

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

API 47-103-03205 County WETZEL District PROCTOR  
Quad WILEYVILLE Pad Name DANIEL DURIG WTZ PAD Field/Pool Name VICTORY  
Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) Well Number DANIEL DURIG WTZ 210H  
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 4,396,394.923 Easting 530,937.443  
Landing Point of Curve Northing 4,396,653.870 Easting 531,670.858  
Bottom Hole Northing 4,394,599.873 Easting 533,871.893

Elevation (ft) 1401.5' 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

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Date permit issued 11/17/2017 Date drilling commenced 11/18/2017 Date drilling ceased 03/04/2018  
Date completion activities began 05/12/2018 Date completion activities ceased 08/27/2018  
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 427' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1,664' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 1,167' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by:

Dmitry  
2-21-19

API 47- 103 - 03205 Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) Well number DANIEL DURIG WTZ 210H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24	20	126'	NEW	J-55/94#		Y
Surface	17.5	13.375	537'	NEW	J-55/54.50#		Y, 26 bbls
Coal	See Intermediate						
Intermediate 1	12.25	9.625	2,712'	NEW	J-55/36#		Y, 64 bbls
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	18,007'	NEW	HCP-110/20#		Y
Tubing							
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	486	15.60	1.19	578.34	SURFACE	8
Coal	See Intermediate						
Intermediate 1	CLASS A	1,045	15.60	1.18	1,233.10	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3,189	15.60	1.19	3,794.91	SURFACE	24
Tubing							

Drillers TD (ft) 18,007' Loggers TD (ft) 18,007'  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 7,189'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature

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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**DANIEL DURIG WTZ 210H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	4/10/2018	17,811	17,775	33
2	5/13/2018	17,739	17,667	33
3	5/13/2018	17,634	17,562	33
4	5/13/2018	17,529	17,457	33
5	5/14/2018	17,424	17,352	33
6	5/16/2018	17,319	17,247	33
7	5/16/2018	17,214	17,142	33
8	5/17/2018	17,109	17,037	33
9	6/7/2018	17,004	16,932	33
10	6/7/2018	16,899	16,827	33
11	6/8/2018	16,794	16,722	33
12	6/9/2018	16,689	16,617	33
13	6/9/2018	16,584	16,512	33
14	6/9/2018	16,479	16,407	33
15	6/10/2018	16,374	16,302	33
16	6/11/2018	16,269	16,197	33
17	6/11/2018	16,164	16,092	33
18	6/12/2018	16,059	15,987	33
19	6/12/2018	15,954	15,882	33
20	6/14/2018	15,849	15,777	33
21	6/14/2018	15,744	15,672	33
22	6/15/2018	15,639	15,567	33
23	6/15/2018	15,534	15,462	33
24	6/16/2018	15,429	15,357	33
25	6/16/2018	15,324	15,252	33
26	6/16/2018	15,219	15,147	33
27	6/17/2018	15,114	15,042	33
28	6/17/2018	15,009	14,937	33
29	6/17/2018	14,904	14,832	33
30	6/18/2018	14,799	14,727	33
31	6/18/2018	14,694	14,622	33
32	6/18/2018	14,589	14,517	33
33	6/19/2018	14,484	14,412	33
34	6/19/2018	14,379	14,307	33
35	6/20/2018	14,274	14,202	33
36	6/21/2018	14,169	14,097	33
37	6/21/2018	14,064	13,992	33
38	6/22/2018	13,959	13,887	33
39	6/22/2018	13,854	13,782	33
40	6/23/2018	13,749	13,677	33
41	6/23/2018	13,644	13,572	33
42	6/24/2018	13,539	13,467	33

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DANIEL DURIG WTZ 210H

ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	6/24/2018	13,434	13,362	33
44	6/24/2018	13,329	13,257	33
45	6/25/2018	13,224	13,152	33
46	6/26/2018	13,119	13,047	33
47	6/27/2018	13,014	12,942	33
48	6/27/2018	12,909	12,837	33
49	6/28/2018	12,804	12,732	33
50	6/28/2018	12,699	12,627	33
51	6/28/2018	12,594	12,522	33
52	6/29/2018	12,489	12,417	33
53	6/29/2018	12,384	12,312	33
54	6/29/2018	12,279	12,207	33
55	6/30/2018	12,174	12,102	33
56	7/1/2018	12,069	11,997	33
57	7/1/2018	11,964	11,892	33
58	7/2/2018	11,859	11,787	33
59	7/2/2018	11,754	11,682	33
60	7/3/2018	11,649	11,577	33
61	7/3/2018	11,544	11,472	33
62	7/4/2018	11,439	11,367	33
63	7/4/2018	11,334	11,262	33
64	7/4/2018	11,229	11,157	33
65	7/6/2018	11,124	11,052	33

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ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	5/12/2018	60	7,936	8,385	4,331	193,100	6,530	0
2	5/13/2018	64	7,992	6,672	4,479	196,880	6,244	0
3	5/13/2018	68	7,985	6,039	4,813	193,680	5,916	0
4	5/14/2018	70	8,073	6,177	4,945	196,200	6,245	0
5	5/14/2018	64	7,997	6,585	4,721	196,760	7,250	0
6	5/15/2018	65	7,730	6,406	4,864	212,660	4,380	0
7	5/16/2018	65	8,021	6,033	5,291	217,380	4,285	0
8	5/17/2018	63	7,870	6,766	4,868	219,690	5,887	0
9	6/7/2018	66	7,821	7,332	4,577	197,780	4,698	0
10	6/8/2018	64	7,894	7,758	5,932	194,260	5,498	0
11	6/8/2018	62	7,987	7,917	5,370	195,420	4,463	0
12	6/9/2018	64	7,874	7,764	4,883	198,060	4,469	0
13	6/9/2018	67	7,997	6,593	5,121	195,680	3,108	0
14	6/10/2018	63	7,984	7,496	5,642	200,060	4,336	0
15	6/11/2018	66	7,841	6,532	4,819	200,020	4,275	0
16	6/11/2018	72	8,161	6,482	5,463	197,920	4,839	0
17	6/12/2018	60	8,180	8,111	5,290	198,540	4,131	0
18	6/12/2018	63	7,720	8,254	4,873	202,080	3,887	0
19	6/14/2018	70	7,908	6,919	5,449	216,060	4,450	0
20	6/14/2018	70	8,115	6,675	4,840	217,570	4,561	0
21	6/14/2018	70	7,878	6,259	4,833	221,330	4,303	0
22	6/15/2018	76	7,985	6,710	5,610	204,100	4,136	0
23	6/15/2018	72	7,863	6,574	4,850	219,130	4,793	0
24	6/16/2018	76	8,010	7,000	5,145	206,780	3,874	0
25	6/16/2018	75	7,889	5,983	5,085	208,880	3,950	0
26	6/17/2018	76	8,061	6,548	5,455	208,740	3,968	0
27	6/17/2018	76	8,131	6,636	4,673	206,840	3,915	0
28	6/17/2018	70	7,745	6,168	5,149	212,160	3,843	0
29	6/18/2018	72	7,907	6,065	5,248	220,150	4,093	0
30	6/18/2018	75	7,839	5,989	5,416	210,000	3,855	0
31	6/18/2018	77	8,045	6,263	5,703	210,460	3,959	0
32	6/19/2018	73	7,479	6,422	5,671	200,760	3,944	0
33	6/19/2018	77	7,959	6,453	4,861	206,920	3,999	0
34	6/20/2018	66	8,217	7,312	5,430	205,340	3,992	0
35	6/21/2018	77	7,855	6,673	5,549	207,180	3,820	0
36	6/21/2018	66	8,094	7,072	5,337	202,780	3,745	0
37	6/22/2018	73	7,955	7,246	5,010	206,720	3,882	0
38	6/22/2018	77	7,911	6,248	5,145	208,740	3,879	0
39	6/23/2018	75	8,058	6,944	5,053	202,380	3,777	0
40	6/23/2018	70	7,897	6,341	5,052	206,840	3,763	0
41	6/24/2018	80	8,019	6,173	5,830	207,040	3,743	0
42	6/24/2018	68	7,633	6,889	4,622	206,100	3,550	0
43	6/24/2018	79	7,902	6,595	5,756	207,860	3,651	0
44	6/25/2018	80	8,008	6,585	5,613	204,070	3,651	0
45	6/25/2018	79	7,971	7,258	5,762	206,360	3,689	0
46	6/26/2018	77	7,966	6,235	4,495	205,720	3,673	0
47	6/27/2018	77	7,938	7,208	4,597	205,060	4,011	0
48	6/28/2018	80	7,563	7,089	5,146	202,980	3,534	0
49	6/28/2018	72	7,880	6,863	4,594	201,920	4,594	0
50	6/28/2018	79	7,584	7,056	5,319	194,720	3,331	0
51	6/29/2018	76	7,705	6,490	5,738	198,720	3,378	0
52	6/29/2018	78	7,858	7,207	4,583	204,700	3,293	0
53	6/29/2018	73	8,019	6,992	4,636	201,700	3,332	0

DANIEL DURIG Wtz 210H  
ATTACHMENT 2  
STIM REPORT

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
54	6/30/2018	70	7,635	6,938	5,120	205,160	3,462	0
55	7/1/2018	78	7,839	8,498	5,280	200,360	3,350	0
56	7/1/2018	81	7,465	8,177	5,398	195,880	3,244	0
57	7/2/2018	80	7,486	8,243	4,229	199,640	3,422	0
58	7/2/2018	79	7,622	8,710	4,356	197,540	3,331	0
59	7/2/2018	78	7,500	7,553	4,670	200,820	3,457	0
60	7/3/2018	80	7,674	8,724	4,224	194,060	3,133	0
61	7/3/2018	76	7,516	7,631	4,486	203,120	3,469	0
62	7/4/2018	79	7,203	7,477	4,854	195,200	3,410	0
63	7/5/2018	73	7,200	7,792	4,508	197,180	3,392	0
64	7/6/2018	81	7,580	7,440	4,780	202,380	3,414	0
65	7/6/2018	79	7,739	8,493	5,616	198,480	3,338	0

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Well Name:

Daniel Durig Wtz 210H

47103032050000

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	427.00	427.00	
Top of Salt Water	1664.00	1664.00	NA	NA	
Pittsburgh Coal	1167.00	1167.00	1239.00	1239.00	
Pottsville (ss)	1239.00	1239.00	1259.00	1259.00	
Mauch Chunk (shale)	NA	NA	NA	NA	
Raven Cliff (ss)	1682.00	1682.00	1951.00	1951.00	
Maxton (ss)	1951.00	1951.00	NA	NA	
Greenbriar (ls)	NA	NA	NA	NA	
Big Injun (ss)	2325.00	2325.00	2911.00	2911.00	
Berea (siltstone)	2911.00	2911.00	6584.00	6584.00	
Rhinestreet (shale)	6954.00	6552.00	7297.00	6860.00	
Cashaqua (shale)	7297.00	6860.00	7440.00	6980.00	
Middlesex (shale)	7440.00	6980.00	7565.00	7073.00	
Burket (shale)	7565.00	7073.00	7607.00	7099.00	
Tully (ls)	7607.00	7099.00	7644.00	7123.00	
Mahantango (shale)	7644.00	7123.00	7928.00	7229.00	
Marcellus (shale)	7928.00	7229.00	NA	NA	GAS

