

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

API 47-069-00329 County OHIO District LIBERTY
Quad VALLEY GROVE, WV Pad Name CARL ROTTER-OHI-PAD1 Field/Pool Name PANHANDLE FIELD WET
Farm name CARL J. & GRACE A. ROTTER Well Number CARL ROTTER OHI 206H
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 4,4391,19.90 Easting 538,992.77
Landing Point of Curve Northing 4,438,758.16 Easting 538,471.66
Bottom Hole Northing 4,433,670.22 Easting 540,583.85

Elevation (ft) 1336.7' 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 12/21/2020 Date drilling commenced 2/25/2022 Date drilling ceased 3/16/2022
Date completion activities began 6/15/2022 Date completion activities ceased 7/20/2022
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 587' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 834' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 722' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
Reviewed by: [Signature]
10/11/2022
10/21/2022

API 47-069 - 00329 Farm name CARL J. & GRACE A. ROTTER Well number CARL ROTTER OHI 206H

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	762	NEW	J-55/54.5#		Y; 75 BBLs
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2,189	NEW	J-55/36#		Y; 48 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75	5.5	25,623	NEW	P-110/20#		Y; 48 BBLs
Tubing		2.875	7,436	NEW	P-110/6.5#		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	882	15.60	1.20	1,058.40	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	844	15.60	1.19	1,004.36	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	5092	15.00	1.29	6,568.68	SURFACE	24
Tubing							

Drillers TD (ft) 25,623' Loggers TD (ft) 25,623'
 Deepest formation penetrated MARCELLUS Plug back to (ft) 21,466'
 Plug back procedure N/A

Kick off depth (ft) 6,144'

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 _____

SURFACE: 11 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 30 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 527 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 _____

API 47- 069 - 00329 Farm name CARL J. & GRACE A. ROTTER Well number CARL ROTTER OHI 206H

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	6,545'	TVD 7,112' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2,858 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 9,434 mcfpd Oil 678 bpd NGL _____ bpd Water 1,114 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)
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	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 77478

Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Please insert additional pages as applicable.

Completed by DENISE GRANTHAM Telephone 832-79-6139
Signature *Denise Grantham* Title REGULATORY ANALYST Date 8/29/2022

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

10/21/2022



Well Name: Carl Rotter OHI 206H

47069003290000

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	587.00	587.00	
Top of Salt Water	834.00	834.00	NA	NA	
Pittsburgh Coal	722.00	722.00	727.00	727.00	
Pottsville (ss)	834.00	834.00	989.00	989.00	
Raven Cliff (ss)	1225.00	1222.00	1473.00	1466.00	
Maxton (ss)	1650.00	1639.00	1910.00	1884.00	
Big Injun (ss)	1910.00	1884.00	2188.00	2138.00	
Berea (siltstone)	2440.00	2370.00	2545.00	2467.00	
Rhinestreet (shale)	6282.00	5940.00	6604.00	6227.00	
Cashaqua (shale)	6604.00	6227.00	6694.00	6299.00	
Middlesex (shale)	6694.00	6299.00	6804.00	6378.00	
Burket (shale)	6804.00	6378.00	6834.00	6498.00	
Tully (ls)	6834.00	6498.00	6891.00	6434.00	
Mahantango (shale)	6891.00	6434.00	7112.00	6545.00	
Marcellus (shale)	7112.00	6545.00	NA	NA	GAS

