



ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Office of Oil and Gas Resource Management
One Natural Resources Way Springfield, Illinois 62702-1271



HIGH VOLUME HORIZONTAL HYDRAULIC FRACTURING PERMIT APPLICATION HVHFF-10

References to "1-xx" or "§1-xx" are to the Hydraulic Fracturing Regulatory Act., 225 ILCS 732/1-1 et seq. References to "240.xxx" and "245.xxx" are to 62 Ill. Admin. Code 240 and 245, respectively.

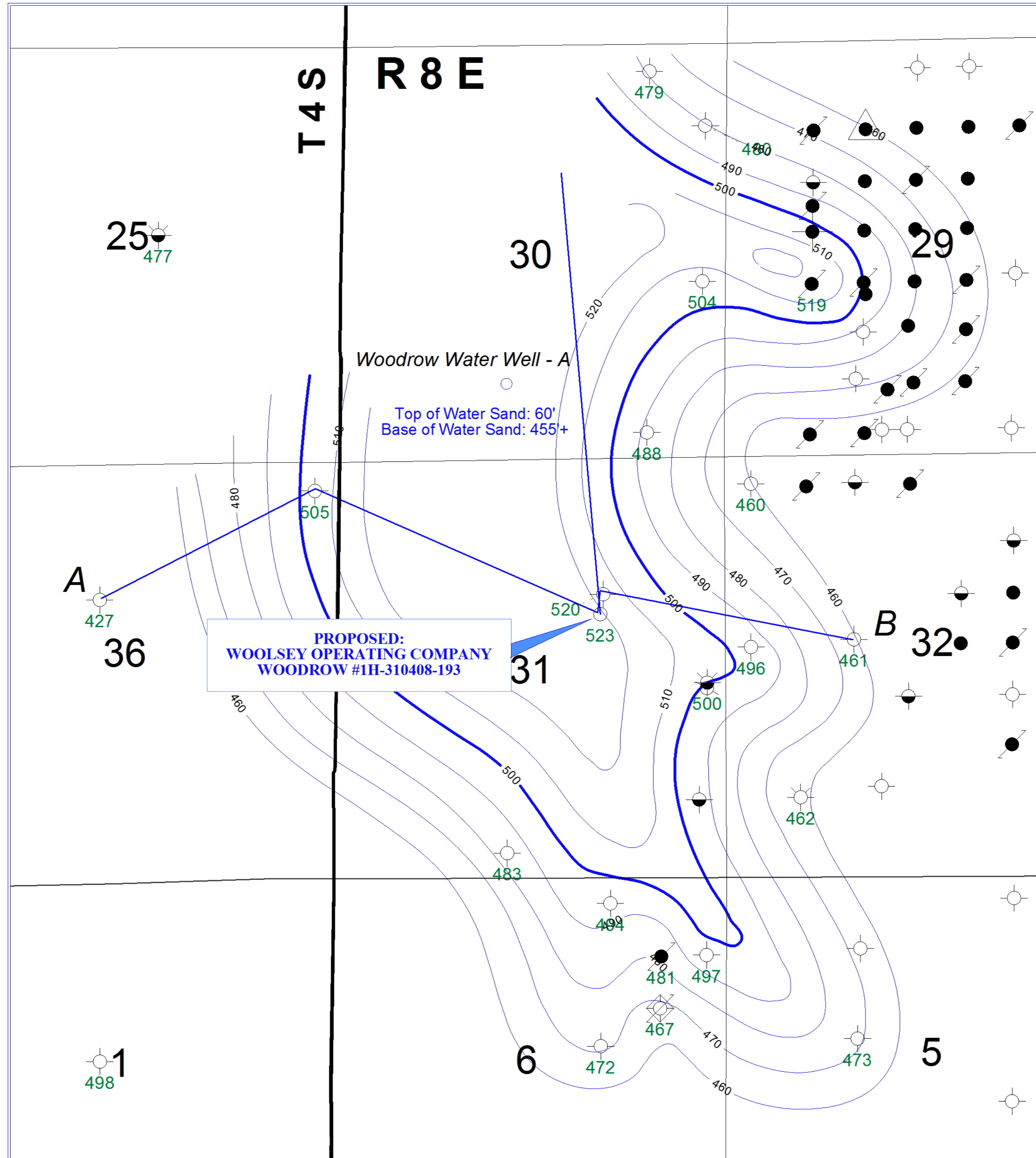
Attachment: UndergroundFreshWaterInformation

Please save attachment and use the file name above

Underground Fresh Water Information Section 1-35(b)(5); 245.210(a)(5).

