

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

API 47 - 103 - 03519 County WETZEL District CLAY
Quad LITTLETON, WV Pad Name VERNON JOHNSON-WTZ-PAD1 Field/Pool Name VICTORY FIELD WET
Farm name SWN PRODUCTION COMPANY, LLC Well Number VERNON JOHNSON WTZ 201H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,396,557.634 Easting 538,929.207
Landing Point of Curve Northing 4,396,870.147 Easting 538,893.634
Bottom Hole Northing 4,400,776.099 Easting 534,559.631

Elevation (ft) 1,431.6' 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)
SOBM

Date permit issued 8/19/2022 Date drilling commenced 10/30/2022 Date drilling ceased 11/27/2022
Date completion activities began 01/28/2023 Date completion activities ceased 03/23/2023
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 440' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,795' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,885' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:
10/06/2023
7-27-23

API 47- 103 - 03519 Farm name SWN PRODUCTION COMPANY, LLC Well number VERNON JOHNSON WTZ 201H

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	24	20	136'	NEW	J-55/94#		Y
Surface	17.5	13.375	512'	NEW	J-55/54.5#		Y; 73 BBLs
Coal							
Intermediate 1	12.25	9.625	3,004'	NEW	J-55/36#		Y; 53 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	27,385'	NEW	P-110HP/20#		N
Tubing			0	NEW			N
Packer type and depth set							

Comment Details _____

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	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	576	15.60	1.19	685.44	SURFACE	8
Coal							
Intermediate 1	CLASS A	1,111	15.60	1.18	1,310.98	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3,095	15.00	1.29	3,992.55	891'	24
Tubing							

Drillers TD (ft) 27,385' Loggers TD (ft) 27,385'
 Deepest formation penetrated MARCELLUS Plug back to (ft) 27,294'
 Plug back procedure N/A

Kick off depth (ft) 6,843' MD

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

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DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 36 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 545 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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[Signature]

API 47- 103 - 03519 Farm name SWN PRODUCTION COMPANY, LLC Well number VERNON JOHNSON WTZ 201H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		SEE	ATTACHMENT	2				

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Please insert additional pages as applicable.

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API 47- 103 - 03519 Farm name SWN PRODUCTION COMPANY, LLC Well number VERNON JOHNSON WTZ 201H

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	7,656'	TVD 7,986' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,640 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 35,658 mcfpd Oil 0 bpd NGL _____ bpd Water 1,293 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)
	0		0		
	SEE	ATTACHMENT	3		

Please insert additional pages as applicable.

Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

Cementing Company SCHLUMBERGER WELL SERVICES
Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77874

Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-796-6139
Signature Denise Grantham title REGULATORY SPECIALIST Date 6.13.2023



Well Name: **Vernon Johnson WTZ 201H**

47103035190000

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LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	440.00	440.00	
Top of Salt Water	1795.00	1794.00	NA	NA	
Pittsburgh Coal	1885.00	1883.00	1291.00	1290.00	
Pottsville (ss)	1404.00	1403.00	1433.00	1431.00	
Raven Cliff (ss)	1880.00	1878.00	2143.00	2140.00	
Maxton (ss)	2143.00	2140.00	2451.00	2448.00	
Big Injun (ss)	2514.00	2510.00	2768.00	2764.00	
Berea (siltstone)	3115.00	3110.00	3146.00	3141.00	
Rhinestreet (shale)	6753.00	6742.00	7449.00	7384.00	
Middlesex (shale)	7449.00	7384.00	7599.00	7489.00	
Burket (shale)	7599.00	7489.00	7655.00	7524.00	
Tully (ls)	7655.00	7524.00	7699.00	7549.00	
Mahantango (shale)	7699.00	7549.00	7986.00	7656.00	
Marcellus (shale)	7986.00	7656.00	NA	NA	GAS