WILLIAM RITCHEA WTZ 205H

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	6/15/2022	80.9	8,403	6,236	3,963	179,830	5,808	0
2	6/15/2022	90.2	9,857	6,425	4,629	359,000	9,500	0
3	6/15/2022	92.6	10,097	6,925	5,200	351,530	9,354	0
4	6/16/2022	90.7	9,780	9,370	4,679	358,120	9,121	0
5	6/16/2022	87.4	9,796	6,971	4,122	356,500	10,609	0
6	6/17/2022	91.1	10,134	9,423	4,512	360,380	9,270	0
7	6/17/2022	92.9	9,742	8,065	4,125	357,450	9,148	0
8	6/17/2022	93.6	9,866	6,495	4,688	354,480	9,688	0
9	6/18/2022	93.1	9,885	6,283	4,215	355,980	9,041	0
10	6/18/2022	93.8	10,182	6,652	4,521	364,700	9,005	0
11	6/18/2022	93.6	10,002	6,432	4,564	363,750	9,027	0
12	6/18/2022	87.4	9,618	6,922	5,067	358,520	8,701	0
13	6/18/2022	90.3	9,474	6,671	4,786	354,380	8,627	0
14	6/19/2022	82.2	9,958	6,826	4,492	345,840	18,821	0
15	6/21/2022	88.3	9,338	6,378	4,469	356,120	8,793	0
16	6/21/2022	88.5	9,490	6,326	4,285	359,610	8,807	0
17	6/22/2022	89.6	9,253	6,177	4,470	364,040	8,840	0
18	6/22/2022	88.6	9,251	5,933	4,325	358,700	8,735	0
19	6/22/2022	88.9	9,616	6,191	4,547	355,690	8,174	0
20	6/23/2022	88.5	9,428	6,854	4,356	358,350	8,002	0
21	6/23/2022	90.7	9,437	6,562	4,379	355,300	10,043	0
22	6/23/2022	94.6	6,994	6,566	4,613	355,420	8,125	0
23	6/24/2022	92.3	9,766	6,862	4,825	354,410	8,007	0
24	6/24/2022	91.6	9,467	6,500	4,456	357,560	7,998	0
25	6/24/2022	91.1	9,574	6,678	4,356	361,040	8,086	0
26	6/24/2022	97	9,933	5,850	5,006	359,760	8,095	0
27	6/25/2022	93.4	9,830	5,304	4,820	361,520	8,131	0
28	6/25/2022	93.7	9,660	6,763	4,379	355,140	7,837	0
29	6/25/2022	95.3	9,408	6,819	4,437	353,160	7,893	0
30	6/25/2022	66.8	7,372	6,991	4,748	353,770	8,561	0
31	6/26/2022	93.1	9,512	6,509	4,209	359,160	7,842	0
32	6/27/2022	78.3	6,238	6,304	5,455	355,720	8,909	0
33	6/27/2022	93.8	9,157	6,605	4,572	357,920	7,694	0
34	6/27/2022	94.5	9,620	6,578	4,456	357,780	7,768	0
35	6/27/2022	94.5	9,987	6,653	5,127	358,570	7,773	0
36	6/28/2022	75	8,047	6,538	4,678	359,820	13,417	0
37	6/28/2022	91.8	9,023	6,464	4,853	364,240	7,779	0
38	6/29/2022	87.7	9,390	6,702	4,874	361,070	7,671	0
39	6/29/2022	96.8	9,334	6,793	5,478	363,250	7,940	0
40	6/29/2022	95.2	9,100	6,441	4,765	357,760	7,530	0
41	6/29/2022	96	9,333	6,096	4,768	357,720	7,875	0
42	6/30/2022	94	8,921	6,260	5,211	368,680	7,859	0
43	6/30/2022	96.3	8,985	6,013	4,509	362,160	7,608	0
44	6/30/2022	97.8	8,980	6,307	4,755	365,940	7,774	0
45	6/30/2022	93.5	9,069	6,512	4,944	360,980	7,934	0
46	7/1/2022	97.1	8,973	5,529	4,637	360,300	7,609	0
47	7/2/2022	97	8,902	6,653	4,940	352,900	7,802	0
48	7/2/2022	97.7	8,993	6,825	4,789	352,640	7,476	0
49	7/2/2022	79	7,236	6,204	4,678	356,250	8,731	0
50	7/2/2022	96.1	9,020	6,648	5,235	356,790	7,558	0
51	7/3/2022	95.3	8,883	6,672	5,178	358,040	7,566	0
52	7/3/2022	90.9	8,430	6,437	4,578	357,040	7,396	0
53	7/3/2022	98.1	8,891	6,299	4,657	357,810	7,458	0

WILLIAM RITCHEA Wtz 205H

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	7/3/2022	91.2	8,335	6,297	5,106	360,380	7,588	0
55	7/3/2022	94.5	8,786	6,695	5,872	363,530	7,731	0
56	7/4/2022	97.2	8,806	5,886	4,789	359,470	7,586	0
57	7/4/2022	98.1	8,610	6,641	4,678	357,450	7,356	0
58	7/4/2022	95.1	8,474	6,453	6,018	359,360	7,331	0
59	7/5/2022	94.1	8,409	6,559	5,380	362,300	7,368	0
60	7/5/2022	98.7	8,328	6,548	4,789	359,470	7,183	0
61	7/5/2022	98.6	8,679	6,752	4,687	357,820	7,296	0
62	7/5/2022	67.9	6,300	6,636	5,110	357,610	8,426	0
63	7/6/2022	96.3	8,411	6,354	5,623	357,340	7,395	0
64	7/6/2022	99	8,445	6,235	5,125	359,200	7,297	0
65	7/6/2022	99.4	8,287	5,825	4,998	357,710	7,269	0
66	7/6/2022	99.6	7,978	6,031	4,521	354,150	7,377	0
67	7/7/2022	99.7	8,325	6,731	4,523	360,790	7,407	0
68	7/7/2022	100.3	7,761	6,280	5,198	352,680	7,153	0
69	7/7/2022	84	7,536	5,326	5,125	367,630	8,358	0
70	7/7/2022	100	7,768	5,941	5,208	358,850	7,356	0
71	7/7/2022	100	8,010	6,152	5,044	364,320	7,260	0
72	7/8/2022	99	8,189	5,916	4,852	360,000	7,276	0
73	7/8/2022	100.7	7,847	6,352	5,515	359,200	7,126	0
74	7/8/2022	83.5	7,516	5,986	5,881	359,100	7,091	0
75	7/8/2022	100	7,228	5,282	4,319	354,700	7,104	0
76	7/8/2022	98.5	7,372	6,064	4,445	360,290	7,119	0
77	7/9/2022	98.7	7,491	6,059	4,406	358,900	7,174	0
78	7/9/2022	83.5	7,431	5,865	5,325	362,910	7,088	0
79	7/9/2022	83.3	7,449	6,600	5,326	354,930	6,955	0
80	7/9/2022	82.4	7,250	6,136	4,642	358,720	7,072	0
81	7/9/2022	82.4	7,291	6,194	4,823	378,440	7,227	0
82	7/9/2022	81.1	7,269	6,589	4,789	355,580	7,037	0
83	7/10/2022	83.3	7,075	6,500	4,518	353,520	7,070	0
84	7/10/2022	78.3	6,756	6,023	5,365	352,680	6,864	0
85	7/10/2022	82.4	7,006	6,255	5,214	356,100	6,938	0
86	7/10/2022	83.7	7,095	5,852	5,309	355,600	6,850	0
87	7/10/2022	83.1	6,894	5,962	4,985	352,430	7,233	0

