

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

API 47-103-03165 County WETZEL District GRANT  
Quad BIG RUN Pad Name BIG360 Field/Pool Name N/A  
Farm name COASTAL FOREST RESOURCES d/b/a COASTAL TIMBERLANDS COMPANY Well Number 515112  
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 4,375,973.63 Easting 532,956.32  
Landing Point of Curve Northing 4,376,012.10 Easting 533,469.83  
Bottom Hole Northing 4,377,543.03 Easting 533,074.11

Elevation (ft) 999' 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)

Synthetic Base Mud 13.4 ppg, barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, 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 11/30/2016 Date drilling commenced 5/30/2017 Date drilling ceased 9/29/2017  
Date completion activities began 3/5/2018 Date completion activities ceased 3/17/2018  
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 291,353 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1972 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 280,440,661,763 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by: 

Reviewed by: DmH

API 47-103 - 03165 Farm name COASTAL FOREST RESOURCES dba COASTAL TIMBERLANDS COMPANY Well number 515112

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"	863'	NEW	J-55	124'	Y
Coal							
Intermediate 1	12 3/8"	9 5/8"	2479'	NEW	A-500	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 1/2"	5 1/2"	13388'	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	49	15.6	1.18	57.8	0	8
Surface	CLASS A	850	15.6	1.20	1020	0	8
Coal							
Intermediate 1	CLASS A / CLASS A	676 / 212	15.6 / 15.6	1.18 / 1.20	1052	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H / CLASS H	233 / 680	15.2 / 15.6	1.25 / 2.06	1692	6700'	72+
Tubing							

Drillers TD (ft) 13,393 Loggers TD (ft) N/A  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

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Kick off depth (ft) 4410'

WV Department of Environmental Protection

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

Well cored  Yes  No  Conventional  Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_  
 CONDUCTOR: NONE  
 SURFACE: 3 CENTRALIZERS @ JOINTS 1,10,20  
 INTERMEDIATE: 6 CENTRALIZERS PLACED EVERY 500'  
 PRODUCTION: 217 Spiral body composite centralizers placed every joint from 13388' to 4301' MD.

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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Drilling Contractor Savanna Drilling (Rig 803)  
Address 125 Industry Road City Waynesburg State PA Zip 15370

Logging Company Phoenix Technology Services  
Address 1805 Brittmoore Road City Houston State TX Zip 77043

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**Final Formations Well #515112 API #47-103-03165**

Formation Name	Drill Top MD (ftKB)	Drill Top (TVD) (ftKB)	Drill Btm MD (ftKB)	Drill Btm (TVD) (ftKB)
SAND / SHALE	1	1	280	280
WASHINGTON COAL	280	280	282	282
SAND / SHALE	282	282	440	440
COAL	440	440	444	444
SAND / SHALE	444	444	661	661
SEWICKLEY COAL	661	661	662	662
SAND / SHALE	662	662	763	763
PITTSBURGH COAL	763	763	767	767
SAND / SHALE	767	767	1,792	1,792
MAXTON	1,792	1,792	1,809	1,809
SAND / SHALE	1,809	1,809	1,943	1,943
BIG LIME	1,943	1,943	2,082	2,082
SAND / SHALE	2,082	2,082	2,105	2,105
BIG INJUN	2,105	2,105	2,206	2,206
SAND / SHALE	2,206	2,206	2,372	2,372
WEIR	2,372	2,372	2,441	2,441
SAND / SHALE	2,441	2,441	2,523	2,523
GANTZ	2,523	2,523	2,558	2,558
SAND / SHALE	2,558	2,558	2,628	2,628
FIFTY FOOT	2,628	2,628	2,656	2,656
SAND / SHALE	2,656	2,656	2,784	2,783
THIRTY FOOT	2,784	2,783	2,798	2,797
SAND / SHALE	2,798	2,797	2,800	2,799
GORDON	2,800	2,799	2,846	2,845
SAND / SHALE	2,846	2,845	2,886	2,884
FORTH SAND	2,886	2,884	2,897	2,895
SAND / SHALE	2,897	2,895	3,018	3,015
BAYARD	3,018	3,015	3,043	3,040
SAND / SHALE	3,043	3,040	3,466	3,463
WARREN	3,466	3,463	3,523	3,520
SAND / SHALE	3,523	3,520	3,620	3,617
SPEECHLEY	3,620	3,617	3,654	3,651
SAND / SHALE	3,654	3,651	3,973	3,970
BALLTOWN A	3,973	3,970	4,339	4,336
SAND / SHALE	4,339	4,336	4,461	4,458
RILEY	4,461	4,458	4,500	4,497
BENSON	5,116	5,061	5,168	5,101
SAND / SHALE	5,168	5,101	5,456	5,316
ALEXANDER	5,456	5,316	5,495	5,344
ELKS	5,495	5,344	7,310	6,708
SONYEA	7,310	6,708	7,475	6,836
MIDDLESEX	7,475	6,836	7,570	6,904
GENESEE	7,570	6,904	7,692	6,978
GENESEO	7,692	6,978	7,752	7,009
TULLY	7,752	7,009	8,027	7,110
HAMILTON	8,027	7,110	8,062	7,118
MARCELLUS	8,062	7,118	13,393	7,090

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Where energy meets innovation.

