

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

API 47-069-00213 County OHIO District RICHLAND  
Quad TILTONSVILLE Pad Name EDWARD DREMAK OHI PAD Field/Pool Name PANHANDLE  
Farm name DREMAK, EDWARD & JOANNE Well Number EDWARD DREMAK OHI 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 4445436.445 Easting 529681.384  
Landing Point of Curve Northing 4445625.985 Easting 539650.021  
Bottom Hole Northing 4448268.122 Easting 528869.697

Elevation (ft) 1078.8' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
SOBM

RECEIVED  
Office of Oil and Gas  
APR 27 2018  
WV Department of  
Environmental Protection

Date permit issued 02/09/2017 Date drilling commenced 09/04/2017 Date drilling ceased 09/28/2017  
Date completion activities began 02/15/2018 Date completion activities ceased 03/25/2018  
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 259' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 750' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 270' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed

*C. B. L.* 5.10.18

Reviewed by: \_\_\_\_\_

API 47-069 - 00213 Farm name DREMAK, EDWARD & JOANNE Well number EDWARD DREMAK OHI 3H

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	K-55/94#		Y
Surface	17.5	13.375	341'	NEW	J-55/54.50#	275'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1756'	NEW	J-55/36#		Y
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	15285'	NEW	HCP-110/20#		Y
Tubing		2.375	6066'	NEW	L-80/4.7#		N
Packer type and depth set							

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

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <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	346	15.60	1.20	415.20	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	694	15.60	1.18	818.92	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2819	15.60	1.19	3354.61	SURFACE	24
Tubing							

Drillers TD (ft) 15285' Loggers TD (ft) 15285'  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

RECEIVED  
Office of Oil and Gas  
APR 27 2018

Kick off depth (ft) 5185'

WV Department of Environmental Protection

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 \_\_\_\_\_







**EDWARD DREMAK OHI 1H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/17/2018	13,799	13,906	42
2	2/26/2018	13,659	13,766	42
3	2/26/2018	13,519	13,626	42
4	2/26/2018	13,379	13,486	42
5	2/27/2018	13,239	13,346	42
6	2/27/2018	13,099	13,206	42
7	2/27/2018	12,959	13,066	42
8	2/28/2018	12,819	12,926	42
9	3/1/2018	12,679	12,786	42
10	3/1/2018	12,539	12,646	42
11	3/1/2018	12,399	12,506	42
12	3/2/2018	12,259	12,366	42
13	3/2/2018	12,119	12,226	42
14	3/3/2018	11,979	12,086	42
15	3/3/2018	11,839	11,946	42
16	3/3/2018	11,699	11,806	42
17	3/4/2018	11,559	11,666	42
18	3/4/2018	11,419	11,526	42
19	3/4/2018	11,279	11,386	42
20	3/5/2018	11,139	11,246	42
21	3/5/2018	11,002	11,106	42
22	3/5/2018	10,859	10,966	42
23	3/5/2018	10,719	10,826	42
24	3/6/2018	10,579	10,686	42
25	3/6/2018	10,439	10,546	42
26	3/6/2018	10,299	10,406	42
27	3/6/2018	10,159	10,266	42
28	3/7/2018	10,019	10,126	42
29	3/7/2018	9,879	9,986	42
30	3/7/2018	9,739	9,846	42
31	3/8/2018	9,599	9,706	42
32	3/8/2018	9,459	9,566	42
33	3/8/2018	9,319	9,426	42
34	3/9/2018	8,899	9,006	42
35	3/9/2018	9,039	9,146	42
36	3/9/2018	9,179	9,286	42
37	3/9/2018	8,759	8,866	42
38	3/10/2018	8,619	8,726	42
39	3/11/2018	8,479	8,586	42
40	3/11/2018	8,339	8,446	42
41	3/12/2018	8,199	8,306	42
42	3/12/2018	8,059	8,166	42
43	3/12/2018	7,919	8,026	42

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of  
Environmental Protection

**EDWARD DREMAK OHI 1H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	3/12/2018	7,779	7,886	42
45	3/13/2018	7,639	7,746	42
46	3/13/2018	7,499	7,606	42
47	3/13/2018	7,359	7,466	42
48	3/14/2018	7,219	7,326	42
49	3/14/2018	7,079	7,186	42
50	3/14/2018	6,939	7,046	42
51	3/14/2018	6,799	6,902	42
52	3/14/2018	6,661	6,766	42
53	3/15/2018	6,519	6,626	42
54	3/15/2018	6,379	6,486	42
55	3/16/2018	6,239	6,346	42
56	3/16/2018	6,099	6,206	42

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of  
Environmental Protection



EDWARD DREMAK OHI 1H

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	2/25/2018	94	7,766	8,531	3,809	495,900	7,502	
2	2/26/2018	98	7,928	8,341	3,975	489,600	7,720	
3	2/26/2018	98	8,292	8,292	4,098	492,830	7,618	
4	2/26/2018	97	7,638	8,660	4,446	503,860	7,780	
5	2/27/2018	90	8,524	9,263	4,157	494,220	7,912	
6	2/27/2018	96	8,004	8,951	4,052	491,220	8,098	
7	2/28/2018	98	7,713	8,065	3,836	486,720	7,433	
8	2/28/2018	100	7,739	8,063	4,055	485,413	7,358	
9	3/1/2018	92	7,486	8,098	4,029	344,260	6,128	
10	3/1/2018	97	7,566	8,015	4,207	500,887	7,389	
11	3/2/2018	92	7,272	8,028	4,246	490,130	6,713	
12	3/2/2018	96	7,946	8,581	4,117	496,680	6,717	
13	3/3/2018	100	7,790	8,656	4,146	499,020	7,162	
14	3/3/2018	93	7,626	8,222	4,264	502,320	6,516	
15	3/3/2018	98	7,720	8,945	4,290	502,620	6,203	
16	3/4/2018	100	7,755	8,356	4,285	497,360	6,153	
17	3/4/2018	92	7,971	8,931	4,541	505,960	6,049	
18	3/4/2018	100	7,450	7,887	4,154	504,460	6,850	
19	3/4/2018	96	7,110	7,351	4,262	483,280	6,837	
20	3/5/2018	91	7,458	8,811	4,377	491,400	5,790	
21	3/5/2018	99	7,941	8,662	4,356	504,180	5,807	
22	3/5/2018	100	7,695	8,466	4,078	495,740	5,907	
23	3/5/2018	100	7,606	8,171	4,143	485,410	6,029	
24	3/6/2018	99	7,533	9,071	4,384	508,360	6,614	
25	3/6/2018	94	7,561	9,126	4,477	504,640	5,750	
26	3/6/2018	100	7,800	8,655	4,342	492,260	5,654	
27	3/7/2018	94	7,420	8,374	4,180	493,400	6,145	RECEIVED Office of Oil and Gas
28	3/7/2018	96	7,436	8,139	4,557	501,280	5,582	
29	3/7/2018	100	7,170	7,879	4,194	494,660	6,152	APR 27 2018
30	3/7/2018	100	7,164	7,468	4,404	493,060	6,027	
31	3/8/2018	92	7,043	8,186	4,485	494,020	5,729	WV Department of Environmental Protection
32	3/8/2018	93	6,957	8,068	4,478	495,280	5,430	
33	3/8/2018	98	6,994	7,581	4,254	502,340	5,821	
34	3/9/2018	80	6,826	8,132	4,633	498,480	7,234	
35	3/9/2018	94	7,316	8,610	4,474	503,580	5,462	
36	3/9/2018	98	7,507	8,156	4,241	504,940	5,922	
37	3/10/2018	91	7,196	8,234	4,485	501,360	5,587	
38	3/10/2018	62	7,787	9,330	3,761	502,800	8,390	
39	3/11/2018	97	7,863	8,654	4,407	511,040	5,826	
40	3/12/2018	98	6,981	7,355	4,697	509,300	5,665	
41	3/12/2018	97	6,710	7,553	4,472	491,100	5,649	
42	3/12/2018	100	6,796	7,607	4,333	505,040	5,861	
43	3/12/2018	101	7,078	7,347	4,620	513,580	5,674	
44	3/13/2018	100	7,075	7,467	4,321	506,680	5,575	
45	3/13/2018	98	7,060	8,263	4,359	511,000	5,295	

**EDWARD DREMAK OHI 1H  
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
46	3/13/2018	96	6,690	6,976	4,382	506,300	5,588	
47	3/13/2018	100	6,728	6,976	4,411	508,800	5,666	
48	3/14/2018	99	7,075	8,049	4,531	515,340	7,167	
49	3/14/2018	100	6,785	7,168	4,369	497,540	7,330	
50	3/14/2018	100	6,771	7,359	4,408	500,320	6,937	
51	3/14/2018	100	7,779	8,385	4,866	500,560	6,857	
52	3/15/2018	102	6,990	8,404	4,312	501,120	7,373	
53	3/15/2018	98	6,884	7,171	4,607	507,480	6,871	
54	3/15/2018	100	7,254	8,034	4,370	504,920	6,751	
55	3/16/2018	99	6,837	7,803	4,484	505,440	6,545	
56	3/16/2018	99	6,479	7,051	4,590	497,980	6,742	

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of  
Environmental Protection





Well Name: Edward Dremak OHI 1H

47069002260000

ATTACHMENT 3

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	259.00	259.00	
Top of Salt Water	750.00	750.00	NA	NA	
Pittsburgh Coal	270.00	270.00	NA	NA	
Pottsville (ss)	374.00	374.00	459.00	459.00	
Mauch Chunk (shale)	477.00	477.00	1300.00	1300.00	
Raven Cliff (ss)	777.00	777.00	912.00	912.00	
Maxton (ss)	1068.00	1068.00	1232.00	1232.00	
Greenbriar (ls)	1300.00	1300.00	1369.00	1369.00	
Big Injun (ss)	1369.00	1369.00	1576.00	1576.00	
Berea (siltstone)	1408.00	1408.00	NA	NA	
Rhinestreet (shale)	5303.00	5250.00	5562.00	5488.00	
Cashaqua (shale)	5562.00	5488.00	5621.00	5536.00	
Middlesex (shale)	5621.00	5536.00	5712.00	5604.00	
Burket (shale)	5712.00	5604.00	5732.00	5617.00	
Tully (ls)	5732.00	5617.00	5815.00	5669.00	
Mahantango (shale)	5815.00	5669.00	6028.00	5760.00	
Marcellus (shale)	6028.00	5760.00	NA	NA	GAS

