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 - 00182 County BROOKE District BUFFALO
Quad BETHANY Pad Name JOHN HUPP BRK PAD Field/Pool Name PANHANDLE FIELD WET
Farm name JOHN W. HUPP & LINDA H. DOUBLE Well Number JOHN HUPP BRK 3H
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 4,447,435.708	Easting 536,688.128
Landing Point of Curve	Northing 4,447,495.221	Easting 536,657.118
Bottom Hole	Northing 4,449,320.648	Easting 535,944.166

Elevation (ft) 1275.6 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 02/02/2017 Date drilling commenced 05/13/2017 Date drilling ceased 09/13/2017
Date completion activities began 01/22/2018 Date completion activities ceased 03/09/2018
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 450 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 977 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 497 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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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	26	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	606	NEW	J-55/54.50#		Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1879	NEW	J-55/36#		Y, 33 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	13180	NEW	HCP-110/20#		Y
Tubing		2.375	6623	NEW	P-110/4.7#		N
Packer type and depth set							

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ^{3}/sks)	Volume (ft.^{3})	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	161/588	15.60	1.18/1.20	189.98/705.6	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	1246	15.60	1.18	1470.28	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	875/1492	15.60	1.21/1.19	1058.75/1775.48	SURFACE	24
Tubing							

Drillers TD (ft) 13180 Loggers TD (ft) 13180
Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
Plug back procedure N/A

Kick off depth (ft) 5270

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				

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS			
MARCELLUS	6193	TVD	6523	MD

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown □ Open Flow OIL TEST □ Flow □ Pump

SHUT-IN PRESSURE Surface 1606 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	4657 mcfpd	590 bpd	_____ bpd	538 bpd	□ Estimated □ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, 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 WEATHERFORD
Address 2000 St. James Place City Houston State TX Zip 77056

Cementing Company SCHLUMBERGER WELL SERVICES
Address 1080 US Hwy 33 East City Weston State WV Zip 26452

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

Please insert additional pages as applicable.

Completed by BOBBY WILLIS Telephone 832-796-2884
Signature _____ Title REGULATORY ANALYST Date 5/17/18

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

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JOHN HUPP BRK 3H

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/24/2018	12,945	13,052	42
2	1/24/2018	12,805	12,912	42
3	1/25/2018	12,665	12,772	42
4	1/25/2018	12,525	12,632	42
5	1/25/2018	12,385	12,492	42
6	1/26/2018	12,245	12,352	42
7	1/26/2018	12,105	12,212	42
8	1/26/2018	11,965	12,072	42
9	1/27/2018	11,825	11,932	42
10	1/27/2018	11,685	11,792	42
11	1/27/2018	11,545	11,652	42
12	1/27/2018	11,405	11,512	42
13	1/28/2018	11,265	11,372	42
14	1/28/2018	11,125	11,232	42
15	1/28/2018	10,985	11,092	42
16	1/29/2018	10,845	10,952	42
17	1/29/2018	10,705	10,812	42
18	1/29/2018	10,565	10,672	42
19	1/29/2018	10,425	10,532	30
20	1/30/2018	10,285	10,392	42
21	1/30/2018	10,145	10,252	42
22	1/30/2018	10,005	10,112	42
23	1/31/2018	9,865	9,972	42
24	1/31/2018	9,725	9,832	42
25	2/1/2018	9,585	9,692	42
26	2/1/2018	9,445	9,552	42
27	2/1/2018	9,305	9,412	42
28	2/2/2018	9,168	9,272	33
29	2/2/2018	9,025	9,132	42
30	2/2/2018	8,885	8,992	42
31	2/3/2018	8,745	8,852	42
32	2/3/2018	8,605	8,712	42
33	2/4/2018	8,465	8,572	42
34	2/4/2018	8,325	8,432	42
35	2/4/2018	8,185	8,292	42
36	2/4/2018	8,045	8,152	42
37	2/5/2018	7,905	8,012	42
38	2/5/2018	7,765	7,872	42
39	2/5/2018	7,625	7,732	42
40	2/5/2018	7,485	7,592	42
41	2/6/2018	7,345	7,444	30
42	2/6/2018	7,205	7,312	42
43	2/7/2018	7,065	7,172	42
44	2/7/2018	6,925	7,032	42
45	2/7/2018	6,785	6,892	42
46	2/8/2018	6,645	6,752	42

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ATTACHMENT 2
STIM REPORT

STAGE NUM	Stim 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
1	1/24/2018	89	7,224	8,164	3,916	282,850	8,455	
2	1/25/2018	92	7,721	8,205	4,212	284,480	4,518	
3	1/25/2018	94	7,626	8,270	4,492	287,060	4,467	
4	1/25/2018	99	7,711	8,132	4,308	288,220	4,968	
5	1/26/2018	97	7,930	8,500	4,498	287,920	4,498	
6	1/26/2018	99	7,781	8,373	4,260	286,000	5,075	
7	1/26/2018	96	7,802	8,569	4,557	291,600	5,131	
8	1/27/2018	93	7,637	8,558	4,260	291,400	4,513	
9	1/27/2018	99	7,593	8,394	4,372	293,580	4,452	
10	1/27/2018	92	7,480	8,641	4,420	294,820	4,985	
11	1/27/2018	99	7,697	8,417	4,593	290,020	4,663	
12	1/28/2018	95	7,663	8,305	4,548	292,420	4,652	
13	1/28/2018	98	7,711	8,387	4,436	287,660	5,169	
14	1/28/2018	99	7,473	7,957	4,545	290,000	5,042	
15	1/29/2018	100	7,256	7,916	4,262	282,960	4,474	
16	1/29/2018	100	7,464	8,148	4,985	287,360	4,977	
17	1/29/2018	100	7,291	7,801	4,607	289,480	5,132	
18	1/29/2018	100	7,368	7,856	4,789	294,320	5,012	
19	1/30/2018	99	7,287	7,929	4,746	290,100	4,543	
20	1/30/2018	99	7,538	8,255	4,570	295,360	4,521	
21	1/30/2018	94	7,959	8,564	4,263	291,180	5,085	
22	1/31/2018	98	7,864	8,524	4,344	291,180	5,032	
23	1/31/2018	98	7,528	9,117	4,233	291,440	5,520	
24	2/1/2018	100	7,322	7,916	4,232	293,420	4,954	
25	2/1/2018	98	7,387	7,842	4,461	295,780	5,226	
26	2/1/2018	100	7,354	7,856	4,489	295,840	4,732	
27	2/2/2018	100	7,477	8,160	4,617	293,860	4,944	
28	2/2/2018	100	7,401	8,010	4,424	296,420	4,979	
29	2/2/2018	99	7,010	7,447	4,543	297,180	4,467	
30	2/3/2018	100	7,487	7,855	4,484	294,300	4,823	
31	2/3/2018	97	6,932	7,384	4,638	298,720	4,428	
32	2/4/2018	99	7,135	7,672	4,263	295,300	5,002	
33	2/4/2018	100	7,288	8,338	4,564	294,840	4,896	
34	2/4/2018	97	6,976	7,404	4,511	300,780	4,652	
35	2/4/2018	97	7,065	7,397	4,644	293,000	4,362	
36	2/5/2018	100	7,104	7,496	4,642	295,980	4,798	
37	2/5/2018	100	6,911	7,356	4,682	297,010	4,785	
38	2/5/2018	98	7,065	7,520	4,601	292,840	4,238	
39	2/5/2018	99	7,023	7,459	4,658	288,500	4,162	
40	2/6/2018	100	7,003	7,355	4,478	286,680	4,520	
41	2/6/2018	100	7,049	7,646	4,770	315,340	4,846	
42	2/7/2018	99	7,490	7,847	4,363	290,780	5,777	
43	2/7/2018	98	7,052	7,600	4,675	281,480	4,134	
44	2/7/2018	98	6,808	8,354	4,637	286,360	3,967	
45	2/8/2018	99	6,941	7,354	4,453	292,540	4,122	
46	2/8/2018	99	7,271	8,354	4,441	290,400	4,032	

