

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

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Office of Oil and Gas

JUL 25 2022

WV Department of
Environmental Protection

API 47 - 033 - 05949 County Harrison District Simpson
Quad Brownton Pad Name J Osborn Field/Pool Name _____
Farm name Judy Osborn Well Number 201
Operator (as registered with the OOG) Arsenal Resources
Address 6031 Wallace Rd Ext, Ste 101 City Wexford State PA Zip 15090

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4346582.308 Easting 567 461.225
Landing Point of Curve Northing 4345950.510 Easting 566749.283
Bottom Hole Northing 4340951 .561 Easting 568577.823

Elevation (ft) 1163.3 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Synthetic Oil Based

Date permit issued 04/12/2019 Date drilling commenced 05/23/2019 Date drilling ceased 01/02/2022
Date completion activities began 1/10/2022 Date completion activities ceased 5/17/2022
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 174, 232, 260, 372, 488, 609, 680 Open mine(s) (Y/N) depths N
Salt water depth(s) ft none reported Void(s) encountered (Y/N) depths N
Coal depth(s) ft 226, 326, 401, 441, 531, 596, 616 (depths based on WVGES - not observed) Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:
Lorenz Reynolds
2-8-23

API 47- 033 - 05949 Farm name Judy Osborn Well number 201

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	24"	100'	New	94	NA	Y
Surface	17 1/2"	13 3/8"	803' GL	New	54.5	NA	Y
Coal	NA	NA	NA	NA	NA	NA	N
Intermediate 1	12 1/4"	9 5/8"	2,518' GL	New	40.0	NA	Y
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	8 1/2"	5 1/2"	25,864' GL	New	20.0	NA	Y
Tubing	NA	NA	NA	NA	NA	NA	NA
Packer type and depth set		NA					

Comment Details Cement to surface on Conductor, Surface, Intermediate and Production cement to 450'

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	A	214	15.60	1.21	258.94	Surface	8+
Surface	A	711	15.60	1.2	853.2	Surface	8+
Coal	NA	NA	NA	NA	NA	NA	NA
Intermediate 1	A	839	15.60	1.21	1015.2	Surface	8+
Intermediate 2	NA	NA	NA	NA	NA	NA	NA
Intermediate 3	NA	NA	NA	NA	NA	NA	NA
Production	A	850/3639	13.80/15.00	1.33/1.3	1,130.5/4,730.7	450'	8+
Tubing	NA	NA	NA	NA	NA	NA	NA

Drillers TD (ft) 25,864'(GL) Loggers TD (ft) NA

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure NA

Kick off depth (ft) 7,300'(GL)

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 24"- No centralizers, 13 3/8" & 9-5/8"- one bow spring centralizer on every other joint, 5.5"- one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 2,400'; there will be no centralizers from 2,400' to surface

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS JUL 25 2022

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS WV Department of Environmental Protection

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 033 - 05949 Farm name Judy Osborn Well number 201

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus Shale</u>	<u>7463</u>	<u>TVD</u>	<u>25871</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

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Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 18998 mcfpd Oil 0 bpd NGL 0 bpd Water 942 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Sand/Silt	0	200	0	200	Freshwater @ 174', 232', 260', 372', 488', 609', 680' (All water depths interpreted from CBL - no reports while drilling)
Sand/Silt/Coal	200	300	200	300	Coal not observed while drilling: depths based on WVGES Maps: Bakerstown Coal @ 226' TVD
Sand/Silt/Coal	300	450	300	450	Brush Creek Coal @ 326' TVD, Upper Freeport @ 401' TVD, Lower Freeport @ 441' TVD
Sand/Silt/Coal	450	900	450	900	Upper Kittanning @ 531' TVD, Middle Kittanning @ 596' TVD, Lower Kittanning @ 616' TVD
Sand/Silt/Limestone	900	3005	900	3022	Sandstone, Siltstone, Limestone
Balltown	3005	3088	3022	3106	Sandstone
Elk Siltstone	4633	4653	4853	4877	Siltstone
Burket	6937	6958	6938	6993	Shale
Tully	6958	7011	6993	7064	Limestone
Mahantango	7011	7172	7064	7342	Shale
Marcellus	7172	7219	7342	7474	Shale
Purcell	7219	7221	7474	7480	Limestone
Lower Marcellus	7221	7254*	7480	25871	Shale - Gas shows through lateral
Onondaga	7254*				*Onondaga not penetrated - top estimated based on 4703305933 thickness

Please insert additional pages as applicable.

