

WR-35
Rev. 8/23/13

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

API 47-009-00249 County BROOKE District BUFFALO
Quad BETHANY Pad Name WORTHLEY BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name KIMBERLY CARMAN WORTHLEY Well Number WORTHLEY BRK 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 4,451,743.57 Easting 537,867.87
Landing Point of Curve Northing 4,451,755.54 Easting 538,110.27
Bottom Hole Northing 4,448,198.16 Easting 539,674.05

Elevation (ft) 1156.51 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 05/15/2018 Date drilling commenced 05/17/2018 Date drilling ceased 07/19/2018
Date completion activities began 08/27/2018 Date completion activities ceased 10/21/2018
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 183 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 800 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 329 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed

C. J. [Signature] 1-17-19

Reviewed by:
[Signature] 1-17-19

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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	36	30	126	NEW	PLS2/234.29#		Y
Surface	26	20	380	NEW	J-55/94#	249.7', 291.7'	Y, 50 BBLS
Coal	SEE SURFACE						
Intermediate 1	17.50	13.375	596	NEW	J-55/54.50#		Y, 21 BBLS
Intermediate 2	12.25	9.625	1734	NEW	J-55/36#		Y, 35 BBLS
Intermediate 3							
Production	8.75/8.50	5.5	19364	NEW	HCP-110/20#		Y, 10 BBLS
Tubing		2.375	6379	NEW	L-80/4.7#		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	796	15.60	1.19	947.24	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	584	15.60	1.20	700.8	SURFACE	8
Intermediate 2	CLASS A	584	15.60	1.20	700.8	SURFACE	8
Intermediate 3							
Production	CLASS A	3,644	15.60	1.19	4,336.36	SURFACE	24
Tubing							

Drillers TD (ft) 19,364 Loggers TD (ft) 19,364
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,227

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 _____

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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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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>MARCELLUS</u>	<u>5,995'</u>	<u>TVD</u>	<u>6,395'</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2608 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 1603 mcfpd Oil 168 bpd NGL _____ bpd Water 504 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)
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		

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 US WELL SERVICES
Address 533 INDUSTRIAL PARK DRIVE City JANE LEW State WV Zip 26378

Please insert additional pages as applicable.

Completed by BOBBY WILLIS Telephone 832-796-2884
Signature [Signature] Title REGULATORY ANALYST Date 1/11/19

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

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/27/2018
Job End Date:	10/9/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00249-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	WORTHLEY BRK 10H
Latitude:	40.21525214
Longitude:	-80.55497151
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,135
Total Base Water Volume (gal):	27,156,030
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
Water	Southwestern Energy	Carrier/Base Fluid	Water	7732-18-5	100.00000	83.06620	
Sand	J.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	16.13863	
HCL Acid (12.6%-17.5%)	J.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.56300	
			Hydrogen Chloride	7647-01-0	17.50000	0.13090	
WFRA-2000	J.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	60.00000	0.04421	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.02210	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01813	
BIOC11139A	Malco Champion	Anti-Bacterial Agent	Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00690	
			Glutaraldehyde	111-30-8	10.00000	0.00230	
			Ethanol	64-17-5	5.00000	0.00090	

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SCAL16486A	Nalco Champion	Scale Inhibitor					
			Ethylene Glycol	107-21-1	30.00000	0.00166	
			Amine Triphosphate	Proprietary	30.00000	0.00149	
FSTI-IC-001	FSTI	Iron Control Additive					
			Acetic acid	64-19-7	60.00000	0.00158	
			Citric Acid	77-92-9	40.00000	0.00121	
Econo-CI200	Economy Polymers & Chemicals	Acid Corrosion Inhibitors					
			Methanol	67-56-1	80.00000	0.00064	
			Fatty acid	Proprietary	10.00000	0.00011	
LT FLUSH SYSTEM I	U.S. Well Services, LLC	Other					
			Mineral oil, petroleum distillates, hardtreated light naphthenic	64742-53-6	100.00000	0.00006	

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.