Please provide the estimated depth and elevation of the lowest potential fresh water along the entire length of the proposed well according to the most recent publication of the Illinois State Geological Survey of Groundwater or any other relevant information you have. Show on attached diagram.

Depth: 510 to 530' Elevation: -24 to -90'



Woolsey Operating Company, LLC

FRONTIER PROJECT

WOODROW PROSPECT

Woodrow #1H-310408-193

Depth to Base of Fresh Water. C.I.=10 Ft

0 988 1376 2064
FEET

POSTED WELL DATA

●
Shallow water source (FEET)

WELL SYMBOLS

- Dry & Abandoned
- Dry Hole, With Show of Gas
- Dry Hole, With Show of Oil & Gas
- Dry Hole, With Show of Oil
- Dry Hole
- Location Only
- Oil Well/SWD
- Oil Well
- Oil Plugged & Abandoned
- SWD Plugged
- T&A-Oil Show Plugged
- Temporarily Abandoned

REMARKS

**Exhibit to:
Underground Fresh
Water Information**

By: DLP

A SMOKEY YORK 1

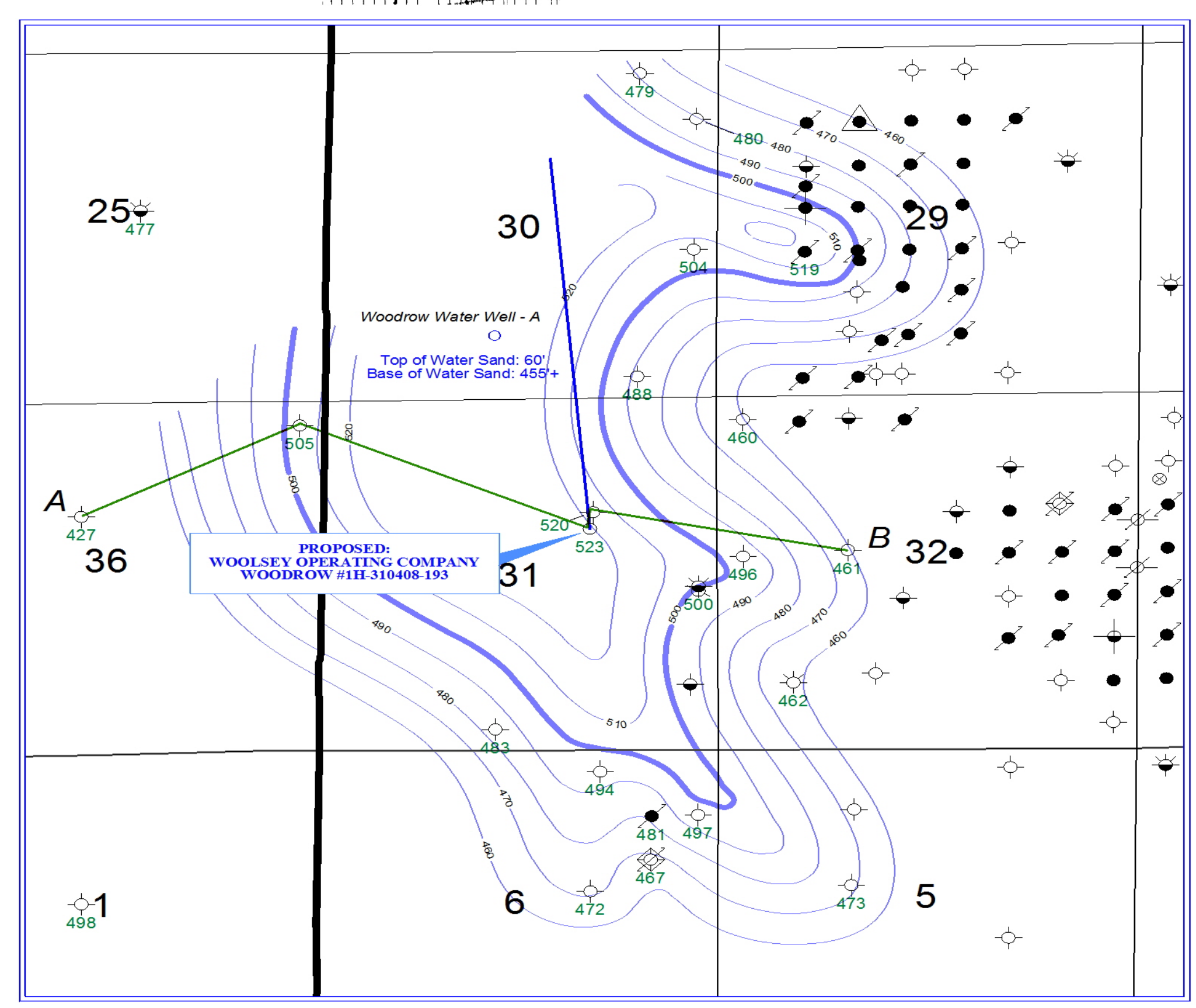
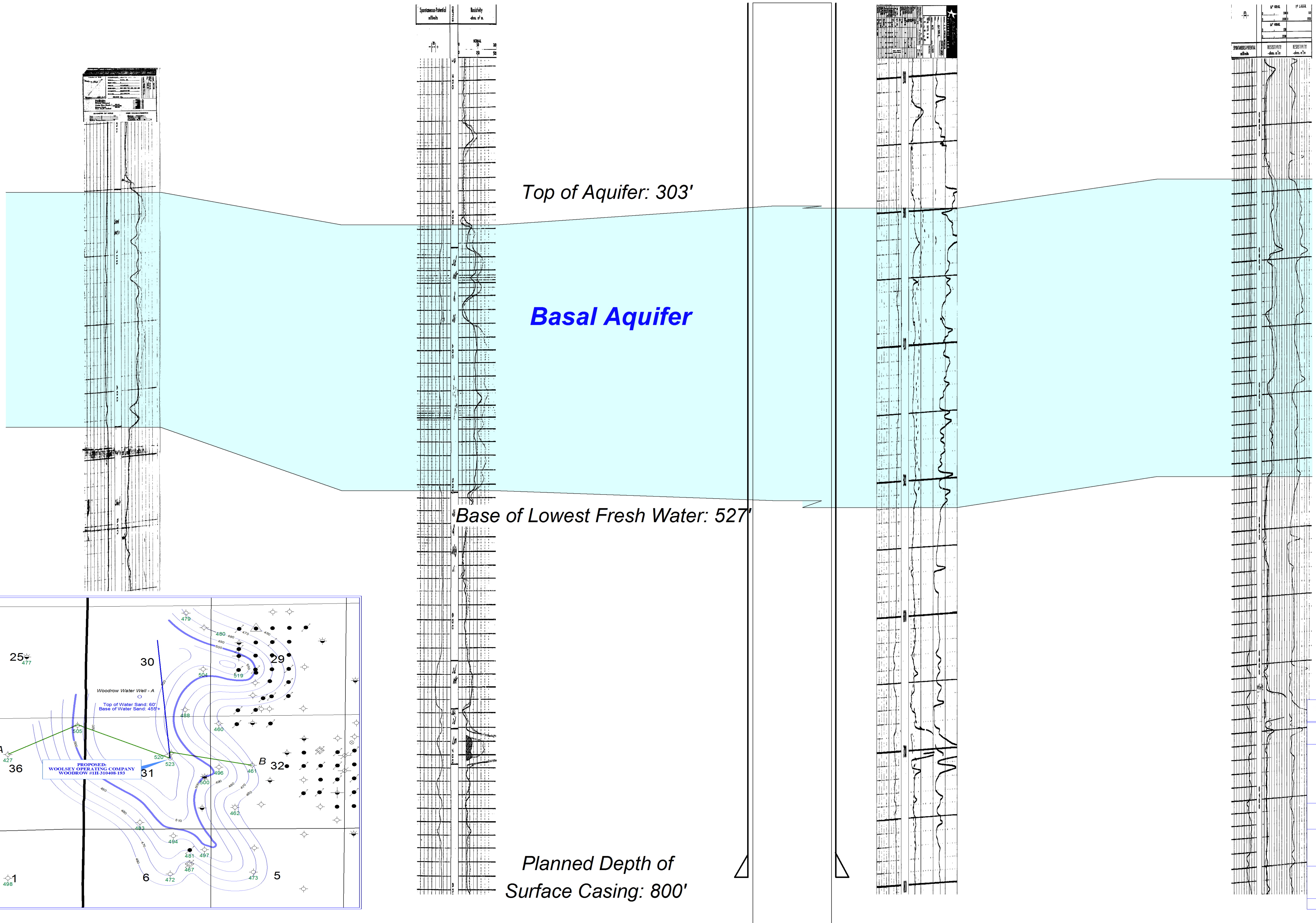
SOHIO A TODD 1