RECEIVED  
 Office of Oil and Gas  
 APR 27 2018  
 WV Department of  
 Environmental Protection

# SOUTHWESTERN ENERGY

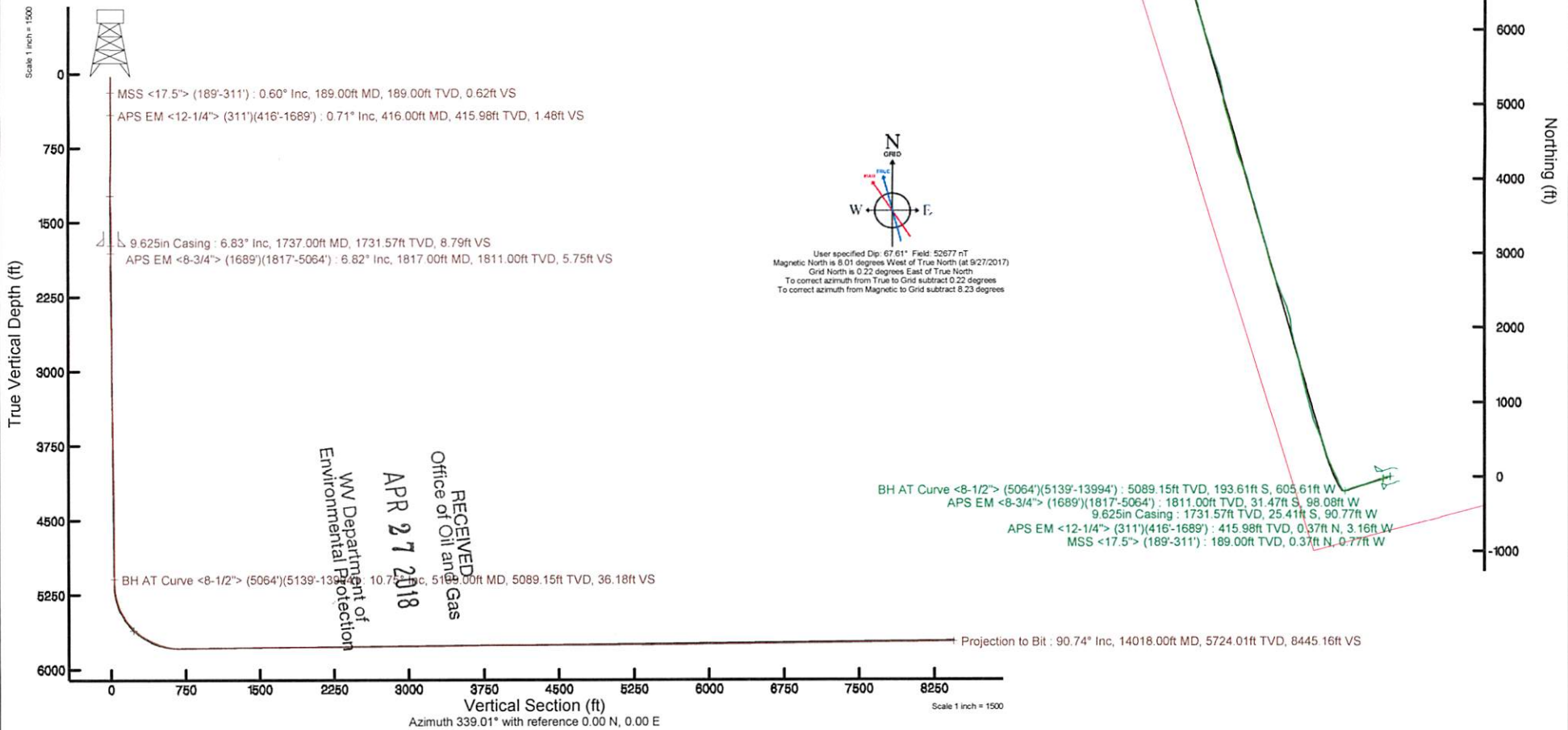


Location: Ohio County, WV Slot: Slot #1H  
 Field: Ohio Well: Edward Dremak OHI 1H  
 Facility: Edward Dremak OHI Pad Wellbore: Edward Dremak OHI 1H PWB

Plot reference wellpath is Edward Dremak OHI 1H PWP Rev-A.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC-46 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC-46 (RKB)	North Reference: Grid north
SDC-46 (RKB) to Mean Sea Level: 1113.95 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #1H): -1087.95 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsuzc on 2017-10-11
	Database: WA_Pennsylvania

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Edward Dremak OHI Pad	1737740.826	14584704.331	40°09'31.223"N	80°39'06.011"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #1H	37.74	24.17	1737764.985	14584742.060
				40°09'31.595"N
				80°39'05.698"W
SDC-46 (RKB) to Ground level (At Slot: Slot #1H)				26ft
Mean Sea Level to Ground level (At Slot: Slot #1H)				-1087.95ft
SDC-46 (RKB) to Mean Sea Level				1113.95ft

API: 47-069-00226-0000  
 Job #: 8775412  
 Rig: SDC 46  
 Duration: 10/01/2017 - 10/09/2017





REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999611	Report Generated	10/11/2017 at 10:00:19 AM
Convergence at slot	0.23° East	Database/Source file	WA_Pennsylvania/Edward_Dremak_OHI_1H_AWP_Proj_14018_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	37.74	24.17	1737764.99	14584742.06	40°09'31.595"N	80°39'05.698"W
Facility Reference Pt			1737740.83	14584704.33	40°09'31.223"N	80°39'06.011"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC-46 (RKB) to Facility Vertical Datum	1113.95ft
Horizontal Reference Pt	Slot	SDC-46 (RKB) to Mean Sea Level	1113.95ft
Vertical Reference Pt	SDC-46 (RKB)	SDC-46 (RKB) to Ground Level at Slot (Slot #1H)	26.00ft
MD Reference Pt	SDC-46 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	339.01°

RECEIVED  
 Office of Oil and Gas  
 APR 27 2018  
 WV Department of  
 Environmental Protection





# Actual Wellpath Report

Edward Dremak OHI 1H AWP Proj: 14018'  
Page 2 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (160 stations) † = interpolated/extrapolated station															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	295.900	0.00	0.00	0.00	0.00	1737764.99	14584742.06	40°09'31.595"N	80°39'05.698"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	295.900	26.00	0.00	0.00	0.00	1737764.99	14584742.06	40°09'31.595"N	80°39'05.698"W	0.00	0.000	0.00	0.00	0.00
189.00	0.600	295.900	189.00	0.62	0.37	-0.77	1737764.22	14584742.43	40°09'31.599"N	80°39'05.708"W	0.85	295.900	0.37	0.37	-39.33
311.00	0.600	262.500	310.99	1.24	0.57	-1.98	1737763.01	14584742.63	40°09'31.601"N	80°39'05.723"W	2.06	286.051	0.28	0.00	-27.38
416.00	0.710	258.690	415.98	1.48	0.37	-3.16	1737761.83	14584742.43	40°09'31.599"N	80°39'05.738"W	3.18	276.665	0.11	0.10	-3.63
509.00	0.900	251.590	508.97	1.61	0.03	-4.42	1737760.57	14584742.09	40°09'31.595"N	80°39'05.755"W	4.42	270.330	0.23	0.20	-7.63
602.00	1.170	236.380	601.96	1.43	-0.73	-5.90	1737759.09	14584741.33	40°09'31.588"N	80°39'05.774"W	5.95	262.938	0.41	0.29	-16.35
695.00	0.940	235.170	694.94	1.04	-1.69	-7.32	1737757.67	14584740.37	40°09'31.579"N	80°39'05.792"W	7.51	256.977	0.25	-0.25	-1.30
788.00	0.770	224.960	787.93	0.60	-2.57	-8.38	1737756.60	14584739.49	40°09'31.570"N	80°39'05.806"W	8.77	252.958	0.24	-0.18	-10.98
881.00	0.840	228.560	880.92	0.11	-3.46	-9.34	1737755.65	14584738.60	40°09'31.561"N	80°39'05.818"W	9.96	249.649	0.09	0.08	3.87
974.00	1.050	229.030	973.91	-0.42	-4.47	-10.49	1737754.50	14584737.59	40°09'31.551"N	80°39'05.833"W	11.41	246.908	0.23	0.23	0.51
1067.00	2.440	248.700	1066.87	-0.72	-5.75	-12.98	1737752.01	14584736.31	40°09'31.539"N	80°39'05.865"W	14.20	246.102	1.61	1.49	21.15
1159.00	4.370	255.900	1158.70	-0.31	-7.32	-18.20	1737746.79	14584734.75	40°09'31.523"N	80°39'05.933"W	19.62	248.104	2.14	2.10	7.83
1252.00	6.420	263.120	1251.28	1.38	-8.80	-26.80	1737738.19	14584733.26	40°09'31.509"N	80°39'06.043"W	28.21	251.819	2.32	2.20	7.76
1345.00	8.560	264.420	1343.49	4.49	-10.10	-38.86	1737726.14	14584731.97	40°09'31.497"N	80°39'06.199"W	40.15	255.431	2.31	2.30	1.40
1438.00	9.160	263.590	1435.38	8.19	-11.60	-53.10	1737711.91	14584730.47	40°09'31.482"N	80°39'06.382"W	54.35	257.679	0.66	0.65	-0.89
1531.00	8.260	256.290	1527.31	10.90	-14.01	-66.95	1737698.06	14584728.06	40°09'31.459"N	80°39'06.561"W	68.40	258.182	1.53	-0.97	-7.85
1623.00	7.580	245.840	1618.43	11.40	-18.06	-78.91	1737686.11	14584724.01	40°09'31.420"N	80°39'06.715"W	80.95	257.109	1.73	-0.74	-11.36
1689.00	6.860	235.670	1683.91	10.25	-22.06	-86.13	1737678.89	14584720.01	40°09'31.380"N	80°39'06.808"W	88.91	255.632	2.22	-1.09	-15.41
1817.00	6.820	227.880	1811.00	5.75	-31.47	-98.08	1737666.94	14584710.60	40°09'31.288"N	80°39'06.963"W	103.01	252.210	0.72	-0.03	-6.09
1910.00	7.750	235.670	1903.25	2.31	-38.71	-107.36	1737657.67	14584703.36	40°09'31.217"N	80°39'07.082"W	114.12	250.171	1.46	1.00	8.38
2003.00	7.220	243.900	1995.46	0.35	-44.82	-117.78	1737647.25	14584697.26	40°09'31.157"N	80°39'07.217"W	126.02	249.167	1.28	-0.57	8.85
2095.00	8.060	251.730	2086.65	0.14	-49.38	-129.10	1737635.93	14584692.69	40°09'31.112"N	80°39'07.363"W	138.22	249.067	1.45	0.91	8.51
2188.00	10.250	256.820	2178.46	1.57	-53.32	-143.35	1737621.69	14584688.76	40°09'31.074"N	80°39'07.547"W	152.94	249.598	2.51	2.35	5.47
2281.00	10.940	256.060	2269.87	3.78	-57.33	-159.97	1737605.08	14584684.75	40°09'31.035"N	80°39'07.761"W	169.93	250.284	0.76	0.74	-0.82
2374.00	11.180	253.790	2361.15	5.61	-61.97	-177.19	1737587.86	14584680.11	40°09'30.990"N	80°39'07.983"W	187.72	250.723	0.53	0.26	-2.44
2467.00	11.100	253.380	2452.39	7.05	-67.05	-194.43	1737570.63	14584675.04	40°09'30.940"N	80°39'08.205"W	205.67	250.973	0.12	-0.09	-0.44
2559.00	10.770	254.320	2542.72	8.52	-71.91	-211.19	1737553.88	14584670.18	40°09'30.893"N	80°39'08.421"W	223.10	251.198	0.41	-0.36	1.02
2652.00	10.360	254.680	2634.15	10.15	-76.46	-227.62	1737537.45	14584665.63	40°09'30.848"N	80°39'08.633"W	240.12	251.432	0.45	-0.44	0.39
2745.00	10.050	253.520	2725.68	11.61	-80.97	-243.47	1737521.61	14584661.12	40°09'30.804"N	80°39'08.838"W	256.58	251.604	0.40	-0.33	-1.25