* 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)

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**WORTHLEY BRK 10H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	8/18/2018	19,255	19,162	36
2	8/28/2018	19,127	19,020	42
3	8/28/2018	18,987	18,880	42
4	8/29/2018	18,847	18,740	42
5	8/31/2018	18,707	18,595	84
6	9/1/2018	18,567	18,460	42
7	9/2/2018	18,427	18,320	42
8	9/3/2018	18,287	18,180	42
9	9/3/2018	18,147	18,040	42
10	9/4/2018	18,007	17,900	42
11	9/5/2018	17,867	17,760	42
12	1/1/2020	17,727	17,620	42
13	9/8/2018	17,587	17,480	42
14	9/8/2018	17,447	17,340	42
15	9/9/2018	17,307	17,197	42
16	9/9/2018	17,167	17,060	42
17	9/10/2018	17,027	16,920	42
18	9/10/2018	16,887	16,780	42
19	9/11/2018	16,747	16,640	42
20	9/11/2018	16,607	16,500	42
21	9/11/2018	16,467	16,360	42
22	9/12/2018	16,327	16,220	42
23	9/12/2018	16,187	16,080	42
24	9/13/2018	16,047	15,940	42
25	9/13/2018	15,907	15,800	42
26	9/14/2018	15,767	15,660	39
27	9/14/2018	15,627	15,520	42
28	9/14/2018	15,487	15,380	42
29	9/16/2018	15,347	15,240	42
30	9/16/2018	15,207	15,100	42
31	9/17/2018	15,067	14,965	42
32	9/17/2018	14,927	14,820	42
33	9/18/2018	14,787	14,680	42
34	9/18/2018	14,647	14,545	42
35	9/20/2018	14,507	14,400	42
36	9/21/2018	14,367	14,260	42
37	9/21/2018	14,227	14,120	42
38	9/21/2018	14,087	13,980	42
39	9/21/2018	13,947	13,840	42
40	9/22/2018	13,807	13,696	42
41	9/22/2018	13,667	13,560	42
42	9/22/2018	13,527	13,420	42
43	9/24/2018	13,387	13,280	42

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STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	9/25/2018	13,247	13,140	42
45	9/25/2018	13,107	13,000	42
46	9/25/2018	12,967	12,860	42
47	9/25/2018	12,827	12,720	42
48	9/26/2018	12,687	12,580	42
49	9/26/2018	12,547	12,440	42
50	9/26/2018	12,407	12,300	42
51	9/27/2018	12,267	12,160	42
52	9/27/2018	12,127	12,020	42
53	9/27/2018	11,987	11,880	42
54	9/27/2018	11,842	11,740	42
55	1/1/2020	11,707	11,600	42
56	1/1/2020	11,567	11,460	42
57	9/28/2018	11,427	11,320	42
58	9/29/2018	11,287	11,180	42
59	9/29/2018	11,147	11,040	42
60	9/29/2018	11,007	10,900	42
61	9/29/2018	10,867	10,760	42
62	9/30/2018	10,722	10,620	42
63	9/30/2018	10,587	10,480	42
64	9/30/2018	10,447	10,340	42
65	10/1/2018	10,307	10,200	42