## **EQT PRODUCTION**

Wetzel County, WV

BIG 360

Well #515112 -MRC - Slot 515112

API#47-103-03165

Main

Design: 515112 As Drilled

## **Standard Survey Report**

27 September, 2017

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**PHOENIX**  
TECHNOLOGY SERVICES



<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

<b>Project</b>	Wetzel County, WV		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		

<b>Site</b>	BIG 360				
<b>Site Position:</b>		<b>Northing:</b>	378,106.49 usft	<b>Latitude:</b>	39° 31' 57.892 N
<b>From:</b>	Map	<b>Easting:</b>	1,684,996.84 usft	<b>Longitude:</b>	80° 37' 0.648 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.71 °

<b>Well</b>	Well #515112 -MRC - Slot 515112					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	378,090.76 usft	<b>Latitude:</b>	39° 31' 57.742 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,685,039.00 usft	<b>Longitude:</b>	80° 37' 0.107 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	999.0 usft

<b>Wellbore</b>	Main				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	9/20/2017	-8.20	66.87	52,307

<b>Design</b>	515112 As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0		

<b>Survey Program</b>	<b>Date</b>	9/27/2017			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
110.0	2,390.0	Gyrodata Gyro (Main)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
2,527.0	5,958.0	SDI Nudge/Air Curve (Main)	SDI MWD	SDI MWD - Standard ver 1.0.1	
6,033.0	13,393.0	Phoenix MWD Surveys (Main)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
110.0	0.23	284.56	110.0	0.1	-0.2	0.0	0.21	0.21	0.00	
135.0	0.16	298.61	135.0	0.1	-0.3	0.1	0.34	-0.28	56.20	
160.0	0.16	316.70	160.0	0.1	-0.3	0.1	0.20	0.00	72.36	
185.0	0.07	333.49	185.0	0.2	-0.4	0.1	0.38	-0.36	67.16	
210.0	0.14	314.16	210.0	0.2	-0.4	0.2	0.31	0.28	-77.32	
235.0	0.16	332.22	235.0	0.3	-0.4	0.2	0.20	0.08	72.24	
260.0	0.22	338.64	260.0	0.3	-0.5	0.3	0.25	0.24	25.68	
285.0	0.12	302.51	285.0	0.4	-0.5	0.3	0.57	-0.40	-144.52	

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Phoenix Technology Services LP  
Survey Report



