Well Operator's Report of Well Work

EQT

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Well Number: 515966

API: 47 - 085 - 10289

Submission: ☑ Initial ☐ Amended

Notes: Initial report w/ Flowback

Reviewed

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Rev. 8/23/13

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

API 47 - 085 - 10289 County RITCHIE District UNION
Quad PULLMAN Pad Name PUL96 Field/Pool Name N/A
Farm name JAMES H. & WILMA J. WILSON Well Number 515966
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey

Top hole	Northing	N. 4,340,221.89	Easting	501,223.44
Landing Point of Curve	Northing	N. 4,340,444.12	Easting	501,474.13
Bottom Hole	Northing	N. 4,342,278.82	Easting	501,023.19

Elevation (ft) 1183' GL Type of Well ■New □ Existing Type of Report □Interim ■Final

Permit Type □ Deviated □ Horizontal ■ Horizontal 6A □ Vertical Depth Type □ Deep ■ Shallow

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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)
Water base Mud 11.5 ppg, Synthetic Base Mud 11.5 ppg, barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phophates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 07/26/2016 Date drilling commenced 04/17/2017 Date drilling ceased 7/28/2017
Date completion activities began 8/15/2017 Date completion activities ceased 9/17/2017
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 345,371,402,559 Open mine(s) (Y/N) depths N
Salt water depth(s) ft No salt water shows Void(s) encountered (Y/N) depths N
Coal depth(s) ft No coal seams Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47- 085 - 10289 Farm name JAMES H. & WILMA J. WILSON Well number 515966

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	30"	26"	40'	NEW	A-500	N/A	Y
Surface	17 1/2"	13 3/8"	655'	NEW	J-55	142'	Y
Coal							
Intermediate 1	12 3/8"	9 5/8"	2563'	NEW	A-500	710'	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	13,245'	NEW	P-110	N/A	N
Tubing							
Packer type and depth set							

Comment Details N/A

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³/sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	49	15.6	1.18	57.7	0	8
Surface	CLASS A	601	15.6	1.20	721.2	0	8
Coal							
Intermediate 1	CLASS A / CLASS A	201 / 778	15.6 / 15.6	1.18 / 1.2	1170.78	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H / CLASS H	329 / 793	15.2 / 15.6	1.25 / 2.06	2044.83	5200	72
Tubing							

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Drillers TD (ft) 13,259 Loggers TD (ft) N/A
Deepest formation penetrated Marcellus Plug back to (ft) N/A
Plug back procedure N/A

Kick off depth (ft) 4953

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
CONDUCTOR: NONE
SURFACE: 2 CENTRALIZERS AT JOINTS 1 AND 11
INTERMEDIATE: 6 CENTRALIZERS PLACED EVERY 500'
PRODUCTION: 197 Spiral body composite centralizers placed every joint from bottom to 4,995 ftMD.

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ■ No DETAILS

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS

WERE TRACERS USED ☐ Yes ■ No TYPE OF TRACER(S) USED

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					Please see attached

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
								See Attached

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PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6,368	TVD	6,862	MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ■ Flow ☐ Pump

SHUT-IN PRESSURE Surface 1,919 psi Bottom Hole N/A psi DURATION OF TEST 134.5 hrs

OPEN FLOW	Gas		Oil		NGL		Water		GAS MEASURED BY
	8,292	mcfpd	N/A	bpd	767	bpd	854	bpd	☐ Estimated ■ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
	0		0		

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Please insert additional pages as applicable.

Drilling Contractor Decker Drilling Rig 11
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Gyrodata Incorporated
Address 73 Noblestown Road City Carnegie State PA Zip 15106

Cementing Company BJ Cementing Services
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Stimulating Company FTS International
Address 1432 Route 519 City Eighty Four State PA Zip 15330

Please insert additional pages as applicable.

Completed by James Abbott Telephone (412) 553-5996
Signature Title Dir Completions Date 11/30/2017

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

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API 47- 085 - 10289 Farm name JAMES H. & WILMA J. WILSON Well number 515966

Drilling Contractor Savanna Drilling (Rig 655)
Address 125 Industry Road City Waynesburg State PA Zip 15370

Logging Company Baker Hughes
Address 4000 Town Center Blvd City Canonsburg State PA Zip 15317

Well # 515966 Final Formations API # 47-085-10289

Formation Name	Drilling Top MD	Drilling Top (TVD)	Drilling Bottom MD	Drilling Btm (TVD)
FRESH WATER ZONE	1	1	559	559
SAND/SHALE	1	1	1,833.00	1,832.80
MAXTON	1,833.00	1,832.80	1,873.00	1,872.70
SAND/SHALE	1,873.00	1,872.70	2,053.00	2,052.60
BIG LIME	2,053.00	2,052.60	2,142.00	2,141.60
BIG INJUN	2,142.00	2,141.60	2,207.00	2,206.60
SAND/SHALE	2,207.00	2,206.60	2,450.00	2,448.90
WEIR	2,450.00	2,448.90	2,495.00	2,493.80
SAND/SHALE	2,495.00	2,493.80	2,665.00	2,663.60
GANTZ	2,665.00	2,663.60	2,668.00	2,666.60
SAND/SHALE	2,668.00	2,666.60	2,747.00	2,745.60
50F	2,747.00	2,745.60	2,781.00	2,779.50
SAND/SHALE	2,781.00	2,779.50	2,796.00	2,794.50
THIRTY FOOT	2,796.00	2,794.50	2,817.00	2,815.50
SAND/SHALE	2,817.00	2,815.50	2,834.00	2,832.50
GORDON	2,834.00	2,832.50	2,894.00	2,892.50
SAND/SHALE	2,894.00	2,892.50	2,954.00	2,952.50
FOURTH SAND	2,954.00	2,952.50	2,962.00	2,960.50
SAND/SHALE	2,962.00	2,960.50	3,047.00	3,045.50
5TH	3,047.00	3,045.50	3,067.00	3,065.50
SAND/SHALE	3,067.00	3,065.50	3,105.00	3,103.50
BAYARD	3,105.00	3,103.50	3,136.00	3,134.50
SAND/SHALE	3,136.00	3,134.50	3,506.00	3,504.50
WARREN	3,506.00	3,504.50	3,552.00	3,550.50
SAND/SHALE	3,552.00	3,550.50	3,616.00	3,614.50
SPEECHLEY	3,616.00	3,614.50	3,743.00	3,741.50
SAND/SHALE	3,743.00	3,741.50	3,954.00	3,952.50
BALLTOWN A	3,954.00	3,952.50	4,005.00	4,003.50
SAND/SHALE	4,005.00	4,003.50	4,601.00	4,599.50
RILEY	4,601.00	4,599.50	4,622.00	4,620.50
SAND/SHALE	4,622.00	4,620.50	4,942.00	4,940.50
BENSON	4,942.00	4,940.50	4,982.00	4,980.40
SAND/SHALE	4,982.00	4,980.40	5,221.00	5,213.00
ALEXANDER	5,221.00	5,213.00	5,246.00	5,236.00
ELKS	5,246.00	5,236.00	6,400.00	6,135.10
SONYEA	6,400.00	6,135.10	6,535.00	6,224.70
MIDDLESEX	6,535.00	6,224.70	6,634.00	6,277.20
GENESSEE	6,634.00	6,277.20	6,756.00	6,329.00
GENESEO	6,756.00	6,329.00	6,830.00	6,356.80
TULLY	6,830.00	6,356.80	6,852.00	6,364.40
HAMILTON	6,852.00	6,364.40	6,862.00	6,367.70
MARCELLUS	6,862.00	6,367.70	13,259.00	6,442.10

Actual Wellpath Report

PUL-96 515966 AWP Proj: 13259'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Edsaryar
Scale	0.999967	Report Generated	04/Aug/2017 at 22:04
Convergence at slot	0.95° West	Database/Source file	WA_MPL_EASTERNUS_Defn/PUL-96_515966_AWP_Proj__13259_.xml

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	105.44	57.30	1578950.12	262511.67	39°12'40.278"N	80°59'09.591"W
Facility Reference Pt			1578892.82	262406.23	39°12'39.227"N	80°59'10.296"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Savanna 655 (RKB) to Facility Vertical Datum	1199.00ft
Horizontal Reference Pt	Slot	Savanna 655 (RKB) to Mean Sea Level	1199.00ft
Vertical Reference Pt	Savanna 655 (RKB)	Savanna 655 (RKB) to Ground Level at Slot (Slot 515966)	16.00ft
MD Reference Pt	Savanna 655 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	355.35°