swn
Southwestern Energy®

Well Name: **John Hupp BRK 3H** 47009001820000

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	450.00	450.00	
Top of Salt Water	977.00	977.00	NA	NA	
Pittsburgh Coal	497.00	497.00	502.00	502.00	
Pottsville (ss)	617.00	617.00	744.00	744.00	
Mauch Chunk (shale)	852.00	852.00	1536.00	1536.00	
Raven Cliff (ss)	959.00	959.00	1226.00	1226.00	
Maxton (ss)	1311.00	1311.00	1434.00	1434.00	
Greenbriar (ls)	1536.00	1536.00	1678.00	1678.00	
Big Injun (ss)	1678.00	1678.00	1813.00	1813.00	
Berea (siltstone)	2167.00	2167.00	2210.00	2210.00	
Rhinestreet (shale)	5812.00	5735.00	5992.00	5888.00	
Cashaqua (shale)	5992.00	5888.00	6060.00	5940.00	
Middlesex (shale)	6060.00	5940.00	6158.00	6009.00	
Burket (shale)	6158.00	6009.00	6181.00	6025.00	
Tully (ls)	6181.00	6025.00	6254.00	6073.00	
Mahantango (shale)	6254.00	6073.00	6523.00	6193.00	
Marcellus (shale)	6523.00	6193.00	NA	NA	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/24/2018
Job End Date:	2/8/2018
State:	West Virginia
County:	Brooke
API Number:	47-009-00182-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	John Hupp BRK 3
Latitude:	40.17649468
Longitude:	-80.56908300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,168
Total Base Water Volume (gal):	8,993,428
Total Base Non Water Volume:	147,000

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
HCL	SWN Well Services	Solvent					
				Listed Below			
BIOC11219A	Nalco	Biocide					
				Listed Below			

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FLOJET DR 9000LPP	SWN Well Services	Friction Reducer					
				Listed Below			
Ingredients	Listed Above	Listed Above					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Base Water	Operator	Base Fluid					
				Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
SCAL16486A	Nalco	Scale Inhibitor					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	83.48376	Density = 8.345
			Crystalline Silica, quartz	14808-60-7	100.00000	14.93550	
			Water	7732-18-5	85.00000	1.27923	
			Hydrochloric Acid	7647-01-0	15.00000	0.21901	
			Petroleum Distillates, Hydrotreated	64742-47-8	45.00000	0.03604	

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			Methonol	67-56-1	60.00000	0.01503	
			Ethylene glycol	107-21-1	10.00000	0.00966	
			Benzyl-(C12-C16 Alky)-Dimethyl-Ammonium	68424-85-1	30.00000	0.00751	
			Acetic Acid	64-19-7	37.50000	0.00292	
			Chloride Glutaraldehyde	111-30-8	10.00000	0.00250	
			Methanol	67-56-1	80.00000	0.00179	
			Citric Acid	77-92-9	22.50000	0.00175	
			Amine Triphosphate	Proprietary	30.00000	0.00165	
			Alcohols, C12-C16,Ethoxylated propoxylated	68213-24-1	2.00000	0.00160	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00160	
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00022	
			Fatty acids	61790-12-3	5.02700	0.00011	
			Modified thiourea polymer	68527-49-1	4.74600	0.00011	
			Potassium acetate	127-08-2	0.02200	0.00000	
			Formaldehyde	50-00-0	0.00400	0.00000	

* 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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John Hupp BRK 3H
Brooke County, WV
Quail 9
Plan vs Actual

Weatherford

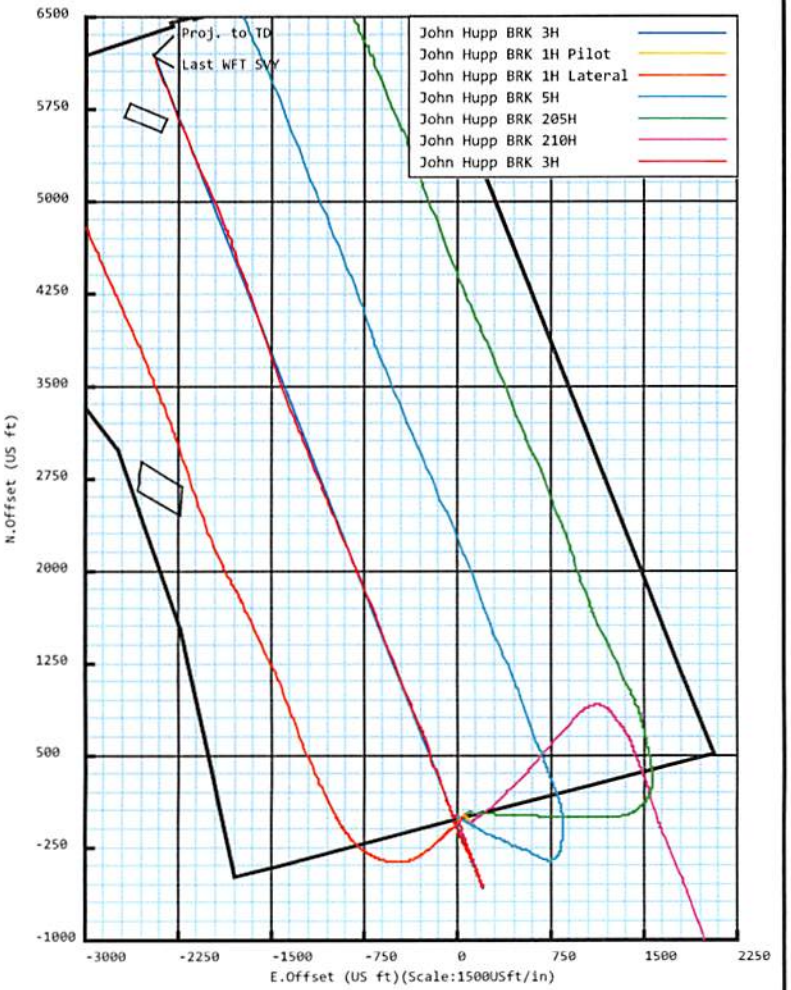
Plan Data for John Hupp BRK 3H

Plan Point Information:
DogLeg Severity Unit: °/100.00ft Position offsets from Slot centre