Drilling Contractor Helmerich & Payne
Address 1437 South Boulder Ave. City Tulsa State OK Zip 74119

Logging Company NA
Address _____ City _____ State _____ Zip _____

Cementing Company Universal Pressure Pumping
Address 6 Desta Drive, Suite 4400 City Midland State TX Zip 79705

Stimulating Company Stingray - Mammoth Energy Services INC
Address 14201 Caliber Drive Suite 300 City Oklahoma City State OK Zip 73134

Please insert additional pages as applicable.

Completed by Arsenal Resources Telephone _____
Signature [Signature] Title Director of Geology & Development Date 7/21/2022



WR 35 FORM COMPLETIONS INFORMATION

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Well Header

Well Name J Osborn HSOP16 201	API/UWI 4703305949	Lease	Pad Name J Osborn HSOP16	Operator Arsenal Resources	Well Type Development	Well Subtype Multi
Original KB Elevation (ft) 1,190.14	Water Depth (ft)	Well License Date 1/24/2019	Spud Date 12/8/2021	Rig Release Date 12/25/2021		
County Harrison	District Simpson	Division Development	Division Code			
Lat/Long Datum	Latitude (°) 39° 9' 0" N	Longitude (°) 80° 7' 48" W	UTM Easting (m)	UTM Northing (m)		

Jobs

Job Category Completion/Workover	Primary Job Type Initial Completion	Start Date 1/10/2022	End Date
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Perforations

Date	Top (ftKB)	Btm (ftKB)	Entered Shot Total	Zone
2/21/2022	8,350.0	8,512.0	40	Marcellus, Original Hole
2/20/2022	8,550.0	8,712.0	40	Marcellus, Original Hole
2/20/2022	8,750.0	8,912.0	40	Marcellus, Original Hole
2/20/2022	8,950.0	9,112.0	40	Marcellus, Original Hole
2/19/2022	9,150.0	9,312.0	40	Marcellus, Original Hole
2/19/2022	9,350.0	9,512.0	40	Marcellus, Original Hole
2/19/2022	9,550.0	9,712.0	40	Marcellus, Original Hole
2/18/2022	9,750.0	9,912.0	40	Marcellus, Original Hole
2/18/2022	9,950.0	10,112.0	40	Marcellus, Original Hole
2/17/2022	10,150.0	10,312.0	40	Marcellus, Original Hole
2/17/2022	10,352.0	10,512.0	40	Marcellus, Original Hole
2/17/2022	10,550.0	10,712.0	40	Marcellus, Original Hole
2/16/2022	10,750.0	10,912.0	40	Marcellus, Original Hole
2/16/2022	10,950.0	11,112.0	40	Marcellus, Original Hole
2/16/2022	11,150.0	11,312.0	40	Marcellus, Original Hole
2/16/2022	11,350.0	11,512.0	40	Marcellus, Original Hole
2/15/2022	11,550.0	11,712.0	40	Marcellus, Original Hole
2/15/2022	11,750.0	11,912.0	40	Marcellus, Original Hole
2/15/2022	11,950.0	12,112.0	40	Marcellus, Original Hole
2/15/2022	12,150.0	12,312.0	40	Marcellus, Original Hole
2/14/2022	12,350.0	12,512.0	40	Marcellus, Original Hole
2/14/2022	12,550.0	12,712.0	40	Marcellus, Original Hole
2/14/2022	12,750.0	12,912.0	40	Marcellus, Original Hole
2/14/2022	12,950.0	13,112.0	40	Marcellus, Original Hole
2/13/2022	13,150.0	13,312.0	40	Marcellus, Original Hole
2/13/2022	13,350.0	13,512.0	40	Marcellus, Original Hole
2/13/2022	13,550.0	13,712.0	40	Marcellus, Original Hole
2/13/2022	13,750.0	13,912.0	40	Marcellus, Original Hole
2/12/2022	13,950.0	14,112.0	40	Marcellus, Original Hole
2/12/2022	14,150.0	14,312.0	40	Marcellus, Original Hole
2/12/2022	14,350.0	14,512.0	40	Marcellus, Original Hole
2/11/2022	14,550.0	14,712.0	40	Marcellus, Original Hole
2/11/2022	14,750.0	14,912.0	40	Marcellus, Original Hole
2/11/2022	14,950.0	15,112.0	40	Marcellus, Original Hole
2/11/2022	15,150.0	15,312.0	40	Marcellus, Original Hole
2/11/2022	15,350.0	15,512.0	40	Marcellus, Original Hole
2/10/2022	15,550.0	15,712.0	40	Marcellus, Original Hole
2/10/2022	15,750.0	15,912.0	40	Marcellus, Original Hole
2/10/2022	15,950.0	16,109.0	40	Marcellus, Original Hole
2/10/2022	16,150.0	16,312.0	40	Marcellus, Original Hole
2/10/2022	16,350.0	16,512.0	40	Marcellus, Original Hole
2/9/2022	16,550.0	16,712.0	40	Marcellus, Original Hole
2/9/2022	16,750.0	16,912.0	40	Marcellus, Original Hole
2/9/2022	16,950.0	17,112.0	40	Marcellus, Original Hole
2/8/2022	17,150.0	17,312.0	40	Marcellus, Original Hole