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/12/2018
Job End Date:	8/6/2018
State:	West Virginia
County:	Wetzel
API Number:	47-103-03205-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Daniel Durig WTZ 210
Latitude:	39.71686436
Longitude:	-80.63905035
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,387
Total Base Water Volume (gal):	15,346,283
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
IC-001	Economy Polymer & Chemicals	Additive					
				Listed Below			
FLOJET DR 9000LPP	SWN Well Services	Friction Reducer					
				Listed Below			

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FDP-S1176-15	Halliburton	Friction Reducer					
				Listed Below			
Base Water	Operator	Base Fluid					
				Listed Below			
BIOC11219A	Nalco	Biocide					
				Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
HCL	Halliburton	Solvent					
				Listed Below			
CI-200	Economy Polymer & Chemicals	Corrosion Inhibitor					
				Listed Below			
SCAL16486A	Nalco	Scale Inhibitor					
				Listed Below			
Sand	SWN Well Services	Proppant					

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				Listed Below			
Sand	Halliburton	Proppant					
				Listed Below			
HCL	SWN Well Services	Solvent					
				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	88.47569	
			Crystalline Silica, quartz	14808-60-7	100.00000	11.14850	
			Hydrochloric Acid	7647-01-0	15.00000	0.29240	
			Petroleum Distillates, Hydrotreated	64742-47-8	45.00000	0.04060	
			Methanol	67-56-1	60.00000	0.01440	
			Ethylene glycol	107-21-1	10.00000	0.01004	
			Benzyl-(C12-C16 Alky)-Dimethyl-Ammonium	68424-85-1	30.00000	0.00625	
			Polyacrylate	Proprietary	30.00000	0.00388	
			Acetic Acid	64-19-7	37.50000	0.00282	
			Chloride Glutaraldehyde	111-30-8	10.00000	0.00208	
			Amine Triphosphate	Proprietary	30.00000	0.00188	
			Citric Acid	77-92-9	22.50000	0.00169	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00163	
			Alcohols, C12-C16,Ethoxylated propoxylated	68213-24-1	2.00000	0.00163	
			Nitilotriacetic acid trisodium salt	5064-31-3	42.00000	0.00086	
			Ammonium chloride	12125-02-9	5.00000	0.00065	
			Sorbitan, mono-9-octadecenoate, (z)	1338-43-8	5.00000	0.00065	
			N,N-Diethanololeamide	93-83-4	5.00000	0.00065	

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			Polyethoxylated castor oil	61791-12-6	5.00000	0.00065	
			Sodium chloride	7647-14-5	5.00000	0.00065	
			Fatty Acids	Trade Secret	10.00000	0.00052	
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00018	
			Fatty acids	61790-12-3	5.02700	0.00009	
			Modified thiourea polymer	68527-49-1	4.74600	0.00009	
			Sodium hydroxide	1310-73-2	2.00000	0.00004	
			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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# SOUTHWESTERN ENERGY

Location: Wetzel County, WV  
 Slot: Slot 210H  
 Well: Daniel Durig WTZ 210H  
 Field: Wetzel  
 Wellbore: Daniel Durig WTZ 210H PWB

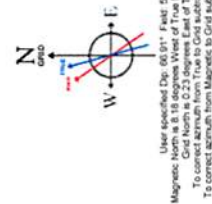
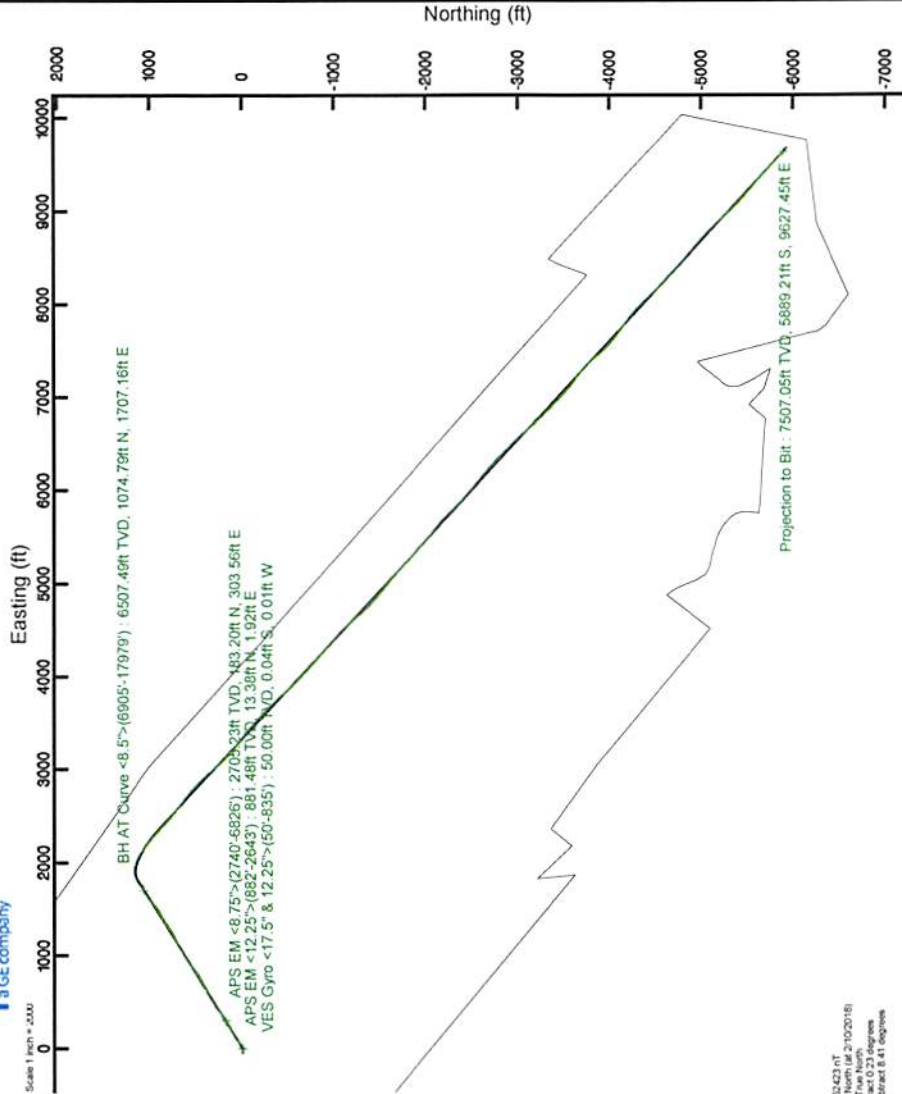
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Daniel Durig Pad	1741901.656	1442390.627	39°43'00.527N	80°38'20.787W
Slot	Local E (ft)	Local N (ft)	Latitude	Longitude
Slot 210H	18.58	15.71	39°43'00.717N	80°38'20.581W
Mean Sea Level to Ground level (At Slot: Slot 210H)				
SDC 46 (KB) to Mean Sea Level				
-1401R				
1427R				

Grid System	MGRS UTM Zone 17 North, US feet
* Wellpath was transformed from a different geoidic datum	
North Reference	Grid north
Scale	True distance
Depth	are in feet
Created by	thomasz on 2018-03-01
Database	WA_Pennsylvania

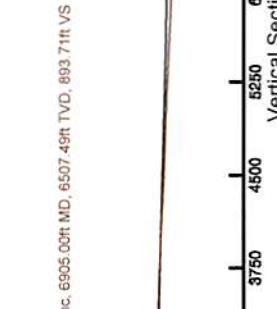
**API: 47-103-03205-0000**  
**Job #: 8841916**  
**Rig: SDC 46**  
**Duration: 02/23/2018 - 02/28/2018**

True vertical depth is referenced to SDC 46 (KB)  
 Measured depths are referenced to SDC 46 (KB)  
 SDC 46 (KB) to Mean Sea Level: 1427 feet  
 Mean Sea Level to Ground level (At Slot: Slot 210H): -1401 feet  
 Coordinates are in feet referenced to Slot

20in Conductor: 0.34° Inc, 126.00ft MD, 126.00ft TVD, -0.19ft VS  
 13.375in Casing Surface: 0.18° Inc, 537.00ft MD, 537.00ft TVD, -1.71ft VS  
 APS EM <12.25>(60-835): 0.19° Inc, 50.00ft MD, 50.00ft TVD, 0.01ft VS  
 APS EM <6.75>(2740-6826): 5.76° Inc, 2740.00ft MD, 2705.23ft TVD, 163.05ft VS  
 APS EM <8.75>(2740-6826): 6.37° Inc, 2712.00ft MD, 2677.39ft TVD, 161.69ft VS  
 APS EM <12.25>(60-835): 6.60° Inc, 862.00ft MD, 861.46ft TVD, -5.36ft VS



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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWP
Facility	Daniel Durig Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999612	Report Generated	3/1/2018 at 1:42:32 PM
Convergence at slot	0.24° East	Database/Source file	WA_Pennsylvania/Daniel_Durig_WTZ_210H_AWP_Proj__18007_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	18.58	15.71	1741917.36	14423839.20	39°43'00.712"N	80°38'20.581"W
Facility Reference Pt			1741901.66	14423820.63	39°43'00.529"N	80°38'20.783"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 (KB) to Facility Vertical Datum	1427.00ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1427.00ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Ground Level at Slot (Slot 210H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	121.51°