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STIM REPORT

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1	6/15/2022	80.9	8,403	6,236	3,963	179,830	5,808	0
2	6/15/2022	90.2	9,857	6,425	4,629	359,000	9,500	0
3	6/15/2022	92.6	10,097	6,925	5,200	351,530	9,354	0
4	6/16/2022	90.7	9,780	9,370	4,679	358,120	9,121	0
5	6/16/2022	87.4	9,796	6,971	4,122	356,500	10,609	0
6	6/17/2022	91.1	10,134	9,423	4,512	360,380	9,270	0
7	6/17/2022	92.9	9,742	8,065	4,125	357,450	9,148	0
8	6/17/2022	93.6	9,866	6,495	4,688	354,480	9,688	0
9	6/18/2022	93.1	9,885	6,283	4,215	355,980	9,041	0
10	6/18/2022	93.8	10,182	6,652	4,521	364,700	9,005	0
11	6/18/2022	93.6	10,002	6,432	4,564	363,750	9,027	0
12	6/18/2022	87.4	9,618	6,922	5,067	358,520	8,701	0
13	6/18/2022	90.3	9,474	6,671	4,786	354,380	8,627	0
14	6/19/2022	82.2	9,958	6,826	4,492	345,840	18,821	0
15	6/21/2022	88.3	9,338	6,378	4,469	356,120	8,793	0
16	6/21/2022	88.5	9,490	6,326	4,285	359,610	8,807	0
17	6/22/2022	89.6	9,253	6,177	4,470	364,040	8,840	0
18	6/22/2022	88.6	9,251	5,933	4,325	358,700	8,735	0
19	6/22/2022	88.9	9,616	6,191	4,547	355,690	8,174	0
20	6/23/2022	88.5	9,428	6,854	4,356	358,350	8,002	0
21	6/23/2022	90.7	9,437	6,562	4,379	355,300	10,043	0
22	6/23/2022	94.6	6,994	6,566	4,613	355,420	8,125	0
23	6/24/2022	92.3	9,766	6,862	4,825	354,410	8,007	0
24	6/24/2022	91.6	9,467	6,500	4,456	357,560	7,998	0
25	6/24/2022	91.1	9,574	6,678	4,356	361,040	8,086	0
26	6/24/2022	97	9,933	5,850	5,006	359,760	8,095	0
27	6/25/2022	93.4	9,830	5,304	4,820	361,520	8,131	0
28	6/25/2022	93.7	9,660	6,763	4,379	355,140	7,837	0
29	6/25/2022	95.3	9,408	6,819	4,437	353,160	7,893	0
30	6/25/2022	66.8	7,372	6,991	4,748	353,770	8,561	0
31	6/26/2022	93.1	9,512	6,509	4,209	359,160	7,842	0
32	6/27/2022	78.3	6,238	6,304	5,455	355,720	8,909	0
33	6/27/2022	93.8	9,157	6,605	4,572	357,920	7,694	0
34	6/27/2022	94.5	9,620	6,578	4,456	357,780	7,768	0
35	6/27/2022	94.5	9,987	6,653	5,127	358,570	7,773	0
36	6/28/2022	75	8,047	6,538	4,678	359,820	13,417	0
37	6/28/2022	91.8	9,023	6,464	4,853	364,240	7,779	0
38	6/29/2022	87.7	9,390	6,702	4,874	361,070	7,671	0
39	6/29/2022	96.8	9,334	6,793	5,478	363,250	7,940	0
40	6/29/2022	95.2	9,100	6,441	4,765	357,760	7,530	0
41	6/29/2022	96	9,333	6,096	4,768	357,720	7,875	0
42	6/30/2022	94	8,921	6,260	5,211	368,680	7,859	0
43	6/30/2022	96.3	8,985	6,013	4,509	362,160	7,608	0
44	6/30/2022	97.8	8,980	6,307	4,755	365,940	7,774	0
45	6/30/2022	93.5	9,069	6,512	4,944	360,980	7,934	0
46	7/1/2022	97.1	8,973	5,529	4,637	360,300	7,609	0
47	7/2/2022	97	8,902	6,653	4,940	352,900	7,802	0
48	7/2/2022	97.7	8,993	6,825	4,789	352,640	7,476	0
49	7/2/2022	79	7,236	6,204	4,678	356,250	8,731	0
50	7/2/2022	96.1	9,020	6,648	5,235	356,790	7,558	0
51	7/3/2022	95.3	8,883	6,672	5,178	358,040	7,566	0
52	7/3/2022	90.9	8,430	6,437	4,578	357,040	7,396	0
53	7/3/2022	98.1	8,891	6,299	4,657	357,810	7,458	0