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	VSec (USft)	DLS (DLSU)	Toolface (°)	Comments
5132.00	12.55	158.58	5071.06	-541.56	195.40	-575.47	0.69	134.2	Last WFT SVY
5297.56	12.55	158.58	5232.67	-575.05	208.54	-611.44	0.00	0.0	Curve KOP 7° DLS
6476.84	70.00	337.94	6179.66	-94.70	11.97	-92.47	7.00	179.4	Build/Turn 9° DLS
6708.74	90.86	338.64	6218.00	116.60	-72.12	134.95	9.00	2.0	Landing Point
13237.11	90.86	338.64	6120.00	6195.79	-2449.81	6662.54	0.00	0.0	PBHL JH3H

Target Set Information:
Name: John Hupp BRK 3H
Position offsets from Slot centre

Name	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	Lat (°)	Long (°)
LP JH3H	6218.00	107.29	-68.48	14591402.64	1760715.82	40.176790	-80.569326
PBHL JH3H	6120.00	6195.79	-2449.81	14597491.14	1758334.49	40.193541	-80.577748



Plan Data for John Hupp BRK 3H

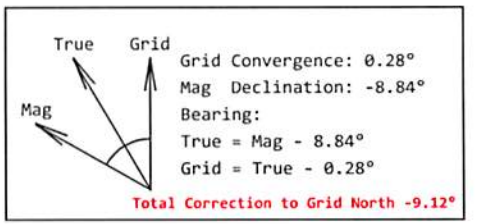
Field: SOUTHWESTERN_BROOKE CO, WV UTM NAD 83 (17N)
Map Unit: USFt Vertical Reference Datum (VRD):
Projected Coordinate System: NAD83 / UTM zone 17N

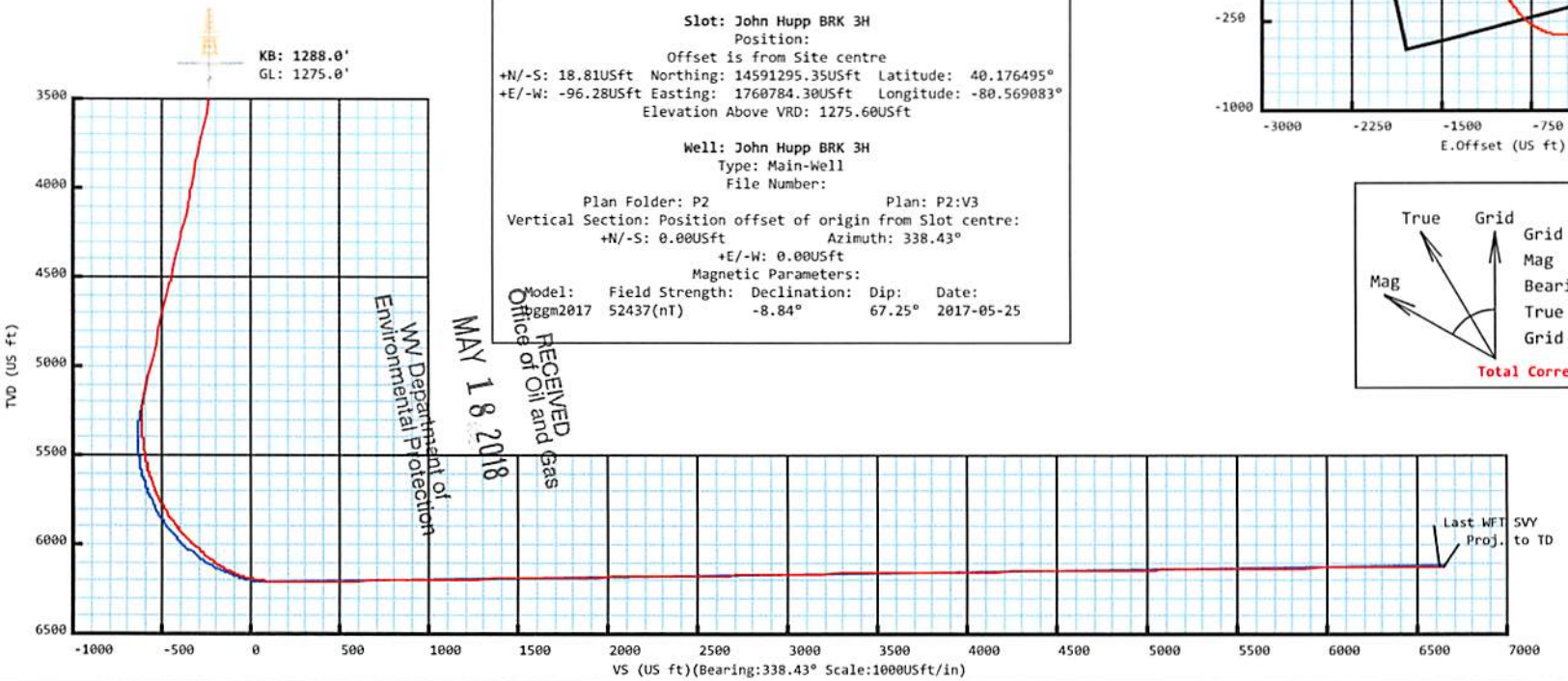
Site: John Hupp Pad
Unit: USFeet TVD Reference:
Company Name: SOUTHWESTERN ENERGY
Position: Northing: 14591276.54USft Latitude: 40.176442°
Easting: 1760880.58USft Longitude: -80.568739°
North Reference: Grid Grid Convergence: 0.28°
Elevation Above VRD: 1276.30USft

Slot: John Hupp BRK 3H
Position:
Offset is from Site centre
+N/-S: 18.81USft Northing: 14591295.35USft Latitude: 40.176495°
+E/-W: -96.28USft Easting: 1760784.30USft Longitude: -80.569083°
Elevation Above VRD: 1275.60USft

Well: John Hupp BRK 3H
Type: Main-Well
File Number:
Plan Folder: P2 Plan: P2:V3
Vertical Section: Position offset of origin from Slot centre:
+N/-S: 0.00USft Azimuth: 338.43°
+E/-W: 0.00USft
Magnetic Parameters:

Model:	Field Strength:	Declination:	Dip:	Date:
bggm2017	52437(nT)	-8.84°	67.25°	2017-05-25





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Drawing By: GWR Date: 09/04/2017
Weatherford Drilling Services
7725 W. Reno, Ste. #220
Oklahoma City, OK 73127
+1.405.773.1100 Main
+1.405.773.1887 Fax

