26	33	17N	01E	SE NE SW	D&A	BALL #4										
27	33	17N	01E	SE SE SW	AOIL	BALL #2										
28	33	17N	01E	SW SW SW	AOIL	BALL #2										
29	33	17N	01E	SW SE SW	D&A	BALL #1										
30	33	17N	01E	1035FWL 285FSL	D&A	M BALL #1										
31	33	17N	01E	SW SW SE	AGAS	DAVIDSON #1										
32	33	17N	01E	SW SE SE	D&A	DAVIDSON #1										
33	33	17N	01E	SE SW SE	AOIL	DAVIDSON #2										
34	33	17N	01E	NW SW SE	AOIL	CRYSTAL #1										
35	33	17N	01E	330FEL 960FSL	D&A	BALL #3										
36	33	17N	01E	NW SE SE	D&A	FRUIN #1										
37	33	17N	01E	SW NE SE	D&A	CLARK #1										
38	33	17N	01E	NE SW SE	D&A	CRYSTAL #2										
39	33	17N	01E	SE NW SE	D&A	WEBBER #1										
40																

DOSBox-X 2024.03.01: QKPRO - 3000 cycles/ms

Main CPU Video Sound DOS Capture Drive Help

QuickPlot Professional Copyright (c) 1992, Scott T. Schad / PetroLogic

QuickPlot expects a well file with the following format for each line:
 Section,Township,Range,Spot,Symbol,Datum (i.e.-1,12N,22E,NE SW,D&A,-2245).
 QuickPlot will generate a script file that you can load into AutoCad to
 reproduce the base map. After starting a new drawing in AutoCad, you type
 SCRIPT followed by the file name you created with this program.

Name of input WELL file: wells.csv
 Name to give SCRIPT file: wells.scr (.scr)

Enter Township and Range
 of top right and bottom
 left corner of map:

TWN:17N
 RNG:1E

TWN:16N
 RNG:1E

Well symbol diameter in feet: 100 (scales both symbols and labels)

F1=Help ENTER=Accept inputs ESC=exit

My DOS program converts CSV files into Autocad script files. It asks for file input and output names, the township extents to draw, and size to use for well symbols.

You can specify up to 16 labels for each well, where to place them around the symbol, whether to create a point (x,y,z) layer (if the label is subsea value), and the color to use.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	SECTION	TOWNSHIP	RANGE	SPOT	STATUS	WELLNAME										
2	4	16N	01E	NW NE NW	D&A	CRABTREE #1										
3	4	16N	01E	NE NE	AOIL	JONES #1										
4	4	16N	01E	NE NE	D&A	JONES JESSE #1										
5	33	17N	01E	NW SE SW	D&A	CUNDIFF #1										
6	4	16N	01E	2080FWL 1980FSL	AOIL	CRABTREE #1										
7	4	16N	01E	660FWL 2072FSL	AOIL	MARGARET #1										
8	4	16N	01E	NE NW	TM	ICONIUM N W #1										
9	4	16N	01E	2053FWL 2112FSL	AOIL	MINA #1										
10	4	16N	01E	NW SW NE	AOIL	JONES #3										
11	4	16N	01E	SW NW NE	ASWD	JONES #2										
12	4	16N	01E	NW NE NE	AOIL	JONES #9										
13	4	16N	01E	NW NW NE	AOIL	JONES #5										
14	4	16N	01E	SE NW NE	AOIL	JONES #6										
15	4	16N	01E	SW NE NE	AOIL	JONES #10										
16	4	16N	01E	NE NE NW	AOIL	CRABTREE #4										
17	4	16N	01E	NW NW NE	AOIL	JONES #1										
18	4	16N	01E	SE NE NW	AOIL	CRABTREE #3										
19	4	16N	01E	NE SW NW	AOIL	DUDEK UNIT #1										
20	4	16N	01E	NE SE NW	AOIL	CRABTREE #2										
21	4	16N	01E	NW SE NW	AOIL	H B CRABTREE #1										
22	4	16N	01E	SE NW NW	AOIL	DUDECK #2										
23	4	16N	01E	SW NE NW	AOIL	CRABTREE #2										
24	4	16N	01E	NE NW NW	AOIL	DUDECK J #1										
25	33	17N	01E	SW NW SE	AOIL	WEBBER #1										
26	33	17N	01E	SE NE SW	D&A	BALL #4										
27	33	17N	01E	SE SE SW	AOIL	BALL #2										
28	33	17N	01E	SW SW SW	AOIL	BALL #2										
29	33	17N	01E	SW SE SW	D&A	BALL #1										
30	33	17N	01E	1035FWL 285FSL	D&A	M BALL #1										
31	33	17N	01E	SW SW SE	AGAS	DAVIDSON #1										
32	33	17N	01E	SW SE SE	D&A	DAVIDSON #1										
33	33	17N	01E	SE SW SE	AOIL	DAVIDSON #2										
34	33	17N	01E	NW SW SE	AOIL	CRYSTAL #1										
35	33	17N	01E	330FEL 960FSL	D&A	BALL #3										
36	33	17N	01E	NW SE SE	D&A	FRUIN #1										
37	33	17N	01E	SW NE SE	D&A	CLARK #1										
38	33	17N	01E	NE SW SE	D&A	CRYSTAL #2										
39	33	17N	01E	SE NW SE	D&A	WEBBER #1										
40																

DOSBox-X 2024.03.01: QKPRO - 3000 cycles/ms

Main CPU Video Sound DOS Capture Drive Help

For each DATUM, name the layer it will reside on, the position the label should have relative to each well symbol, whether an associated POINT layer (for contouring) should be created, and the color for the layer:

Layer Name	Position	Assoc Pt	Layer?(Y/N)	Color
WELLNAME	1		N	1

Label position codes

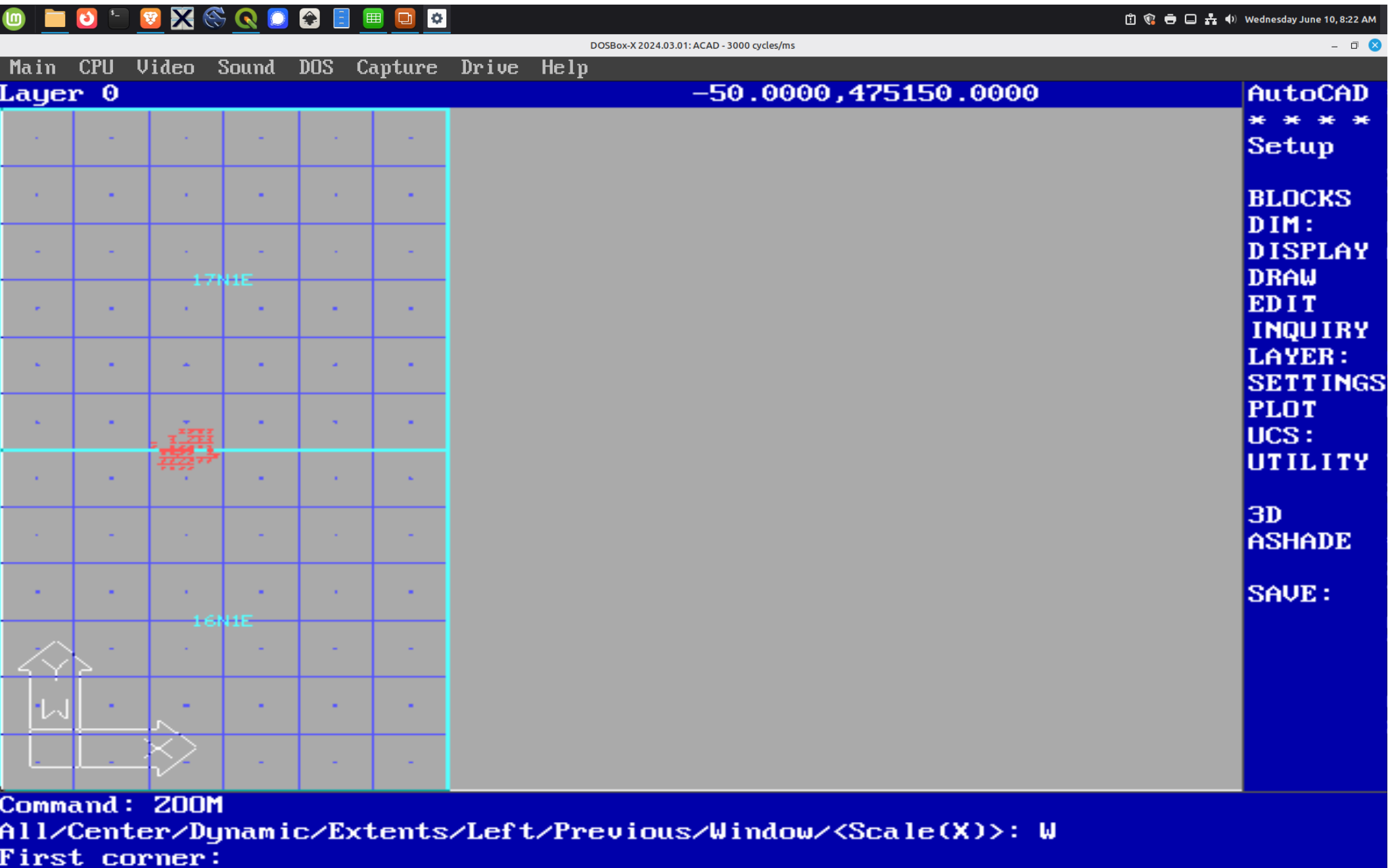
1
2
8 3
symbol
7 4
5
6

Color codes

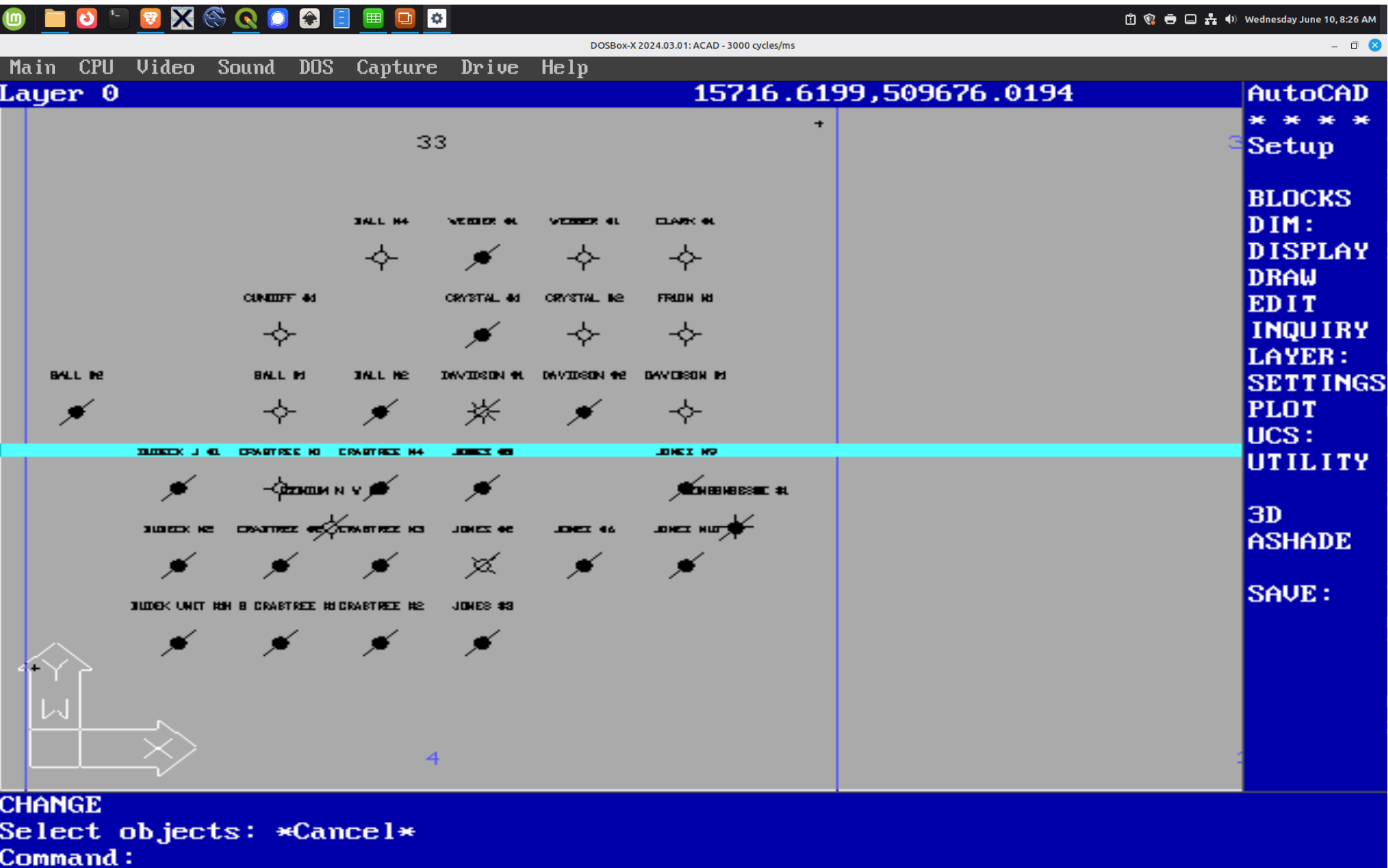
1 = red
2 = yellow
3 = green
4 = cyan
5 = blue
6 = magenta
7 = white(or black)

F1=Help ENTER=Accept inputs ESC=exit

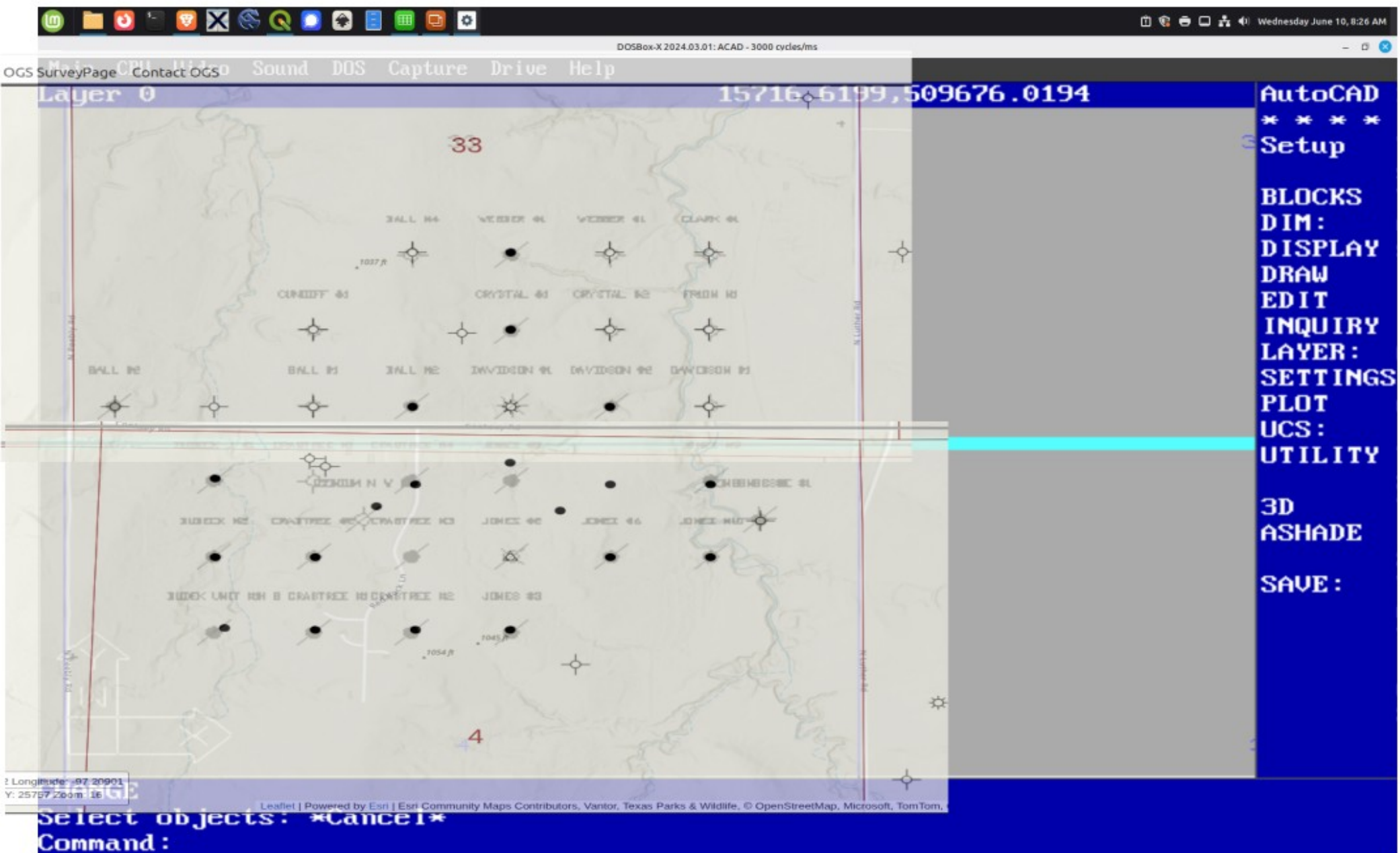
Here is the map it creates in an antique version of Autocad. It looks a bit squashed due to the limitations of the DOS emulator that I'm running on my Linux machine.



Here is a zoomed-in view of the wells in Iconium Field, spotted from their legal descriptions. It's a heckuva lot closer to reality than a map made using the OCC's lat/longs.



Overlay a screenshot of the OGS map, adjust for scale (since the sections aren't square), and the match isn't too bad. I'd guess that OGS locations were originally calculated from legal descriptions.



Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- Getting started with QGIS
- *The Future*

Layers Filters Search

BASE MAPS

Imagery w/ Labels

Streets

☒ Topographic

OSM

WELLS - OIL AND GAS

☒ Gas ☐

☒ Oil ☒

☒ Oil and Gas ☒

WELLS - INJECTION

WELLS - STORAGE

WELLS - DISPOSAL

WELLS - ABANDONED

WELLS - OTHER

GEOLOGIC MAPS

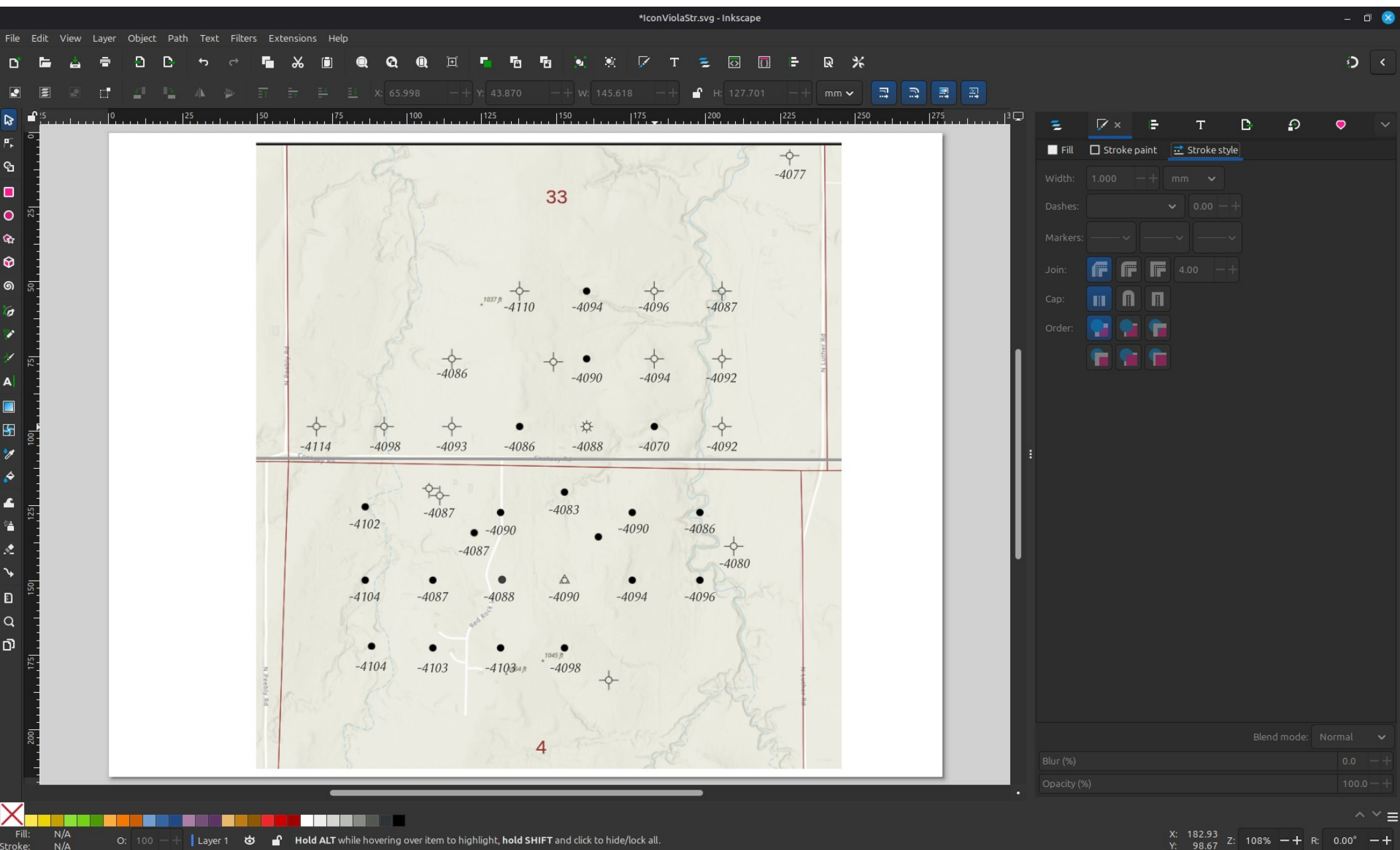
OTHER OVERLAYS

☒ Township & Sections

Let's put this base map into a free graphics package called Inkscape, add data, and contour it with another free package called SAGA

Latitude: 35.89842 Longitude: -97.20901
Tile X: 15071 Tile Y: 25757 Zoom: 16

Here the basemap image loaded into Inkscape. I've added Viola tops as text labels. Let's extract them.



