

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

AUG 13 2018

WV Department of
Environmental Protection

API 47 - 069 - 00250 County OHIO District TRIADELPHIA
Quad VALLEY GROVE Pad Name MARK HICKMAN PAD Field/Pool Name PANHANDLE
Farm name MARK HICKMAN Well Number MARK HICKMAN OHI 10H
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 4,432,270.540 Easting 538,612.807
Landing Point of Curve Northing 4,432,137.452 Easting 538,894.559
Bottom Hole Northing 4,429,899.505 Easting 539,937.320

Elevation (ft) 1281.8 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 10/16/2017 Date drilling commenced 02/22/2018 Date drilling ceased 04/17/2018
Date completion activities began 05/06/2018 Date completion activities ceased 05/26/2018
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 564' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 919' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 714' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed
[Signature] 8/30/18

Reviewed by:
[Signature] 8/30/18
09/07/2018

API 47- 069 - 00250 Farm name MARK HICKMAN Well number MARK HICKMAN OHI 10H

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	126'	NEW	J-55/94#		Y
Surface	17.5	13.375	815'	NEW	J-55/54.50#	690'; 663'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2317'	NEW	J-55/36#		Y, 40 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	15,327'	NEW	HCP-110/20#		Y
Tubing		2.375	7,164'	NEW	P-110/4.7#		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	626	15.60	1.20	751.2	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	920	16	1.12	1030.4	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2739	15.60	1.19	3259.41	SURFACE	24
Tubing							

Drillers TD (ft) 15327' Loggers TD (ft) 15327'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5924'

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: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 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 - 00250 Farm name MARK HICKMAN Well number MARK HICKMAN OHI 10H

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	6685'	TVD 6990' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1060 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 5016 mcfpd Oil 190 bpd NGL _____ bpd Water 387 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	SEE	ATTACHMENT	3		

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Please insert additional pages as applicable.

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

Logging Company PREMIER DIRECTIONAL DRILLING
Address 363 NORTH SAM HOUSTON PKWY E, STE 300 City HOUSTON State TX Zip 77060

Cementing Company SCHLUMBERGER WELL SERVICES
Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

Stimulating Company STINGRAY
Address 66680 EXECUTIVE DRIVE City ST CLAIRSVILLE State OH Zip 43950

Please insert additional pages as applicable.

Completed by ELIZABETH GEE Telephone 832-796-7632
Signature  Title STAFF REGULATORY ANALYST Date 08/19/2018

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

09/07/2018

**MARK HICKMAN OHI 10H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	5/3/2018	15,240	15,145	36
2	5/6/2018	15,112	15,005	42
3	5/7/2018	14,972	14,862	42
4	5/7/2018	14,832	14,725	42
5	5/7/2018	14,692	14,588	42
6	5/8/2018	14,552	14,445	42
7	5/8/2018	14,412	14,305	42
8	5/8/2018	14,272	14,165	42
9	5/8/2018	14,128	14,025	42
10	5/9/2018	13,992	13,892	42
11	5/9/2018	13,852	13,745	42
12	5/9/2018	13,712	13,605	42
13	5/9/2018	13,572	13,455	75
14	5/10/2018	13,422	13,325	42
15	5/10/2018	13,292	13,185	42
16	5/10/2018	13,149	13,045	42
17	5/11/2018	13,012	12,905	42
18	5/11/2018	12,872	12,765	42
19	5/11/2018	12,732	12,625	42
20	5/11/2018	12,588	12,485	42
21	5/11/2018	12,452	12,345	42
22	5/12/2018	12,317	12,205	42
23	5/13/2018	12,172	12,065	42
24	5/13/2018	12,032	11,925	42
25	5/14/2018	11,892	11,786	42
26	5/14/2018	11,752	11,645	42
27	5/14/2018	11,612	11,505	42
28	5/14/2018	11,472	11,365	42
29	5/14/2018	11,334	11,231	42
30	5/15/2018	11,192	11,085	42
31	5/15/2018	11,052	10,945	42
32	5/15/2018	10,912	10,805	42
33	5/15/2018	10,770	10,665	42
34	5/15/2018	10,632	10,524	42
35	5/16/2018	10,496	10,385	42
36	5/16/2018	10,352	10,245	42
37	5/16/2018	10,212	10,105	42
38	5/16/2018	10,068	9,965	42
39	5/17/2018	9,932	9,824	42
40	5/17/2018	9,797	9,685	42
41	5/17/2018	9,652	9,545	42
42	5/17/2018	9,516	9,405	42