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Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00†	0.000	130.180	0.00	-1199.00	0.00	0.00	0.00	0.00	0.00	0.00	
16.00	0.000	130.180	16.00	-1183.00	0.00	0.00	0.00	0.00	0.00	0.00	
103.00	0.320	130.180	103.00	-1096.00	-0.17	-0.16	0.19	0.37	0.37	149.63	
203.00	0.350	136.880	203.00	-996.00	-0.61	-0.56	0.61	0.05	0.03	6.70	
303.00	0.330	149.690	303.00	-896.00	-1.11	-1.03	0.96	0.08	-0.02	12.81	
403.00	0.230	138.600	402.99	-796.01	-1.53	-1.43	1.24	0.11	-0.10	-11.09	
503.00	0.280	131.970	502.99	-696.01	-1.86	-1.74	1.55	0.06	0.05	-6.63	
603.00	0.260	125.290	602.99	-596.01	-2.19	-2.04	1.92	0.04	-0.02	-6.68	
703.00	1.130	279.830	702.99	-496.01	-2.09	-2.00	1.13	1.37	0.87	154.54	
803.00	1.200	279.050	802.97	-396.03	-1.59	-1.67	-0.87	0.07	0.07	-0.78	
903.00	1.220	277.330	902.94	-296.06	-1.12	-1.37	-2.96	0.04	0.02	-1.72	
1003.00	1.210	277.320	1002.92	-196.08	-0.68	-1.10	-5.06	0.01	-0.01	-0.01	
1103.00	1.060	277.350	1102.90	-96.10	-0.27	-0.84	-7.03	0.15	-0.15	0.03	
1203.00	0.920	271.650	1202.89	3.89	0.01	-0.70	-8.75	0.17	-0.14	-5.70	
1303.00	0.910	256.930	1302.87	103.87	-0.02	-0.86	-10.32	0.23	-0.01	-14.72	
1403.00	0.970	240.570	1402.86	203.86	-0.49	-1.46	-11.84	0.27	0.06	-16.36	
1503.00	1.080	226.750	1502.85	303.85	-1.43	-2.52	-13.26	0.27	0.11	-13.82	
1603.00	1.180	210.490	1602.83	403.83	-2.86	-4.05	-14.47	0.33	0.10	-16.26	
1703.00	1.420	196.570	1702.80	503.80	-4.86	-6.13	-15.34	0.39	0.24	-13.92	
1803.00	1.580	187.850	1802.77	603.77	-7.36	-8.68	-15.89	0.28	0.16	-8.72	
1903.00	1.880	179.300	1902.72	703.72	-10.34	-11.68	-16.05	0.39	0.30	-8.55	
2003.00	1.950	178.500	2002.67	803.67	-13.68	-15.03	-15.99	0.07	0.07	-0.80	
2103.00	1.230	185.910	2102.63	903.63	-16.43	-17.79	-16.05	0.75	-0.72	7.41	
2203.00	1.080	88.440	2202.61	1003.61	-17.54	-18.84	-15.22	1.74	-0.15	-97.47	
2303.00	4.820	70.480	2302.46	1103.46	-16.51	-17.41	-10.32	3.81	3.74	-17.96	
2403.00	5.250	78.510	2402.08	1203.08	-14.89	-15.09	-1.88	0.82	0.43	8.03	
2503.00	3.160	109.530	2501.82	1302.82	-15.47	-15.10	5.21	3.02	-2.09	31.02	
2603.00	2.820	118.430	2601.68	1402.68	-17.94	-17.19	9.97	0.57	-0.34	8.90	
2703.00	2.160	119.870	2701.59	1502.59	-20.36	-19.30	13.76	0.66	-0.66	1.44	
2803.00	1.490	122.100	2801.53	1602.53	-22.20	-20.93	16.50	0.67	-0.67	2.23	

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Actual Wellpath Report

PUL-96 515966 AWP Proj: 13259'

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Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
2903.00	1.130	120.790	2901.51	1702.51	-23.55	-22.13	18.45	0.36	-0.36	-1.31	
3003.00	0.740	120.810	3001.50	1802.50	-24.50	-22.96	19.85	0.39	-0.39	0.02	
3103.00	0.550	120.470	3101.49	1902.49	-25.15	-23.54	20.82	0.19	-0.19	-0.34	
3203.00	0.480	125.020	3201.48	2002.48	-25.69	-24.02	21.58	0.08	-0.07	4.55	
3303.00	0.400	131.580	3301.48	2102.48	-26.21	-24.49	22.18	0.09	-0.08	6.56	
3403.00	0.430	138.920	3401.48	2202.48	-26.76	-25.01	22.69	0.06	0.03	7.34	
3503.00	0.360	143.120	3501.48	2302.48	-27.33	-25.54	23.12	0.08	-0.07	4.20	
3603.00	0.320	148.040	3601.47	2402.47	-27.85	-26.03	23.46	0.05	-0.04	4.92	
3703.00	0.300	147.340	3701.47	2502.47	-28.33	-26.49	23.75	0.02	-0.02	-0.70	
3803.00	0.310	147.110	3801.47	2602.47	-28.80	-26.94	24.04	0.01	0.01	-0.23	
3903.00	0.330	143.090	3901.47	2702.47	-29.28	-27.39	24.36	0.03	0.02	-4.02	
4003.00	0.330	134.740	4001.47	2802.47	-29.74	-27.83	24.73	0.05	0.00	-8.35	
4103.00	0.310	133.030	4101.47	2902.47	-30.16	-28.21	25.14	0.02	-0.02	-1.71	
4203.00	0.260	109.970	4201.47	3002.47	-30.45	-28.47	25.55	0.12	-0.05	-23.06	
4303.00	0.240	127.610	4301.47	3102.47	-30.69	-28.68	25.93	0.08	-0.02	17.64	
4403.00	0.370	165.260	4401.46	3202.46	-31.15	-29.12	26.17	0.23	0.13	37.65	
4503.00	0.350	202.560	4501.46	3302.46	-31.74	-29.71	26.14	0.23	-0.02	37.30	
4603.00	0.330	222.410	4601.46	3402.46	-32.20	-30.21	25.83	0.12	-0.02	19.85	
4703.00	0.260	257.320	4701.46	3502.46	-32.43	-30.47	25.41	0.19	-0.07	34.91	
4803.00	0.350	282.390	4801.46	3602.46	-32.37	-30.46	24.89	0.16	0.09	25.07	
4903.00	0.670	307.800	4901.45	3702.45	-31.89	-30.03	24.13	0.38	0.32	25.41	
4923.00	0.770	303.680	4921.45	3722.45	-31.73	-29.89	23.93	0.56	0.50	-20.60	Gyro Tie In=4923' MD
4981.00	0.600	312.270	4979.45	3780.45	-31.26	-29.47	23.38	0.34	-0.29	14.81	KOP 1=4981' MD
5024.00	3.000	77.760	5022.43	3823.43	-30.95	-29.08	24.31	7.87	5.58	291.84	
5068.00	7.990	82.380	5066.21	3867.21	-30.64	-28.43	28.47	11.38	11.34	10.50	
5111.00	13.010	80.360	5108.48	3909.48	-30.06	-27.22	36.21	11.70	11.67	-4.70	
5155.00	17.190	75.640	5150.95	3951.95	-28.54	-24.77	47.40	9.89	9.50	-10.73	
5199.00	20.680	79.510	5192.57	3993.57	-26.65	-21.75	61.34	8.43	7.93	8.80	
5241.00	23.860	81.710	5231.43	4032.43	-25.35	-19.17	77.04	7.83	7.57	5.24	
5285.00	26.610	81.240	5271.23	4072.23	-24.08	-16.39	95.59	6.27	6.25	-1.07	