Inkscape uses the SVG
(Scaled Vector Graphics)
file format.

SVG is an XML document,
which is a pure text file.

You can open and edit it
with a text editor.

Let's find the coordinates
of the well labels and extract
them to a file.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!-- Created with Inkscape (http://www.inkscape.org/) -->

<svg
  width="11in"
  height="8.5in"
  viewBox="0 0 279.4 215.9"
  version="1.1"
  id="svg1"
  xml:space="preserve"
  inkscape:version="1.4.4 (dcaf3e7d9e, 2026-05-05)"
  sodipodi:docname="IconViolaStr.svg"
  xmlns:inkscape="http://www.inkscape.org/namespaces/inkscape"
  xmlns:sodipodi="http://sodipodi.sourceforge.net/DTD/sodipodi-0.dtd"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns="http://www.w3.org/2000/svg"
  xmlns:svg="http://www.w3.org/2000/svg"><sodipodi:namedview
  id="namedview1"
  pagecolor="#ffffff"
  bordercolor="#000000"
  borderopacity="0.25"
  inkscape:showpageshadow="2"
  inkscape:pageopacity="0.0"
  inkscape:pagecheckerboard="0"
  inkscape:deskcolor="#d1d1d1"
  inkscape:document-units="mm"
  inkscape:zoom="1.0833333"
  inkscape:cx="527.53846"
  inkscape:cy="408"
  inkscape:window-width="1920"
  inkscape:window-height="1128"
  inkscape:window-x="0"
  inkscape:window-y="40"
  inkscape:window-maximized="1"
  inkscape:current-layer="layer1" /><defs
  id="defs1"><clipPath
  clipPathUnits="userSpaceOnUse"
  id="clipPath1"><rect
```

You can do this with a text editor that lets you record macros. The macro I use looks for each [id="text"] element and extracts the X, Y, and text labels. It also makes the "Y" values negative. Why?