WILLIAM RITCHEA WTZ 205H

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	7/3/2022	91.2	8,335	6,297	5,106	360,380	7,588	0
55	7/3/2022	94.5	8,786	6,695	5,872	363,530	7,731	0
56	7/4/2022	97.2	8,806	5,886	4,789	359,470	7,586	0
57	7/4/2022	98.1	8,610	6,641	4,678	357,450	7,356	0
58	7/4/2022	95.1	8,474	6,453	6,018	359,360	7,331	0
59	7/5/2022	94.1	8,409	6,559	5,380	362,300	7,368	0
60	7/5/2022	98.7	8,328	6,548	4,789	359,470	7,183	0
61	7/5/2022	98.6	8,679	6,752	4,687	357,820	7,296	0
62	7/5/2022	67.9	6,300	6,636	5,110	357,610	8,426	0
63	7/6/2022	96.3	8,411	6,354	5,623	357,340	7,395	0
64	7/6/2022	99	8,445	6,235	5,125	359,200	7,297	0
65	7/6/2022	99.4	8,287	5,825	4,998	357,710	7,269	0
66	7/6/2022	99.6	7,978	6,031	4,521	354,150	7,377	0
67	7/7/2022	99.7	8,325	6,731	4,523	360,790	7,407	0
68	7/7/2022	100.3	7,761	6,280	5,198	352,680	7,153	0
69	7/7/2022	84	7,536	5,326	5,125	367,630	8,358	0
70	7/7/2022	100	7,768	5,941	5,208	358,850	7,356	0
71	7/7/2022	100	8,010	6,152	5,044	364,320	7,260	0
72	7/8/2022	99	8,189	5,916	4,852	360,000	7,276	0
73	7/8/2022	100.7	7,847	6,352	5,515	359,200	7,126	0
74	7/8/2022	83.5	7,516	5,986	5,881	359,100	7,091	0
75	7/8/2022	100	7,228	5,282	4,319	354,700	7,104	0
76	7/8/2022	98.5	7,372	6,064	4,445	360,290	7,119	0
77	7/9/2022	98.7	7,491	6,059	4,406	358,900	7,174	0
78	7/9/2022	83.5	7,431	5,865	5,325	362,910	7,088	0
79	7/9/2022	83.3	7,449	6,600	5,326	354,930	6,955	0
80	7/9/2022	82.4	7,250	6,136	4,642	358,720	7,072	0
81	7/9/2022	82.4	7,291	6,194	4,823	378,440	7,227	0
82	7/9/2022	81.1	7,269	6,589	4,789	355,580	7,037	0
83	7/10/2022	83.3	7,075	6,500	4,518	353,520	7,070	0
84	7/10/2022	78.3	6,756	6,023	5,365	352,680	6,864	0
85	7/10/2022	82.4	7,006	6,255	5,214	356,100	6,938	0
86	7/10/2022	83.7	7,095	5,852	5,309	355,600	6,850	0
87	7/10/2022	83.1	6,894	5,962	4,985	352,430	7,233	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/15/2022
Job End Date:	7/10/2022
State:	West Virginia
County:	Ohio
API Number:	47-069-00329-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	CARL ROTTER OHI 206
Latitude:	40.10147117
Longitude:	-80.54251752
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,712
Total Base Water Volume (gal):	29,429,384
Total Base Non Water Volume:	0



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	88.45216	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.29408	

			Water	7732-18-5	100.00000	0.29408	
			Water	7732-18-5	45.00000	0.29408	
FSTI-CI-02	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Tolicide 4Frac	SWN Well Services	Biocide					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			
Plexaid 655NM	SWN Well Services	Scale Inhibitor					
				Listed Below			
Ferriplex 80	SWN Well Services	Iron Control					
				Listed Below			
Plexslick 930	SWN Well Services	Friction Reducer					
				Listed Below			
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	11.16717	
			Hydrochloric Acid	7647-01-0	15.00000	0.04209	