Southwestern Energy®

5D Survey Report

SOUTHWESTERN ENERGY

Field Name: *SOUTHWESTERN_BROOKE CO, WV UTM NAD 83 (17N)*
Site Name: *John Hupp Pad*
Well Name: *John Hupp BRK 3H*
Survey: *Definitive survey*

11 September 2017

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John Hupp BRK 3H

Field Name: SOUTHWESTERN_BROOKE CO, WV UTM NAD 83 (17N)

Map Units: US ft **Company Name:** SOUTHWESTERN ENERGY

Vertical Reference Datum (VRD):

Projected Coordinate System: NAD83 / UTM zone 17N

Comment:

Site: John Hupp Pad

Units: US ft **North Reference:** Grid **Convergence Angle:** 0.28

Position: **Northing:** 14591276.54 US ft **Latitude:** 40.176442 **Easting:** 1760880.58 US ft **Longitude:** -80.568739

Elevation above Field Reference: 1276.30 US ft

Comment:

Slot: John Hupp BRK 3H

Position (Relative to Site Centre)

+N/-S: 18.81 US ft **Northing:** 14591295.35 US ft **Latitude:** 40.176495

+E/-W: -96.28 US ft **Easting:** 1760784.30 US ft **Longitude:** -80.569083

Elevation above Field Reference: 1275.60 US ft

Comment:

Well: John Hupp BRK 3H

Type: Main well **UWI:**

File Number: **Comment:**

Closure Distance: 6648.66US ft **Closure Azimuth:** 338.46°

Vertical Section: Position of Origin (Relative to Slot centre)

+N/-S: 0.00 US ft **+E/-W:** 0.00 US ft **Az:** 338.43°

Drill floor: Survey Name: Definitive Survey

Rig Height (Well TVD Reference): 26.00US ft **Elevation above Field Reference:** 1301.60US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey

Date: 17/May/2017 **Survey Tool:** *See Survey Tool Ranges below.* **Comment:** **Company:**

Magnetic Model:

Model Name: bggm2017 **Date:** 25/May/2017 **Field Strength:** 52437.7nT **Declination:** -8.84° **Dip:** 67.25°

Tie Point:

MD: 0.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** 0.00 US ft **North Offset:** 0.00 US ft **East Offset:** 0.00 US ft

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	13.00	
MWD	13.00	547.00	WFT MWD_01
MWD	547.00	1822.00	WFT MWD_02
MWD	1822.00	5132.00	WFT MWD_03
MWD	5132.00	13180.00	WFT MWD_04

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Wellpath created using minimum curvature.

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

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	40.176495	-80.569083	0.00	
13.00	0.00	0.00	13.00	0.00	0.00	0.00	40.176495	-80.569083	0.00	
151.00	0.69	160.59	151.00	-0.83	-0.78	0.28	40.176493	-80.569082	0.50	
196.00	0.83	177.69	195.99	-1.41	-1.36	0.38	40.176491	-80.569082	0.59	
240.00	0.79	183.40	239.99	-1.98	-1.99	0.37	40.176489	-80.569082	0.20	
284.00	0.85	182.79	283.98	-2.56	-2.61	0.34	40.176487	-80.569082	0.14	
328.00	0.80	191.91	327.98	-3.11	-3.24	0.26	40.176486	-80.569082	0.32	
372.00	0.87	199.23	371.97	-3.62	-3.86	0.09	40.176484	-80.569083	0.29	
416.00	1.06	204.10	415.97	-4.16	-4.54	-0.19	40.176482	-80.569084	0.47	
460.00	0.91	208.81	459.96	-4.66	-5.22	-0.52	40.176480	-80.569085	0.39	
504.00	0.79	207.44	503.96	-5.09	-5.80	-0.83	40.176479	-80.569086	0.28	
547.00	0.56	204.31	546.95	-5.43	-6.25	-1.05	40.176478	-80.569087	0.54	
641.00	0.38	295.28	640.95	-5.52	-6.54	-1.53	40.176477	-80.569089	0.73	
684.00	0.47	319.52	683.95	-5.25	-6.34	-1.77	40.176477	-80.569089	0.46	
728.00	0.51	319.71	727.95	-4.89	-6.06	-2.01	40.176478	-80.569090	0.09	
772.00	0.50	322.53	771.95	-4.52	-5.75	-2.26	40.176479	-80.569091	0.06	
816.00	0.62	300.28	815.95	-4.15	-5.48	-2.58	40.176480	-80.569092	0.56	
904.00	0.86	319.21	903.94	-3.15	-4.74	-3.42	40.176482	-80.569095	0.39	
992.00	0.76	317.07	991.93	-1.98	-3.81	-4.25	40.176484	-80.569098	0.12	
1080.00	0.77	317.31	1079.92	-0.89	-2.95	-5.05	40.176487	-80.569101	0.01	
1166.00	0.69	311.45	1165.91	0.11	-2.18	-5.83	40.176489	-80.569104	0.13	
1254.00	0.63	320.83	1253.91	1.04	-1.46	-6.53	40.176491	-80.569106	0.14	
1340.00	0.63	336.83	1339.90	1.97	-0.66	-7.02	40.176493	-80.569108	0.20	
1429.00	0.77	345.70	1428.90	3.05	0.37	-7.36	40.176496	-80.569109	0.20	
1516.00	1.07	340.76	1515.89	4.44	1.71	-7.77	40.176499	-80.569111	0.36	
1604.00	1.02	347.51	1603.87	6.04	3.25	-8.21	40.176504	-80.569112	0.15	
1691.00	0.74	343.44	1690.86	7.36	4.54	-8.54	40.176507	-80.569113	0.33	
1779.00	0.64	342.30	1778.85	8.42	5.55	-8.85	40.176510	-80.569115	0.11	
1822.00	0.67	330.14	1821.85	8.90	6.00	-9.05	40.176511	-80.569115	0.33	
1937.00	1.09	332.38	1936.84	10.66	7.55	-9.89	40.176516	-80.569118	0.37	
2026.00	0.47	334.75	2025.83	11.86	8.63	-10.44	40.176519	-80.569120	0.70	
2114.00	2.76	155.95	2113.80	10.11	7.02	-9.73	40.176514	-80.569118	3.67	
2202.00	4.46	150.88	2201.62	4.60	2.10	-7.20	40.176501	-80.569109	1.96	
2291.00	4.89	153.30	2290.33	-2.61	-4.31	-3.81	40.176483	-80.569097	0.53	
2379.00	5.43	159.89	2377.97	-10.51	-11.57	-0.69	40.176463	-80.569086	0.91	
2467.00	7.11	161.09	2465.44	-20.11	-20.64	2.51	40.176438	-80.569074	1.91	
2555.00	9.31	155.70	2552.53	-32.66	-32.28	7.20	40.176406	-80.569058	2.65	
2643.00	11.46	152.01	2639.09	-48.46	-46.49	14.23	40.176367	-80.569033	2.56	
2732.00	11.26	151.51	2726.34	-65.88	-61.93	22.53	40.176324	-80.569003	0.25	
2820.00	10.67	160.31	2812.74	-82.55	-77.15	29.37	40.176282	-80.568979	2.01	
2908.00	11.43	163.55	2899.11	-99.38	-93.19	34.58	40.176238	-80.568961	1.11	
2996.00	12.48	164.78	2985.20	-117.51	-110.72	39.55	40.176190	-80.568943	1.23	
3085.00	12.35	162.61	3072.12	-136.56	-129.09	44.92	40.176140	-80.568924	0.54	
3173.00	12.40	159.45	3158.08	-155.39	-146.91	51.05	40.176091	-80.568903	0.77	
3261.00	12.02	160.54	3244.09	-174.00	-164.40	57.42	40.176042	-80.568880	0.51	
3349.00	12.15	161.35	3330.14	-192.40	-181.82	63.43	40.175995	-80.568859	0.24	
3437.00	11.81	161.28	3416.22	-210.65	-199.12	69.28	40.175947	-80.568838	0.39	
3526.00	12.36	159.77	3503.25	-229.27	-216.68	75.50	40.175899	-80.568816	0.71	
3612.00	12.81	159.52	3587.18	-248.00	-234.25	82.02	40.175850	-80.568793	0.53	
3700.00	12.41	157.41	3673.06	-267.21	-252.12	89.07	40.175801	-80.568769	0.69	
3788.00	11.53	158.19	3759.15	-285.46	-269.02	95.97	40.175755	-80.568744	1.02	
3876.00	10.33	153.44	3845.55	-302.11	-284.24	102.76	40.175713	-80.568720	1.70	
3966.00	10.27	155.31	3934.10	-318.16	-298.75	109.72	40.175673	-80.568695	0.38	
4054.00	10.29	163.61	4020.69	-333.82	-313.42	115.22	40.175632	-80.568676	1.68	
4142.00	12.60	168.30	4106.94	-351.11	-330.36	119.38	40.175586	-80.568661	2.83	
4229.00	13.98	164.71	4191.61	-370.91	-349.79	124.08	40.175532	-80.568645	1.85	
4318.00	13.26	159.83	4278.11	-391.80	-369.74	130.43	40.175478	-80.568622	1.52	
4406.00	12.44	163.01	4363.90	-411.34	-388.28	136.68	40.175427	-80.568600	1.23	
4493.00	12.14	160.86	4448.91	-429.82	-405.88	142.42	40.175378	-80.568580	0.63	