<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
310.0	0.16	294.02	310.0	0.4	-0.6	0.4	0.18	0.16	-33.96
335.0	0.23	283.38	335.0	0.4	-0.7	0.4	0.31	0.28	-42.56
360.0	0.21	292.17	360.0	0.5	-0.7	0.4	0.16	-0.08	35.16
385.0	0.18	327.18	385.0	0.5	-0.8	0.4	0.48	-0.12	140.04
410.0	0.20	28.76	410.0	0.6	-0.8	0.5	0.78	0.08	246.32
435.0	0.34	53.33	435.0	0.7	-0.7	0.6	0.71	0.56	98.28
460.0	0.36	74.53	460.0	0.7	-0.6	0.7	0.52	0.08	84.80
485.0	0.50	82.36	485.0	0.8	-0.4	0.7	0.61	0.56	31.32
510.0	0.42	84.92	510.0	0.8	-0.2	0.8	0.33	-0.32	10.24
535.0	0.34	86.32	535.0	0.8	0.0	0.8	0.32	-0.32	5.60
560.0	0.34	95.26	560.0	0.8	0.1	0.8	0.21	0.00	35.76
585.0	0.31	107.05	585.0	0.8	0.2	0.8	0.29	-0.12	47.16
610.0	0.28	128.41	610.0	0.7	0.4	0.8	0.45	-0.12	85.44
635.0	0.19	107.36	635.0	0.7	0.4	0.7	0.49	-0.36	-84.20
660.0	0.09	108.35	660.0	0.7	0.5	0.7	0.40	-0.40	3.96
685.0	0.04	170.51	685.0	0.6	0.5	0.7	0.32	-0.20	248.64
710.0	0.04	301.00	710.0	0.6	0.5	0.7	0.29	0.00	521.96
735.0	0.05	239.35	735.0	0.6	0.5	0.7	0.19	0.04	-246.60
760.0	0.02	198.19	760.0	0.6	0.5	0.7	0.15	-0.12	-164.64
785.0	0.04	205.38	785.0	0.6	0.5	0.7	0.08	0.08	28.76
810.0	0.13	259.58	810.0	0.6	0.5	0.6	0.45	0.36	216.80
835.0	0.10	253.47	835.0	0.6	0.4	0.6	0.13	-0.12	-24.44
860.0	0.08	239.69	860.0	0.6	0.4	0.6	0.12	-0.08	-55.12
885.0	0.10	161.58	885.0	0.5	0.4	0.6	0.46	0.08	-312.44
910.0	0.10	167.21	910.0	0.5	0.4	0.5	0.04	0.00	22.52
935.0	0.02	208.14	935.0	0.5	0.4	0.5	0.34	-0.32	163.72
960.0	0.07	145.13	960.0	0.5	0.4	0.5	0.25	0.20	-252.04
985.0	0.09	130.55	985.0	0.4	0.4	0.5	0.11	0.08	-58.32
1,010.0	0.09	80.90	1,010.0	0.4	0.4	0.5	0.30	0.00	-198.60
1,035.0	0.03	156.91	1,035.0	0.4	0.5	0.5	0.35	-0.24	304.04
1,060.0	0.10	215.46	1,060.0	0.4	0.4	0.4	0.35	0.28	234.20
1,085.0	0.03	260.18	1,085.0	0.4	0.4	0.4	0.33	-0.28	178.88
1,110.0	0.18	320.40	1,110.0	0.4	0.4	0.4	0.67	0.60	240.88
1,135.0	0.24	320.04	1,135.0	0.5	0.3	0.5	0.24	0.24	-1.44
1,160.0	0.30	333.61	1,160.0	0.6	0.3	0.6	0.35	0.24	54.28
1,185.0	0.25	323.18	1,185.0	0.7	0.2	0.7	0.28	-0.20	-41.72
1,210.0	0.33	317.89	1,210.0	0.8	0.1	0.8	0.34	0.32	-21.16
1,235.0	0.30	314.87	1,235.0	0.9	0.0	0.9	0.14	-0.12	-12.08
1,260.0	0.29	314.46	1,260.0	1.0	-0.1	1.0	0.04	-0.04	-1.64
1,285.0	0.34	314.70	1,285.0	1.1	-0.2	1.0	0.20	0.20	0.96
1,310.0	0.37	316.48	1,310.0	1.2	-0.3	1.1	0.13	0.12	7.12
1,335.0	0.36	316.31	1,335.0	1.3	-0.4	1.3	0.04	-0.04	-0.68
1,360.0	0.35	324.75	1,360.0	1.4	-0.5	1.4	0.21	-0.04	33.76