RECEIVED  
Office of Oil and Gas  
  
APR 27 2018  
  
WV Department of  
Environmental Protection





# Actual Wellpath Report

Edward Dremak OHI 1H AWP Proj: 14018'  
Page 3 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

### WELLPATH DATA (160 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2837.00	9.530	252.630	2816.34	12.72	-85.53	-258.44	1737506.65	14584656.57	40°09'30.760"N	80°39'09.031"W	272.22	251.689	0.59	-0.57	-0.97
2930.00	9.310	252.830	2908.08	13.71	-90.04	-272.97	1737492.12	14584652.05	40°09'30.716"N	80°39'09.218"W	287.44	251.744	0.24	-0.24	0.22
3026.00	8.570	251.450	3002.91	14.53	-94.61	-287.17	1737477.93	14584647.48	40°09'30.671"N	80°39'09.401"W	302.36	251.765	0.80	-0.77	-1.44
3119.00	7.730	248.960	3094.97	14.82	-99.06	-299.58	1737465.52	14584643.04	40°09'30.628"N	80°39'09.561"W	315.53	251.702	0.98	-0.90	-2.68
3212.00	8.190	255.980	3187.08	15.62	-102.91	-311.84	1737453.26	14584639.19	40°09'30.590"N	80°39'09.719"W	328.39	251.736	1.16	0.49	7.55
3304.00	8.720	255.950	3278.08	17.26	-106.19	-324.97	1737440.15	14584635.91	40°09'30.558"N	80°39'09.889"W	341.88	251.904	0.58	0.58	-0.03
3397.00	10.000	257.160	3369.84	19.25	-109.70	-339.68	1737425.44	14584632.40	40°09'30.524"N	80°39'10.078"W	356.95	252.102	1.39	1.38	1.30
3489.00	9.530	254.710	3460.51	21.14	-113.48	-354.81	1737410.31	14584628.62	40°09'30.487"N	80°39'10.273"W	372.52	252.264	0.68	-0.51	-2.66
3582.00	8.350	253.530	3552.38	22.44	-117.43	-368.72	1737396.41	14584624.68	40°09'30.449"N	80°39'10.453"W	386.96	252.334	1.28	-1.27	-1.27
3675.00	7.130	252.000	3644.53	23.27	-121.13	-380.68	1737384.45	14584620.98	40°09'30.413"N	80°39'10.607"W	399.49	252.350	1.33	-1.31	-1.65
3768.00	7.770	250.760	3736.74	23.77	-124.98	-392.11	1737373.03	14584617.13	40°09'30.375"N	80°39'10.754"W	411.54	252.321	0.71	0.69	-1.33
3861.00	9.100	256.470	3828.74	24.91	-128.77	-405.19	1737359.95	14584613.34	40°09'30.338"N	80°39'10.923"W	425.16	252.369	1.69	1.43	6.14
3953.00	9.640	255.940	3919.51	26.79	-132.35	-419.74	1737345.41	14584609.76	40°09'30.303"N	80°39'11.110"W	440.11	252.499	0.59	0.59	-0.58
4046.00	9.290	253.310	4011.24	28.29	-136.39	-434.48	1737330.67	14584605.72	40°09'30.264"N	80°39'11.301"W	455.39	252.572	0.60	-0.38	-2.83
4139.00	8.620	252.980	4103.11	29.34	-140.59	-448.34	1737316.82	14584601.52	40°09'30.223"N	80°39'11.479"W	469.86	252.589	0.72	-0.72	-0.35
4232.00	8.980	253.510	4195.01	30.39	-144.69	-461.96	1737303.21	14584597.43	40°09'30.183"N	80°39'11.655"W	484.09	252.609	0.40	0.39	0.57
4325.00	10.560	255.380	4286.66	31.90	-148.90	-477.17	1737288.00	14584593.22	40°09'30.142"N	80°39'11.851"W	499.86	252.669	1.73	1.70	2.01
4417.00	10.790	252.560	4377.07	33.37	-153.61	-493.54	1737271.64	14584588.51	40°09'30.096"N	80°39'12.062"W	516.89	252.712	0.62	0.25	-3.07
4510.00	9.950	249.970	4468.55	34.04	-158.97	-509.39	1737255.79	14584583.15	40°09'30.044"N	80°39'12.267"W	533.62	252.668	1.03	-0.90	-2.78
4603.00	9.090	249.850	4560.27	34.29	-164.25	-523.84	1737241.35	14584577.87	40°09'29.992"N	80°39'12.453"W	548.99	252.591	0.92	-0.92	-0.13
4696.00	8.450	248.440	4652.18	34.33	-169.30	-537.09	1737228.10	14584572.83	40°09'29.943"N	80°39'12.624"W	563.14	252.505	0.73	-0.69	-1.52
4789.00	9.580	252.220	4744.03	34.69	-174.17	-550.82	1737214.38	14584567.96	40°09'29.895"N	80°39'12.801"W	577.70	252.453	1.37	1.22	4.06
4881.00	9.920	252.400	4834.70	35.59	-178.90	-565.66	1737199.55	14584563.23	40°09'29.849"N	80°39'12.992"W	593.28	252.449	0.37	0.37	0.20
4974.00	8.440	247.550	4926.51	35.89	-183.93	-579.60	1737185.61	14584558.20	40°09'29.800"N	80°39'13.172"W	608.09	252.394	1.79	-1.59	-5.22
5064.00	9.880	250.380	5015.36	35.91	-189.05	-592.98	1737172.23	14584553.09	40°09'29.750"N	80°39'13.345"W	622.39	252.317	1.68	1.60	3.14
5139.00	10.750	249.970	5089.15	36.18	-193.61	-605.61	1737159.61	14584548.53	40°09'29.705"N	80°39'13.508"W	635.81	252.272	1.16	1.16	-0.55
5186.00	10.050	252.600	5135.38	36.51	-196.33	-613.65	1737151.58	14584545.80	40°09'29.679"N	80°39'13.611"W	644.29	252.258	1.80	-1.49	5.60
5233.00	9.980	273.990	5181.68	38.48	-197.28	-621.63	1737143.60	14584544.86	40°09'29.670"N	80°39'13.714"W	652.18	252.393	7.87	-0.15	45.51
5326.00	12.500	314.460	5273.02	51.06	-189.65	-636.87	1737128.36	14584552.48	40°09'29.745"N	80°39'13.910"W	664.51	253.417	8.69	2.71	43.52
5419.00	20.420	326.650	5362.16	76.11	-169.01	-653.01	1737112.23	14584573.11	40°09'29.950"N	80°39'14.117"W	674.52	255.489	9.25	8.52	13.11

Office of Oil and Gas  
**APR 27 2018**  
WV Department of  
Environmental Protection