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Perforations

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Zone

Date	Top (ftKB)	Btm (ftKB)	Entered Shot Total	Zone
2/8/2022	17,350.0	17,512.0	40	Marcellus, Original Hole
2/8/2022	17,550.0	17,712.0	40	Marcellus, Original Hole
2/2/2022	17,750.0	17,912.0	40	Marcellus, Original Hole
2/2/2022	17,950.0	18,112.0	40	Marcellus, Original Hole
2/1/2022	18,150.0	18,312.0	40	Marcellus, Original Hole
2/1/2022	18,350.0	18,512.0	40	Marcellus, Original Hole
2/1/2022	18,550.0	18,712.0	40	Marcellus, Original Hole
2/1/2022	18,750.0	18,912.0	40	Marcellus, Original Hole
1/31/2022	18,950.0	19,112.0	40	Marcellus, Original Hole
1/31/2022	19,150.0	19,312.0	40	Marcellus, Original Hole
1/31/2022	19,350.0	19,512.0	40	Marcellus, Original Hole
1/30/2022	19,550.0	19,712.0	40	Marcellus, Original Hole
1/30/2022	19,750.0	19,912.0	40	Marcellus, Original Hole
1/29/2022	19,950.0	20,112.0	40	Marcellus, Original Hole
1/29/2022	20,150.0	20,312.0	40	Marcellus, Original Hole
1/29/2022	20,350.0	20,512.0	40	Marcellus, Original Hole
1/28/2022	20,550.0	20,712.0	40	Marcellus, Original Hole
1/28/2022	20,750.0	20,912.0	40	Marcellus, Original Hole
1/28/2022	20,950.0	21,112.0	40	Marcellus, Original Hole
1/27/2022	21,150.0	21,312.0	40	Marcellus, Original Hole
1/27/2022	21,350.0	21,512.0	40	Marcellus, Original Hole
1/27/2022	21,550.0	21,712.0	40	Marcellus, Original Hole
1/27/2022	21,750.0	21,912.0	40	Marcellus, Original Hole
1/26/2022	21,950.0	22,112.0	40	Marcellus, Original Hole
1/26/2022	22,150.0	22,310.0	40	Marcellus, Original Hole
1/26/2022	22,350.0	22,512.0	40	Marcellus, Original Hole
1/26/2022	22,550.0	22,712.0	40	Marcellus, Original Hole
1/25/2022	22,750.0	22,912.0	40	Marcellus, Original Hole
1/24/2022	22,950.0	23,112.0	40	Marcellus, Original Hole
1/24/2022	23,150.0	23,312.0	40	Marcellus, Original Hole
1/23/2022	23,350.0	23,512.0	40	Marcellus, Original Hole
1/23/2022	23,550.0	23,712.0	40	Marcellus, Original Hole
1/23/2022	23,754.0	23,912.0	40	Marcellus, Original Hole
1/21/2022	23,950.0	24,112.0	40	Marcellus, Original Hole
1/21/2022	24,150.0	24,312.0	40	Marcellus, Original Hole
1/21/2022	24,350.0	24,512.0	40	Marcellus, Original Hole
1/21/2022	24,550.0	24,712.0	40	Marcellus, Original Hole
1/20/2022	24,750.0	24,912.0	40	Marcellus, Original Hole
1/20/2022	24,950.0	25,112.0	40	Marcellus, Original Hole
1/19/2022	25,150.0	25,312.0	40	Marcellus, Original Hole
1/19/2022	25,350.0	25,512.0	40	Marcellus, Original Hole
1/19/2022	25,550.0	25,712.0	40	Marcellus, Original Hole
1/18/2022	25,750.0	25,845.0	4	Marcellus, Original Hole

Stimulations Summary

Start Date	Treat Rate Avg (bbl/min)	Treat Pressure Avg (psi)	Proppant Total (lb) 43,240,018.0	Volume Clean Total (bbl) 790,292.00	Frac Gradient Average (psi/ft) 1.16
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Stimulation Intervals