		Tetrakis(Hydroxymethyl) Phosphonium Sulfate	55566-30-8	45.00000	0.00436	
		Sodium Erythorbate	6381-77-7	100.00000	0.00150	
		Quaternary ammonium compounds	68424-85-1	7.50000	0.00073	
		Ethanol	64-17-5	2.50000	0.00024	
		Ethylene glycol	107-21-1	40.00000	0.00017	
		Poly(oxy-1,2-ethanediyl), .alpha.-(nonylphenyl)-.omega.-hydroxy-	9016-45-9	10.00000	0.00004	
		N,N-Dimethylformamide	68-12-2	10.00000	0.00004	
		Cinnamaldehyde	104-55-2	10.00000	0.00004	
		benzyl chloridequaternized	72480-70-7	5.00000	0.00002	
		Isopropyl alcohol	67-63-0	5.00000	0.00002	
		1-Decanol	112-30-1	5.00000	0.00002	
		Triethyl phosphate	78-40-0	5.00000	0.00002	
		1-Octanol	111-87-5	5.00000	0.00002	
		2-Butoxyethanol	111-76-2	5.00000	0.00002	

* 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)

LATITUDE: 40°07'30" SURFACE HOLE (2000' SCALE) 307'

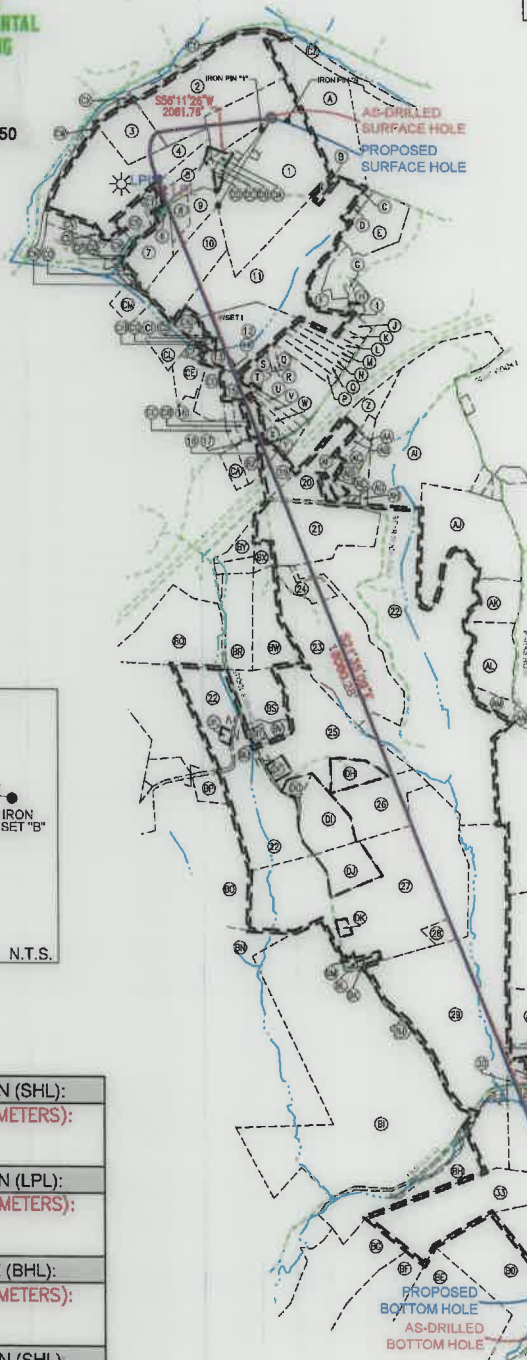
LATITUDE: 40°05'00" BOTTOM HOLE (2000' SCALE) 6801'



www.jhacompanies.com

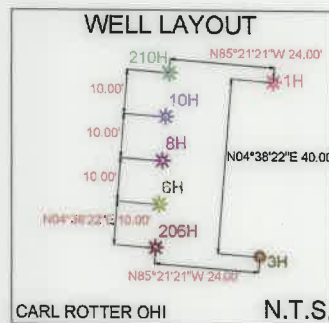
68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-6100

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

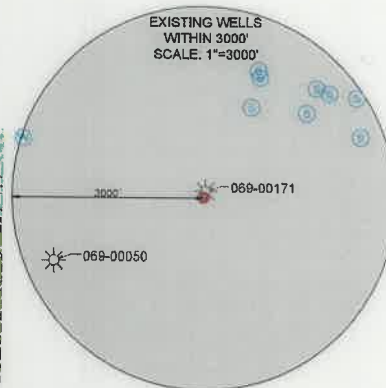
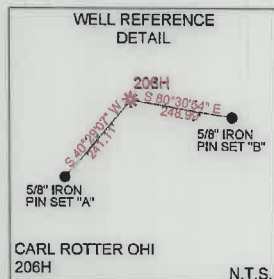