VERNON JOHNSON WTZ 201H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	1/28/2023	83.4	9,277	10,350	4,533	174,920	6,610	0
2	1/29/2023	85.7	8,961	6,778	4,933	305,420	10,260	0
3	1/29/2023	66.7	8,620	6,400	5,019	264,410	13,713	0
4	1/30/2023	65.5	9,889	5,500	4,636	307,930	9,986	0
5	1/30/2023	68.5	10,049	7,401	4,469	307,600	9,450	0
6	1/30/2023	76.4	10,915	6,208	5,208	321,220	9,622	0
7	1/31/2023	67.1	10,214	7,356	4,819	305,190	9,200	0
8	1/31/2023	83.8	10,653	5,214	5,013	299,150	9,349	0
9	2/1/2023	74.3	10,409	5,285	4,715	305,770	9,513	0
10	2/1/2023	71.8	10,313	6,755	5,151	316,960	9,668	0
11	2/1/2023	72.7	9,544	5,807	4,833	306,580	9,932	0
12	2/2/2023	91.5	10,283	6,100	4,925	305,260	9,551	0
13	2/3/2023	67.8	8,206	6,920	5,873	305,260	11,743	0
14	2/4/2023	86.9	10,364	6,202	5,428	305,180	9,503	0
15	2/4/2023	88.5	10,293	6,396	5,403	302,850	9,091	0
16	2/5/2023	91.7	10,408	6,005	5,020	303,110	9,129	0
17	2/5/2023	89.9	10,435	6,647	5,604	314,630	9,204	0
18	2/6/2023	88.9	10,456	6,875	4,895	310,340	9,520	0
19	2/6/2023	90.5	10,547	6,585	5,802	312,900	8,978	0
20	2/7/2023	85.4	10,162	5,870	5,614	310,650	9,015	0
21	2/7/2023	94.7	10,338	7,224	5,273	311,100	9,178	0
22	2/8/2023	91.2	10,589	6,645	5,300	315,920	8,702	0
23	2/8/2023	93.2	10,247	6,530	5,202	311,880	9,122	0
24	2/9/2023	91.7	10,297	6,760	5,319	318,000	9,043	0
25	2/9/2023	91.6	10,425	6,515	6,081	310,130	8,458	0
26	2/9/2023	86.3	10,367	6,702	5,602	303,180	8,967	0
27	2/10/2023	85.3	10,334	6,648	4,953	312,880	8,962	0
28	2/10/2023	91.9	10,496	6,614	5,325	316,300	8,937	0
29	2/11/2023	94.6	10,314	6,400	6,170	314,300	8,690	0
30	2/11/2023	91.1	10,373	7,000	5,762	309,550	8,475	0
31	2/12/2023	92.6	10,409	6,606	5,535	313,190	9,077	0
32	2/13/2023	91.9	10,489	6,300	5,000	311,420	8,584	0
33	2/14/2023	91.7	10,312	6,286	5,157	311,680	8,824	0
34	2/14/2023	92.7	10,430	6,560	4,920	312,600	8,531	0
35	2/14/2023	93.3	10,163	6,322	5,511	316,000	8,806	0
36	2/15/2023	88.3	9,944	6,220	5,347	315,540	8,464	0
37	2/15/2023	89.5	9,676	6,210	5,606	311,240	8,906	0
38	2/15/2023	90.1	9,942	6,646	4,411	314,320	8,940	0
39	2/16/2023	89	9,562	6,735	4,967	312,890	8,900	0
40	2/17/2023	79	8,620	6,727	5,110	312,200	9,768	0
41	2/17/2023	89.9	9,791	6,042	4,600	315,080	8,807	0
42	2/18/2023	89.6	9,288	6,046	6,245	311,880	8,936	0
43	2/18/2023	92	9,643	6,410	5,312	310,930	8,850	0
44	2/18/2023	89.8	9,342	6,550	4,739	311,900	8,662	0
45	2/19/2023	93.3	9,549	6,338	5,226	311,220	8,693	0
46	2/19/2023	91.6	9,599	5,770	5,345	310,840	8,762	0
47	2/19/2023	94.2	18,004	6,175	4,586	311,780	8,691	0
48	2/20/2023	97.4	9,504	5,576	5,707	314,370	8,784	0
49	2/20/2023	93.5	9,605	5,730	5,033	315,390	8,680	0
50	2/20/2023	92.2	9,203	6,107	4,449	311,230	8,499	0
51	2/21/2023	98.1	9,620	5,974	5,424	310,620	8,610	0
52	2/21/2023	100	9,685	5,924	5,904	307,870	7,933	0
53	2/21/2023	96.1	9,254	6,355	4,871	308,850	8,657	0