```
id="image1"
x="4.5488043"
y="2.7018044"
clip-path="url(#clipPath"
transform="matrix(1.1574
xml:space="preserve"
style="font-size:4.9389p
x="137.99"
y="53.97"
id="text2"><tspan
  sodipodi:role="line"
  id="tspan2"
  style="font-style:ital
  x="137.99"
  y="53.97">-4110</tspan
xml:space="preserve"
style="font-size:4.9389p
x="177.06732"
y="59.958652"
id="text4"><tspan
  sodipodi:role="line"
  id="tspan4"
  style="font-style:ital
```



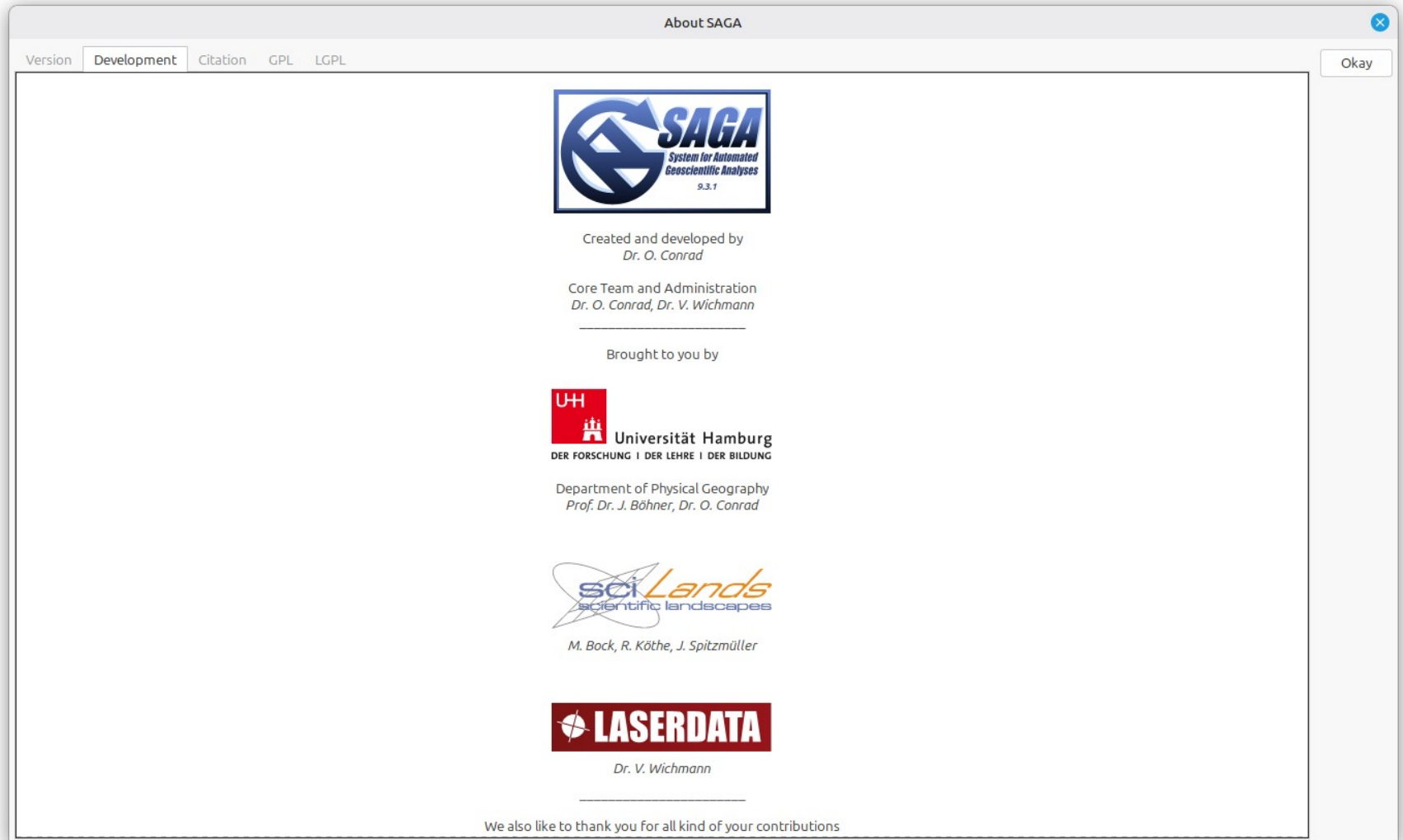
```
IW  viola.csv
x,y,viola
228.11,-8.79,-4077
137.99,-53.97,-4110
129.97,-54.46,-4094
182.93,-53.73,-4096
205.89,-53.49,-4087
115.28,-75.96,-4086
159.73,-76.69,-4090
183.17,-76.44,-4094
205.15,-76.44,-4092
69.61,-98.42,-4114
92.56,-98.91,-4098
115.03,-98.18,-4093
137.26,-98.91,-4086
159.97,-99.4,-4088
182.44,-99.16,-4070
205.64,-99.16,-4092
86.46,-125.53,-4102
110.64,-121.63,-4087
131.15,-127.49,-4090
152.16,-121.14,-4083
174.87,-127.98,-4090
```

Joe's Own Editor 4.6 (utf-8)

Graphics packages use a coordinate system that puts the origin (0,0) at the upper left corner of the page. By negating the Y values, I flip the coordinate system to be at the lower left, which is what my contouring package will expect.



Let's fire up the free SAGA System for Geoscientific Analysis package



Messages

General Execution Errors

[2026-06-10/09:48:29] Loading tool chain: /usr/share/saga/toolchains/io_table_import_text_tables.xml...okay

[2026-06-10/09:48:29] Loading tool chain: /usr/share/saga/toolchains/tta_TravelTime.xml...okay

[2026-06-10/09:48:29] Loading tool chain: /usr/share/saga/toolchains/tta_LandCover.xml...okay

[2026-06-10/09:48:29] Loading tool chain: /usr/share/saga/toolchains/shapes_grid_and_polygon_to_points.xml...okay

[2026-06-10/09:48:29] Loading tool chain: /usr/share/saga/toolchains/imagery_segmentationobia.xml...okay

File Geoprocessing Table Window ?

Manager

Tools Data Maps

Tool Libraries

- Climate and Weather
- Garden
- Grid
- Grid Collection
- Imagery
- Import/Export
- Projection
- Reports
- Shapes
 - Lines
 - Point Clouds
 - Points
 - 3D Points Selection
 - Add Coordinates to Point
 - Add Polygon Attributes to
 - Aggregate Point Observa
 - Clip Points with Polygons
 - Convert Line/Polygon Ver
 - Convert Multipoints to Po
 - Convert Table to Points
 - Convex Hull
 - Count Points in Polygons
 - Create Point Grid
 - Create Random Points
 - Point Thinning
 - Point to Line Distances
 - Point to Point Distances
 - Points Filter
 - Populate Polygons with P
 - Remove Duplicate Points
 - Select Points [interactive]
 - Separate points by directi
 - Snap Points to Grid
 - Snap Points to Lines
 - Snap Points to Points
 - Snap Points to Polygons
 - Thiessen Polygons
- Polygons
- Shapes-Grid Tools
- Tools
- Transects

1. viola

	x	y	viola
1	228.11	-8.79	-4077
2	137.99	-53.97	-4110

Convert Table to Points

Data Objects

- Shapes
 - << Points <create>
- Tables
 - >> Table
 - 1. viola
 - X x
 - Y y
 - Z viola

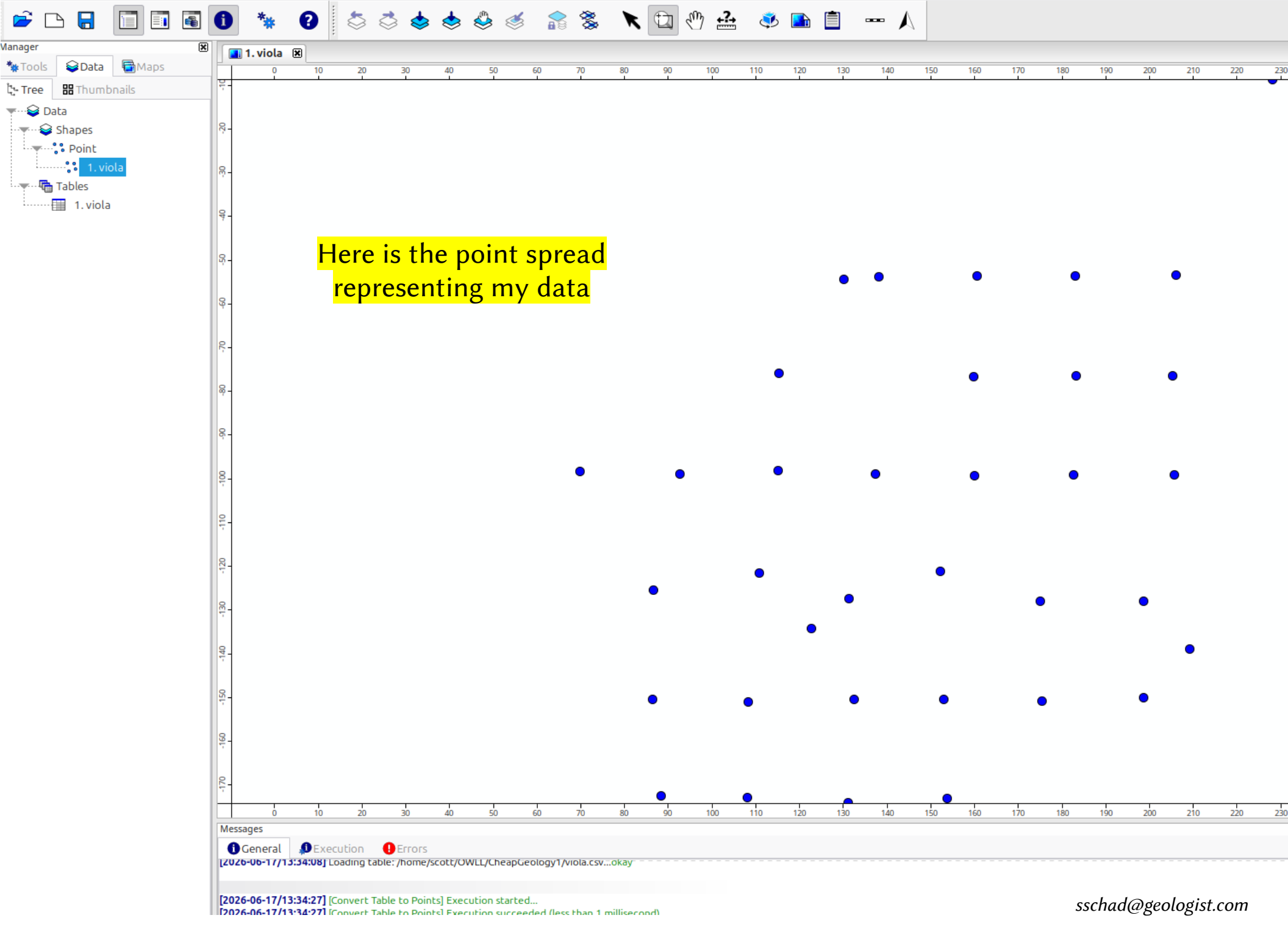
Z
table field

Messages

- General
- Execution
- Errors

[2026-06-10/10:49:50] Loading tool chain: /usr/share/saga/toolchains/shapes_grid_and_polygon_to_points.xml...okay

I loaded my viola.csv file into a table. Now I'll tell SAGA to convert the table into points



SAGA 9.3.1

File Geoprocessing Map Window ?

Manager

Tools Data Maps

Tree Thumbnails

Data

Shapes

Point

1. viola

Tables

1. viola

1. viola

Modified Quadratic Shepard

Data Objects	
Shapes	
>> Points	
Attribute	1. viola
	viola
Options	
Cross Validation	none
Target Grid System	user defined
Cellsize	6.8
West	68
East	231.2
South	-176.8
North	-6.8
Columns	25
Rows	26
Fit	nodes
Quadratic Neighbors	13
Weighting Neighbors	19

Attribute
table field

Messages

General Execution Errors

[2026-06-17/13:34:08] Loading table: /home/scott/OWLL/CheapGeology1/viola.csv...okay

[2026-06-17/13:34:27] [Convert Table to Points] Execution started...

[2026-06-17/13:34:27] [Convert Table to Points] Execution succeeded (less than 1 millisecond)

Let's grid the points using a Modified Quadratic Shepard algorithm

SAGA 9.3.1

File Geoprocessing Map Window ?

Manager

Tools Data Maps

Tree Thumbnails

Data

Grids

6.8; 25x 26y; 68x -176.8y

1. viola.viola [Modified Quadratic Shepard]

Shapes

Point

1. viola

Tables

1. viola

1. viola

Contour Lines from Grid

Data Objects	
Grids	
Grid system	6.8; 25x 26y; 68x -176.8y
>> Grid	1. viola.viola [Modified Quadratic Shepard]
Shapes	
<< Contour	<create>
Vertex Type	x, y, z
Parallel Processing	☒
Split Line Parts	☒
< Polygons	<not set>
Options	
Interpolation Scale	1
Boundary Extension	☐
Minimum Length	0
Interval Definition	equal intervals
Base Contour Value	-4110
Maximum Contour Value	-4070
Contour Interval	5

Contour Interval

Floating point number

Minimum: 0.000000

Default: 100.000000

Messages

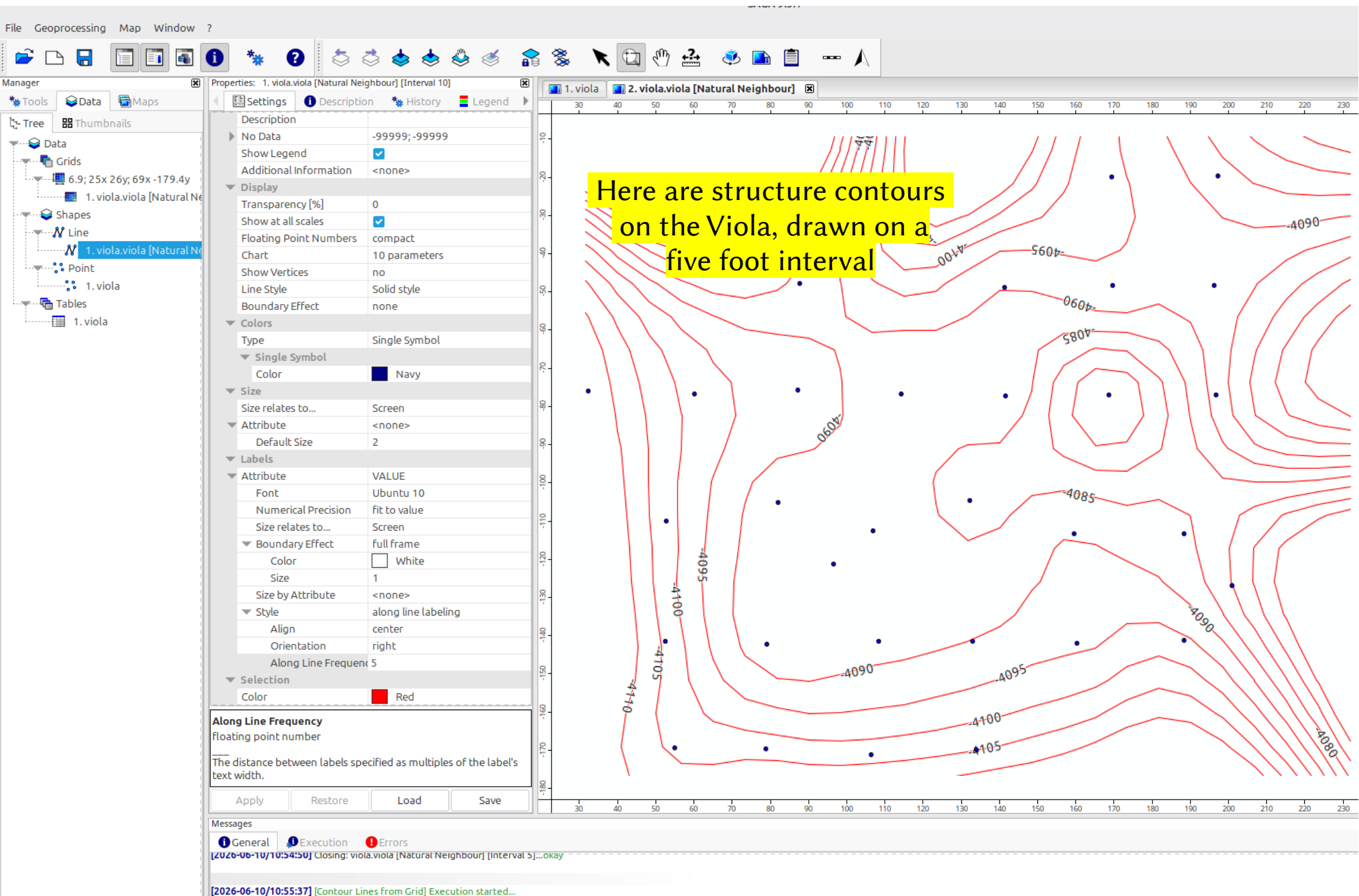
General Execution Errors

[2026-06-17/13:34:21] [Convert Table to Points] Execution succeeded (less than 1 millisecond)

[2026-06-17/13:37:15] [Modified Quadratic Shepard] Execution started...

[2026-06-17/13:37:15] [Modified Quadratic Shepard] Execution succeeded (less than 1 millisecond)

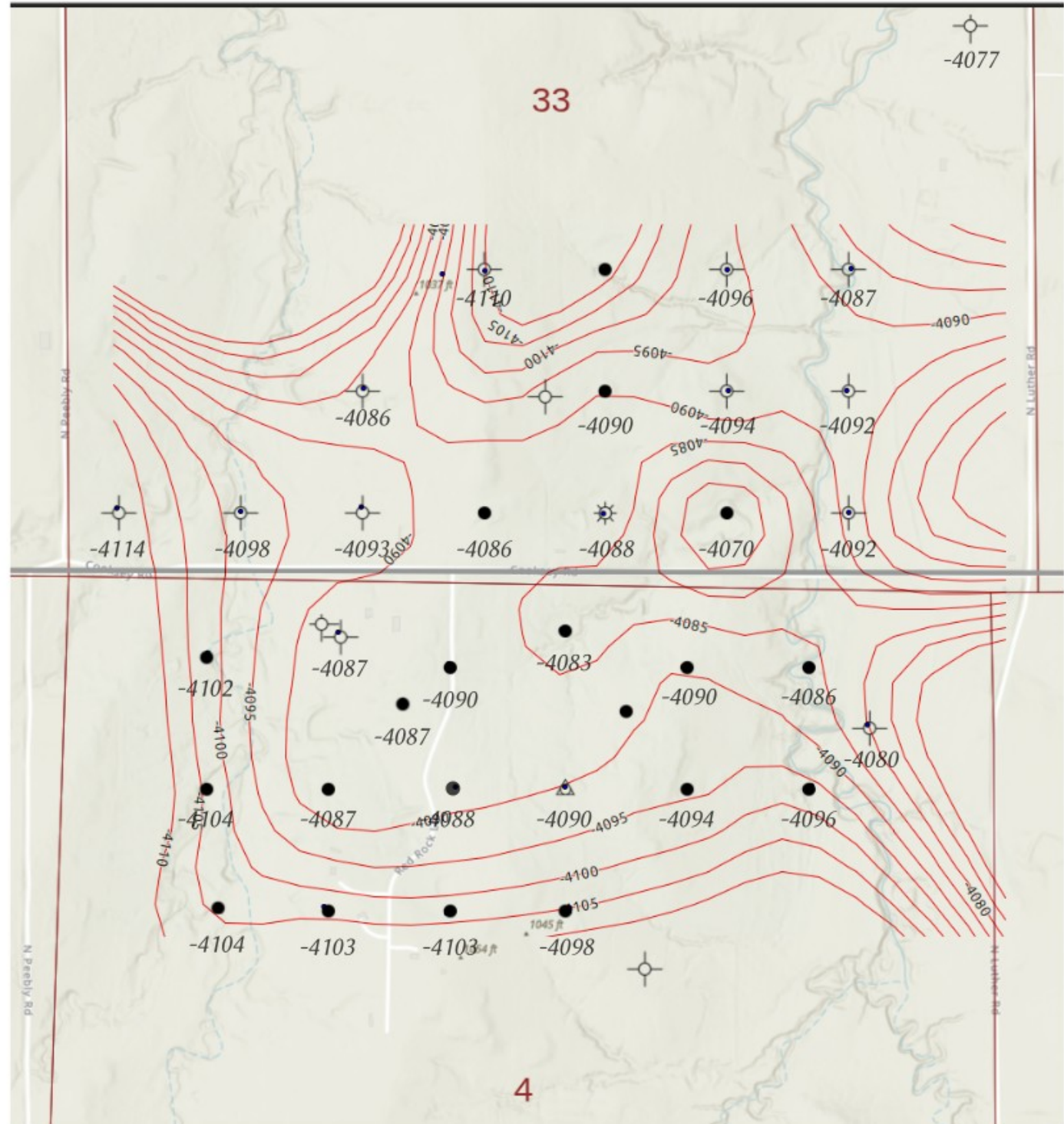
Now let's draw contours through the grid