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STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	5/17/2018	9,372	9,265	42
44	5/18/2018	9,232	9,125	42
45	5/18/2018	9,092	8,985	42
46	5/18/2018	8,952	8,848	42
47	5/18/2018	8,812	8,705	42
48	5/19/2018	8,672	8,565	42
49	5/19/2018	8,532	8,428	42
50	5/19/2018	8,392	8,285	42
51	5/19/2018	8,252	8,145	42
52	5/19/2018	8,112	8,001	42
53	5/19/2018	7,974	7,865	42
54	5/20/2018	7,832	7,725	42
55	5/20/2018	7,692	7,585	42
56	5/20/2018	7,552	7,445	42
57	5/20/2018	7,412	7,300	42
58	5/20/2018	7,276	7,165	42
59	5/20/2018	7,132	7,025	42

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ATTACHMENT 2
STIM REPORT

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STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbbls	Amount of nitrogen/othr
1	5/6/2018	84.6	8,276	7,759	3,161	279,640	5,376	0
2	5/7/2018	99	7,911	6,403	4,102	280,340	5,715	0
3	5/7/2018	93.4	8,501	7,125	3,917	279,880	5,207	0
4	5/7/2018	94.4	8,418	6,180	4,341	279,820	5,196	0
5	5/8/2018	92.5	8,667	7,077	4,338	282,400	5,055	0
6	5/8/2018	93.8	8,276	6,586	4,261	279,870	4,676	0
7	5/8/2018	94.4	8,338	7,473	4,262	280,660	4,664	0
8	5/8/2018	95.6	8,374	5,830	4,310	280,320	4,494	0
9	5/9/2018	95.6	8,511	5,291	4,332	277,820	4,951	0
10	5/9/2018	93.9	8,154	5,197	4,351	279,520	4,601	0
11	5/9/2018	92.1	8,067	7,623	4,443	280,260	4,725	0
12	5/9/2018	93.3	8,398	8,166	4,472	280,020	4,794	0
13	5/9/2018	97.1	9,494	5,588	4,260	179,640	8,877	0
14	5/10/2018	93.2	8,300	5,864	4,473	277,160	4,899	0
15	5/10/2018	93.7	8,079	5,457	4,743	279,400	4,796	0
16	5/11/2018	90.7	8,098	5,611	4,490	280,660	4,555	0
17	5/11/2018	92.6	8,002	5,186	4,602	272,060	4,494	0
18	5/11/2018	91.3	8,096	5,897	4,603	280,300	5,526	0
19	5/11/2018	91	8,042	6,016	4,483	279,830	4,435	0
20	5/11/2018	90.3	8,206	5,860	4,380	273,560	4,476	0
21	5/12/2018	99.2	8,045	6,089	4,394	279,800	4,795	0
22	5/13/2018	92.5	7,809	5,344	4,321	276,240	4,422	0
23	5/13/2018	97	8,215	6,011	4,407	272,580	4,316	0
24	5/13/2018	99.4	7,949	5,825	4,311	271,920	5,466	0
25	5/14/2018	92.9	8,052	5,857	4,350	275,400	4,434	0
26	5/14/2018	98.1	7,764	5,626	4,482	279,480	4,356	0
27	5/14/2018	94.5	8,240	5,718	4,315	275,060	4,335	0
28	5/14/2018	96.3	8,287	5,667	4,520	280,440	4,454	0
29	5/15/2018	96.1	8,069	4,837	4,690	281,280	4,524	0
30	5/15/2018	98.9	8,017	5,287	4,626	274,740	4,592	0
31	5/15/2018	96	8,477	5,296	4,674	278,920	4,324	0
32	5/15/2018	96.3	8,365	5,679	4,632	271,640	4,367	0
33	5/15/2018	98	8,171	6,316	4,600	281,540	4,324	0
34	5/16/2018	90.7	7,722	5,982	4,680	278,800	6,277	0
35	5/16/2018	92.5	8,269	6,276	4,458	278,260	4,471	0
36	5/16/2018	92.8	8,129	6,313	4,357	279,080	4,561	0
37	5/16/2018	95.6	7,929	5,108	4,425	281,540	4,315	0
38	5/17/2018	96.9	8,091	5,251	4,370	279,100	4,305	0
39	5/17/2018	95.8	8,094	5,997	4,427	280,320	4,323	0
40	5/17/2018	96.2	7,648	4,223	4,455	274,100	4,364	0
41	5/17/2018	91.2	7,814	5,524	4,574	279,140	4,335	0
42	5/17/2018	98.4	7,810	5,604	4,510	280,260	4,278	0
43	5/18/2018	96.8	7,672	6,486	4,490	281,460	4,139	0
44	5/18/2018	92.6	7,945	5,732	4,416	280,120	4,453	0
45	5/18/2018	93.2	7,786	5,688	4,392	288,060	4,669	0
46	5/18/2018	96.5	7,295	4,881	4,345	281,820	4,286	0
47	5/18/2018	98	7,724	5,359	4,520	280,660	4,157	0
48	5/19/2018	94	7,661	5,600	4,630	280,660	4,112	0
49	5/19/2018	89.6	7,545	6,135	4,631	284,900	4,827	0
50	5/19/2018	91.4	7,842	4,916	4,466	270,880	4,192	0
51	5/19/2018	97.8	7,638	5,875	4,545	281,180	4,125	0
52	5/19/2018	97.8	7,744	5,315	4,270	269,000	3,968	0
53	5/20/2018	98	7,636	6,000	4,350	278,000	4,047	0