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Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)

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
4580.00	13.25	160.33	4533.78	-448.92	-423.91	148.77	40.175329	-80.568558	1.28	
4669.00	13.81	158.05	4620.31	-469.74	-443.37	156.18	40.175275	-80.568532	0.87	
4756.00	13.61	161.06	4704.83	-490.35	-462.68	163.38	40.175222	-80.568506	0.85	
4843.00	13.51	159.45	4789.41	-510.73	-481.88	170.27	40.175169	-80.568482	0.45	
4931.00	12.78	156.42	4875.10	-530.74	-500.43	177.77	40.175118	-80.568455	1.14	
5019.00	13.08	156.01	4960.87	-550.41	-518.44	185.71	40.175069	-80.568427	0.36	
5132.00	12.55	158.58	5071.06	-575.47	-541.56	195.40	40.175005	-80.568393	0.69	
5207.00	11.81	157.22	5144.37	-591.29	-556.22	201.35	40.174965	-80.568372	1.06	
5302.00	5.18	147.53	5238.28	-605.23	-568.81	207.42	40.174930	-80.568350	7.12	
5350.00	1.27	139.62	5286.19	-607.87	-571.05	208.93	40.174924	-80.568345	8.18	
5399.00	1.49	317.22	5335.19	-607.79	-570.99	208.85	40.174924	-80.568345	5.63	
5447.00	3.79	313.81	5383.14	-605.76	-569.44	207.28	40.174928	-80.568351	4.80	
5495.00	7.35	313.15	5430.90	-601.54	-566.24	203.89	40.174937	-80.568363	7.42	
5543.00	9.02	321.12	5478.41	-595.17	-561.21	199.29	40.174951	-80.568379	4.20	
5591.00	10.89	335.39	5525.69	-587.05	-554.16	195.04	40.174970	-80.568394	6.42	
5639.00	13.94	345.83	5572.57	-576.79	-544.42	191.73	40.174997	-80.568406	7.87	
5688.00	17.19	346.94	5619.77	-563.77	-531.65	188.65	40.175032	-80.568417	6.66	
5736.00	20.91	347.78	5665.13	-548.30	-516.36	185.23	40.175074	-80.568429	7.77	
5784.00	24.81	348.06	5709.35	-529.91	-498.13	181.34	40.175124	-80.568442	8.13	
5832.00	27.53	342.88	5752.43	-508.91	-477.67	175.99	40.175181	-80.568461	7.40	
5880.00	30.09	338.03	5794.50	-485.82	-455.90	168.22	40.175241	-80.568489	7.22	
5928.00	32.96	337.49	5835.41	-460.72	-432.67	158.71	40.175304	-80.568522	6.01	
5976.00	36.22	337.08	5874.92	-433.48	-407.54	148.19	40.175374	-80.568560	6.81	
6024.00	39.23	334.77	5912.88	-404.15	-380.74	136.19	40.175447	-80.568602	6.93	
6073.00	42.35	331.10	5949.98	-372.30	-352.27	121.61	40.175526	-80.568654	8.03	
6121.00	46.16	329.86	5984.35	-339.14	-323.13	105.09	40.175606	-80.568712	8.14	
6169.00	47.81	331.41	6017.10	-304.37	-292.54	87.89	40.175690	-80.568773	4.17	
6217.00	49.31	334.13	6048.87	-268.57	-260.55	71.44	40.175778	-80.568832	5.27	
6266.00	50.86	335.90	6080.31	-231.05	-226.48	55.57	40.175872	-80.568888	4.20	
6314.00	55.48	335.72	6109.08	-192.68	-191.45	39.83	40.175968	-80.568944	9.63	
6362.00	59.91	335.96	6134.72	-152.17	-154.44	23.23	40.176070	-80.569003	9.24	
6410.00	65.22	337.93	6156.83	-109.60	-115.25	6.57	40.176178	-80.569061	11.65	
6458.00	70.08	340.54	6175.08	-65.22	-73.75	-9.14	40.176292	-80.569117	11.30	
6506.00	75.15	342.80	6189.42	-19.51	-30.28	-23.53	40.176412	-80.569168	11.48	
6554.00	79.03	343.39	6200.14	27.11	14.48	-37.13	40.176535	-80.569216	8.17	
6602.00	83.14	342.21	6207.58	74.38	59.76	-51.15	40.176659	-80.569265	8.90	
6651.00	85.99	338.99	6212.22	123.12	105.76	-67.36	40.176786	-80.569322	8.75	
6699.00	88.89	338.91	6214.37	171.06	150.51	-84.58	40.176909	-80.569383	6.04	
6747.00	89.94	339.13	6214.86	219.06	195.32	-101.76	40.177032	-80.569444	2.23	
6843.00	90.74	338.32	6214.29	315.05	284.78	-136.59	40.177279	-80.569567	1.19	
6940.00	91.05	339.27	6212.77	412.04	375.20	-171.68	40.177527	-80.569691	1.03	
7035.00	90.99	341.23	6211.08	506.97	464.59	-203.77	40.177773	-80.569804	2.06	
7131.00	90.86	341.97	6209.53	602.81	555.67	-234.07	40.178024	-80.569911	0.78	
7227.00	90.92	341.44	6208.04	698.64	646.81	-264.20	40.178274	-80.570018	0.56	
7323.00	90.56	337.27	6206.80	794.60	736.61	-298.04	40.178521	-80.570137	4.36	
7419.00	90.86	336.71	6205.61	890.56	824.97	-335.56	40.178765	-80.570270	0.66	
7514.00	90.92	338.15	6204.13	985.53	912.68	-372.02	40.179006	-80.570399	1.52	
7610.00	90.74	337.91	6202.74	1081.52	1001.70	-407.93	40.179251	-80.570526	0.31	
7706.00	90.99	338.32	6201.29	1177.51	1090.77	-443.71	40.179496	-80.570653	0.50	
7803.00	91.05	338.77	6199.57	1274.49	1181.03	-479.18	40.179744	-80.570778	0.47	
7899.00	91.05	339.31	6197.81	1370.47	1270.67	-513.52	40.179991	-80.570899	0.56	
7995.00	90.92	339.38	6196.16	1466.44	1360.48	-547.38	40.180238	-80.571019	0.15	
8090.00	90.99	338.88	6194.57	1561.42	1449.24	-581.21	40.180482	-80.571139	0.53	
8187.00	90.92	339.44	6192.96	1658.40	1539.88	-615.72	40.180731	-80.571261	0.58	
8282.00	90.92	338.38	6191.43	1753.38	1628.50	-649.90	40.180975	-80.571381	1.12	
8378.00	90.99	338.28	6189.83	1849.37	1717.71	-685.34	40.181221	-80.571507	0.13	
8475.00	90.92	337.80	6188.21	1946.35	1807.65	-721.61	40.181468	-80.571635	0.50	
8571.00	90.80	336.66	6186.77	2042.32	1896.16	-758.76	40.181712	-80.571767	1.19	
8668.00	90.74	335.47	6185.47	2139.23	1984.81	-798.11	40.181956	-80.571906	1.23	