NOTES ON SURVEY

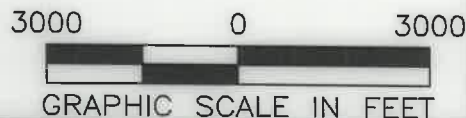
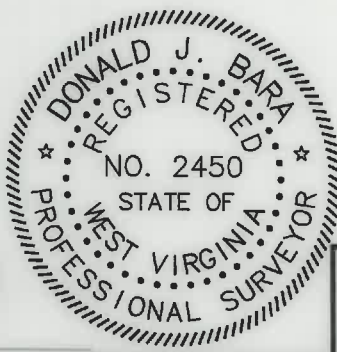
- COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.



LINE	BEARING	DISTANCE
L1	S37°18'04"W	1436.11'
L2	S31°35'47"W	1611.21'



SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4439119.90 EASTING: 538992.77
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4438758.16 EASTING: 538471.66
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4433670.22 EASTING: 540583.85
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4439119.88 EASTING: 538992.70
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4438809.43 EASTING: 538449.48
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4433667.26 EASTING: 540577.41



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. 2041

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 SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

CARL ROTTER OHI

OPERATOR'S WELL #: 206H

API WELL #: 47 069 00329
STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1336.7'

DISTRICT: LIBERTY COUNTY: OHIO QUADRANGLE: VALLEY GROVE, WV

SURFACE OWNER: CARL J. & GRACE A. ROTTER ACREAGE: ±77.45

OIL & GAS ROYALTY OWNER: CARL J. & GRACE A. ROTTER ACREAGE: ±77.45

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,820' TO 10,211' TO 10,262'

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY

ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201 ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201

CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	REVISIONS:	DATE: 08-12-2022
● EXISTING BOTTOM HOLE		API NO: 47-069-00329
★ EXISTING / PRODUCING WELLHEAD		DRAWN BY: R. GRIMES
LPL★ EXISTING LANDING POINT LOCATION		SCALE: 1" = 3000'
● PROPOSED SURFACE HOLE / BOTTOM HOLE		DRAWING NO: 2018-0153
LPL★ PROPOSED LANDING POINT LOCATION		WELL LOCATION PLAT
— ACCESS ROAD		
— PUBLIC ROAD		
— FLOOD PLAIN		
— LEASE BOUNDARY		
— ASDRILLED PATH		
— PROPOSED PATH		


LONGITUDE: 80°30'00" BOTTOM HOLE (2000' SCALE) 11356'

LONGITUDE: 80°32'30" SURFACE HOLE (2000' SCALE) 8567'