I took a screen capture of the contours placed them on top of the basemap in Inkscape.

If I set the layer blend mode to “multiply,” the basemap and wells show through the contour image.

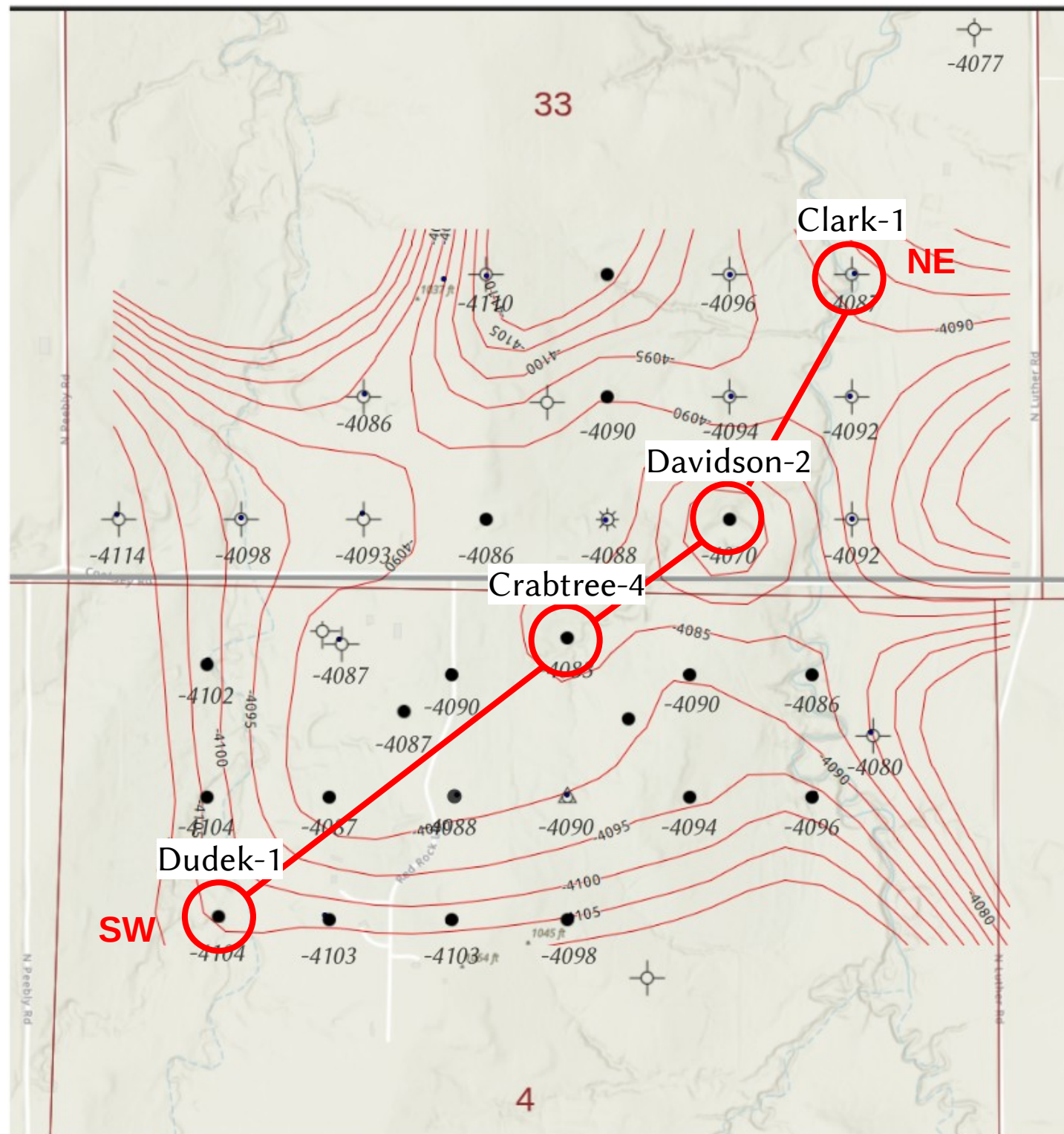
I'll show you an even faster way to do this at the end of the talk...



Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- Getting started with QGIS
- *The Future*

Now let's make this cross-section through the field using logs from MCGL's online system



MCGL's website is: <https://mcglonline.com/auth>

Enter the section, township, and range, then click Search.

MCGL MID-CONTINENT GEOLOGICAL LIBRARY

PARTNER ACCESS LINKS

WELLS OTHER ITEMS HELP

State OK County SEC +1 4 TSP +1 16N RGE 1E TD / Range DocType Keyword HISTORY SEARCH RESET Enable Map

WELLS

SELECTIONS (418)

	API	Operator	S	T	R	Name ▲	Num	Spot	SURV	ABSTR	BLK
▶	3508335896	DECK	33	17N	1E	BALL	1	SW SE SW			
▶	3508335894	DECK BOB WHITE PRODUCTION	33	17N	1E	BALL	A-2	SE SE SW			
▶	3508335897	BLACKWELL	33	17N	1E	BALL	1	SE SW SW			
▶	3508335893	DECK	33	17N	1E	BALL	4	SW NE SW			
▶	3508335902	DECK	33	17N	1E	BALL	3	NE SE SW			
▼	3508335904	DECK	33	17N	1E	CLARK	1	SW NE SE			

	Type	TD/Range	KB	DF	GR	ComplDt	SpudDt	PlugDt	Desc
☐ ⓘ	Scout Ticket	5197	0	935	0		04/17/1965		
☐ ⓘ	Scout Ticket	5197	0	0	935				
☒ ⓘ	Resistivity Log	5197	929	935	0				
☐ ⓘ	Scout Ticket	5197	0	0	935				
☐ ⓘ	Scout Ticket	5197	0	0	935				
☐ ⓘ	Resistivity Log	5197	929	935	0				
☐ ⓘ	Scout Ticket	5197	0	935	0		04/17/1965		
☐ ⓘ	Scout Ticket	5197	0	0	935				
☐ ⓘ	Resistivity Log	5197	0	0	0				
☐ ⓘ	Scout Ticket	5197			935		11/01/1948		
☐ ⓘ	Scout Ticket	5197			935		11/02/1948		

▶	35083E2B7B	WOODS DRLG CO	4	16N	1E	CRABTREE	1	NE NE NW			
▶	3508300274	WOODS DRILLING	4	16N	1E	CRABTREE	1	NW NE NW			
▶	3508320846	WIL MORE	4	16N	1E	CRABTREE	1	C NE NW			
▶	3508335506	WOODS DRILLING	4	16N	1E	CRABTREE	4	NE NE NW			
▶	3508335508	WOODS DRILLING	4	16N	1E	CRABTREE	3	SE NE NW			
▶	3508335510	AMERADA	4	16N	1E	CRABTREE	2	NE SE NW			

<< < > >> Page 1 of 1 | Go to page: 1 Show 100 ▼

Click on a triangle to open the data for a well. Select up to 4 checkboxes, then click here:

MCGL MID-CONTINENT GEOLOGICAL LIBRARY PARTNER ACCESS LINKS

WELLS OTHER ITEMS HELP

State OK County SEC +1 4 TSP +1 16N RGE 1E TD/Range DocType Keyword HISTORY SEARCH RESET Enable Map

WELLS SELECTIONS (418)

API	Operator	S	T	R	Name ▲	Num	Spot	SURV	ABSTR	BLK
▶ 3508335896	DECK	33	17N	1E	BALL	1	SW SE SW			
▶ 3508335894	DECK BOB WHITE PRODUCTION	33	17N	1E	BALL	A-2	SE SE SW			
▶ 3508335897	BLACKWELL	33	17N	1E	BALL	1	SE SW SW			
▶ 3508335893	DECK	33	17N	1E	BALL	4	SW NE SW			
▶ 3508335902	DECK	33	17N	1E	BALL	3	NE SE SW			
▶ 3508335904	DECK	33	17N	1E	CLARK	1	SW NE SE			

Type	TD/Range	KB	DF	GR	ComplDt	SpudDt	PlugDt	Desc
☐ ⓘ Scout Ticket	5197	0	935	0		04/17/1965		
☐ ⓘ Scout Ticket	5197	0	0	935				
☒ ⓘ Resistivity Log	5197	929	935	0				
☐ ⓘ Scout Ticket	5197	0	0	935				
☐ ⓘ Scout Ticket	5197	0	0	935				
☐ ⓘ Resistivity Log	5197	929	935	0				
☐ ⓘ Scout Ticket	5197	0	935	0		04/17/1965		
☐ ⓘ Scout Ticket	5197	0	0	935				
☐ ⓘ Resistivity Log	5197	0	0	0				
☐ ⓘ Scout Ticket	5197			935		11/01/1948		
☐ ⓘ Scout Ticket	5197			935		11/02/1948		

▶ 35083E2B7B	WOODS DRLG CO	4	16N	1E	CRABTREE	1	NE NE NW			
▶ 3508300274	WOODS DRILLING	4	16N	1E	CRABTREE	1	NW NE NW			
▶ 3508320846	WIL MORE	4	16N	1E	CRABTREE	1	C NE NW			
▶ 3508335506	WOODS DRILLING	4	16N	1E	CRABTREE	4	NE NE NW			
▶ 3508335508	WOODS DRILLING	4	16N	1E	CRABTREE	3	SE NE NW			
▶ 3508335510	AMERADA	4	16N	1E	CRABTREE	2	NE SE NW			

<< < > >> Page 1 of 1 | Go to page: 1 Show 100 ▼

🔍 ⬇

If you want to buy a TIFF image, click the down arrow here. You'll be prompted to enter a credit card number for the transaction. This is purely an MCGL function (it doesn't involve OWLL).

You can rearrange logs from left-to-right by dragging these markers sideways with the mouse

MCGL PARTNER ACCESS LINKS HELP U40

Sync Scrolls

The image displays four Schlumberger well logs side-by-side. Each log is a 'COMPOSITE LOG' for a well surveyed by Schlumberger Well Surveying Corporation. The logs are for wells: GEORGE DECK, WOODS DRILLING, DAVIDSON #2, and GEORGE W. DECK. Each log includes fields for Location of Well, Company, Well, Run No., Field, Survey, County, State, and Filing No. The logs also contain a table of measurements (Date, First Reading, Last Reading, Footage Measured, Casing Shoe, Max. Depth Reached, Bottom Driller, Depth Datum, Mud Nature, Resistivity, Weight, Viscosity, Hole Size, Bottom Temp., Spacing, AM, OA) and a section for REMARKS. At the bottom of each log is a 'A RILEY REPRODUCTION U.S. PATENT PENDING' section with a grid for SELF-POTENTIAL (millivolts) and RESISTIVITY (ohms, m.m.). The logs are arranged in a row, and the zoom controls (magnifying glass and equals sign) are visible on the top of each log. A red arrow points from the text 'You can rearrange logs from left-to-right by dragging these markers sideways with the mouse' to the zoom controls. Another red arrow points from the text 'All the logs come in at the same scale. You can make logs bigger or smaller with these controls' to the zoom controls.

PROPERTY OF OCGS
GEOLOGICAL LIBRARY

