

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

API 47-009-00202 County BROOKE District BUFFALO  
Quad BETHANY & TILTONSVILLE Pad Name MIKE RYNIAWEC BRK PAD Field/Pool Name PANHANDLE FIELD WET  
Farm name MIKE RYNIAWEC Well Number MIKE RYNIAWEC BRK 201H  
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC  
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4448995.27 Easting 533256.72  
Landing Point of Curve Northing 4449031.00 Easting 532769.23  
Bottom Hole Northing 4451774.79 Easting 531487.84

Elevation (ft) 1147.4 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 9/1/2017 Date drilling commenced 2/6/2018 Date drilling ceased 3/6/2018  
Date completion activities began 6/15/2018 Date completion activities ceased 7/23/2018  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

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Freshwater depth(s) ft 346 Open mine(s) (Y/N) depths N WV Department of  
Salt water depth(s) ft 645 Void(s) encountered (Y/N) depths N Environmental Protection  
Coal depth(s) ft 342 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

Reviewed by  
*[Signature]* 1.17.19

1.17.19  
*[Signature]*

API 47-009 - 00202 Farm name MIKE RYNIAWEC Well number MIKE RYNIAWEC BRK 201H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	428	NEW	J-55/54.50#	252.3', 320.6'	Y, 43
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1697	NEW	J-55/36#		Y, 30
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	16600	NEW	HCP-110/20#		Y
Tubing		2.375	6435	NEW	P-100/4.7#		N
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	201	15.60	1.20	241.2	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	656	15.60	1.20	787.2	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2,869	15.60	1.19	3,414.11	SURFACE	24
Tubing							

Drillers TD (ft) 16600 Loggers TD (ft) 16600  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5320

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

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_ **OCT 19 2018**

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_ WV Department of Environmental Protection

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_



API 47- 009 - 00202 Farm name MIKE RYNIAWEC Well number MIKE RYNIAWEC BRK 201H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>5,899</u> TVD	<u>6,416</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2568 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 1,485 mcfpd Oil 312 bpd NGL \_\_\_\_\_ bpd Water 545 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<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 WEATHERFORD  
Address 2000 ST. JAMES PLACE City HOUSTON State TX Zip 77056

Cementing Company SCHLUMBERGER WELL SERVICES  
Address 1080 US-33 City WESTON State WV Zip 26452

Stimulating Company HALLIBURTON ENERGY SERVICES  
Address 1628 JACKSON MILL ROAD City JANE LEW State WV Zip 26378

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Please insert additional pages as applicable.

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Completed by BOBBY WILLIS Telephone 832-796-2884  
Signature  Title REGULATORY ANALYST Date 10/18/2018

WV Department of  
Environmental Protection

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

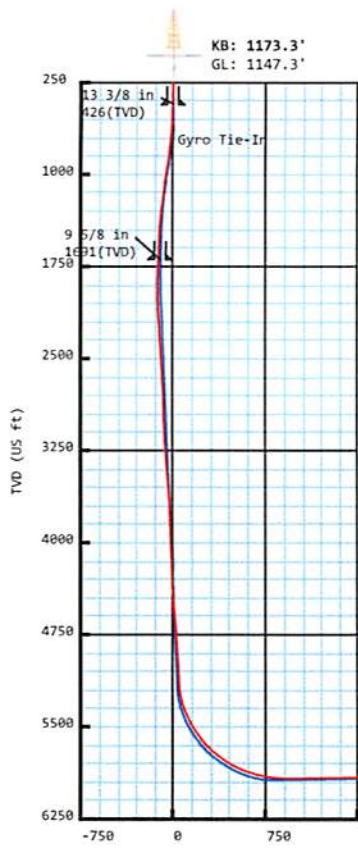




Mike Ryniawec BRK 201H  
 Brooke Co, WV  
 SDC 40  
 Plan vs Actual



Weatherford®



Plan Data for Mike Ryniawec BRK 201H

DogLeg Severity Unit: °/100.00ft

MD	Inc	Az	TVD	+N/-S	+E/-W	VSec	DLS	Toolface	Comments
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(DLSU)	(°)	(°)
0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.0	0.0
26.00	0.00	0.00	26.00	0.00	0.00	0.00	0.00	0.0	KB Offset
470.00	0.00	0.00	470.00	0.00	0.00	0.00	0.00	0.0	0.0 Nudge KOP
970.00	10.00	160.00	967.47	-40.90	14.89	-42.50	2.00	160.0	Turn
1541.62	10.00	230.00	1532.27	-119.70	-6.23	-97.68	2.00	124.6	Hold
1681.47	10.00	230.00	1670.00	-135.31	-24.83	-100.87	0.00	0.0	Build/Turn
2095.49	17.50	245.38	2072.00	-184.43	-109.11	-97.13	2.00	33.6	Hold
5339.86	17.50	245.38	5166.21	-590.87	-996.02	35.62	0.00	0.0	Curve KOP 7° DLS
6324.32	70.00	328.55	5893.92	-211.01	-1424.92	586.27	7.00	89.8	Build/Turn 9° DLS
6566.48	90.86	334.99	5934.00	-1.71	-1536.83	822.94	9.00	17.6	Landing Point
16617.12	90.86	334.99	5783.00	9105.20	-5786.17	10788.16	0.00	0.0	PBHL Mike R201H

Target Set Information:  
 Name: Mike Ryniawec BRK 201H

Name	TVD	+N/-S	+E/-W	Northing	Easting	Lat	Long
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(°)	(°)
LP Mike R201H	5934.00	-166.17	-1460.16	14596246.99	1748066.28	40.190253	-80.614536
PBHL Mike R201H	5783.00	9105.20	-5786.17	14605518.36	1743740.27	40.215763	-80.629887

Plan Data for Mike Ryniawec BRK 201H

Field: SOUTHWESTERN\_BROOKE CO, WV UTM NAD 83 (17N)  
 Map Unit: USft Vertical Reference Datum (VRD):  
 Projected Coordinate System: NAD83 / UTM zone 17N

Site: Mike Ryniawec Pad  
 Unit: USFeet TVD Reference:  
 Company Name: SOUTHWESTERN ENERGY

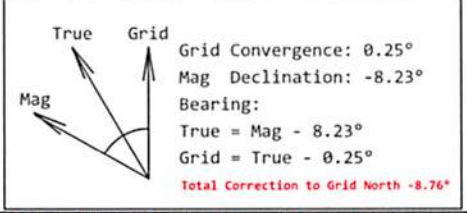
Position:  
 Northing: 14596413.14USft Latitude: 40.190691°  
 Easting: 1749526.49USft Longitude: -80.609305°  
 North Reference: Grid Grid Convergence: 0.25°  
 Elevation Above VRD: 1173.00USft

Slot: Mike Ryniawec BRK 201H  
 Position:  
 Offset is from Site centre  
 +N/-S: 0.02USft Northing: 14596413.16USft Latitude: 40.190691°  
 +E/-W: -0.05USft Easting: 1749526.44USft Longitude: -80.609305°  
 Elevation Above VRD: 1147.30USft

Well: Mike Ryniawec BRK 201H  
 Type: Main-Well  
 File Number:

Plan Folder: P1 Plan: P1:V2  
 Vertical Section: Position offset of origin from Slot centre:  
 +N/-S: 0.00USft Azimuth: 327.56°  
 +E/-W: 0.00USft

Magnetic Parameters:  
 Model: Field Strength: Declination: Dip: Date:  
 HDGM 52603(nT) -8.23° 67.62° 2018-02-12



WV Department of Environmental Protection

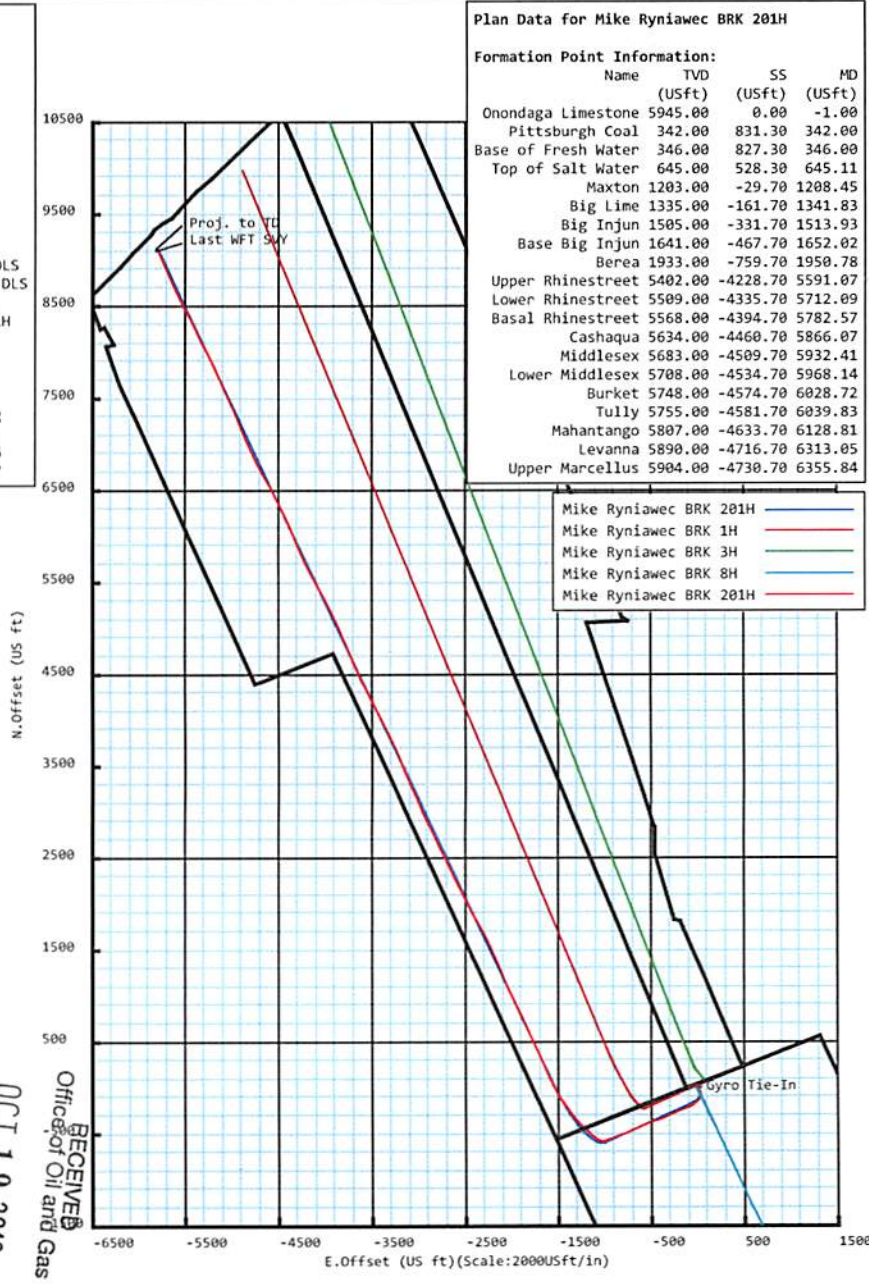
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Plan Data for Mike Ryniawec BRK 201H

