

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

API 47-051-02184 County MARSHALL District MEADE
Quad WILEYVILLE, WV Pad Name ARTHUR WARYCK MSH PAD Field/Pool Name VICTORY FIELD WET
Farm name A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK Well Number ARTHUR WARYCK MSH 5H
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 4,397,192.032 Easting 528,114.022
Landing Point of Curve Northing 4,397,431.861 Easting 528,238.371
Bottom Hole Northing 4,399,707.210 Easting 525,732.928

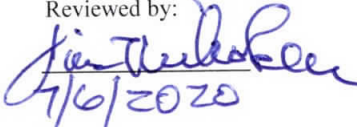
Elevation (ft) 1,326.3 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution 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)
SOBM

Date permit issued 5/22/2019 Date drilling commenced 07/06/2019 Date drilling ceased 07/27/2019
Date completion activities began 01/21/2020 Date completion activities ceased 03/27/2020
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 557' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 892' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,147' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: 
7/6/2020

API 47-051 - 02184 Farm name A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK Well number ARTHUR WARYCK MSH 5H

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	656	NEW	J-55/54.50#		Y, 51
Coal	SEE INTERMEDIATE						
Intermediate 1	12.25	9.625	2,732	NEW	J-55/36#		Y, 58
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	18,733	NEW	HCP-110/20#		Y, 75
Tubing		2.875		NEW	P-110/6.50#		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	682	15.60	1.19	811.58	SURFACE	8
Coal	SEE INTERMEDIATE						
Intermediate 1	CLASS A	1,130	16.00	1.12	1,254.3	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3,533	15.60	1.18	4,168.94	SURFACE	24
Tubing							

Drillers TD (ft) 18,733' Loggers TD (ft) 18,733'

Deepest formation penetrated _____ Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6,335'

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- 051 - 02184 Farm name A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK Well number ARTHUR WARYCK MSH 5H

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	7,082'	TVD 7,389' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,779 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas Oil NGL Water GAS MEASURED BY
8,389 mcfpd 101 bpd _____ bpd 158 bpd 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 BJ SERVICES
 Address 11211 FM 2920 City TOMBALL State TX Zip 77377

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

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-2873
 Signature  Title Staff Regulatory Analyst Date 06/19/2020

ARTHUR WARYCK MSH 5H

ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/15/2020	18,682	18,487	36
2	1/21/2020	18,451	18,275	36
3	1/22/2020	18,243	18,067	36
4	1/23/2020	18,034	17,859	36
5	1/24/2020	17,826	17,650	36
6	1/25/2020	17,615	17,442	36
7	1/26/2020	17,406	17,233	36
8	1/27/2020	17,201	17,025	36
9	1/27/2020	16,992	16,817	36
10	1/28/2020	16,779	16,605	36
11	1/29/2020	16,576	16,403	36
12	1/30/2020	16,367	16,195	36
13	1/31/2020	16,159	15,983	36
14	2/1/2020	15,950	15,777	36
15	2/2/2020	15,742	15,566	36
16	2/3/2020	15,534	15,358	36
17	2/5/2020	15,325	15,150	36
18	2/6/2020	15,117	14,941	36
19	2/7/2020	14,909	14,733	36
20	2/9/2020	14,700	14,525	36
21	2/10/2020	14,492	14,316	36
22	2/11/2020	14,283	14,108	36
23	2/16/2020	14,075	13,894	36
24	2/25/2020	13,867	13,688	36
25	2/26/2020	13,658	13,483	36
26	2/27/2020	13,450	13,274	36
27	3/3/2020	13,242	13,069	36
28	3/4/2020	13,033	12,857	36
29	3/4/2020	12,825	12,645	36
30	3/5/2020	12,617	12,441	36
31	3/5/2020	12,412	12,232	36
32	3/6/2020	12,200	12,024	36
33	3/6/2020	11,991	11,816	36
34	3/7/2020	11,783	11,607	36
35	3/7/2020	11,574	11,399	36
36	3/7/2020	11,366	11,190	36
37	3/8/2020	11,158	10,982	36
38	3/9/2020	10,949	10,778	36
39	3/9/2020	10,741	10,561	36
40	3/10/2020	10,533	10,355	36
41	3/10/2020	10,324	10,149	36
42	3/11/2020	10,116	9,940	36
43	3/11/2020	9,907	9,732	36
44	3/11/2020	9,699	9,523	36
45	3/12/2020	9,491	9,315	36
46	3/12/2020	9,282	9,107	36
47	3/13/2020	9,074	8,898	36
48	3/13/2020	8,866	8,690	36
49	3/14/2020	8,657	8,481	36
50	3/14/2020	8,449	8,276	36
51	3/15/2020	8,240	8,065	36
52	3/15/2020	8,028	7,856	36
53	3/15/2020	7,824	7,648	36
54	3/16/2020	7,612	7,440	36