**WOOLSEY OPERATING COMPANY
WOODROW #1H-310408-193**

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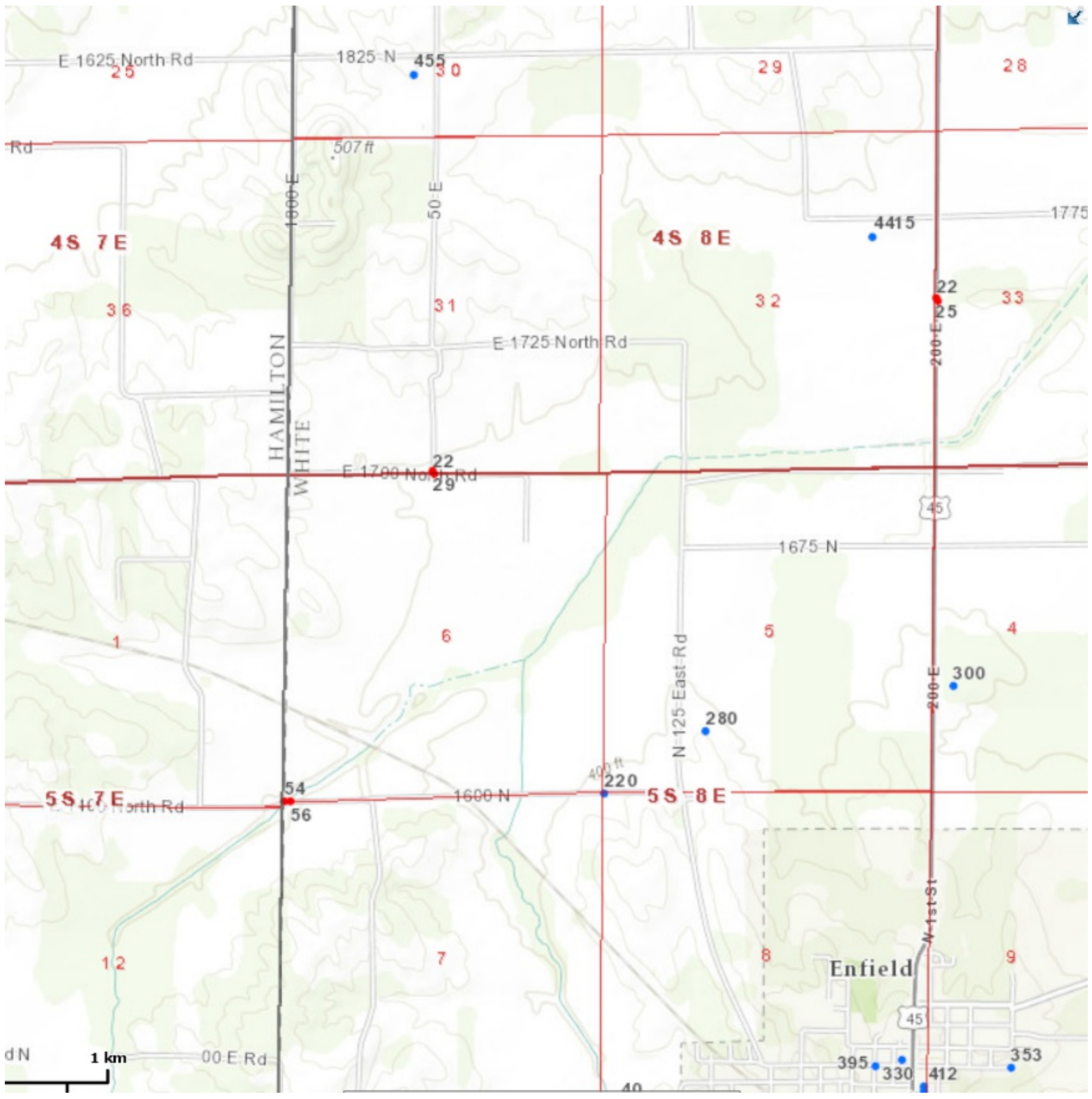
WAUSAU PARKER HEIRS 1