Formation Point Information:

Name	TVD	SS	MD
(USft)	(USft)	(USft)	(USft)
Onondaga Limestone	5945.00	0.00	-1.00
Pittsburgh Coal	342.00	831.30	342.00
Base of Fresh Water	346.00	827.30	346.00
Top of Salt Water	645.00	528.30	645.11
Maxton	1203.00	-29.70	1208.45
Big Lime	1335.00	-161.70	1341.83
Big Injun	1505.00	-331.70	1513.93
Base Big Injun	1641.00	-467.70	1652.02
Berea	1933.00	-759.70	1950.78
Upper Rhinestreet	5402.00	-4228.70	5591.07
Lower Rhinestreet	5509.00	-4335.70	5712.09
Basal Rhinestreet	5568.00	-4394.70	5782.57
Cashaqua	5634.00	-4460.70	5866.07
Middlesex	5683.00	-4509.70	5932.41
Lower Middlesex	5708.00	-4534.70	5968.14
Burket	5748.00	-4574.70	6028.72
Tully	5755.00	-4581.70	6039.83
Mahantango	5807.00	-4633.70	6128.81
Levanna	5890.00	-4716.70	6313.05
Upper Marcellus	5904.00	-4730.70	6355.84



Drawing By: Gary Rhodes Date: 14 February 2018  
 Office Name: MidCon DS  
 Address: 7725 W. Reno Ave, Ste. #220  
 Oklahoma City, OK 73127  
 Phone: +1.405.720.4257



## Mike Ryniawec BRK 201H

<b>Field Name:</b>	<b>Map Units:</b> US ft	<b>Company Name:</b> SOUTHWESTERN ENERGY	
SOUTHWESTER N_BROOKE CO, WV UTM NAD 83 (17N)	<b>Vertical Reference Datum (VRD):</b>		
	<b>Projected Coordinate System:</b> NAD83 / UTM zone 17N		
	<b>Comment:</b>		
Site:  Mike Ryniawec Pad	<b>Units:</b> US ft	<b>North Reference:</b> Grid	<b>Convergence Angle:</b> 0.25
	<b>Position:</b>	<b>Northing:</b> 14596413.14 US ft	<b>Latitude:</b> 40.190691
		<b>Easting:</b> 1749526.49 US ft	<b>Longitude:</b> -80.609305
	<b>Elevation above Field Reference:</b> 1173.00 US ft		
<b>Comment:</b>			
Slot:  Mike Ryniawec BRK 201H	<b>Position (Relative to Site Centre)</b>		
	<b>+N/-S:</b> 0.02 US ft	<b>Northing:</b> 14596413.16 US ft	<b>Latitude:</b> 40.190691
	<b>+E/-W:</b> -0.05 US ft	<b>Easting:</b> 1749526.44 US ft	<b>Longitude:</b> -80.609305
	<b>Elevation above Field Reference:</b> 1147.30 US ft		
<b>Comment:</b>			
Well:  Mike Ryniawec BRK 201H	<b>Type:</b> Main well		<b>UWI:</b>
	<b>File Number:</b>	<b>Comment:</b>	
	<b>Closure Distance:</b> 10808.7 US ft		<b>Closure Azimuth:</b> 327.52°
	<b>Vertical Section: Position of Origin (Relative to Slot centre)</b>		
	<b>+N/-S:</b> 0.00 US ft	<b>+E/-W:</b> 0.00 US ft	<b>Az:</b> 327.56°

<b>Drill floor: Survey Name:</b> Definitive Survey			
<b>Rig Height (Drill Floor):</b> 26.00 US ft	<b>Elevation above Field Reference:</b> 1173.30 US ft	<b>Inclination:</b> 0.00°	<b>Azimuth:</b> 0.00°

<b>Survey Name:</b> Definitive Survey				
<b>Date:</b> 09/Feb/2018	<b>Survey Tool:</b> See Survey Tool Ranges below.	<b>Comment:</b>	<b>Company:</b>	
<b>Magnetic Model:</b>				
<b>Model Name:</b> HDGM	<b>Date:</b> 12/Feb/2018	<b>Field Strength:</b> 52603.0nT	<b>Declination:</b> -8.23°	<b>Dip:</b> 67.62°

<b>Tie Point:</b>					
<b>MD:</b> 0.00 US ft	<b>Inclination:</b> 0.00°	<b>Azimuth:</b> 0.00°	<b>TVD:</b> -0.00 US ft	<b>North Offset:</b> 0.00 US ft	<b>East Offset:</b> 0.00 US ft

Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
GYRO_GC_WIR+DPIPE_GYD	0.00	270.00	Gyro_01
GYRO_GC_WIR+DPIPE_GYD	270.00	750.00	Gyro_02
MWD	750.00	1635.00	WFT MWD_01
MWD	1635.00	5677.00	WFT MWD_02
MWD	5677.00	16600.00	WFT MWD_03

Wellpath created using minimum curvature.

## 5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Latitude (° ' ")	Longitude (° ' ")	DLS (°/100US ft)	Comment
0.00	0.00	0.00	-0.00	0.00	0.00	0.00	40.190691	-80.609305	0.00	
50.00	0.08	202.31	50.00	-0.02	-0.03	-0.01	40.190691	-80.609305	0.16	
100.00	0.15	54.77	100.00	-0.04	-0.03	0.03	40.190691	-80.609305	0.44	
150.00	0.36	66.69	150.00	-0.06	0.07	0.22	40.190692	-80.609304	0.43	
210.00	0.29	76.80	210.00	-0.14	0.18	0.55	40.190692	-80.609303	0.15	
270.00	0.62	99.90	270.00	-0.41	0.16	1.01	40.190692	-80.609301	0.62	
299.00	0.95	123.66	298.99	-0.73	0.00	1.37	40.190691	-80.609300	1.58	
350.00	1.09	129.22	349.99	-1.58	-0.54	2.10	40.190690	-80.609297	0.34	
385.00	1.32	126.00	384.98	-2.27	-0.99	2.68	40.190689	-80.609295	0.68	
425.00	1.36	136.41	424.97	-3.17	-1.60	3.38	40.190687	-80.609293	0.62	
475.00	2.08	161.13	474.94	-4.63	-2.89	4.08	40.190683	-80.609290	2.04	
515.00	2.37	166.18	514.91	-6.12	-4.38	4.51	40.190679	-80.609289	0.87	
566.00	3.54	177.23	565.85	-8.49	-6.98	4.84	40.190672	-80.609287	2.54	
610.00	4.19	175.18	609.75	-11.09	-9.94	5.04	40.190664	-80.609287	1.51	
658.00	4.89	175.77	657.60	-14.45	-13.72	5.34	40.190654	-80.609286	1.46	
700.00	5.28	172.48	699.43	-17.78	-17.42	5.73	40.190643	-80.609284	1.16	
750.00	5.67	167.42	749.20	-22.19	-22.12	6.57	40.190631	-80.609282	1.24	Gyro Tie-In
900.00	7.95	151.93	898.15	-39.50	-38.50	13.06	40.190586	-80.609259	1.94	
993.00	9.61	158.83	990.06	-53.53	-51.42	18.89	40.190550	-80.609238	2.11	
1086.00	9.04	176.37	1081.85	-67.55	-65.95	22.16	40.190510	-80.609226	3.10	
1179.00	10.02	185.48	1173.57	-80.33	-81.30	21.85	40.190468	-80.609228	1.93	
1271.00	11.04	194.74	1264.02	-92.64	-97.79	18.84	40.190423	-80.609239	2.14	
1364.00	10.58	206.53	1355.38	-103.09	-114.04	12.76	40.190378	-80.609261	2.42	
1457.00	10.97	220.16	1446.76	-110.14	-128.44	3.24	40.190339	-80.609295	2.77	
1549.00	11.15	228.97	1537.06	-114.09	-140.97	-9.12	40.190304	-80.609340	1.85	
1635.00	11.28	229.17	1621.41	-116.55	-151.93	-21.75	40.190274	-80.609385	0.16	
1795.00	11.03	226.51	1778.39	-121.77	-172.70	-44.70	40.190218	-80.609467	0.36	
1888.00	10.62	229.01	1869.74	-124.75	-184.44	-57.62	40.190186	-80.609514	0.67	
1981.00	11.19	242.05	1961.07	-125.32	-194.29	-72.06	40.190159	-80.609566	2.72	
2073.00	13.72	246.17	2050.90	-122.99	-202.89	-89.93	40.190135	-80.609630	2.91	
2166.00	17.39	247.40	2140.48	-118.96	-212.69	-112.86	40.190109	-80.609712	3.96	
2259.00	19.60	248.14	2228.67	-113.72	-223.84	-140.17	40.190078	-80.609810	2.39	
2351.00	20.13	247.72	2315.20	-108.09	-235.58	-169.14	40.190047	-80.609914	0.60	
2444.00	20.57	245.82	2402.39	-102.92	-248.34	-198.85	40.190012	-80.610021	0.85	
2537.00	20.13	245.73	2489.59	-98.30	-261.61	-228.35	40.189976	-80.610126	0.47	
2630.00	19.21	247.08	2577.16	-93.50	-274.15	-257.03	40.189942	-80.610229	1.10	
2722.00	19.02	246.50	2664.09	-88.66	-286.02	-284.72	40.189909	-80.610329	0.29	
2815.00	17.25	246.59	2752.46	-84.14	-297.54	-311.27	40.189878	-80.610424	1.90	
2908.00	16.59	242.66	2841.44	-80.80	-309.12	-335.72	40.189847	-80.610512	1.42	
3001.00	16.12	242.62	2930.68	-78.48	-321.16	-358.98	40.189814	-80.610595	0.51	
3093.00	15.54	249.56	3019.20	-74.79	-331.34	-381.87	40.189786	-80.610677	2.15	
3186.00	14.92	251.21	3108.93	-69.38	-339.54	-404.88	40.189764	-80.610760	0.81	
3279.00	14.76	250.59	3198.83	-63.88	-347.34	-427.38	40.189743	-80.610840	0.24	
3372.00	15.99	252.52	3288.50	-57.90	-355.12	-450.78	40.189722	-80.610924	1.43	
3464.00	17.75	252.69	3376.54	-50.97	-363.10	-476.25	40.189700	-80.611016	1.91	
3557.00	18.96	251.44	3464.80	-43.64	-372.13	-504.11	40.189676	-80.611116	1.37	
3650.00	18.28	251.15	3552.93	-36.59	-381.65	-532.24	40.189650	-80.611216	0.74	
3743.00	17.60	248.22	3641.41	-30.56	-391.58	-559.10	40.189623	-80.611313	1.21	
3835.00	17.42	245.52	3729.15	-26.08	-402.45	-584.55	40.189593	-80.611404	0.90	
3928.00	17.19	243.93	3817.94	-22.63	-414.25	-609.56	40.189561	-80.611494	0.57	
4021.00	16.66	242.83	3906.92	-19.88	-426.38	-633.77	40.189528	-80.611581	0.67	
4114.00	16.59	243.52	3996.03	-17.28	-438.39	-657.51	40.189495	-80.611666	0.23	
4206.00	16.85	246.23	4084.14	-13.91	-449.62	-681.47	40.189465	-80.611752	0.89	
4299.00	16.83	245.54	4173.15	-10.01	-460.63	-706.06	40.189435	-80.611840	0.22	
4392.00	17.61	244.74	4261.98	-6.38	-472.20	-731.04	40.189404	-80.611930	0.88	
4485.00	17.00	246.67	4350.77	-2.47	-483.59	-756.25	40.189373	-80.612020	0.90	
4578.00	18.03	250.40	4439.46	2.88	-493.80	-782.29	40.189345	-80.612114	1.64	
4670.00	18.88	250.40	4526.73	9.36	-503.57	-809.72	40.189318	-80.612212	0.92	
4763.00	18.72	251.19	4614.77	16.22	-513.43	-838.03	40.189292	-80.612313	0.32	