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**VERNON JOHNSON WTZ 201H
ATTACHMENT 2
STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	2/22/2023	93.3	9,105	5,634	4,949	314,610	8,651	0
55	2/22/2023	95.1	9,233	5,673	5,680	309,560	8,399	0
56	2/23/2023	90.1	9,265	6,205	5,748	311,860	8,403	0
57	2/23/2023	91.1	9,386	6,209	5,108	306,300	8,279	0
58	2/24/2023	90.1	9,561	6,472	5,058	316,070	8,704	0
59	2/24/2023	94.2	9,579	6,824	5,272	306,600	8,361	0
60	2/25/2023	90.8	9,475	6,411	4,920	313,200	8,412	0
61	2/26/2023	91.6	9,303	7,151	5,133	312,110	8,330	0
62	2/26/2023	93.7	9,266	7,025	5,975	307,360	8,416	0
63	2/27/2023	92	9,377	6,862	5,668	314,560	8,444	0
64	2/27/2023	99	9,688	6,574	6,023	313,360	8,379	0
65	2/28/2023	92.7	9,388	7,125	5,253	308,310	8,476	0
66	2/28/2023	99.8	9,501	6,589	5,939	309,420	8,142	0
67	3/1/2023	90.1	9,087	7,632	6,253	302,950	7,743	0
68	3/1/2023	90.1	9,592	7,169	6,235	313,750	7,767	0
69	3/1/2023	89.5	9,426	6,575	6,655	309,460	7,531	0
70	3/2/2023	94.8	9,546	5,626	5,675	313,160	7,842	0
71	3/2/2023	97.3	9,750	6,706	5,879	313,050	7,631	0
72	3/6/2023	98.5	9,635	7,000	6,518	312,670	7,411	0
73	3/6/2023	98.2	9,717	7,417	6,049	317,920	7,254	0
74	3/6/2023	97.2	9,033	5,911	6,437	314,190	7,198	0
75	3/6/2023	98.3	9,363	5,580	5,430	314,030	7,291	0
76	3/6/2023	99	9,303	7,590	6,681	308,830	7,238	0
77	3/7/2023	98.4	9,767	7,986	6,498	315,820	7,389	0
78	3/7/2023	98.4	9,356	6,111	5,736	314,220	7,297	0
79	3/7/2023	99.5	9,448	6,940	5,105	308,060	7,203	0
80	3/8/2023	98.7	9,026	6,825	5,376	314,860	7,400	0
81	3/8/2023	90.6	9,518	6,535	5,198	316,000	7,246	0
82	3/8/2023	95.7	9,165	5,542	5,813	317,990	7,506	0
83	3/8/2023	84.2	8,149	5,101	4,955	315,170	7,186	0
84	3/8/2023	98.4	9,280	7,075	5,000	311,930	7,127	0
85	3/9/2023	99	9,140	8,750	5,920	304,480	7,133	0
86	3/9/2023	90.2	8,811	7,202	5,396	312,020	7,781	0
87	3/9/2023	70.1	7,337	7,670	5,325	315,880	8,592	0
88	3/10/2023	95.3	8,909	8,243	5,203	310,210	7,281	0
89	3/10/2023	94.7	8,774	7,898	5,756	319,450	7,479	0
90	3/10/2023	92.3	8,444	6,510	5,120	318,700	7,186	0
91	3/10/2023	99.4	8,738	7,400	5,300	314,750	7,115	0
92	3/11/2023	95	8,507	7,123	5,734	307,050	7,146	0