09/07/2018

**MARK HICKMAN OHI 10H
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	5/20/2018	97.7	7,550	5,973	4,516	282,320	4,098	0
55	5/20/2018	95.1	7,565	7,264	4,472	272,120	4,124	0
56	5/20/2018	96.3	7,168	5,004	4,599	275,020	4,081	0
57	5/20/2018	96.5	6,992	6,105	4,419	276,400	4,021	0
58	5/20/2018	99.3	7,599	4,888	4,495	276,180	4,019	0
59	5/20/2018	97.4	7,790	6,135	4,230	273,500	3,810	0

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ATTACHMENT 3

Well Name: Mark Hickman OHI 10H

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	564.00	564.00	
Top of Salt Water	919.00	919.00	NA	NA	
Pittsburgh Coal	714.00	714.00	727.00	727.00	
Pottsville (ss)	NA	NA	NA	NA	
Mauch Chunk (shale)	NA	NA	NA	NA	
Raven Cliff (ss)	NA	NA	NA	NA	
Maxton (ss)	NA	NA	NA	NA	
Greenbriar (ls)	NA	NA	NA	NA	
Big Injun (ss)	1951.00	1951.00	2478.00	2468.00	
Berea (siltstone)	2478.00	2468.00	6052.00	6015.00	
Rhinstreet (shale)	6052.00	6015.00	6391.00	6331.00	
Cashaqua (shale)	6391.00	6331.00	6497.00	6414.00	
Middlesex (shale)	6497.00	6414.00	6617.00	6500.00	
Burket (shale)	6617.00	6500.00	6647.00	6520.00	
Tully (ls)	6647.00	6520.00	6692.00	6549.00	
Mahantango (shale)	6692.00	6549.00	6990.00	6685.00	
Marcellus (shale)	6990.00	6685.00	NA	NA	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/6/2018
Job End Date:	5/20/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00250-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mark Hickman OHI 10H
Latitude:	40.03978021
Longitude:	-80.54738382
Datum:	NAD27
Federal Well:	YES
Indian Well:	NO
True Vertical Depth:	6,756
Total Base Water Volume (gal):	11,305,590
Total Base Non Water Volume:	0

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Frac Focus
Chemical Disclosure Registry



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
Water	Southwestern Energy	Carrier/Base Fluid	Water	7732-18-5	100.00000	86.98679	None
Sand (100 Mesh Proppant)	US Silica	Proppant	Silica Substrate	14808-60-7	100.00000	6.33155	None
Sand (40/70 Proppant)	US Silica	Proppant	Silica Substrate	14808-60-7	100.00000	5.95425	None
Hydrochloric Acid (28%)	Solvay	Acidizing	Water	7732-18-5	64.00000	0.39219	None
			Hydrochloric Acid (Hydrogen Chloride)	7732-18-5	36.00000	0.22061	None
Plexslick 957	Solvay	Friction Reducer	Water	7732-18-5	75.00000	0.06516	None
			Petroleum Distillate	64742-47-8	20.00000	0.01737	None
			Ammonium Chloride ((NH4)Cl)	12125-02-9	2.00000	0.00174	None
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00130	None
			Alcohols, C14-15, ethoxylated	68551-12-2	1.50000	0.00130	None
BIOC11219A	Nalco	Biocide					