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**WORTHLEY BRK 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/Other
1	8/28/2018	84.4	8,118	6,944	3,873	280,530	6,277	0
2	8/28/2018	85	7,982	6,493	4,183	491,660	9,017	0
3	8/29/2018	81.2	8,269	6,306	4,241	496,380	8,827	0
4	8/30/2018	72.1	8,222	6,147	4,718	321,770	9,903	0
5	8/31/2018	52	8,275	6,383	4,483	14,000	8,979	0
6	9/2/2018	76.5	7,771	6,051	4,041	489,240	8,754	0
7	9/2/2018	82	7,678	5,493	4,497	493,280	8,219	0
8	9/3/2018	80.7	7,562	5,877	4,520	487,080	8,376	0
9	9/4/2018	84.2	8,134	5,669	4,513	498,450	8,648	0
10	9/4/2018	80.5	7,863	5,234	4,765	490,020	8,291	0
11	9/7/2018	77.6	7,968	5,962	4,772	500,260	8,163	0
12	9/8/2018	73.7	7,894	5,887	4,821	510,560	8,322	0
13	9/8/2018	74.4	7,875	6,160	4,762	501,180	7,852	0
14	9/9/2018	78.2	7,831	5,893	4,822	496,200	7,979	0
15	9/9/2018	74.1	8,081	5,722	4,223	501,500	9,078	0
16	9/9/2018	79.5	7,984	5,793	4,976	231,400	8,016	0
17	9/10/2018	74.2	7,743	5,912	4,478	428,260	9,902	0
18	9/10/2018	78.1	7,511	5,675	4,410	506,360	7,591	0
19	9/11/2018	78.2	7,321	5,607	4,836	503,240	7,697	0
20	9/11/2018	66.3	8,452	6,543	4,589	333,940	8,416	0
21	9/12/2018	76.9	7,581	5,806	4,477	497,480	7,186	0
22	9/12/2018	73.7	7,205	5,974	4,854	497,140	8,540	0
23	9/13/2018	79.9	7,796	5,673	4,529	501,360	7,336	0
24	9/13/2018	85.2	7,847	6,266	4,742	502,620	7,780	0
25	9/13/2018	86.1	7,972	5,330	4,481	506,780	7,619	0
26	9/14/2018	81.1	7,858	5,795	5,057	496,580	7,739	0
27	9/14/2018	83	7,619	5,390	4,463	501,160	7,384	0
28	9/15/2018	77.5	7,950	5,572	4,427	503,260	7,130	0
29	9/16/2018	81.2	7,704	5,968	4,671	499,760	7,281	0
30	9/16/2018	78.9	8,074	6,128	4,645	461,740	6,761	0
31	9/17/2018	85.1	7,442	5,563	4,464	500,500	7,178	0
32	9/18/2018	80.9	7,485	5,601	4,787	505,500	11,313	0
33	9/18/2018	83.7	7,839	6,151	4,679	497,080	7,775	0
34	9/20/2018	85.1	7,787	5,796	4,607	498,160	7,730	0
35	9/20/2018	82.8	8,024	5,494	4,410	503,360	7,379	0
36	9/21/2018	84	8,267	6,051	4,456	461,480	6,058	0
37	9/21/2018	87.6	8,224	5,455	4,168	485,640	6,362	0
38	9/21/2018	89.4	8,081	5,011	4,265	492,840	6,592	0
39	9/21/2018	87.6	7,931	5,845	4,588	488,860	7,227	0
40	9/22/2018	85.7	7,869	5,704	4,659	489,880	7,046	0
41	9/22/2018	85.1	8,263	5,508	4,542	499,160	7,077	0
42	9/24/2018	83.2	8,036	5,477	4,570	497,840	7,431	0
43	9/24/2018	88.8	8,022	5,697	4,506	458,660	6,416	0
44	9/25/2018	88.1	7,931	5,648	4,354	525,340	6,854	0
45	9/25/2018	87.8	7,444	5,327	5,028	485,800	6,174	0
46	9/25/2018	84.6	7,915	5,240	4,697	493,640	6,147	0
47	9/25/2018	88	7,976	5,548	5,167	489,200	6,608	0
48	9/26/2018	88.5	7,512	5,714	4,951	518,820	6,450	0
49	9/26/2018	87.3	7,856	5,443	4,799	488,120	6,901	0
50	9/26/2018	88.6	7,837	5,866	4,887	477,240	6,557	0
51	9/27/2018	88.2	7,919	5,762	4,762	479,980	6,863	0
52	9/27/2018	86.9	7,887	5,558	4,663	497,020	6,250	0
53	9/27/2018	86.8	7,321	5,610	4,829	491,800	6,064	0

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**WORTHLEY BRK 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	9/28/2018	87.1	7,579	5,492	4,492	490,860	7,683	0
55	9/28/2018	90.2	7,265	5,219	4,843	506,790	8,738	0
56	9/28/2018	87.3	7,323	5,287	4,919	499,580	6,444	0
57	9/29/2018	87.9	7,897	4,994	4,663	497,120	6,544	0
58	9/29/2018	88	7,289	5,147	4,851	524,080	6,050	0
59	9/29/2018	86.3	7,923	5,621	5,333	494,360	5,792	0
60	9/29/2018	87.6	7,397	5,618	4,974	500,320	5,812	0
61	9/29/2018	89.1	7,251	5,315	4,523	497,380	8,207	0
62	9/30/2018	88.5	7,499	5,899	4,817	489,080	5,913	0
63	9/30/2018	82.1	7,364	4,927	4,614	496,300	6,931	0
64	9/30/2018	89.3	7,095	4,438	4,657	492,620	5,933	0
65	10/1/2018	86.8	7,492	5,120	4,472	434,660	5,068	0