**ARTHUR WARYCK MSH 5H
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	1/21/2020	67	7,541	5,270	4,604	102,110	8,636	0
2	1/22/2020	76.5	7,640	5,891	4,062	119,560	6,964	0
3	1/23/2020	81.1	7,687	5,410	4,431	321,460	10,819	0
4	1/24/2020	75.8	7,574	5,978	4,743	325,880	8,695	0
5	1/25/2020	80.3	7,947	5,302	4,769	301,160	9,642	0
6	1/26/2020	85.5	8,314	5,673	4,975	321,280	8,512	0
7	1/27/2020	82	7,913	5,270	4,723	320,200	8,932	0
8	1/27/2020	86.2	8,181	8,537	4,824	319,820	7,842	0
9	1/28/2020	86.5	8,141	5,707	4,806	324,480	7,913	0
10	1/29/2020	83.4	7,809	5,561	4,598	319,020	8,508	0
11	1/30/2020	81	8,117	5,776	4,604	319,580	7,987	0
12	1/31/2020	85	8,291	5,666	4,689	318,360	8,006	0
13	2/1/2020	88	8,434	5,848	5,019	315,320	7,799	0
14	2/2/2020	90.2	8,287	5,858	4,958	317,120	7,646	0
15	2/3/2020	86.9	8,290	5,791	4,715	322,780	8,836	0
16	2/5/2020	86.6	8,120	5,837	4,922	315,080	7,723	0
17	2/6/2020	83.3	8,020	5,992	4,951	321,260	8,652	0
18	2/7/2020	87.4	8,092	5,837	4,886	322,900	7,583	0
19	2/8/2020	85	8,161	5,847	5,027	321,160	7,912	0
20	2/10/2020	89.5	8,276	5,654	5,022	319,880	7,491	0
21	2/11/2020	89	8,174	5,584	4,925	321,360	7,719	0
22	2/16/2020	89.8	8,257	5,541	4,788	320,820	7,513	0
23	2/25/2020	94.8	8,272	5,795	4,720	310,520	7,583	0
24	2/26/2020	90.7	8,279	5,867	4,918	239,080	6,884	0
25	2/26/2020	92.3	8,067	5,238	4,827	321,380	7,632	0
26	3/3/2020	87.6	8,439	8,800	5,146	322,840	7,920	0
27	3/3/2020	83.7	8,169	5,836	4,997	302,130	9,133	0
28	3/4/2020	86.2	8,268	5,669	4,582	322,800	7,868	0
29	3/5/2020	93.1	8,087	5,775	4,524	322,380	7,866	0
30	3/5/2020	85.9	8,351	5,751	4,398	319,700	7,810	0
31	3/6/2020	78	8,151	5,846	4,806	322,000	8,132	0
32	3/6/2020	90.1	8,294	5,824	4,618	319,480	7,580	0
33	3/7/2020	85.6	7,942	5,708	4,494	320,060	7,660	0
34	3/7/2020	93.1	7,882	5,419	4,454	317,940	7,589	0
35	3/7/2020	95.3	8,153	5,760	4,396	320,160	7,569	0
36	3/8/2020	94.5	8,094	6,039	4,539	329,120	7,842	0
37	3/9/2020	97	7,905	7,235	4,906	317,080	7,669	0
38	3/9/2020	90.5	7,791	5,234	4,268	160,440	7,526	0
39	3/9/2020	93	8,043	5,567	4,209	315,820	7,492	0
40	3/10/2020	93.7	7,893	5,461	4,429	321,960	6,950	0
41	3/11/2020	90	7,928	5,637	4,190	320,760	7,509	0
42	3/11/2020	92.4	7,727	5,516	4,488	322,820	7,481	0
43	3/11/2020	95.9	7,679	4,919	4,037	323,360	7,596	0
44	3/12/2020	87.5	7,778	5,883	4,415	322,000	7,531	0
45	3/12/2020	97.4	7,939	6,188	4,768	320,360	7,542	0
46	3/13/2020	92	7,549	5,703	4,704	316,140	8,620	0
47	3/13/2020	89.4	7,574	5,783	4,764	317,360	7,332	0
48	3/14/2020	96.6	7,853	5,759	4,332	316,960	7,561	0
49	3/14/2020	95	7,822	6,080	4,772	320,100	7,362	0
50	3/14/2020	98.1	7,797	6,235	4,569	318,340	7,391	0
51	3/15/2020	89	7,396	6,222	4,380	317,060	7,441	0
52	3/15/2020	99	7,670	6,109	4,463	320,320	7,339	0
53	3/16/2020	81.5	6,995	5,629	4,643	322,120	7,348	0
54	3/16/2020	84.5	6,954	6,015	4,676	319,560	7,378	0



Well Name: Arthur Waryck MSH 5H 47051021840000

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	557.00	557.00	
Top of Salt Water	892.00	892.00	NA	NA	
Pittsburgh Coal	1147.00	1147.00	1208.00	1208.00	
Pottsville (ss)	1208.00	1208.00	1672.00	1673.00	
Raven Cliff (ss)	1672.00	1673.00	2089.00	2089.00	
Maxton (ss)	2089.00	2089.00	2249.00	2249.00	
Big Injun (ss)	2249.00	2249.00	2906.00	2904.00	
Berea (siltstone)	2906.00	2904.00	6544.00	6462.00	
Rhinestreet (shale)	6556.00	6461.00	6872.00	6753.00	
Cashaqua (shale)	6872.00	6753.00	7005.00	6863.00	
Middlesex (shale)	7005.00	6863.00	7120.00	6949.00	
Burket (shale)	7120.00	6949.00	7153.00	6969.00	
Tully (ls)	7153.00	6969.00	7193.00	6994.00	
Mahantango (shale)	7193.00	6994.00	7389.00	7082.00	
Marcellus (shale)	7389.00	7082.00	NA	NA	GAS

SOUTHWESTERN ENERGY

Location: Marshall County, WV
 Field: Marshall
 Facility: Arthur Waryck MSH Pad Wellbore: Arthur Waryck MSH 5H PWB