Interval Number	Start Date	Slurry Rate Avg (bbl/min)	P Treat Avg (psi)	P Breakdown (psi)	ISIP (psi)	Proppant Total OR (lb)	Vol Clean Total (bbl)
1	1/19/2022	80.3	9,357.0	9,999.0	4,442.0	249,900.0	5,789.00
2	1/19/2022	79.4	9,341.0	6,275.0	5,642.0	503,790.0	9,399.00
3	1/19/2022	78.4	10,027.0	6,635.0	4,724.0	395,240.0	9,823.00
4	1/20/2022	80.1	9,620.0	6,701.0	5,471.0	499,180.0	9,424.00
5	1/20/2022	79.7	9,471.0	6,932.0	4,876.0	489,800.0	9,290.00
6	1/20/2022	80.1	9,548.0	6,304.0	4,927.0	499,940.0	9,394.00



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Stimulation Intervals

Interval Number	Start Date	Slurry Rate Avg (bbl/min)	P Treat Avg (psi)	P Breakdown (psi)	ISIP (psi)	Proppant Total OR (lb)	Vol Clean Total (bbl)
7	1/21/2022	83.4	9,882.0	6,588.0	5,560.0	503,510.0	9,379.00
8	1/21/2022	84.6	9,671.0	6,625.0	5,476.0	498,920.0	9,444.00
9	1/21/2022	79.2	9,356.0	6,780.0	5,231.0	501,338.0	9,360.00
10	1/22/2022	83.2	9,365.0	6,553.0	5,953.0	492,120.0	10,400.00
11	1/23/2022	84.8	9,443.0	5,838.0	6,230.0	500,810.0	9,352.00
12	1/23/2022	84.6	9,531.0	6,751.0	4,693.0	500,300.0	9,291.00
13	1/23/2022	80.2	9,137.0	6,550.0	5,677.0	502,000.0	9,273.00
14	1/24/2022	82.3	9,025.0	5,925.0	5,783.0	498,270.0	9,253.00
15	1/24/2022	79.6	9,044.0	6,349.0	5,860.0	383,280.0	9,798.00
16	1/25/2022	79.8	9,387.0	6,092.0	5,612.0	499,490.0	9,700.00
17	1/26/2022	80.4	9,319.0	6,598.0	5,917.0	500,060.0	9,212.00
18	1/26/2022	82.8	9,387.0	6,394.0	5,790.0	501,580.0	9,286.00
19	1/26/2022	83.9	9,414.0	6,504.0	6,115.0	495,380.0	9,270.00
20	1/26/2022	79.8	9,048.0	6,342.0	6,081.0	499,900.0	9,242.00
21	1/27/2022	80.2	9,188.0	6,141.0	6,575.0	503,780.0	9,324.00
22	1/27/2022	83.2	9,354.0	5,233.0	6,482.0	501,740.0	8,967.00
23	1/27/2022	80.6	9,410.0	6,812.0	6,042.0	498,780.0	8,872.00
24	1/28/2022	83.7	9,817.0	6,323.0	5,546.0	505,550.0	8,976.00
25	1/28/2022	81.7	10,197.0	4,952.0	5,956.0	394,180.0	7,682.00
26	1/28/2022	80.5	9,314.0	7,063.0	6,031.0	501,660.0	8,959.00
27	1/29/2022	80.2	8,734.0	6,612.0	6,015.0	501,880.0	8,925.00
28	1/29/2022	79.1	8,960.0	5,464.0	5,693.0	500,890.0	8,827.00
29	1/29/2022	80.2	8,888.0	6,778.0	5,894.0	500,960.0	8,782.00
30	1/29/2022	79.9	8,938.0	7,332.0	6,153.0	502,670.0	8,858.00
31	1/30/2022	79.7	9,292.0	5,584.0	6,446.0	500,430.0	8,817.00
32	1/31/2022	79.9	8,976.0	6,563.0	6,187.0	500,930.0	8,818.00
33	1/31/2022	69.2	9,835.0	7,498.0	5,632.0	390,890.0	9,611.00
34	1/31/2022	79.6	8,863.0	5,226.0	6,270.0	500,610.0	8,724.00
35	1/31/2022	80.3	9,032.0	7,341.0	6,271.0	501,060.0	8,816.00
36	2/1/2022	79.1	8,577.0	6,955.0	6,282.0	504,160.0	8,825.00
37	2/1/2022	79.3	8,823.0	6,525.0	6,205.0	502,450.0	8,790.00
38	2/1/2022	80.1	9,247.0	5,846.0	5,930.0	502,600.0	8,828.00
39	2/1/2022	80.2	8,603.0	5,669.0	5,837.0	499,110.0	8,795.00
40	2/2/2022	80	8,297.0	5,592.0	6,040.0	499,980.0	9,285.00
41	2/8/2022	79.8	8,612.0	6,945.0	5,855.0	500,340.0	9,393.00
42	2/8/2022	80.1	8,586.0	6,861.0	5,784.0	500,680.0	9,139.00
43	2/8/2022	80.2	8,688.0	6,990.0	6,050.0	500,520.0	9,174.00
44	2/9/2022	81	8,766.0	5,767.0	6,400.0	500,220.0	9,087.00
45	2/9/2022	80.1	8,705.0	7,603.0	5,212.0	500,420.0	9,083.00
46	2/9/2022	80.4	8,486.0	6,951.0	5,780.0	501,720.0	9,115.00
47	2/9/2022	80.5	8,522.0	6,933.0	6,538.0	504,440.0	9,180.00
48	2/10/2022	82.9	8,708.0	5,437.0	5,919.0	504,420.0	9,065.00
49	2/10/2022	83	8,619.0	7,466.0	6,256.0	501,460.0	9,129.00
50	2/10/2022	83.1	8,586.0	7,060.0	5,619.0	500,940.0	9,057.00
51	2/10/2022	79.2	8,414.0	6,797.0	6,380.0	504,130.0	9,735.00
52	2/11/2022	79.9	9,728.0	7,374.0	6,562.0	497,120.0	9,063.00
53	2/11/2022	84.9	8,885.0	6,382.0	5,812.0	501,160.0	9,076.00
54	2/11/2022	88	9,037.0	6,050.0	6,259.0	501,400.0	9,060.00
55	2/11/2022	88	9,008.0	6,223.0	6,545.0	502,710.0	9,433.00
56	2/11/2022	88.6	9,054.0	6,392.0	6,292.0	500,800.0	9,082.00
57	2/12/2022	88.4	9,361.0	7,017.0	6,409.0	494,070.0	9,046.00
58	2/12/2022	87.7	9,000.0	7,149.0	6,462.0	499,330.0	9,008.00
59	2/12/2022	89.2	9,073.0	7,000.0	6,552.0	496,170.0	9,112.00
60	2/12/2022	87.7	8,673.0	6,662.0	6,325.0	503,070.0	9,042.00
61	2/13/2022	88.4	8,812.0	6,891.0	6,427.0	499,150.0	9,004.00