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Well Name: **Worthley BRK 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	183.00	183.00	
Top of Salt Water	800.00	800.00	NA	NA	
Pittsburgh Coal	329.00	329.00	482.00	482.00	
Pottsville (ss)	482.00	482.00	784.00	784.00	
Raven Cliff (ss)	784.00	784.00	1182.00	1182.00	
Maxton (ss)	1182.00	1182.00	1510.00	1510.00	
Big Injun (ss)	1510.00	1510.00	5431.00	5430.00	
Rhinestreet (shale)	5431.00	5430.00	5698.00	5682.00	
Cashaqua (shale)	5698.00	5682.00	5762.00	5737.00	
Middlesex (shale)	5762.00	5737.00	5962.00	5813.00	
Burket (shale)	5962.00	5813.00	5983.00	5828.00	
Tully (ls)	5983.00	5828.00	6073.00	5885.00	
Mahantango (shale)	6073.00	5885.00	6395.00	5995.00	
Marcellus (shale)	6395.00	5995.00	NA	NA	Gas

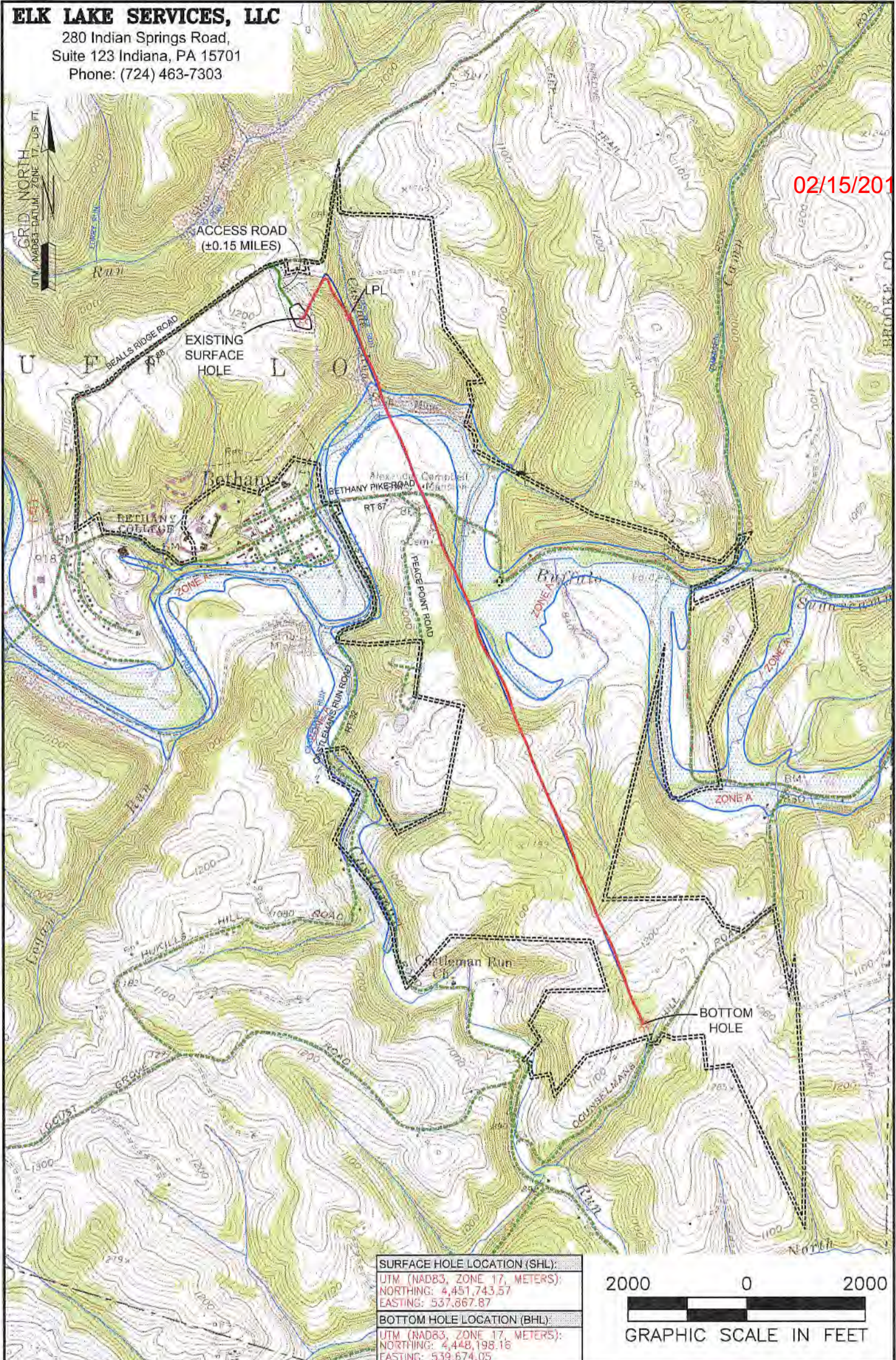
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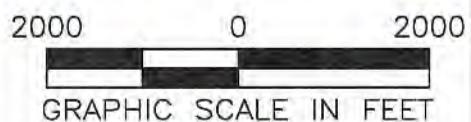
ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