WV Department  
Environmental Protection



Phoenix Technology Services LP  
Survey Report



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<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
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<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,385.0	0.34	327.79	1,385.0	1.5	-0.6	1.5	0.08	-0.04	12.16	
1,410.0	0.29	326.16	1,410.0	1.7	-0.6	1.6	0.20	-0.20	-6.52	
1,435.0	0.34	314.78	1,435.0	1.8	-0.7	1.7	0.32	0.20	-45.52	
1,460.0	0.31	320.48	1,460.0	1.9	-0.8	1.8	0.18	-0.12	22.80	
1,485.0	0.25	329.24	1,485.0	2.0	-0.9	1.9	0.29	-0.24	35.04	
1,510.0	0.29	337.45	1,510.0	2.1	-0.9	2.0	0.22	0.16	32.84	
1,535.0	0.29	340.55	1,535.0	2.2	-1.0	2.1	0.06	0.00	12.40	
1,560.0	0.23	336.50	1,560.0	2.3	-1.0	2.2	0.25	-0.24	-16.20	
1,585.0	0.17	6.72	1,585.0	2.4	-1.0	2.3	0.48	-0.24	120.88	
1,610.0	0.14	28.54	1,610.0	2.4	-1.0	2.3	0.26	-0.12	87.28	
1,635.0	0.12	11.59	1,635.0	2.5	-1.0	2.4	0.17	-0.08	-67.80	
1,660.0	0.11	349.05	1,660.0	2.5	-1.0	2.4	0.18	-0.04	-90.16	
1,685.0	0.10	22.45	1,685.0	2.6	-1.0	2.5	0.24	-0.04	133.60	
1,710.0	0.09	50.87	1,710.0	2.6	-1.0	2.5	0.19	-0.04	113.68	
1,735.0	0.07	348.10	1,735.0	2.6	-1.0	2.5	0.34	-0.08	-251.08	
1,760.0	0.13	297.56	1,760.0	2.7	-1.0	2.6	0.40	0.24	-202.16	
1,785.0	0.13	306.06	1,785.0	2.7	-1.0	2.6	0.08	0.00	34.00	
1,810.0	0.11	336.44	1,810.0	2.7	-1.1	2.6	0.26	-0.08	121.52	
1,835.0	0.10	332.33	1,835.0	2.8	-1.1	2.7	0.05	-0.04	-16.44	
1,860.0	0.05	324.83	1,860.0	2.8	-1.1	2.7	0.20	-0.20	-30.00	
1,885.0	0.05	62.60	1,885.0	2.8	-1.1	2.7	0.30	0.00	391.08	
1,910.0	0.16	266.66	1,910.0	2.8	-1.1	2.7	0.83	0.44	-623.76	
1,935.0	0.11	246.35	1,935.0	2.8	-1.2	2.7	0.27	-0.20	-81.24	
1,960.0	0.13	264.92	1,960.0	2.8	-1.2	2.7	0.17	0.08	74.28	
1,985.0	0.14	230.59	1,985.0	2.8	-1.3	2.6	0.32	0.04	-137.32	
2,010.0	0.12	248.39	2,010.0	2.7	-1.3	2.6	0.18	-0.08	71.20	
2,035.0	0.13	289.82	2,035.0	2.7	-1.4	2.6	0.36	0.04	165.72	
2,060.0	0.18	288.97	2,060.0	2.8	-1.4	2.6	0.20	0.20	-3.40	
2,085.0	0.15	266.64	2,085.0	2.8	-1.5	2.6	0.28	-0.12	-89.32	
2,110.0	0.12	270.43	2,110.0	2.8	-1.6	2.6	0.13	-0.12	15.16	
2,135.0	0.13	283.31	2,135.0	2.8	-1.6	2.6	0.12	0.04	51.52	
2,160.0	0.35	288.88	2,160.0	2.8	-1.7	2.6	0.88	0.88	22.28	
2,185.0	0.34	305.55	2,185.0	2.9	-1.9	2.7	0.40	-0.04	66.68	
2,210.0	0.29	289.81	2,210.0	2.9	-2.0	2.8	0.40	-0.20	-62.96	
2,235.0	0.40	285.19	2,235.0	3.0	-2.1	2.8	0.45	0.44	-18.48	
2,260.0	0.37	282.33	2,260.0	3.0	-2.3	2.8	0.14	-0.12	-11.44	
2,285.0	0.35	294.59	2,285.0	3.1	-2.4	2.8	0.32	-0.08	49.04	
2,310.0	0.34	308.90	2,310.0	3.2	-2.6	2.9	0.35	-0.04	57.24	
2,335.0	0.28	307.32	2,335.0	3.2	-2.7	3.0	0.24	-0.24	-6.32	
2,360.0	0.29	308.46	2,360.0	3.3	-2.8	3.1	0.05	0.04	4.56	
2,385.0	0.32	300.77	2,385.0	3.4	-2.9	3.1	0.20	0.12	-30.76	
2,390.0	0.32	303.30	2,390.0	3.4	-2.9	3.1	0.28	0.00	50.60	
2,527.0	0.52	281.05	2,527.0	3.7	-3.1	3.1	0.19	0.15	-16.24	