WR 35 FORM COMPLETIONS INFORMATION

Stimulation Intervals

Interval Number	Start Date	Slurry Rate Avg (bbl/min)	P Treat Avg (psi)	P Breakdown (psi)	ISIP (psi)	Proppant Total OR (lb)	Vol Clean Total (bbl)
62	2/13/2022	87.7	8,686.0	6,035.0	6,062.0	498,310.0	8,998.00
63	2/13/2022	89.1	8,987.0	6,640.0	5,495.0	505,321.0	9,256.00
64	2/13/2022	88.1	8,568.0	6,623.0	6,019.0	501,500.0	9,023.00
65	2/13/2022	87.8	8,525.0	6,390.0	6,312.0	501,860.0	9,037.00
66	2/14/2022	88.1	8,497.0	6,878.0	6,162.0	499,910.0	8,971.00
67	2/14/2022	88.1	8,479.0	6,848.0	6,216.0	489,879.0	8,486.00
68	2/15/2022	88.5	8,696.0	6,087.0	6,595.0	496,910.0	8,609.00
69	2/15/2022	87.9	8,384.0	6,682.0	6,087.0	499,980.0	8,586.00
70	2/15/2022	88.2	8,481.0	6,814.0	5,696.0	502,060.0	8,668.00
71	2/15/2022	96.3	8,191.0	7,123.0	6,355.0	477,960.0	8,636.00
72	2/16/2022	87.1	8,457.0	7,266.0	6,230.0	505,470.0	8,733.00
73	2/16/2022	88	8,324.0	7,727.0	6,150.0	500,060.0	8,667.00
74	2/16/2022	84	8,407.0	7,265.0	5,880.0	408,000.0	8,163.00
75	2/16/2022	89.3	8,229.0	7,042.0	5,620.0	497,800.0	8,630.00
76	2/17/2022	87.9	8,119.0	7,581.0	6,435.0	498,220.0	8,624.00
77	2/17/2022	88.3	8,181.0	7,321.0	6,360.0	502,460.0	8,565.00
78	2/17/2022	88.2	8,195.0	6,640.0	6,130.0	500,020.0	8,616.00
79	2/18/2022	88.4	8,263.0	6,754.0	6,120.0	501,010.0	8,545.00
80	2/18/2022	87.8	8,123.0	8,432.0	5,950.0	500,200.0	8,575.00
81	2/19/2022	88.2	7,873.0	7,713.0	6,197.0	503,290.0	8,604.00
82	2/19/2022	87.7	7,786.0	7,382.0	6,160.0	500,510.0	8,621.00
83	2/19/2022	88.9	8,037.0	7,407.0	5,938.0	502,740.0	8,678.00
84	2/20/2022	88	7,772.0	7,184.0	6,053.0	497,420.0	8,617.00
85	2/20/2022	87.7	7,098.0	7,098.0	5,950.0	500,300.0	8,664.00
86	2/20/2022	87.6	8,274.0	7,458.0	6,236.0	503,050.0	9,640.00
87	2/20/2022	87.7	7,992.0	7,251.0	6,330.0	502,110.0	8,609.00
88	2/21/2022	87.8	7,859.0	6,466.0	5,420.0	500,280.0	8,528.00