WELL BORE TABLE FOR SURFACE/ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	ROTTER CARL J & GRACE A (S/R)	3-L11-54
TRACT	SURFACE OWNER	TAX PARCEL
2	NOLAN JOHN A JR	3-L11-61
3	ROTTER CARL J & GRACE A	3-L11-65
4	ROTTER CARL J & GRACE A	3-L11-64
5	DAVIS DONNA E; WEASE RHONDA	3-L11-49
6	STATE OF WEST VIRGINIA DEPARTMENT OF HIGHWAYS	TRESTLEWORK ROGERS RD
7	TUNNEL RIDGE LLC	3-L11-55
8	WEASE DUANE L & RHONDA L	3-L11-58
9	WEASE DUANE L & RHONDA L	3-L11-55.2
10	TUNNEL RIDGE LLC	3-L11-55.1
11	KLAGES LLOYD A JR	3-L11-46.18
12	DEAN LAWRENCE J II & JANET S	3-L14-49
13	SPEAKER BERNARD P & AMY L	3-L14-24.2
14	DEAN LAWRENCE J II & MICHELLE R	3-L14-24.4
15	TUNNEL RIDGE LLC	3-L14-24.1
16	BAKER BRUCE A & TAMMY A	3-L14-52.4
17	STATE OF WEST VIRGINIA DEPARTMENT OF HIGHWAYS	STOOLFIRE/WEST ALEXANDER ROAD
18	TUNNEL RIDGE LLC	3-L14-32
19	STATE OF WEST VIRGINIA DEPARTMENT OF HIGHWAYS	INTERSTATE 70
20	BLAZIER ROBERT BRENT	3-L14-31
21	WEST VIRGINIA DEPARTMENT OF NATURAL RESOURCES	3-L14-29
22	CONSERVATION COMM OF W VA	6-T5-1
23	ADAMS CAROLE JOYCE	6-T4-8
24	ADAMS THOMAS E & AMANDA BAKER	6-T4-8.1
25	DAGUE FREDERICK W	6-T9-48
26	RIGGLE PAUL; RIGGLE KIMBERLY	6-T9-48.5
27	KOZIK JOHN A & JAMES E	6-T9-49
28	KOZIK JOHN A & CHERYL A	6-T10-12
29	WILD LIFE LEAGUE OF OHIO CO	6-T10-2
30	NICK GREGORY W & ELIZABETH I	6-T10-5.1
31	HAUGHT RANDY T & BRITTANY L	6-T10-5.7
32	KRUPINSKI MARK D & PATTISHALL JAN M	6-T10-5.6
33	STRAWN REX M & BETH ANN	6-T10-11.2
34	ALDERMAN CHRISTINA M; C/O GARRETT CHRISTINA	6-T10-11.5
35	GARRETT CHRISTINA M & AMBER C MOORE	6-T10-11
36	GARRETT CHRISTINA M & ALDERMAN BRANDI N	6-T10-11.1
37	NICK CLINTON W NICK JENNIFER M	6-T10-5.3
38	ALDERMAN ROY M	6-T10-11.6
ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	GRIFFITH SHARON & WARREN	3-L11-60.1
B	SCHMIDT TODD R	3-L11-46.22
C	POWERS JEFFREY B	3-L11-46.20
D	KLAGES PROPERTIES LLC	3-L11-46.9
E	WOLEN JOHN J & MICHELLE L	3-L11-46.11
F	HOMESTEAD FARMS LLC	3-L11-46
G	MOORE SCOTT E & LEAH	3-L11-46.10
H	OHIO RIVER COLLIERIES COMPANY	3-L11-46.3
I	KING PATRICK R	3-L11-46.7
J	HENDERSON DENNIS C & MURPHY PATRICIA A	3-L14-53
K	TUNNEL RIDGE LLC	3-L14-51
L	TUNNEL RIDGE LLC	3-L14-52.1
M	CAROLLA FRANK A JR	3-L14-52.2
N	TUNNEL RIDGE LLC	3-L14-52.3
O	TUNNEL RIDGE LLC	3-L14-52.24
P	TUNNEL RIDGE LLC	3-L14-52.26
Q	TUNNEL RIDGE LLC	3-L14-52.33
R	TUNNEL RIDGE LLC	3-L14-52.32
S	TUNNEL RIDGE LLC	3-L14-52.34
T	SMITH WESLEY DALE; BETTY ANN	3-L14-52.39
U	HUNTLEY CHAD D & SUSAN L	3-L14-52.7
V	WINTERS ROBERT E	3-L14-52.19
W	KNICELY GERALD L & JO ANN; TR 2009 KNICELY FAMILY IRR TRUST	3-L14-52.20
X	HEWITT PATRICIA E	3-L14-52.6
Y	TUNNEL RIDGE LLC	3-L14-33
Z	TULLY JAMES M & VERONICA	3-L14-31.2
AA	TULLY JAMES M & VERONICA	3-L14-31.1
AB	GARRETT JOHN W & CHRISTINA M	3-L14-31.6
AC	ERNEST DEBORAH J	3-L14-31.5
AD	HOCKENBERRY JAMES MICHAEL	3-L14-31.3
AE	HOCKENBERRY JAMES MICHAEL	3-L14-31.7
AF	BROWN MARCINDA LEE & GARY	3-L14-31.8
AG	GARRETT JOHN W & CHRISTINA	3-L14-37
AH	NIETZEL EDWARD L	3-L14-38
AI	PAGENDARM PATRICIA M	3-L15-2.2
AJ	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	6-T5-2
AK	JONES DOROTHY S & GIVENS HERSCHEL L	6-T5-2.2
AL	DAVIS JOHN R & ADA I	6-T5-2.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