# Actual Wellpath Report

Edward Dremak OHI 1H AWP Proj: 14018'  
Page 4 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (160 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
5511.00	29.000	333.950	5445.68	114.08	-135.50	-671.66	1737093.59	14584606.61	40°09'30.282"N	80°39'14.355"W	685.19	258.594	9.88	9.33	7.93	
5604.00	37.110	335.870	5523.57	164.64	-89.57	-693.07	1737072.19	14584652.53	40°09'30.737"N	80°39'14.629"W	698.83	262.636	8.79	8.72	2.06	
5697.00	44.940	337.490	5593.68	225.58	-33.53	-717.15	1737048.12	14584708.54	40°09'31.291"N	80°39'14.936"W	717.93	267.323	8.50	8.42	1.74	
5743.00	49.080	337.240	5625.03	259.21	-2.48	-730.10	1737035.17	14584739.58	40°09'31.599"N	80°39'15.101"W	730.10	269.805	9.01	9.00	-0.54	
5790.00	53.320	335.580	5654.48	295.79	31.07	-744.77	1737020.51	14584773.12	40°09'31.931"N	80°39'15.288"W	745.42	272.389	9.43	9.02	-3.53	
5836.00	58.820	333.910	5680.15	333.83	65.57	-761.06	1737004.22	14584807.60	40°09'32.272"N	80°39'15.497"W	763.88	274.924	12.33	11.96	-3.63	
5882.00	61.220	334.050	5703.13	373.52	101.37	-778.54	1736986.75	14584843.39	40°09'32.627"N	80°39'15.720"W	785.11	277.419	5.22	5.22	0.30	
5929.00	67.050	335.380	5723.63	415.68	139.60	-796.58	1736968.71	14584881.60	40°09'33.005"N	80°39'15.950"W	808.72	279.940	12.66	12.40	2.83	
5975.00	68.340	336.550	5741.09	458.17	178.47	-813.91	1736951.39	14584920.46	40°09'33.390"N	80°39'16.172"W	833.25	282.367	3.66	2.80	2.54	
6022.00	69.760	339.530	5757.89	502.05	219.17	-830.32	1736934.99	14584961.14	40°09'33.793"N	80°39'16.381"W	858.76	284.786	6.65	3.02	6.34	
6068.00	75.310	340.650	5771.69	545.91	260.41	-845.25	1736920.06	14585002.37	40°09'34.201"N	80°39'16.571"W	884.46	287.123	12.29	12.07	2.43	
6114.00	81.660	341.960	5780.87	590.92	303.09	-859.69	1736905.64	14585045.03	40°09'34.623"N	80°39'16.755"W	911.55	289.420	14.08	13.80	2.85	
6160.00	84.760	341.980	5786.31	636.53	346.52	-873.82	1736891.51	14585088.44	40°09'35.053"N	80°39'16.935"W	940.02	291.631	6.74	6.74	0.04	
6207.00	88.340	343.340	5789.14	683.34	391.29	-887.80	1736877.53	14585133.20	40°09'35.496"N	80°39'17.113"W	970.21	293.785	8.15	7.62	2.89	
6253.00	90.400	345.090	5789.64	729.14	435.55	-900.31	1736865.03	14585177.44	40°09'35.934"N	80°39'17.272"W	1000.13	295.817	5.88	4.48	3.80	
6346.00	90.400	338.670	5788.99	821.98	523.89	-929.22	1736836.13	14585265.74	40°09'36.808"N	80°39'17.639"W	1066.73	299.414	6.90	0.00	-6.90	
6439.00	90.310	335.380	5788.42	914.91	609.50	-965.51	1736799.85	14585351.32	40°09'37.655"N	80°39'18.103"W	1141.80	302.263	3.54	-0.10	-3.54	
6531.00	90.710	338.310	5787.60	1006.83	694.07	-1001.69	1736763.69	14585435.86	40°09'38.492"N	80°39'18.564"W	1218.65	304.718	3.21	0.43	3.18	
6624.00	90.710	343.600	5786.45	1099.73	781.95	-1032.02	1736733.37	14585523.70	40°09'39.362"N	80°39'18.951"W	1294.80	307.151	5.69	0.00	5.69	
6717.00	91.510	345.430	5784.64	1192.28	871.55	-1056.84	1736708.56	14585613.27	40°09'40.248"N	80°39'19.266"W	1369.86	309.511	2.15	0.86	1.97	
6810.00	90.710	346.740	5782.84	1284.55	961.80	-1079.20	1736686.20	14585703.48	40°09'41.141"N	80°39'19.549"W	1445.59	311.708	1.65	-0.86	1.41	
6902.00	90.590	345.060	5781.80	1375.88	1051.02	-1101.61	1736663.80	14585792.67	40°09'42.024"N	80°39'19.833"W	1522.56	313.654	1.83	-0.13	-1.83	
6995.00	90.370	345.700	5781.02	1468.30	1141.00	-1125.09	1736640.34	14585882.62	40°09'42.914"N	80°39'20.131"W	1602.41	315.402	0.73	-0.24	0.69	
7087.00	90.620	346.890	5780.22	1559.55	1230.38	-1146.88	1736618.55	14585971.96	40°09'43.798"N	80°39'20.408"W	1682.01	317.012	1.32	0.27	1.29	
7180.00	90.620	347.680	5779.22	1651.58	1321.09	-1167.35	1736598.09	14586062.64	40°09'44.695"N	80°39'20.667"W	1762.95	318.535	0.85	0.00	0.85	
7272.00	90.680	347.790	5778.17	1742.51	1410.99	-1186.89	1736578.56	14586152.50	40°09'45.584"N	80°39'20.914"W	1843.80	319.930	0.14	0.07	0.12	
7365.00	90.090	346.260	5777.55	1834.60	1501.61	-1207.77	1736557.68	14586243.08	40°09'46.480"N	80°39'21.178"W	1927.05	321.190	1.76	-0.63	-1.65	
7458.00	90.280	346.130	5777.25	1926.86	1591.92	-1229.96	1736535.50	14586333.36	40°09'47.374"N	80°39'21.460"W	2011.72	322.309	0.25	0.20	-0.14	
7551.00	90.680	345.350	5776.47	2019.22	1682.05	-1252.87	1736512.60	14586423.45	40°09'48.265"N	80°39'21.750"W	2097.37	323.320	0.94	0.43	-0.84	
7644.00	88.310	344.650	5777.29	2111.70	1771.87	-1276.94	1736488.55	14586513.24	40°09'49.154"N	80°39'22.056"W	2184.06	324.221	2.66	-2.55	-0.75	

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of  
Environmental Protection





# Actual Wellpath Report

Edward Dremak OHI 1H AWP Proj: 14018'  
Page 5 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (160 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7737.00	90.490	344.920	5778.26	2204.22	1861.60	-1301.34	1736464.15	14586602.93	40°09'50.041"N	80°39'22.366"W	2271.35	325.045	2.36	2.34	0.29
7830.00	90.550	351.680	5777.42	2295.94	1952.61	-1320.19	1736445.31	14586693.91	40°09'50.942"N	80°39'22.604"W	2357.03	325.937	7.27	0.06	7.27
7923.00	90.620	356.000	5776.47	2385.82	2045.05	-1330.17	1736435.34	14586786.31	40°09'51.855"N	80°39'22.728"W	2439.58	326.959	4.65	0.08	4.65
8015.00	90.460	346.110	5775.60	2475.68	2135.81	-1344.45	1736421.06	14586877.04	40°09'52.753"N	80°39'22.907"W	2523.74	327.810	10.75	-0.17	-10.75
8108.00	90.460	342.170	5774.85	2568.28	2225.25	-1369.86	1736395.66	14586966.44	40°09'53.638"N	80°39'23.230"W	2613.10	328.384	4.24	0.00	-4.24
8201.00	90.400	338.070	5774.15	2661.24	2312.69	-1401.48	1736364.05	14587053.84	40°09'54.503"N	80°39'23.633"W	2704.20	328.784	4.41	-0.06	-4.41
8294.00	90.180	338.170	5773.68	2754.23	2398.99	-1436.14	1736329.41	14587140.11	40°09'55.357"N	80°39'24.075"W	2796.00	329.093	0.26	-0.24	0.11
8386.00	90.400	338.540	5773.22	2846.22	2484.50	-1470.07	1736295.49	14587225.59	40°09'56.203"N	80°39'24.508"W	2886.84	329.387	0.47	0.24	0.40
8479.00	90.460	338.660	5772.52	2939.22	2571.09	-1504.00	1736261.57	14587312.14	40°09'57.060"N	80°39'24.941"W	2978.68	329.674	0.14	0.06	0.13
8572.00	90.400	340.150	5771.82	3032.21	2658.14	-1536.72	1736228.87	14587399.16	40°09'57.922"N	80°39'25.358"W	3070.37	329.967	1.60	-0.06	1.60
8664.00	90.830	342.630	5770.83	3124.12	2745.32	-1566.07	1736199.53	14587486.30	40°09'58.784"N	80°39'25.731"W	3160.59	330.297	2.74	0.47	2.70
8757.00	90.310	344.660	5769.91	3216.80	2834.54	-1592.26	1736173.35	14587575.49	40°09'59.667"N	80°39'26.064"W	3251.14	330.676	2.25	-0.56	2.18
8850.00	90.580	345.340	5769.19	3309.29	2924.37	-1616.33	1736149.29	14587665.29	40°10'00.556"N	80°39'26.370"W	3341.32	331.070	0.79	0.29	0.73
8943.00	90.400	345.470	5768.39	3401.71	3014.37	-1639.76	1736125.87	14587755.25	40°10'01.446"N	80°39'26.667"W	3431.50	331.455	0.24	-0.19	0.14
9036.00	91.230	346.470	5767.07	3494.01	3104.58	-1662.30	1736103.33	14587845.43	40°10'02.338"N	80°39'26.953"W	3521.60	331.834	1.40	0.89	1.08
9128.00	90.950	343.350	5765.32	3585.50	3193.38	-1686.25	1736079.40	14587934.19	40°10'03.217"N	80°39'27.257"W	3611.25	332.164	3.40	-0.30	-3.39
9221.00	90.680	343.300	5764.00	3678.23	3282.46	-1712.93	1736052.73	14588023.24	40°10'04.098"N	80°39'27.596"W	3702.52	332.443	0.30	-0.29	-0.05
9313.00	90.340	345.650	5763.18	3769.80	3371.09	-1737.55	1736028.11	14588111.84	40°10'04.975"N	80°39'27.909"W	3792.54	332.732	2.58	-0.37	2.55
9406.00	90.090	345.470	5762.83	3862.19	3461.16	-1760.74	1736004.93	14588201.86	40°10'05.866"N	80°39'28.203"W	3883.27	333.037	0.33	-0.27	-0.19
9499.00	89.750	344.780	5762.96	3954.66	3551.04	-1784.62	1735981.07	14588291.71	40°10'06.755"N	80°39'28.507"W	3974.26	333.318	0.83	-0.37	-0.74
9592.00	89.970	342.760	5763.18	4047.33	3640.33	-1810.61	1735955.09	14588380.96	40°10'07.638"N	80°39'28.837"W	4065.74	333.555	2.18	0.24	-2.17
9685.00	89.910	341.810	5763.28	4140.18	3728.92	-1838.91	1735926.80	14588469.52	40°10'08.515"N	80°39'29.197"W	4157.69	333.750	1.02	-0.06	-1.02
9777.00	90.400	345.390	5763.03	4231.87	3817.16	-1864.88	1735900.84	14588557.73	40°10'09.388"N	80°39'29.527"W	4248.35	333.962	3.93	0.53	3.89
9870.00	90.830	347.310	5762.03	4324.10	3907.52	-1886.82	1735878.90	14588648.05	40°10'10.281"N	80°39'29.805"W	4339.22	334.226	2.12	0.46	2.06
9963.00	90.550	343.340	5760.91	4416.51	3997.46	-1910.37	1735855.36	14588737.96	40°10'11.171"N	80°39'30.104"W	4430.49	334.457	4.28	-0.30	-4.27
10056.00	90.800	340.710	5759.82	4509.37	4085.91	-1939.07	1735826.67	14588826.37	40°10'12.046"N	80°39'30.470"W	4522.68	334.612	2.84	0.27	-2.83
10149.00	90.490	337.480	5758.77	4602.35	4172.77	-1972.25	1735793.51	14588913.20	40°10'12.906"N	80°39'30.893"W	4615.39	334.702	3.49	-0.33	-3.47
10241.00	90.120	334.990	5758.28	4694.23	4256.96	-2009.32	1735756.45	14588997.36	40°10'13.739"N	80°39'31.366"W	4707.34	334.732	2.74	-0.40	-2.71
10334.00	90.150	343.910	5758.06	4787.13	4343.96	-2041.93	1735723.85	14589084.32	40°10'14.600"N	80°39'31.782"W	4799.94	334.824	9.59	0.03	9.59
10427.00	90.430	345.890	5757.59	4879.64	4433.74	-2066.16	1735699.64	14589174.07	40°10'15.488"N	80°39'32.089"W	4891.53	335.014	2.15	0.30	2.13