09/07/2018

NEFE-180	Solvay	Corrosion Inhibitor/Iron Control	Methanol	67-56-1	60.00000	0.01129	None
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium	38424-85-1	30.00000	0.00565	None
			Glutaraldehyde	111-30-8	10.00000	0.00188	None
			Acetic acid	64-19-7	89.00000	0.00339	None
			Methanol	67-56-1	40.00000	0.00153	None
			2-Ethylhexanol	104-76-7	10.00000	0.00038	None
			2-Propyn-1-ol	107-19-7	5.00000	0.00019	None
			Coconut oil acid diethanolamine	88603-42-9	5.00000	0.00019	None
			Fatty acids, tall oil	61790-12-3	5.00000	0.00019	None
			Alcohols, C14-15, ethoxylated	38951-67-7	5.00000	0.00019	None
SCAL 16486A	Nalco	Scale Inhibitor	Amine Triphosphate	Proprietary	30.00000	0.00153	None
			Ethylene Glycol	107-21-1	30.00000	0.00153	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	64.00000	0.39219	
			Water	7732-18-5	75.00000	0.06516	
			Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium	38424-85-1	30.00000	0.00565	
			Glutaraldehyde	111-30-8	10.00000	0.00188	
			Ammonium Chloride ((NH4)Cl)	12125-02-9	2.00000	0.00174	
			Ethylene Glycol	107-21-1	30.00000	0.00153	
			Methanol	67-56-1	40.00000	0.00153	
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00130	
			Alcohols, C14-15, ethoxylated	38551-12-2	1.50000	0.00130	
			2-Ethylhexanol	104-76-7	10.00000	0.00038	
			2-Propyn-1-ol	107-19-7	5.00000	0.00019	
			Alcohols, C14-15, ethoxylated	38951-67-7	5.00000	0.00019	
			Fatty acids, tall oil	61790-12-3	5.00000	0.00019	
			Coconut oil acid diethanolamine	88603-42-9	5.00000	0.00019	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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)

THRASHER

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

SHL 13,328'

BHL 9,023'

Latitude: 40°02'30"

LINE	BEARING	DISTANCE
1	S 71°44'27" E	2290.23'
2	S 89°47'30" E	2024.40'