B



Planned Depth of Surface Casing: 800'

WOOLSEY OPERATING CO.
FRONTIER PROJECT
WOODROW PROSPECT
Woodrow #1H-310408-193
Structural XS of Fresh Water Aquifer
Horizontal Scale = 245.8 Vertical Scale = 20.0 Vertical Exaggeration = 12.3x
Operator Well Name Well Number ProdM ○ WELL - SP_OIL (WEG)
HVHF-10 Underground Fresh Water Information
By: DLP



ILLINOIS STATE GEOLOGICAL SURVEY

Household - Livestock Watering Well	Top	Bottom
yellow clay	0	15
gray shale	15	20
shale & coal	20	25
dark shale	25	60
sand & lime	60	100
sand	100	135
sand & shale	135	250
lime & shale	250	353
white sand (water)	353	455
Total Depth		455
Casing: 5" PVC SCH 40 from 1' to 355'		
Grout: SAND & CUTTINGS from 0 to 355.		
Size hole below casing: 4.869999885559082"		
Water from penn sand at 355' to 455'.		
Static level 130' below casing top which is 1' above GL		
Pumping level 240' when pumping at 40 gpm for 3 hours		
Permanent pump installed at 240'		
on April 27, 1981, with a capacity of 10 gpm		
Owner Address: [REDACTED]		
Location source: Location from permit		

Permit Date: April 22, 1981

Permit #: [REDACTED]

COMPANY Keen, George

FARM [REDACTED]

DATE DRILLED April 27, 1981

NO. 1

ELEVATION 0

COUNTY NO. 30882

LOCATION NE SE SW

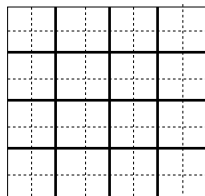
LATITUDE 38.142496

LONGITUDE -88.365277

COUNTY White

API 121933088200

30 - 4S - 8E



ILLINOIS STATE GEOLOGICAL SURVEY

Private Water Well	Top	Bottom
yellow clay	0	15
yellow sandstone	15	23
white sandstone, hard	23	60
shale	60	135
dark shale	135	143
dark shale, hard	143	180
shale	180	230
light sandy shale	230	235
sandstone	235	280
Total Depth		280
Casing: 6" PVC from -1' to 240'		
Grout: BENTONITE from 0 to 240.		
Water from sandstone at 240' to 280'.		
Static level 40' below casing top which is 1' above GL		
Permanent pump installed at 240'		
on August 27, 2010, with a capacity of 10 gpm		
Remarks: Driller's Estimated Well Yield 20 gpm		
Owner Address: [REDACTED]		
Address of well: same as above		
Location source: Location from permit		

Permit Date: August 16, 2010

Permit #: [REDACTED]

COMPANY Wilson, DeNeal

FARM [REDACTED]

DATE DRILLED August 24, 2010

NO. 1

ELEVATION

COUNTY NO. 32547

LOCATION NW SE SW

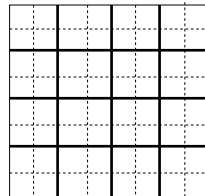
LATITUDE 38.114026

LONGITUDE -88.349175

COUNTY White

API 121933254700

5 - 5S - 8E



ILLINOIS STATE GEOLOGICAL SURVEY

Private Water Well	Top	Bottom
clay	0	23
shale	23	40
sand	40	57
shale	57	225
hard gray sand	225	250
water sand	250	300
Total Depth		300
Casing: 5" SDR 21 from -1' to 10'		
5" SDR 20 from 10' to 270'		
5" SLOTTED from 270' to 290'		
Screen: 20' of 5" diameter .02 slot		
Grout: CEMENT from 3 to 250.		
Water from Mt. Carmel sand at 250' to 300'.		
Static level 110' below casing top which is 1' above GL		
Permanent pump installed at 200'		
on October 31, 1991, with a capacity of 10 gpm		
Owner Address: [REDACTED]		
Location source: Location from permit		

Permit Date: October 16, 1991

Permit #: [REDACTED]

COMPANY Lamp, Robert Wayne

FARM [REDACTED]