APR 27 2018





# Actual Wellpath Report

Edward Dremak OHI 1H AWP Proj: 14018'  
Page 6 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWP
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (160 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
10520.00	90.340	346.920	5756.97	4971.86	4524.13	-2088.02	1735677.79	14589264.42	40°10'16.382"N	80°39'32.367"W	4982.73	335.225	1.11	-0.10	1.11	
10613.00	90.310	344.830	5756.44	5064.19	4614.31	-2110.71	1735655.10	14589354.57	40°10'17.274"N	80°39'32.654"W	5074.15	335.419	2.25	-0.03	-2.25	
10705.00	90.030	343.860	5756.17	5155.79	4702.90	-2135.54	1735630.28	14589443.12	40°10'18.151"N	80°39'32.970"W	5165.05	335.578	1.10	-0.30	-1.05	
10798.00	89.940	344.030	5756.19	5248.44	4792.27	-2161.26	1735604.57	14589532.46	40°10'19.035"N	80°39'33.297"W	5257.08	335.725	0.21	-0.10	0.18	
10888.00	89.940	344.530	5756.28	5338.06	4878.90	-2185.64	1735580.20	14589619.06	40°10'19.892"N	80°39'33.607"W	5346.09	335.869	0.56	0.00	0.56	
10981.00	90.060	346.710	5756.28	5430.44	4968.98	-2208.74	1735557.11	14589709.10	40°10'20.783"N	80°39'33.900"W	5437.77	336.035	2.35	0.13	2.34	
11073.00	90.120	351.380	5756.14	5521.00	5059.28	-2226.21	1735539.64	14589799.36	40°10'21.676"N	80°39'34.120"W	5527.42	336.249	5.08	0.07	5.08	
11166.00	90.430	351.420	5755.69	5611.84	5151.24	-2240.12	1735525.74	14589891.28	40°10'22.585"N	80°39'34.295"W	5617.24	336.497	0.34	0.33	0.04	
11259.00	90.710	347.600	5754.77	5703.26	5242.66	-2257.05	1735508.82	14589982.67	40°10'23.489"N	80°39'34.509"W	5707.87	336.707	4.12	0.30	-4.11	
11349.00	90.650	348.520	5753.70	5792.13	5330.71	-2275.67	1735490.21	14590070.68	40°10'24.360"N	80°39'34.744"W	5796.13	336.882	1.02	-0.07	1.02	
11441.00	91.200	343.420	5752.21	5883.41	5419.92	-2297.96	1735467.92	14590159.86	40°10'25.243"N	80°39'35.027"W	5886.95	337.024	5.57	0.60	-5.54	
11534.00	90.650	339.080	5750.71	5976.31	5507.95	-2327.84	1735438.05	14590247.86	40°10'26.114"N	80°39'35.407"W	5979.66	337.089	4.70	-0.59	-4.67	
11627.00	90.770	340.740	5749.56	6069.28	5595.28	-2359.78	1735406.12	14590335.15	40°10'26.978"N	80°39'35.815"W	6072.54	337.133	1.79	0.13	1.78	
11720.00	90.650	342.780	5748.41	6162.16	5683.60	-2388.89	1735377.03	14590423.44	40°10'27.852"N	80°39'36.185"W	6165.23	337.202	2.20	-0.13	2.19	
11812.00	90.400	343.190	5747.56	6253.94	5771.57	-2415.81	1735350.12	14590511.37	40°10'28.722"N	80°39'36.528"W	6256.77	337.287	0.52	-0.27	0.45	
11905.00	90.460	341.350	5746.87	6346.78	5860.14	-2444.13	1735321.81	14590599.91	40°10'29.598"N	80°39'36.888"W	6349.41	337.360	1.98	0.06	-1.98	
11998.00	90.520	341.880	5746.07	6439.68	5948.39	-2473.46	1735292.49	14590688.13	40°10'30.472"N	80°39'37.262"W	6442.16	337.421	0.57	0.06	0.57	
12091.00	90.520	342.590	5745.23	6532.53	6036.96	-2501.83	1735264.13	14590776.65	40°10'31.348"N	80°39'37.623"W	6534.83	337.490	0.76	0.00	0.76	
12183.00	90.580	345.550	5744.34	6624.16	6125.41	-2527.08	1735238.89	14590865.07	40°10'32.223"N	80°39'37.944"W	6626.22	337.581	3.22	0.07	3.22	
12276.00	90.830	347.720	5743.20	6716.32	6215.88	-2548.57	1735217.41	14590955.51	40°10'33.118"N	80°39'38.216"W	6718.06	337.706	2.35	0.27	2.33	
12368.00	90.860	345.500	5741.84	6807.50	6305.36	-2569.88	1735196.11	14591044.95	40°10'34.003"N	80°39'38.486"W	6808.95	337.826	2.41	0.03	-2.41	
12461.00	90.520	341.990	5740.72	6900.16	6394.62	-2595.90	1735170.10	14591134.18	40°10'34.886"N	80°39'38.817"W	6901.44	337.905	3.79	-0.37	-3.77	
12554.00	90.250	341.290	5740.10	6993.06	6482.89	-2625.20	1735140.82	14591222.41	40°10'35.759"N	80°39'39.190"W	6994.24	337.955	0.81	-0.29	-0.75	
12646.00	90.310	345.070	5739.65	7084.80	6570.93	-2651.81	1735114.21	14591310.42	40°10'36.630"N	80°39'39.529"W	7085.85	338.023	4.11	0.07	4.11	
12739.00	90.340	348.280	5739.12	7176.95	6661.42	-2673.24	1735092.79	14591400.87	40°10'37.525"N	80°39'39.800"W	7177.79	338.134	3.45	0.03	3.45	
12832.00	90.620	357.290	5738.34	7267.18	6753.58	-2684.91	1735081.12	14591493.00	40°10'38.436"N	80°39'39.946"W	7267.71	338.320	9.69	0.30	9.69	
12925.00	90.800	356.310	5737.19	7355.73	6846.43	-2690.10	1735075.94	14591585.81	40°10'39.354"N	80°39'40.008"W	7355.97	338.549	1.07	0.19	-1.05	
13017.00	90.620	347.420	5736.04	7445.32	6937.40	-2703.11	1735062.94	14591676.75	40°10'40.254"N	80°39'40.171"W	7445.43	338.712	9.66	-0.20	-9.66	
13110.00	90.740	339.010	5734.94	7537.98	7026.36	-2729.94	1735036.12	14591765.67	40°10'41.134"N	80°39'40.513"W	7538.05	338.767	9.04	0.13	-9.04	
13203.00	90.740	339.520	5733.74	7630.98	7113.32	-2752.86	1735003.21	14591852.60	40°10'41.994"N	80°39'40.933"W	7631.04	338.774	0.55	0.00	0.55	