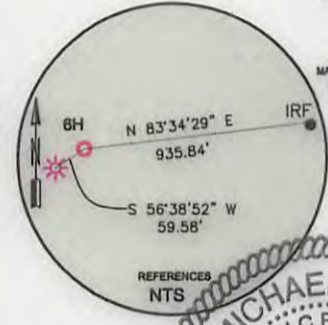
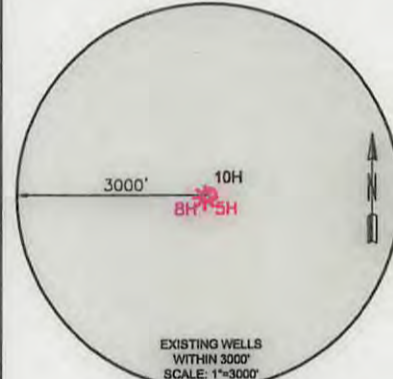
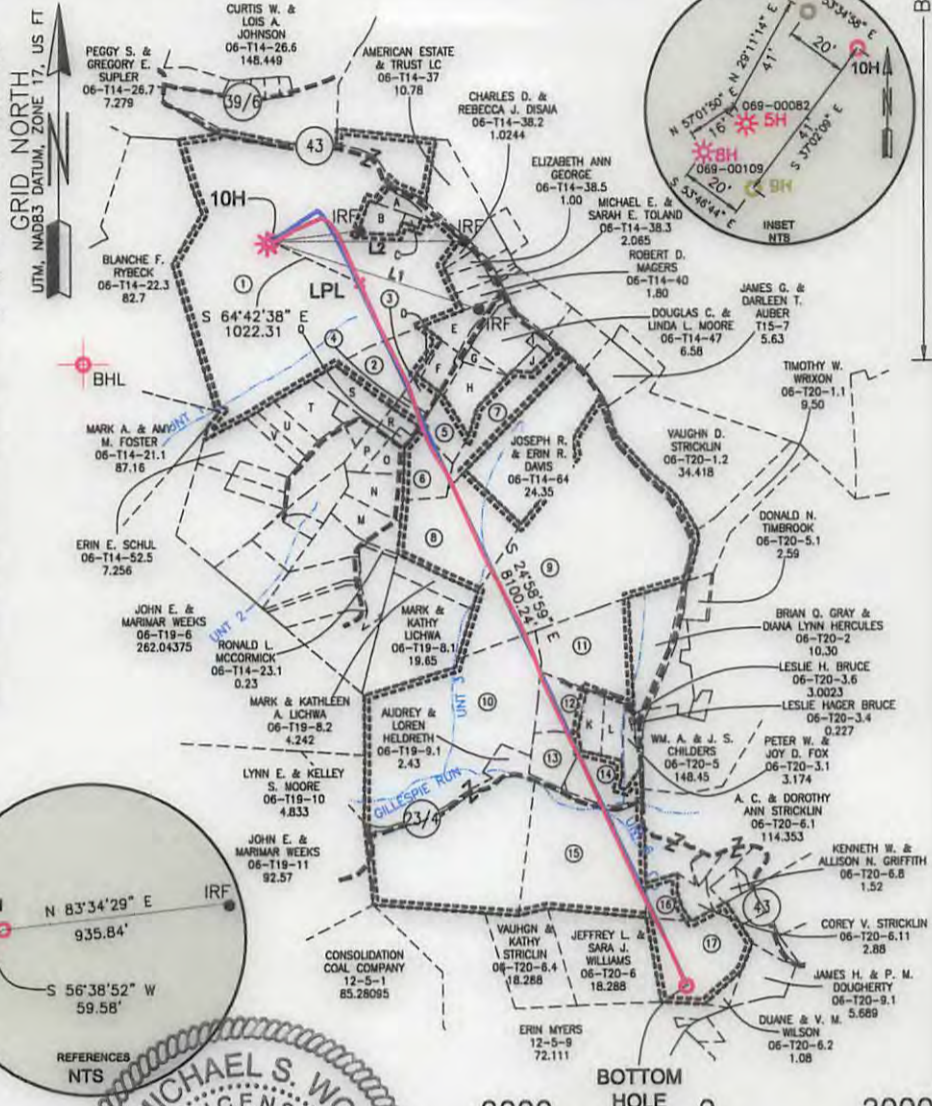
WELL BORE TABLE FOR SURFACE & ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	LAWRENCE GRANT HICKMAN, CECIL LEE HICKMAN & CAROL SUE HICKMAN	06-T14-38	143.53
SURFACE OWNER			
2	CHARLES D. POLING	06-T14-54	11.007
3	CHARLES D. POLING	06-T14-42	2.02
4	JAMIE JAQUAY & BRIAN JAQUAY	06-T14-42.1	1.00
5	CARL R. SCHNEIDER JR. & DARLA K. SCHNEIDER	06-T14-49	4.317
6	KATEY M. KAGE	06-T14-50	6.466
7	RALPH W. & ROSELLA RICHEY	06-T14-62	10.662
8	MARK F. & KATHLEEN A. LICHWA	06-T14-65	21.087
9	VAUGHN D. & KATHRYN STRICKLIN; COREY STRICKLIN	06-T19-8	75.20
10	CASEY, TAMMY & JACOB STEIN & AUDERY HELDRETH	06-T19-9	101.555
11	LESLIE H. BRUCE	06-T20-3.5	17.54
12	JOSEPH R. & ERIN R. DAVIS	06-T20-3	6.011
13	JODI L. ELLIOT & MICHAEL A. SINE	06-T20-3.8	5.526
14	PETER W. FOX & JOY D. FOX	06-T20-3.3	6.924
15	JOSEPH L. VESPA	06-T20-3.2	34.045
16	COREY V. STRICKLIN	06-T20-6.13	3.28
17	MICHAEL E. TOLAND & SARAH ELIZABETH TOLAND	06-T20-6.3	18.288