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**VERNON JOHNSON Wtz 201H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
Stage No	Perforation I	Perf From MD	Perf to MD	Number of Perforations
1	1/24/2023	27,294	27,209	36
2	1/29/2023	27,175	26,997	36
3	1/29/2023	26,964	26,786	36
4	1/29/2023	26,753	26,576	36
5	1/30/2023	26,542	26,365	36
6	1/30/2023	26,332	26,154	36
7	1/31/2023	26,121	25,943	36
8	1/31/2023	25,910	25,732	36
9	2/1/2023	25,699	25,521	36
10	2/1/2023	25,488	25,311	36
11	2/1/2023	25,277	25,100	36
12	2/2/2023	25,067	24,889	36
13	2/2/2023	24,856	24,678	36
14	2/3/2023	24,645	24,467	36
15	2/4/2023	24,434	24,256	36
16	2/4/2023	24,223	24,046	36
17	2/5/2023	24,012	23,835	36
18	2/6/2023	23,802	23,624	36
19	2/6/2023	23,591	23,413	36
20	2/7/2023	23,380	23,202	36
21	2/7/2023	23,169	22,991	36
22	2/8/2023	22,958	22,781	36
23	2/8/2023	22,747	22,570	36
24	2/8/2023	22,537	22,359	36
25	2/9/2023	22,326	22,148	36
26	2/9/2023	22,115	21,937	36
27	2/9/2023	21,904	21,726	36
28	2/10/2023	21,693	21,516	36
29	2/11/2023	21,482	21,305	36
30	2/11/2023	21,272	21,094	36
31	2/12/2023	21,061	20,883	36
32	2/13/2023	20,850	20,672	36
33	2/13/2023	20,639	20,461	36
34	2/14/2023	20,428	20,251	36
35	2/14/2023	20,217	20,040	36
36	2/14/2023	20,007	19,829	36
37	2/15/2023	19,796	19,618	36
38	2/15/2023	19,585	19,407	36
39	2/16/2023	19,374	19,196	36
40	2/17/2023	19,163	18,986	36
41	2/17/2023	18,952	18,775	36

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**VERNON JOHNSON WTZ 201H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
42	2/18/2023	18,742	18,564	36
43	2/18/2023	18,531	18,353	36
44	2/18/2023	18,320	18,142	36
45	2/18/2023	18,109	17,931	36
46	2/19/2023	17,898	17,721	36
47	2/19/2023	17,687	17,510	36
48	2/19/2023	17,477	17,299	36
49	2/20/2023	17,266	17,088	36
50	2/20/2023	17,055	16,877	36
51	2/21/2023	16,844	16,666	36
52	2/21/2023	16,633	16,456	36
53	2/21/2023	16,422	16,245	36
54	2/22/2023	16,212	16,034	36
55	2/22/2023	16,001	15,823	36
56	2/22/2023	15,790	15,612	36
57	2/23/2023	15,579	15,401	36
58	2/24/2023	15,368	15,191	36
59	2/24/2023	15,157	14,980	36
60	2/24/2023	14,947	14,769	36
61	2/25/2023	14,736	14,558	36
62	2/26/2023	14,525	14,347	36
63	2/26/2023	14,314	14,136	36
64	2/27/2023	14,103	13,926	36
65	2/27/2023	13,892	13,715	36
66	2/28/2023	13,682	13,504	36
67	2/28/2023	13,471	13,293	36
68	3/1/2023	13,260	13,082	36
69	3/1/2023	13,049	12,871	36
70	3/2/2023	12,838	12,661	36
71	3/2/2023	12,627	12,450	36
72	3/2/2023	12,417	12,239	36
73	3/6/2023	12,206	12,028	36
74	3/6/2023	11,995	11,817	36
75	3/6/2023	11,784	11,606	36
76	3/6/2023	11,573	11,396	36
77	3/7/2023	11,362	11,185	36
78	3/7/2023	11,152	10,974	36
79	3/7/2023	10,941	10,763	36
80	3/7/2023	10,730	10,552	36
81	3/8/2023	10,519	10,341	36
82	3/8/2023	10,308	10,130	36
83	3/8/2023	10,097	9,920	36

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10/06/2023

VERNON JOHNSON WTZ 201H
ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
84	3/8/2023	9,887	9,709	36
85	3/9/2023	9,676	9,498	36
86	3/9/2023	9,465	9,287	36
87	3/9/2023	9,254	9,076	36
88	3/10/2023	9,043	8,865	36
89	3/10/2023	8,832	8,655	36
90	3/10/2023	8,622	8,444	36
91	3/10/2023	8,411	8,233	36
92	3/10/2023	8,200	8,022	36

Office of the
JUN 14 2023
WV Department of
Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/28/2023
Job End Date:	3/11/2023
State:	West Virginia
County:	Wetzel
API Number:	47-103-03519-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	VERNON JOHNSON WTZ 201
Latitude:	39.71800265
Longitude:	-80.54580300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,493
Total Base Water Volume (gal):	32,878,418
Total Base Non Water Volume:	0

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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Base Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	90.20929	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.34086	