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Survey Report



<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,570.0	0.47	304.28	2,570.0	3.9	-4.2	3.5	0.48	-0.12	54.02	
2,614.0	1.16	27.02	2,614.0	4.4	-4.1	4.0	2.72	1.57	188.05	
2,657.0	2.88	47.63	2,656.9	5.5	-3.1	5.2	4.28	4.00	47.93	
2,701.0	5.00	52.82	2,700.8	7.4	-0.8	7.3	4.88	4.82	11.80	
2,745.0	6.97	60.21	2,744.6	9.9	3.1	10.1	4.80	4.48	16.80	
2,789.0	7.73	61.92	2,788.2	12.6	8.0	13.3	1.80	1.73	3.89	
2,832.0	7.72	61.22	2,830.8	15.4	13.1	16.5	0.22	-0.02	-1.63	
2,876.0	8.05	67.76	2,874.4	17.9	18.5	19.6	2.17	0.75	14.86	
2,920.0	8.54	76.99	2,918.0	19.8	24.6	22.0	3.22	1.11	20.98	
2,963.0	7.40	87.78	2,960.6	20.7	30.4	23.4	4.36	-2.65	25.09	
3,006.0	5.95	98.66	3,003.3	20.4	35.4	23.6	4.46	-3.37	25.30	
3,049.0	4.78	110.04	3,046.1	19.5	39.3	23.0	3.67	-2.72	26.47	
3,093.0	2.91	117.42	3,090.0	18.3	42.0	22.1	4.39	-4.25	16.77	
3,136.0	1.73	148.39	3,132.9	17.3	43.3	21.2	3.91	-2.74	72.02	
3,180.0	1.55	170.49	3,176.9	16.1	43.8	20.1	1.48	-0.41	50.23	
3,267.0	0.81	172.22	3,263.9	14.4	44.0	18.4	0.85	-0.85	1.99	
3,355.0	0.73	347.75	3,351.9	14.3	44.0	18.3	1.75	-0.09	199.47	
3,442.0	1.47	352.28	3,438.9	15.9	43.7	19.9	0.86	0.85	5.21	
3,528.0	0.78	343.02	3,524.9	17.6	43.4	21.5	0.83	-0.80	-10.77	
3,614.0	0.27	319.27	3,610.9	18.3	43.1	22.2	0.63	-0.59	-27.62	
3,700.0	0.34	353.06	3,696.9	18.7	43.0	22.6	0.22	0.08	39.29	
3,787.0	0.23	72.29	3,783.9	19.0	43.1	22.9	0.43	-0.13	91.07	
3,874.0	0.53	119.22	3,870.9	18.9	43.6	22.8	0.47	0.34	53.94	
3,960.0	0.41	115.87	3,956.9	18.6	44.2	22.5	0.14	-0.14	-3.90	
4,046.0	0.60	104.27	4,042.9	18.3	44.9	22.4	0.25	0.22	-13.49	
4,174.0	1.00	99.93	4,170.8	18.0	46.7	22.2	0.32	0.31	-3.39	
4,261.0	0.83	104.12	4,257.8	17.7	48.1	22.0	0.21	-0.20	4.82	
4,347.0	0.77	116.92	4,343.8	17.3	49.2	21.7	0.22	-0.07	14.88	
4,391.0	1.11	117.25	4,387.8	16.9	49.8	21.4	0.77	0.77	0.75	
4,435.0	2.55	95.11	4,431.8	16.6	51.2	21.3	3.59	3.27	-50.32	
4,478.0	5.63	86.44	4,474.7	16.7	54.2	21.6	7.29	7.16	-20.16	
4,522.0	8.65	88.95	4,518.3	16.9	59.7	22.3	6.90	6.86	5.70	
4,564.0	10.37	93.49	4,559.8	16.7	66.6	22.8	4.46	4.10	10.81	
4,608.0	12.26	101.25	4,602.9	15.6	75.2	22.4	5.51	4.30	17.64	
4,652.0	13.68	112.14	4,645.8	12.7	84.6	20.4	6.41	3.23	24.75	
4,695.0	15.05	119.14	4,687.4	8.1	94.2	16.7	5.14	3.19	16.28	
4,739.0	17.64	123.28	4,729.7	1.6	104.7	11.2	6.45	5.89	9.41	
4,783.0	20.45	125.51	4,771.3	-6.5	116.5	4.2	6.60	6.39	5.07	
4,826.0	23.32	125.71	4,811.1	-15.8	129.6	-3.9	6.68	6.67	0.47	
4,870.0	25.42	123.84	4,851.2	-26.2	144.5	-12.8	5.08	4.77	-4.25	
4,914.0	28.00	119.67	4,890.5	-36.6	161.3	-21.6	7.24	5.86	-9.48	
4,957.0	28.72	118.62	4,928.4	-46.5	179.2	-29.9	2.04	1.67	-2.44	
5,001.0	30.83	116.69	4,966.6	-56.6	198.5	-38.2	5.27	4.80	-4.39	
5,045.0	33.75	116.28	5,003.8	-67.1	219.5	-46.7	6.65	6.64	-0.93	