Water
 Sand (100 Mesh Proppant)
 Sand (40/70 Proppant)
 Hydrochloric Acid (28%)
 Plexib 166
 Stinstream SC 398
 Stinstream SC 398
 Clearal 270
 Clearal 270
 Clearal 270
 Clearal 270
 Clearal 270
 Clearal 269
 Clearal 269
 Clearal 269
 Clearal 269
 Chemstream 9750 Cationic
 Chemstream 9750 Cationic

Claimant Company	Claimant First Name	Claimant Last Name	Claimant Email	Claimant Phone (nnn-nnn-nnnn)
ChemStream	Eric	Fry	eric.fry@chemstream.com	814-706-1426
ChemStream	Eric	Fry	eric.fry@chemstream.com	814-706-1426
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3	CAROLYN S. HARRON	15-330/3
4	DAVID A. & TAMMERA L. FARIS	15-330/24
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C	GEORGE T. FARIS, ET AL	15-330/3
D	JOHN B. WEBB, ET AL	15-330/25
E	MICHAEL A. OSBORN ET UX	15-350/4
F	XTO ENERGY INC.	15-350/3
		15-350/3.3
		15-350/3.1
G	REBECCA A. COMPTON; JAMES MICHAEL COMPTON & JENNIFER NORA COMPTON	15-350/16.1
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		*15-350/23.6
		15-350/23
	TRACY H. MCDONALD	P/O 15-350/23.1
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M	JOHN JAMES JONES AUDREY U. DAVIS ET UX.	P/O 15-370/27
		15-370/28.1
		15-370/28
N	GEORGE T. FARRIS, ET AL	15-350/4
		15-350/10
		15-350/11
		15-350/12
		15-350/14



THRASHER
 THE THRASHER GROUP, INC.
 600 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

AS DRILLED PLAT

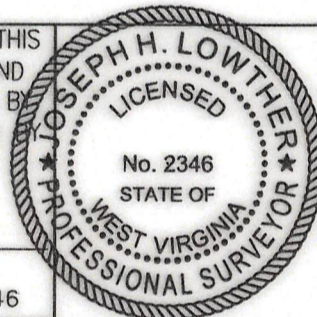
SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

AS-DRILLED LOCATIONS UTM 17-NAD83(M)	
SURFACE HOLE LOCATION (SHL)	
N:4346582.308	E:567461.225
APPROX LANDING POINT (LP)	
N:4345950.510	E:566749.283
BOTTOM HOLE LOCATION (BHL)	
N:4340951.561	E:568577.823

FILE #: J OSBORN HSOP 16 201 AS DRILLED
 DRAWING #: J OSBORN HSOP 16 201 AS DRILLED
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: Joseph H. Lowther
 R.P.E.: _____ L.L.S.: P.S. No. 2346



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: JANUARY 20, 2022
 OPERATOR'S WELL #: J OSBORN HSOP 16 201 AS DRILLED
 API WELL #: 47 33 5949
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: SIMPSON CREEK ELEVATION: 1163.30'±

COUNTY/DISTRICT: HARRISON / SIMPSON QUADRANGLE: ROSEMONT, WV 7.5'