02/15/2019



SURFACE HOLE LOCATION (SHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,451,743.57
	EASTING: 537,867.87
BOTTOM HOLE LOCATION (BHL):	
UTM (NAD83, ZONE 17, METERS):	NORTHING: 4,448,198.18
	EASTING: 539,874.05



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.

LEGEND:	ACCESS ROAD
PROPOSED SURFACE HOLE / BOTTOM HOLE	PUBLIC ROAD
EXISTING / PRODUCING WELLHEAD	ACCESS ROAD TO PREV. SITE
LANDING POINT LOCATION	LEASE BOUNDARY
FLOOD PLAIN	EXISTING PATH
	PROPOSED PATH

WELL OPERATOR:
SWN PRODUCTION COMPANY, LLC
ADDRESS:
1300 FORT PIERPONT DR STE 201, MORGANTOWN, WV 26508
SURFACE OWNER:
KIMBERLY CARMAN WORTHLEY

WELL (FARM) NAME:	WELL #	SERIAL #
WORTHLEY BRK	10H	XXXX
COUNTY	DISTRICT:	
BROOKE	BUFFALO	
USGS 7 1/2 QUADRANGLE MAP NAME		
BETHANY, WV		

Latitude: 40°15'00" SURFACE HOLE 3716'

Latitude: 40°12'30" BOTTOM HOLE 9490'