All the logs come in at the same scale. You can make logs bigger or smaller with these controls

When you align the logs (by scrolling up/down), this checkbox will let you scroll them all in unison

☐ Sync Scrolls

SCHLUMBERGER
WELL SURVEYING CORPORATION
COMPOSITE LOG

Location of Well: *[Handwritten: GEORGE DECK]*

COMPANY: *GEORGE DECK*

WELL: *DUDECK #1*

RUN NO.: *ONE & TWO*

FIELD: *ICONTUM*

SURVEY: *SEC. 4-17N-1E*

COUNTY: *LOGAN*

STATE: *OKLAHOMA*

Elevation D.F.: *960'*

FILING No.: *4010*

RUN	#1	#2
Date	12-7-47	1-5-48
First Reading	5257	5250
Last Reading	107	5081
Footage Measured	5150	1269
Cog Shoe Driller	107	-
Max. Depth Reached	5257	5250
Bottom Driller	5257	5250
Depth Datum	BELON	BELON
Mud Nature	AQUAGEL	AQUAGEL
Weight	1.4	2.2
Viscosity	9.7	10.3
Hole Size	41	30
Bottom Temp.	9"	104
Spacings	64"	64"
AM	16"	16"
OA	224"	224"

REMARKS: *P-3425*
Y-4103
W-4258

DRIVE BUSHING 9' ABOVE GROUND LEVEL

RUN #2 IS SIDE TRACK

A RILEY REPRODUCTION
U.S. PATENT PENDING

NOTE: LINES ON ORIGINAL WERE VERY WEAK

SELF-POTENTIAL	DEPTHS	RESISTIVITY
millivolts		-ohms. m.m.

1" = 100'

PROPERTY OF OCGS
GEOLOGICAL LIBRARY

SCHLUMBERGER
WELL SURVEYING CORPORATION
COMPOSITE LOG

Location of Well: *[Handwritten: GEORGE DECK]*

COMPANY: *WOODS DRILLING*

WELL: *CRABTREE #4*

RUN NO.: *ONE*

FIELD: *ICONTUM*

SURVEY: *SEC. 4-17N-1E*

COUNTY: *LOGAN*

STATE: *OKLAHOMA*

Elevation D.F.: *1016*

FILING No.: *4010*

RUN	#1	#2
Date	12-7-47	1-5-48
First Reading	5257	5250
Last Reading	107	5081
Footage Measured	5150	1269
Cog Shoe Driller	107	-
Max. Depth Reached	5257	5250
Bottom Driller	5257	5250
Depth Datum	BELON	BELON
Mud Nature	AQUAGEL	AQUAGEL
Weight	1.4	2.2
Viscosity	9.7	10.3
Hole Size	41	30
Bottom Temp.	9"	104
Spacings	64"	64"
AM	16"	16"
OA	224"	224"

REMARKS: *P-3425*
Y-4103
W-4258

DRIVE BUSHING 11' ABOVE GROUND LEVEL

A RILEY REPRODUCTION
U.S. PATENT PENDING

NOTE: LINES ON ORIGINAL WERE VERY WEAK

SELF-POTENTIAL	DEPTHS	RESISTIVITY
millivolts		-ohms. m.m.

1" = 100'

SCHLUMBERGER
WELL SURVEYING CORPORATION
COMPOSITE LOG

Location of Well: *[Handwritten: GEORGE DECK]*

COMPANY: *WOODS DRILLING*

WELL: *DAVIDSON #2*

RUN NO.: *ONE*

FIELD: *ICONTUM*

SURVEY: *SEC. 33-17N-1E*

COUNTY: *LOGAN*

STATE: *OKLAHOMA*

Elevation D.F.: *957'*

FILING No.: *4010*

RUN	#1	#2
Date	12-7-47	1-5-48
First Reading	5257	5250
Last Reading	107	5081
Footage Measured	5150	1269
Cog Shoe Driller	107	-
Max. Depth Reached	5257	5250
Bottom Driller	5257	5250
Depth Datum	BELON	BELON
Mud Nature	AQUAGEL	AQUAGEL
Weight	1.7	2.2
Viscosity	10.5	10.3
Hole Size	41	30
Bottom Temp.	9"	104
Spacings	64"	64"
AM	16"	16"
OA	224"	224"

REMARKS: *P-3425*
Y-4103
W-4258

DRIVE BUSHING 11' ABOVE GROUND LEVEL

A RILEY REPRODUCTION
U.S. PATENT PENDING

NOTE: LINES ON ORIGINAL WERE VERY WEAK

SELF-POTENTIAL	DEPTHS	RESISTIVITY
millivolts		-ohms. m.m.

1" = 100'

SCHLUMBERGER
WELL SURVEYING CORPORATION
COMPOSITE LOG

Location of Well: *[Handwritten: GEORGE DECK]*

COMPANY: *GEORGE W. DECK*

WELL: *CLARK #1*

RUN NO.: *ONE*

FIELD: *ICONTUM*

SURVEY: *SEC. 33-17N-1E*

COUNTY: *LOGAN*

STATE: *OKLAHOMA*

Elevation D.F.: *929'*

FILING No.: *4010*

RUN	#1	#2
Date	11-25-48	-
First Reading	5135	-
Last Reading	5135	-
Footage Measured	5084	-
Cog Shoe Driller	5135	-
Max. Depth Reached	5135	-
Bottom Driller	5135	-
Depth Datum	BUSHING	-
Mud Nature	AQUAGEL	-
Weight	2.1	-
Viscosity	10.5	-
Hole Size	41	-
Bottom Temp.	131	-
Spacings	18"	-
AM	131	-
OA	224"	-

REMARKS: *P-3425*
Y-4103
W-4258

DRIVE BUSHING 11' ABOVE GROUND LEVEL

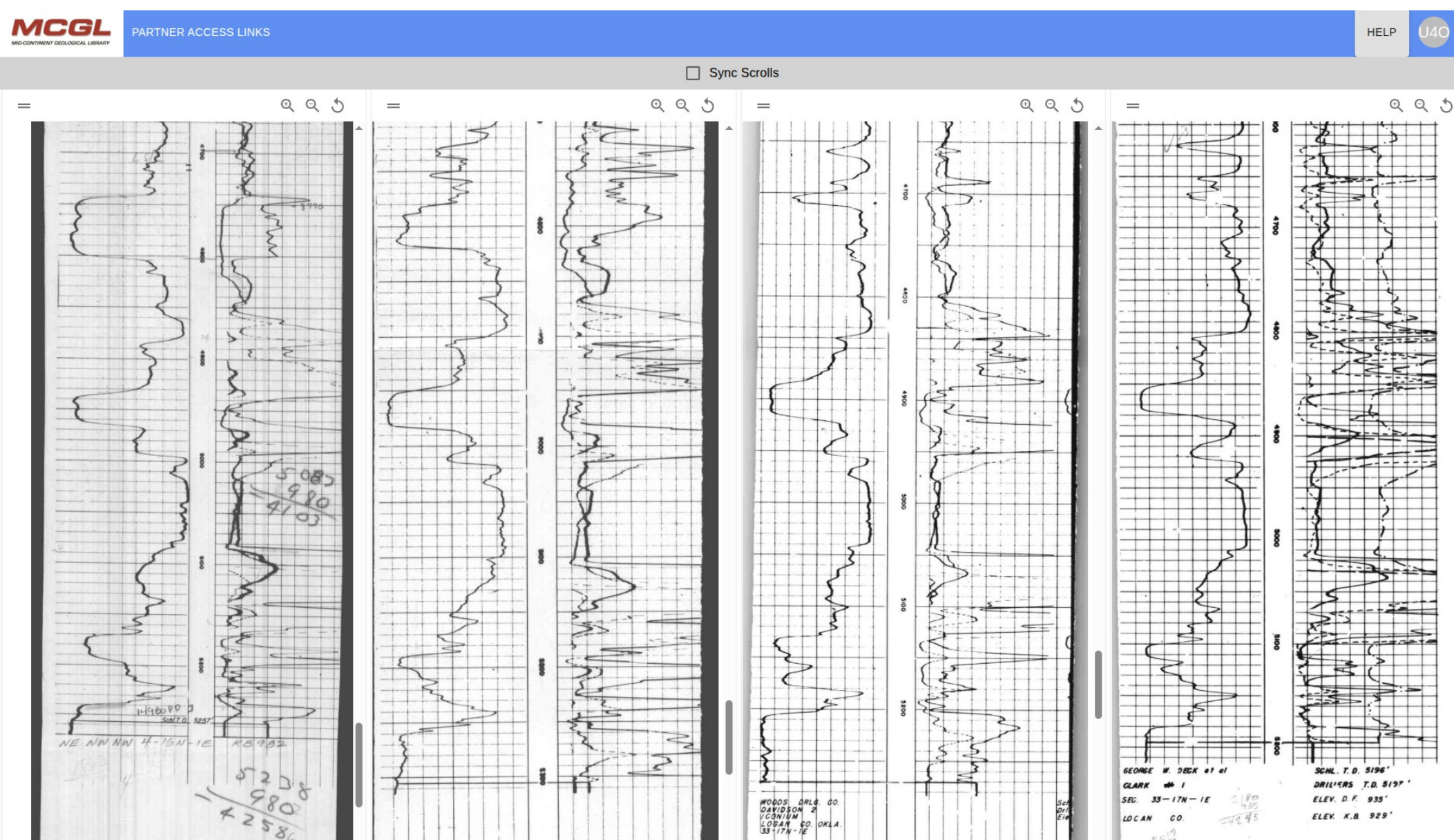
A RILEY REPRODUCTION
U.S. PATENT PENDING

NOTE: LINES ON ORIGINAL WERE VERY WEAK

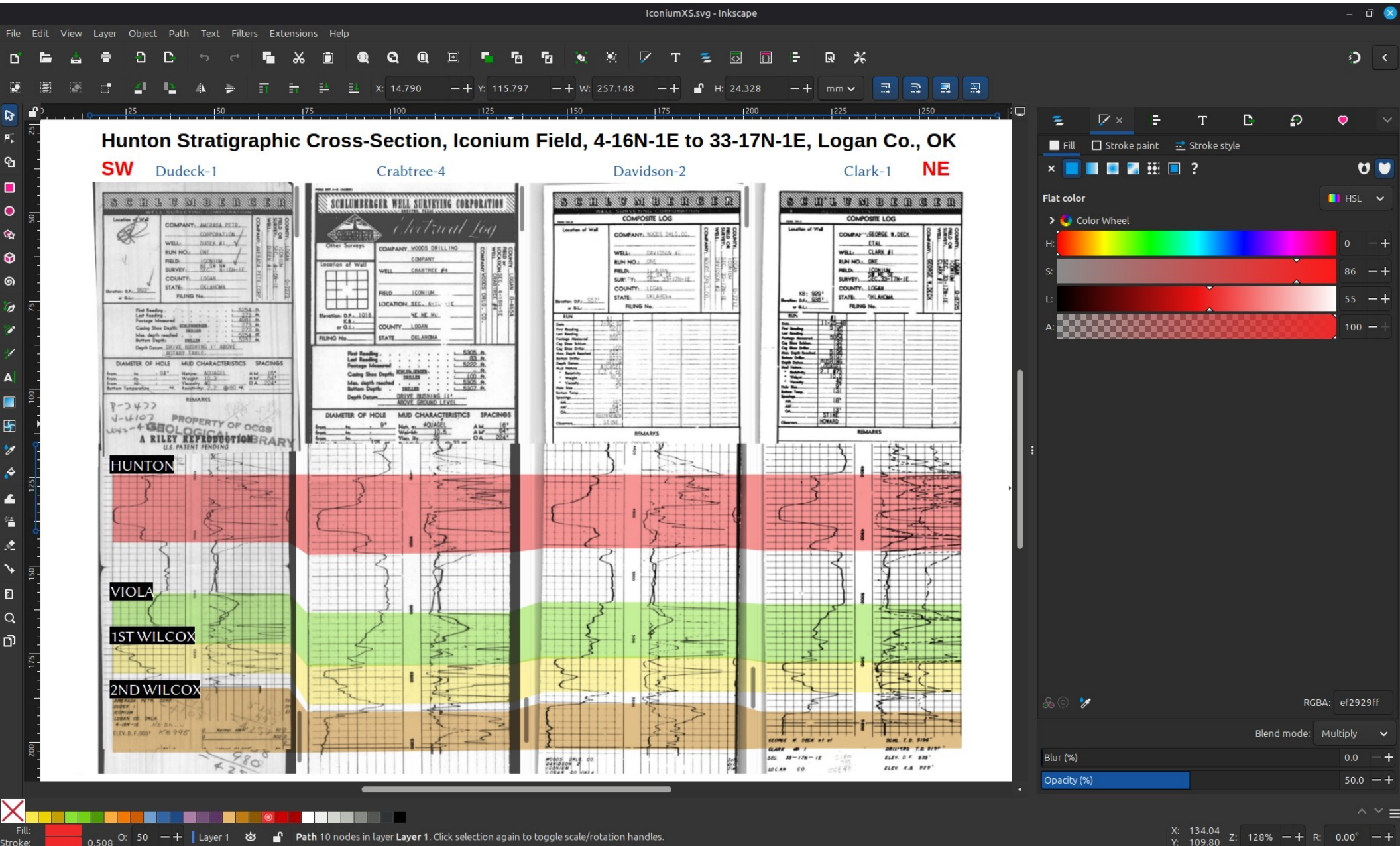
SELF-POTENTIAL	DEPTHS	RESISTIVITY
millivolts		-ohms. m.m.

1" = 100'

I've aligned the small scale electric logs on the top of the Hunton. Let's take a screenshot and turn it into a cross-section in Inkscape

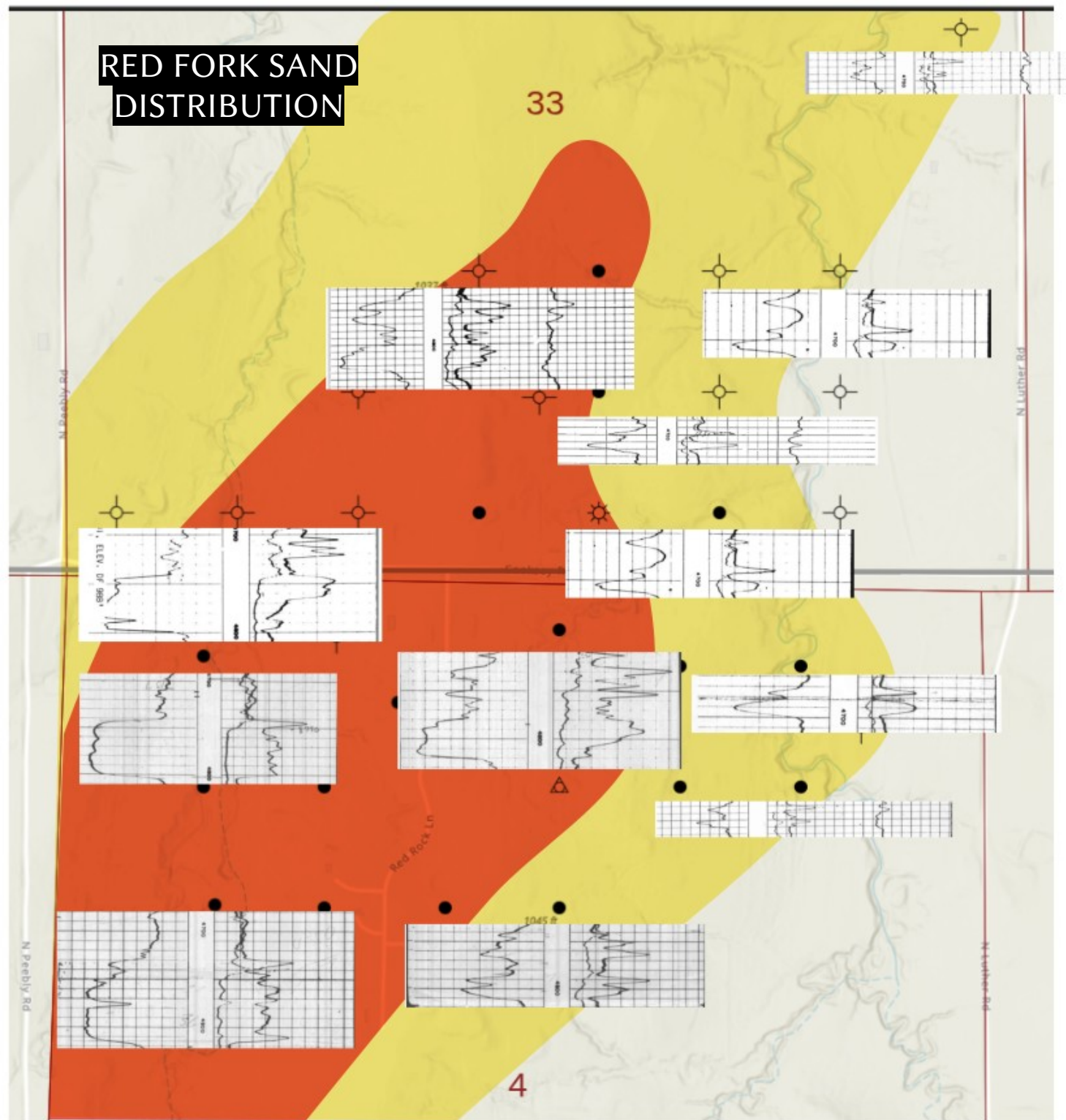


I pasted the screen capture into Inkscape and added formation colors and labels



You can also make log motif maps:

- Use MCGL to call up small-scale electric logs for key wells
- Screen capture the Red Fork in each well log and paste it on top of the field base map in Inkscape
- Draw polygons to outline the channel sand in color, setting the blend mode of each to multiply
- Move the channel outlines below the logs and above the basemap



Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- **Getting started with QGIS**
- *The Future*

Navigation icons: back, forward, refresh, home, search, and various browser extensions.

Address bar: <https://qgis.org>

QGIS About Resources Community Download Donate

Latest news will appear here soon. English Search

★ QGIS 4.0 QGIS 4.0 is here – our most powerful release yet! — Discover the new features, improvements, and everything that makes this release a landmark moment. Explore the changelog →

Free and Open Source DPG an OSGeo project

Spatial without Compromise

Spatial visualization and decision-making tools for everyone

Download Available on Windows, Mac, Linux



A red arrow points from the address bar to the 'Resources' link in the navigation bar. A yellow box contains the text 'Go out to: https://qgis.org'.