			Water	7732-18-5	100.00000	0.34086	
HCL	SWN Well Services	Solvent		Listed Below			
Ferriplex 80	SWN Well Services	Iron Control		Listed Below			
FSTI-CI-02	SWN Well Services	Corrosion Inhibitor		Listed Below			
Clearal 270	SWN Well Services	Biocide		Listed Below			
StimSTREAM FR 2800	SWN Well Services	Friction Reducer		Listed Below			
Sand	SWN Well Services	Proppant		Listed Below			
StimSTREAM SC 398 CW	SWN Well Services	Scale Inhibitor		Listed Below			
StimSTREAM FR 9800	SWN Well Services	Friction Reducer		Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Crystalline Silica, quartz	14808-60-7	100.00000	9.36107
			Hydrochloric Acid	7647-01-0	15.00000	0.04595
			Glutaraldehyde	111-30-8	25.00000	0.00248
			Ethylene glycol	107-21-1	25.00000	0.00152
			Didecyl dimethyl ammonium Chloride	7173-51-5	1.50000	0.00075
			Quaternary Ammonium compounds, Benzyl-C12-C16-alkyldimethyl, Chlorides	68424-85-1	1.50000	0.00075
			Sodium Erythorbate	6381-77-7	100.00000	0.00065
			Ethanol	64-17-5	4.00000	0.00040
			Cinnamaldehyde	104-55-2	10.00000	0.00012
			Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-	9016-45-9	10.00000	0.00012
			N,N-Dimethylformamide	68-12-2	10.00000	0.00012
			1-Decanol	112-30-1	5.00000	0.00006
			benzyl chloride quaternized	72480-70-7	5.00000	0.00006
			1-Octanol	111-87-5	5.00000	0.00006
			Isopropyl alcohol	67-63-0	5.00000	0.00006
			Triethyl phosphate	78-40-0	5.00000	0.00006
			2-Butoxyethanol	111-76-2	5.00000	0.00006

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 Environmental Protection

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

**JACKSON SURVEYING
INC.**

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

Latitude: 39°47'30" **BOTTOM HOLE 3,717'**

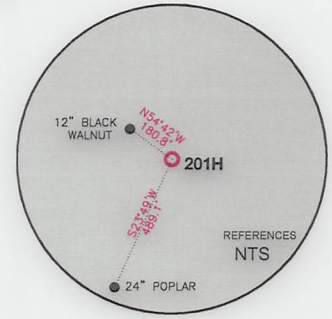
Latitude: 39°45'00" **SURFACE HOLE 1,163'**

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,557.562 EASTING: 538,929.144
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,859.073 EASTING: 538,916.288
AZIMUTH POINT LOCATION-1 (AZL1):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,511.819 EASTING: 534,992.336
AZIMUTH POINT LOCATION-2 (AZL2):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,640.000 EASTING: 534,814.095
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,773.140 EASTING: 534,568.807

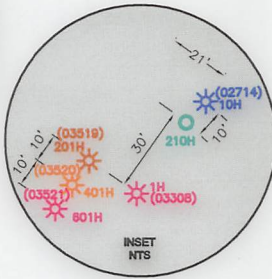
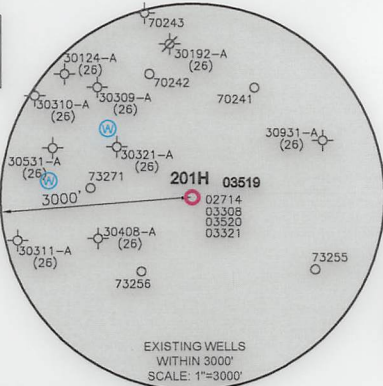
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 12°44'22" E	3338.67'	SHL TO LANDMARK	30" POPLAR FOUND
L2	S 11°07'24" E	568.14'	SHL TO LANDMARK	LARGE POST FOUND
L5	N 61°50'49" W	936.34'	AZL2 TO BHL	

LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	N 06°29'38" W	1031.92'	1,266.97'	SHL TO LP
L4	N 55°21'37" W	663.39'	664.53'	AZL1 TO AZL2

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,557.634 EASTING: 538,929.207
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,870.147 EASTING: 538,893.634
AZIMUTH POINT LOCATION-1 (AZL1):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,516.507 EASTING: 534,977.623
AZIMUTH POINT LOCATION-2 (AZL2):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,631.441 EASTING: 534,811.262
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,400,776.099 EASTING: 534,559.631



GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



WELL RESTRICTIONS

- NO OCCUPIED DWELLINGS > 2500 SQ. FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO AGRICULTURE BUILDINGS > 2500 SQ. FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