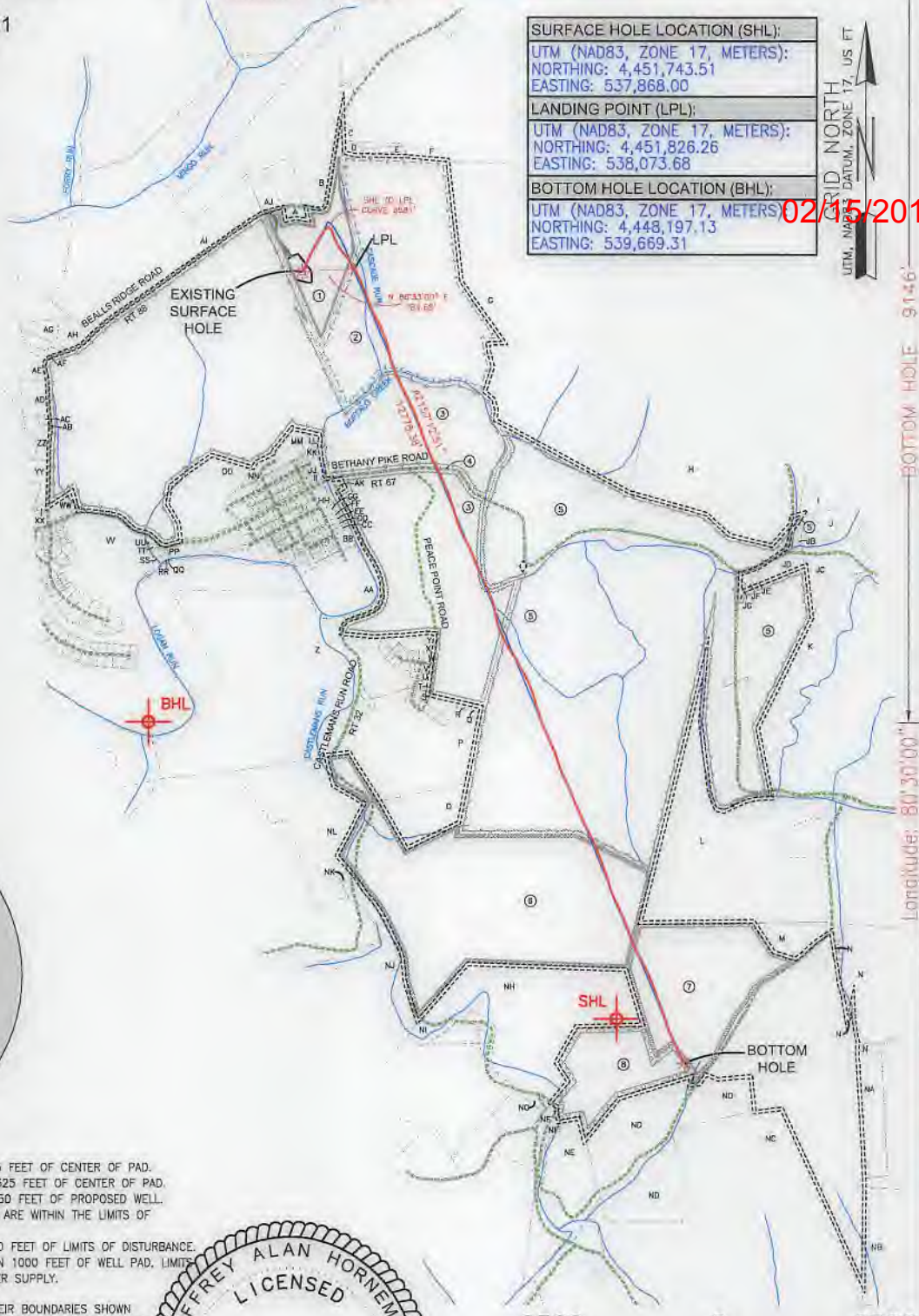
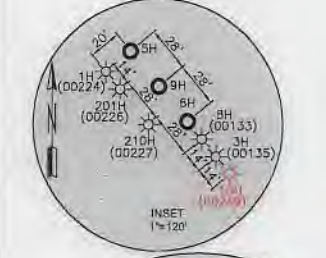
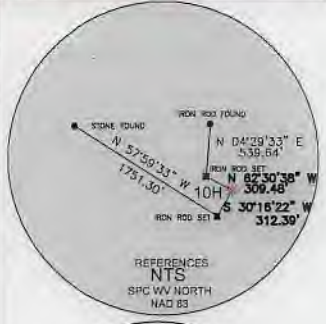
ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,743.57 EASTING: 537,867.87
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,755.54 EASTING: 538,110.27
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,448,198.16 EASTING: 539,674.05

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,743.51 EASTING: 537,868.00
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,451,826.26 EASTING: 538,073.68
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,448,197.13 EASTING: 539,669.31

02/05/2019



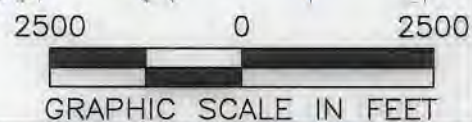
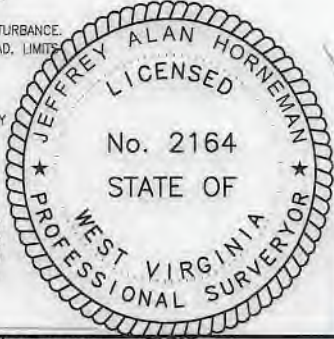
Longitude: 80°30'00" Longitude: 80°32'30" SURFACE HOLE 12659' BOTTOM HOLE 9146'

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. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 850 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN 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 CONTRDLS 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 PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.
 4. WELLBORE PARCELS ARE DESIGNATED WITH UNIQUE LINE TYPES.
- 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.