Plot reference wellpath is Arthur Waryck MSH 5H PWP Rev-B 0 Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)
Measured depths are referenced to SDC 46 (KB)
SDC 46 (KB) to Mean Sea Level: 1352.3 feet
Mean Sea Level to Mud line (At Slot: Slot 5H): -1326.3 feet
Coordinates are in feet referenced to Slot

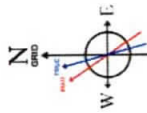


Location Information

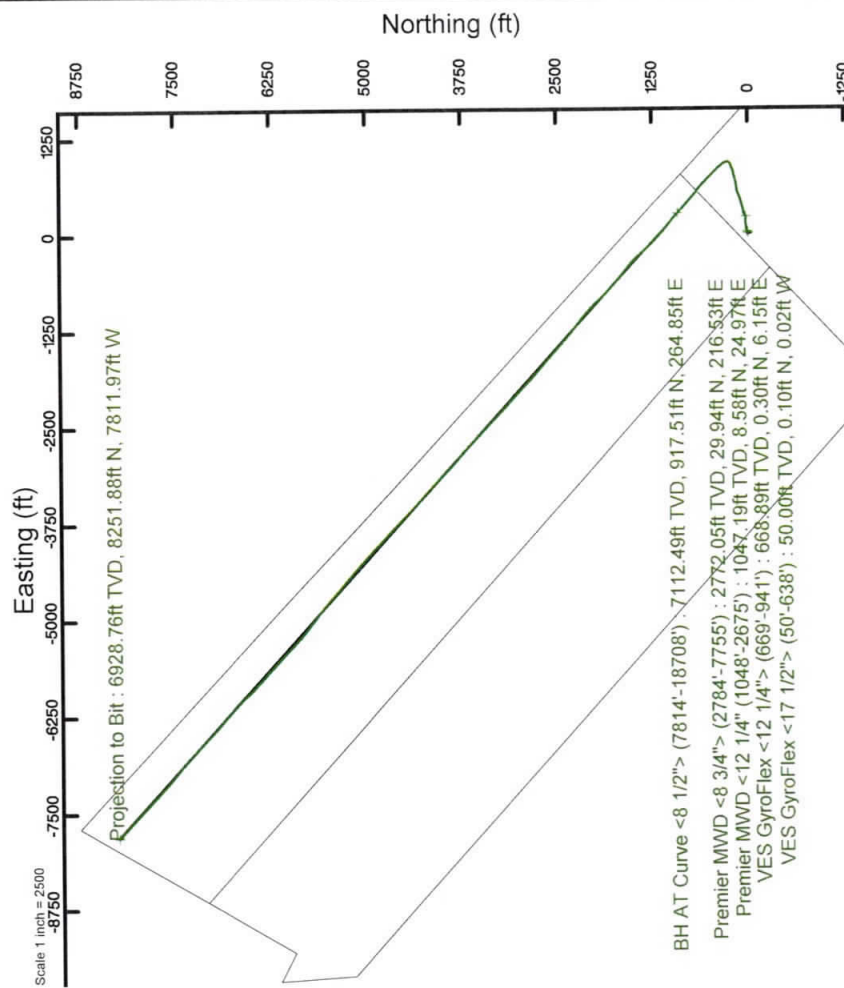
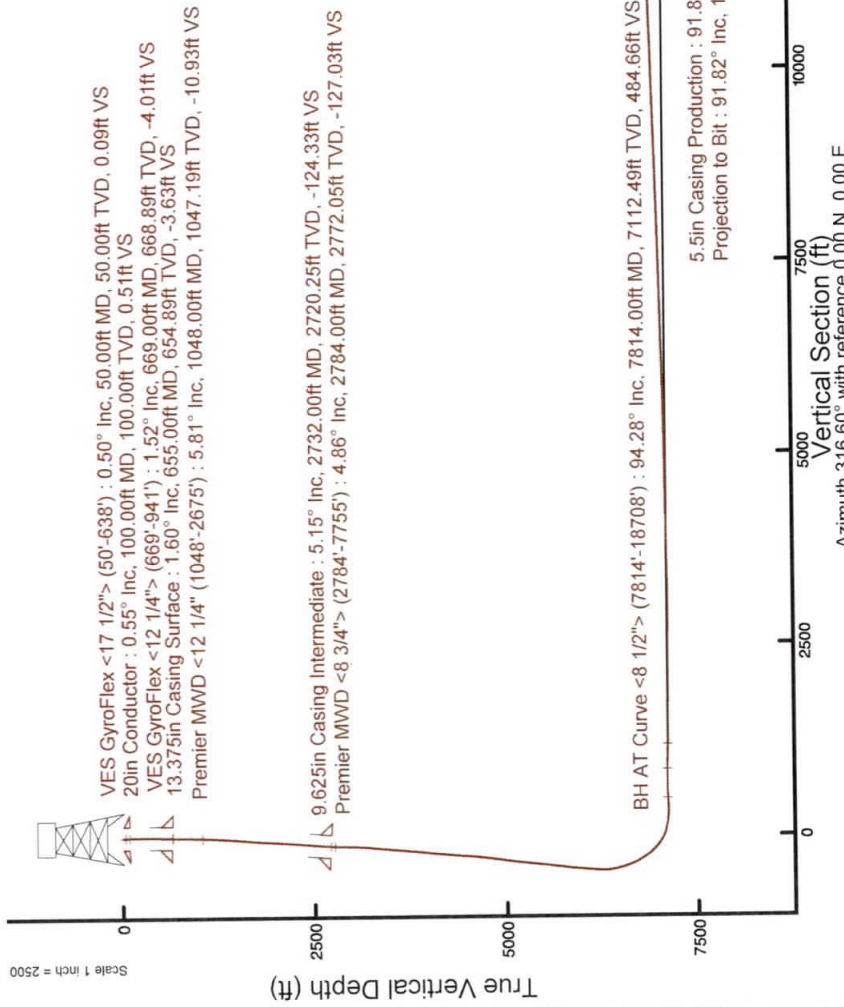
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Arthur Waryck MSH Pad	1732651.719	14426411.271	39°43'26.493"N	80°40'19.078"W
Slot	Local N (ft)	Grid East (US ft)	Latitude	Longitude
Slot 5H	42.94	1732654.090	39°43'26.917"N	80°40'19.046"W
Slot 5H	2.37	1732654.190		26ft
SDC 46 (KB) to Mud line (At Slot: Slot 5H)				-1326.3ft
Mean Sea Level to Mud line (At Slot: Slot 5H)				1352.3ft