APR 27 2018



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (160 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
13295.00	90.980	340.060	5732.36	7722.96	7199.65	-2794.64	1734971.44	14591938.89	40°10'42.849"N	80°39'41.338"W	7723.02	338.786	0.64	0.26	0.59
13388.00	90.520	337.660	5731.14	7815.94	7286.38	-2828.17	1734937.92	14592025.59	40°10'43.707"N	80°39'41.766"W	7816.00	338.787	2.63	-0.49	-2.58
13481.00	90.490	337.460	5730.32	7908.91	7372.33	-2863.67	1734902.43	14592111.51	40°10'44.558"N	80°39'42.219"W	7908.98	338.772	0.22	-0.03	-0.22
13574.00	90.370	339.580	5729.62	8001.90	7458.86	-2897.72	1734868.39	14592198.01	40°10'45.414"N	80°39'42.653"W	8001.97	338.769	2.28	-0.13	2.28
13666.00	90.710	341.090	5728.75	8093.86	7545.49	-2928.68	1734837.45	14592284.60	40°10'46.271"N	80°39'43.048"W	8093.93	338.787	1.68	0.37	1.64
13759.00	90.770	342.270	5727.55	8186.75	7633.77	-2957.91	1734808.23	14592372.84	40°10'47.145"N	80°39'43.420"W	8186.80	338.820	1.27	0.06	1.27
13852.00	90.710	342.740	5726.35	8279.57	7722.46	-2985.87	1734780.29	14592461.50	40°10'48.022"N	80°39'43.776"W	8279.60	338.861	0.51	-0.06	0.51
13945.00	90.920	342.820	5725.03	8372.36	7811.28	-3013.39	1734752.77	14592550.29	40°10'48.901"N	80°39'44.126"W	8372.38	338.905	0.24	0.23	0.09
13994.00	90.740	343.440	5724.32	8421.23	7858.17	-3027.61	1734738.56	14592597.16	40°10'49.365"N	80°39'44.307"W	8421.24	338.929	1.32	-0.37	1.27
14018.00	90.740	343.440	5724.01	8445.16	7881.17	-3034.45	1734731.72	14592620.15	40°10'49.592"N	80°39'44.394"W	8445.16	338.942	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Edward Dremak OHI 1H AWB    Ref Wellpath: Edward Dremak OHI 1H AWP Proj: 14018'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
12.25in Open Hole	359.00	1767.00	1408.00	358.99	1761.36	0.49	-2.49	-27.61	-93.58
9.625in Casing	26.00	1737.00	1711.00	26.00	1731.57	0.00	0.00	-25.41	-90.77
8.75in Open Hole	1767.00	5135.00	3368.00	1761.36	5085.22	-27.61	-93.58	-193.35	-604.92
8.5in Open Hole	5135.00	14018.00	8883.00	5085.22	5724.01	-193.35	-604.92	7881.17	-3034.45

RECEIVED  
 Office of Oil and Gas  
 APR 27 2018  
 WV Department of  
 Environmental Protection

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Edward Dremak OHI 1H BHL Rev-1	5718.00	7892.40	-3028.52	1734737.65	14592631.37	40°10'49.703"N	80°39'44.317"W	point
Edward Dremak OHI 1H LP Rev-1	5789.00	391.51	-889.32	1736876.02	14585133.42	40°09'35.498"N	80°39'17.132"W	point

WELLPATH COMPOSITION - Ref Wellbore: Edward Dremak OHI 1H AWB      Ref Wellpath: Edward Dremak OHI 1H AWP Proj: 14018'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	311.00	OWSG EMS rev2 - Standard	01_MSS <17.5"> (189'-311')	Edward Dremak OHI 1H AWB
311.00	1689.00	BHI NaviTrak (Axial)	02_APS EM <12-1/4"> (311')(416'-1689')	Edward Dremak OHI 1H AWB
1689.00	5064.00	BHI NaviTrak (Axial)	03_APS EM <8-3/4"> (1689')(1817'-5064')	Edward Dremak OHI 1H AWB
5064.00	13994.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2"> (5064')(5139'-13994')	Edward Dremak OHI 1H AWB
13994.00	14018.00	Blind Drilling (std)	Projection to bit	Edward Dremak OHI 1H AWB

RECEIVED  
 Office of Oil and Gas  
 APR 27 2018  
 WV Department of  
 Environmental Protection



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #1H
Area	Ohio County, WV	Well	Edward Dremak OHI 1H
Field	Ohio	Wellbore	Edward Dremak OHI 1H AWB
Facility	Edward Dremak OHI Pad		

COMMENTS
<p><b>Wellpath general comments</b>            API: 47-069-00226-0000            Job #: 8775412            Rig: SDC 46            Duration: 10/01/2017 - 10/09/2017</p>

RECEIVED  
 Office of Oil and Gas  
**APR 27 2018**  
 W. Department of  
 Environmental Protection

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/25/2018
Job End Date:	3/16/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00226-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Edward Dremak 1H
Latitude:	40.15877640
Longitude:	-80.65158273
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,760
Total Base Water Volume (gal):	15,039,412
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	80.87182	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	1.11066	

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of

BIOC11219A	NALCO	Biocide					
				Listed Below			
HAI-150E	Halliburton	Corrosion Inhibitor					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SAND-COMMON WHITE - 100 MESH, 3307 LB BAG	Halliburton	Proppant					
				Listed Below			
FDP-S1176-15	Halliburton	Friction Reducer					
				Listed Below			
FloJet DR 9000	SNF Inc	Friction Reducer					
				Listed Below			
SCAL16486A	NALCO	Scale Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
		RECEIVED Office of Oil and Gas		Listed Below			

APR 27 2018

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	17.95860	
		Hydrochloric acid	7647-01-0	15.00000	0.15970	
		Polyacrylate	Proprietary	30.00000	0.02300	
		Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02300	
		Methanol	67-56-1	60.00000	0.01124	
		Benzyl-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00562	
		Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00383	
		9-Octadecenamamide, n,n-bis-2(hydroxy-ethyl)-(Z)	93-83-4	5.00000	0.00383	
		Ammonium chloride	12125-02-9	5.00000	0.00383	
		Castor oil, ethoxylated	61791-12-6	5.00000	0.00383	
		Sodium chloride	7647-14-5	5.00000	0.00383	
		Ethylene Glycol	107-21-1	30.00000	0.00241	
		Amine Triphosphate	Proprietary	30.00000	0.00224	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
		Glutaraldehyde	111-30-8	10.00000	0.00187	
		Distillates hydrotreated light	64742-47-8	45.00000	0.00078	
		Non-hazardous food substance	Proprietary	100.00000	0.00033	
		Alcohols, ethoxylated propoxylated	68213-24-1	2.00000	0.00003	
		Fatty alcohols ethoxylated	Proprietary	2.00000	0.00003	

\* 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)

RECEIVED  
Office of Oil and Gas

APR 27 2018

WV Department of  
Environmental Protection



SHL Latitude: 40°10'00" 7,396'

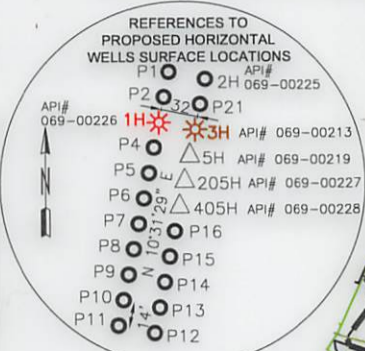
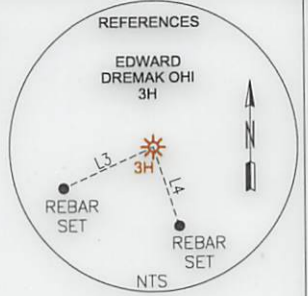
BHL Latitude: 40°12'30" 10,020'



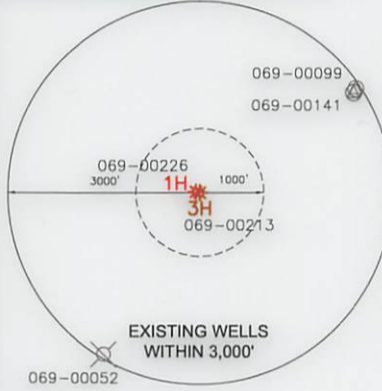
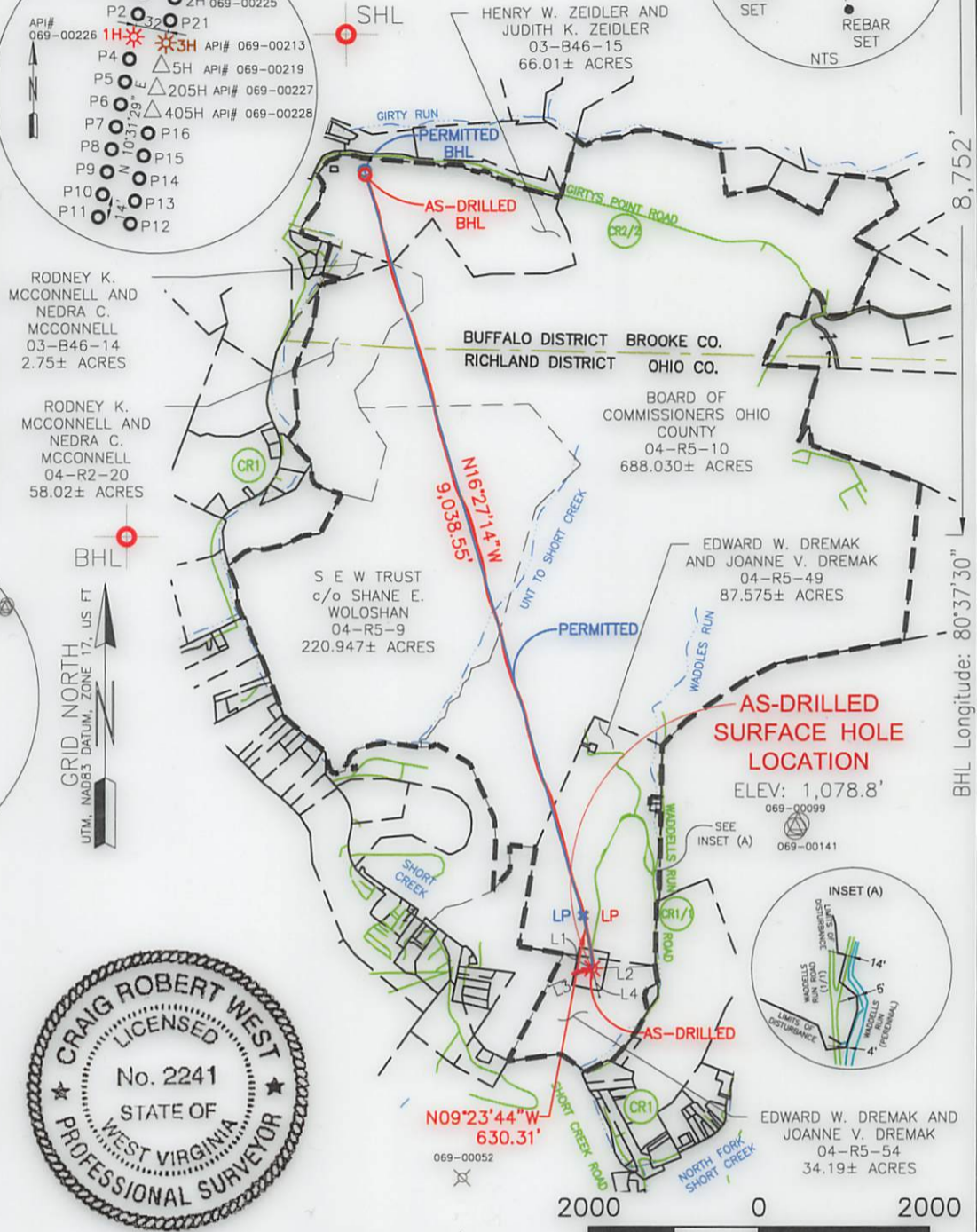
RETTEW Associates, Inc. 27 Travata Street, Suite 101 Bridgeport, WV 26330 Phone (800) 738-8395 Email: rettew@rettew.com Website: www.rettew.com