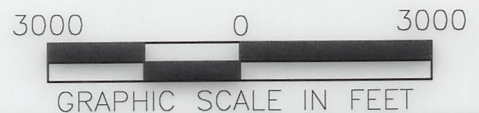
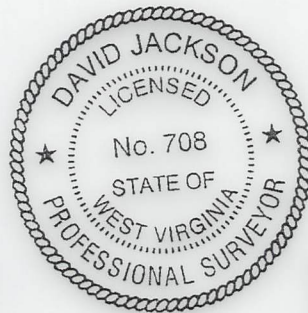
NOTES ON SURVEY

- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

David L Jackson



COMPANY: **SWN** **SWN**
Production Company, LLC Production Company™

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)

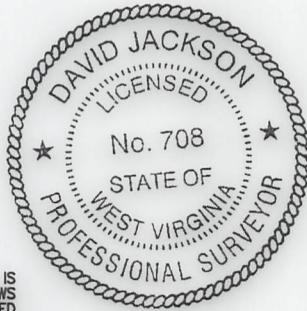
VERNON JOHNSON WTZ
OPERATOR'S WELL #: 201H
API WELL #: 47 103 03519
STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW
WATERSHED: WEST VIRGINIA FORK FISH CREEK (HUC-10) ELEVATION: 1,431.6'
DISTRICT: CLAY COUNTY: WETZEL QUADRANGLE: LITTLETON, WV
SURFACE OWNER: VERNON S. JOHNSON ESTATE ACREAGE: ±132.00
OIL & GAS ROYALTY OWNER: AMP FUND III; LP: ALICE M. ABEREGG; ELLEN ABEREGG; JAMES J. ABEREGG; KEITH ABEREGG; BRIAN F. BUTLER; RED STONE RESOURCES, LLC; JAMES STONEKING ACREAGE: ±132.00
DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) MODIFICATION 10/06/2023
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,680 TMD 27,383 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT ROAD SUITE 200 ADDRESS: 1300 FORT PIERPONT ROAD SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	— SURVEYED BOUNDARY	REVISIONS:	DATE: 04-14-2023
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— DRILLING UNIT		
⊙ EXISTING / PRODUCING WELLHEAD	== LEASE BOUNDARY		
LPL ⊙ LANDING POINT LOCATION	— AS DRILLED PATH		DRAWN BY: N. MANO
⊙ EXISTING WATER WELL	— PROPOSED PATH		SCALE: 1" = 3000'
⊙ EXISTING SPRING	AZL ⊙ AZIMUTH POINT LOCATION		DRAWING NO.:
			WELL LOCATION PLAT

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851



..... INTERIOR PARCEL LINE TRACT 7-24-1
 p# INTERIOR PARCEL ID TRACT 7-24-1

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

p.s. 708

David L Jackson

3000 0 3000



GRAPHIC SCALE IN FEET

10/06/2023

REVISIONS:	COMPANY:		
		OPERATOR'S	VERNON JOHNSON WTZ
		WELL #:	201H
		DISTRICT:	CLAY
		COUNTY:	WETZEL
		STATE:	WV
		API #:	047-103-03519
		DATE:	04-14-2023
		DRAWN BY:	N. MANO
		SCALE:	1" = 3000'
		DRAWING NO:	
		WELL LOCATION PLAT	2

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	
1	JOHNSON VERNON S EST (S)/ AMP FUND III; LP; ALICE M. ABEREGG; ELLEN ABEREGG; JAMES J. ABEREGG; KEITH ABEREGG, BRIAN F. BUTLER; RED STONE RESOURCES, LLC; JAMES STONEKING (R)	03-01-01
TRACT	SURFACE OWNER (S)	
2	PRENDERGAST MICHAEL J & SUELLEN LEMLEY (S)	07-23-26
3	W VA WILDLIFE RESOURCES SECTION (S)	07-24-01
4	FROMHART BRAD ET UX - LIFE (S)	07-20-41
5	UNDERDONK ALAN (S)	07-16-25.1
6	FROMHART BRAD ET UX - LIFE (S)	07-20-01
7	MARLING SUELLEN (S)	07-20-03
8	CUMPSTON GAIL (S)	07-19-20