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## 5D Survey Report

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4856.00	18.59	250.09	4702.88	22.95	-523.29	-866.09	40.189265	-80.612414	0.40	
4949.00	18.69	249.50	4791.01	29.25	-533.56	-893.99	40.189237	-80.612514	0.23	
5041.00	18.29	248.40	4878.26	35.01	-544.04	-921.22	40.189209	-80.612612	0.58	
5134.00	17.99	248.27	4966.63	40.43	-554.73	-948.13	40.189180	-80.612708	0.33	
5227.00	16.90	247.02	5055.36	45.32	-565.32	-973.91	40.189151	-80.612801	1.24	
5320.00	16.47	247.54	5144.44	49.82	-575.63	-998.54	40.189123	-80.612889	0.49	
5366.00	17.24	259.85	5188.48	53.54	-579.33	-1011.28	40.189113	-80.612935	7.92	
5412.00	18.25	269.73	5232.30	59.96	-580.56	-1025.20	40.189109	-80.612985	6.90	
5459.00	19.83	278.94	5276.74	69.15	-579.36	-1040.44	40.189113	-80.613039	7.21	
5505.00	21.99	287.99	5319.71	80.95	-575.49	-1056.34	40.189124	-80.613096	8.43	
5551.00	24.59	295.89	5361.97	95.75	-568.64	-1073.15	40.189143	-80.613156	8.82	
5595.00	26.36	301.52	5401.70	112.32	-559.54	-1089.72	40.189168	-80.613215	6.81	
5641.00	27.62	307.27	5442.70	131.50	-547.74	-1106.91	40.189201	-80.613277	6.30	
5677.00	28.95	310.75	5474.40	147.67	-537.00	-1120.15	40.189230	-80.613324	5.88	
5737.00	32.68	313.18	5525.92	177.27	-516.43	-1142.98	40.189287	-80.613405	6.55	
5783.00	35.53	313.97	5564.01	202.30	-498.64	-1161.65	40.189336	-80.613472	6.27	
5829.00	38.76	314.90	5600.67	229.35	-479.19	-1181.48	40.189390	-80.613543	7.13	
5876.00	43.31	314.25	5636.11	259.40	-457.55	-1203.46	40.189449	-80.613621	9.72	
5922.00	46.60	313.72	5668.66	290.99	-434.99	-1226.84	40.189512	-80.613704	7.20	
5969.00	49.13	314.35	5700.19	324.88	-410.76	-1251.90	40.189578	-80.613794	5.47	
6015.00	51.55	315.77	5729.55	359.45	-385.69	-1276.90	40.189648	-80.613883	5.77	
6061.00	53.75	317.67	5757.45	395.36	-359.06	-1301.96	40.189721	-80.613972	5.80	
6108.00	55.85	320.46	5784.55	433.34	-330.05	-1327.11	40.189801	-80.614062	6.59	
6154.00	60.12	323.14	5808.93	472.13	-299.40	-1351.20	40.189885	-80.614148	10.51	
6200.00	64.93	324.33	5830.15	512.84	-266.50	-1375.33	40.189976	-80.614233	10.71	
6247.00	68.09	324.59	5848.88	555.88	-231.42	-1400.38	40.190073	-80.614323	6.74	
6293.00	70.39	325.49	5865.18	598.84	-196.17	-1425.02	40.190170	-80.614410	5.32	
6337.00	72.87	326.11	5879.05	640.58	-161.64	-1448.49	40.190265	-80.614494	5.79	
6383.00	75.44	327.94	5891.61	684.82	-124.52	-1472.57	40.190367	-80.614579	6.77	
6429.00	78.90	329.54	5901.82	729.66	-86.18	-1495.84	40.190473	-80.614662	8.25	
6476.00	82.16	330.96	5909.56	775.96	-45.94	-1518.84	40.190583	-80.614744	7.55	
6522.00	84.20	332.73	5915.02	821.50	-5.67	-1540.38	40.190694	-80.614820	5.85	
6568.00	85.13	333.39	5919.30	867.09	35.16	-1561.13	40.190807	-80.614894	2.48	
6612.00	87.04	334.35	5922.30	910.72	74.57	-1580.47	40.190915	-80.614963	4.86	
6658.00	90.68	335.64	5923.22	956.31	116.24	-1599.90	40.191030	-80.615032	8.39	
6751.00	91.17	337.88	5921.71	1048.10	201.68	-1636.59	40.191265	-80.615162	2.47	
6844.00	91.17	335.17	5919.81	1139.94	286.95	-1673.63	40.191499	-80.615293	2.91	
6936.00	91.17	335.26	5917.94	1231.10	370.46	-1712.19	40.191729	-80.615430	0.10	
7026.00	90.99	335.31	5916.24	1320.26	452.20	-1749.81	40.191954	-80.615563	0.21	
7119.00	90.68	335.09	5914.88	1412.43	536.62	-1788.81	40.192186	-80.615702	0.41	
7212.00	90.80	337.59	5913.68	1504.32	621.79	-1826.13	40.192421	-80.615834	2.69	
7304.00	90.62	335.48	5912.54	1595.19	706.17	-1862.76	40.192653	-80.615964	2.30	
7397.00	90.62	334.42	5911.54	1687.41	790.41	-1902.13	40.192885	-80.616103	1.14	
7490.00	90.74	335.61	5910.43	1779.61	874.70	-1941.41	40.193117	-80.616243	1.29	
7583.00	90.86	332.83	5909.13	1871.97	958.43	-1981.85	40.193347	-80.616386	2.99	
7675.00	90.74	334.52	5907.85	1963.43	1040.88	-2022.64	40.193574	-80.616531	1.84	
7768.00	90.74	337.24	5906.65	2055.44	1125.74	-2060.64	40.193807	-80.616666	2.92	
7861.00	91.05	338.60	5905.19	2146.91	1211.91	-2095.59	40.194044	-80.616790	1.50	
7954.00	90.62	337.24	5903.84	2238.38	1298.08	-2130.55	40.194281	-80.616913	1.53	
8046.00	90.86	336.57	5902.65	2329.15	1382.70	-2166.63	40.194514	-80.617041	0.77	
8139.00	91.17	337.11	5901.00	2420.92	1468.19	-2203.20	40.194749	-80.617171	0.67	
8232.00	91.11	334.57	5899.15	2512.92	1553.02	-2241.26	40.194983	-80.617306	2.73	
8324.00	91.23	333.43	5897.27	2604.32	1635.69	-2281.58	40.195210	-80.617449	1.25	
8417.00	90.68	331.39	5895.72	2696.97	1718.10	-2324.64	40.195437	-80.617602	2.27	
8510.00	90.44	329.48	5894.82	2789.84	1798.98	-2370.52	40.195660	-80.617765	2.07	
8603.00	90.80	330.91	5893.81	2882.74	1879.67	-2416.75	40.195882	-80.617929	1.59	
8696.00	90.92	334.80	5892.41	2975.31	1962.40	-2459.16	40.196110	-80.618080	4.18	
8785.00	90.92	333.49	5890.98	3063.71	2042.48	-2497.97	40.196330	-80.618218	1.47	
8878.00	91.17	333.00	5889.29	3156.24	2125.51	-2539.83	40.196558	-80.618366	0.59	