Comments

API: 47-051-02184-0000
 BH Job #: 109987934
 Rtg: SDC 46
 Duration: 07/22/2019 - 07/24/2019



User specified Dip: 66.76° Field: 52266 nT
 Magnetic North is 8.04 degrees West of True North
 To correct azimuth from True to Grid subtract 0.21 degrees
 To correct azimuth from Magnetic to Grid subtract 8.25 degrees



5.5in Casing Production : 91.82° Inc, 18733.00ft MD, 6928.76ft TVD, 11363.12ft VS
 Projection to Bit : 91.82° Inc, 18733.00ft MD, 6928.76ft TVD, 11363.12ft VS

Scale 1 inch = 2500
 12500
 10000
 7500
 5000
 2500
 0

Vertical Section (ft)
 Azimuth 316.60° with reference 0.00 N, 0.00 E

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/21/2020
Job End Date:	3/16/2020
State:	West Virginia
County:	Marshall
API Number:	47-051-02184-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Arthur Waryck MSH 5H
Latitude:	39.72414400
Longitude:	-80.67195700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,065
Total Base Water Volume (gal):	17,788,696
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
Fresh Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	87.41807	Density = 8.34
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	2.24280	Density = 8.50

Ingredients	Listed Above	Listed Above	Listed Above						
				Water	7732-18-5	100.00000	0.11420		
FSTI-IC-001	FSTI	Iron Control Agent			Listed Below				
LEGEND(TM) LD-7750W	MultiChem	Scale Control			Listed Below				
MC MX 8-4743	MultiChem	Additive			Listed Below				
FSTI-CI-01	FSTI	Acid Corrosion Inhibitor			Listed Below				
LD-2950	MultiChem	Friction Reducer			Listed Below				
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant			Listed Below				
Sand-Premium White-40/70	Halliburton	Proppant			Listed Below				
FSTI HCl	FSTI	Acid			Listed Below				



					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	10.12084	
				Complex Amine Compound	Proprietary	60.00000	0.06221	
				Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03111	
				Sodium nitrate	7631-99-4	60.00000	0.02347	
				Hydrochloric acid	7647-01-0	36.00000	0.02246	
				Methanol	67-56-1	80.00000	0.00806	
				Ethoxylated alcohols	Proprietary	5.00000	0.00518	
				Sodium molybdate	10102-40-6	5.00000	0.00196	
				Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched	69011-36-5	1.00000	0.00104	
				Adipic acid	124-04-9	1.00000	0.00104	
				Acetic acid	64-19-7	60.00000	0.00095	
				Sodium chloride	7647-14-5	5.00000	0.00068	
				Phosphoric Acid Salt	Proprietary	5.00000	0.00064	
				Citric acid	77-92-9	40.00000	0.00063	
				Fatty acids	Trade Secret	10.00000	0.00004	
				Sodium acetate	127-09-3	0.10000	0.00004	
				Sodium lactate	72-17-3	0.10000	0.00004	
				Monopotassium phosphate	7778-77-0	0.10000	0.00004	
				Yeast extract	8013-01-2	0.10000	0.00004	
				Formaldehyde	50-00-0	0.10000	0.00001	