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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	195.750	0.00	0.00	0.00	0.00	1741917.36	14423839.20	39°43'00.712"N	80°38'20.581"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	195.750	26.00	0.00	0.00	0.00	1741917.36	14423839.20	39°43'00.712"N	80°38'20.581"W	0.00	0.000	0.00	0.00	0.00
50.00	0.190	195.750	50.00	0.01	-0.04	-0.01	1741917.35	14423839.16	39°43'00.712"N	80°38'20.581"W	0.04	195.750	0.79	0.79	-684.38
100.00	0.360	257.150	100.00	-0.08	-0.15	-0.19	1741917.17	14423839.05	39°43'00.710"N	80°38'20.583"W	0.24	230.623	0.63	0.34	122.80
150.00	0.330	259.070	150.00	-0.30	-0.22	-0.48	1741916.88	14423838.98	39°43'00.710"N	80°38'20.587"W	0.53	245.889	0.06	-0.06	3.84
200.00	0.290	292.260	200.00	-0.53	-0.19	-0.74	1741916.62	14423839.01	39°43'00.710"N	80°38'20.590"W	0.76	255.254	0.36	-0.08	66.38
250.00	0.340	317.320	250.00	-0.80	-0.04	-0.96	1741916.40	14423839.16	39°43'00.712"N	80°38'20.593"W	0.96	267.748	0.29	0.10	50.12
300.00	0.070	266.910	300.00	-0.96	0.07	-1.09	1741916.27	14423839.27	39°43'00.713"N	80°38'20.595"W	1.09	273.669	0.60	-0.54	-100.82
350.00	0.230	317.540	350.00	-1.09	0.14	-1.19	1741916.17	14423839.34	39°43'00.713"N	80°38'20.596"W	1.19	276.833	0.39	0.32	101.26
400.00	0.270	324.240	400.00	-1.29	0.31	-1.32	1741916.04	14423839.51	39°43'00.715"N	80°38'20.598"W	1.36	283.261	0.10	0.08	13.40
450.00	0.170	338.380	450.00	-1.46	0.48	-1.42	1741915.94	14423839.68	39°43'00.717"N	80°38'20.599"W	1.50	288.555	0.23	-0.20	28.28
500.00	0.270	350.210	500.00	-1.60	0.66	-1.47	1741915.89	14423839.86	39°43'00.719"N	80°38'20.600"W	1.61	294.275	0.22	0.20	23.66
550.00	0.210	269.700	550.00	-1.75	0.78	-1.58	1741915.78	14423839.98	39°43'00.720"N	80°38'20.601"W	1.76	296.213	0.63	-0.12	-161.02
600.00	0.950	329.070	599.99	-2.20	1.13	-1.88	1741915.48	14423840.33	39°43'00.723"N	80°38'20.605"W	2.20	301.017	1.72	1.48	118.74
650.00	1.350	318.350	649.98	-3.13	1.93	-2.49	1741914.87	14423841.13	39°43'00.731"N	80°38'20.613"W	3.15	307.776	0.91	0.80	-21.44
700.00	1.900	331.350	699.96	-4.41	3.10	-3.28	1741914.09	14423842.29	39°43'00.743"N	80°38'20.623"W	4.51	313.373	1.32	1.10	26.00
750.00	2.470	356.200	749.93	-5.75	4.90	-3.75	1741913.62	14423844.10	39°43'00.785"N	80°38'20.629"W	6.17	322.597	2.18	1.14	49.70
800.00	3.740	29.680	799.86	-6.43	7.39	-3.01	1741914.35	14423846.59	39°43'00.785"N	80°38'20.619"W	7.98	337.845	4.32	2.54	66.96
835.00	5.540	36.640	834.74	-6.31	9.74	-1.44	1741915.93	14423848.93	39°43'00.808"N	80°38'20.599"W	9.84	351.615	5.38	5.14	19.89
882.00	6.600	47.660	881.48	-5.36	13.38	1.92	1741919.27	14423852.57	39°43'00.844"N	80°38'20.556"W	13.51	8.148	3.34	2.26	23.45
928.00	7.080	55.070	927.15	-3.49	16.78	6.19	1741923.55	14423855.97	39°43'00.878"N	80°38'20.501"W	17.89	20.258	2.18	1.04	16.11
1021.00	8.920	65.860	1019.25	2.87	23.01	17.47	1741934.83	14423862.20	39°43'00.939"N	80°38'20.356"W	28.89	37.210	2.55	1.98	11.60
1068.00	9.510	69.760	1065.64	7.33	25.85	24.44	1741941.79	14423865.04	39°43'00.966"N	80°38'20.267"W	35.57	43.401	1.83	1.26	8.30
1160.00	8.950	68.710	1156.45	16.36	31.07	38.24	1741955.59	14423870.26	39°43'01.018"N	80°38'20.090"W	49.27	50.903	0.64	-0.61	-1.14
1253.00	8.760	68.270	1248.34	24.97	36.32	51.56	1741968.90	14423875.51	39°43'01.069"N	80°38'19.919"W	63.07	54.837	0.22	-0.20	-0.47
1346.00	8.650	63.260	1340.27	32.89	42.09	64.38	1741981.72	14423881.27	39°43'01.125"N	80°38'19.755"W	76.92	56.826	0.82	-0.12	-5.39
1438.00	9.360	56.090	1431.14	39.64	49.38	76.77	1741994.10	14423888.56	39°43'01.197"N	80°38'19.596"W	91.28	57.252	1.44	0.77	-7.79
1531.00	11.230	52.530	1522.64	46.04	59.11	90.24	1742007.56	14423898.28	39°43'01.293"N	80°38'19.423"W	107.87	56.774	2.12	2.01	-3.83
1624.00	12.330	52.650	1613.68	52.87	70.64	105.32	1742022.64	14423909.81	39°43'01.406"N	80°38'19.230"W	126.81	56.149	1.18	1.18	0.13
1669.00	12.550	54.110	1657.62	56.48	76.42	113.10	1742030.41	14423915.59	39°43'01.463"N	80°38'19.130"W	136.50	55.953	0.85	0.49	3.24

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WV Department of Environmental Protection





Southwestern Energy

# Actual Wellpath Report

Daniel Durig WTZ 210H AWP Proj: 18007 MD

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a GE company



## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY
Area	Wetzel County, WV
Field	Wetzel
Facility	Daniel Durig Pad
Well	Daniel Durig WTZ 210H AWP
Slot	Slot 210H

## WELLPATH DATA (212 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[US ft]	[ft]	[ft]	[ft]	[°/100ft]	[°/100ft]	[°/100ft]

1717.00	12.330	54.860	1704.50	60.52	82.43	121.51	1742038.83	14423921.60	39°43'01.522"N	80°38'19.022"W	146.83	55.849	0.57	-0.46	1.56
1809.00	14.420	61.900	1794.00	70.21	93.48	139.66	1742056.96	14423932.64	39°43'01.630"N	80°38'18.789"W	168.05	56.203	2.88	2.27	7.65
1902.00	14.400	62.470	1884.08	82.01	104.28	160.12	1742077.42	14423943.44	39°43'01.736"N	80°38'18.527"W	191.09	56.926	0.15	-0.02	0.61
1995.00	14.100	62.130	1974.21	93.73	114.92	180.39	1742097.68	14423954.07	39°43'01.841"N	80°38'18.267"W	213.89	57.501	0.33	-0.32	-0.37
2088.00	13.410	62.250	2064.55	105.01	125.24	199.95	1742117.23	14423964.39	39°43'01.942"N	80°38'18.016"W	235.93	57.940	0.74	-0.74	0.13
2180.00	12.440	62.140	2154.21	115.52	134.83	218.15	1742135.43	14423973.98	39°43'02.036"N	80°38'17.782"W	256.46	58.281	1.05	-1.05	-0.12
2272.00	11.880	59.040	2244.15	124.94	144.34	235.04	1742152.30	14423983.48	39°43'02.129"N	80°38'17.566"W	275.82	58.446	0.93	-0.61	-3.37
2365.00	11.520	59.500	2335.22	133.72	153.98	251.25	1742168.51	14423993.11	39°43'02.224"N	80°38'17.358"W	294.67	58.498	0.40	-0.39	0.49
2458.00	10.720	60.130	2426.47	142.23	163.00	266.75	1742184.00	14424002.13	39°43'02.312"N	80°38'17.159"W	312.61	58.573	0.87	-0.86	0.68
2551.00	9.660	61.780	2518.00	150.30	170.99	281.12	1742198.37	14424010.13	39°43'02.391"N	80°38'16.975"W	329.04	58.690	1.18	-1.14	1.77
2643.00	7.880	62.130	2608.92	157.41	177.59	293.50	1742210.75	14424016.72	39°43'02.455"N	80°38'16.816"W	343.05	58.823	1.94	-1.93	0.38
2740.00	5.760	59.170	2705.23	163.05	183.20	303.56	1742220.80	14424022.32	39°43'02.510"N	80°38'16.687"W	354.56	58.889	2.21	-2.19	-3.05
2833.00	7.810	54.920	2797.58	167.73	189.22	312.74	1742229.98	14424028.35	39°43'02.570"N	80°38'16.569"W	365.53	58.824	2.27	2.20	-4.57
2925.00	11.720	51.500	2888.23	173.41	198.63	325.17	1742242.41	14424037.76	39°43'02.662"N	80°38'16.410"W	381.04	58.581	4.29	4.25	-3.72
3018.00	12.000	55.540	2979.24	180.58	209.98	340.54	1742257.76	14424049.10	39°43'02.774"N	80°38'16.212"W	400.07	58.341	0.94	0.30	4.34
3111.00	13.570	58.320	3069.94	189.44	221.18	357.79	1742275.01	14424060.30	39°43'02.884"N	80°38'15.991"W	420.64	58.276	1.81	1.69	2.99
3204.00	21.100	54.440	3158.65	200.90	236.67	380.73	1742297.94	14424075.78	39°43'03.036"N	80°38'15.697"W	448.30	58.134	8.19	8.10	-4.17
3296.00	24.300	50.920	3243.52	213.64	258.24	408.91	1742326.11	14424097.34	39°43'03.248"N	80°38'15.335"W	483.62	57.726	3.78	3.48	-3.83
3389.00	24.510	53.090	3328.21	227.10	281.89	439.18	1742356.37	14424120.98	39°43'03.480"N	80°38'14.946"W	521.87	57.306	0.99	0.23	2.33
3482.00	25.070	58.230	3412.65	243.05	303.85	471.36	1742388.54	14424142.93	39°43'03.696"N	80°38'14.533"W	560.81	57.193	2.39	0.60	5.53
3575.00	24.560	58.200	3497.06	260.59	324.41	504.54	1742421.71	14424163.49	39°43'03.898"N	80°38'14.108"W	599.84	57.260	0.55	-0.55	-0.03
3667.00	25.460	62.540	3580.43	277.80	345.15	537.44	1742454.59	14424184.22	39°43'04.102"N	80°38'13.686"W	638.73	57.291	1.05	0.98	-0.91
3760.00	26.750	67.500	3663.96	297.31	365.59	572.85	1742489.99	14424204.65	39°43'04.302"N	80°38'13.231"W	679.57	57.454	2.81	1.39	5.57
3856.00	26.680	64.890	3749.71	320.31	384.70	611.54	1742528.66	14424223.75	39°43'04.489"N	80°38'12.735"W	722.48	57.827	1.10	-0.07	2.45
3949.00	25.100	63.040	3833.38	342.11	402.50	648.03	1742565.14	14424241.55	39°43'04.664"N	80°38'12.267"W	762.86	58.155	1.91	-1.70	-1.99
4041.00	26.050	60.450	3916.36	362.09	421.31	683.00	1742600.09	14424260.35	39°43'04.848"N	80°38'11.819"W	802.49	58.331	1.59	1.03	-2.82
4134.00	27.970	60.950	3999.22	382.69	441.98	719.83	1742636.91	14424281.00	39°43'05.051"N	80°38'11.346"W	844.69	58.450	2.08	2.06	0.54
4227.00	27.890	62.270	4081.38	404.54	462.69	758.15	1742675.22	14424301.71	39°43'05.254"N	80°38'10.855"W	888.19	58.605	0.67	-0.09	1.42
4320.00	27.250	54.510	4163.85	423.99	485.18	794.75	1742711.80	14424324.19	39°43'05.475"N	80°38'10.385"W	931.14	58.597	3.92	-0.69	-8.34
4412.00	26.210	52.820	4246.02	439.60	509.68	828.09	1742745.13	14424348.68	39°43'05.716"N	80°38'09.958"W	972.37	58.388	1.40	-1.13	-1.84