COMPANY: **SWN** Production Company, LLC **SWN** 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 SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

WORTHLEY BRK
 OPERATOR'S WELL #: 10H
 API WELL #: 47 009 00249
 STATE COUNTY PERMIT

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1156.51'
 DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY
 SURFACE OWNER: KIMBERLY CARMAN WORTHLEY ACREAGE: ±40.00
 OIL & GAS ROYALTY OWNER: COLONIAL CORP, A NEVADA CORP, & KIMBERLY J. CARMAN AKA KIMBERLY J. WORTHLEY, A MARRIED WOMAN DEALING IN HER SASP ACREAGE: ±40.00

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: 6,241' TVD 19,364' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY
 ADDRESS: 1300 FORT PIERPONT DR STE 201 ADDRESS: 1300 FORT PIERPONT DR STE 201
 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	— SURVEYED BOUNDARY	REVISIONS:	DATE: 01-09-2019
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— DRILLING UNIT		FILE NO: 17-02
★ EXISTING / PRODUCING WELLHEAD	— LEASE BOUNDARY		DRAWN BY: JMB
LPL★ LANDING POINT LOCATION	— EXISTING PATH		SCALE: 1" = 2500'
⊙ EXISTING WATER WELL	— PROPOSED PATH		DRAWING NO: 1
⊙ EXISTING SPRING			WELL LOCATION PLAT 1



ELK LAKE SERVICES, LLC

280 Indian Springs Road,
Suite 123 Indiana, PA 15701
Phone: (724) 463-7303

02/15/2019

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	KIMBERLY CARMAN WORTHLEY (S) COLONIAL CORP, A NEVADA CORP, & KIMBERLY J. CARMAN AKA KIMBERLY J. WORTHLEY, A MARRIED WOMAN DEALING IN HER SASP (R)	3-B38-27	40.00
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	WORTHLEY KIMBERLY CARMEN	3-B38-25	136.0000
3	BETHANY COLLEGE	3-B38-31	822.2600
4	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS	BETHANY PIKE	5.2600
5	VALENTINE GENE CHARLES TRUST OF 11/26/86	3-B43-28	478.4400
6	WV ST OF DEPT OF COMM DIV OF NAT RE WILDLIFE RES SEC	3-B43-62	178.500
7	COUNSELMAN CLIFFORD E	3-B49-02	80.100
8	HOGAN ANDREW P	3-B48-34	126.200