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Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
5328.00	30.010	81.370	5309.08	4110.08	-22.65	-13.31	115.75	7.91	7.91	0.30	
5372.00	33.370	80.860	5346.51	4147.51	-20.93	-9.73	138.58	7.66	7.64	-1.16	
5416.00	35.330	79.330	5382.84	4183.84	-18.65	-5.45	163.03	4.87	4.45	-3.48	
5459.00	36.090	78.920	5417.75	4218.75	-15.93	-0.72	187.68	1.85	1.77	-0.95	
5503.00	38.260	79.270	5452.81	4253.81	-13.03	4.31	213.78	4.96	4.93	0.80	
5546.00	38.600	81.040	5486.50	4287.50	-10.62	8.88	240.12	2.68	0.79	4.12	
5590.00	38.270	80.570	5520.96	4321.96	-8.45	13.25	267.12	1.00	-0.75	-1.07	
5632.00	38.940	77.510	5553.79	4354.79	-5.57	18.23	292.84	4.82	1.60	-7.29	
5674.00	39.030	75.950	5586.43	4387.43	-1.60	24.30	318.55	2.35	0.21	-3.71	
5718.00	40.030	77.350	5620.37	4421.37	2.63	30.76	345.80	3.04	2.27	3.18	
5762.00	39.520	79.220	5654.19	4455.19	6.09	36.48	373.36	2.96	-1.16	4.25	
5805.00	39.150	82.620	5687.45	4488.45	8.20	40.78	400.26	5.08	-0.86	7.91	
5849.00	39.720	83.720	5721.44	4522.44	9.26	44.10	428.01	2.05	1.30	2.50	
5893.00	39.140	83.070	5755.42	4556.42	10.21	47.32	455.77	1.62	-1.32	-1.48	
5925.00	39.310	82.960	5780.21	4581.21	11.04	49.78	475.86	0.57	0.53	-0.34	KOP 2=5925' MD
5979.00	35.100	80.040	5823.21	4624.21	13.19	54.56	508.14	8.45	-7.80	-5.41	
6011.00	32.830	79.230	5849.75	4650.75	14.97	57.78	525.73	7.23	-7.09	-2.53	
6042.00	34.000	78.190	5875.63	4676.63	16.94	61.12	542.47	4.20	3.77	-3.35	
6074.00	37.680	78.090	5901.56	4702.56	19.29	64.97	560.80	11.50	11.50	-0.31	
6106.00	41.220	78.700	5926.27	4727.27	21.75	69.06	580.72	11.13	11.06	1.91	
6137.00	43.310	75.960	5949.21	4750.21	24.67	73.64	601.05	8.99	6.74	-8.84	
6169.00	44.140	70.850	5972.35	4773.35	29.25	79.96	622.23	11.34	2.59	-15.97	
6201.00	44.240	64.480	5995.30	4796.30	36.02	88.43	642.84	13.88	0.31	-19.91	
6232.00	44.330	58.280	6017.50	4818.50	44.81	98.79	661.82	13.96	0.29	-20.00	
6264.00	44.590	52.670	6040.35	4841.35	55.96	111.48	680.27	12.30	0.81	-17.53	
6296.00	45.180	48.280	6063.03	4864.03	68.87	125.85	697.68	9.85	1.84	-13.72	
6327.00	45.850	44.540	6084.76	4885.76	82.77	141.09	713.69	8.87	2.16	-12.06	
6357.00	46.410	41.540	6105.55	4906.55	97.33	156.90	728.44	7.45	1.87	-10.00	
6390.00	46.850	38.180	6128.22	4929.22	114.43	175.31	743.81	7.52	1.33	-10.18	
6421.00	45.450	36.320	6149.69	4950.69	131.07	193.10	757.35	6.25	-4.52	-6.00	

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Actual Wellpath Report

PUL-96 515966 AWP Proj: 13259'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
6453.00	46.280	33.290	6171.98	4972.98	148.80	211.96	770.45	7.27	2.59	-9.47	
6485.00	48.910	30.360	6193.56	4994.56	167.80	232.03	782.89	10.64	8.22	-9.16	
6516.00	52.070	28.830	6213.28	5014.28	187.57	252.83	794.70	10.88	10.19	-4.94	
6548.00	54.750	27.720	6232.35	5033.35	209.14	275.46	806.86	8.83	8.37	-3.47	
6580.00	57.860	26.860	6250.10	5051.10	231.73	299.12	819.07	9.97	9.72	-2.69	
6611.00	60.280	26.210	6266.04	5067.04	254.48	322.91	830.94	8.01	7.81	-2.10	
6643.00	62.160	24.770	6281.44	5082.44	278.74	348.22	843.01	7.08	5.87	-4.50	
6674.00	64.320	21.890	6295.40	5096.40	303.18	373.64	853.96	10.83	6.97	-9.29	
6706.00	65.820	18.260	6308.89	5109.89	329.53	400.89	863.92	11.30	4.69	-11.34	
6738.00	66.480	14.520	6321.84	5122.84	356.84	428.96	872.17	10.89	2.06	-11.69	
6769.00	67.150	10.330	6334.04	5135.04	384.07	456.78	878.30	12.61	2.16	-13.52	
6801.00	68.150	5.960	6346.22	5147.22	412.93	486.07	882.48	13.01	3.13	-13.66	
6833.00	69.250	1.290	6357.85	5158.85	442.42	515.81	884.36	14.02	3.44	-14.59	
6864.00	71.310	356.670	6368.31	5169.31	471.53	544.98	883.84	15.52	6.65	-14.90	
6896.00	74.910	354.120	6377.61	5178.61	502.15	575.49	881.37	13.59	11.25	-7.97	
6928.00	79.610	352.750	6384.66	5185.66	533.33	606.49	877.80	15.27	14.69	-4.28	
6959.00	84.490	350.540	6388.95	5189.95	563.96	636.85	873.34	17.25	15.74	-7.13	
6991.00	88.950	349.220	6390.78	5191.78	595.75	668.30	867.73	14.53	13.94	-4.13	LP=6991' MD / 6390.78' TVD
7022.00	89.540	347.820	6391.19	5192.19	626.53	698.67	861.56	4.90	1.90	-4.52	
7054.00	89.170	346.110	6391.55	5192.55	658.18	729.84	854.34	5.47	-1.16	-5.34	
7117.00	89.080	342.590	6392.51	5193.51	720.01	790.49	837.35	5.59	-0.14	-5.59	
7181.00	89.110	338.700	6393.52	5194.52	781.89	850.86	816.15	6.08	0.05	-6.08	
7245.00	87.880	338.550	6395.20	5196.20	843.16	910.43	792.83	1.94	-1.92	-0.23	
7308.00	87.170	340.430	6397.93	5198.93	903.70	969.38	770.78	3.19	-1.13	2.98	
7371.00	87.230	342.720	6401.00	5202.00	964.81	1029.07	750.89	3.63	0.10	3.63	
7432.00	88.520	348.140	6403.27	5204.27	1024.84	1088.05	735.56	9.13	2.11	8.89	
7495.00	90.310	350.440	6403.91	5204.91	1087.48	1149.94	723.86	4.63	2.84	3.65	
7559.00	90.120	350.670	6403.67	5204.67	1151.25	1213.07	713.35	0.47	-0.30	0.36	
7622.00	90.520	351.390	6403.32	5204.32	1214.07	1275.30	703.53	1.31	0.63	1.14	
7685.00	91.510	351.720	6402.20	5203.20	1276.92	1337.61	694.28	1.66	1.57	0.52	