Phoenix Technology Services LP  
Survey Report



<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,088.0	36.73	116.68	5,038.9	-78.2	241.8	-55.6	6.95	6.93	0.93
5,132.0	39.62	114.92	5,073.5	-90.0	266.2	-65.2	7.02	6.57	-4.00
5,176.0	42.63	114.77	5,106.6	-102.2	292.5	-74.9	6.84	6.84	-0.34
5,219.0	43.51	113.57	5,138.0	-114.2	319.3	-84.4	2.80	2.05	-2.79
5,263.0	43.14	115.34	5,170.0	-126.7	346.8	-94.3	2.89	-0.84	4.02
5,307.0	41.21	114.76	5,202.6	-139.2	373.5	-104.3	4.47	-4.39	-1.32
5,350.0	40.31	111.92	5,235.2	-150.3	399.3	-113.0	4.79	-2.09	-6.60
5,394.0	40.29	113.46	5,268.8	-161.3	425.5	-121.5	2.26	-0.05	3.50
5,438.0	41.47	111.90	5,302.0	-172.4	452.1	-130.1	3.55	2.68	-3.55
5,481.0	42.66	113.96	5,333.9	-183.6	478.6	-138.9	4.24	2.77	4.79
5,525.0	42.36	113.67	5,366.4	-195.6	505.8	-148.3	0.81	-0.68	-0.66
5,569.0	42.77	112.49	5,398.8	-207.3	533.2	-157.4	2.04	0.93	-2.68
5,612.0	42.50	110.51	5,430.4	-218.0	560.3	-165.6	3.18	-0.63	-4.60
5,656.0	42.23	110.35	5,462.9	-228.3	588.1	-173.3	0.66	-0.61	-0.36
5,700.0	42.40	111.57	5,495.5	-238.9	615.8	-181.3	1.91	0.39	2.77
5,742.0	42.23	109.43	5,526.5	-248.8	642.2	-188.8	3.45	-0.40	-5.10
5,784.0	41.83	109.64	5,557.7	-258.2	668.7	-195.7	1.01	-0.95	0.50
5,828.0	41.45	111.82	5,590.6	-268.6	696.1	-203.5	3.40	-0.86	4.95
5,871.0	41.72	113.50	5,622.8	-279.5	722.4	-212.0	2.67	0.63	3.91
5,915.0	40.89	115.31	5,655.8	-291.5	748.9	-221.5	3.31	-1.89	4.11
5,958.0	40.29	117.93	5,688.5	-304.1	773.9	-231.7	4.20	-1.40	6.09
Tie In									
6,033.0	40.68	114.91	5,745.5	-325.7	817.5	-249.3	2.67	0.52	-4.03
First Phoenix MWD Survey									
6,127.0	44.63	119.88	5,814.7	-355.1	873.9	-273.3	5.52	4.20	5.29
6,221.0	43.98	119.27	5,881.9	-387.5	931.0	-300.3	0.83	-0.69	-0.65
6,316.0	43.76	119.56	5,950.4	-419.8	988.4	-327.3	0.31	-0.23	0.31
6,410.0	43.65	123.09	6,018.4	-453.6	1,043.8	-355.8	2.60	-0.12	3.76
6,504.0	43.14	122.92	6,086.7	-488.8	1,098.0	-385.8	0.56	-0.54	-0.18
6,598.0	42.43	122.44	6,155.7	-523.3	1,151.7	-415.2	0.83	-0.76	-0.51
6,693.0	43.35	118.61	6,225.3	-556.1	1,207.4	-442.8	2.91	0.97	-4.03
6,787.0	44.06	117.50	6,293.3	-586.6	1,264.7	-467.9	1.11	0.76	-1.18
6,819.0	43.97	117.34	6,316.3	-596.8	1,284.5	-476.3	0.45	-0.28	-0.50
6,851.0	43.60	116.51	6,339.4	-606.9	1,304.2	-484.5	2.13	-1.16	-2.59
6,864.0	42.58	115.37	6,348.9	-610.8	1,312.2	-487.6	9.87	-7.84	-8.79
KOP As-Drilled:6864'MD/6348.9'TVD									
6,882.0	41.19	113.71	6,362.3	-615.8	1,323.1	-491.6	9.87	-7.73	-9.21
6,913.0	38.95	109.48	6,386.0	-623.1	1,341.7	-497.2	11.37	-7.23	-13.65
6,945.0	37.71	104.18	6,411.1	-628.9	1,360.7	-501.2	10.98	-3.88	-16.56
6,976.0	37.04	99.97	6,435.7	-632.8	1,379.0	-503.4	8.52	-2.16	-13.58
7,008.0	36.53	96.70	6,461.4	-635.6	1,398.0	-505.6	6.32	-1.59	-10.22
7,039.0	36.11	92.09	6,486.3	-637.0	1,416.3	-507.8	8.91	-1.35	-14.87
7,070.0	34.49	88.17	6,511.6	-637.0	1,434.2	-502.6	8.98	-5.23	-12.65
7,102.0	33.72	82.91	6,538.2	-635.7	1,452.1	-499.6	9.52	-2.41	-16.44