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	WILLIAMS JOHN EDWARD	01-03-09
B	ABEREGG D W EST & ABEREGG WILLIAM D ETAL L/E ABEREGG DA	01-03-02
C	LONG LONNY DAVID & LINDA SUE	01-03-2.1
D	WADE MICHAEL CLAY & MCCCELLAND LAWRENCE W - TOD ET AL	07-24-06
E	WILLIAMS KATHERINE E TRUST	01-03-01
F	SEIDLER EARL DALE & NETTIE	01-02-6.1
G	VELLEKOOP PETER B ET UX - TOD	07-27-13
H	VELLEKOOP PETER B ET UX - TOD	07-27-11
I	VELLEKOOP PETER B ET UX - TOD	07-27-10.1
J	VELLEKOOP PETER B ET UX - TOD	07-26-6.2
K	VELLEKOOP PETER B ET UX - TOD	07-26-6.1
L	GEDEON DANIEL D ET UX	07-26-06
M	YOCUM JOSEPH LEE & MICHAEL D	07-26-09
N	CONSOLIDATED GAS SUPPLY CORP	07-26-08
O	BUZZARD COLIN R	07-26-03
P	HUNDRED RESOURCES INC	07-26-11
Q	BUTLER JOHN M & LISA A	07-26-11.1
R	HORNER DELORSE A	07-26-10
S	RIGGS JOHN E JR & DELANA	07-27-02
T	MORGAN JAMES E - LIFE	07-26-14
U	GRIBBEN M PEGGY REVOCABLE LIVING TRUST	07-19-28
V	VUCELICK CHARLES EST	07-19-22
W	SHARPENBERG DALTON & DEREK	07-19-21
X	DRUSCHEL JAMES F & JAMIE ANN ET AL	07-19-23
Y	CONNELLY CHAS E	07-20-05
Z	BURGE JUDITH A & VIRGINIA L BAILEY (S)	07-20-04
A2	CUMPSTON GEORGE R ET AL	07-16-24
B2	BUTLER JOHN MATTHEW	07-16-39
C2	BURGE JUDITH A & VIRGINIA L BAILEY ET AL	07-16-40
D2	BURGE JUDITH A & VIRGINIA L BAILEY ET AL	07-20-06
E2	GEHO ANNIE L EST	07-20-11
F2	BURLEY AMMON ET UX	07-20-12
G2	BURLEY AMMON	07-20-18
H2	BURLEY AMMON A	07-20-24
I2	BURLEY AMON A	07-20-37
J2	GRESHAW JASON M & MARY L	07-25-02
K2	BROWN ANDREW C III	07-25-06
L2	HARRINGTON CLYDE F	07-25-07
M2	W VA DEPT OF COMMERCE DIV OF NATURAL RESOURCES	07-25-09
N2	CONAWAY THOMAS EARL JR & CAROLYN K STOWE	07-25-12
O2	CONAWAY THOMAS E	07-23-01
P2	PIERCE ALMA O	07-23-3.1
Q2	PIERCE ALMA O	07-23-04
R2	CONAWAY ROBERT W ET UX	07-23-26.2
S2	RICE RIDGE COMMUNITY CHURCH	07-23-26.1
T2	MCCABE M E CHURCH	07-23-28
U2	RICE RIDGE CEMETERY	07-23-27
V2	MACKEY KATHLEEN & DEBRA POE	07-23-26.3
W2	LUCAS PAUL W LIVING TRUST	07-23-06
X2	GRANT JEFFREY W & VIRGINIA F	07-23-21
Y2	GRANT JEFFREY W ET UX	07-23-22
Z2	BYERLY CHARLES BRADLEY	07-23-24
A3	DISHMAN BOBBY RONALD	07-23-25
B3	PRENDERGAST MICHAEL J & SUE ELLEN	03-01-02
C3	WV MINERALS INC	03-01-03
D3	MILLIKEN KEVIN R ETAL	03-01-04
E3	DRAHEIM HERBERT P ET AL	03-01-06
F3	CBC HOLDINGS LLC	03-01-8.1

10/06/2023

REVISIONS:	COMPANY:			
	OPERATOR'S	VERNON JOHNSON WTZ	API #:	DATE: 04-14-2023
	WELL #:	201H	047-103-03519	DRAWN BY: N. MANO
	DISTRICT:	CLAY	COUNTY:	SCALE: N/A
			WETZEL	DRAWING NO:
			STATE:	WV
				WELL LOCATION PLAT 3