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Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
7749.00	91.200	349.220	6400.69	5201.69	1340.67	1400.70	683.69	3.94	-0.48	-3.91	
7812.00	90.490	346.960	6399.76	5200.76	1403.15	1462.34	670.69	3.76	-1.13	-3.59	
7875.00	89.820	345.450	6399.59	5200.59	1465.35	1523.52	655.67	2.62	-1.06	-2.40	
7939.00	90.090	344.820	6399.64	5200.64	1528.33	1585.37	639.25	1.07	0.42	-0.98	
8002.00	90.740	343.500	6399.18	5200.18	1590.13	1645.98	622.05	2.34	1.03	-2.10	
8065.00	89.910	339.640	6398.83	5199.83	1651.30	1705.73	602.14	6.27	-1.32	-6.13	
8128.00	89.780	341.340	6399.00	5200.00	1712.19	1765.11	581.10	2.71	-0.21	2.70	
8191.00	89.420	342.590	6399.44	5200.44	1773.48	1825.02	561.60	2.06	-0.57	1.98	
8254.00	88.860	346.940	6400.38	5201.38	1835.39	1885.78	545.05	6.96	-0.89	6.90	
8317.00	89.750	350.250	6401.15	5202.15	1897.94	1947.52	532.59	5.44	1.41	5.25	
8381.00	89.780	351.060	6401.41	5202.41	1961.72	2010.67	522.20	1.27	0.05	1.27	
8444.00	89.720	351.210	6401.68	5202.68	2024.55	2072.92	512.49	0.26	-0.10	0.24	
8507.00	89.660	350.330	6402.02	5203.02	2087.35	2135.10	502.39	1.40	-0.10	-1.40	
8570.00	89.820	347.840	6402.31	5203.31	2149.96	2196.96	490.46	3.96	0.25	-3.95	
8633.00	89.940	346.950	6402.44	5203.44	2212.36	2258.44	476.71	1.43	0.19	-1.41	
8697.00	89.820	346.920	6402.58	5203.58	2275.67	2320.78	462.24	0.19	-0.19	-0.05	
8760.00	89.570	345.570	6402.91	5203.91	2337.87	2381.97	447.27	2.18	-0.40	-2.14	
8823.00	89.420	345.320	6403.47	5204.47	2399.93	2442.95	431.43	0.46	-0.24	-0.40	
8886.00	89.570	345.630	6404.02	5205.02	2461.99	2503.93	415.63	0.55	0.24	0.49	
8949.00	90.060	346.010	6404.23	5205.23	2524.12	2565.01	400.20	0.98	0.78	0.60	
9013.00	90.580	344.560	6403.87	5204.87	2587.14	2626.91	383.95	2.41	0.81	-2.27	
9075.00	89.750	341.740	6403.69	5204.69	2647.73	2686.24	365.98	4.74	-1.34	-4.55	
9138.00	89.260	342.370	6404.23	5205.23	2709.04	2746.17	346.57	1.27	-0.78	1.00	
9201.00	89.050	343.850	6405.16	5206.16	2770.60	2806.45	328.26	2.37	-0.33	2.35	
9264.00	88.520	345.870	6406.50	5207.50	2832.53	2867.24	311.81	3.31	-0.84	3.21	
9327.00	89.320	350.440	6407.69	5208.69	2895.00	2928.87	298.89	7.36	1.27	7.25	
9390.00	88.650	352.190	6408.80	5209.80	2957.83	2991.14	289.38	2.97	-1.06	2.78	
9454.00	89.260	352.940	6409.97	5210.97	3021.75	3054.59	281.10	1.51	0.95	1.17	
9517.00	89.260	352.470	6410.78	5211.78	3084.67	3117.07	273.10	0.75	0.00	-0.75	
9581.00	89.450	350.800	6411.50	5212.50	3148.53	3180.39	263.79	2.63	0.30	-2.61	

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Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
9644.00	89.970	347.220	6411.82	5212.82	3211.14	3242.22	251.78	5.74	0.83	-5.68	
9707.00	89.750	343.730	6411.98	5212.98	3273.19	3303.20	235.98	5.55	-0.35	-5.54	
9770.00	88.950	341.280	6412.69	5213.69	3334.61	3363.27	217.05	4.09	-1.27	-3.89	
9833.00	87.720	344.460	6414.52	5215.52	3396.08	3423.44	198.50	5.41	-1.95	5.05	
9896.00	86.830	349.560	6417.52	5218.52	3458.33	3484.74	184.36	8.21	-1.41	8.10	
9959.00	90.180	352.920	6419.16	5220.16	3521.13	3546.97	174.77	7.53	5.32	5.33	
10022.00	89.750	351.620	6419.20	5220.20	3584.03	3609.39	166.30	2.17	-0.68	-2.06	
10085.00	90.740	352.470	6418.93	5219.93	3646.93	3671.79	157.58	2.07	1.57	1.35	
10149.00	91.170	348.820	6417.87	5218.87	3710.69	3734.92	147.18	5.74	0.67	-5.70	
10212.00	90.000	344.070	6417.22	5218.22	3772.91	3796.14	132.42	7.76	-1.86	-7.54	
10275.00	89.660	343.950	6417.41	5218.41	3834.68	3856.70	115.06	0.57	-0.54	-0.19	
10338.00	89.690	345.590	6417.77	5218.77	3896.60	3917.49	98.52	2.60	0.05	2.60	
10401.00	89.630	346.340	6418.14	5219.14	3958.76	3978.60	83.24	1.19	-0.10	1.19	
10465.00	89.600	346.900	6418.57	5219.57	4022.02	4040.86	68.43	0.88	-0.05	0.88	
10528.00	89.660	345.590	6418.98	5219.98	4084.22	4102.05	53.45	2.08	0.10	-2.08	
10591.00	89.630	346.900	6419.37	5220.37	4146.42	4163.25	38.47	2.08	-0.05	2.08	
10654.00	89.690	348.880	6419.74	5220.74	4208.89	4224.84	25.25	3.14	0.10	3.14	
10718.00	89.720	349.240	6420.07	5221.07	4272.50	4287.68	13.11	0.56	0.05	0.56	
10781.00	89.350	349.540	6420.58	5221.58	4335.16	4349.60	1.51	0.76	-0.59	0.48	
10845.00	89.420	351.230	6421.27	5222.27	4398.91	4412.69	-9.18	2.64	0.11	2.64	
10908.00	89.480	353.180	6421.87	5222.87	4461.81	4475.10	-17.72	3.10	0.10	3.10	
10971.00	89.940	350.810	6422.19	5223.19	4524.70	4537.48	-26.50	3.83	0.73	-3.76	
11034.00	89.450	348.570	6422.53	5223.53	4587.38	4599.46	-37.77	3.64	-0.78	-3.56	
11097.00	89.140	348.370	6423.30	5224.30	4649.93	4661.19	-50.36	0.59	-0.49	-0.32	
11161.00	89.380	348.040	6424.13	5225.13	4713.42	4723.83	-63.44	0.64	0.38	-0.52	
11223.00	89.290	345.410	6424.85	5225.85	4774.71	4784.16	-77.68	4.24	-0.15	-4.24	
11286.00	89.630	342.620	6425.44	5226.44	4836.48	4844.72	-95.02	4.46	0.54	-4.43	
11349.00	89.290	339.800	6426.04	5227.04	4897.56	4904.35	-115.31	4.51	-0.54	-4.48	
11413.00	89.140	341.160	6426.92	5227.92	4959.41	4964.67	-136.70	2.14	-0.23	2.13	
11476.00	89.110	343.570	6427.88	5228.88	5020.78	5024.69	-155.78	3.83	-0.05	3.83	