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# Actual Wellpath Report

Daniel Durig WTZ 210H AWP Proj: 18007MD  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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]
4505.00	24.380	52.960	4330.10	454.09	533.66	859.78	1742776.80	14424372.65	39°43'05.952"N	80°38'09.551"W	1011.93	58.172	1.97	-1.97	0.15
4598.00	23.070	52.870	4415.24	467.74	556.22	889.63	1742806.64	14424395.20	39°43'06.173"N	80°38'09.168"W	1049.20	57.985	1.41	-1.41	-0.10
4691.00	22.400	55.150	4501.01	481.49	577.35	918.70	1742835.70	14424416.32	39°43'06.381"N	80°38'08.795"W	1085.05	57.853	1.19	-0.72	2.45
4784.00	23.480	54.330	4586.66	495.78	598.28	948.29	1742865.28	14424437.24	39°43'06.587"N	80°38'08.415"W	1121.25	57.752	1.21	1.16	-0.88
4876.00	25.960	61.800	4670.24	513.05	618.49	980.94	1742897.92	14424457.45	39°43'06.785"N	80°38'07.996"W	1159.64	57.768	4.33	2.70	8.12
4969.00	24.910	58.020	4754.23	532.06	638.48	1015.50	1742932.46	14424477.43	39°43'06.981"N	80°38'07.553"W	1199.54	57.841	2.08	-1.13	-4.06
5062.00	25.480	56.290	4838.38	549.19	659.96	1048.75	1742965.70	14424498.90	39°43'07.192"N	80°38'07.126"W	1239.12	57.819	1.00	0.61	-1.86
5154.00	25.080	58.720	4921.57	566.40	681.06	1081.88	1742998.81	14424520.00	39°43'07.399"N	80°38'06.701"W	1278.40	57.809	1.21	-0.43	2.64
5247.00	25.280	61.600	5005.74	585.37	700.74	1116.19	1743033.12	14424539.67	39°43'07.593"N	80°38'06.261"W	1317.92	57.879	1.33	0.22	3.10
5340.00	25.990	66.510	5089.60	607.01	718.31	1152.35	1743069.26	14424557.23	39°43'07.765"N	80°38'05.797"W	1357.90	58.063	2.41	0.76	5.28
5432.00	26.840	63.690	5171.99	629.64	735.55	1189.46	1743106.35	14424574.47	39°43'07.934"N	80°38'05.321"W	1398.52	58.268	1.65	0.92	-3.07
5525.00	27.910	63.930	5254.58	652.49	754.42	1227.83	1743144.71	14424593.33	39°43'08.119"N	80°38'04.829"W	1441.08	58.432	1.16	1.15	0.26
5618.00	26.970	57.570	5337.13	673.43	775.30	1265.19	1743182.06	14424614.20	39°43'08.323"N	80°38'04.350"W	1483.85	58.500	3.31	-1.01	-6.84
5713.00	25.640	54.000	5422.30	690.76	798.94	1300.01	1743216.86	14424637.83	39°43'08.556"N	80°38'03.903"W	1525.88	58.427	2.18	-1.40	-3.76
5806.00	23.970	54.000	5506.71	705.68	821.87	1331.57	1743248.41	14424660.75	39°43'08.781"N	80°38'03.498"W	1564.79	58.316	1.80	-1.80	0.00
5899.00	23.280	53.760	5591.92	719.86	843.84	1361.68	1743278.51	14424682.71	39°43'08.997"N	80°38'03.112"W	1601.95	58.213	0.75	-0.74	-0.26
5991.00	23.090	61.960	5676.51	735.90	863.07	1392.27	1743309.09	14424701.94	39°43'09.186"N	80°38'02.719"W	1638.08	58.205	3.51	-0.21	8.91
6084.00	23.830	62.450	5761.82	754.80	880.34	1425.02	1743341.83	14424719.19	39°43'09.355"N	80°38'02.299"W	1675.02	58.293	0.82	0.80	0.53
6177.00	25.840	59.220	5846.22	773.88	899.40	1459.10	1743375.89	14424738.25	39°43'09.542"N	80°38'01.862"W	1714.03	58.350	2.61	2.16	-3.47
6270.00	25.850	56.040	5929.92	791.73	921.10	1493.33	1743410.11	14424759.94	39°43'09.755"N	80°38'01.423"W	1754.55	58.333	1.49	0.01	-3.42
6362.00	25.120	55.110	6012.97	807.87	943.47	1525.98	1743442.75	14424782.31	39°43'09.975"N	80°38'01.004"W	1794.09	58.273	0.90	-0.79	-1.01
6455.00	25.290	48.520	6097.13	821.59	967.93	1557.06	1743473.82	14424806.75	39°43'10.215"N	80°38'00.605"W	1833.39	58.133	3.02	0.18	-7.09
6548.00	24.500	50.410	6181.49	833.65	993.38	1586.81	1743503.55	14424832.19	39°43'10.466"N	80°38'00.223"W	1872.10	57.953	1.21	-0.85	2.03
6641.00	23.930	54.560	6266.32	847.28	1016.60	1617.04	1743533.77	14424855.41	39°43'10.694"N	80°37'59.835"W	1910.05	57.843	1.93	-0.61	4.46
6734.00	24.170	54.610	6351.24	862.13	1038.57	1647.92	1743564.64	14424877.36	39°43'10.910"N	80°37'59.438"W	1947.89	57.780	0.26	0.26	0.05
6826.00	23.860	59.320	6435.29	878.20	1058.97	1679.28	1743595.99	14424897.76	39°43'11.110"N	80°37'59.036"W	1985.30	57.764	2.11	-0.34	5.12
6905.00	24.020	61.540	6507.49	893.71	1074.79	1707.16	1743623.86	14424913.57	39°43'11.265"N	80°37'58.678"W	2017.32	57.807	1.16	0.20	2.81
6997.00	25.780	56.260	6590.95	911.46	1094.82	1740.27	1743656.95	14424933.60	39°43'11.462"N	80°37'58.254"W	2056.01	57.825	3.08	1.91	-5.74
7090.00	25.760	52.850	6674.70	927.28	1118.26	1773.19	1743689.86	14424957.03	39°43'11.692"N	80°37'57.831"W	2096.36	57.762	1.59	-0.02	-3.67
7183.00	25.830	54.560	6758.44	942.56	1142.22	1805.81	1743722.46	14424980.97	39°43'11.928"N	80°37'57.412"W	2136.73	57.686	0.80	0.08	1.84

Office of Oil and Gas

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WV Department of  
Environmental Protection

# Actual Wellpath Report

Daniel Durig WTZ 210H AWP Proj: 18007 MD  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 stations)															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(°)	(°)	(ft)	(°)	(ft/100ft)	(°/100ft)	(°/100ft)
7275.00	27.290	64.830	6840.77	962.01	1162.82	1841.25	1743757.89	14425001.57	39°43'12.130"N	80°37'56.958"W	2177.69	57.726	5.23	1.59	11.16
7368.00	32.560	82.800	6921.51	993.33	1175.06	1885.49	1743802.11	14425013.80	39°43'12.249"N	80°37'56.391"W	2221.67	58.068	11.13	5.67	19.32
7461.00	39.070	99.510	6997.06	1040.20	1173.34	1939.14	1743856.01	14425012.09	39°43'12.230"N	80°37'55.701"W	2266.73	58.826	12.58	7.00	17.97
7553.00	46.290	113.640	7064.81	1100.23	1155.16	1998.68	1743915.26	14424993.90	39°43'12.048"N	80°37'54.944"W	2308.49	59.974	13.00	7.85	15.36
7646.00	54.570	120.210	7124.04	1171.58	1122.53	2062.37	1743978.92	14424961.30	39°43'11.723"N	80°37'54.130"W	2348.07	61.441	10.43	8.90	7.06
7739.00	63.410	123.100	7171.91	1251.20	1080.67	2130.09	1744046.62	14424919.45	39°43'11.306"N	80°37'53.266"W	2388.54	63.100	9.87	9.51	3.11
7785.00	68.680	125.160	7190.58	1293.17	1057.08	2164.86	1744081.38	14424895.87	39°43'11.072"N	80°37'52.822"W	2409.16	63.974	12.16	11.46	4.48
7832.00	71.480	126.380	7206.59	1337.23	1031.25	2200.71	1744117.21	14424870.05	39°43'10.815"N	80°37'52.365"W	2430.35	64.892	6.44	5.96	2.60
7878.00	76.790	128.640	7219.17	1381.22	1004.31	2235.79	1744152.28	14424843.12	39°43'10.547"N	80°37'51.917"W	2451.00	65.810	12.47	11.54	4.91
7925.00	79.950	130.590	7228.64	1426.78	974.96	2271.24	1744187.72	14424813.78	39°43'10.256"N	80°37'51.465"W	2471.66	66.768	7.86	6.72	4.15
7971.00	84.600	132.770	7234.82	1471.63	944.66	2305.27	1744221.73	14424783.49	39°43'09.955"N	80°37'51.031"W	2491.32	67.717	11.15	10.11	4.74
8018.00	84.950	133.240	7239.10	1517.50	912.73	2339.50	1744255.95	14424751.58	39°43'09.638"N	80°37'50.595"W	2511.24	68.687	1.24	0.74	1.00
8064.00	87.070	133.440	7242.30	1562.41	881.24	2372.87	1744289.31	14424720.10	39°43'09.326"N	80°37'50.169"W	2531.23	69.626	4.63	4.61	0.43
8110.00	89.140	133.530	7243.82	1607.38	849.60	2406.23	1744322.65	14424688.47	39°43'09.012"N	80°37'49.744"W	2551.81	70.553	4.50	4.50	0.20
8203.00	89.230	130.720	7245.15	1698.77	787.24	2475.19	1744391.58	14424626.13	39°43'08.392"N	80°37'48.865"W	2597.36	72.357	3.02	0.10	-3.02
8296.00	89.080	127.910	7246.52	1790.89	728.33	2547.13	1744463.49	14424567.24	39°43'07.807"N	80°37'47.947"W	2649.21	74.043	3.03	-0.16	-3.02
8389.00	88.890	128.190	7248.17	1883.27	671.02	2620.35	1744536.69	14424509.95	39°43'07.238"N	80°37'47.013"W	2704.90	75.636	0.36	-0.20	0.30
8481.00	88.680	127.900	7250.12	1974.65	614.33	2692.79	1744609.09	14424453.29	39°43'06.675"N	80°37'46.089"W	2761.97	77.149	0.39	-0.23	-0.32
8574.00	88.250	129.650	7252.61	2066.87	556.11	2765.26	1744681.54	14424395.09	39°43'06.096"N	80°37'45.165"W	2820.62	78.629	1.94	-0.46	1.88
8667.00	88.120	133.600	7255.56	2158.36	494.38	2834.73	1744750.98	14424333.39	39°43'05.483"N	80°37'44.279"W	2877.52	80.107	4.25	-0.14	4.25
8759.00	88.520	139.050	7258.25	2247.23	427.89	2898.21	1744814.44	14424266.92	39°43'04.824"N	80°37'43.470"W	2929.63	81.602	5.94	0.43	5.92
8852.00	89.420	137.400	7259.93	2336.28	358.55	2960.15	1744876.36	14424197.61	39°43'04.136"N	80°37'42.681"W	2981.79	83.094	2.02	0.97	-1.77
8945.00	89.420	138.280	7260.87	2425.52	289.62	3022.57	1744938.75	14424128.70	39°43'03.452"N	80°37'41.886"W	3036.42	84.527	0.95	0.00	0.95
9038.00	89.350	136.630	7261.87	2514.94	221.10	3085.45	1745001.61	14424060.22	39°43'02.773"N	80°37'41.085"W	3093.36	85.901	1.78	-0.08	-1.77
9130.00	89.660	133.890	7262.66	2604.29	155.77	3150.20	1745066.33	14423994.90	39°43'02.124"N	80°37'40.260"W	3154.05	87.169	3.00	0.34	-2.98
9223.00	89.320	129.490	7263.49	2695.80	93.93	3219.63	1745135.73	14423933.09	39°43'01.510"N	80°37'39.375"W	3221.00	88.329	4.75	-0.37	-4.73
9315.00	88.710	127.400	7265.07	2787.11	36.74	3291.67	1745207.74	14423875.92	39°43'00.942"N	80°37'38.456"W	3291.87	89.361	2.37	-0.66	-2.27
9408.00	88.950	127.260	7266.97	2879.61	-19.65	3365.60	1745281.65	14423819.56	39°43'00.382"N	80°37'37.513"W	3365.66	90.334	0.30	0.26	-0.15
9501.00	88.890	129.340	7268.72	2971.93	-77.27	3438.57	1745354.59	14423761.96	39°42'59.809"N	80°37'36.582"W	3439.44	91.287	2.24	-0.06	2.24
9593.00	88.650	132.100	7270.70	3062.72	-137.27	3508.27	1745424.27	14423701.98	39°42'59.213"N	80°37'35.694"W	3510.96	92.241	3.01	-0.26	3.00