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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
8764.00	91.05	338.38	6183.97	2235.17	2073.11	-835.73	40.182199	-80.572039	3.05	
8860.00	91.05	338.63	6182.21	2331.16	2162.42	-870.90	40.182444	-80.572163	0.26	
8956.00	90.86	338.03	6180.61	2427.14	2251.62	-906.34	40.182690	-80.572289	0.66	
9052.00	90.93	337.00	6179.11	2523.12	2340.31	-943.05	40.182934	-80.572419	1.08	
9149.00	90.68	337.49	6177.75	2620.09	2429.75	-980.56	40.183180	-80.572551	0.57	
9244.00	90.55	335.88	6176.73	2715.03	2516.99	-1018.16	40.183420	-80.572685	1.70	
9340.00	91.11	338.66	6175.34	2810.99	2605.51	-1055.25	40.183663	-80.572816	2.95	
9436.00	91.11	337.17	6173.48	2906.97	2694.45	-1091.33	40.183908	-80.572943	1.55	
9532.00	90.86	336.84	6171.83	3002.93	2782.81	-1128.83	40.184151	-80.573076	0.43	
9628.00	91.60	338.76	6169.77	3098.89	2871.67	-1165.09	40.184396	-80.573205	2.14	
9724.00	91.30	337.57	6167.34	3194.86	2960.75	-1200.79	40.184641	-80.573331	1.28	
9821.00	90.31	337.70	6165.97	3291.84	3050.44	-1237.69	40.184888	-80.573461	1.03	
9916.00	90.43	336.36	6165.36	3386.81	3137.90	-1274.76	40.185128	-80.573593	1.42	
10013.00	90.62	338.84	6164.47	3483.78	3227.58	-1311.72	40.185375	-80.573723	2.56	
10109.00	90.49	341.63	6163.54	3579.72	3317.91	-1344.18	40.185624	-80.573838	2.91	
10205.00	90.55	340.00	6162.67	3675.63	3408.57	-1375.73	40.185873	-80.573949	1.70	
10301.00	90.55	340.56	6161.75	3771.58	3498.93	-1408.12	40.186122	-80.574064	0.58	
10397.00	90.74	339.67	6160.67	3867.53	3589.20	-1440.77	40.186370	-80.574179	0.95	
10493.00	90.55	339.72	6159.59	3963.50	3679.23	-1474.08	40.186617	-80.574297	0.20	
10590.00	90.74	339.79	6158.50	4060.47	3770.23	-1507.64	40.186868	-80.574416	0.21	
10686.00	90.80	340.78	6157.21	4156.41	3860.60	-1540.02	40.187116	-80.574530	1.03	
10783.00	90.80	340.81	6155.85	4253.31	3952.19	-1571.93	40.187368	-80.574643	0.03	
10879.00	90.68	341.26	6154.61	4349.21	4042.97	-1603.13	40.187618	-80.574753	0.49	
10975.00	90.68	342.17	6153.47	4445.04	4134.12	-1633.24	40.187869	-80.574859	0.95	
11071.00	90.68	340.13	6152.33	4540.92	4224.96	-1664.26	40.188119	-80.574968	2.12	
11167.00	90.68	337.60	6151.19	4636.90	4314.48	-1698.87	40.188365	-80.575091	2.64	
11263.00	90.68	339.67	6150.05	4732.89	4403.88	-1733.83	40.188611	-80.575215	2.16	
11359.00	90.62	341.26	6148.96	4828.82	4494.34	-1765.93	40.188860	-80.575328	1.66	
11455.00	90.74	342.27	6147.83	4924.65	4585.51	-1795.97	40.189110	-80.575434	1.06	
11552.00	90.99	340.49	6146.36	5021.51	4677.42	-1826.94	40.189363	-80.575543	1.85	
11647.00	90.68	337.11	6144.98	5116.48	4765.97	-1861.28	40.189607	-80.575665	3.57	
11743.00	90.92	337.42	6143.64	5212.45	4854.50	-1898.38	40.189850	-80.575796	0.41	
11839.00	90.56	337.58	6142.40	5308.43	4943.19	-1935.11	40.190094	-80.575926	0.41	
11935.00	90.74	336.13	6141.31	5404.39	5031.45	-1972.84	40.190337	-80.576060	1.52	
12030.00	90.68	335.44	6140.13	5499.28	5118.09	-2011.81	40.190576	-80.576198	0.73	
12126.00	90.62	333.97	6139.04	5595.07	5204.87	-2052.82	40.190815	-80.576343	1.53	
12223.00	90.68	336.62	6137.94	5691.91	5292.98	-2093.36	40.191057	-80.576487	2.73	
12319.00	90.62	337.63	6136.85	5787.87	5381.43	-2130.67	40.191300	-80.576619	1.05	
12416.00	90.62	338.24	6135.80	5884.86	5471.31	-2167.11	40.191548	-80.576748	0.63	
12510.00	90.62	338.19	6134.78	5978.86	5558.60	-2201.99	40.191788	-80.576871	0.05	
12606.00	90.86	338.34	6133.54	6074.85	5647.76	-2237.54	40.192033	-80.576997	0.29	
12701.00	90.62	338.88	6132.32	6169.84	5736.21	-2272.18	40.192276	-80.577119	0.62	
12796.00	90.62	338.54	6131.29	6264.83	5824.72	-2306.67	40.192520	-80.577241	0.36	
12892.00	90.74	337.99	6130.15	6360.83	5913.89	-2342.22	40.192765	-80.577367	0.59	
12986.00	90.53	339.95	6129.11	6454.81	6001.62	-2375.95	40.193007	-80.577486	2.10	
13082.00	91.11	340.03	6127.73	6550.77	6091.82	-2408.80	40.193255	-80.577603	0.61	
13157.00	90.56	341.49	6126.64	6625.69	6162.62	-2433.51	40.193450	-80.577690	2.08	Last WFT SVY
13180.00	90.56	341.49	6126.42	6648.66	6184.43	-2440.81	40.193509	-80.577716	0.00	Proj. to TD