SURFACE HOLE LOCATION (SHL):		SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,270.564 EASTING: 538,612.822		UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,270.540 EASTING: 538,612.807	
LANDING POINT (LPL):		LANDING POINT (LPL):	
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,220.141 EASTING: 538,850.326		UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,137.452 EASTING: 538,894.559	
BOTTOM HOLE LOCATION (BHL):		BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,429,897.524 EASTING: 539,940.817		UTM (NAD83, ZONE 17, METERS): NORTHING: 4,429,899.505 EASTING: 539,937.320	

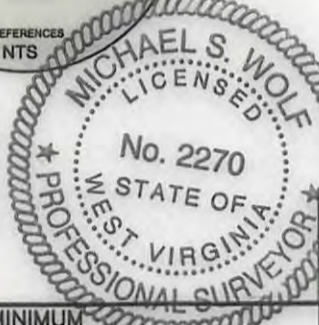
NOTES ON SURVEY

- COORDINATES 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 FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- 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 LIMITS OF DISTURBANCE.

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	MARK JOHN HICKMAN	06-T14-38.6	1.597
B	MARK JOHN HICKMAN	06-T14-38.7	2.876
C	GLEN ALAN & REBECCA LYNN MENCER	06-T14-38.1	1.00
D	DENNIS A. & BRENDA L. BEITER	06-T14-54.1	0.57
E	RICHARD L. & R. J. SCOTT	06-T14-56	3.556
F	DENNIS A. & BRENDA L. BEITER	06-T14-55	2.34
G	BRIAN D. & LINDA W. HOUGH	06-T14-47.1	1.04
H	BRENDA SUE PHILLIPS	06-T14-48	5.31
I	RALPH W. & ROSELLA RICHEY	06-T14-58	1.518
J	RALPH W. & ROSELLA RICHEY	06-T14-59	1.115
K	LESLIE HAGER OZOSKY BRUCE	06-T20-3.9	3.016
L	LESLIE H. BRUCE	06-T20-3.6	3.002
M	MARK & KATHLEEN ANN LICHWA	06-T19-18	5.00
N	PATRICK L. & CHRISTINA RIDOLE	06-T19-20	5.00
O	DAVID G. & J. A. BEAVER	06-T14-41.2	2.632
P	DANIEL R. & REBECCA L. OLIVER	06-T14-41.3	2.368
Q	RAY A. & NATALIE C. DURBIN	06-T14-41.5	0.67
R	LOHNE & THEA A. CHURCH	06-T14-41.4	1.43
S	LOHNE & THEA A. CHURCH	06-T14-41.1	4.78
T	CHRISTOPHER & CASSIE A. DENHAM	06-T14-53	4.72
U	KEVIN P. & BRENDA VORHES	06-T14-52.3	2.99
V	KEVIN P. & BRENDA VORHES	06-T14-52.4	2.00



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. 2270

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)</p>	<p>COMPANY: SWN Production Company, LLC</p> <p>OPERATOR'S WELL #: 10H</p> <p>API WELL #: 47 69 00250</p> <p>STATE COUNTY PERMIT</p>
	<p>WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: WHEELING CREEK ELEVATION: 1281.8'</p> <p>DISTRICT: TRIADDELPHIA COUNTY: OHIO QUADRANGLE: VALLEY GROVE</p> <p>SURFACE OWNER: LAWRENCE GRANT HICKMAN, CECIL LEE HICMAN & CAROL SUE HICKMAN ACREAGE: ± 143.77</p> <p>OIL & GAS ROYALTY OWNER: CECIL LEE HICKMAN, JOHN MARK HICKMAN, LAWRENCE GRANT HICKMAN, CAROL SUE (CRISWELL) HICKMAN ACREAGE: ± 418.378</p> <p>DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/></p> <p>CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED</p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,798'</p>	<p>DESIGNATED AGENT: BRITTANY WOODY</p> <p>ADDRESS: P.O. BOX 1300</p> <p>CITY: JANE LEW STATE: WV ZIP CODE: 26378</p>
<p>LEGEND:</p> <ul style="list-style-type: none"> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ⊙ EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION ⊙ EXISTING WATER WELL ⊙ EXISTING SPRING --- SURVEYED BOUNDARY --- DRILLING UNIT --- LEASE BOUNDARY --- PROPOSED PATH --- AS-DRILLED PATH 	<p>REVISIONS:</p> <p>DATE: 07-27-2018</p> <p>DRAWN BY: K. POTH</p> <p>SCALE: 1" = 2000'</p> <p>DRAWING NO: 050-5494</p> <p>WELL LOCATION PLAT</p>	