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# Actual Wellpath Report

Daniel Durig WTZ 210H AWP Proj: 18007'MD  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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]
9686.00	88.890	133.490	7272.69	3153.90	-200.44	3576.50	1745492.46	14423638.84	39°42'58.586"N	80°37'34.824"W	3582.11	93.208	1.52	0.26	1.49
9779.00	89.020	135.400	7274.39	3244.52	-265.54	3642.88	1745558.82	14423573.76	39°42'57.940"N	80°37'33.978"W	3652.55	94.169	2.06	0.14	2.05
9872.00	88.150	135.100	7276.69	3334.83	-331.57	3708.33	1745624.25	14423507.76	39°42'57.285"N	80°37'33.144"W	3723.13	95.109	0.99	-0.94	-0.32
9965.00	87.690	138.810	7280.06	3424.39	-399.48	3771.76	1745687.65	14423439.88	39°42'56.611"N	80°37'32.336"W	3792.85	96.046	4.02	-0.49	3.99
10057.00	87.450	137.810	7283.97	3512.39	-468.12	3832.89	1745748.76	14423371.27	39°42'55.930"N	80°37'31.557"W	3861.37	96.963	1.12	-0.26	-1.09
10150.00	87.810	134.980	7287.81	3602.18	-535.39	3896.97	1745812.81	14423304.01	39°42'55.263"N	80°37'30.741"W	3933.58	97.823	3.06	0.39	-3.04
10243.00	87.540	134.050	7291.58	3692.72	-600.54	3963.23	1745879.04	14423238.89	39°42'54.616"N	80°37'29.896"W	4008.47	98.616	1.04	-0.29	-1.00
10336.00	88.280	133.140	7294.98	3783.60	-664.63	4030.54	1745946.33	14423174.83	39°42'53.980"N	80°37'29.039"W	4084.97	99.364	1.26	0.80	-0.98
10428.00	87.480	132.700	7298.38	3873.72	-727.23	4097.86	1746013.63	14423112.25	39°42'53.359"N	80°37'28.180"W	4161.89	100.063	0.99	-0.87	-0.48
10521.00	87.720	131.050	7302.27	3965.11	-789.25	4167.05	1746082.78	14423050.25	39°42'52.743"N	80°37'27.298"W	4241.13	100.725	1.79	0.26	-1.77
10614.00	87.510	130.000	7306.14	4056.89	-849.63	4237.68	1746153.38	14422989.90	39°42'52.143"N	80°37'26.398"W	4322.01	101.337	1.15	-0.23	-1.13
10707.00	87.630	130.430	7310.09	4148.73	-909.62	4308.63	1746224.31	14422929.93	39°42'51.547"N	80°37'25.493"W	4403.60	101.921	0.48	0.13	0.46
10799.00	86.430	132.810	7314.85	4239.17	-970.64	4377.31	1746292.96	14422868.94	39°42'50.942"N	80°37'24.618"W	4483.63	102.503	2.89	-1.30	2.59
10892.00	87.480	132.600	7319.80	4330.27	-1033.62	4445.55	1746361.18	14422805.98	39°42'50.316"N	80°37'23.748"W	4564.13	103.089	1.15	1.13	-0.23
10985.00	87.540	134.070	7323.84	4421.21	-1097.38	4513.13	1746428.73	14422742.24	39°42'49.683"N	80°37'22.886"W	4644.63	103.666	1.58	0.06	1.58
11075.00	87.910	137.550	7327.41	4508.34	-1161.86	4575.81	1746491.38	14422677.80	39°42'49.044"N	80°37'22.088"W	4721.01	104.247	3.89	0.41	3.87
11167.00	87.940	140.370	7330.74	4596.04	-1231.20	4636.17	1746551.72	14422608.48	39°42'48.356"N	80°37'21.319"W	4796.86	104.872	3.06	0.03	3.07
11260.00	88.180	139.440	7333.89	4684.24	-1302.30	4696.03	1746611.56	14422537.41	39°42'47.651"N	80°37'20.557"W	4873.26	105.500	1.03	0.26	-1.00
11353.00	88.830	133.690	7336.32	4773.98	-1369.78	4759.92	1746675.42	14422469.96	39°42'46.981"N	80°37'19.743"W	4953.09	106.054	6.22	0.70	-6.18
11446.00	87.600	130.940	7339.22	4865.27	-1432.35	4828.65	1746744.12	14422407.41	39°42'46.360"N	80°37'18.867"W	5036.61	106.522	3.24	-1.32	-2.96
11538.00	87.540	129.410	7343.12	4956.14	-1491.64	4898.88	1746814.33	14422348.14	39°42'45.771"N	80°37'17.971"W	5120.94	106.935	1.66	-0.07	-1.66
11631.00	87.660	129.150	7347.01	5048.20	-1550.47	4970.80	1746886.22	14422289.33	39°42'45.187"N	80°37'17.054"W	5207.00	107.324	0.31	0.13	-0.28
11724.00	87.600	128.710	7350.86	5140.34	-1608.86	5043.09	1746958.48	14422230.97	39°42'44.606"N	80°37'16.133"W	5293.50	107.694	0.48	-0.06	-0.47
11816.00	87.470	131.560	7354.81	5231.21	-1668.10	5113.35	1747028.72	14422171.75	39°42'44.018"N	80°37'15.237"W	5378.56	108.068	3.10	-0.14	3.10
11909.00	87.450	132.530	7358.94	5322.55	-1730.32	5182.35	1747097.68	14422109.55	39°42'43.400"N	80°37'14.357"W	5463.58	108.464	1.04	-0.02	1.04
12002.00	87.480	134.280	7363.05	5413.46	-1794.16	5249.84	1747165.15	14422045.74	39°42'42.767"N	80°37'13.497"W	5547.96	108.868	1.88	0.03	1.88
12094.00	87.510	133.480	7367.07	5503.24	-1857.87	5316.09	1747231.38	14421982.05	39°42'42.134"N	80°37'12.653"W	5631.39	109.264	0.87	0.03	-0.87
12187.00	87.410	132.180	7371.19	5594.34	-1921.03	5384.23	1747299.49	14421918.92	39°42'41.507"N	80°37'11.784"W	5716.67	109.636	1.40	-0.11	-1.40
12280.00	87.660	132.730	7375.19	5685.56	-1983.75	5452.78	1747368.01	14421856.22	39°42'40.884"N	80°37'10.910"W	5802.42	109.992	0.65	0.27	0.59
12373.00	87.940	130.300	7378.76	5777.07	-2045.34	5522.36	1747437.56	14421794.66	39°42'40.273"N	80°37'10.023"W	5888.96	110.323	2.63	0.30	-2.61