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Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH DATA (210 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [ft]	Vert Sect [ft]	North [ft]	East [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
11539.00	89.080	344.660	6428.87	5229.87	5082.57	5085.28	-173.02	1.73	-0.05	1.73	
11602.00	89.200	345.020	6429.82	5230.82	5144.50	5146.08	-189.49	0.60	0.19	0.57	
11665.00	88.860	346.490	6430.88	5231.88	5206.61	5207.13	-204.99	2.39	-0.54	2.33	
11728.00	89.170	349.330	6431.97	5232.97	5269.07	5268.72	-218.18	4.53	0.49	4.51	
11791.00	89.110	353.400	6432.91	5233.91	5331.89	5330.99	-227.64	6.46	-0.10	6.46	
11853.00	89.570	355.000	6433.63	5234.63	5393.87	5392.66	-233.91	2.69	0.74	2.58	
11917.00	89.820	351.860	6433.97	5234.97	5457.83	5456.23	-241.23	4.92	0.39	-4.91	
11980.00	89.630	348.700	6434.27	5235.27	5520.57	5518.32	-251.86	5.02	-0.30	-5.02	
12043.00	89.510	348.060	6434.74	5235.74	5583.11	5580.03	-264.55	1.03	-0.19	-1.02	
12106.00	89.630	351.400	6435.22	5236.22	5645.79	5642.01	-275.78	5.30	0.19	5.30	
12169.00	89.450	351.780	6435.72	5236.72	5708.66	5704.33	-284.99	0.67	-0.29	0.60	
12233.00	89.570	349.100	6436.27	5237.27	5772.41	5767.43	-295.62	4.19	0.19	-4.19	
12295.00	89.570	344.760	6436.74	5237.74	5833.73	5827.81	-309.64	7.00	0.00	-7.00	
12358.00	89.320	341.980	6437.35	5238.35	5895.35	5888.16	-327.67	4.43	-0.40	-4.41	
12422.00	89.450	342.810	6438.03	5239.03	5957.71	5949.16	-347.02	1.31	0.20	1.30	
12484.00	89.480	342.880	6438.61	5239.61	6018.24	6008.40	-365.31	0.12	0.05	0.11	
12548.00	89.600	343.150	6439.13	5240.13	6080.76	6069.61	-384.00	0.46	0.19	0.42	
12611.00	89.630	342.430	6439.55	5240.55	6142.25	6129.79	-402.64	1.14	0.05	-1.14	
12674.00	89.540	342.840	6440.01	5241.01	6203.70	6189.91	-421.45	0.67	-0.14	0.65	
12737.00	89.540	344.470	6440.51	5241.51	6265.39	6250.36	-439.17	2.59	0.00	2.59	
12800.00	89.480	348.100	6441.05	5242.05	6327.59	6311.55	-454.11	5.76	-0.10	5.76	
12863.00	89.540	350.270	6441.59	5242.59	6390.22	6373.43	-465.93	3.45	0.10	3.44	
12926.00	89.910	350.940	6441.89	5242.89	6453.01	6435.58	-476.21	1.21	0.59	1.06	
12989.00	89.940	350.400	6441.97	5242.97	6515.80	6497.75	-486.43	0.86	0.05	-0.86	
13053.00	89.970	349.640	6442.02	5243.02	6579.52	6560.78	-497.52	1.19	0.05	-1.19	
13116.00	89.970	348.730	6442.06	5243.06	6642.15	6622.66	-509.34	1.44	0.00	-1.44	
13180.00	89.940	346.200	6442.11	5243.11	6705.54	6685.13	-523.23	3.95	-0.05	-3.95	
13207.00†	90.000	344.850	6442.12	5243.12	6732.15	6711.27	-529.98	5.00	0.22	-5.00	Deepest Point of Well=13207' MD / 6442.12' TVD
13234.00	90.060	343.500	6442.11	5243.11	6758.63	6737.25	-537.34	5.00	0.22	-5.00	Final Survey=13234' MD / 6442.11' TVD
13259.00	90.060	343.500	6442.08	5243.08	6783.10	6761.22	-544.44	0.00	0.00	0.00	Projection to TD=13259' MD / 6442.08' TVD

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HOLE & CASING SECTIONS - Ref Wellbore: PUL-96 515966 AWB Ref Wellpath: PUL-96 515966 AWP Proj: 13259'

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]
26in Conductor	16.00	63.00	47.00	16.00	63.00	0.00	0.00	-0.05	0.05
17.5in Open Hole	63.00	655.00	592.00	63.00	654.99	-0.05	0.05	-2.09	1.80
13.375in Casing Surface	16.00	655.00	639.00	16.00	654.99	0.00	0.00	-2.09	1.80
12.25in Open Hole	655.00	2563.00	1908.00	654.99	2561.73	-2.09	1.80	-16.30	8.17
9.625in Casing Intermediate	16.00	2563.00	2547.00	16.00	2561.73	0.00	0.00	-16.30	8.17
8.75in Open Hole	2563.00	5997.00	3434.00	2561.73	5838.06	-16.30	8.17	56.36	518.17
8.5in Open Hole	5997.00	13259.00	7262.00	5838.06	6442.08	56.36	518.17	6761.22	-544.44
5.5in Casing Production	16.00	13259.00	13243.00	16.00	6442.08	0.00	0.00	6761.22	-544.44

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PUL-96 515966 BHL Rev-1	6365.00	6760.95	-549.76	**1578400.38**	**269272.38**	39°13'47.003"N	80°59'17.997"W	point
PUL-96 515966 LP Rev-1	6365.00	715.54	834.86	**1579784.95**	**263227.18**	39°12'47.486"N	80°58'59.136"W	point
PUL-96 Hardlines Rev-1	6500.00	2321.23	679.07	**1579629.17**	**264832.82**	39°13'03.329"N	80°59'01.452"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: PUL-96 515966 AWB Ref Wellpath: PUL-96 515966 AWP Proj: 13259'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	4923.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <8-3/4"> (103'-4923')	PUL-96 515966 AWB
4923.00	5925.00	OWSG MWD rev2 - Standard	02_SDI MWD <8-3/4"> (4923')(4981'-5925')	PUL-96 515966 AWB
5925.00	13234.00	BHI AutoTrak Curve (Short)	03_BHI AT Curve <8-1/2"> (5925')(5979'-13234')	PUL-96 515966 AWB
13234.00	13259.00	Blind Drilling (std)	Projection to bit	PUL-96 515966 AWB

Actual Wellpath Report

PUL-96 515966 AWP Proj: 13259'

Where energy meets innovation.

BAKER HUGHES a GE company

REFERENCE WELLPATH IDENTIFICATION			
Operator	EQT	Slot	Slot 515966
Area	Ritchie County, WV	Well	PUL-96 515966
Field	Ritchie	Wellbore	PUL-96 515966 AWB
Facility	PUL-96 Pad		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
4923.00	0.770	303.680	4921.45	Gyro Tie In=4923' MD
4981.00	0.600	312.270	4979.45	KOP 1=4981' MD
5925.00	39.310	82.960	5780.21	KOP 2=5925' MD
6991.00	88.950	349.220	6390.78	LP=6991' MD / 6390.78' TVD
13207.00	90.000	344.850	6442.12	Deepest Point of Well=13207' MD / 6442.12' TVD
13234.00	90.060	343.500	6442.11	Final Survey=13234' MD / 6442.11' TVD
13259.00	90.060	343.500	6442.08	Projection to TD=13259' MD / 6442.08' TVD

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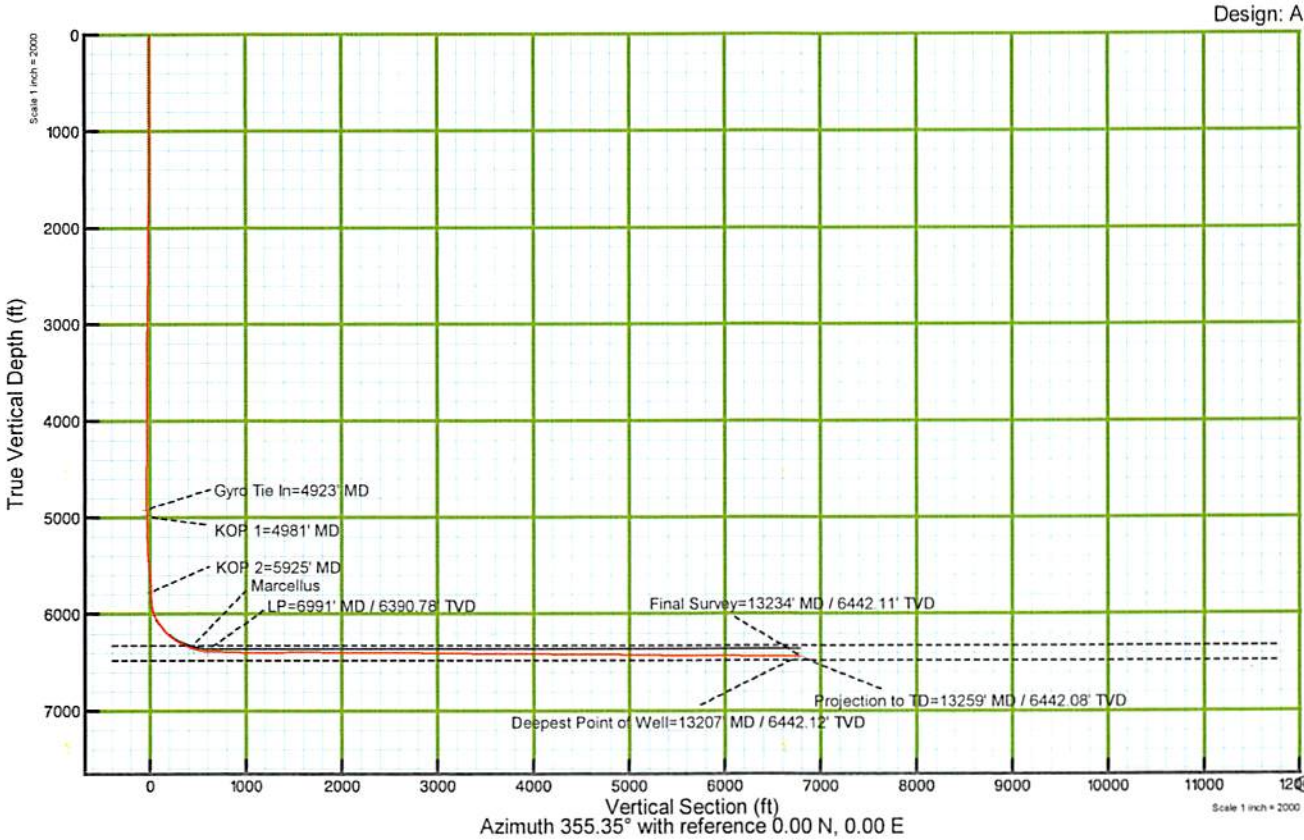
EQT Production - Marcellus