Project

Community

Resources

Documentation

Installation guide

Windows

Debian / Ubuntu

Mac OS X / macOS

FreeBSD

OpenBSD

Container images

QGIS Testing warning

Installing from Source

Testing

Roadmap

Reports

Resources Hub

Books

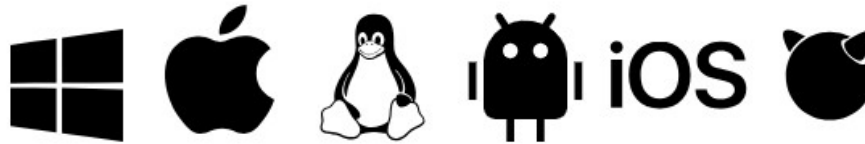
Contact and Support

Blog

Edit on GitHub

QGIS Installers

QGIS is available on Windows, macOS, Linux, FreeBSD, OpenBSD, Android and iOS.



We recommend installing the Long Term Release (LTR) packages since they undergo more rigorous testing before release and receive at least one update.

See also [the main installers page](#).

To evaluate the upcoming release and to allow non-developers to support development we also provide testing packages (note the **warning**).

In the feature frozen phase preceding a release (see [Release schedule](#)) these packages are effectively **pre-releases, which we strongly urge users to test**.

Windows

There are two options for installing on Windows:

Offline (Standalone) installers

Standalone installers include everything QGIS needs in a single download. Once you have the installer, no internet is required to complete the installation. When a new release is available, you need to download the complete installer again in order to upgrade. For beginners, the standalone installer is probably the easiest way to install QGIS:

Click on the Download button to get the QGIS installation file for your

https://oklahoma.gov/occ/divisions/oil-gas/oil-gas-data.html

Translate State Agencies

OKLAHOMA
Corporation Commission

Search

About News Complaints Divisions Courts Public Meetings Rules Open Records

OCC > Divisions > Oklahoma Oil and Gas Conservation Division > Oil and Gas Data Files

Oil and Gas Data Files



Oil & Gas Production

Looking for crude oil or natural gas production data? The Oklahoma Tax Commission is the official recordkeeper for the state.

[VISIT OTC >](#)

Let's go to the OCC and download digital well information

Below are downloadable files that include information regarding oil, gas and underground injection wells, as well as historical files.

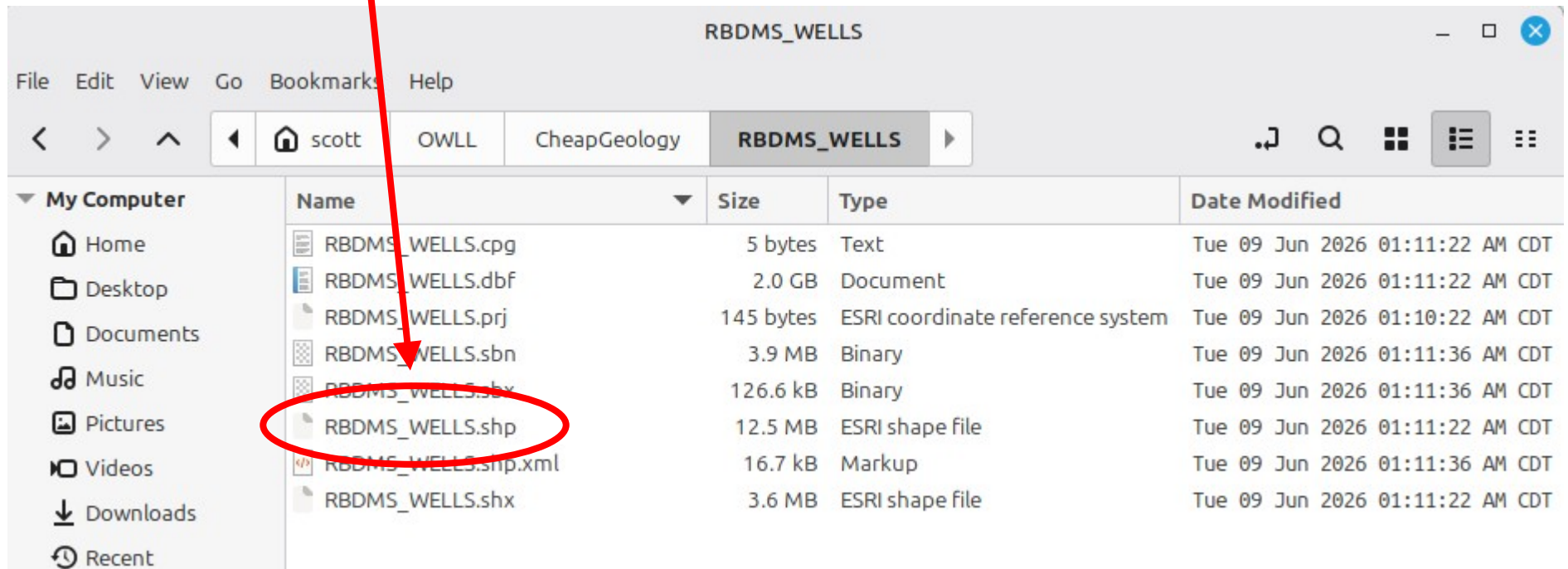
- Oil and Gas Well Information (includes Incident Data and RBDMS Well Data) ✓
- Underground Injection Control Well Information ✓

Download the shapefile

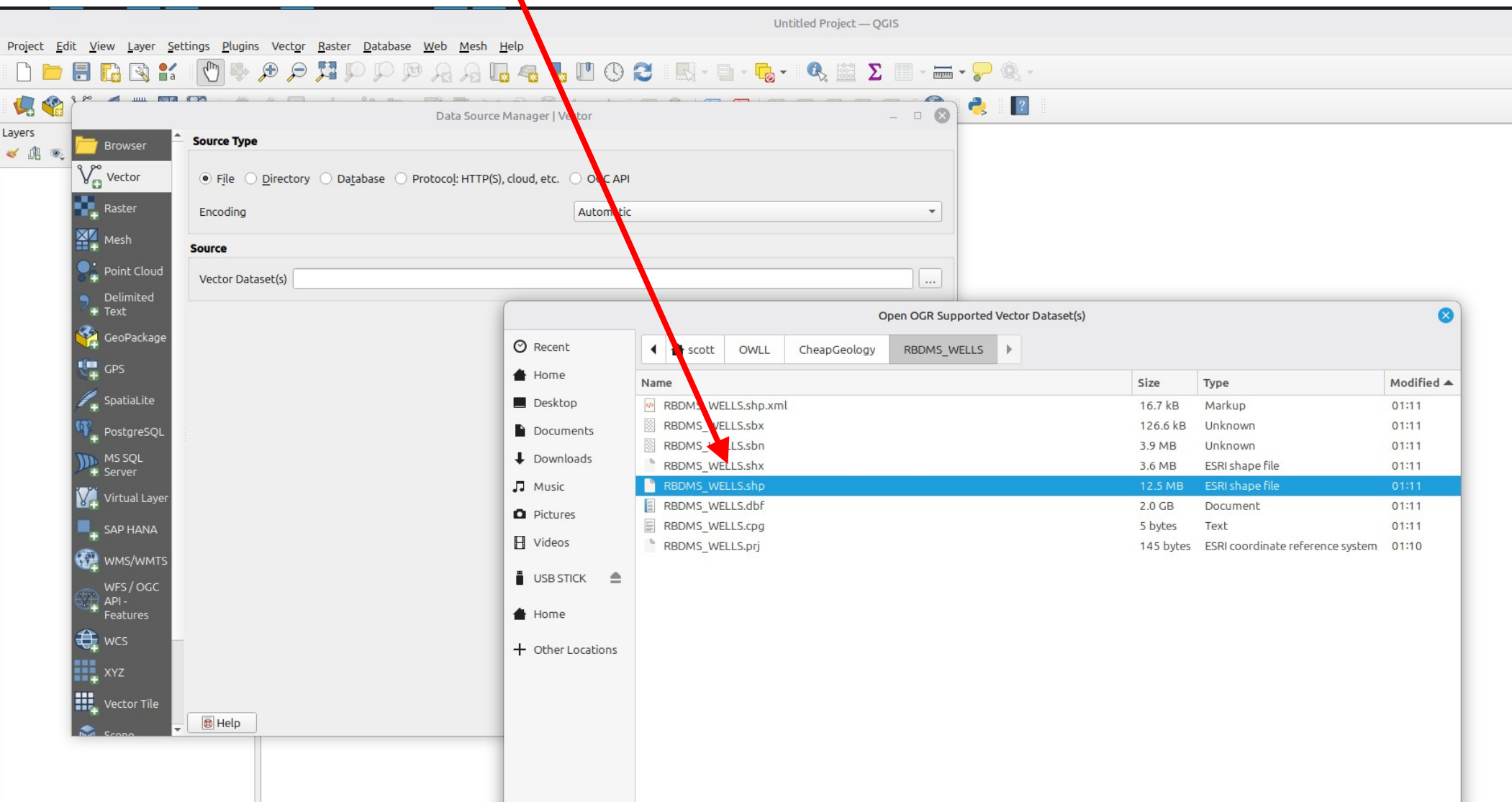
Oil and Gas Well Information (includes Incident Data and RBDMS Well Data) ^

SUBJECT	DESCRIPTION	UPDATED	FILE TYPE
RBDMS Well Data Data Dictionary for RBDMS Well Data	RBDMS Well Data in .CSV format	Nightly	.csv
RBDMS Wells shapefile (zipped) for GIS	RBDMS Wells shapefile for GIS	Nightly	.zip
Incident Report Archive	List of all Incident Reports	Daily	.csv
Orphan Well List Data Dictionary for Orphan Well List	Oil and Gas Orphaned Wells - All Districts	Every Thursday	xlsx
State Funds Well List Data Dictionary for State Funds Well List	List of wells with State Funds Plugging Orders	Every Thursday	xlsx
Intent to Drill - Last 7 Days Data Dictionary for Intent to Drill Files	Intent to Drill Past 7 days	Daily	.xlsx

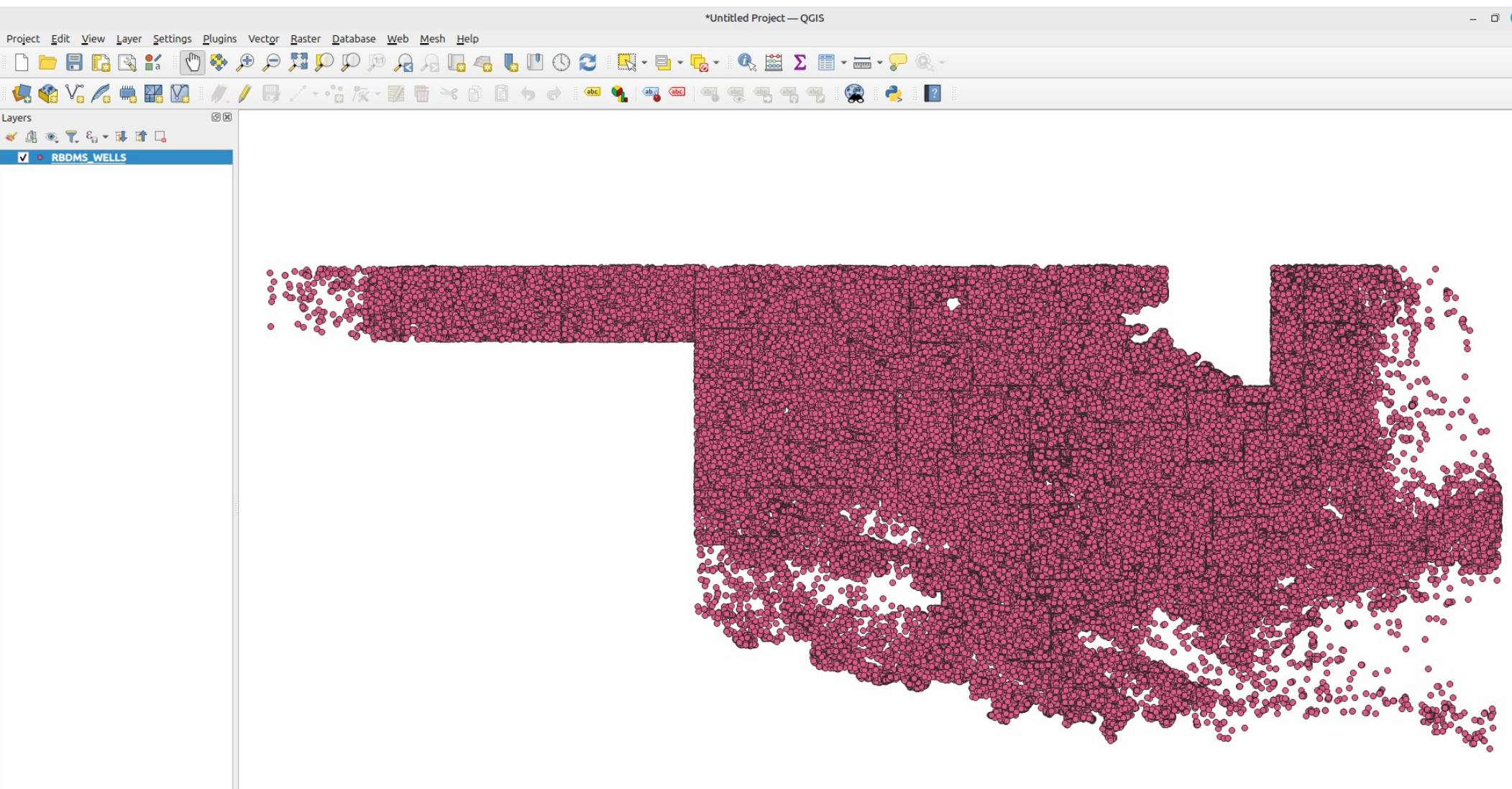
The RBDMS shape file is zipped and contains a number of files. Extract it to a directory so that you'll be able to find this file



Open QGIS, create a new vector layer, and link it to the RBDMS shape file of Oklahoma well data



QGIS will display the well data as a single symbol type.



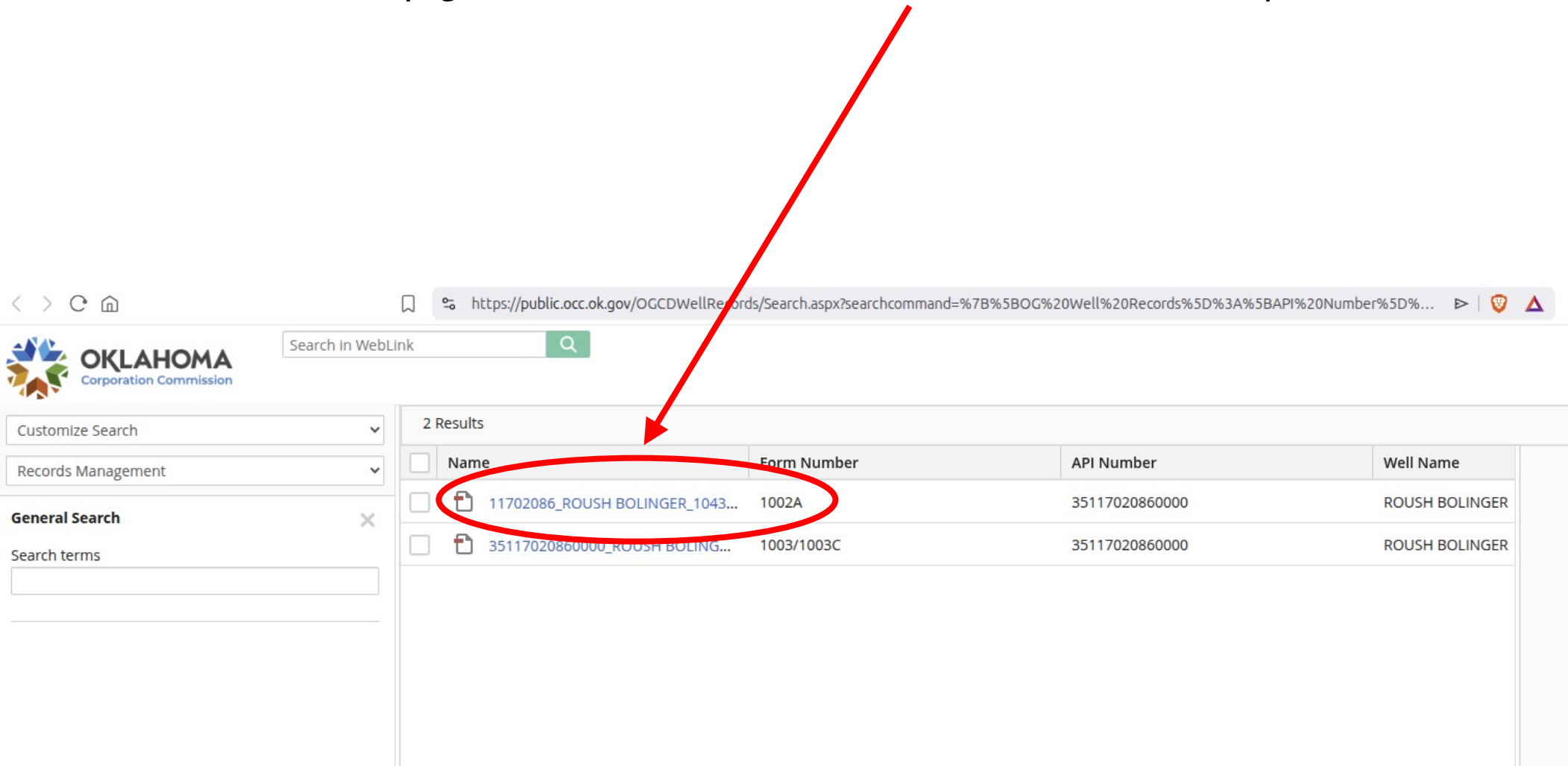
Use this tool to click on a well and see its information

The screenshot shows the QGIS interface with a map of well locations. A red circle highlights a specific well on the map, and another red circle highlights the 'Identify Results' panel on the right. The 'Identify Results' panel shows the following information for the selected well:

Feature	Value
RBDMS_WELLS	
WELL_NAME	BOLINGER R
(Derived)	
(Actions)	
API	3511702086.000000000000
WELL_RECORDER	https://public.occ.ok.gov/OGCDWellRecords/Search.asp
WELL_NAME	BOLINGER R
WELL_NUM	#1
OPERATOR	PAWNEE OIL & GAS CO.
WELLSTATUS	PA
WELLTYPE	DRY
SYMBOL_CLA	PLUGGED
SURF_LAT	36.19837100000
SURF_LON	-96.23611000000
COUNTY	PAWNEE
SECTION	21.000000000000
TOWNSHIP	20N
RANGE	10E
TOWNSHIP_D	20.000000000000
RANGE_D	10.000000000000
QTR4	NULL
QTR3	NE
QTR2	SW
QTR1	NE
PM	IM
FOOTAGE_EW	0
EW	NULL
FOOTAGE_NS	0
NS	NULL

Clicking on WELL_RECORDER takes you to the OCC's info page for the well

Here is the information page for the selected well. Click here to see the 1002A completion form.



The screenshot shows the Oklahoma Corporation Commission's public well records search interface. The browser address bar displays the URL: <https://public.occ.ok.gov/OGCDWellRecords/Search.aspx?searchcommand=%7B%5B%22Well%20Records%5D%3A%5BAPI%20Number%5D%...>. The left sidebar contains navigation links for "Customize Search" and "Records Management", and a "General Search" section with a "Search terms" input field. The main content area shows "2 Results" in a table. The first result is circled in red, and a red arrow points from the word "here" in the text above to this result.

☐	Name	Form Number	API Number	Well Name
☐	11702086_ROUSH BOLINGER_1043...	1002A	35117020860000	ROUSH BOLINGER