# Actual Wellpath Report

Daniel Durig WZ 210H AWP Proj: 18007'MD  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WZ 210H
Field	Wetzel	Wellbore	Daniel Durig WZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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]	
12466.00	88.000	127.680	7382.06	5869.22	-2103.81	5594.59	1747509.77	14421736.21	39°42'39.692"N	80°37'09.102"W	5977.08	110.608	2.82	0.06	-2.82	
12555.00	87.880	131.260	7385.26	5957.29	-2160.34	5663.24	1747578.39	14421679.70	39°42'39.130"N	80°37'08.227"W	6061.30	110.880	4.02	-0.13	4.02	
12648.00	87.910	135.820	7388.68	6048.16	-2224.35	5730.59	1747645.72	14421615.72	39°42'38.495"N	80°37'07.369"W	6147.15	111.214	4.90	0.03	4.90	
12740.00	88.800	136.990	7391.32	6137.03	-2290.95	5794.00	1747709.10	14421549.15	39°42'37.834"N	80°37'06.561"W	6230.48	111.574	1.60	0.97	1.27	
12833.00	88.890	133.600	7393.19	6227.32	-2357.02	5859.40	1747774.48	14421483.10	39°42'37.178"N	80°37'05.728"W	6315.71	111.913	3.65	0.10	-3.65	
12926.00	88.740	132.240	7395.12	6318.46	-2420.34	5927.49	1747842.54	14421419.81	39°42'36.550"N	80°37'04.860"W	6402.59	112.211	1.47	-0.16	-1.46	
13019.00	88.680	130.660	7397.21	6410.04	-2481.88	5997.18	1747912.20	14421358.29	39°42'35.939"N	80°37'03.972"W	6490.45	112.482	1.70	-0.06	-1.70	
13111.00	88.800	130.320	7399.23	6500.89	-2541.61	6067.13	1747982.12	14421298.59	39°42'35.345"N	80°37'03.080"W	6577.98	112.729	0.39	0.13	-0.37	
13204.00	88.800	130.340	7401.18	6592.77	-2601.78	6138.01	1748052.97	14421238.43	39°42'34.748"N	80°37'02.176"W	6666.67	112.971	0.02	0.00	0.02	
13297.00	88.210	130.720	7403.61	6684.59	-2662.20	6208.67	1748123.61	14421178.04	39°42'34.148"N	80°37'01.275"W	6755.36	113.209	0.75	-0.63	0.41	
13390.00	88.340	131.330	7406.41	6776.26	-2723.21	6278.80	1748193.71	14421117.05	39°42'33.542"N	80°37'00.381"W	6843.92	113.447	0.67	0.14	0.66	
13482.00	88.180	136.210	7409.20	6866.10	-2786.81	6345.18	1748260.07	14421053.48	39°42'32.910"N	80°36'59.535"W	6930.20	113.711	5.30	-0.17	5.30	
13575.00	88.370	136.240	7412.00	6956.01	-2853.93	6409.50	1748324.35	14420986.39	39°42'32.244"N	80°36'58.716"W	7016.16	114.002	0.21	0.20	0.03	
13667.00	88.430	133.250	7414.57	7045.52	-2918.66	6474.81	1748389.64	14420921.68	39°42'31.602"N	80°36'57.884"W	7102.23	114.264	3.25	0.07	-3.25	
13760.00	87.850	136.570	7417.59	7135.93	-2984.27	6540.63	1748455.43	14420856.09	39°42'30.951"N	80°36'57.045"W	7189.27	114.526	3.62	-0.62	3.57	
13852.00	87.880	138.640	7421.02	7224.25	-3052.16	6602.61	1748517.39	14420788.23	39°42'30.277"N	80°36'56.256"W	7273.94	114.810	2.25	0.03	2.25	
13945.00	88.150	137.810	7424.24	7313.27	-3121.48	6664.53	1748579.29	14420718.94	39°42'29.590"N	80°36'55.468"W	7359.32	115.097	0.94	0.29	-0.89	
14038.00	87.940	135.020	7427.41	7403.08	-3188.80	6728.60	1748643.34	14420651.65	39°42'28.922"N	80°36'54.651"W	7445.97	115.357	3.01	-0.23	-3.00	
14130.00	87.880	135.850	7430.77	7492.31	-3254.30	6793.12	1748707.83	14420586.17	39°42'28.271"N	80°36'53.830"W	7532.39	115.597	0.90	-0.07	0.90	
14223.00	87.880	134.360	7434.21	7582.64	-3320.13	6858.71	1748773.39	14420520.36	39°42'27.618"N	80°36'52.994"W	7620.05	115.830	1.60	0.00	-1.60	
14316.00	88.280	135.730	7437.32	7673.01	-3385.91	6924.38	1748839.04	14420454.61	39°42'26.965"N	80°36'52.157"W	7707.88	116.058	1.53	0.43	1.47	
14408.00	89.200	134.900	7439.35	7762.33	-3451.30	6989.06	1748903.69	14420389.25	39°42'26.316"N	80°36'51.333"W	7794.77	116.281	1.35	1.00	-0.90	
14501.00	88.860	131.110	7440.92	7853.43	-3514.71	7057.05	1748971.65	14420325.86	39°42'25.687"N	80°36'50.467"W	7883.85	116.475	4.09	-0.37	-4.08	
14594.00	88.030	128.500	7443.45	7945.42	-3574.22	7128.46	1749043.04	14420266.37	39°42'25.095"N	80°36'49.556"W	7974.33	116.629	2.94	-0.89	-2.81	
14687.00	88.120	126.690	7446.57	8037.84	-3630.92	7202.10	1749116.65	14420209.69	39°42'24.532"N	80°36'48.617"W	8065.60	116.755	1.95	0.10	-1.95	
14780.00	87.880	128.470	7449.82	8130.26	-3687.60	7275.76	1749190.28	14420153.04	39°42'23.969"N	80°36'47.678"W	8156.90	116.877	1.93	-0.26	1.91	
14872.00	88.120	134.590	7453.03	8220.75	-3748.53	7344.55	1749259.05	14420092.13	39°42'23.364"N	80°36'46.801"W	8245.85	117.039	6.65	0.26	6.65	
14965.00	88.770	140.190	7455.55	8310.14	-3816.93	7407.47	1749321.94	14420023.76	39°42'22.685"N	80°36'46.000"W	8333.04	117.261	6.06	0.70	6.02	
15058.00	87.780	140.310	7458.35	8398.16	-3888.40	7466.91	1749381.35	14419952.32	39°42'21.976"N	80°36'45.243"W	8418.69	117.508	1.07	-1.06	0.13	
15150.00	88.800	135.670	7461.10	8486.32	-3956.71	7528.43	1749442.86	14419884.04	39°42'21.298"N	80°36'44.460"W	8504.87	117.725	5.16	1.11	-5.04	

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# Actual Wellpath Report

Daniel Durig WTZ 210H AWP Proj: 18007MD  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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]	
15243.00	88.890	129.300	7462.98	8577.55	-4019.47	7596.97	1749511.36	14419821.30	39°42'20.675"N	80°36'43.587"W	8594.77	117.883	6.85	0.10	-6.85	
15336.00	88.830	125.890	7464.83	8670.00	-4076.19	7670.63	1749585.00	14419764.60	39°42'20.112"N	80°36'42.647"W	8686.42	117.986	3.67	-0.06	-3.67	
15429.00	88.890	126.310	7466.68	8762.68	-4130.97	7745.76	1749660.10	14419709.84	39°42'19.567"N	80°36'41.689"W	8778.48	118.072	0.46	0.06	0.45	
15522.00	88.770	128.050	7468.58	8855.20	-4187.16	7819.84	1749734.15	14419653.67	39°42'19.008"N	80°36'40.744"W	8870.30	118.167	1.88	-0.13	1.87	
15614.00	89.140	128.620	7470.26	8946.54	-4244.22	7891.99	1749806.27	14419596.64	39°42'18.442"N	80°36'39.824"W	8960.85	118.271	0.74	0.40	0.62	
15707.00	89.080	134.160	7471.70	9038.11	-4305.67	7961.72	1749875.98	14419535.21	39°42'17.831"N	80°36'38.935"W	9051.40	118.404	5.96	-0.06	5.96	
15800.00	89.260	136.900	7473.05	9128.32	-4372.03	8026.86	1749941.09	14419468.88	39°42'17.173"N	80°36'38.106"W	9140.30	118.576	2.95	0.19	2.95	
15892.00	89.200	136.350	7474.29	9217.13	-4438.89	8090.04	1750004.24	14419402.04	39°42'16.509"N	80°36'37.301"W	9227.81	118.753	0.60	-0.07	-0.60	
15985.00	89.260	135.030	7475.54	9307.29	-4505.43	8155.00	1750069.17	14419335.52	39°42'15.849"N	80°36'36.474"W	9316.81	118.920	1.42	0.06	-1.42	
16078.00	89.170	132.770	7476.81	9398.11	-4569.91	8222.00	1750136.15	14419271.07	39°42'15.209"N	80°36'35.620"W	9406.66	119.066	2.43	-0.10	-2.43	
16171.00	89.200	131.400	7478.13	9489.51	-4632.23	8291.01	1750205.13	14419208.77	39°42'14.590"N	80°36'34.741"W	9497.28	119.192	1.47	0.03	-1.47	
16263.00	88.650	133.610	7479.86	9579.80	-4694.38	8358.81	1750272.91	14419146.65	39°42'13.973"N	80°36'33.877"W	9586.81	119.319	2.48	-0.60	2.40	
16356.00	88.830	131.940	7481.90	9670.99	-4757.52	8427.06	1750341.13	14419083.54	39°42'13.346"N	80°36'33.007"W	9677.26	119.447	1.81	0.19	-1.80	
16449.00	88.650	130.560	7483.95	9762.62	-4818.82	8496.96	1750411.01	14419022.26	39°42'12.737"N	80°36'32.116"W	9768.29	119.559	1.50	-0.19	-1.48	
16542.00	88.770	132.270	7486.04	9854.21	-4880.32	8566.69	1750480.70	14418960.78	39°42'12.126"N	80°36'31.227"W	9859.29	119.670	1.84	0.13	1.84	
16634.00	88.710	133.240	7488.07	9944.42	-4942.76	8634.22	1750548.21	14418898.36	39°42'11.506"N	80°36'30.367"W	9948.90	119.790	1.06	-0.07	1.05	
16727.00	88.680	132.140	7490.18	10035.63	-5005.80	8702.56	1750616.53	14418835.35	39°42'10.880"N	80°36'29.496"W	10039.55	119.908	1.18	-0.03	-1.18	
16820.00	88.550	133.680	7492.43	10126.77	-5069.10	8770.65	1750684.59	14418772.08	39°42'10.252"N	80°36'28.628"W	10130.16	120.026	1.66	-0.14	1.66	
16913.00	89.290	137.090	7494.19	10217.02	-5135.28	8835.95	1750749.86	14418705.92	39°42'09.595"N	80°36'27.797"W	10219.84	120.164	3.75	0.80	3.67	
17005.00	89.720	136.680	7494.98	10305.73	-5202.44	8898.83	1750812.71	14418638.79	39°42'08.928"N	80°36'26.996"W	10307.98	120.311	0.65	0.47	-0.45	
17098.00	89.320	136.860	7495.76	10395.44	-5270.20	8962.52	1750876.39	14418571.06	39°42'08.256"N	80°36'26.185"W	10397.20	120.457	0.47	-0.43	0.19	
17191.00	89.600	136.450	7496.64	10485.21	-5337.83	9026.35	1750940.19	14418503.46	39°42'07.585"N	80°36'25.372"W	10486.54	120.598	0.53	0.30	-0.44	
17284.00	89.480	133.020	7497.38	10575.73	-5403.27	9092.41	1751006.22	14418438.04	39°42'06.935"N	80°36'24.530"W	10576.73	120.721	3.69	-0.13	-3.69	
17376.00	89.260	131.710	7498.39	10666.07	-5465.26	9160.38	1751074.16	14418376.07	39°42'06.320"N	80°36'23.664"W	10666.84	120.821	1.44	-0.24	-1.42	
17469.00	89.110	130.810	7499.72	10757.72	-5526.58	9230.28	1751144.04	14418314.77	39°42'05.711"N	80°36'22.773"W	10758.31	120.911	0.98	-0.16	-0.97	
17562.00	89.170	130.840	7501.11	10849.48	-5587.38	9300.64	1751214.38	14418254.00	39°42'05.107"N	80°36'21.877"W	10849.92	120.995	0.07	0.06	0.03	
17654.00	89.230	131.490	7502.40	10940.17	-5647.93	9369.90	1751283.60	14418193.48	39°42'04.505"N	80°36'20.994"W	10940.48	121.080	0.71	0.07	0.71	
17747.00	89.110	132.850	7503.74	11031.55	-5710.35	9438.82	1751352.49	14418131.08	39°42'03.885"N	80°36'20.116"W	11031.74	121.173	1.47	-0.13	1.46	
17840.00	89.200	134.670	7505.12	11122.42	-5774.67	9505.97	1751419.62	14418066.79	39°42'03.247"N	80°36'19.260"W	11122.51	121.278	1.96	0.10	1.96	
17933.00	89.170	133.360	7506.44	11213.20	-5839.28	9572.85	1751486.47	14418002.20	39°42'02.605"N	80°36'18.408"W	11213.23	121.382	1.41	-0.03	-1.41	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WZ 210H
Field	Wetzel	Wellbore	Daniel Durig WZ 210H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (212 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]
17979.00	89.690	132.030	7506.90	11258.33	-5870.47	9606.65	1751520.27	14417971.02	39°42'02.296"N	80°36'17.977"W	11258.34	121.428	3.10	1.13	-2.89
18007.00	89.690	132.030	7507.05	11285.86	-5889.21	9627.45	1751541.06	14417952.28	39°42'02.109"N	80°36'17.712"W	11285.86	121.455	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Daniel Durig WZ 210H AWB    Ref Wellpath: Daniel Durig WZ 210H AWP Proj: 18007'MD									
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]
20in Conductor	26.00	126.00	100.00	26.00	126.00	0.00	0.00	-0.19	-0.34
17.5in Open Hole	126.00	550.00	424.00	126.00	550.00	-0.19	-0.34	0.78	-1.58
13.375in Casing Surface	26.00	537.00	511.00	26.00	537.00	0.00	0.00	0.77	-1.54
12.25in Open Hole	550.00	2732.00	2182.00	550.00	2697.27	0.78	-1.58	182.78	302.86
9.625in Casing Intermediate	26.00	2712.00	2686.00	26.00	2677.39	0.00	0.00	181.70	301.01
8.75in Open Hole	2732.00	6898.00	4166.00	2697.27	6501.10	182.78	302.86	1073.42	1704.66
8.5in Open Hole	6898.00	18007.00	11109.00	6501.10	7507.05	1073.42	1704.66	-5889.21	9627.45