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8971.00	91.91	332.94	5886.79	3248.79	2208.32	-2582.08	40.196786	-80.618516	0.80	
9064.00	92.03	334.94	5883.59	3341.15	2291.81	-2622.91	40.197016	-80.618661	2.15	
9156.00	90.68	336.02	5881.42	3432.25	2375.49	-2661.08	40.197246	-80.618797	1.88	
9249.00	90.74	334.42	5880.26	3524.41	2459.92	-2700.05	40.197479	-80.618935	1.72	
9342.00	90.92	333.53	5878.92	3616.81	2543.48	-2740.85	40.197709	-80.619080	0.98	
9435.00	90.68	334.70	5877.62	3709.20	2627.14	-2781.45	40.197939	-80.619224	1.28	
9528.00	90.68	334.57	5876.51	3801.48	2711.17	-2821.28	40.198170	-80.619365	0.14	
9620.00	90.98	334.75	5875.18	3892.77	2794.31	-2860.66	40.198399	-80.619505	0.38	
9713.00	90.88	333.89	5873.67	3985.11	2878.11	-2900.95	40.198629	-80.619648	0.93	
9806.00	90.97	334.24	5872.17	4077.50	2961.73	-2941.62	40.198860	-80.619792	0.39	
9899.00	90.92	336.56	5870.64	4169.61	3046.27	-2980.33	40.199092	-80.619930	2.49	
9991.00	90.37	336.65	5869.60	4260.46	3130.70	-3016.85	40.199324	-80.620059	0.61	
10084.00	90.49	335.93	5868.90	4352.38	3215.85	-3054.25	40.199559	-80.620192	0.78	
10176.00	90.37	336.76	5868.21	4443.29	3300.12	-3091.16	40.199790	-80.620323	0.91	
10269.00	90.43	336.84	5867.56	4535.09	3385.60	-3127.80	40.200026	-80.620453	0.11	
10362.00	90.80	338.77	5866.56	4626.59	3471.70	-3162.92	40.200262	-80.620577	2.11	
10455.00	90.74	338.13	5865.31	4717.91	3558.19	-3197.08	40.200500	-80.620698	0.69	
10547.00	90.98	337.20	5863.93	4808.47	3643.27	-3232.04	40.200734	-80.620822	1.04	
10640.00	91.23	333.26	5862.14	4900.60	3727.68	-3270.99	40.200967	-80.620960	4.24	
10733.00	90.92	335.35	5860.39	4992.94	3811.47	-3311.30	40.201197	-80.621103	2.27	
10825.00	91.11	335.10	5858.76	5084.10	3894.99	-3349.85	40.201427	-80.621240	0.34	
10918.00	90.80	333.21	5857.21	5176.47	3978.67	-3390.38	40.201657	-80.621384	2.06	
11011.00	90.62	334.07	5856.06	5268.94	4061.99	-3431.67	40.201887	-80.621530	0.94	
11104.00	90.49	333.11	5855.16	5361.42	4145.28	-3473.04	40.202116	-80.621677	1.04	
11197.00	90.49	334.60	5854.37	5453.85	4228.76	-3514.01	40.202346	-80.621823	1.60	
11289.00	90.31	333.36	5853.72	5545.27	4311.43	-3554.37	40.202573	-80.621966	1.36	
11382.00	90.25	333.88	5853.27	5637.75	4394.75	-3595.69	40.202802	-80.622113	0.56	
11475.00	91.05	335.53	5852.21	5730.02	4478.82	-3635.42	40.203034	-80.622254	1.97	
11568.00	90.68	336.89	5850.81	5821.95	4563.91	-3672.93	40.203268	-80.622387	1.52	
11661.00	91.11	337.87	5849.36	5913.57	4649.74	-3708.70	40.203504	-80.622514	1.15	
11753.00	90.68	337.11	5847.92	6004.18	4734.72	-3743.91	40.203738	-80.622638	0.95	
11843.00	91.50	335.83	5846.21	6093.08	4817.22	-3779.84	40.203965	-80.622766	1.69	
11936.00	91.11	336.64	5844.09	6184.99	4902.31	-3817.31	40.204199	-80.622899	0.97	
12026.00	90.79	336.53	5842.60	6273.86	4984.89	-3853.07	40.204426	-80.623025	0.38	
12119.00	90.98	336.68	5841.16	6365.69	5070.23	-3889.99	40.204661	-80.623156	0.26	
12208.00	90.92	334.51	5839.69	6453.80	5151.26	-3926.75	40.204884	-80.623287	2.44	
12301.00	91.29	332.99	5837.89	6546.24	5234.66	-3967.88	40.205113	-80.623433	1.68	
12394.00	91.11	332.84	5835.94	6638.81	5317.44	-4010.21	40.205341	-80.623583	0.25	
12486.00	91.11	332.82	5834.16	6730.41	5399.27	-4052.22	40.205566	-80.623732	0.02	
12579.00	90.68	330.68	5832.71	6823.14	5481.18	-4096.23	40.205792	-80.623889	2.35	
12672.00	91.11	330.96	5831.26	6915.98	5562.37	-4141.56	40.206015	-80.624050	0.55	
12765.00	90.43	332.86	5830.01	7008.70	5644.40	-4185.35	40.206241	-80.624206	2.17	
12857.00	90.18	335.28	5829.52	7100.10	5727.13	-4225.57	40.206468	-80.624348	2.64	
12950.00	90.86	336.91	5828.67	7192.06	5812.15	-4263.25	40.206702	-80.624482	1.90	
13043.00	90.62	338.83	5827.47	7283.55	5898.28	-4298.28	40.206939	-80.624606	2.08	
13136.00	90.80	338.14	5826.32	7374.85	5984.80	-4332.39	40.207177	-80.624727	0.77	
13229.00	90.79	336.71	5825.03	7466.47	6070.66	-4368.09	40.207413	-80.624854	1.54	
13321.00	90.62	335.68	5823.90	7557.42	6154.83	-4405.22	40.207645	-80.624985	1.13	
13414.00	90.68	333.85	5822.84	7649.67	6238.94	-4444.86	40.207876	-80.625126	1.97	
13507.00	91.06	333.71	5821.43	7742.11	6322.36	-4485.95	40.208106	-80.625272	0.44	
13600.00	91.15	333.36	5819.64	7834.59	6405.60	-4527.38	40.208335	-80.625419	0.39	
13692.00	91.17	332.69	5817.77	7926.15	6487.57	-4569.11	40.208561	-80.625567	0.73	
13785.00	90.68	331.12	5816.27	8018.87	6569.60	-4612.90	40.208786	-80.625723	1.77	
13878.00	90.92	329.99	5814.97	8111.73	6650.58	-4658.61	40.209009	-80.625885	1.24	
13971.00	90.43	332.51	5813.88	8204.53	6732.10	-4703.33	40.209234	-80.626044	2.76	
14063.00	90.68	333.57	5812.99	8296.10	6814.10	-4745.04	40.209459	-80.626192	1.18	
14156.00	90.55	334.43	5811.99	8388.51	6897.68	-4785.81	40.209689	-80.626337	0.94	
14246.00	90.49	336.14	5811.17	8477.68	6979.43	-4823.43	40.209914	-80.626471	1.90	
14335.00	90.49	335.85	5810.41	8565.72	7060.73	-4859.64	40.210138	-80.626599	0.33	

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14428.00	90.92	338.35	5809.27	8657.42	7146.39	-4895.82	40.210373	-80.626727	2.73	
14521.00	90.18	338.60	5808.37	8748.73	7232.90	-4929.94	40.210611	-80.626848	0.84	
14611.00	90.25	336.59	5808.04	8837.35	7316.10	-4964.24	40.210840	-80.626970	2.23	
14703.00	90.55	336.20	5807.39	8928.25	7400.40	-5001.08	40.211072	-80.627101	0.53	
14796.00	91.17	336.66	5806.00	9020.13	7485.63	-5038.26	40.211307	-80.627233	0.83	
14889.00	90.79	335.48	5804.41	9112.09	7570.62	-5075.98	40.211541	-80.627366	1.33	
14982.00	90.80	335.76	5803.12	9204.16	7655.32	-5114.37	40.211774	-80.627503	0.30	
15074.00	90.62	337.19	5801.98	9295.04	7739.66	-5151.08	40.212006	-80.627633	1.57	
15167.00	90.74	335.05	5800.87	9387.00	7824.69	-5188.73	40.212240	-80.627766	2.30	
15260.00	90.43	334.89	5799.92	9479.21	7908.95	-5228.07	40.212471	-80.627906	0.38	
15349.00	90.71	333.19	5799.04	9567.64	7988.97	-5267.03	40.212692	-80.628044	1.94	
15442.00	90.99	332.66	5797.66	9660.22	8071.77	-5309.35	40.212919	-80.628195	0.64	
15535.00	90.55	335.40	5796.41	9752.61	8155.36	-5350.07	40.213149	-80.628339	2.98	
15628.00	90.88	336.18	5795.25	9844.64	8240.17	-5388.21	40.213383	-80.628475	0.91	
15721.00	91.05	333.36	5793.68	9936.89	8324.28	-5427.84	40.213614	-80.628615	3.04	
15814.00	90.80	330.73	5792.18	10029.58	8406.41	-5471.42	40.213840	-80.628770	2.84	
15906.00	90.62	331.84	5791.04	10121.38	8487.09	-5515.62	40.214062	-80.628927	1.22	
15996.00	90.55	334.90	5790.12	10210.90	8567.53	-5555.95	40.214284	-80.629071	3.40	
16089.00	90.80	335.38	5789.02	10303.08	8651.90	-5595.05	40.214516	-80.629209	0.58	
16181.00	90.31	334.59	5788.13	10394.30	8735.27	-5633.95	40.214745	-80.629347	1.01	
16274.00	90.44	336.18	5787.52	10486.43	8819.81	-5672.68	40.214978	-80.629485	1.72	
16367.00	90.62	336.59	5786.66	10578.33	8905.02	-5709.94	40.215212	-80.629617	0.48	
16460.00	90.80	336.66	5785.51	10670.16	8990.38	-5746.83	40.215447	-80.629748	0.21	
16552.00	90.62	335.14	5784.37	10761.18	9074.35	-5784.39	40.215678	-80.629881	1.66	
16577.00	90.62	335.24	5784.10	10785.95	9097.05	-5794.88	40.215740	-80.629919	0.40	Last WFT SVY
16600.00	90.62	335.24	5783.85	10808.75	9117.93	-5804.52	40.215798	-80.629953	0.00	Proj. to TD