☐	35117020860000_ROUSH BOLING...	1003/1003C	35117020860000	ROUSH BOLINGER



Search in document

1 of 2

Automatic Zoom

I e >>

Details Annotations

Entry Properties

Tags
LookupComplete
Migration Data Sweep

Modified 9/7/2023 10:39:50 AM

Created 4/20/2022 8:13:07 AM

Template

OG Well Records

Group 1:

Location 2120N10EIM NE SW NE

API Number 35117020860000

Well Name ROUSH BOLINGER

District 1

County Pawnee

Fields

DocID 1043704

Operator Number 09998

Effective Date 4/30/1920

Form Number 1002A

Scan 8/19/1999

Form 1002-10 M-6-19

WELL RECORD

Mail to Corporation Commission, Oklahoma City, Okla.

Pawnee County. Company Selby Oil & Gas Company
Farm R. Bolinger Lot Section 21 Township 20 Range 10 Well No. 1
Drilling Commenced Feb. 11th, 19 20. Drilling Completed April 30, 19 20.
Correspondence regarding this well should be sent to Name Selby Oil & Gas Co. Address Tulsa, Okla.

CASING RECORD

SIZE	PUT IN WELL		PULLED OUT		LEFT IN WELL		PACKERS AND SHOES
	Ft.	In.	Ft.	In.	Ft.	In.	
12 1/2"	45	Left in hole					
8"	1635		1635				
6-5/8"	2057		2057				

Character of well Dry Hole

Oil Well, Initial production

Elevation above sea level at top of casing

You can add many free datasets to QGIS:

Find county outlines and section/township/range data on this site:

<https://csagis-uok.opendata.arcgis.com/>

Get oil & gas field outlines, well data, and more, on this site:

<https://gisdata-occokc.opendata.arcgis.com/>

Retrieve digitized fault traces from either of these sites:

<https://www.ou.edu/ogs/data/fault>

<https://home-owrb.opendata.arcgis.com/datasets/fault-lines/about>

Link QGIS to seamless topo maps using this pathname:

https://services.arcgisonline.com/arcgis/rest/services/USA_Topo_Maps/MapServer/WMTS/1.0.0/WMTSCapabilities.xml,layer=USA_Topo_Maps,tilematrixset=default028mm

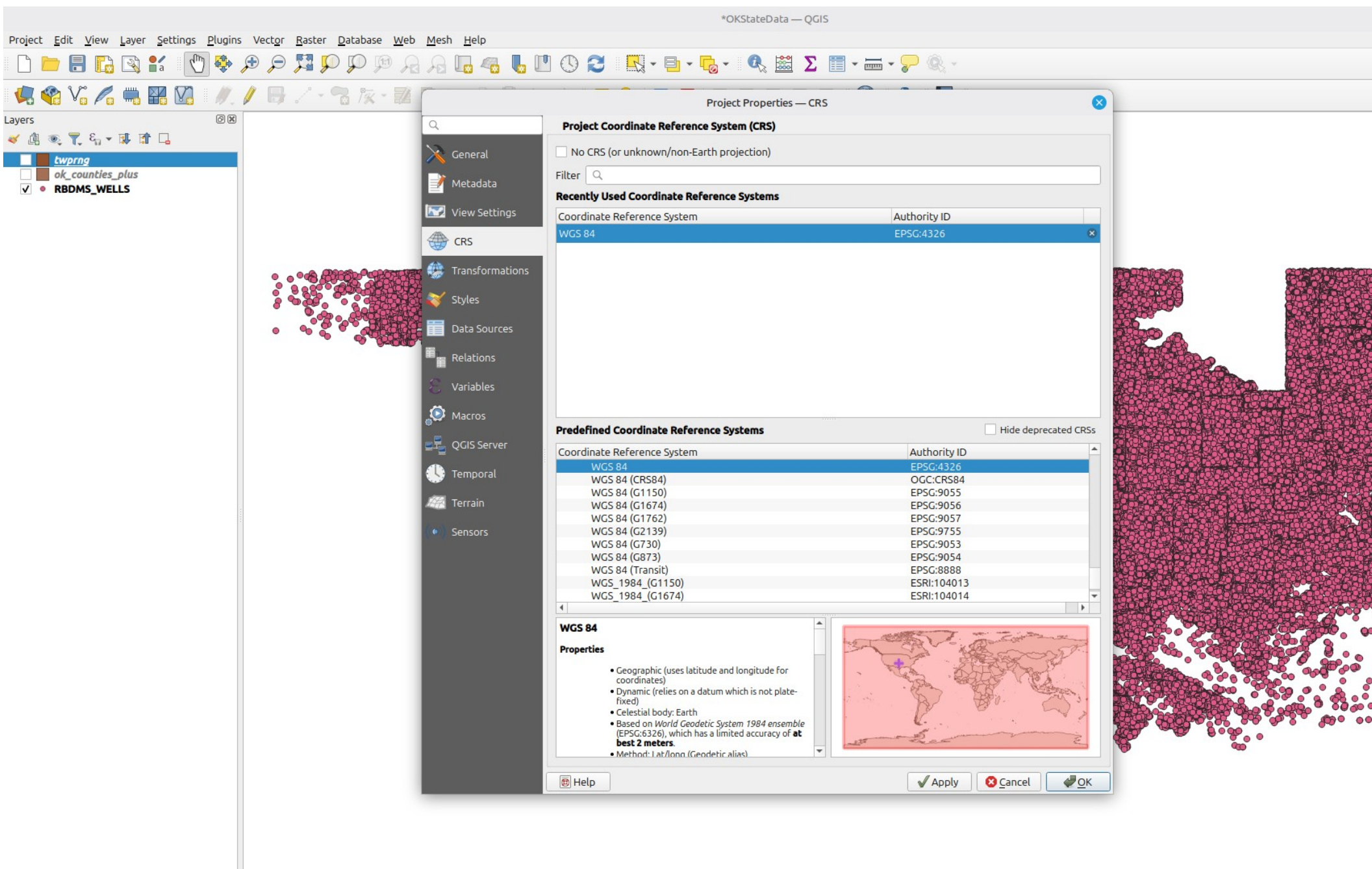
Link QGIS to seamless street maps with this pathname:

<https://tile.openstreetmap.org/{z}/{x}/{y}.png>

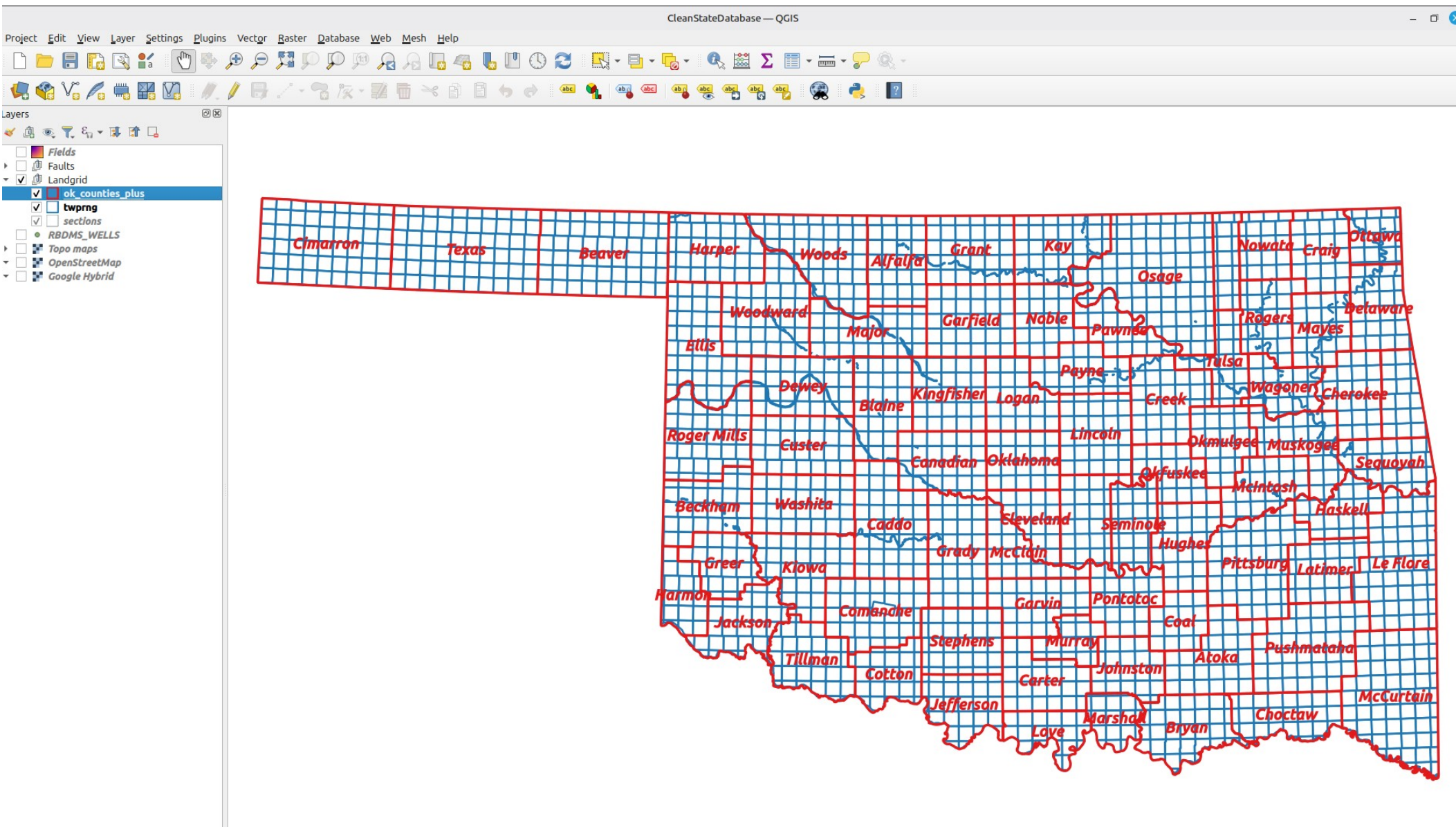
Link QGIS to seamless Google imagery with this pathname:

<https://mt1.google.com/vt/lyrs=y&x={x}&y={y}&z={z}>

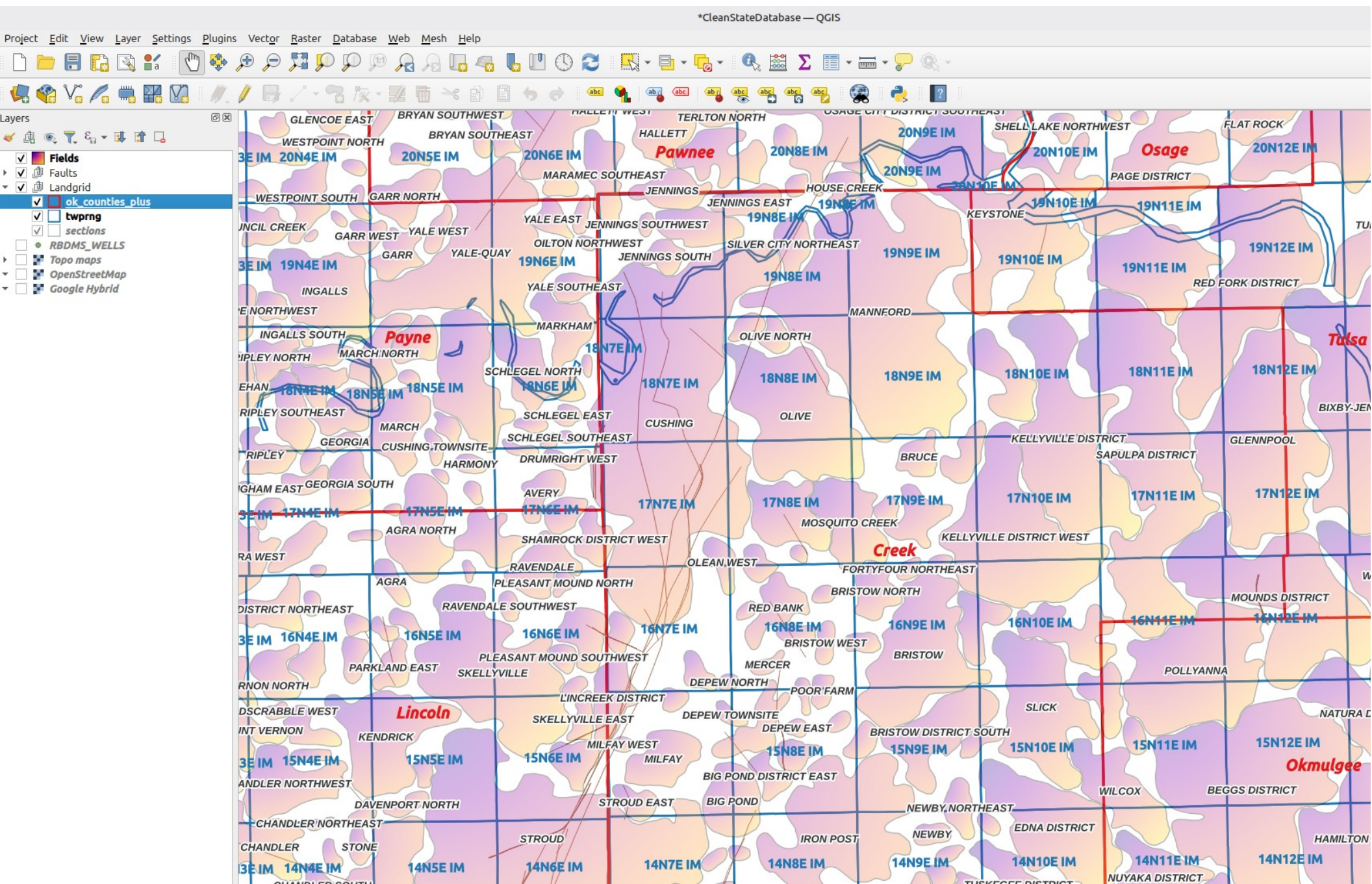
Don't forget to set a global coordinate system for the project:



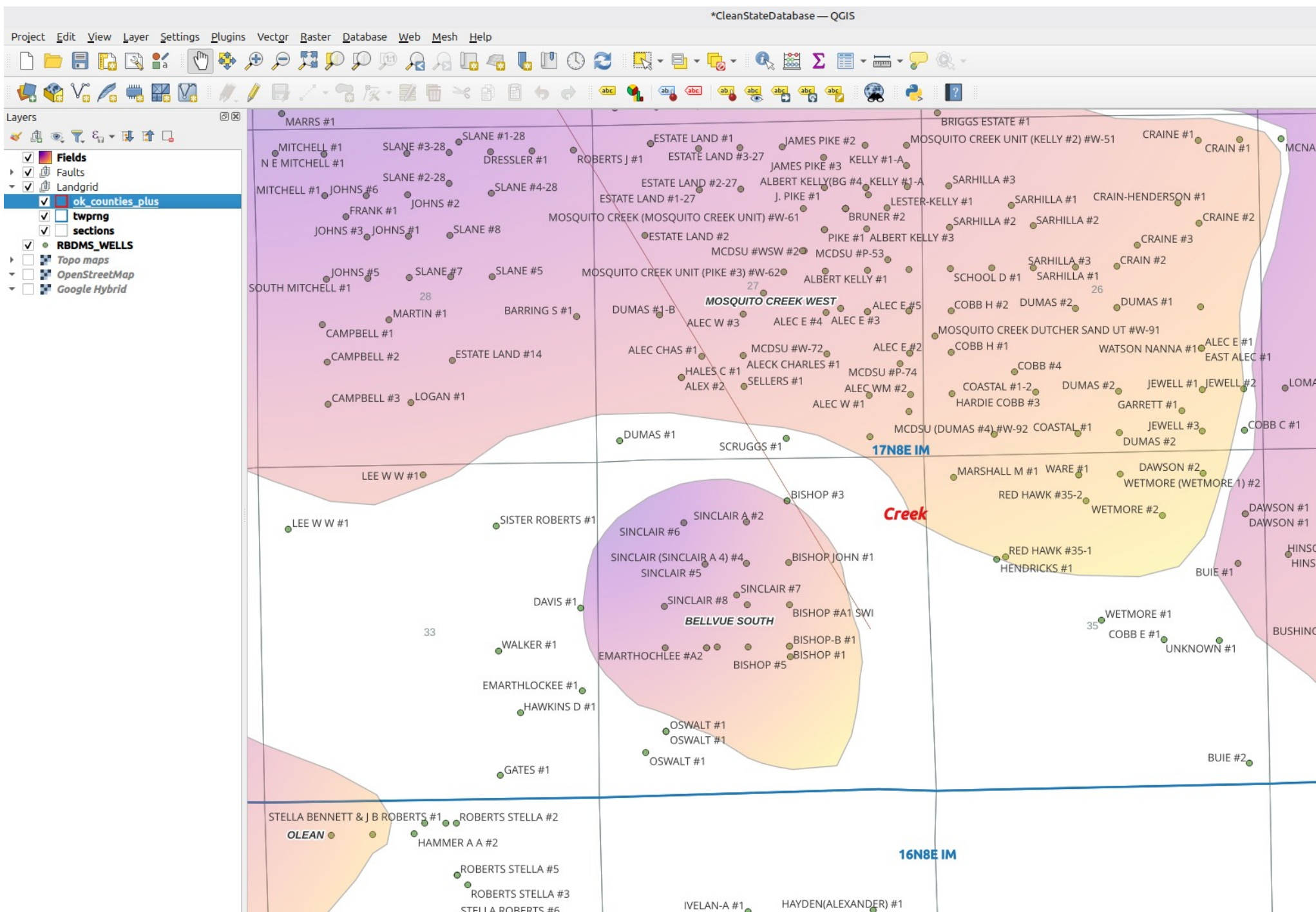
This is a (cleaned-up) QGIS database that uses all of this free information.



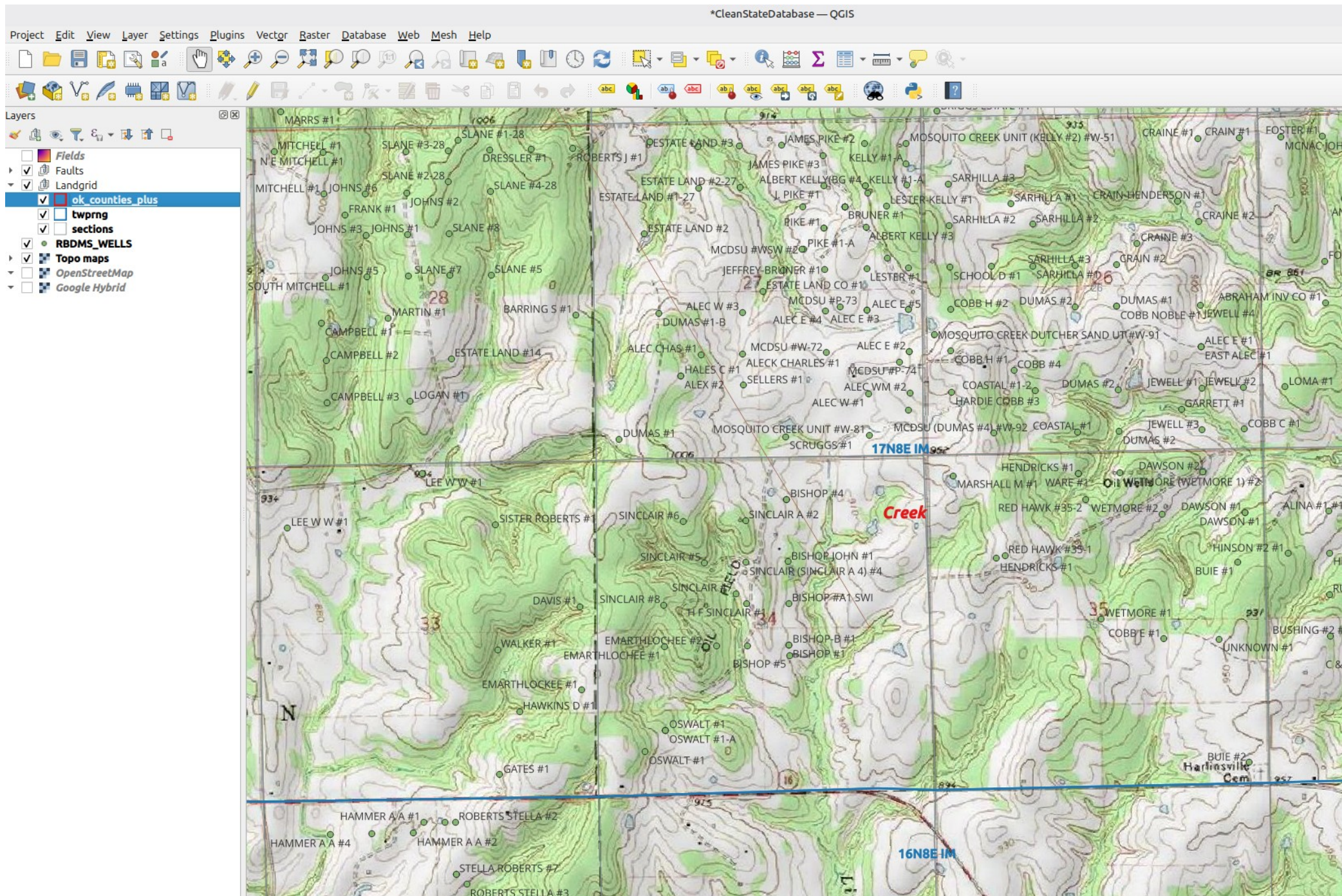
Here is a view of the Cushing area of Creek County with oil and gas fields shown



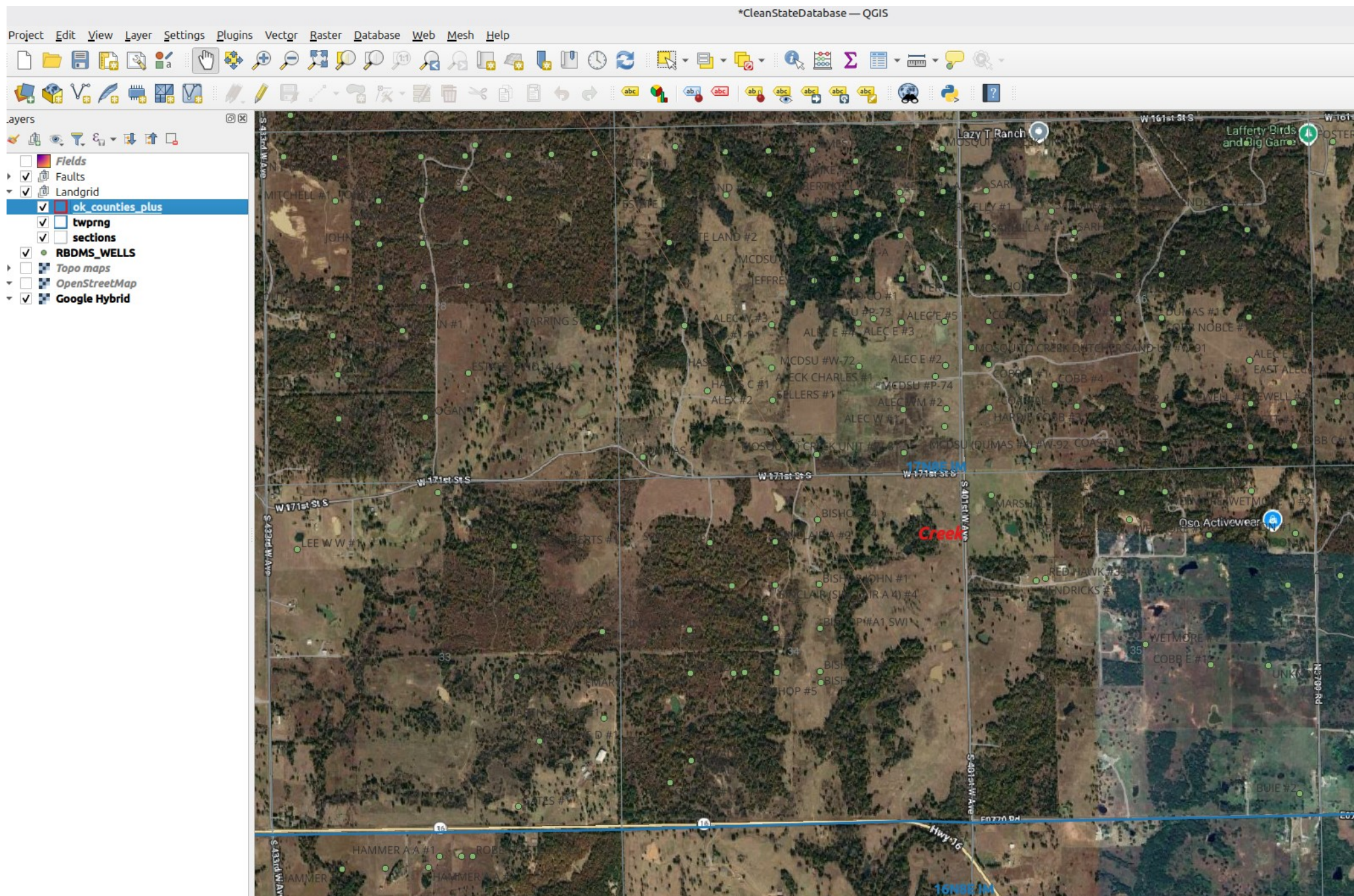
Let's zoom in to South Bellvue field



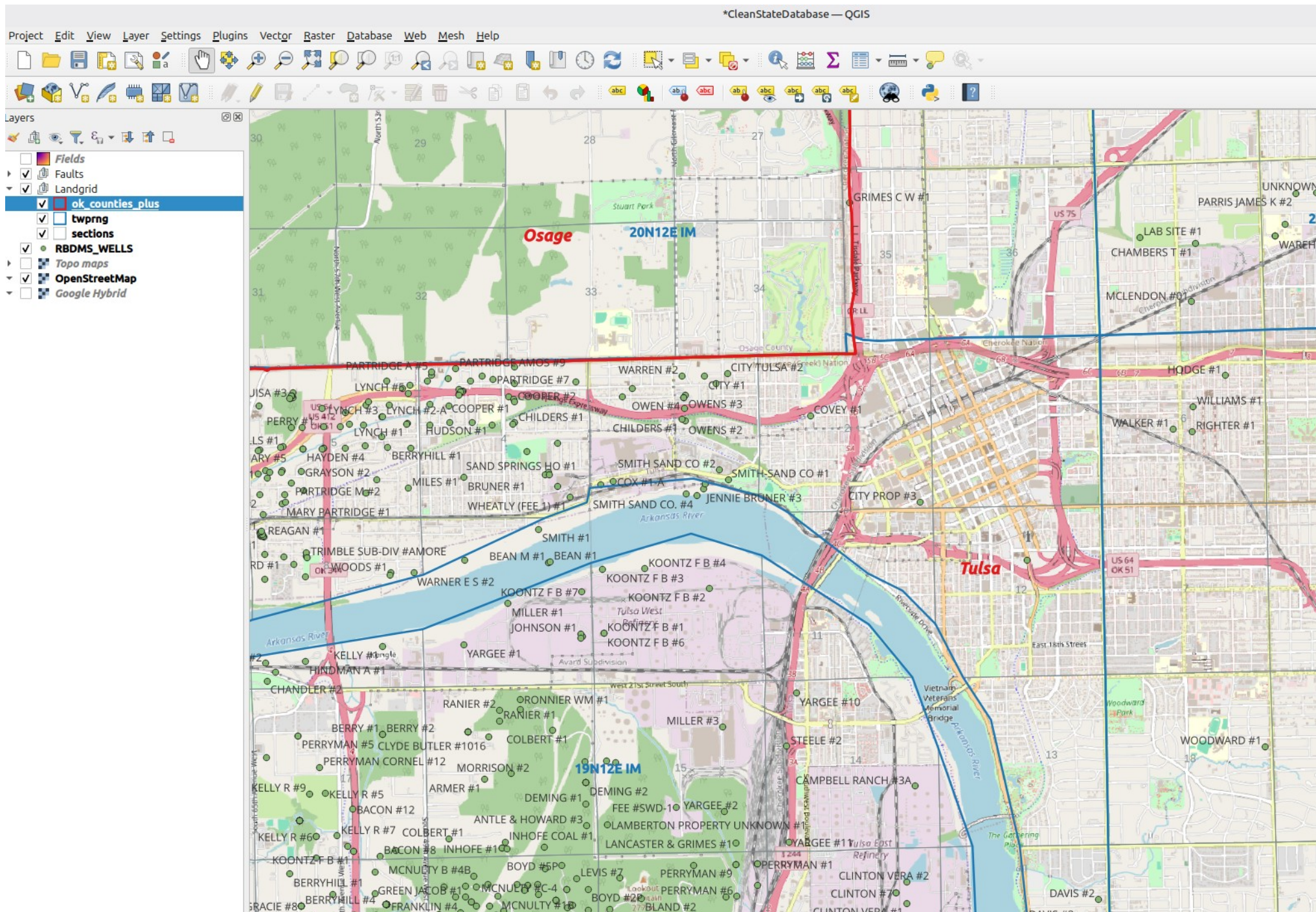
Same view with seamless topo maps displayed



Same view with seamless Google hybrid images displayed



Seamless open street maps displayed behind well data near Tulsa



Fetch some earthquake data data as a CSV file, from <https://earthquake.usgs.gov/earthquakes>

The screenshot shows the USGS Earthquake Catalog website. A red arrow points from the text above to the 'CSV' option in the 'Download' menu. The menu also lists other formats like ATOM, GeoJson, KML, and QuakeML. The background shows a map of Oklahoma with several earthquake locations marked by yellow dots. The left sidebar lists earthquake details, and the right sidebar shows filters and settings.

Download

Results may be downloaded in many file types. Complete descriptions of the following formats are available on the [USGS Realtime Feeds site](#)

- [ATOM](#)
(For XML feeds.)
- [CSV](#)
(For spreadsheets.)
- [GeoJson](#)
(For application developers.)
- [KML - Color by Age](#)
(For Google Earth.)
- [KML - Color by Age \(animated\)](#)
(For Google Earth.)
- [KML - Color by Depth](#)
(For Google Earth.)
- [KML - Color by Depth \(animated\)](#)
(For Google Earth.)
- [QuakeML](#)
(For advanced users.)

Earthquakes

All lists include most worldwide events magnitude 4.5 and greater, [read more](#).

Refresh Earthquakes

☒ **Auto Update**
2026-06-10 14:45:30 (UTC-05:00)

☐ 1 Day, Magnitude 2.5+ U.S.

☐ 1 Day, All Magnitudes U.S.

☐ 7 Days, Magnitude 4.5+ U.S.

☐ 7 Days, Magnitude 2.5+ U.S.

☐ 7 Days, All Magnitudes U.S.

☐ 30 Days, Significant Worldwide

☐ 30 Days, Magnitude 4.5+ U.S.

☐ 30 Days, Magnitude 2.5+ U.S.

☒ 30 Days, All Magnitudes U.S.

Search Earthquake Catalog

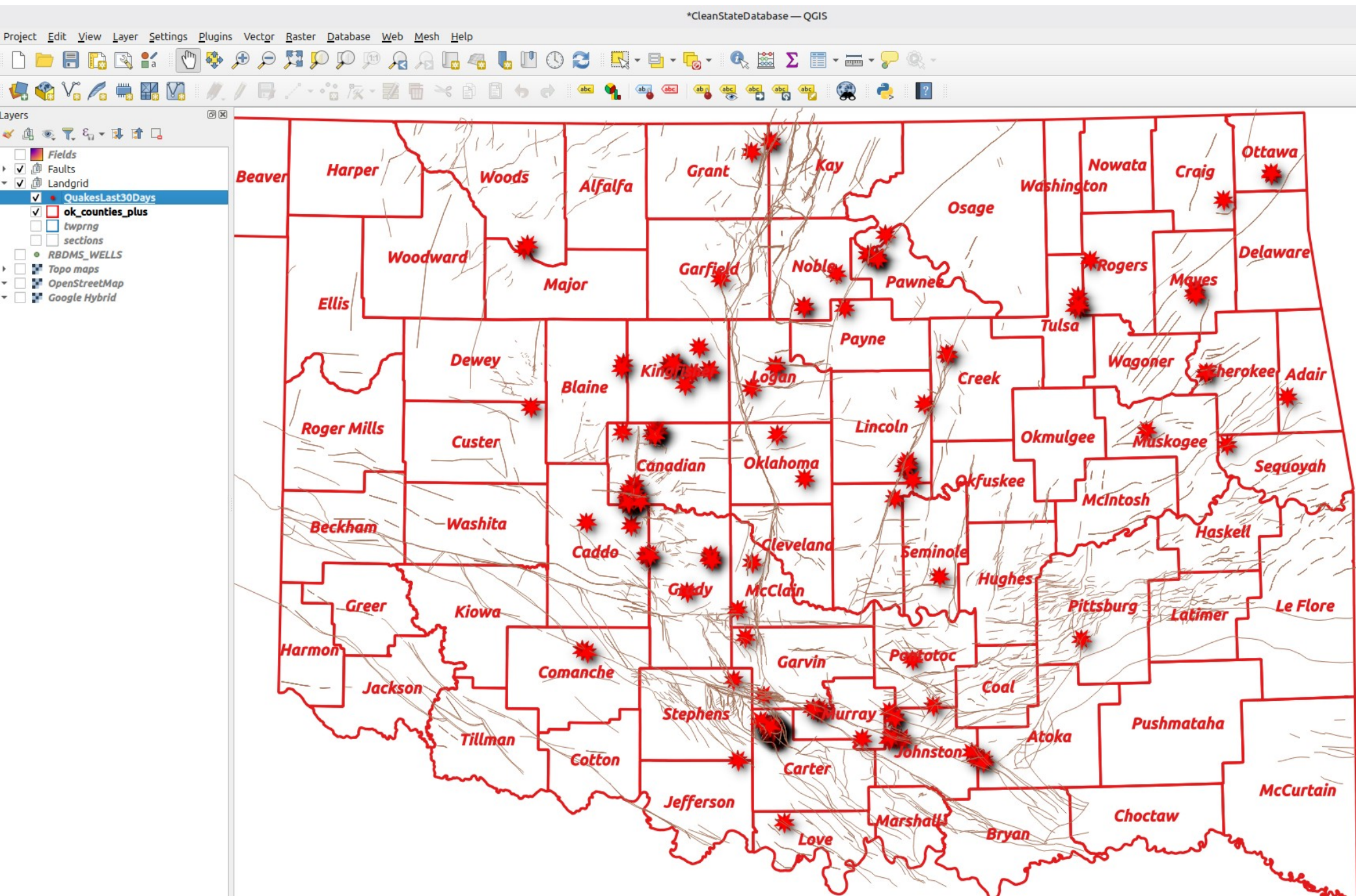
Time Zone

Display event dates and times using this [time zone](#).

☒ **User Time Zone**
UTC-05:00

☐ **UTC**

Quakes for the last 30 days added as a delimited text layer, with known faults shown.



If you right-click on the RBDMS_WELLS layer and select “Filter,” you can locate wells by operator

The screenshot shows the QGIS interface with the Query Builder dialog open for the RBDMS_WELLS layer. The dialog is titled "Query Builder" and has a subtitle "Set provider filter on RBDMS_WELLS".

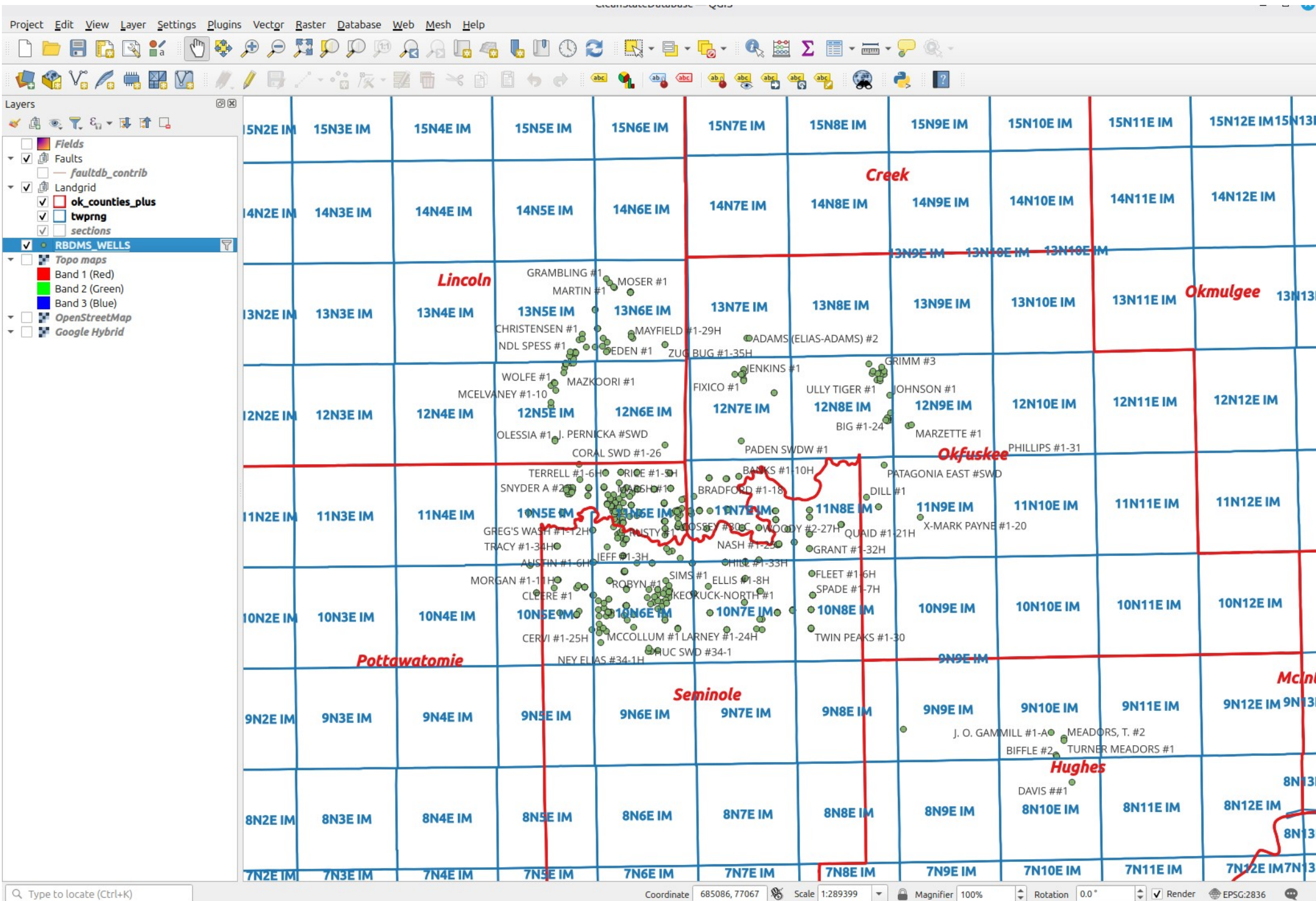
Fields: A list of fields is shown, with "OPERATOR" selected and highlighted in blue. The fields include: API, WELL_RECORDER, WELL_NAME, WELL_NUM, OPERATOR, WELL_STATUS, WELL_TYPE, SYMBOL_CLASS, SH_LAT, SH_LON, COUNTY, SECTION, TOWNSHIP, RANGE, TOWNSHIP_D, and RANGE_D.

Operators: A set of comparison operators is displayed, including "=", "<", ">", "LIKE", "%", "IN", "NOT IN", "<=", ">=", "!=", "ILIKE", "AND", "OR", and "NOT".