* 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

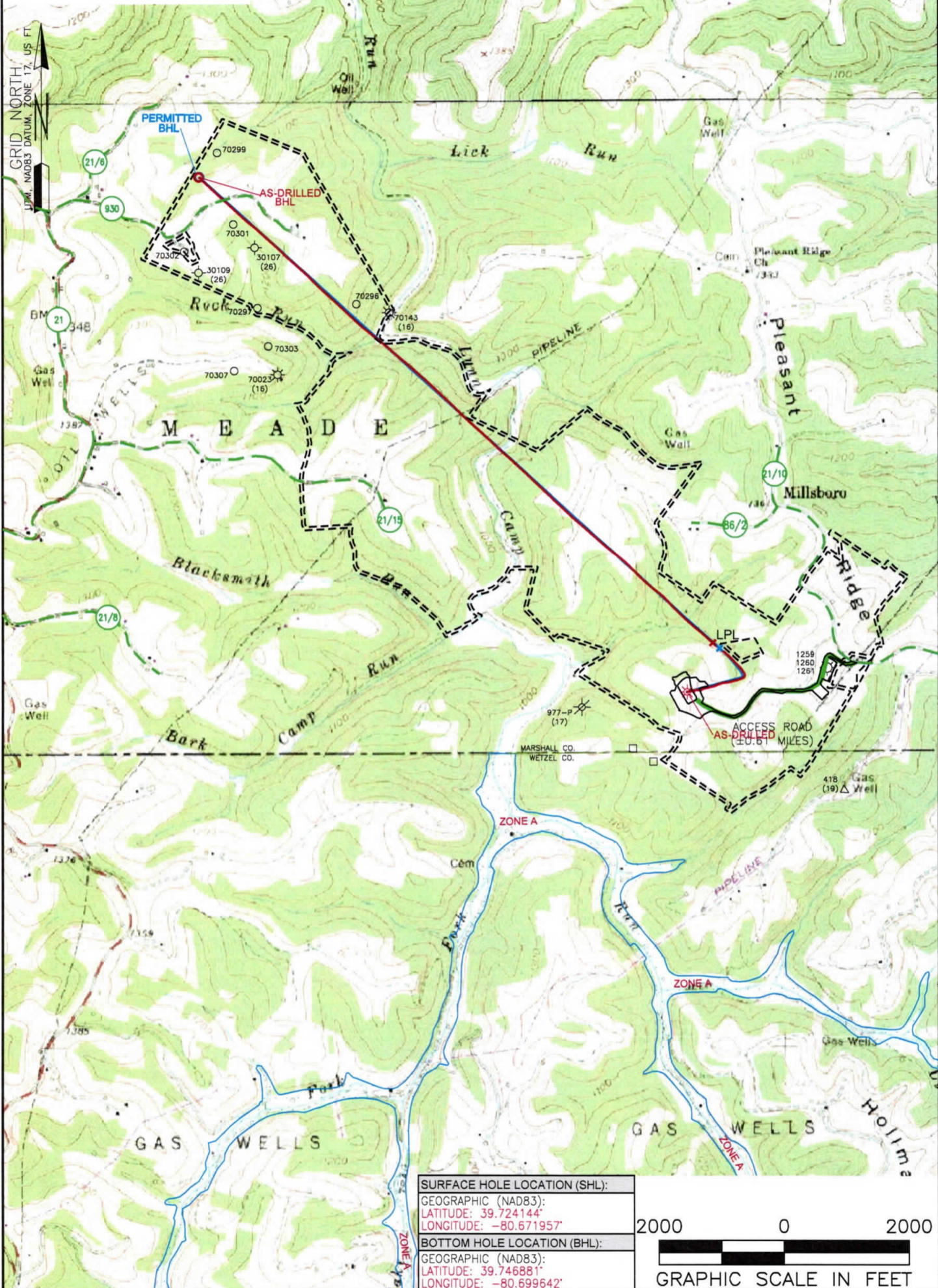
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK (S) / CHARLES W. CAIN & PEARL CAIN (R)	09-21-10
TRACT	SURFACE OWNER	TAX PARCEL
2	JANE E. HAFER (S)	09-21-09
3	APPALACHIAN MIDSTREAM SERVICES, LLC (S)	09-21-05
4	APPALACHIAN MIDSTREAM SERVICES, LLC (S)	09-21-03
5	ROSELAND PROPERTY, LLC (S)	09-21-02
6	WSD PROPERTIES, LLC (S)	09-19-20
7	NILA J. FROHNAPFEL (S)	09-18-14
8	CLEMENT E. FROHNAPFEL & BRENDA L. FROHNAPFEL (S)	09-18-13

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MASON DIXON FARMS, LLC	09-21-11
B	ANORAH C. SCHOSTAG & RYAN U. SCHOSTAG	09-21-10.1
C	ZACHARY M. BLAIR	09-21-13
D	ZACHARY M. BLAIR	09-21-14
E	ZACHARY M. BLAIR	09-21-16
F	ZACHARY M. BLAIR	09-21-04
G	CLEMENT E. FROHNAPFEL & BRENDA FROHNAPFEL	09-18-13.1
H	ROBERT F. VILLERS & APRIL L. VILLERS	09-18-16.4
I	MASON DIXON FARMS, LLC	09-21-22
J	MASON DIXON FARMS, LLC	09-21-9.3
K	MASON DIXON FARMS, LLC	09-29-08
L	MASON DIXON FARMS, LLC	09-29-09
M	MASON DIXON FARMS, LLC	09-29-10
N	STEVE HAFER, ETUX	09-21-9.1
O	MASON DIXON FARMS, LLC	09-29-11

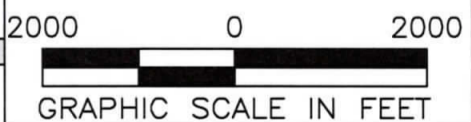
REVISIONS:	COMPANY:		 	
	OPERATOR'S ARTHUR WARYCK MSH		API # 47-051-02184	DATE: 03-24-2020
	WELL #: 5H			DRAWN BY: N. MANO
	DISTRICT: MEADE	COUNTY: MARSHALL	STATE: WV	SCALE: N/A
				DRAWING NO:
				WELL LOCATION PLAT 2

**JACKSON SURVEYING
INC.**
2413 EAST PIKE ST. # 112
Clarksburg, WV 26301
304-623-5851



SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83):
LATITUDE: 39.724144'
LONGITUDE: -80.671957'

BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83):
LATITUDE: 39.746881'
LONGITUDE: -80.699642'



NOTES ON SURVEY

1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- ⊙ EXISTING / PRODUCING WELLHEAD
- ✱ LPL LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH
- ASDRILLED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: ARTHUR WARYCK MSH	WELL # 5H	SERIAL #
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508	COUNTY - CODE MARSHALL - 051	DISTRICT; MEADE	
SURFACE OWNER: A. MICHAEL WARYCK & DEBORAH ELLEN WARYAK	USGS 7 1/2 QUADRANGLE MAP NAME WILEYVILLE, WV	API # 47-051-02184	

Latitude: 39°45'00"(SH)

SURFACE HOLE 1,487'

Latitude: 39°45'00"(BH)

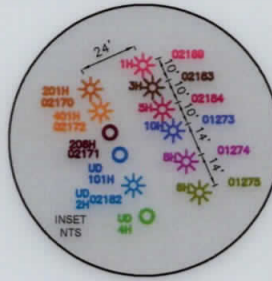
BOTTOM HOLE 9272'

JACKSON SURVEYING INC.

2413 EAST PIKE ST. # 112
Clarksburg, WV 26301
304-623-5851

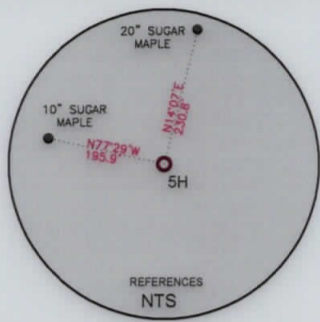
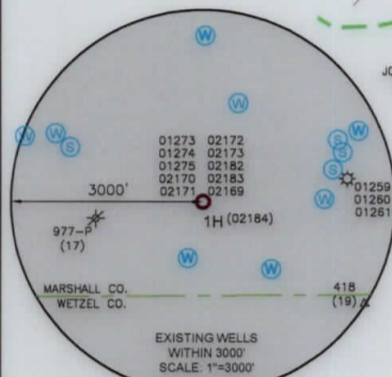
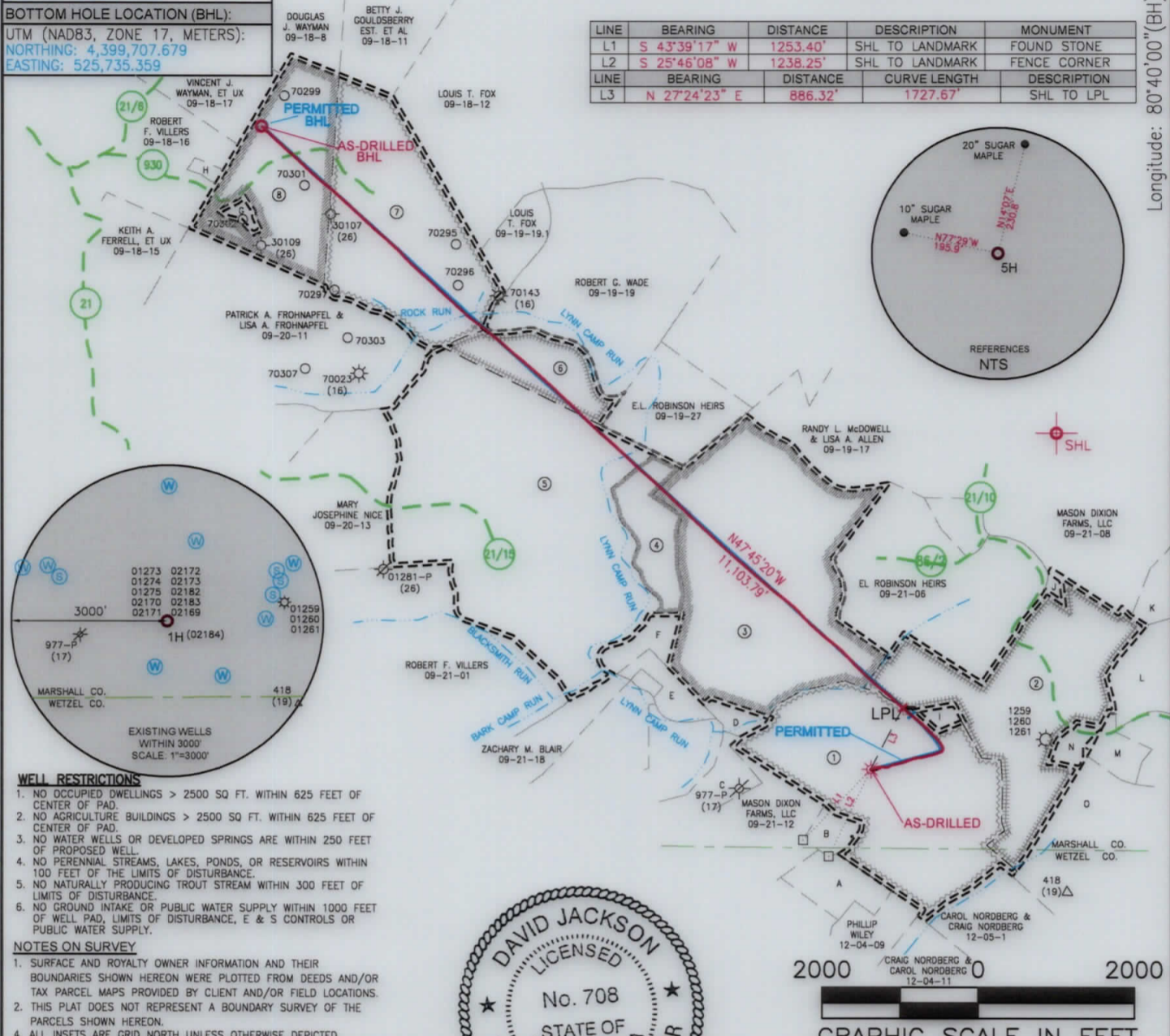
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,192.013 EASTING: 528,114.160
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,405.636 EASTING: 528,271.495
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,399,707.679 EASTING: 525,735.359