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WZ 210H
Field	Wetzel	Wellbore	Daniel Durig WZ 210H AWB
Facility	Daniel Durig Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Daniel Durig WZ 210H TP	6780.00	1136.32	1820.45	1743737.10	14424975.08	39°43'11.869"N	80°37'57.225"W	point
Daniel Durig WZ 210H LP Rev-5	7242.00	902.67	2363.76	1744280.20	14424741.52	39°43'09.538"N	80°37'50.285"W	point
Daniel Durig Unleased	7480.00	0.00	0.00	1741917.36	14423839.20	39°43'00.712"N	80°38'20.581"W	polygon
Daniel Durig WZ 210H BHL Rev-6	7484.00	-5930.00	9673.41	1751587.00	14417911.51	39°42'01.704"N	80°36'17.127"W	point

WELLPATH COMPOSITION - Ref Wellbore: Daniel Durig WZ 210H AWB						Ref Wellpath: Daniel Durig WZ 210H AWP Proj: 18007'MD
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
26.00	835.00	VESSI GyroFlex v4	02_VES Gyro <17.5" & 12.25">(50'-835')		Daniel Durig WZ 210H AWB	
835.00	2643.00	BHI NaviTrak (Axial)	03_APS EM <12.25"> (835')(882'-2643')		Daniel Durig WZ 210H AWB	
2643.00	6826.00	BHI NaviTrak (Axial)	04_APS EM <8.75"> (2643')(2740'-6826')		Daniel Durig WZ 210H AWB	
6826.00	17979.00	BHI AutoTrak Curve (Short)	05 <8.5">(6826')(6905'-17979')		Daniel Durig WZ 210H AWB	
17979.00	18007.00	Blind Drilling (std)	Projection to bit		Daniel Durig WZ 210H AWB	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 210H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 210H
Field	Wetzel	Wellbore	Daniel Durig WTZ 210H AWB
Facility	Daniel Durig Pad		

COMMENTS
<p><b>Wellpath general comments</b>            API: 47-103-03205-0000            Job #: 8841916            Rig: SDC 46            Duration: 02/23/2018 - 02/28/2018</p>

Latitude: 39°45'00" (SURFACE HOLE) SURFACE HOLE 3951'

Latitude: 39°42'30" (BOTTOM HOLE)

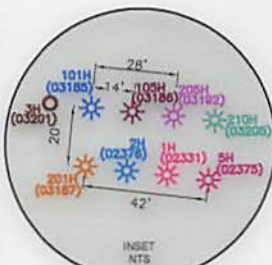
BOTTOM HOLE 6070'

**JACKSON SURVEYING**

INC.

P.O. Box 1460  
677 W. Main St  
Clarksburg, WV 26302  
304-623-5851

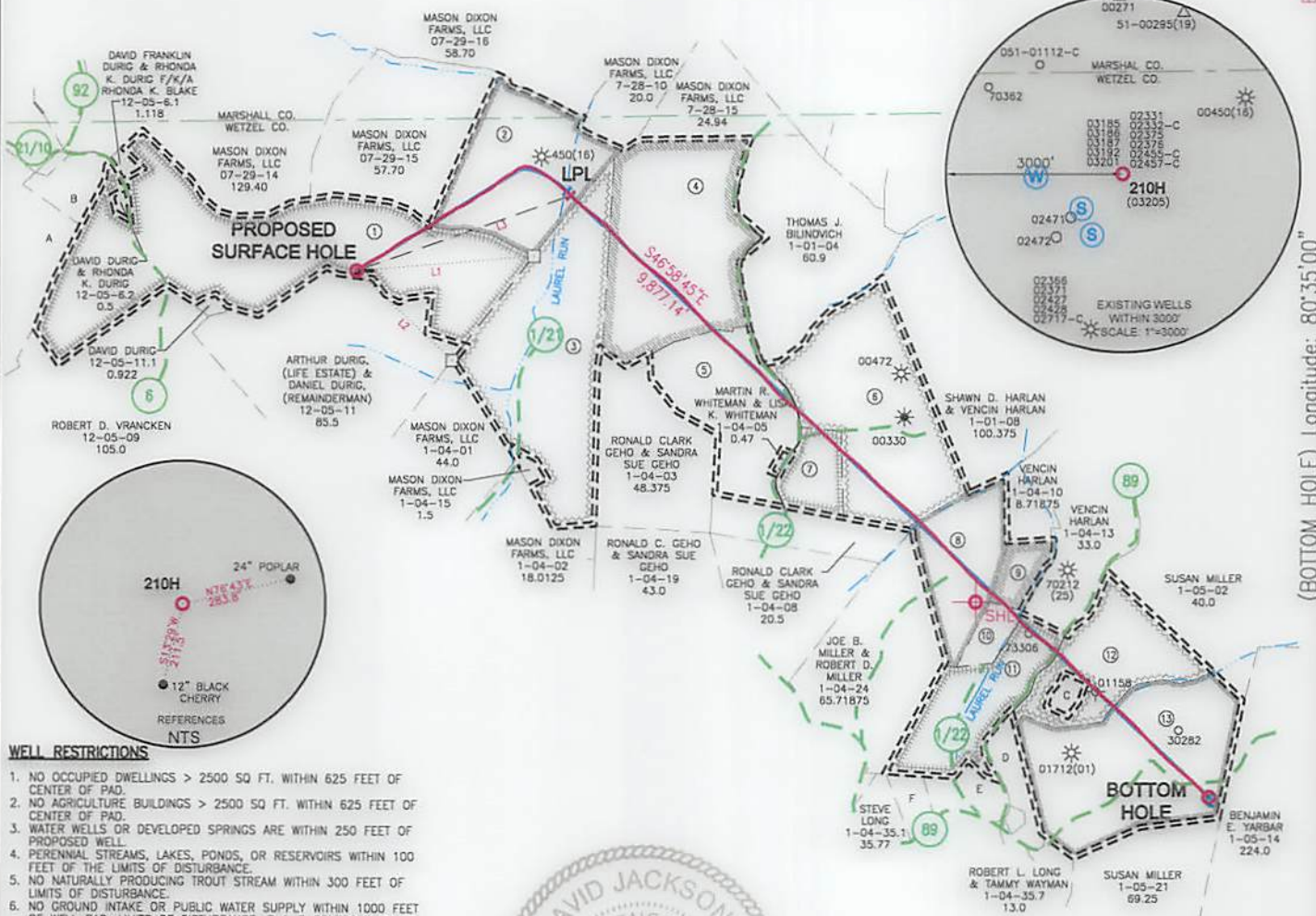
GRID NORTH  
UTM, NAD83 DATUM, ZONE 17, US FT



<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,394.923 EASTING: 530,937.443
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,653.870 EASTING: 531,670.858
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,394,588.217 EASTING: 533,884.785

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,394.923 EASTING: 530,937.467
<b>LANDING POINT LOCATION (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,670.009 EASTING: 531,657.668
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,394,588.217 EASTING: 533,884.785

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 85°07'14" E	1999.62'	SHL TO LANDMARK	FENCE CORNER
L2	S 46°54'39" E	1470.54'	SHL TO LANDMARK	FD. MARKED STONE
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	S 70°33'12" E	2551.78'	2,865.51'	TPL TO LPL



**WELL RESTRICTIONS**

1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

**NOTES ON SURVEY**

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

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

*David L. Jackson*



<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL &amp; GAS 601 57TH STREET CHARLESTON, WV 25034</p>	<p>MINIMUM DEGREE OF ACCURACY: 1/200</p> <p>PROVEN SURVEY SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)</p>	<p>COMPANY: <b>SWN</b> Production Company, LLC</p> <p>OPERATOR'S WELL #: DANIEL DURIG WTZ 210H</p> <p>API WELL #: 47 103 03205</p> <p>STATE COUNTY PERMIT</p>
	<p>WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/></p> <p>WATERSHED: LAUREL RUN (HUC-10 FISH CREEK)</p> <p>DISTRICT: PROCTOR COUNTY: WETZEL</p> <p>SURFACE OWNER: ARTHUR DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN) ACREAGE: ±151.58</p> <p>OIL &amp; GAS ROYALTY OWNER: O.C. YOHO AND MARY YOHO, ARTHUR T. DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN) ACREAGE: ±151.58</p> <p>DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/></p> <p>CONVERT <input type="checkbox"/> PLUG &amp; ABANDON <input type="checkbox"/> CLEAN OUT &amp; REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) <b>ASDRILLED</b></p> <p>TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,507' TVD 18,007' TMD</p>	