AM	DAVIS JOHN RICHARD & ADA I	6-T5-2.3
AN	DAVIS JOHN RICHARD JR & ADA I	6-T5-6
AO	DAVIS JOHN RICHARD ET AL	6-T10-1
AP	WINESBURG MICHAEL J	6-T10-5.4
AQ	PHILLIPS VANCE A & BRIANNE L	6-T10-5.5
AR	NICK CLINTON W & JENNIFER M	6-T10-5.2
AS	HOCKING GEORGE M & JOAN ANN - TOD	6-T10-5.10
AT	REMOVED	REMOVED
AU	KRUPINSKI MARK D & PATTISHALL JAN M	6-T10-5
AV	KRUPINSKI MARK D & PATTISHALL JAN M	6-T10-9
AW	LEMMON WADE LEE; LEMMON JOSHUA; LEMMON MORGAN	6-T10-10
AX	REMOVED	REMOVED
AY	ALDERMAN ROY M	6-T10-11.3
AZ	ALDERMAN ROY M	6-T10-11.7
BA	WHITEMAN FLORENCE J	6-T15-11
BB	MACRI GARY A	6-T15-11.2
BC	SMITH WAYNE P & GRACE A	6-T15-2
BD	ALDERMAN ROY & BRANDI	6-T15-3
BE	MCCONN MICHELE M TRUSTEE	6-T15-4
BF	STRAWN REX M & BETH ANN	6-T14-36.1
BG	STRAWN HAROLD REX	6-T14-33
BH	SLIGAR DAVID B & EASTER A	6-T10-7
BI	MCDONALD MICHAEL W & VALERIE R	6-T9-51
BJ	MCDONALD ZACHARY MICHAEL	6-T9-51.2
BK	KOZIK KALEIGH A. & MCKENZIE CHAD A.	6-T9-49.3
BL	HENDERSON JOHN M & HENDERSON ELIZABETH STARR	6-T9-51.1
BM	HENDERSON JOHN M & HENDERSON ELIZABETH STARR	6-T9-50
BN	HENDERSON JOHN M & DAVID L	6-T9-34
BO	DAGUE FREDERICK W	6-T9-45
BP	DAGUE FREDERICK W	6-T9-45.1
BQ	BLACK SCOTT A	6-T4-7
BR	LEWTON TIMOTHY M ET AL LEWTON FREDERICK M - LE	6-T4-7.3
BS	HRUTKAY LISA	6-T4-11
BT	HASENAUER RICHARD W & MARGARET K	6-T4-11.2
BU	HASENAUER RICHARD W & MARGARET K	6-T4-11.1
BV	HASENAUER RICHARD W & MARGARET K	6-T4-11.3
BW	LEWTON TIMOTHY M ET AL LEWTON FREDERICK M - LE	6-T4-10
BX	LEWTON SUE ANN	6-T4-10.1
BY	BLAZIER BETH ANN	3-L14-27.31
BZ	TUNNEL RIDGE LLC	3-L14-27.37
CA	HICKS PAUL F JR & HICKS TANYA R	3-L14-27
CB	TUNNEL RIDGE LLC	3-L14-52.18
CC	TUNNEL RIDGE LLC	3-L14-52.21
CD	YOURKOVICH JEFFREY	3-L14-52.22
CE	JONES CHARLES & MARGARET	3-L14-52.23
CF	SALOMON GREG F & CARNAHAN JAN M	3-L14-24.3
CG	KLEEH CHAD D; KLEEH TAMI L & WATSON GARY	3-L14-28
CH	KLEEH TAMI L	3-L14-23
CI	KLEEH CHAD D; KLEEH TAMI L & WATSON GARY	3-L14-23.1
CJ	WATSON GARY L	3-L14-21
CK	HEINRICH EARNEST J III & ANGELA R	3-L14-22
CL	WILLIAMSON TERRY L	3-L14-30
CM	NEIDHARDT CHRISTOPHER E & MARY BETH	3-L11-38
CN	MULL CLYDE E JR AND HEIDI L	3-L11-42.3
CO	MULL, CLYDE E JR; HEIDI L MULL	3-L11-55.3
CP	RAWLEY ELIZABETH (OCC) RAWLEY ROGER LEE	3-L11-40
CQ	WV DOT	3-L11-34.3
CR	TUNNEL RIDGE LLC	3-L11-34.2
CS	TUNNEL RIDGE LLC	3-L11-49.1
CT	DAVIS DANIEL R & DAVIS DONNA EVANS	3-L11-49.3
CU	TUNNEL RIDGE LLC	3-L11-56
CV	TUNNEL RIDGE LLC	3-L11-34.1
CW	TUNNEL RIDGE LLC	3-L11-71
CX	TUNNEL RIDGE LLC	3-L11-72
CY	NOLAN JOHN A JR	3-L11-66
CZ	TUNNEL RIDGE LLC	3-L12-32
DA	DAVIS DONNA E & DANIEL R	3-L11-50
DB	DAVIS DONNA EVANS & DANIEL R	3-L11-49.2
DC	ROTTER C J & GRACE A	3-L11-52
DD	ROTTER C J & GRACE A	3-L11-53
DE	HACKATHORN TINA RAE & DAVID T JR	6-T4-12
DF	STENGER WILLIAM J JR & SHIRLEY A	6-T9-48.2
DG	GARRETT HAROLD R	6-T9-48.1
DH	RIGGLE PAUL & KIMBERLY M	6-T9-48.6
DI	RIGGLE PAUL; RIGGLE KIMBERLY	6-T9-48.4
DJ	KOZIK JOHN A & CHERYL A	6-T9-49.2
DK	KOZIK JAMES E & HEATHER L	6-T9-49.1
DL	ALDERMAN ROY M	6-T10-11.4

10/21/2022

REVISIONS:	COMPANY: 		DATE: 08-12-2022	
	OPERATOR'S: CARL ROTTER OHI		API NO: 47-069-00329	
	WELL #: 206H		DRAWN BY: R. GRIMES	
	DISTRICT: LIBERTY	COUNTY: OHIO	STATE: WV	SCALE: N/A
				DRAWING NO: 2018-0153
				WELL LOCATION PLAT