KB Elevation=1199 FT
Ground Elevation=1183 FT
All measurements were taken from KB Elevation

Project: Ritchie County, WV
Site: PUL-96
Well: PUL-96 515966
Wellbore: Main Wellbore
Design: As-Drilled Surveys



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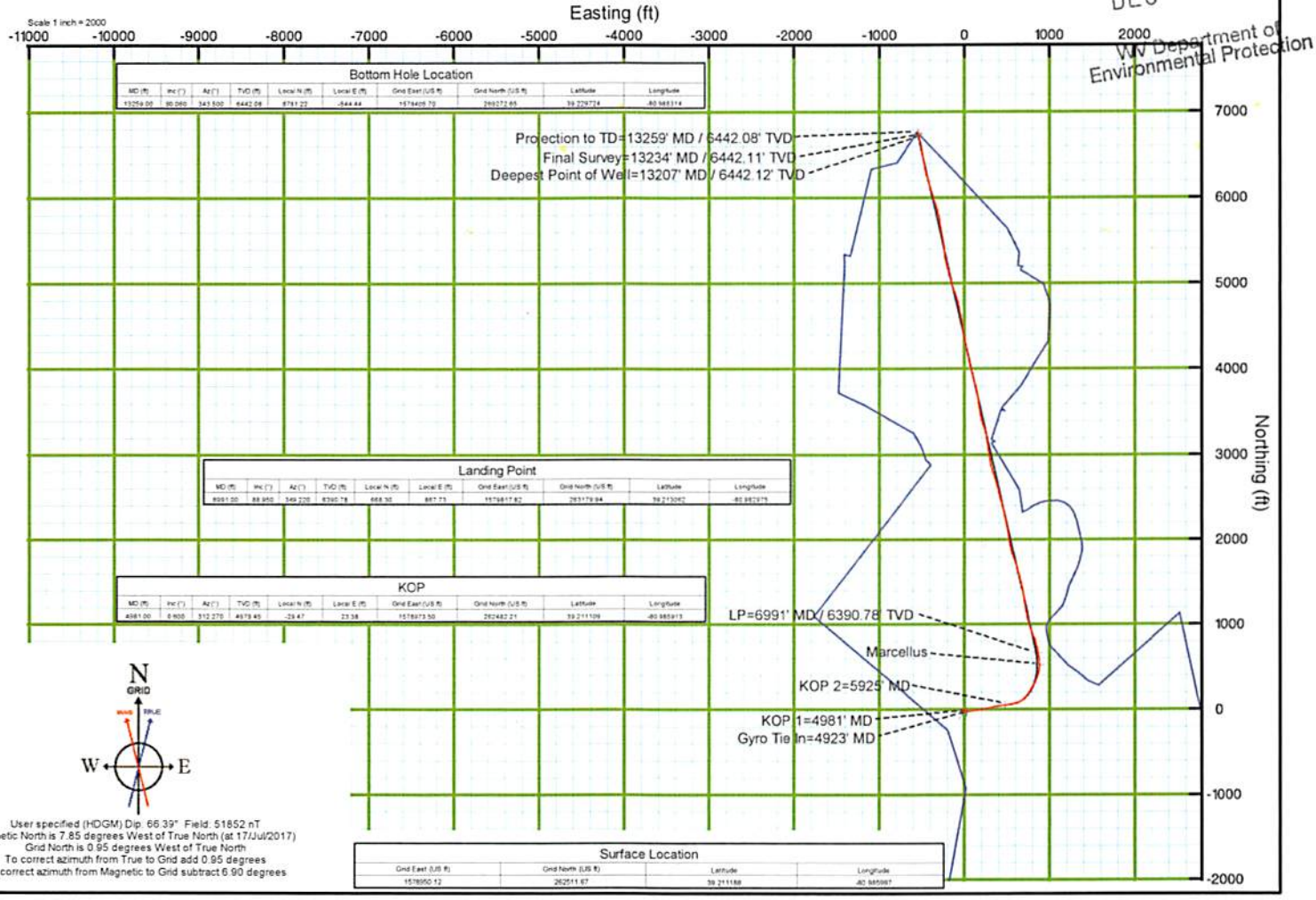

User specified (HDGM) Dip. 66.39° Field: 51852 nT
Magnetic North is 7.85 degrees West of True North (at 17/Jul/2017)
Grid North is 0.95 degrees West of True North
To correct azimuth from True to Grid add 0.95 degrees
To correct azimuth from Magnetic to Grid subtract 6.90 degrees

Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
13259.00	90.060	343.500	6442.08	6791.22	-544.44	1578405.70	269272.65	39.229724	-80.983314

Landing Point

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
6991.00	88.950	349.220	6390.78	668.30	867.73	1579817.82	263179.94	39.213042	-80.982975

KOP

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
4981.00	0.000	312.270	4979.45	-29.47	23.38	1578973.50	262482.21	39.211109	-80.985913

Surface Location

Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1578950.12	262511.67	39.211188	-80.985997

515966 47-085-10289-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	8/9/2017	13,219	13,245	10	MARCELLUS
1	8/16/2017	13,058	13,180	32	MARCELLUS
2	8/16/2017	12,858	13,020	40	MARCELLUS
2	8/17/2017	12,878	12,960	24	MARCELLUS
3	8/18/2017	12,658	12,820	40	MARCELLUS
4	8/19/2017	12,458	12,620	40	MARCELLUS
5	8/20/2017	12,258	12,420	40	MARCELLUS
6	8/21/2017	11,996	12,078	40	MARCELLUS
6	8/21/2017	12,058	12,220	24	MARCELLUS
7	8/21/2017	11,796	11,958	40	MARCELLUS
8	8/22/2017	11,596	11,758	40	MARCELLUS
9	8/22/2017	11,396	11,558	40	MARCELLUS
10	8/23/2017	11,196	11,358	40	MARCELLUS
11	8/24/2017	10,996	11,158	40	MARCELLUS
12	8/24/2017	10,796	10,958	40	MARCELLUS
13	8/25/2017	10,596	10,758	40	MARCELLUS
14	8/26/2017	10,396	10,558	40	MARCELLUS
15	8/26/2017	10,196	10,358	40	MARCELLUS
16	8/27/2017	9,996	10,158	40	MARCELLUS
17	8/29/2017	9,796	9,958	40	MARCELLUS
18	8/29/2017	9,596	9,758	40	MARCELLUS
19	8/29/2017	9,396	9,558	40	MARCELLUS
20	8/30/2017	9,196	9,358	40	MARCELLUS
21	8/31/2017	8,996	9,158	40	MARCELLUS
22	9/1/2017	8,796	8,958	40	MARCELLUS
23	9/2/2017	8,596	8,758	40	MARCELLUS
24	9/2/2017	8,396	8,558	40	MARCELLUS
25	9/5/2017	8,196	8,358	40	MARCELLUS
26	9/7/2017	7,996	8,158	40	MARCELLUS
27	9/8/2017	7,796	7,958	40	MARCELLUS
28	9/10/2017	7,596	7,758	40	MARCELLUS
29	9/13/2017	7,396	7,558	40	MARCELLUS
30	9/15/2017	7,196	7,358	40	MARCELLUS
31	9/15/2017	6,996	7,158	40	MARCELLUS