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	CARRINGTON MORTGAGE SERVICES,LLC.	3-B38-26
B	HENSLER, JEFFREY W	3-B38-27
C	OWEN, MARK WEAVER&KREUTZ, VIRGINIA BEALL	3-B38-19
D	ELSON, LANCE M	3-B38-21
E	VANCAMP, NOLTE&GLADYS AS TRUS OF 11/4/02 VANCAMP FAMILY TR	3-B38-23
F	OWEN, MARK WEAVER & KREUTZ, VIRGINIA BEALL	3-B38-19
G	OWEN, MARK W 1/2 INT: KRUETZ, VIRGINIA BEALL 1/2 INT:	3-B38-24
H	TREDWAY, RAYMOND L & LINDSEY G	3-B39-11
I	HAMILTON, VICKI G & SHAWN P	3-B44-01
J	GREATHOUSE, JAMES R & LINDA R	3-B39-12
JB	WEEKLEY, DONNA M	3-B44-02
JC	MAIN, MILDRED	3-B44-06
JD	NEEL, CURTIS LEE & LOUANN L	3-B44-07
JE	JACKSON, JANICE F (LE-PHILLIS SWAIN)	3-B44-08
JF	JACKSON, JANICE F (LE-PHILLIS SWAIN)	3-B44-09
JG	JACKSON, JANICE F (LE-PHILLIS A SWAIN)	3-B44-10
K	FORNEY & SONS HOLDING CO LLC	3-B44-05
L	ST OF WV DEPT OF COMM DIV OF NAT RE WILDLIFE RES SEC	3-B44-14
M	COUNSELMAN, CLIFFORD	3-B44-13
N	MCKEEN W JAMES & PATRICIA (SURV)	3-B49-03
NA	MAHAN, MICHAEL A & PAULA;PARR, ANTHONY	3-B49-04
NB	RANCH SPORTSMANS CLUB INC	3-B49-10
NC	W VA DEPT OF NATURAL RESOURCES	3-B49-07
ND	WEST VIRGINIA BUREAU OF COMMERCE DIV OF NATURAL RESOUR	3-B49-01
NE	MCNICHOLAS JOHN WALTER III	3-B48-36
NF	STATE ROAD COMMISSION	3-B48-42
NG	TABLE ROCK REALTY LLC	3-B48-30
NH	HOGAN ANDREW P	3-B48-34
NI	SMITH DEAN S	3-B48-32
NJ	CHAMBERS ROBERT M & CHARLOTTE A	3-B48-24
NK	PUSKARICH TRACY T	3-B43-59
NL	FONNER MARY LOU	3-B43-58
O	DONINI SAMUEL & MELANIE	3-B43-57
P	VALENTINE GENE C TRUST	3-B43-49.3
Q	COLLINS MARY E	3-B43-49
R	COLLINS RANDY I & VANESSA J	3-B43-49.2
S	VALENTINE GENE C TRUST	3-B43-48
T	VALENTINE GENE C TRUST	3-B43-51
U	VALENTINE GENE C TRUST	3-B43-53
V	VALENTINE GENE CHARLES	3-B43-55
W	VALENTINE GENE C	3-B43-35.6
X	VALENTINE GENE C TRUST	3-B43-35.8
Y	VALENTINE GENE	3-B43-34
Z	VALENTINE GENE C TRUST	3-B43-33
AA	BETHANY CITY OF	2-B43-15
BB	SCHWERTFEGER RUSSELL ETAL (LE- ALVAH RUSSELL&LOIS SCHWERTFER	2-B43C-120
CC	KEMP JAMES E JR & GODINA LAURA	2-B43C-121
DD	KEMP LAURA R(LIFE ESTATE-RAYMOND GODINA)	2-B43C-122
EE	CHAMBERS ROBERT M & DAVID L	2-B43C-123
FF	SCHWERTFEGER CHARLES E & NANCY	2-B43C-124
GG	MENZ HARALD J A & KIMBERLY J LAWLESS	2-B43C-125
HH	BETHANY CHURCH OF GOD	2-B43C-71
II	KEEGAN JAMES & KATHLEEN	2-B43C-37
JJ	CHAMBERS BARBARA L	2-B43C-36
KK	LARSON GARY E & VAUGHNDA S	2-B43C-04
LL	BETHANY COLLEGE	2-B43C-03
MM	BETHANY COLLEGE	2-B43C-02
NN	BETHANY COLLEGE	2-B43C-01
OO	PUBLIC PARCEL	NA
PP	STRAUB TRAVIS G & GREGORY B	2-B43F-84
QQ	SONNEWALD GEORGE JR	2-B43F-82
RR	SONNEWALD GEORGE JR	2-B43F-81
SS	MITCHELL WILLIAM HEIRS	2-B43B-22
TT	MITCHELL DONALD STEVEN	2-B43F-83
UU	MITCHELL WILLIAM HEIRS	2-B43B-22
VV	BETHANY COLLEGE	3-B38-31
WW	HUFF JOHN HEIRS	2-B43B-04
XX	ROTHWELL JOHN T & PAULA JEAN	2-B43B-03
YY	BETHANY COLLEGE	3-B38-31
ZZ	HOLLADAY DANNY M & SANDRA L	3-B43-03
AB	RUSCHELL DENNIS & DERRELLE	3-B43-02
AC	RUSCHELL DENNIS & DERRELLE	3-B43-01
AD	GERMON RUTH;WOY JEFFREY;MOORE SUE;WEST PATRICIA;WOY SARA	3-B38-37
AE	JOHNSON ALLEN;WARREN; CHARLES ETAL	3-B38-36
AF	OWENS DAVID G; WALTERS LINDA (LE-ROY R OWENS)	3-B38-35
AG	OWENS DAVID G; WALTERS LINDA (LE-ROY R OWENS)	3-B38-33
AH	OWENS DAVID G; WALTERS LINDA (LE-ROY R OWENS)	3-B38-32
AI	BETHANY COLLEGE	3-B38-31
AJ	BROWN CHARLES F & DONNA	3-B38-30
AK	GORBY RICHARD FRANCIS	3-B43-27.0

REVISIONS:	COMPANY:	 	
	OPERATOR'S	WORTHLEY BRK	
	WELL #:	10H	
	DISTRICT:	COUNTY:	STATE:
	BUFFALO	BROOKE	WV
			DATE: 01-09-2019
			FILE NO: 17-02
			DRAWN BY: JMB
			SCALE: N/A
			DRAWING NO: 1
			WELL LOCATION PLAT 1