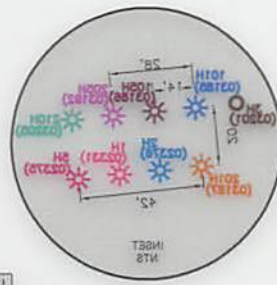
<p>WELL OPERATOR: SWN PRODUCTION COMPANY, LLC</p> <p>ADDRESS: P.O. BOX 1300</p> <p>CITY: JANE LEW STATE: WV ZIP CODE: 26378</p>	<p>DESIGNATED AGENT: BRITTANY WOODY</p> <p>ADDRESS: P.O. BOX 1300</p> <p>CITY: JANE LEW STATE: WV ZIP CODE: 26378</p>
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<p><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>○ PROPOSED SURFACE HOLE / BOTTOM HOLE</li> <li>★ EXISTING / PRODUCING WELLHEAD</li> <li>LPL★ LANDING POINT LOCATION</li> <li>⊕ EXISTING WATER WELL</li> <li>⊙ EXISTING SPRING</li> <li>— SURVEYED BOUNDARY</li> <li>— DRILLING UNIT</li> <li>== LEASE BOUNDARY</li> <li>— ASDRILLED PATH</li> <li>— PROPOSED PATH</li> </ul>	<p><b>REVISIONS:</b></p> <table border="1"> <tr> <td> </td> <td>DATE: 10-11-2018</td> </tr> <tr> <td> </td> <td>DRAWN BY: N. MANO</td> </tr> <tr> <td> </td> <td>SCALE: 1" = 2000'</td> </tr> <tr> <td> </td> <td>DRAWING NO:</td> </tr> <tr> <td> </td> <td>WELL LOCATION PLAT</td> </tr> </table>		DATE: 10-11-2018		DRAWN BY: N. MANO		SCALE: 1" = 2000'		DRAWING NO:		WELL LOCATION PLAT
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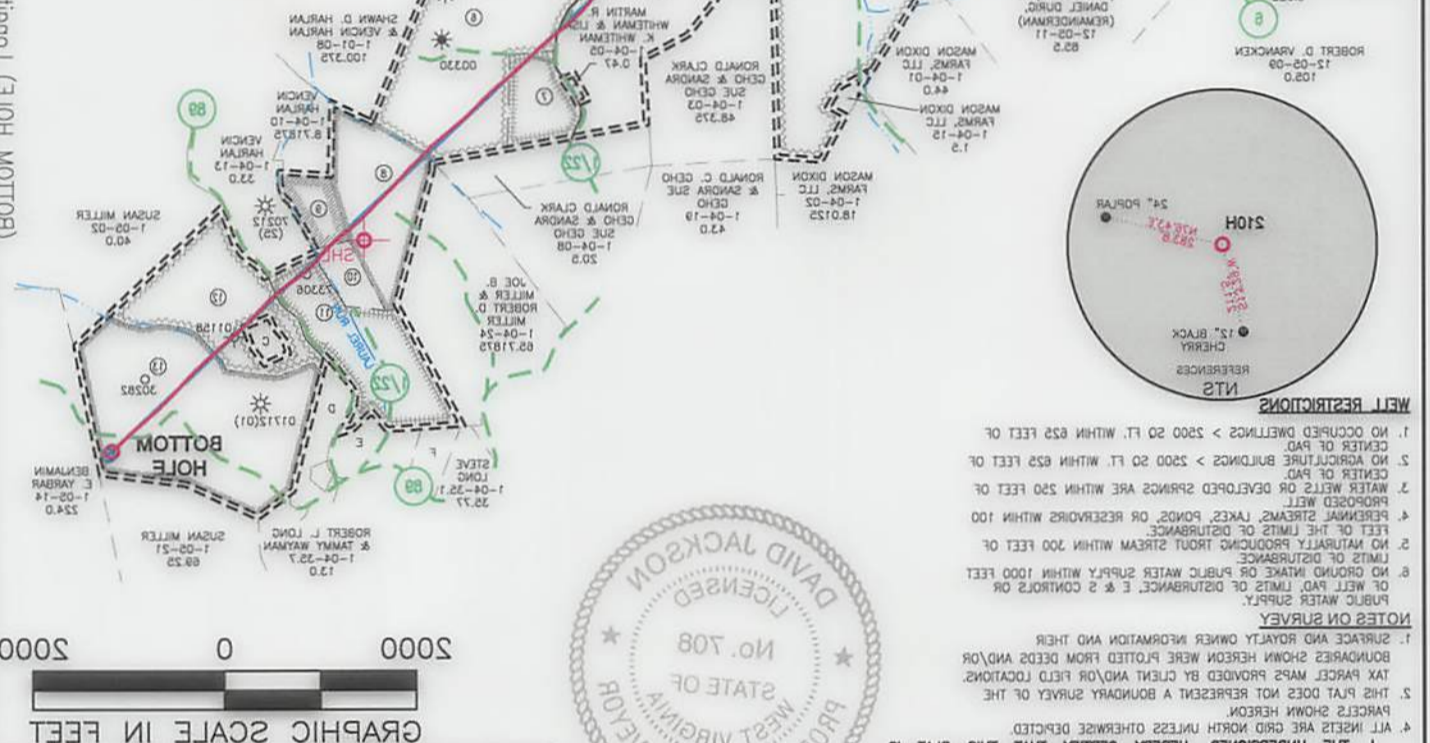
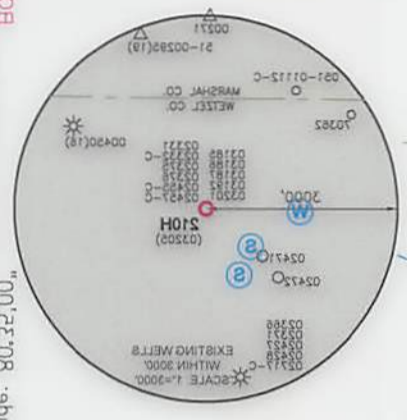
JACKSON SURVEYING

INC.  
P.O. Box 1460  
677 W. Main St.  
Clarkburg, WV 26302  
304-623-6851

SURFACE HOLE LOCATION (SHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,294.972 EASTING: 520,937.467
LANDING POINT LOCATION (LPL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,670.008 EASTING: 521,657.688
BOTTOM HOLE LOCATION (BHL):	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,394,588.217 EASTING: 523,884.785



LINE	BEARING	DISTANCE	DESCRIPTION
L1	N 82°07'14" E	1999.82	SHL TO LANDMARK
L2	S 48°44'38" E	1470.84	SHL TO LANDMARK
L3	S 70°33'12" E	2521.78	SHL TO LPL



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NOTES ON SURVEY:  
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.  
2. ALL METERS ARE ROUNDED UNLESS OTHERWISE SPECIFIED.  
3. THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAN 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 AND PRESERVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

WELL TYPE: <input type="checkbox"/> OIL <input type="checkbox"/> WASTE DISPOSAL <input checked="" type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW	WATERSHED: LAUREL RUN (HUC-10 FISH CREEK)
DISTRICT: PROCTOR	COUNTY: WETZEL
SURFACE OWNER: ARTHUR DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN)	ACREAGE: ±121.28
OIL & GAS ROYALTY OWNER: O.C. YOHO AND MARY YOHO, ARTHUR T. DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN)	ACREAGE: ±121.28
DRILL: <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION	CONVERT: <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE (SPECIFY) <input checked="" type="checkbox"/> ASDRILLED
TARGET FORMATION: MARCELLUS	ESTIMATED DEPTH: 7507' TVD 18007' TMD
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: P.O. BOX 1300	CITY: JANE LEW
STATE: WV	ZIP CODE: 26378
CITY: JANE LEW	STATE: WV
ZIP CODE: 26378	DATE: 10-11-2018
REVISIONS:	DRAWN BY: N. MANO
	SCALE: 1" = 2000'
	DRAWING NO:
	WELL LOCATION PLAN



**JACKSON SURVEYING**

**INC.**

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677 W. Main St.  
Clarksburg, WV 26302  
304-623-5851

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	ARTHUR DURIG (LIFE ESTATE) & DANIEL DURIG (REMAINDERMAN) (S/R)	12-05-06	151.58
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	FRED S. WILKERSON (S)	01-01-01	50.0
3	MASON DIXON FARMS, LLC (S)	01-01-02	100.1
4	ROBERT R. REYNOLDS & DONNA D. REYNOLDS (S)	01-01-03	82.625
5	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-04	46.00
6	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-06	80.0
7	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-07	16.40
8	VENCIN HARLAN (S)	01-04-09	33.48125
9	VENCIN HARLAN (S)	01-04-11	9.25
10	VENCIN LEROY HARLAN, L/E, SUSAN L. THOMAS & JOHN F. THOMAS, JR. (S)	01-04-12	7.26875
11	VENCIN LEROY HARLAN, L/E, SUSAN L. THOMAS & JOHN F. THOMAS, JR. (S)	01-04-25	30.0
12	SUSAN MILLER (S)	01-05-12	45.32
13	SUSAN MILLER (S)	01-05-13	80.0

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	MASON DIXON FARMS, LLC	12-05-04	48.875
B	ARTHUR DURIG, LIFE ESTATE, & DANIEL DURIG, REMAINDERMAN	12-05-05	10.0
C	SUSAN MILLER	01-04-54	2.05
D	RODGER S. LONG	01-04-35.2	13.36625
E	STEVE LONG	01-04-35	34.25
F	DENNIS M. LONG & MELBA LONG	01-04-35.3	0.456

REVISIONS:	COMPANY:	 	
	OPERATOR'S	DANIEL DURIG	
	WELL #:	210H	
	DISTRICT:	COUNTY:	STATE:
	PROCTOR	WETZEL	WV
			DATE: 10-11-2018
			DRAWN BY: N. MANO
			SCALE: N/A
			DRAWING NO:
			WELL LOCATION PLAT 2

WELL BORE TABLE FOR SURFACE \ ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) \ ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	ARTHUR DURIG (LIFE ESTATE) & DANIEL DURIG (REMAINDERMAN) (S\R)	12-02-08	121.28
SURFACE OWNER			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	FRED S. WILKERSON (S)	01-01-01	20.0
3	MASON DIXON FARMS, LLC (S)	01-01-02	100.1
4	ROBERT R. REYNOLDS & DONNA D. REYNOLDS (S)	01-01-03	82.825
5	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-04	48.00
6	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-08	80.0
7	MARTIN R. WHITEMAN & LISA K. WHITEMAN (S)	01-04-07	18.40
8	VENGIN HARLAN (S)	01-04-09	23.48125
9	VENGIN HARLAN (S)	01-04-11	9.25
10	VENGIN LEROY HARLAN, L/E, SUSAN L. THOMAS & JOHN F. THOMAS, JR. (S)	01-04-12	7.28875
11	VENGIN LEROY HARLAN, L/E, SUSAN L. THOMAS & JOHN F. THOMAS, JR. (S)	01-04-25	30.0
12	SUSAN MILLER (S)	01-02-12	42.32
13	SUSAN MILLER (S)	01-02-13	80.0

ADJOINING OWNERS TABLE			
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	MASON DIXON FARMS, LLC	12-02-04	48.875
B	ARTHUR DURIG, LIFE ESTATE, & DANIEL DURIG, REMAINDERMAN	12-02-02	10.0
C	SUSAN MILLER	01-04-24	2.02
D	RODGER S. LONG	01-04-22	12.38825
E	STEVE LONG	01-04-25	34.25
F	DENNIS M. LONG & MELBA LONG	01-04-22	0.428

DATE: 10-11-2018		DRAWN BY: N. MANO		SCALE: N/A		DRAWING NO:		WELL LOCATION PLAT 2	
OPERATOR'S		DANIEL DURIG		STATE: WV		COUNTY: WETZEL		WELL #:	
PROCTOR								DISTRICT:	
COMPANY:		swm		Production Company, LLC		swm		Production Company, LLC	
REVISIONS:									