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<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,133.0	33.71	79.38	6,563.9	-633.0	1,469.1	-495.4	6.32	-0.03	-11.39
7,165.0	33.75	75.59	6,590.6	-629.2	1,486.4	-490.0	6.58	0.13	-11.84
7,196.0	34.58	70.96	6,616.2	-624.1	1,503.1	-483.4	8.80	2.68	-14.94
7,228.0	35.26	67.42	6,642.5	-617.6	1,520.2	-475.4	6.68	2.13	-11.06
7,259.0	36.09	64.75	6,667.6	-610.3	1,536.7	-466.6	5.69	2.68	-8.61
7,290.0	37.57	61.25	6,692.5	-601.9	1,553.2	-456.6	8.28	4.77	-11.29
7,322.0	38.27	56.52	6,717.7	-591.7	1,570.1	-445.0	9.34	2.19	-14.78
7,353.0	38.32	51.47	6,742.0	-580.4	1,585.6	-432.3	10.09	0.16	-16.29
7,385.0	38.50	44.74	6,767.1	-567.2	1,600.4	-417.7	13.07	0.56	-21.03
7,416.0	39.15	41.12	6,791.3	-552.9	1,613.6	-402.4	7.61	2.10	-11.68
7,448.0	40.75	37.40	6,815.8	-537.0	1,626.6	-385.3	8.98	5.00	-11.63
7,479.0	42.07	35.45	6,839.1	-520.5	1,638.8	-367.8	5.95	4.26	-6.29
7,511.0	44.10	33.17	6,862.4	-502.5	1,651.1	-348.7	7.99	6.34	-7.13
7,542.0	45.88	31.20	6,884.4	-483.9	1,662.7	-329.1	7.29	5.74	-6.35
7,574.0	48.16	28.49	6,906.2	-463.6	1,674.4	-307.8	9.44	7.13	-8.47
7,605.0	50.70	25.08	6,926.3	-442.6	1,685.0	-285.9	11.70	8.19	-11.00
7,636.0	53.18	22.40	6,945.4	-420.2	1,694.8	-262.8	10.50	8.00	-8.65
7,668.0	55.09	18.55	6,964.2	-396.0	1,703.9	-237.8	11.43	5.97	-12.03
7,699.0	57.42	15.15	6,981.4	-371.3	1,711.3	-212.5	11.82	7.52	-10.97
7,731.0	58.84	11.24	6,998.3	-344.8	1,717.5	-185.6	11.28	4.44	-12.22
7,762.0	60.71	6.60	7,013.9	-318.4	1,721.7	-158.9	14.27	6.03	-14.97
7,793.0	62.29	4.45	7,028.7	-291.3	1,724.3	-131.7	7.94	5.10	-6.94
7,825.0	63.69	0.88	7,043.3	-262.8	1,725.6	-103.2	10.86	4.38	-11.16
7,856.0	65.82	359.33	7,056.5	-234.8	1,725.6	-75.3	8.23	6.87	-5.00
7,888.0	68.69	356.30	7,068.9	-205.3	1,724.5	-46.0	12.52	8.97	-9.47
7,919.0	70.98	355.59	7,079.5	-176.3	1,722.4	-17.3	7.69	7.39	-2.29
7,951.0	72.95	355.43	7,089.4	-145.9	1,720.1	12.7	6.17	6.16	-0.50
7,982.0	74.41	354.76	7,098.2	-116.3	1,717.5	42.0	5.15	4.71	-2.16
8,014.0	74.79	355.19	7,106.7	-85.6	1,714.8	72.3	1.76	1.19	1.34
8,045.0	77.23	353.97	7,114.2	-55.6	1,712.0	101.9	8.75	7.87	-3.94
8,076.0	79.71	353.03	7,120.3	-25.4	1,708.5	131.6	8.53	8.00	-3.03
8,108.0	82.61	351.42	7,125.3	5.9	1,704.3	162.4	10.34	9.06	-5.03
8,139.0	85.50	349.91	7,128.5	36.3	1,699.3	192.2	10.51	9.32	-4.87
8,171.0	88.08	349.52	7,130.3	67.7	1,693.6	223.0	8.15	8.06	-1.22
8,202.0	90.04	346.59	7,130.8	98.1	1,687.1	252.6	11.37	6.32	-9.45
<b>LP As-Drilled/8202'MD/7130.8'TVD - Cherry Valley Target - Deepest Point @ 8202'MD/7130.8'TVD</b>									
8,297.0	90.27	347.32	7,130.5	190.6	1,665.7	342.8	0.81	0.24	0.77
8,390.0	90.44	348.47	7,129.9	281.5	1,646.2	431.6	1.25	0.18	1.24
8,485.0	90.42	346.60	7,129.2	374.3	1,625.7	522.0	1.97	-0.02	-1.97
8,579.0	90.68	347.76	7,128.3	465.9	1,604.8	611.4	1.26	0.28	1.23
8,673.0	90.84	345.17	7,127.1	557.3	1,582.8	700.4	2.76	0.17	-2.76
8,768.0	90.93	344.25	7,125.6	648.9	1,557.8	789.3	0.97	0.09	-0.97
8,861.0	89.47	344.69	7,125.3	738.5	1,532.9	876.2	1.64	-1.57	0.47