RECEIVED
Office of Oil and Gas
MAY 18 2018
WV Department of
Environmental Protection

Latitude: 40°12'30" — 7,658'

10,067' — BHL Latitude: 40°12'30"

RETTEW

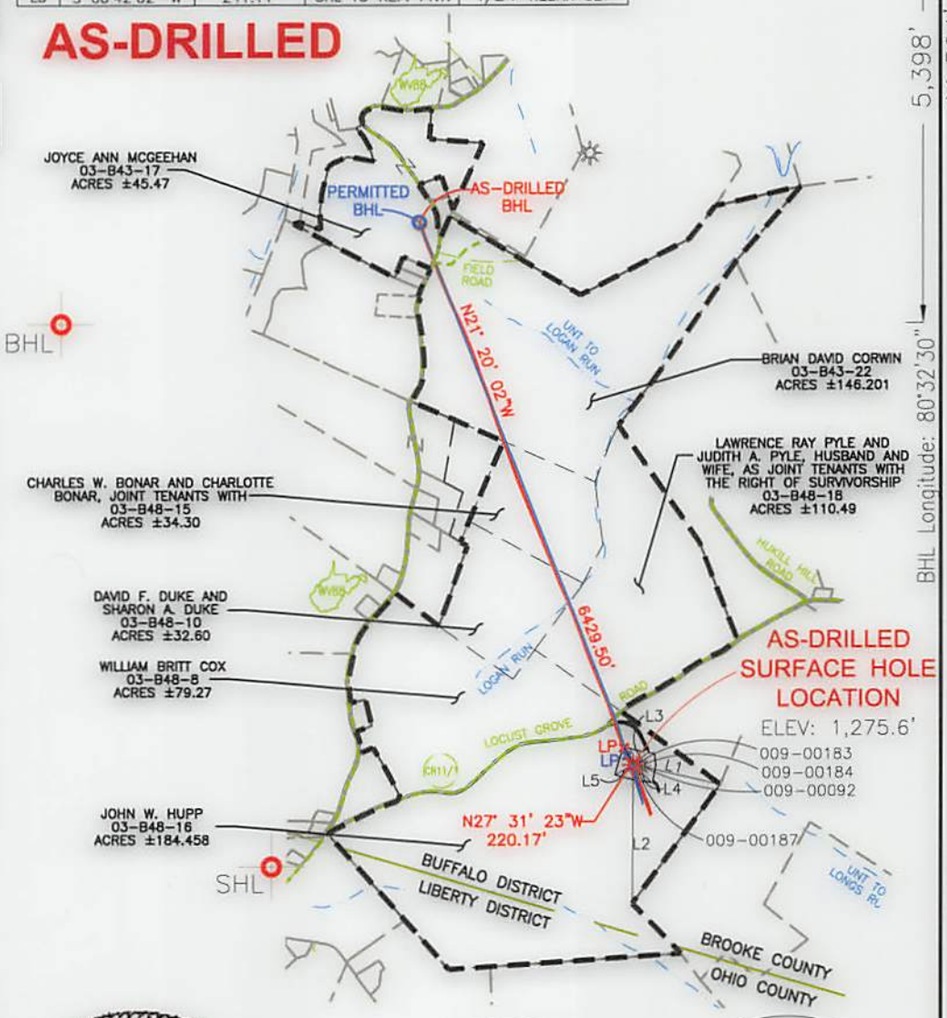
RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

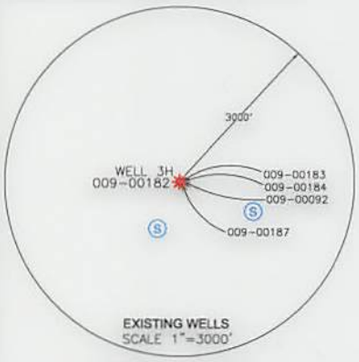
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 77°08'05" E	1020.64'	SHL TO LANDMARK	
L2	S 00°22'09" E	1579.01'	SHL TO LANDMARK	
L3	N 50°39'16" E	232.37'	SHL TO REF. PNT.	1/2"ø REBAR/CAP
L4	S 45°14'26" E	296.16'	SHL TO REF. PNT.	1/2"ø REBAR/CAP
L5	S 60°42'02" W	241.11'	SHL TO REF. PNT.	1/2"ø REBAR SET

AS-DRILLED

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

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,435.708 EASTING: 536,688.128
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,495.221 EASTING: 536,657.118
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,320.648 EASTING: 535,944.166
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,435.708 EASTING: 536,688.128
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,447,468.410 EASTING: 536,667.255
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,449,324.189 EASTING: 535,941.424

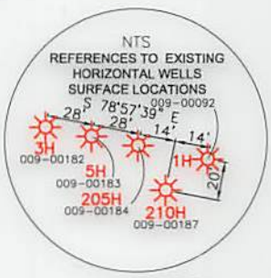


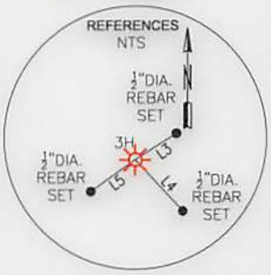


NOTES ON SURVEY

1. COORDINATES 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 FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

CRAIG ROBERT WEST
LICENSED
No. 2241
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR





2000 0 2000
GRAPHIC SCALE IN FEET

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. 2241

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)

OPERATOR'S WELL #: JOHN HUPP BRK 3H

API WELL #: 47 (STATE) 009 (COUNTY) 00182 (PERMIT)