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## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/16/2018
Job End Date:	7/14/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00202-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mike Ryniawec 201H
Latitude:	40.19069135
Longitude:	-80.60930473
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,851
Total Base Water Volume (gal):	12,652,075
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	Operator	Base Fluid					
			Water	7732-18-5	100.00000	82.89859	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	1.40697	

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HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SCAL16486A	NALCO	Scale Inhibitor					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
HAI-150E	Halliburton	Corrosion Inhibitor					
				Listed Below			
EXCELERATE LX-1	Halliburton	Friction Reducer					
				Listed Below			
BIOC11219A	NALCO	Biocide					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				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	15.63819	
			Hydrochloric acid	7647-01-0	15.00000	0.20459	

			Polyacrylate	Proprietary	30.00000	0.02153	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02153	
			Fatty acid ester	Proprietary	5.00000	0.00718	
			Amine Triphosphate	Proprietary	30.00000	0.00648	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Ethylene Glycol	107-21-1	30.00000	0.00648	
			Ammonium chloride	12125-02-9	5.00000	0.00359	
			Ethoxylated fatty acid	Proprietary	5.00000	0.00359	
			Sodium chloride	7647-14-5	5.00000	0.00359	
			Methanol	67-56-1	60.00000	0.00293	
			Benzyl-(C12-C16 Alkyl)- Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00147	
			Non-hazardous food substance	Proprietary	100.00000	0.00104	
			Glutaraldehyde	111-30-8	10.00000	0.00049	

\* 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)

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**MIKE RYNIAWEC BRK 201H**  
**ATTACHMENT 1**  
**PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	5/24/2018	16,508	16,415	36
2	6/16/2018	16,380	16,273	42
3	6/16/2018	16,240	16,133	42
4	6/17/2018	16,100	15,993	42
5	6/18/2018	15,960	15,853	42
6	6/18/2018	15,820	15,713	42
7	6/18/2018	15,680	15,573	42
8	6/19/2018	15,540	15,433	42
9	6/19/2018	15,403	15,293	42
10	6/20/2018	15,260	15,153	42
11	6/20/2018	15,120	15,013	42
12	6/20/2018	14,980	14,873	42
13	6/21/2018	14,840	14,733	42
14	6/21/2018	14,700	14,593	42
15	6/22/2018	14,560	14,453	42
16	6/22/2018	14,420	14,313	42
17	6/23/2018	14,280	14,178	42
18	6/23/2018	14,140	14,033	42
19	6/23/2018	14,000	13,893	42
20	6/23/2018	13,860	13,753	42
21	6/24/2018	13,720	13,613	42
22	6/24/2018	13,580	13,473	42
23	6/24/2018	13,440	13,333	42
24	6/25/2018	13,300	13,193	42
25	6/25/2018	13,160	13,053	42
26	6/25/2018	13,022	12,913	42
27	6/26/2018	12,880	12,775	42
28	6/26/2018	12,740	12,633	42
29	6/26/2018	12,600	12,493	42
30	6/27/2018	12,460	12,353	42
31	6/28/2018	12,320	12,213	42
32	6/28/2018	12,180	12,073	42
33	6/29/2018	12,040	11,933	42
34	6/29/2018	11,900	11,793	42
35	6/30/2018	11,760	11,653	42
36	6/30/2018	11,620	11,513	42
37	6/30/2018	11,480	11,373	42
38	7/1/2018	11,340	11,233	42
39	7/1/2018	11,200	11,093	42
40	7/1/2018	11,060	10,953	42
41	7/1/2018	10,920	10,813	42
42	7/2/2018	10,780	10,673	42
43	7/2/2018	10,640	10,533	42



**MIKE RYNIAWEC BRK 201H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	7/3/2018	10,500	10,393	42
45	7/3/2018	10,360	10,253	42
46	7/4/2018	10,220	10,113	42
47	7/4/2018	10,080	9,973	42
48	7/4/2018	9,940	9,833	42
49	7/5/2018	9,800	9,693	42
50	7/5/2018	9,660	9,553	42
51	7/6/2018	9,520	9,413	42
52	7/6/2018	9,380	9,273	42
53	7/7/2018	9,240	9,133	42
54	7/7/2018	9,100	8,993	42
55	7/8/2018	8,960	8,853	42
56	7/8/2018	8,820	8,713	42
57	7/8/2018	8,680	8,573	42
58	7/9/2018	8,540	8,433	42
59	7/9/2018	8,400	8,293	42
60	7/10/2018	8,260	8,153	42
61	7/10/2018	8,120	8,013	42
62	7/10/2018	7,980	7,873	42
63	7/10/2018	7,840	7,733	42
64	7/11/2018	7,700	7,593	42
65	7/11/2018	7,560	7,453	42

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**MIKE RYNIAWEC BRK 201H**  
**ATTACHMENT 2**  
**STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	6/16/2018	82	7,694	7,973	3,645	285,960	5,210	0
2	6/16/2018	96	7,870	5,621	3,770	276,400	5,731	0
3	6/17/2018	97	8,006	5,579	3,816	284,160	5,497	0
4	6/17/2018	80	7,618	5,733	4,086	288,740	5,412	0
5	6/17/2018	95	7,423	4,426	4,004	271,320	5,044	0
6	6/18/2018	95	7,833	5,274	4,156	286,530	5,369	0
7	6/19/2018	99	7,896	4,835	3,944	289,610	4,794	0
8	6/19/2018	98	7,607	5,391	4,211	271,700	5,004	0
9	6/19/2018	99	7,958	5,127	3,925	285,440	4,660	0
10	6/20/2018	92	8,228	5,678	3,901	289,460	4,704	0
11	6/20/2018	91	7,757	5,467	3,952	267,140	5,657	0
12	6/21/2018	96	7,973	6,594	4,037	270,880	4,652	0
13	6/21/2018	96	8,240	5,564	4,122	282,580	4,673	0
14	6/21/2018	100	7,899	5,251	4,377	270,600	4,267	0
15	6/22/2018	97	7,902	5,368	4,240	270,540	4,735	0
16	6/22/2018	99	7,979	5,589	4,231	286,250	4,470	0
17	6/23/2018	99	8,072	5,276	4,069	274,120	3,745	0
18	6/23/2018	89	7,816	5,480	3,946	269,680	4,865	0
19	6/23/2018	100	7,830	5,181	4,277	288,920	3,787	0
20	6/24/2018	100	7,566	5,642	4,442	288,840	4,358	0
21	6/24/2018	96	7,697	5,455	4,250	269,460	4,488	0
22	6/24/2018	100	7,419	4,890	4,037	286,810	4,121	0
23	6/25/2018	100	7,650	5,547	4,409	288,770	3,708	0
24	6/25/2018	100	7,221	5,319	4,365	273,400	4,782	0
25	6/25/2018	100	7,476	4,460	4,302	277,180	4,292	0
26	6/26/2018	100	7,383	5,633	4,058	273,840	3,639	0
27	6/26/2018	96	7,843	5,048	4,047	269,380	4,116	0
28	6/26/2018	98	7,569	4,062	4,128	283,470	4,057	0
29	6/27/2018	98	7,613	8,243	4,063	284,730	4,044	0
30	6/27/2018	98.2	7,676	5,794	4,396	281,520	3,914	0
31	6/28/2018	92.3	7,584	5,846	4,191	288,180	4,630	0
32	6/29/2018	89.8	7,858	5,927	4,085	287,605	4,293	0
33	6/29/2018	100	7,134	5,151	4,121	282,210	4,230	0
34	6/29/2018	99.9	7,276	5,908	4,179	280,810	3,562	0
35	6/30/2018	98.9	7,117	5,790	4,322	274,180	3,972	0
36	6/30/2018	99.8	7,146	5,476	4,476	283,430	3,520	0
37	7/1/2018	99.4	7,193	5,827	4,586	273,740	3,344	0
38	7/1/2018	100.2	7,465	5,267	4,515	271,180	3,913	0
39	7/1/2018	97.7	7,010	5,710	4,141	285,960	3,918	0
40	7/1/2018	99.1	7,243	5,569	4,434	282,860	3,358	0
41	7/2/2018	99.6	7,420	5,339	4,635	289,140	3,538	0
42	7/2/2018	98.4	7,047	5,455	4,274	275,340	3,994	0
43	7/3/2018	100	7,094	4,380	4,135	285,960	3,917	0
44	7/3/2018	100.5	6,989	5,540	4,319	289,540	3,746	0
45	7/3/2018	99.6	7,016	5,648	4,778	309,680	3,599	0
46	7/4/2018	99.1	7,288	5,529	4,375	280,790	3,935	0
47	7/4/2018	86.6	7,642	5,546	4,186	279,750	4,932	0
48	7/5/2018	99.4	7,263	5,663	9,570	176,580	4,042	0
49	7/5/2018	100.2	6,773	5,292	4,471	280,320	4,285	0
50	7/6/2018	80.1	7,606	5,147	3,969	281,380	8,350	0
51	7/6/2018	98.9	6,835	5,668	4,140	300,060	4,762	0
52	7/7/2018	98.5	6,718	5,313	4,354	284,840	4,299	0
53	7/7/2018	99.4	6,831	5,566	4,543	276,540	4,317	0