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515966 47-085-10289-0000 - Stimulated Stages								
Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
Initiation Sleeve								
1	8/15/2017	92	8,590	9,460	8,321	450,535	3,725	0
2	8/17/2017	11	7,016	8,802	4,669	31,269	3,698	0
2	8/18/2017	43	8,363	9,342	5,161	18,896	2,325	0
3	8/19/2017	11	7,691	8,975	5,697	598,487	3,491	0
4	8/20/2017	98	7,712	8,584	2,638	446,940	10,501	0
5	8/21/2017	88	7,222	8,765	2,566	443,860	7,283	0
6	8/21/2017	100	8,176	8,573	2,556	461,801	7,712	0
7	8/22/2017	94	7,861	9,929	2,776	447,419	9,914	0
8	8/22/2017	88	7,997	9,579	2,579	449,695	8,383	0
9	8/23/2017	95	7,617	8,415	2,711	448,803	7,376	0
10	8/24/2017	98	7,139	8,959	2,930	450,798	7,448	0
11	8/24/2017	90	6,947	8,073	2,872	450,084	7,057	0
12	8/25/2017	98	7,405	7,797	2,824	447,406	7,229	0
13	8/26/2017	99	7,618	9,468	2,945	449,853	7,248	0
14	8/26/2017	97	7,281	7,640	3,027	450,230	7,241	0
15	8/27/2017	100	7,729	8,967	2,690	447,738	7,142	0
16	8/28/2017	94	7,908	8,732	2,811	450,127	7,881	0
17	8/29/2017	47	7,784	8,805	5,912	449,044	1,305	0
18	8/29/2017	99	7,619	8,218	2,904	450,409	2,507	0
19	8/30/2017	96	7,286	7,895	2,749	451,477	8,780	0
20	8/31/2017	98	7,224	7,898	2,863	449,873	7,008	0
21	9/1/2017	94	7,020	7,606	3,050	450,672	7,041	0
22	9/2/2017	100	7,150	8,196	3,160	450,184	6,964	0
23	9/2/2017	99	7,077	8,454	3,917	451,606	6,907	0
24	9/5/2017	100	7,304	7,731	3,038	451,117	6,826	0
25	9/7/2017	99	7,325	7,679	2,638	453,309	7,864	0
26	9/8/2017	97	7,482	8,412	2,908	451,995	6,893	0
27	9/10/2017	101	7,280	8,350	2,556	453,095	6,492	0
28	9/13/2017	100	7,070	9,280	2,647	449,065	6,995	0
29	9/15/2017	100	7,519	7,869	3,213	449,170	7,215	0
30	9/15/2017	100	7,654	9,035	2,712	449,433	6,937	0
31	9/17/2017	100	6,969	7,186	2,912	454,536	7,297	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/15/2017
Job End Date:	9/17/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10289-00-00
Operator Name:	EQT Production
Well Name and Number:	515966
Latitude:	39.21118800
Longitude:	-80.98599700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,368
Total Base Water Volume (gal):	9,921,534
Total Base Non Water Volume:	0

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	FTS International	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	85.43776	None
HVG-1	FTS International	Gelling Agent					
				Listed Below			

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Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			
FRW-1450	FTS International	Friction Reducer					
				Listed Below			
Hydrochloric Acid (15%)	FTS International	Acidizing					
				Listed Below			
Sand (Proppant)	FTS International	Proppant					
				Listed Below			
CS-500-SI	FTS International	Scale Inhibitor					
				Listed Below			
CI-150	FTS International	Acid Corrosion Inhibitor					
				Listed Below			
MX-5-3886	Multi-Chem	Bacteria Treatment					
				Listed Below			
MX-8-2544	Multi-Chem	Bacteria Treatment					
				Listed Below			
ABP-1	FTS International	Breaker					

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				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Silica Substrate	14808-60-7	100.00000	14.14647	None
			Calcium Nitrate.4H2O	13477-34-4	100.00000	0.11272	None
			Calcium Nitrate.4H2O	13477-34-4	100.00000	0.11272	
			Hydrochloric Acid	7647-01-0	15.00000	0.02972	None
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	30.00000	0.02046	
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	30.00000	0.02046	None
			Sodium Chloride	7647-14-5	100.00000	0.01003	
			Sodium Chloride	7647-14-5	100.00000	0.01003	None
			Alcohols, C11-14-iso-,C13-rich, ethoxylated	78330-21-9	5.00000	0.00341	None
			Alcohols, C11-14-iso-,C13-rich, ethoxylated	78330-21-9	5.00000	0.00341	
			Ethylene Glycol	107-21-1	10.00000	0.00251	None
			Ethylene Glycol	107-21-1	10.00000	0.00251	
			Petroleum Distillate	64742-47-8	55.00000	0.00058	
			Petroleum Distillate	64742-47-8	55.00000	0.00058	None
			Guar Gum	9000-30-0	50.00000	0.00052	
			Guar Gum	9000-30-0	50.00000	0.00052	None
			Sodium Nitrate	7631-99-4	5.00000	0.00050	None
			Sodium Nitrate	7631-99-4	5.00000	0.00050	
			Ammonium Persulfate	7727-54-0	95.00000	0.00021	None
			Isopropanol	67-63-0	30.00000	0.00011	None
			Organic Amine Resin Salt	Proprietary	30.00000	0.00011	None
			Ethylene Glycol	107-21-1	30.00000	0.00011	None
			Aromatic Aldehyde	Proprietary	10.00000	0.00004	None
			Quaternary Ammonium Compound	Proprietary	10.00000	0.00004	None

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			Dimethylformamide	68-12-2	10.00000	0.00004	None
			Clay	14808-60-7	2.00000	0.00002	
			Clay	14808-60-7	2.00000	0.00002	None
			Surfactant	68439-51-0	2.00000	0.00002	
			Surfactant	68439-51-0	2.00000	0.00002	None

* 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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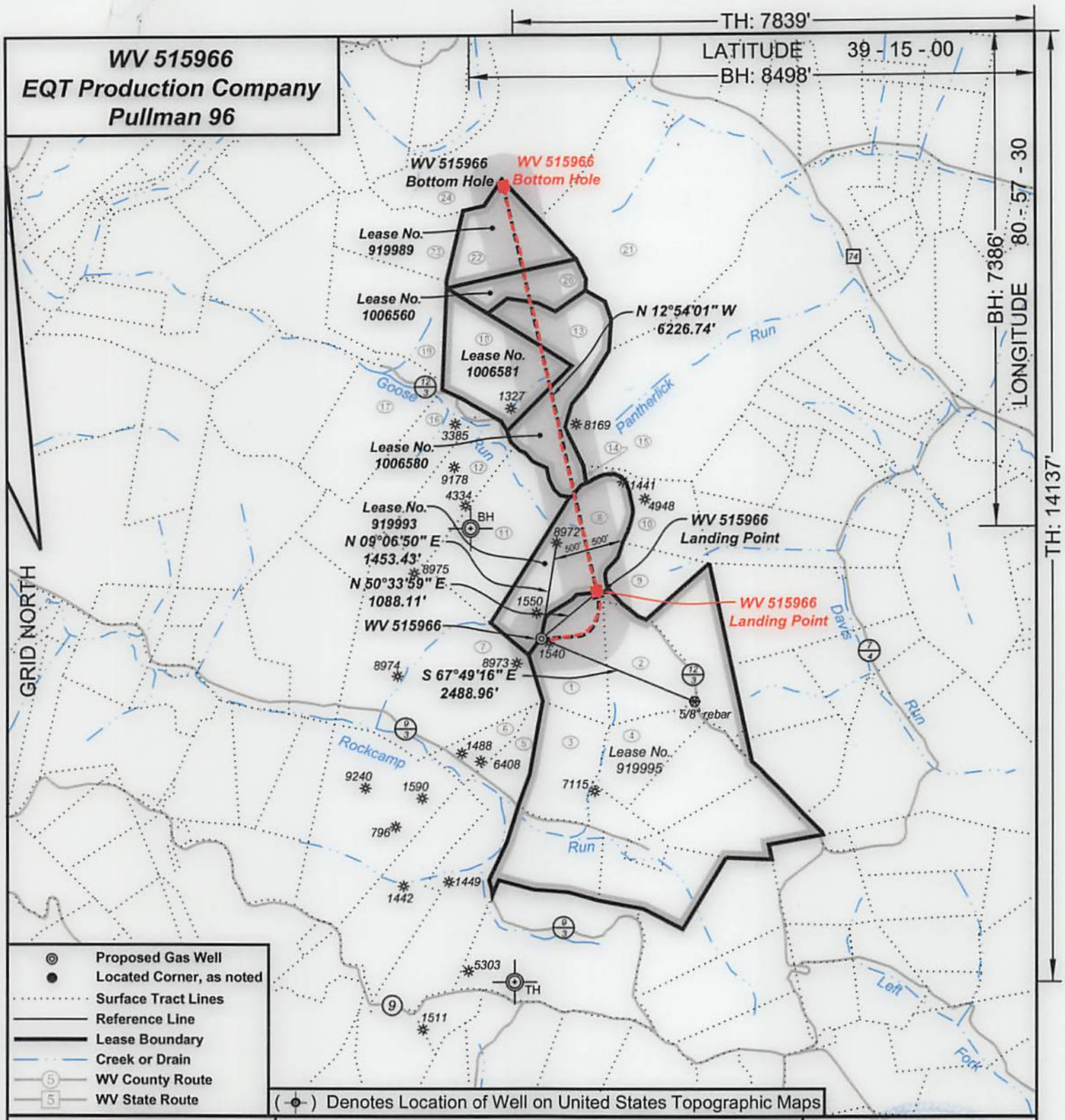


ALLEGHENY SURVEYS, INC.