SURFACE OWNER: JUDY M OSBORN (LE) (JUDY M OSBORN IRREVOCABLE TRUST) ACREAGE: 70.00±

OIL & GAS ROYALTY OWNER: GOBEL OSBORN, ET AL ACREAGE: 1,596.97±

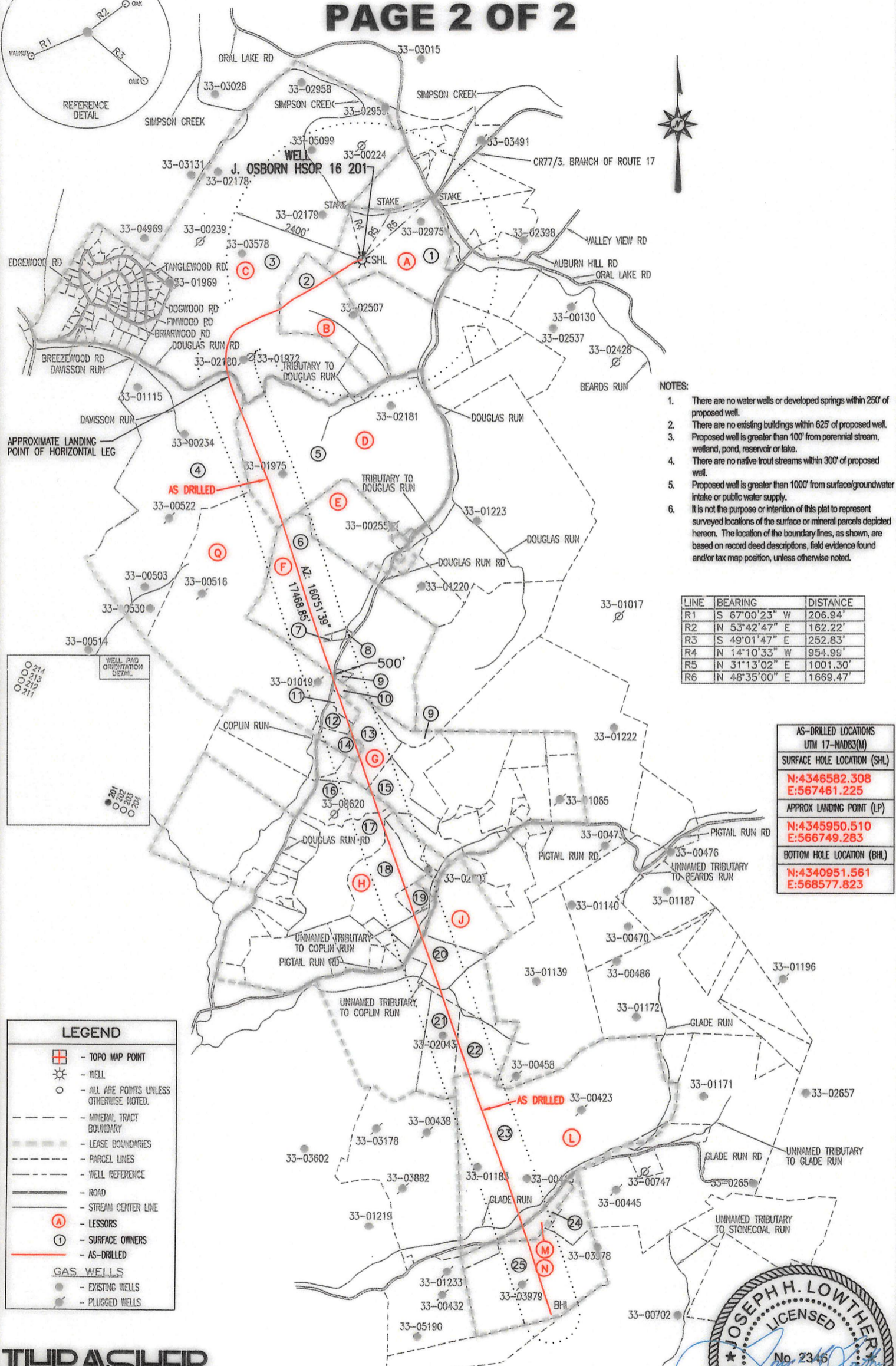
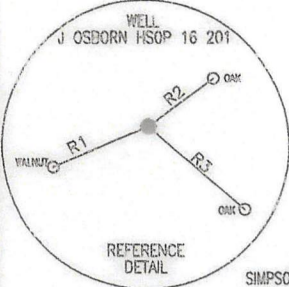
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): AS DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,435.97'± TMD: 25,901.00'±

WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT GARY SHORT
 Address 6031 WALLACE ROAD EXTENSION, SUITE 300 Address 633 WEST MAIN ST.
 City WEXFORD State PA Zip Code 15090 City BRIDGEPORT State WV Zip Code 26330

J OSBORN HSOP 16 201

PAGE 2 OF 2



NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
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R1	S 67°00'23" W	206.94'
R2	N 53°42'47" E	162.22'
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LEGEND

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- LEASE BOUNDARIES
- PARCEL LINES
- WELL REFERENCE
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- SURFACE OWNERS
- AS-DRILLED
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- EXISTING WELLS
- PLUGGED WELLS



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JANUARY 20, 2022
AS DRILLED PLAT