MIKE RYNIAWEC BRK 201H

ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	7/7/2018	98.9	6,728	5,845	4,419	283,660	3,876	0
55	7/8/2018	99.5	6,706	6,464	4,102	282,960	4,429	0
56	7/8/2018	100.7	6,608	6,408	4,045	284,320	4,066	0
57	7/8/2018	99.5	6,636	6,356	4,283	285,340	3,740	0
58	7/9/2018	99.5	6,781	6,219	4,453	284,100	3,665	0
59	7/9/2018	100.5	6,712	5,937	4,332	288,600	3,873	0
60	7/10/2018	100.4	6,424	6,004	4,481	291,390	3,608	0
61	7/10/2018	99.9	6,853	5,728	4,242	287,120	3,933	0
62	7/10/2018	99.9	6,757	5,726	4,482	287,120	3,709	0
63	7/10/2018	99.3	6,461	5,573	4,629	286,980	3,543	0
64	7/11/2018	100.3	6,444	5,736	4,343	274,470	3,975	0
65	7/11/2018	100	6,615	5,484	4,179	286,690	3,589	0

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Well Name:

MIKE RYNIAWEC BRK 201H

47009002020000

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	346.00	346.00	
Top of Salt Water	645.00	645.00	NA	NA	
Pittsburgh Coal	342.00	342.00	348.00	348.00	
Big Injun (ss)	1505.00	1505.00	1933.00	1933.00	
Berea (siltstone)	1933.00	1933.00	5402.00	5402.00	
Rhinestreet (shale)	5402.00	5402.00	5759.00	5544.00	
Cashaqua (shale)	5848.00	5615.00	5917.00	5665.00	
Middlesex (shale)	5917.00	5665.00	6016.00	5730.00	
Burket (shale)	6016.00	5730.00	6037.00	5743.00	
Tully (ls)	6037.00	5743.00	6132.00	5797.00	
Mahantango (shale)	6132.00	5797.00	6416.00	5899.00	
Marcellus (shale)	6416.00	5899.00	NA	NA	GAS

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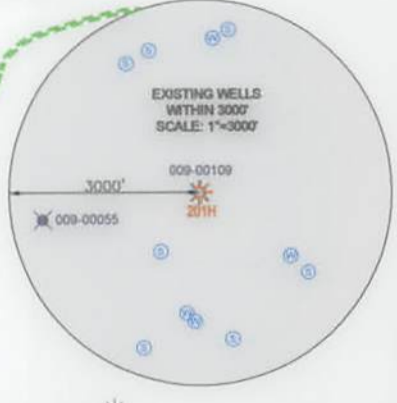
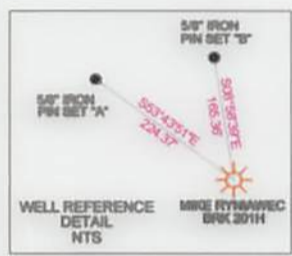
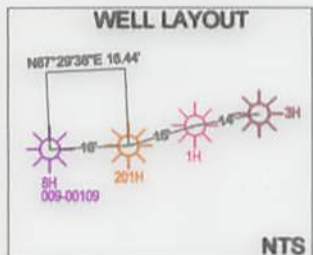
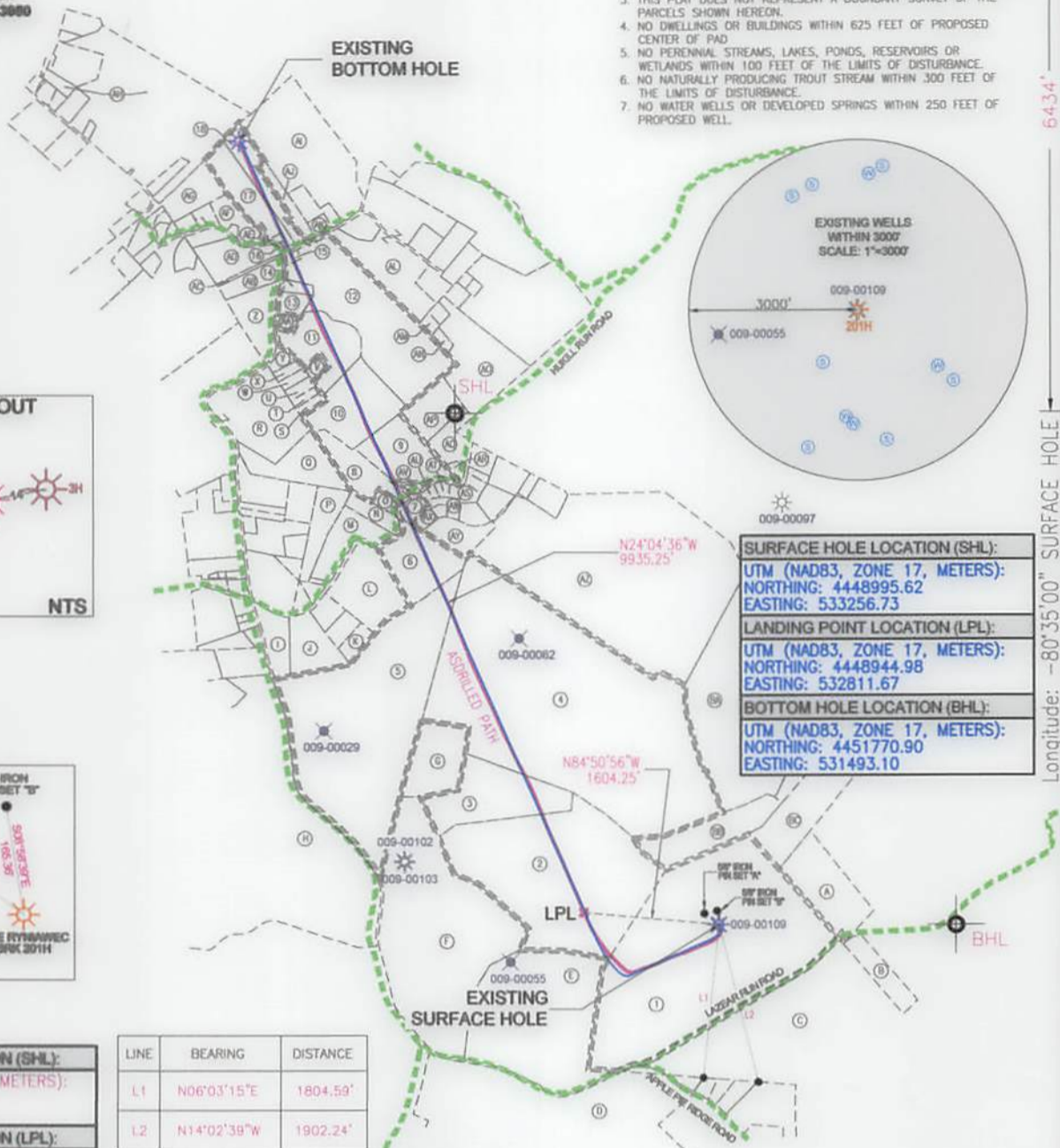


www.jhacompanies.com  
 68811 Vineyard Road  
 St. Clairsville, Ohio 43980  
 740-895-6100

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

**NOTES ON SURVEY**

1. COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. 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.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
6. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
7. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.



<b>SURFACE HOLE LOCATION (SHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4448995.62 EASTING: 533256.73
<b>LANDING POINT LOCATION (LPL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4448944.98 EASTING: 532811.67
<b>BOTTOM HOLE LOCATION (BHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4451770.90 EASTING: 531493.10

<b>SURFACE HOLE LOCATION (SHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4448995.27 EASTING: 533256.72
<b>LANDING POINT LOCATION (LPL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4449031.00 EASTING: 532769.23
<b>BOTTOM HOLE LOCATION (BHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4451774.79 EASTING: 531487.48

LINE	BEARING	DISTANCE
L.1	N06°03'15"E	1804.59'
L.2	N14°02'39"W	1902.24'



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.

*Signature* 10/10/18

(+) 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)	COMPANY: SWN Production Company, LLC OPERATOR'S WELL #: MIKE RYNIAWEC BRK 201H API WELL #: 47 STATE 009 COUNTY 00202 PERMIT
---	--	---

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

WATERSHED: UPPER OHIO SOUTH  
 DISTRICT: BUFFALO COUNTY: BROOKE  
 SURFACE OWNER: MIKE RYNIAWEC  
 OIL & GAS ROYALTY OWNER: MIKE RYNIAWEC

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: 5,923' TVD 16,600.0' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378	DESIGNATED AGENT: BRITTANY WOODY ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378
--	--

<b>LEGEND:</b> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION ⊙ EXISTING WATER WELL ⊕ EXISTING SPRING	<b>REVISIONS:</b> — SURVEYED BOUNDARY = LEASE BOUNDARY — ASDRILLED PATH — PROPOSED PATH	DATE: 10-10-2018 DRAWN BY: D. REED SCALE: 1" = 2000' DRAWING NO: 2017-220 WELL LOCATION PLAT
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WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	RYNIAWEC MIKE (S)/(R)	03-B42-0033.0000	102.00
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	LUTHER GRIZZEL	03-B42-0029.0000	79.13
3	LUTHER GRIZZEL	03-B42-0031.0000	18.87
4	HENRY HEINZROTH	03-B42-0032.0000	140.52
5	JAY GLEN COLLINS	03-B41-0080.0000	291.95
6	FRANK G. AINSCOUGH & KELLY L. AINSCOUGH JTROS	03-B42-0071.0000	12.55
7	MICHAEL ENSMINGER	03-B42-0009.0000	1.89
8	BARBARA C. MCFARLAND	03-B42-0007.0000	6.09
9	ROD EDWARD PATTISON JR.	03-B42-0004.0000	13.25
10	ROGER L. SNODERLY & KAREN A. SNODERLY (SURV.)	03-B41-0106.0000	14.58
11	CHRISTOPHER S. LOY & INGRID E. LOY (SURV.)	03-B36-0119.0000	13.80
12	DALE V. HOPKINS	03-B36-0124.0000	34.11
13	VIRGINIA MAY HUNT FORKER	03-B36-0121.0000	2.00
14	HOWARD M. ROCKHOLD & DEBROH S. ROCKHOLD (SURV.)	03-B36-0122.0000	1.17
15	JOSEPH P. LIZON JR.	03-B36-0123.0000	0.53
16	CHAPEL HILL CHURCH	03-B36-0131.0000	1.10
17	RICKEY E. FIBER	03-B36-0132.0000	8.47
18	LORIE T. DONNELLY & MICHAEL A. HOT (SURV.)	03-B36-0130.0000	5.75