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

WATERSHED: UPPER OHIO NORTH — ELEVATION: ±1,275.6 (AS-BUILT)
DISTRICT: BUFFALO — COUNTY: BROOKE — QUADRANGLE: BETHANY, WV-PA
SURFACE OWNER: JOHN W. HUPP & LINDA H. DOUBLE — ACREAGE: ±184.46
OIL & GAS ROYALTY OWNER: JOHN W. HUPP & LINDA H. DOUBLE — ACREAGE: ±184.46

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: 6,215' TVD 13,180' TMD

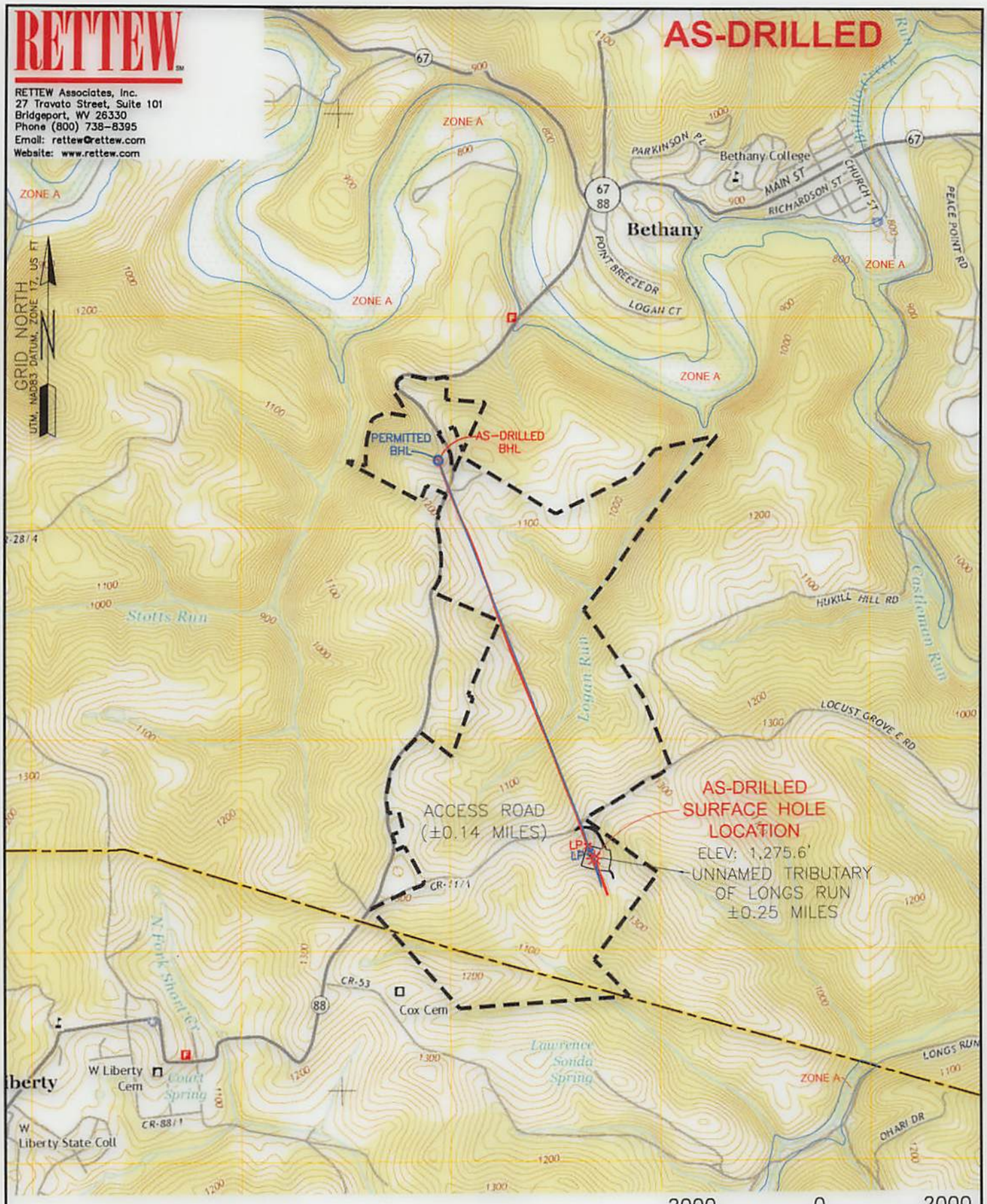
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC — DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300 — ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378 — CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- PERMITTED NOT DRILLED
- CUT CONDUCTOR
- EXISTING SPRING
- EXISTING WATER WELL
- TIE LINE
- LEASE BOUNDARY
- ASDRILLED WELLPATH
- PERMITTED WELLPATH
- STREAM

REVISIONS:	DATE: 11-13-2017
	DRAWN BY: W. MCCLEAF
	SCALE: 1" = 2000'
	DRAWING NO:087569048
	WELL LOCATION PLAT

C:_RETTEWVAULTWIP\087569048-HUPP BRK PAD\SHEETS\SV\AS-DRILLED\087569048-3H-AD-WELL-PLAT.DWG
MONDAY NOVEMBER 13 2017 04:19PM

COMPLETION ID 2501165833
PAD ID 3001156337



WELL: JOHN HUPP BRK 3H
QUAD: BETHANY, WV-PA

NAME AND DISTANCE TO THE NEAREST STREAM:	STREAM CROSSING COORDINATES (NAD 83):
UN-NAMED TRIBUTARY TO LONGS RUN IS LOCATED ±0.25 MILES SOUTH EAST OF THE CENTER OF THE DRILL PAD.	NO NEW CROSSINGS.

WELL RESTRICTIONS:

WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET
WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET
CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET
CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET

FEMA FLOOD INFORMATION:

BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0130D, 54009C0135D, 54009C0140D, 54009C0141D, 54009C0145D; EFFECTIVE DATE: APRIL 19, 2010.

NO FLOOD ZONES ARE SITUATED WITHIN THE UNIT.

COMPANY: SWN Production Company, LLC — SWN Production Company™

OPERATOR'S WELL #: JOHN HUPP BRK 3H

LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA

SURFACE HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.176495°
LONGITUDE: -80.569083°

BOTTOM HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.193509°
LONGITUDE: -80.577716°

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LEASE BOUNDARY
- ASDRILLED WELLPATH
- PERMITTED WELLPATH
- ACCESS ROAD
- HIGHWAY/INTERSTATE
- COUNTY ROAD

REVISIONS:	DATE: 11-13-2017
	DRAWN BY: W. MCCLEAF
	SCALE: 1" = 2000'
	DRAWING NO:087569048
	TOPOGRAPHIC MAP

C:_RETTEWVAULTWIP\087569048-HUPP BRK PAD\SHEETS\SV\AS-DRILLED\087569048-3H-AD-WELL-PLAT.DWG
MONDAY NOVEMBER 13 2017 04:20PM

COMPLETION ID 2501165833
PAD ID 3001156337