Table with 2 columns: Location Type (SHL, LPL, BHL) and UTM Coordinates (NORTHING, EASTING)

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT



AS-DRILLED



- 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 LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE. 7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)

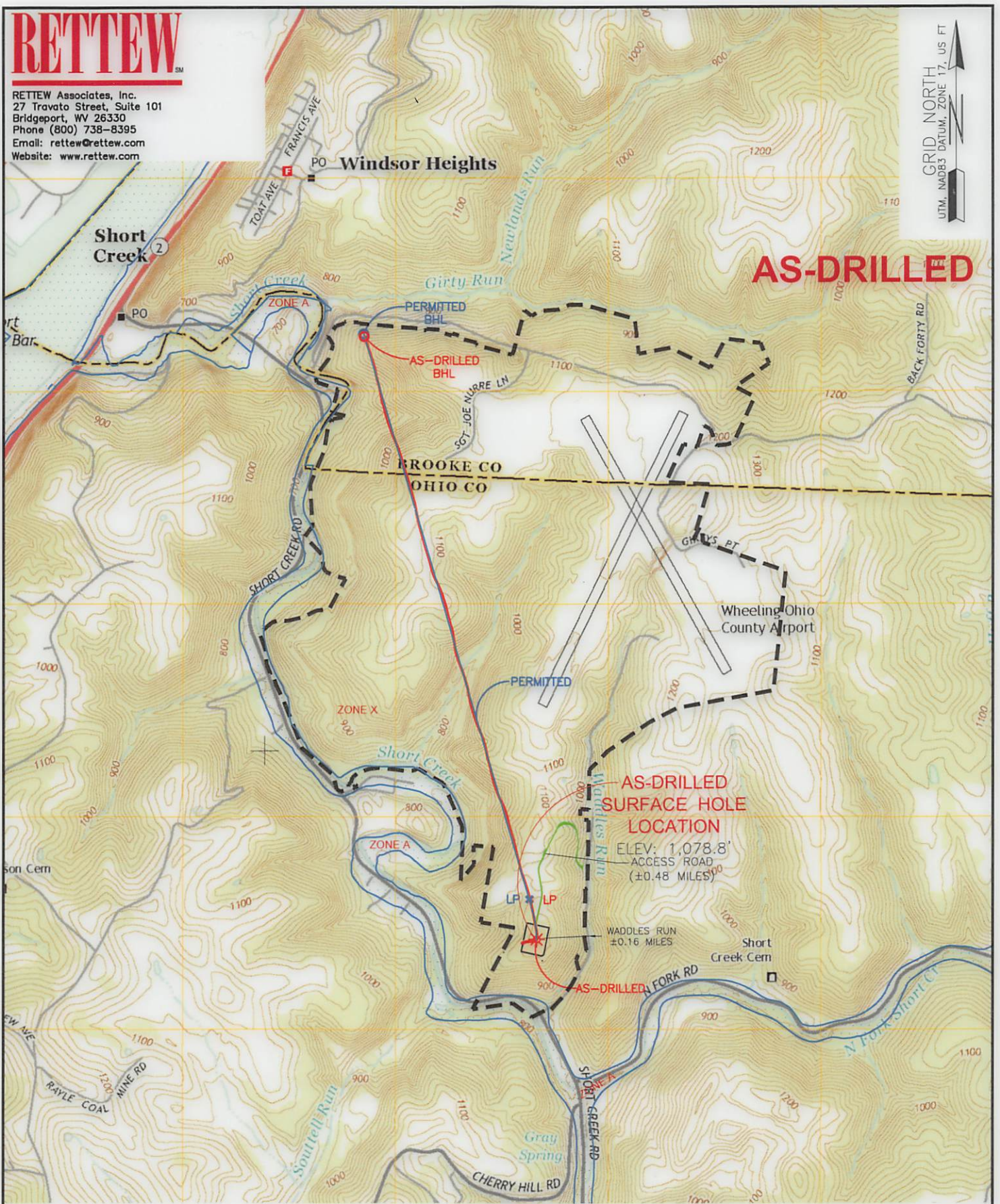
EDWARD DREMAK OHI OPERATOR'S WELL #: 3H API WELL #: 47 STATE 69 COUNTY 00213 PERMIT

WELL TYPE: OIL [ ] WASTE DISPOSAL [ ] PRODUCTION [X] DEEP [ ] GAS [X] LIQUID INJECTION [ ] STORAGE [ ] SHALLOW [X] WATERSHED: UPPER OHIO WHEELING DISTRICT: RICHLAND COUNTY: OHIO SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V. OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V. DRILL [ ] DRILL DEEPER [ ] REDRILL [ ] FRACTURE OR STIMULATE [ ] PLUG OFF OLD FORMATION [ ] PERFORATE NEW FORMATION [ ] CONVERT [ ] PLUG & ABANDON [ ] CLEAN OUT & REPLUG [ ] OTHER CHANGE [X] (SPECIFY) As-Drilled TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,795' TVD 15,285' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378 DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 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, TIE LINE, LEASE BOUNDARY, AS DRILLED WELLPATH, PERMITTED WELLPATH, STREAM, REVISIONS, DATE: 11-09-2017, DRAWN BY: G.FLORES, SCALE: 1" = 2000', DRAWING NO: 087569045, WELL LOCATION PLAT





WELL: EDWARD DREMAK OHI 3H  
QUAD: TILTONSVILLE, OH-WV

GRAPHIC SCALE IN FEET

<b>NAME AND DISTANCE TO THE NEAREST STREAM:</b> WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.		<b>STREAM CROSSING COORDINATES (NAD 83):</b> NO STREAM CROSSINGS		<b>COMPANY:</b> 	
<b>WELL RESTRICTIONS:</b> 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		<b>OPERATOR'S</b> EDWARD DREMAK OHI		<b>WELL #:</b> 3H	
<b>FEMA FLOOD INFORMATION:</b> BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006		<b>LOCATION:</b> RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		<b>SURFACE HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.158760° LONGITUDE: -80.651471°	
<b>LEGEND:</b> 		<b>BOTTOM HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.184300° LONGITUDE: -80.666875°		<b>REVISIONS:</b> DATE: 11-09-2017	
				<b>DRAWN BY:</b> G.FLORES <b>SCALE:</b> 1" = 2000' <b>DRAWING NO:</b> 087569045 <b>TOPOGRAPHIC MAP</b>	



SHL Latitude: 40°10'00" 7,396'

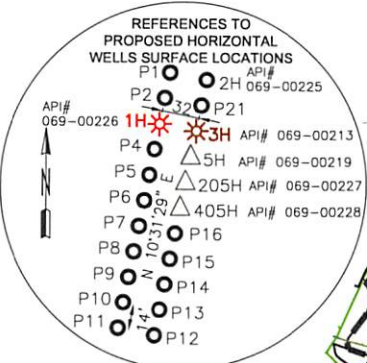
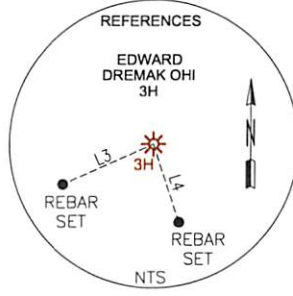
BHL Latitude: 40°12'30" 10,020'



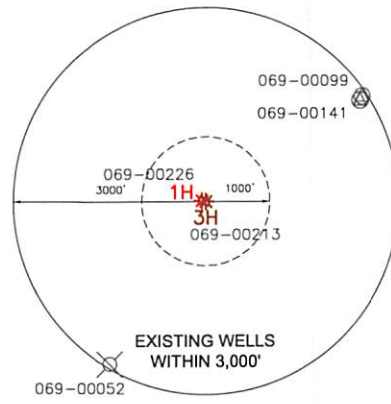
RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

Table with 2 columns: Location Type and UTM Coordinates. Includes Surface Hole Location (SHL), Landing Point Location (LPL), and Bottom Hole Location (BHL) for both existing and proposed wells.