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	RALPH O. SMITH & GINA L. SMITH (SURV.)	03-B42-0064.0000	12.60
B	DOUGLAS L. TURNER & BELINDA TURNER	03-B42-0035.0000	5.00
C	MIKE RYNIWEC	03-B42-0034.0000	61.17
D	JOSEPH S. BUREK & JANE M. BUREK	03-B47-0019.0000	117.68
E	ELIZABETH ELLEN FLUHARTY	03-B47-0018.0000	52.00
F	KATHY LYNN MAYHEW & MICHAEL ET AL (SURV.)	03-B47-0027.0000	79.13
G	LUTHER GRIZZEL	03-B42-0030.0000	10.48
H	JAY GLEN COLLINS	03-B41-0080.0000	291.95
I	SHAWN M. SINES	03-B41-0085.0000	5.61
J	HENRY MIKELS; BONNIE J. BURKETT (SURV.)	03-B41-0086.0001	7.72
K	JASON D. WHITE & MARY E. WHITE (SURV.)	03-B41-0086.0000	2.32
L	ROBERT D. HILDEBRAND II & LESLIE C. HILDEBRAND (SURV.)	03-B42-0063.0000	14.07
M	AUDRA EDWARD REFFITT & JANE BEATICE (SURV.)	03-B41-0118.0002	8.00
N	MICHAEL TODD ELLIOTT & YOLANDA S. ELLIOTT (SURV.)	03-B42-0062.0000	4.55
O	BARBARA C. MCFARLAND	03-B42-0008.0000	1.00
P	JOAN C. ARACICH (TOD)	03-B41-0119.0000	6.02
Q	KAGESH CHAPEL CEMETARY	03-B41-0107.0000	9.18
R	LORETTA JOAN BASIL	03-B41-0099.0000	53.00
S	JEROMY R. SADLER	03-B41-0105.0000	0.90
T	WAYNE J. SMITH & KASSI JO SMITH (SURV.)	03-B41-0104.0000	0.87
U	WAYNE J. SMITH & KASSI JO SMITH (SURV.)	03-B41-0103.0000	1.00
V	THOMAS L. PUSKARICH & KIMBERLY PUSKARICH (SURV.)	03-B41-0121.0000	1.00
W	WILLIAM J. COCHRAN & SANDRA L. COCHRAN (SURV.)	03-B41-0102.0000	1.00
X	ERVAN R. COWAN; RICHARD; DIANE DIGHT; JODY TENNANT	03-B41-0101.0000	1.00
Y	JOHN GEORGE SR. & MAXINE GEORGE	03-B41-0100.0000	1.20
Z	MARK LLOYD VANHORN & JOANN VANHORN (SURV.)	03-B36-0118.0000	7.65
AA	CHARLES N. MONROE & GAY R. MONROE (SURV.)	03-B36-0120.0000	1.00
AB	JEFFREY ALAN FERRY ETAL	03-B36-0117.0000	4.04
AC	DONNA HARMS ETAL	03-B36-0116.0000	0.49
AD	DONNA HARMS ETAL	03-B36-0115.0000	6.06
AE	MERRY M. FIBER	03-B36-0133.0000	0.43
AF	JEROME ANDERSON & CATHY ANDERSON	03-B36-0134.0000	4.37
AG	MARK A. ADAMS & MELODY J. ADAMS	03-B36-0142.0000	6.21
AH	BRIAN L. TESLOMCH	03-B36-0145.0000	50.91
AI	HERBERT G. WEAVER JR. & ANITA H. WEAVER (SURV.)	03-B36-0125.0000	29.47
AJ	DAVID LEE (2SD); ELIZABETH JANE	03-B36-0129.0000	3.00
AK	COLIN P. KELLEY II; NANCY E. TAYLOR (SURV.)	03-B36-0127.0000	1.01
AL	DALE V. HOPKINS & DANA M. HOPKINS (SURV.)	03-B37-0119.0000	23.82
AM	DIANNA ARACICH	03-B37-0127.0000	1.00
AN	MICHAEL OWEN MATHES	03-B37-0125.0000	1.14
AO	SAMUEL M. HALL	03-B42-0001.0000	18.12
AP	ROD EDWARD PATTISON JR.	03-B42-0002.0000	6.08
AQ	DANIEL R. GORBY	03-B42-0003.0000	5.00
AR	DUANE D. MILLER & BETTY J. MILLER	03-B42-0005.0000	0.73
AS	NORTHERN HANCOCK BANK & TRUST COMPANY	03-B42-0023.0000	1.10
AT	JOHN DAVIS	03-B42-0022.0000	0.64
AU	JOHN FREDERICK DAVIS	03-B42-0021.0000	0.62
AV	JOHN PAUGH	03-B42-0006.0000	0.92
AW	RICKEY D. CONLEY JR.	03-B42-0012.0000	1.33
AX	ANDREW J. VARGO JR. & NANCY L. VARGO	03-B42-0010.0000	0.85
AY	RICHARD HAROLD KENNY & JOY LYNN KENNY (SURV.)	03-B42-0020.0000	4.51
AZ	ROCCO BASIL	03-B42-0019.0000	100.05
BA	PHYLIS P. MARKER	03-B42-0052.0000	91.51
BB	JAMES L. BONAR ETAL.	03-B42-0054.0000	4.64
BC	WINDSOR POWER HOUSE COAL CO.	03-B42-0055.0000	21.00

REVISIONS:

COMPANY:		 	
OPERATOR'S		MIKE RYNIWEC BRK	
WELL #:		201H	
DISTRICT:	COUNTY:	STATE:	DATE: 10-10-2018
BUFFALO	BROOKE	WV	DRAWN BY: D. REED
			SCALE: N/A
			DRAWING NO: 2017-220
			WELL LOCATION PLAT

WELL LOCATION PLAT  
 DRAWING NO: 2017-250  
 SCALE: N/A  
 DRAWN BY: D. REED  
 DATE: 10-10-2018

WELL #: 201H  
 OPERATOR'S: MIKE RYNIWEC BRK  
 DISTRICT: BUTFALO  
 COUNTY: BROOKE  
 STATE: WV



SWN Production Company, LLC  
 COMPANY:

REVISIONS:	

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
BC	WINDSOR POWER HOUSE COAL CO	07-843-0025.0000	21.00
BB	JAMES L. BONAR ETAL	07-843-0024.0000	4.84
BA	FRYDUS P. MARKER	07-843-0025.0000	81.21
AZ	ROCCO BASIL	07-843-0019.0000	100.00
AY	RICHARD HAROLD KERRY & JOY LYNN KERRY (SURV.)	07-843-0030.0000	4.21
AX	ANDREW J. VARGO JR. & NANCY L. VARGO	07-843-0010.0000	0.82
AW	RICKY D. COMLEY JR.	07-843-0015.0000	1.22
AV	JOHN FLUGH	07-843-0008.0000	0.92
AU	JOHN FREDERICK DAVIS	07-843-0031.0000	0.82
AT	JOHN DAVIS	07-843-0033.0000	0.84
AS	NORTHERN HAWKCOCK BANK & TRUST COMPANY	07-843-0023.0000	1.10
AR	DIANE D. MILLER & BETTY J. MILLER	07-843-0002.0000	0.72
AQ	DANIEL R. GORBY	07-843-0003.0000	2.00
AP	ROD EDWARD PATTISON JR.	07-843-0003.0000	8.08
AO	SAMUEL M. HALL	07-843-0001.0000	8.12
AN	MICHAEL OWEN MATHESS	07-843-0125.0000	1.14
AM	DANNA ARACHO	07-843-0123.0000	1.00
AL	DALE V. HOPKINS & DANA M. HOPKINS (SURV.)	07-843-0119.0000	22.82
AK	COLIN P. KELLEY & NANCY E. TAYLOR (SURV.)	07-843-0127.0000	1.01
AJ	DAVID LEE LISO, ELIZABETH JANE	07-843-0128.0000	2.00
AI	HERBERT G. WEAVER JR. & WILMA H. WEAVER (SURV.)	07-843-0125.0000	28.47
AH	BRIAN J. TEOLOUCH	07-843-0142.0000	20.91
AG	MARK A. ADAMS & MELLOY L. ADAMS	07-843-0145.0000	8.21
AF	JEROME ANDERSON & CATHY ANDERSON	07-843-0124.0000	4.72
AE	MERRYL M. FIEBER	07-843-0123.0000	0.42
AD	DOMNA HARMIS ETAL	07-843-0118.0000	8.08
AC	DOMNA HARMIS ETAL	07-843-0118.0000	8.08
AB	JEFFREY ALAN FERRY ETAL	07-843-0117.0000	4.04
AA	CHARLES H. MONROE & GAY R. MONROE (SURV.)	07-843-0120.0000	1.00
AZ	MARK LLOYD WINGORIN & JOANN WINGORIN (SURV.)	07-843-0118.0000	7.82
Y	JOHN GEORGE SR. & MAXINE GEORGE	07-843-0100.0000	1.20
X	ERVAN R. COMAR, RICHARD, DIANE DIGHT, JODY TENNANT	07-843-0101.0000	1.00
W	WILLIAM J. COCHRAN & SANDRA L. COCHRAN (SURV.)	07-843-0103.0000	1.00
V	THOMAS J. PUSKASICH & KIMBERLY PUSKASICH (SURV.)	07-843-0121.0000	1.00
U	WAYNE J. SMITH & KASSI JO SMITH (SURV.)	07-843-0102.0000	1.00
T	WAYNE J. SMITH & KASSI JO SMITH (SURV.)	07-843-0104.0000	0.82
S	JEROME R. SAEGER	07-843-0105.0000	0.90
R	LORRETTA JOAN BASIL	07-843-0099.0000	22.00
Q	KADESH CHAPEL CEMETARY	07-843-0107.0000	8.18
P	JOAN C. MARCICH (TOD)	07-843-0119.0000	8.02
O	BARBARA C. MCFARLAND	07-843-0008.0000	1.00
N	MICHAEL TODD ELLIOTT & YOLANDA S. ELLIOTT (SURV.)	07-843-0085.0000	4.22
M	ALICIA EDWARD REFFITT & JANE BEATICE (SURV.)	07-843-0118.0000	8.00
L	ROBERT D. HILDEBRAND II & LESLIE C. HILDEBRAND (SURV.)	07-843-0082.0000	14.02
K	JACSON D. WHITE & MARY E. WHITE (SURV.)	07-843-0088.0000	2.22
J	HENRY MICHAEL BONNE J. BURKETT (SURV.)	07-843-0086.0001	2.22
I	SHAWN M. SHINE	07-843-0085.0000	2.81
H	JAY GLEN COLLINS	07-843-0080.0000	29.18
G	LUTHER GRIZZEL	07-843-0030.0000	10.48
F	KATHY LYNN MAYHEW & MICHAEL ET AL (SURV.)	07-843-0037.0000	29.12
E	ELIZABETH ELLEN FLUHWARTY	07-843-0018.0000	22.00
D	JOSEPH S. BURK & JANE M. BURK	07-843-0019.0000	11.88
C	MIKE RYNIWEC	07-843-0024.0000	81.12
B	DOUGLAS L. TURNER & BELINDA TURNER	07-843-0025.0000	2.00
A	RALPH O. SMITH & GINA L. SMITH (SURV.)	07-843-0084.0000	12.80