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



SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,192.032 EASTING: 528,114.022
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,431.861 EASTING: 528,238.371
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,399,707.210 EASTING: 525,732.928

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 43°39'17" W	1253.40'	SHL TO LANDMARK	FOUND STONE
L2	S 25°46'08" W	1238.25'	SHL TO LANDMARK	FENCE CORNER
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	N 27°24'23" E	886.32'	1727.67'	SHL TO LPL

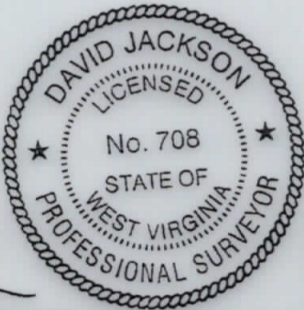


- WELL RESTRICTIONS**
1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
 2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
 3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
 4. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
 6. 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**
1. 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.
 2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 3. 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*



(+) 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)

COMPANY: **SWN** Production Company, LLC

ARTHUR WARYCK MSH

OPERATOR'S WELL #: 5H

API WELL #: 47 051 02184

STATE COUNTY PERMIT

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

WATERSHED: LYNN CAMP RUN OF FISH CREEK (HUC-10) ELEVATION: 1326.3'

DISTRICT: MEADE COUNTY: MARSHALL QUADRANGLE: WILEYVILLE, WV

SURFACE OWNER: A. MICHAEL WARYCK & DEBORAH ELLEN WARYAK ACREAGE: ±125.39

OIL & GAS ROYALTY OWNER: CHARLES W. CAIN & PEARL CAIN ACREAGE: ±125.39

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

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) ASDRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,127 TVD 18,733 TMD

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

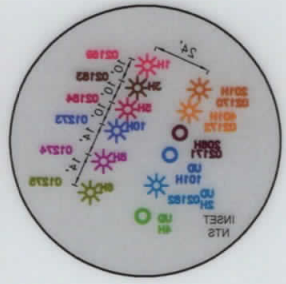
DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	PROPOSED SURFACE HOLE / BOTTOM HOLE	SURVEYED BOUNDARY
EXISTING / PRODUCING WELLHEAD	DRILLING UNIT	LEASE BOUNDARY
LPL	ASDRILLED PATH	PROPOSED PATH
EXISTING WATER WELL		
EXISTING SPRING		
REVISIONS:		DATE: 03-24-2020
		DRAWN BY: N. MANO
		SCALE: 1" = 2000'
		DRAWING NO:
		WELL LOCATION PLAT

JACKSON SURVEYING INC.
 2413 EAST PIKE ST. # 112
 Clarkspurg, Wv 26301
 304-623-6851

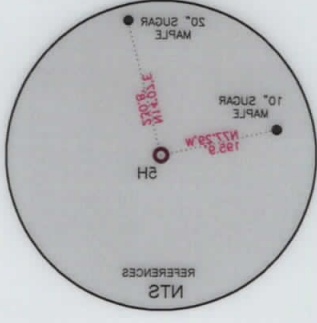
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): EASTING: 528,114,180 NORTHING: 4,397,192,013
LANDING POINT (LP):
UTM (NAD83, ZONE 17, METERS): EASTING: 528,217,492 NORTHING: 4,397,402,838
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): EASTING: 525,732,358 NORTHING: 4,399,707,879

GRID NORTH
 74 20 21
 17 20 21
 17 20 21



SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): EASTING: 528,114,022 NORTHING: 4,397,192,022
LANDING POINT LOCATION (LP):
UTM (NAD83, ZONE 17, METERS): EASTING: 528,238,371 NORTHING: 4,397,431,861
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): EASTING: 525,732,928 NORTHING: 4,399,707,210

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	2 43.39.17" W	1253.40'	SHL TO LANDMARK	FOUND STONE
L2	2 52.48.08" W	1238.25'	SHL TO LANDMARK	FENCE CORNER
L3	N 27.24.23" E	886.32'	CURVE LENGTH	DESCRIPTION
			SHL TO LP	



Longitude: 80.40.00.00 (BH) BOTTOM HOLE 9272'
 Longitude: 80.40.00.00 (SH) SURFACE HOLE 1487'



- WELL RESTRICTIONS**
- NO OCCUPIED DWELLINGS < 2500 FT. WITHIN 825 FEET OF CENTER OF PAD.
 - NO AGRICULTURE BUILDINGS < 2500 FT. WITHIN 825 FEET OF CENTER OF PAD.
 - NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
 - NO PERMANENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 - NO NATURALLY PRODUCING STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
 - NO GROUND TAKE 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 FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- ALL INSERTS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.
- 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.