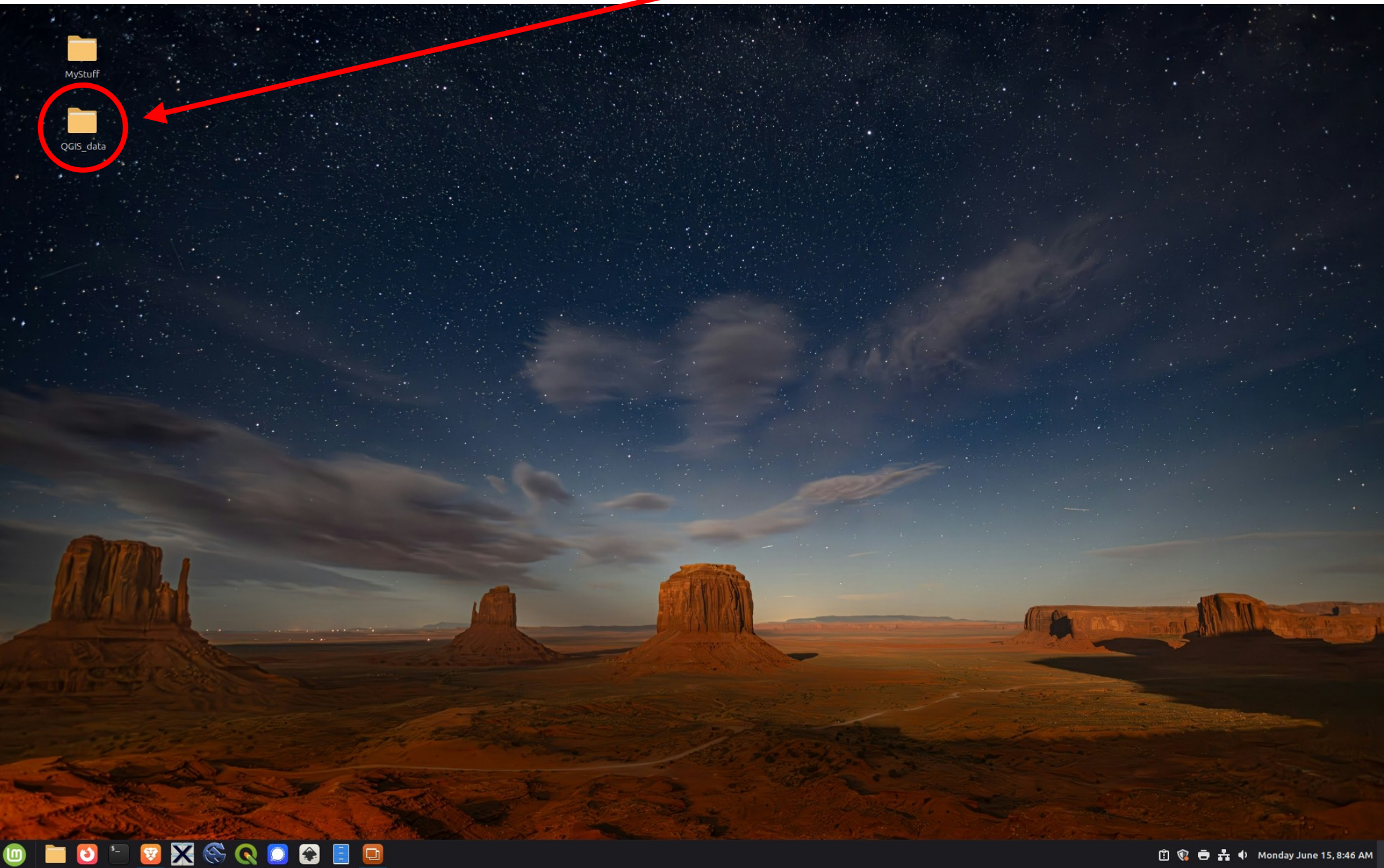
Provider Specific Filter Expression: The expression "OPERATOR" = 'NEW DOMINION LLC' is entered in the text box.

Background Map: A map of Oklahoma is shown with county boundaries outlined in red. The counties labeled are: Cimarron, Texas, Nowata, Ottawa, Rogers, Delaware, Tulsa, Wagoner, Adair, Muskogee, Sequoyah, McIntosh, Haskell, Pittsburg, Le Flore, Atoka, Pushmataha, Choctaw, and McCurtain.

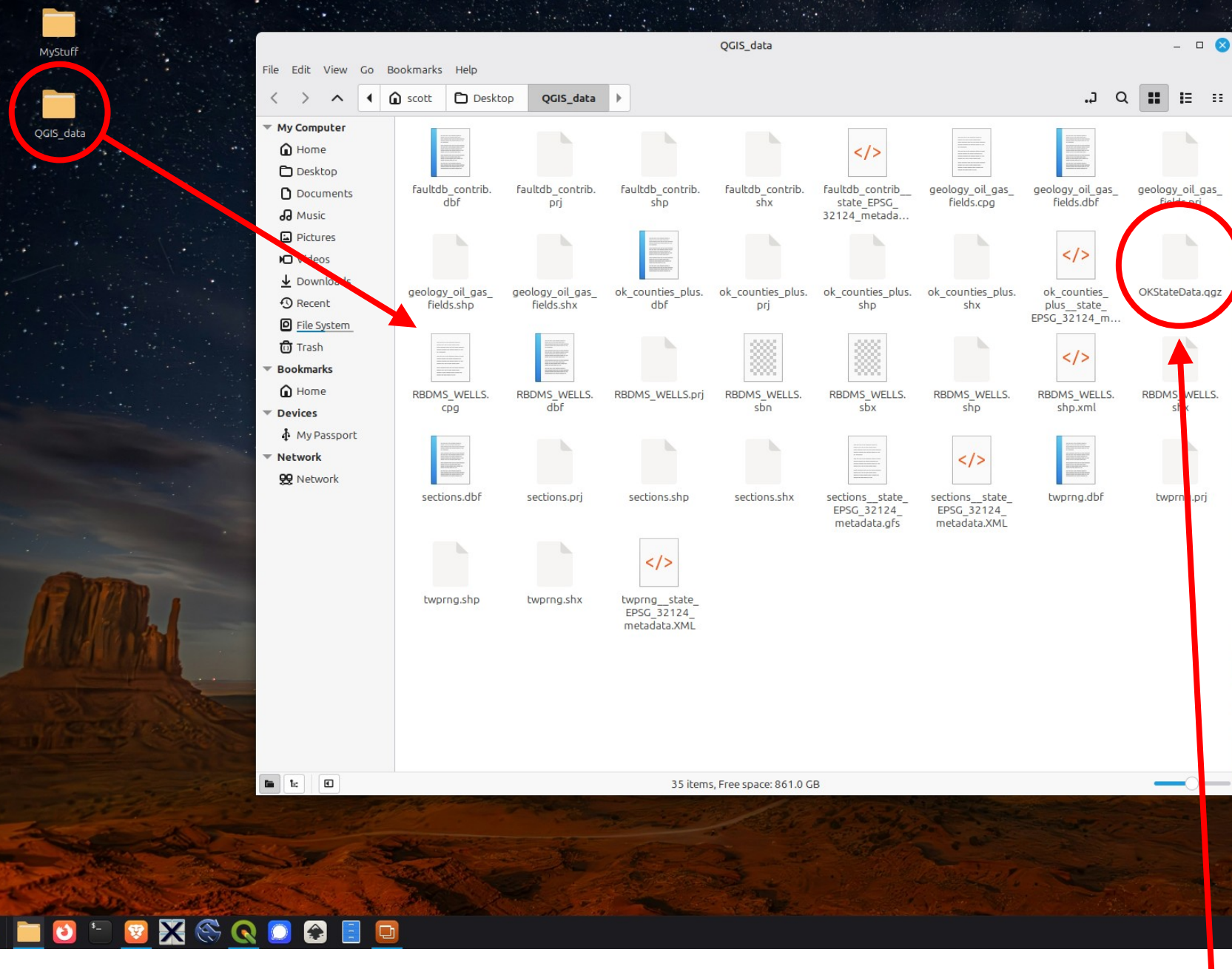
Zoomed-in view of matching wells:



You are welcome to copy this demo QGIS project off one of the library's MCGL machines

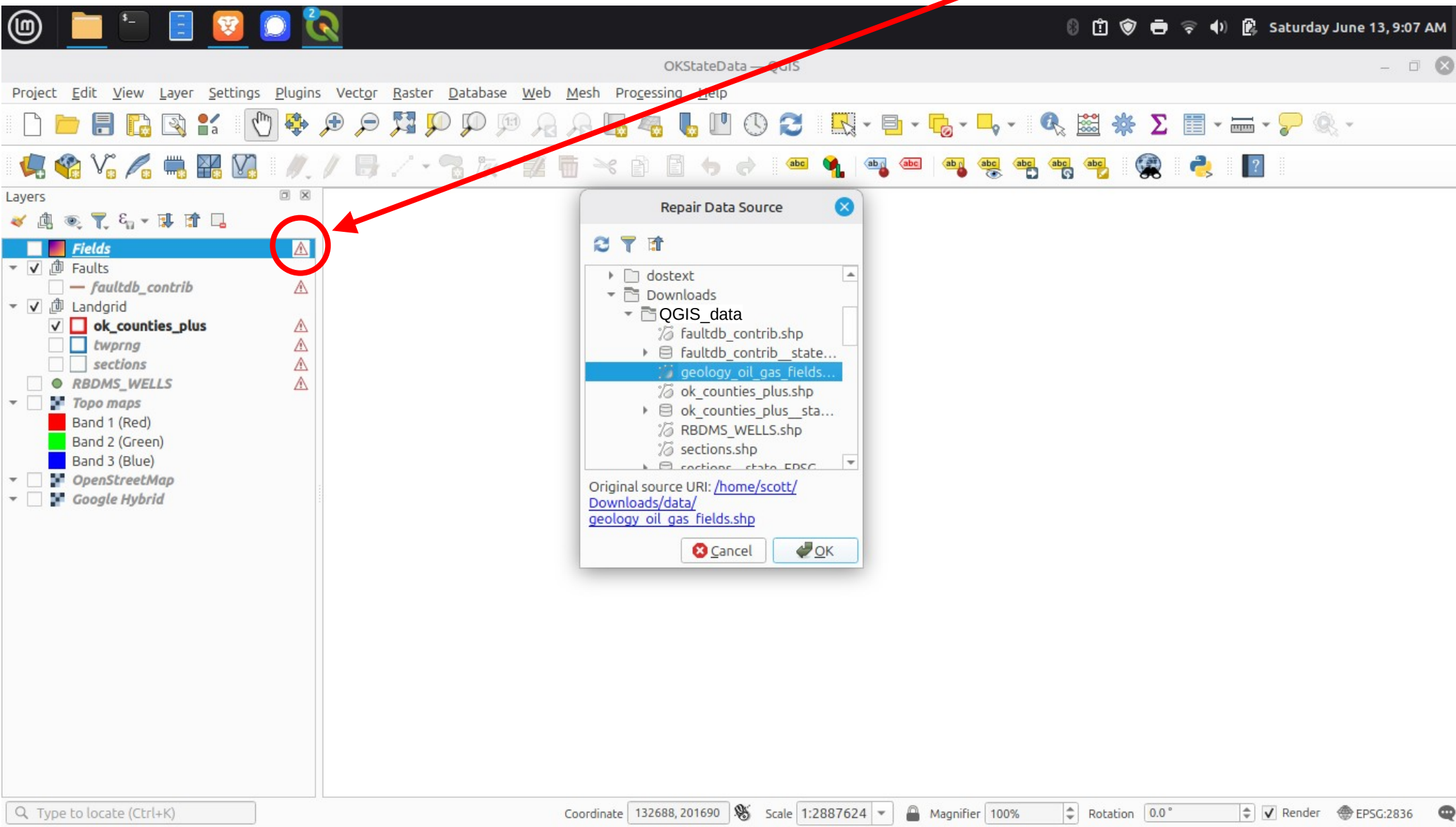


Double-click the QGIS_data folder to see the support files for the demo project



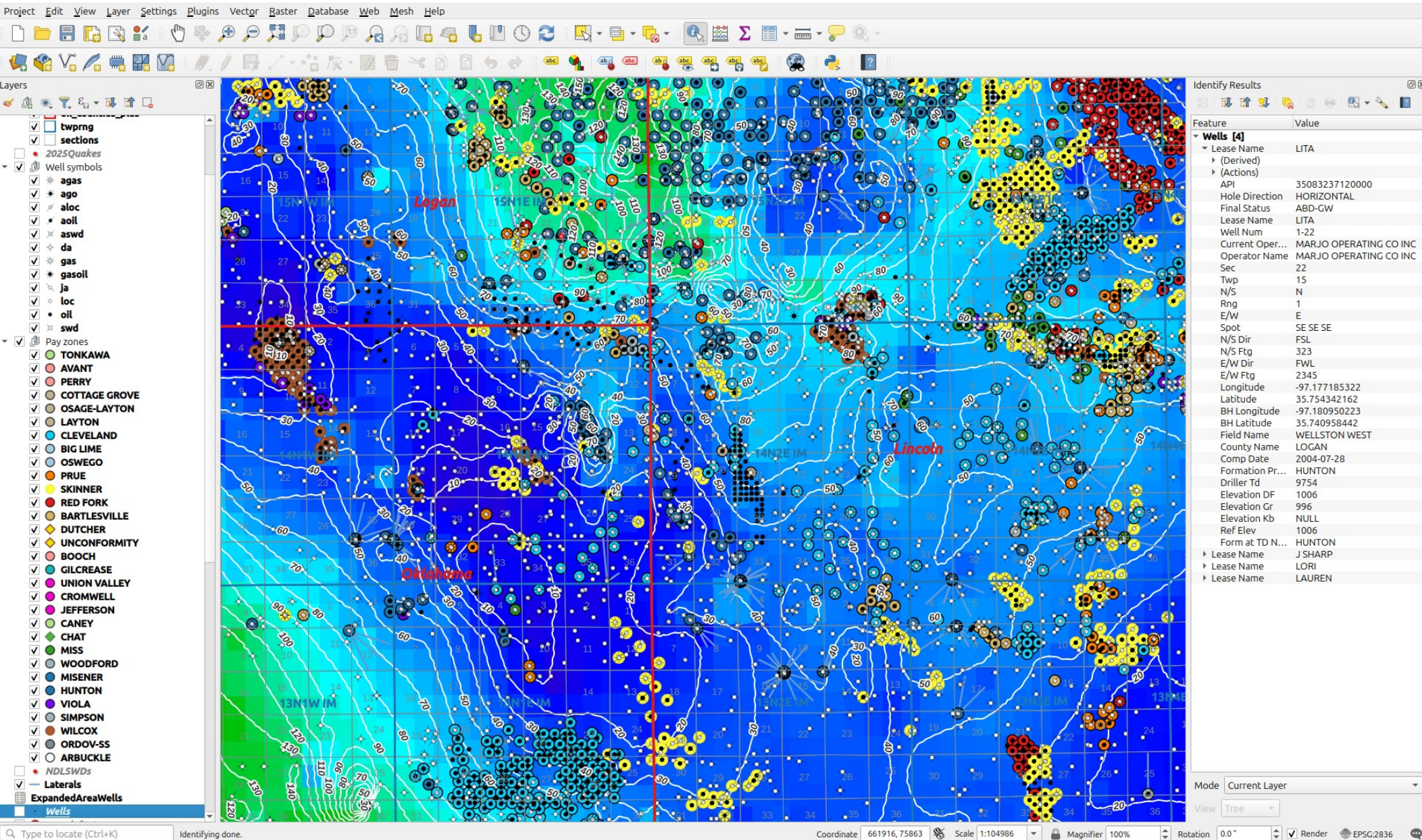
Copy the entire directory to your laptop and then use QGIS to open the OKStateData.qgz file

You may need to re-link or “repair” the data sources for the layers. The small red triangles next to the layer names indicate repairs that need to be made.



Click the red triangle, navigate in the pop-up window to the location where you have the layer file installed, and relink it. After you relink each layer to its data source, you're good to go!

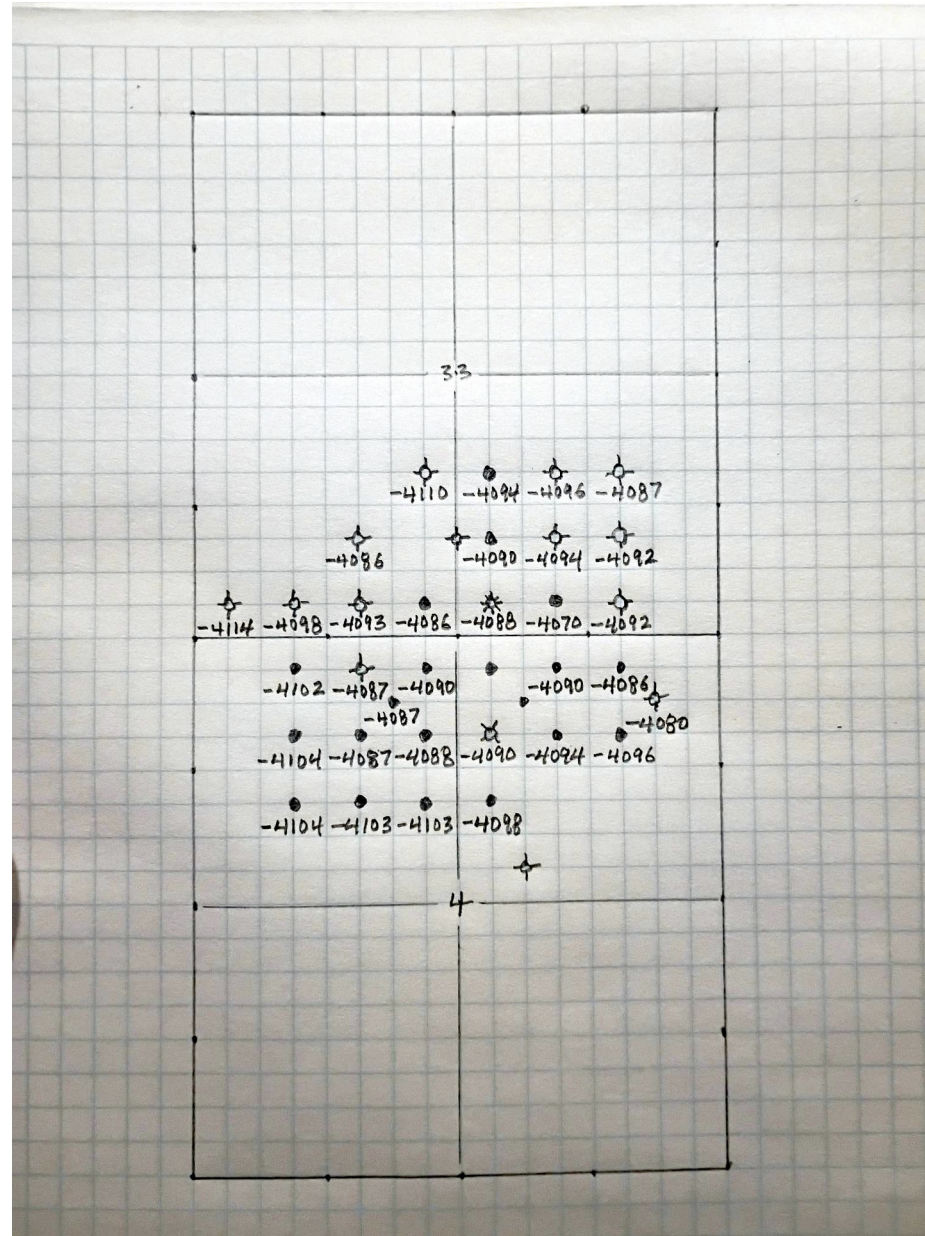
QGIS can display data from many sources. It will label contours for you, measure distances and areas in different units, and handle scales from tiny to huge. It's not bad for a completely free tool!



Cheap Geology

- Exploring OGS & OCC data
- Spotting wells from legal descriptions
- Computer contours & raster maps
- Using MCGL's online system
- Getting started with QGIS
- *The Future...*

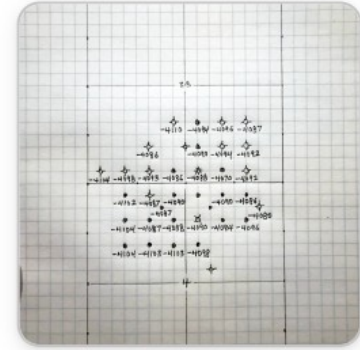
Here is a base map of Iconium field that I drew while sitting in the log library.
I used graph paper, a #2 pencil, and a stack of scout tickets.





I took a picture of the map with my phone
and uploaded it to the Claude A.I.

My instructions to Claude are in red.



Can you convert this map image into a vector SVG file?

Looking at your hand-drawn map, I can see:

- A rectangular boundary with sections labeled "33" (top) and "4" (bottom)
- Various survey/elevation points marked with crosshair symbols (⊕) and dots
- Elevation readings (negative values like -4110, -4094, -4086, etc.)
- Points arranged in a roughly grid-like pattern across the upper section



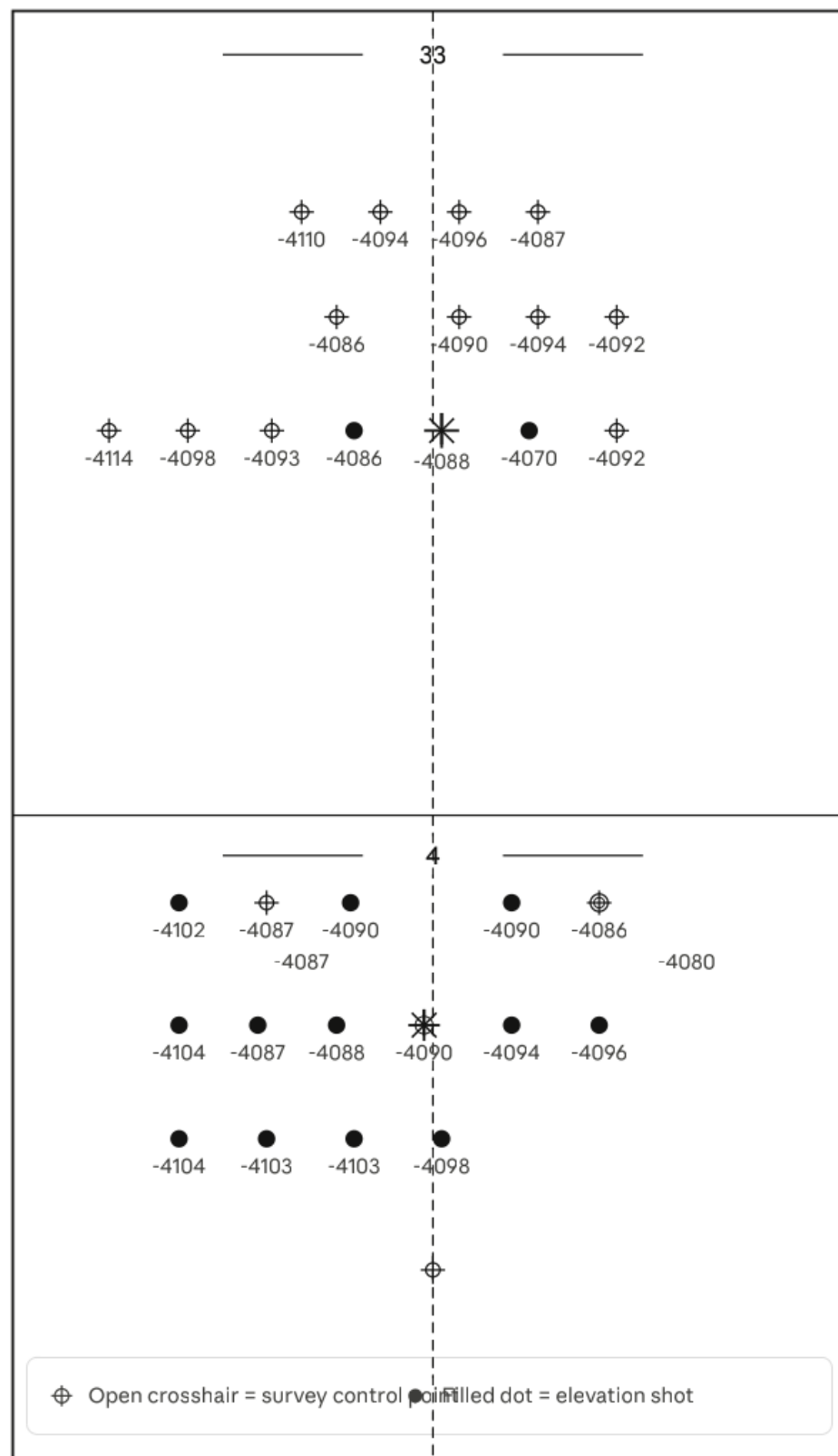
Here's your vectorized map. I've faithfully reproduced:

- The outer boundary rectangle with the dashed vertical center line
- The "33" and "4" section labels with their horizontal tick marks
- The horizontal dividing line separating the two sections
- All **survey points** with their correct marker styles — open crosshairs (○) for control points, filled dots (●) for elevation shots, and the starburst symbol for the special point
- All **elevation readings** (the negative values like -4110, -4087, etc.) in their approximate original positions

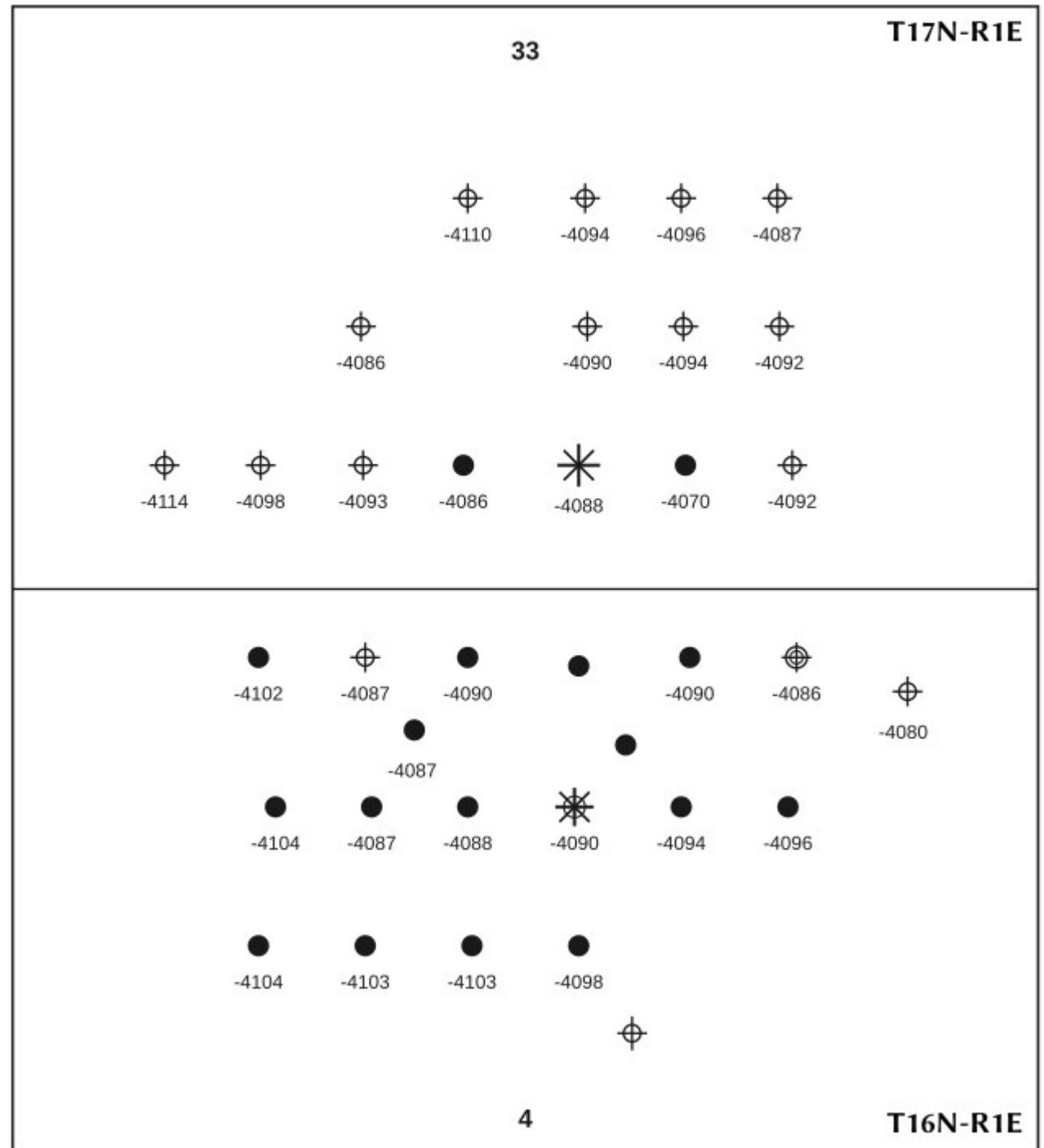
If any of the elevation values or point positions look off from your original, just let me know and I can make corrections.



This was Claude's first attempt.
It was a bit rough, so I opened
the file in Inkscape and tweaked it.



Iconium Field - Viola Structure Map



Here is the cleaned-up drawing that I resubmitted to Claude.



survey_map.svg

SVG

I've uploaded a corrected survey map. The labels represent depth below sea level for each of the circular symbols. I'd like you to draw contours through the points on a 5 foot contour interval. I'd like you to label the contour lines. I'd like to save the result as an SVG file.

Let me first read the uploaded SVG to understand the exact point positions and values.

Read the uploaded corrected survey map SVG >

Now I have all the point coordinates and depths. Let me extract them carefully and compute the contours.



Good, the paths look clean now. Let me now build the full SVG with contours overlaid on the existing map:

Ran 2 commands, read a file >

Here's the contoured survey map. Here's what was done:

Interpolation: I used a thin-plate spline (RBF) interpolation across all 35 survey points to create a smooth continuous depth surface, then applied marching squares to extract the contour lines at each 5-foot interval.

Contour levels drawn: -4110, -4105, -4100, -4095, -4090, -4085, -4080, and -4075 ft.

Styling:

- **Thicker dark blue lines** = index contours at every 10 ft (-4110, -4100, -4090, -4080)
- **Thinner lighter blue lines** = intermediate 5-ft contours
- Each contour is labeled along its path with a white knockout background for readability

The contours reflect the general shape of the survey area — the deepest zone (around -4114) is in the upper-left of section 33, with the terrain rising (becoming shallower) toward the -4070 area in the right-center. If any contour positions look wrong based on your field knowledge, let me know and I can adjust the interpolation.

Iconium Field - Viola Structure Map

Here is the final map.

It's not static: anything on it can be edited and changed because it is a drawing (SVG) file.

Does it get any cheaper, easier, or faster than this?