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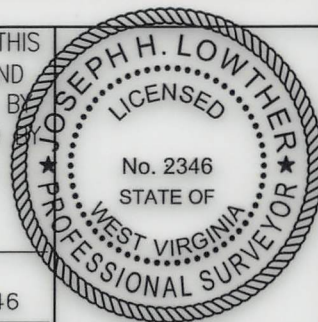
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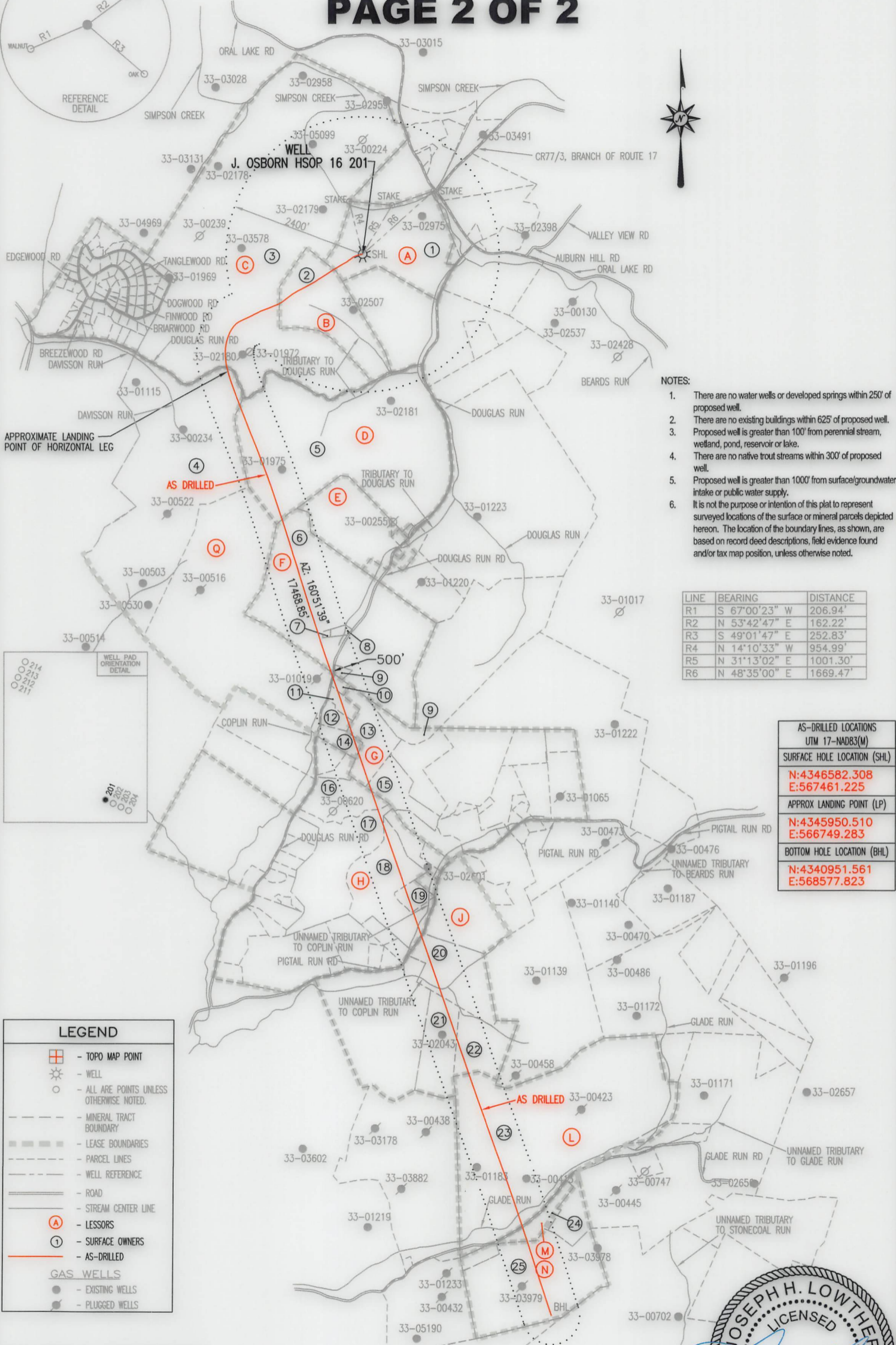
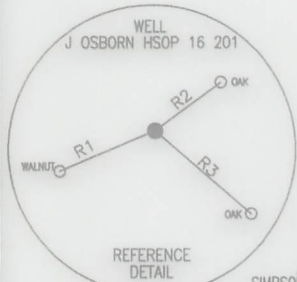
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