SWN Production Company, LLC
 COMPANY: SWN
 GRAPHIC SCALE IN FEET


WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	DESIGNATED AGENT: BRITTANY WOODY ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508
WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" 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"/>	WATERSHED: LINN CAMP RUN OF FISH CREEK (HUC-10) DISTRICT: MEADE COUNTY: MARSHALL
SURFACE OWNER: A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK OIL & GAS ROYALTY OWNER: CHARLES W. CAIN & PEARL CAIN	ACREAGE: ±125.39
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE (SPECIFY) AS DRILLED <input checked="" type="checkbox"/>	PERFORATE NEW FORMATION <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> REDRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/>
ESTIMATED DEPTH: 7,127 TVD 18,733 TMD	REVISIONS:
WELL LOCATION PLAT	REVISIONS:
DRAWING NO.:	REVISIONS:
SCALE: 1" = 200'	REVISIONS:
DRAWN BY: N. MANO	REVISIONS:
DATE: 03-24-2020	REVISIONS:
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	REVISIONS:
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200	REVISIONS:
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	REVISIONS:



WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK (S) / CHARLES W. CAIN & PEARL CAIN (R)	09-21-10
TRACT	SURFACE OWNER	TAX PARCEL
2	JANE E. HAFER (S)	09-21-09
3	APPALACHIAN MIDSTREAM SERVICES, LLC (S)	09-21-05
4	APPALACHIAN MIDSTREAM SERVICES, LLC (S)	09-21-03
5	ROSELAND PROPERTY, LLC (S)	09-21-02
6	WSD PROPERTIES, LLC (S)	09-19-20
7	NILA J. FROHNAPFEL (S)	09-18-14
8	CLEMENT E. FROHNAPFEL & BRENDA L. FROHNAPFEL (S)	09-18-13

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	MASON DIXON FARMS, LLC	09-21-11
B	ANORAH C. SCHOSTAG & RYAN U. SCHOSTAG	09-21-10.1
C	ZACHARY M. BLAIR	09-21-13
D	ZACHARY M. BLAIR	09-21-14
E	ZACHARY M. BLAIR	09-21-16
F	ZACHARY M. BLAIR	09-21-04
G	CLEMENT E. FROHNAPFEL & BRENDA FROHNAPFEL	09-18-13.1
H	ROBERT F. VILLERS & APRIL L. VILLERS	09-18-16.4
I	MASON DIXON FARMS, LLC	09-21-22
J	MASON DIXON FARMS, LLC	09-21-9.3
K	MASON DIXON FARMS, LLC	09-29-08
L	MASON DIXON FARMS, LLC	09-29-09
M	MASON DIXON FARMS, LLC	09-29-10
N	STEVE HAFER, ETUX	09-21-9.1
O	MASON DIXON FARMS, LLC	09-29-11

REVISIONS:	COMPANY:		 	
	OPERATOR'S	ARTHUR WARYCK MSH	API #	47-051-02184
	WELL #:	5H	DATE:	03-24-2020
	DISTRICT:	MEADE	COUNTY:	MARSHALL
			STATE:	WV
			DRAWN BY:	N. MANO
			SCALE:	N/A
			DRAWING NO:	
			WELL LOCATION	PLAT 2

WELL LOCATION PLAT 2		DRAWING NO:	
SCALE: N/A		STATE:	WV
DRAWN BY: N. MANO		COUNTY:	MARSHALL
DATE: 03-24-2020		WELL #:	2H
API # 47-021-02184		OPERATOR'S:	ARTHUR WARYCK MSH
		COMPANY:	SWN Production Company, LLC
		REVISIONS:	

TRACT	SURFACE OWNER	TAX PARCEL
A	MASON DIXON FARMS, LLC	09-21-11
B	ANORAH C. SCHOSTAG & RYAN U. SCHOSTAG	09-21-10.1
C	ZACHARY M. BLAIR	09-21-13
D	ZACHARY M. BLAIR	09-21-14
E	ZACHARY M. BLAIR	09-21-16
F	ZACHARY M. BLAIR	09-21-04
G	CLEMENT E. FROHNAPFEL & BRENDA FROHNAPFEL	09-18-13.1
H	ROBERT F. VILLERS & APRIL L. VILLERS	09-18-16.4
I	MASON DIXON FARMS, LLC	09-21-22
J	MASON DIXON FARMS, LLC	09-21-23
K	MASON DIXON FARMS, LLC	09-29-08
L	MASON DIXON FARMS, LLC	09-29-09
M	MASON DIXON FARMS, LLC	09-29-10
N	STEVE HAFER, ETUX	09-21-21
O	MASON DIXON FARMS, LLC	09-29-11

TRACT	SURFACE OWNER	TAX PARCEL
1	A. MICHAEL WARYCK & DEBORAH ELLEN WARYCK (2) \ CHARLES W. CAIN & PEARL CAIN (R)	09-21-10
2	JANE E. HAFER (2)	09-21-09
3	APPALACHIAN MIDSTREAM SERVICES, LLC (2)	09-21-05
4	APPALACHIAN MIDSTREAM SERVICES, LLC (2)	09-21-03
5	ROSELAND PROPERTY, LLC (2)	09-21-02
6	WSD PROPERTIES, LLC (2)	09-19-20
7	NILA J. FROHNAPFEL (2)	09-18-14
8	CLEMENT E. FROHNAPFEL & BRENDA L. FROHNAPFEL (2)	09-18-13

WELL BORE TABLE FOR SURFACE \ ROYALTY OWNERS