DATE DRILLED October 29, 1991

NO. 1

ELEVATION 0

COUNTY NO. 31371

LOCATION SW NW SW

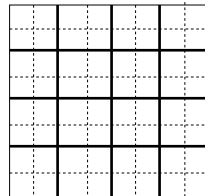
LATITUDE 38.115983

LONGITUDE -88.335586

COUNTY White

API 121933137100

4 - 5S - 8E



ILLINOIS STATE GEOLOGICAL SURVEY

Water Well Test Hole	Top	Bottom
till, very silty, brown, weak micaceous	0	10
same	10	20
sh, sty, dk gry, wk, mic, carb	20	25
sh as above; sh light gray, weak	25	30
shale as above	30	40
sh, sty, gry, wk, mic, slightly carb	40	45
same	45	70
sh, sty, lt gry-wh, wk, frag ls, lt brn	70	80
sh & ls as above	80	85
ss, sty, lt gry, vy f-f, cmpt, mic, pyrc	85	90
same	90	95
ss as abv, ss vy sty, gry, vy f-f, cmpt	95	100
sh v sty dk gry wk-f mic frag ss v sty	100	105
shale as above	105	110
same	110	115
ss sty arg gry vy f cmpt mic	115	120
ss as abv sh vy sty gry f-wk mic pyr	120	125
shale as above	125	135
same	135	160
shale as above, frag coal	160	165
same	165	170
same si arg gry cmpt mic pyr	170	175
same	175	185
sh as abv	185	190

Permit Date:

Permit #:

COMPANY Schell, Sidney

FARM [REDACTED]

DATE DRILLED October 20, 1947

NO. 1

ELEVATION 485GL

COUNTY NO. 04951

LOCATION 600'S line, 40'E line of SE SE

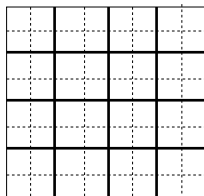
LATITUDE 38.098644

LONGITUDE -88.33716

COUNTY White

API 121930495100

8 - 5S - 8E



ILLINOIS STATE GEOLOGICAL SURVEY

Municipal Water Supply	Top	Bottom
yellow clay	0	8
yellow sandstone	8	20
sandy shale	20	45
dark shale	45	55
shaley coal	55	60
shaley lime	60	90
sandy shale	90	240
dark shale	240	255
sandstone water	255	348
sandy shale & lime	348	353
Total Depth		353
Casing: 6.62" BLACK 2/80 WALL from -2' to 266'		
Size hole below casing: 9"		
Water from sandstone at 260' to 353'.		
Static level 165' below casing top which is 2' above GL		
Pumping level 260' when pumping at 30 gpm for 4 hours		
Driller's Log filed		
Owner Address: [REDACTED]		
Location source: Location from permit		

Permit Date: April 14, 1970

Permit #: [REDACTED]

COMPANY Wilson, Olen L.

FARM [REDACTED]

DATE DRILLED June 19, 1970

NO. 4

ELEVATION 0

COUNTY NO. 08259

LOCATION 420'N line, 5'E line of SW SW

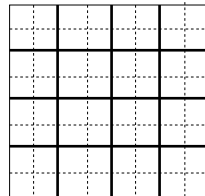
LATITUDE 38.099427

LONGITUDE -88.33241

COUNTY White

API 121930825900

9 - 5S - 8E



same	190	200
sh as abv	200	205
sh as abv si arg gry cmpt mic	205	210
si as abv sh caved	210	215
same	215	235
sh sty gry f-wk mic slgtly pyr ptly carb	235	240
same	240	260
sh as abv ss sty gry vy f cmpt pyr mic	260	265
sh vy sty gry fr-wk mic slgtly carb ss	265	270
ss slgtly calc vy sty arg gry vy f cmpt	270	280
same	280	295
ss as abv cmpt to f	295	300
same	300	305
same some mud	305	310
same	310	330
ss slgtly calc f-crs f-inco ptly mic pyr	330	335
same	335	365
ss slgtly calc lt gry vy f-med f-inco	365	370
same	370	410
Total Depth		412
Electric Log filed		
Driller's Log filed		
Survey Sample Study filed		
Sample set # 17426 (1' - 410') Received: January 1, 1947		
Owner Address: [REDACTED]		
Location source: Location from the driller		

Schell, Sidney

COUNTY White

API 121930495100

8 - 5S - 8E