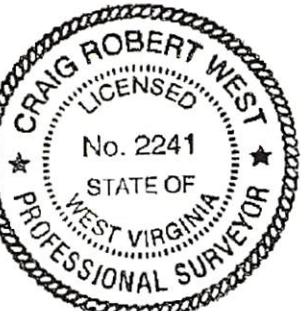
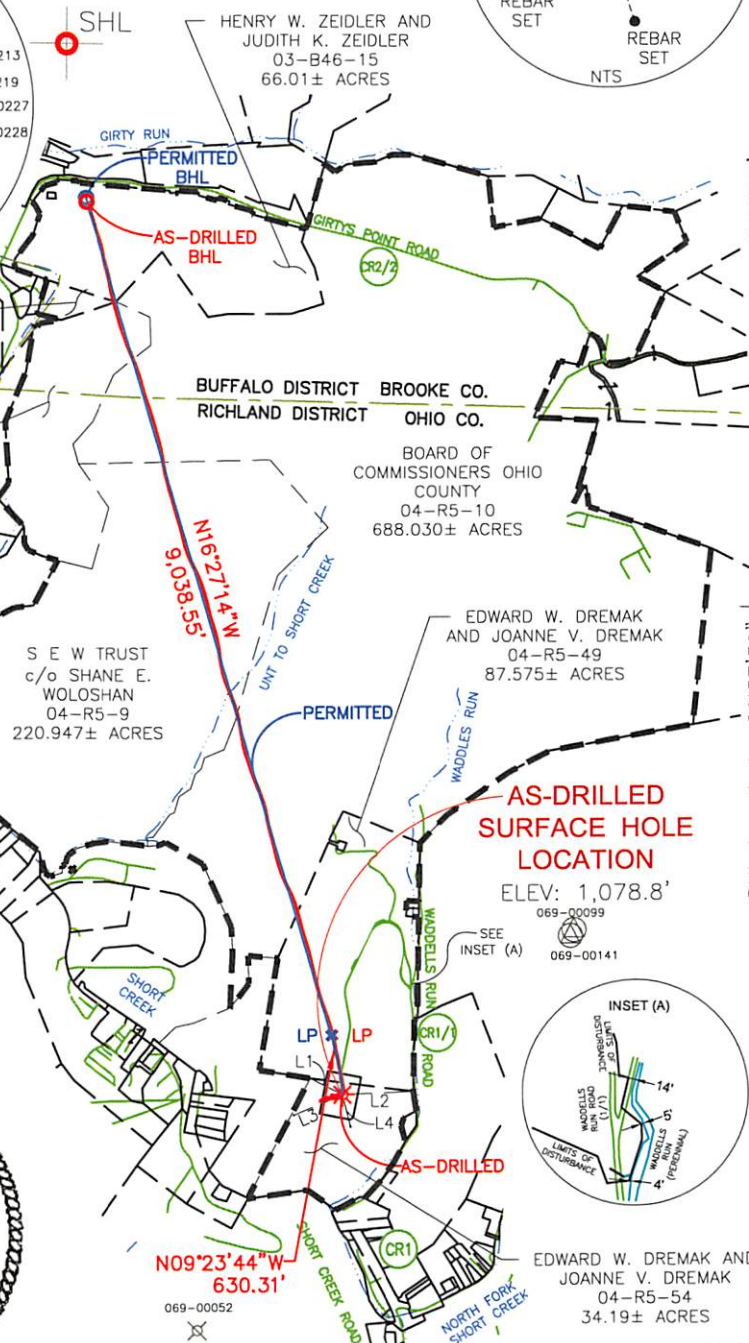
Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Lists lines L1 through L4 with bearings, distances, and descriptions.



AS-DRILLED



RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL 03-B46-14 2.75± ACRES
RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL 04-R2-20 58.02± ACRES



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 LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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)

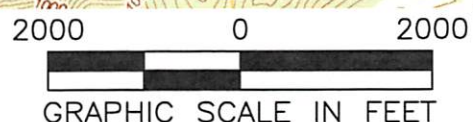
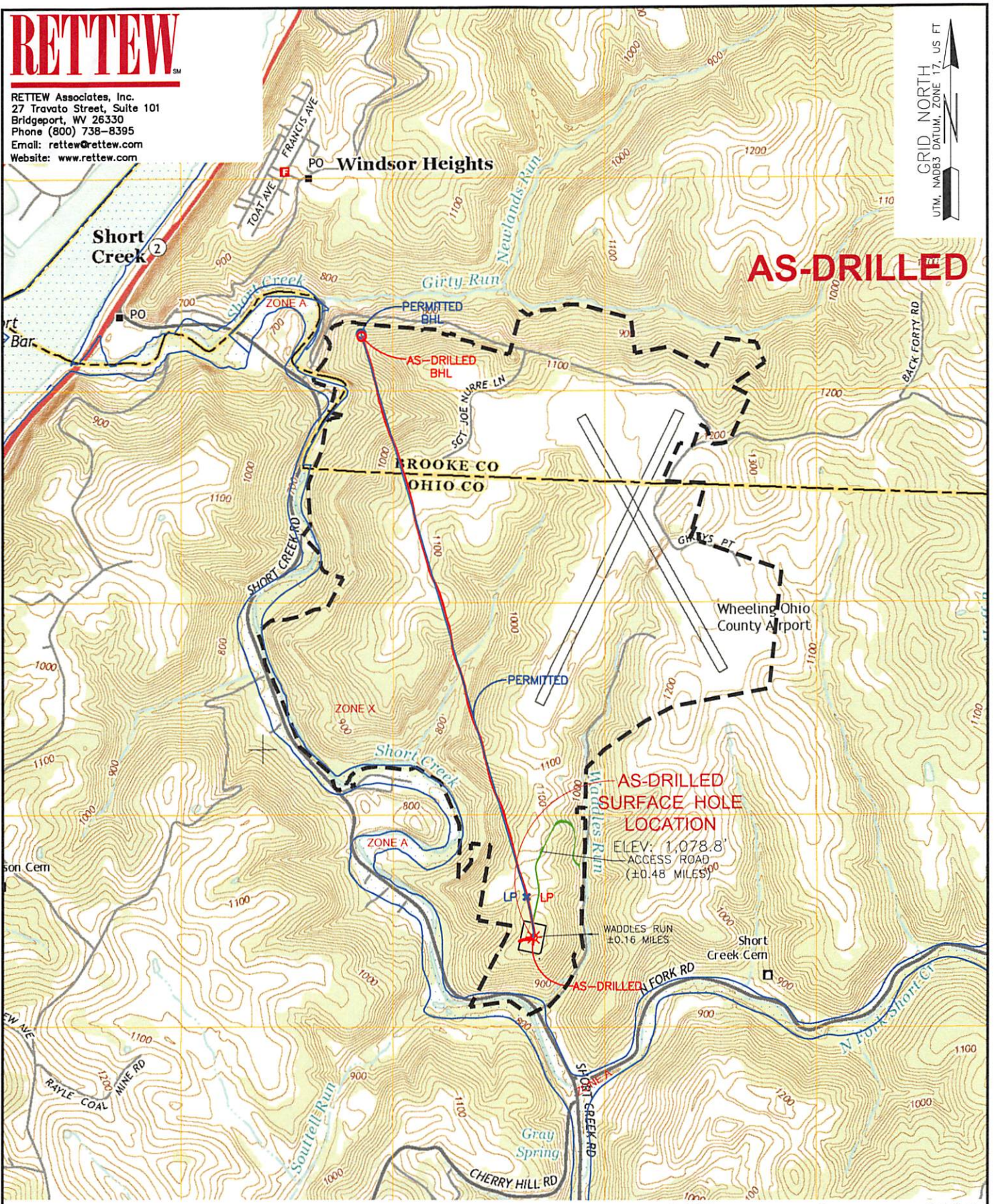
EDWARD DREMAK OHI OPERATOR'S WELL #: 3H
API WELL #: 47 STATE 69 COUNTY 00213 PERMIT

WELL TYPE: OIL [ ] WASTE DISPOSAL [ ] PRODUCTION [X] DEEP [ ] GAS [X] LIQUID INJECTION [ ] STORAGE [ ] SHALLOW [X]
WATERSHED: UPPER OHIO WHEELING ELEVATION: 1,078.8' (AS-BUILT)
DISTRICT: RICHLAND COUNTY: OHIO QUADRANGLE: TILTONSVILLE, OH-WV
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
DRILL [ ] DRILL DEEPER [ ] REDRILL [ ] FRACTURE OR STIMULATE [ ] PLUG OFF OLD FORMATION [ ] PERFORATE NEW FORMATION [ ]
CONVERT [ ] PLUG & ABANDON [ ] CLEAN OUT & REPLUG [ ] OTHER CHANGE [X] (SPECIFY) As-Drilled
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,795' TVD 15,285' 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, TIE LINE, LEASE BOUNDARY, ASDRILLED WELLPATH, PERMITTED WELLPATH, STREAM. REVISIONS: DATE: 11-09-2017. DRAWN BY: G.FLORES. SCALE: 1" = 2000'. DRAWING NO: 087569045. WELL LOCATION PLAT.





WELL: EDWARD DREMAK OHI 3H  
 QUAD: TILTONSVILLE, OH-WV

<b>NAME AND DISTANCE TO THE NEAREST STREAM:</b> WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.		<b>STREAM CROSSING COORDINATES (NAD 83):</b> NO STREAM CROSSINGS		<b>COMPANY:</b> 	
<b>WELL RESTRICTIONS:</b> 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		<b>OPERATOR'S</b> EDWARD DREMAK OHI		<b>WELL #:</b> 3H	
<b>FEMA FLOOD INFORMATION:</b> BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006		<b>LOCATION:</b> RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		<b>SURFACE HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.158760° LONGITUDE: -80.651471°	
<b>LEGEND:</b> ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ✖ EXISTING / PRODUCING WELLHEAD ✖ ABANDONED WELL ✖ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR		--- LEASE BOUNDARY --- ASDRILLED WELLPATH --- PERMITTED WELLPATH --- ACCESS ROAD --- HIGHWAY/INTERSTATE --- COUNTY ROAD		<b>BOTTOM HOLE LOCATION:</b> GEOGRAPHIC (NAD83): LATITUDE: 40.184300° LONGITUDE: -80.660875°	
<b>REVISIONS:</b>		DATE: 11-09-2017		DRAWN BY: G.FLORES SCALE: 1" = 2000' DRAWING NO:087569045 TOPOGRAPHIC MAP	