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 the regulations issued and prescribed by the Department of Environmental Protection.

Dwayne A. Hall

P.S. 2089SU

DWAYNE A. HALL LICENSED No. 2089 SU STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

SEAL

FILE NO: 243-14
DRAWING NO: 243-14 Pullman 96 H9.dwg
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: September 7 20 17
OPERATOR'S WELL NO. 515966
API WELL NO
47 - 85 - 10289
STATE COUNTY PERMIT

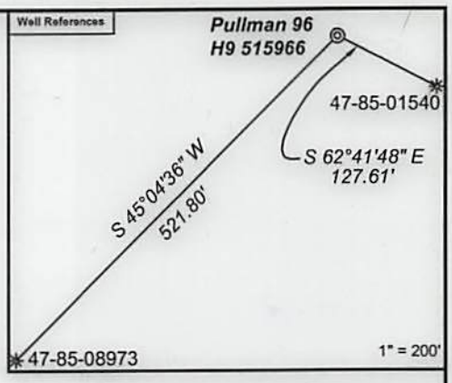
WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION : ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: As-Built 1182.6' WATERSHED Goose Run of Rockcamp Run QUADRANGLE: Pullman
DISTRICT: Union COUNTY: Ritchie
SURFACE OWNER: James H. & Wilma J. Wilson ACREAGE: 40.089
ROYALTY OWNER: Laurie Ann Haddox, et al LEASE NO: 919995 ACREAGE: 360
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☐ PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6,376

WELL OPERATOR: EQT Production Company
ADDRESS: PO Box 280 / 115 Professional Place
Bridgeport, WV 26330

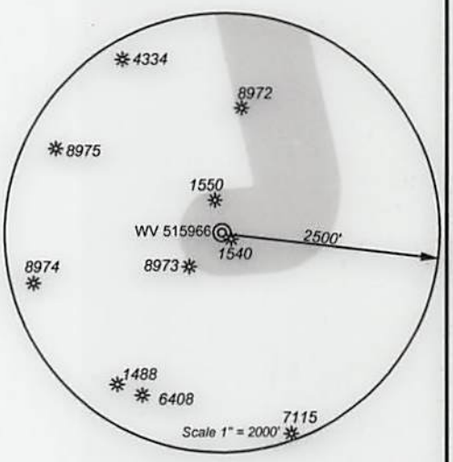
DESIGNATED AGENT: Rex C. Ray
ADDRESS: PO Box 280 / 115 Professional Place
Bridgeport, WV 26330

WV 515966
EQT Production Company
Pullman 96

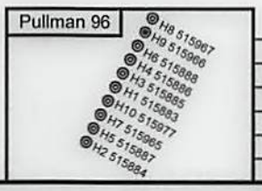
Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	7	8.4	Ritchie	Union	Wilma J. Wilson	40.09
2	7	8.3	Ritchie	Union	James D. Wilson	39.87
3	7	8.5	Ritchie	Union	Robert & Oleta Jane Wilson	37.23
4	7	8.2	Ritchie	Union	Ian David Wilson	30.10
5	7	11.0	Ritchie	Union	Arnold K. Richards (Life)	43.84
6	7	6.0	Ritchie	Union	Eva L. Riffle	14.75
7	7	5.0	Ritchie	Union	Jean W. Moore	134.70
8	7	4.0	Ritchie	Union	James D. Wilson, et al.	63.00
9	39	10.0	Ritchie	Clay	Charlie Ray & Lori Ann Amos	24.64
10	39	10.1	Ritchie	Clay	Pierce Okla & Suzanne Denise Amos	25.36
11	7	3.0	Ritchie	Union	Earl Wilson Jr., et al.	61.00
12	7	2.1	Ritchie	Union	Michael W. Elder	46.20
13	35	39.0	Ritchie	Clay	Chester D. Riddle, et al.	49.50
14	7	17.0	Ritchie	Union	Max D. & Laura B. Dodd	1.00
15	35	40.0	Ritchie	Clay	Max D. & Laura B. Dodd	211.60
16	7	2.0	Ritchie	Union	Michael W. Elder	66.00
17	7	1.0	Ritchie	Union	Randall K. Woods	55.20
18	35	39.1	Ritchie	Clay	Chester D. Riddle, et al.	47.50
19	35	38.0	Ritchie	Clay	James L. Crouse, et al.	50.00
20	35	39.2	Ritchie	Clay	Howard E. Todd	22.50
21	35	31.0	Ritchie	Clay	Max D. & Laura B. Dodd	93.33
22	35	30.0	Ritchie	Clay	Hothem Family Properties LP	38.75
23	35	29.0	Ritchie	Clay	James L. Crouse, et al.	38.50
24	35	14.0	Ritchie	Clay	Earl Wilson Jr., et al.	293.36



As-Drilled Well Information:
WV 515966 coordinates are
NAD 27 N: 262,511.67 E: 1,578,950.12
NAD 83 UTM N: 4,340,221.89 E: 501,223.44
WV 515966 Landing Point coordinates are
NAD 27 N: 263,227.18 E: 1,579,784.95
NAD 83 UTM N: 4,340,444.12 E: 501,474.13
WV 515966 Bottom Hole coordinates are
NAD 27 N: 269,272.65 E: 1,578,405.70
NAD 83 UTM N: 4,342,278.82 E: 501,023.19
West Virginia Coordinate system of 1927 (North Zone).
Geographic coordinates are NAD27.
UTM coordinates are NAD83, Zone 17, Meters.
Plat orientation, corner and well ties are based upon the grid north meridian.
Well location references are based upon the grid north meridian.



- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route



Lease No.	Name	Acres
919993	Ian David Wilson, et al.	63
1006580	Eagle Ridge L.P., et al.	49.5
1006581	Eagle Ridge L.P., et al.	47.5
1006560	E. Howard Todd	22.5
919989	Sandra Kay Reed, et al.	38

ALLEGHENY SURVEYS, INC.

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 the regulations issued and prescribed by the Department of Environmental Protection.

Dwayne A. Wall
P.S. 2089SU

DWAYNE A. WALL LICENSED No. 2089 SU STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

SEAL

FILE NO: 243-14
DRAWING NO: 243-14 Pullman 96 H9.dwg
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: September 7 20 17
OPERATOR'S WELL NO. 515966

API WELL NO
47 - 85 - 10289
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION : ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: As-Built 1182.6' WATERSHED Goose Run of Rockcamp Run QUADRANGLE: Pullman
DISTRICT: Union COUNTY: Ritchie
SURFACE OWNER: James H. & Wilma J. Wilson ACREAGE: 40.089
ROYALTY OWNER: Laurie Ann Haddox, et al LEASE NO: 919995 ACREAGE: 360
PROPOSED WORK: ☒ DRILL ☐ CONVERT ☐ DRILL DEEPER ☒ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☐ PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6,376

WELL OPERATOR: EQT Production Company
ADDRESS: PO Box 280 / 115 Professional Place
Bridgeport, WV 26330

DESIGNATED AGENT: Rex C. Ray
ADDRESS: PO Box 280 / 115 Professional Place
Bridgeport, WV 26330