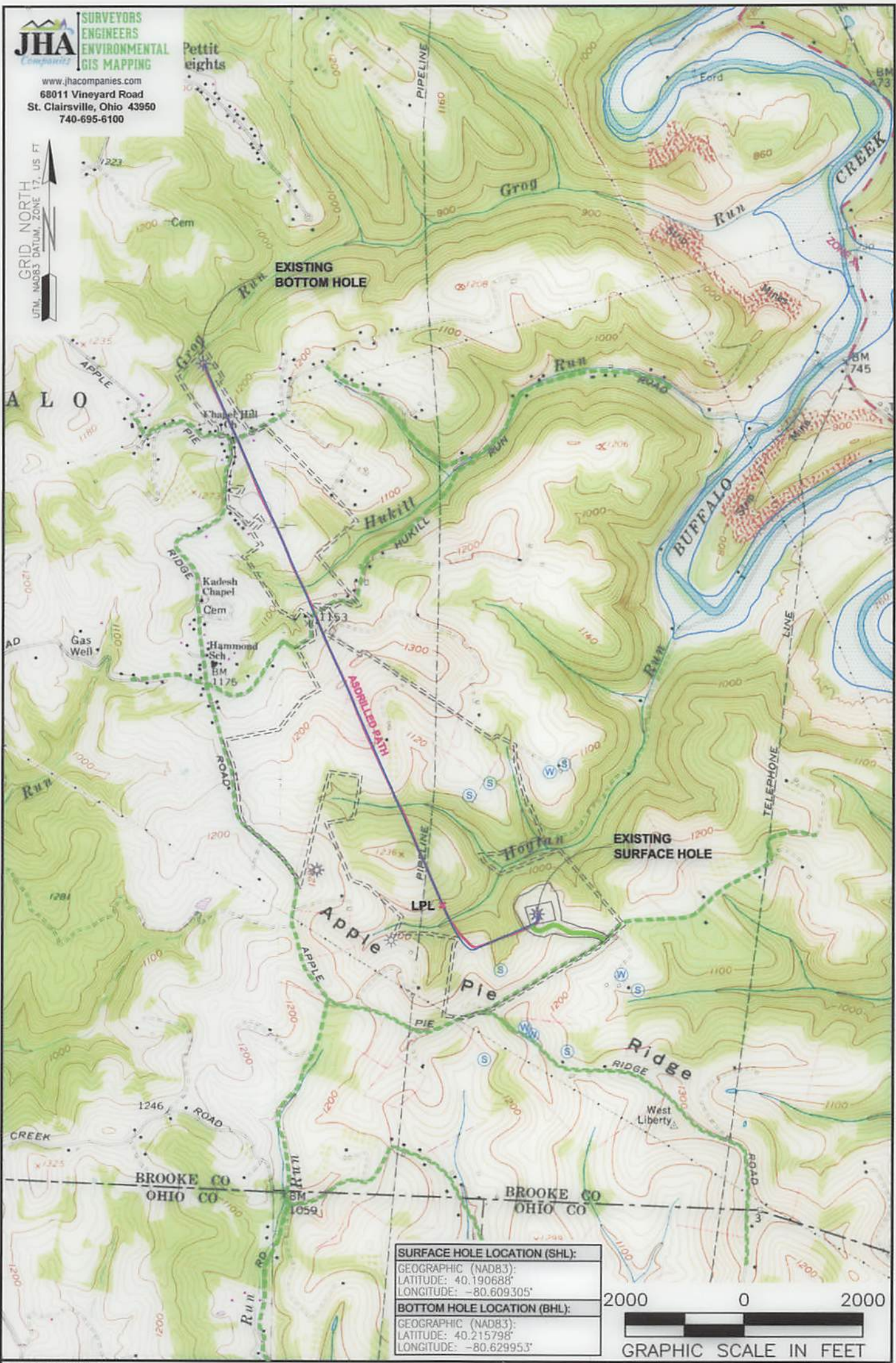
TRACT	SURFACE OWNER (S) \ ROYALTY OWNER (R)	TAX PARCEL	ACRES
18	LORE T. DONNELLY & MICHAEL A. HOD (SURV.)	07-843-0120.0000	2.22
17	RICKY E. FIEBER	07-843-0125.0000	8.42
16	CHAPEL HILL CHURCH	07-843-0121.0000	1.10
15	JOSEPH P. LIZON JR.	07-843-0123.0000	0.22
14	HOWARD M. ROCKHOLD & DEBORAH S. ROCKHOLD (SURV.)	07-843-0123.0000	1.12
13	VERGIA MAY HUNT FORKNER	07-843-0121.0000	2.00
12	DALE V. HOPKINS	07-843-0124.0000	24.11
11	CHRISTOPHER S. LOY & INGRID E. LOY (SURV.)	07-843-0119.0000	12.80
10	ROGER L. SNODGRY & KAREN A. SNODGRY (SURV.)	07-843-0108.0000	14.28
9	ROD EDWARD PATTISON JR.	07-843-0004.0000	12.22
8	BARBARA C. MCFARLAND	07-843-0003.0000	8.08
7	MICHAEL ENGININGER	07-843-0008.0000	1.88
6	FRANK G. WINGCOURT & KELLY L. WINGCOURT TRUST	07-843-0031.0000	12.22
5	JAY GLEN COLLINS	07-843-0080.0000	29.18
4	HENRY HENSROTH	07-843-0023.0000	140.22
3	LUTHER GRIZZEL	07-843-0031.0000	18.82
2	LUTHER GRIZZEL	07-843-0029.0000	28.12
1	RYNIWEC MINE (S) \ (R)	07-843-0023.0000	102.00

ADJOINING OWNERS TABLE

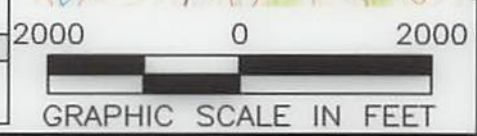
WELL BORE TABLE FOR SURFACE \ ROYALTY OWNERS



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



<b>SURFACE HOLE LOCATION (SHL):</b>
GEOGRAPHIC (NAD83):
LATITUDE: 40.190688°
LONGITUDE: -80.609305°
<b>BOTTOM HOLE LOCATION (BHL):</b>
GEOGRAPHIC (NAD83):
LATITUDE: 40.215798°
LONGITUDE: -80.629953°



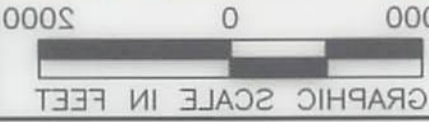
**NOTES ON SURVEY**  
 1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.  
 2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.  
 3. ALL INSETS ARE: GRID NORTH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

**LEGEND:**

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

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> MIKE RYNIWEC BRK	<b>WELL #</b> 201H	<b>SERIAL #</b> XXXX
<b>ADDRESS:</b> P.O. BOX 1300 JANE LEW, WV 26378	<b>COUNTY - CODE</b> BROOKE - 009	<b>DISTRICT:</b> BUFFALO	
<b>SURFACE OWNER:</b> MIKE RYNIWEC	<b>USGS 7 1/2 QUADRANGLE MAP NAME:</b> BETHANY, WV & TILTONVILLE, OH-WV		





<b>SURFACE HOLE LOCATION (SHL):</b>
LONGITUDE: -80.603305
LATITUDE: 40.190888
GEOGRAPHIC (NAD83):
<b>BOTTOM HOLE LOCATION (BHL):</b>
LONGITUDE: -80.639927
LATITUDE: 40.212398
GEOGRAPHIC (NAD83):

**LEGEND:**

- FLOOD PLAIN
- ACQUIRED PATH
- PROPOSED PATH
- LEASE BOUNDARY
- ACCESS ROAD TO PREV. SITE
- PUBLIC ROAD
- ACCESS ROAD
- PROPOSED SURFACE HOLE \ BOTTOM HOLE
- EXISTING \ PRODUCING WELLS
- L.P.L. LANDING POINT LOCATION
- FLOOD PLAIN

<b>WELL (FARM) NAME:</b>	MIKE RYNAWEC BRK
<b>COUNTY - CODE</b>	BROOKE - 009
<b>DISTRICT:</b>	BUFFALO
<b>WELL #</b>	2011 XXXX
<b>SERIAL #</b>	

**NOTES ON SURVEY:**

1. SURFACE AND BOTTLE HOLE INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
2. ALL HEIGHTS ARE GRID NORTH UNLESS OTHERWISE SPECIFIED.

**WELL OPERATOR:** SWN PRODUCTION COMPANY, LLC  
**ADDRESS:** P.O. BOX 1300 JANE LEW, WV 26328  
**SURFACE OWNER:** MIKE RYNAWEC  
 UG2 7 1/2 QUADRANGLE MAP NAME: BETHANY, W & TILTONVILLE, OH-WV