<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,956.0	89.52	344.90	7,126.1	830.2	1,508.0	965.2	0.23	0.05	0.22
9,050.0	90.10	345.93	7,126.4	921.2	1,484.3	1,053.6	1.26	0.62	1.10
9,144.0	90.35	346.02	7,126.1	1,012.4	1,461.5	1,142.4	0.28	0.27	0.10
9,239.0	92.18	345.34	7,124.0	1,104.4	1,438.0	1,231.8	2.05	1.93	-0.72
9,333.0	92.70	345.68	7,120.0	1,195.3	1,414.5	1,320.2	0.66	0.55	0.36
9,428.0	90.44	345.95	7,117.4	1,287.4	1,391.3	1,409.8	2.40	-2.38	0.28
9,522.0	90.70	345.80	7,116.4	1,378.5	1,368.3	1,498.4	0.32	0.28	-0.16
9,617.0	89.21	346.28	7,116.5	1,470.7	1,345.4	1,588.1	1.65	-1.57	0.51
9,711.0	88.73	347.21	7,118.2	1,562.2	1,323.9	1,677.2	1.11	-0.51	0.99
9,806.0	89.98	347.86	7,119.3	1,655.0	1,303.4	1,767.7	1.48	1.32	0.68
9,900.0	90.25	347.55	7,119.1	1,746.8	1,283.3	1,857.3	0.44	0.29	-0.33
9,994.0	90.87	347.48	7,118.2	1,838.6	1,263.0	1,946.8	0.66	0.66	-0.07
10,088.0	91.07	346.41	7,116.6	1,930.1	1,241.8	2,036.1	1.16	0.21	-1.14
10,183.0	90.96	347.20	7,114.9	2,022.6	1,220.1	2,126.1	0.84	-0.12	0.83
10,277.0	91.12	346.64	7,113.2	2,114.2	1,198.8	2,215.4	0.62	0.17	-0.60
10,371.0	90.01	346.69	7,112.2	2,205.6	1,177.2	2,304.4	1.18	-1.18	0.05
10,466.0	89.81	346.46	7,112.4	2,298.0	1,155.1	2,394.4	0.32	-0.21	-0.24
10,560.0	89.75	346.66	7,112.8	2,389.5	1,133.3	2,483.5	0.22	-0.06	0.21
10,655.0	89.76	347.26	7,113.2	2,482.0	1,111.8	2,573.6	0.63	0.01	0.63
10,749.0	91.33	346.79	7,112.3	2,573.6	1,090.7	2,662.9	1.74	1.67	-0.50
10,843.0	91.34	347.10	7,110.1	2,665.1	1,069.5	2,752.1	0.33	0.01	0.33
10,938.0	91.41	348.28	7,107.8	2,757.9	1,049.2	2,842.7	1.24	0.07	1.24
11,032.0	91.07	345.66	7,105.8	2,849.5	1,028.1	2,931.9	2.81	-0.36	-2.79
11,126.0	91.04	345.70	7,104.0	2,940.5	1,004.8	3,020.4	0.05	-0.03	0.04
11,220.0	91.02	344.98	7,102.3	3,031.5	981.0	3,108.8	0.77	-0.02	-0.77
11,314.0	89.29	344.46	7,102.1	3,122.1	956.3	3,196.8	1.92	-1.84	-0.55
11,409.0	90.90	345.66	7,101.9	3,213.9	931.8	3,285.9	2.11	1.69	1.26
11,503.0	91.05	345.40	7,100.3	3,304.9	908.3	3,374.4	0.32	0.16	-0.28
11,597.0	91.04	347.24	7,098.6	3,396.2	886.0	3,463.3	1.96	-0.01	1.96
11,691.0	89.79	347.28	7,097.9	3,487.9	865.3	3,552.7	1.33	-1.33	0.04
11,786.0	90.01	346.33	7,098.1	3,580.4	843.6	3,642.8	1.03	0.23	-1.00
11,880.0	90.67	345.79	7,097.5	3,671.6	821.0	3,731.5	0.91	0.70	-0.57
11,974.0	89.95	347.74	7,097.0	3,763.1	799.5	3,820.7	2.21	-0.77	2.07
12,068.0	90.04	346.03	7,097.0	3,854.7	778.1	3,909.9	1.82	0.10	-1.82
12,162.0	89.53	347.94	7,097.4	3,946.3	757.0	3,999.1	2.10	-0.54	2.03
12,257.0	89.39	348.30	7,098.3	4,039.2	737.4	4,089.9	0.41	-0.15	0.38
12,352.0	89.67	348.22	7,099.1	4,132.2	718.1	4,180.7	0.31	0.29	-0.08
12,446.0	91.75	346.92	7,097.9	4,224.0	697.9	4,270.3	2.61	2.21	-1.38
12,541.0	92.18	347.95	7,094.7	4,316.7	677.2	4,360.6	1.17	0.45	1.08
12,635.0	90.25	347.62	7,092.7	4,408.5	657.3	4,450.3	2.08	-2.05	-0.35
12,729.0	90.36	346.89	7,092.2	4,500.2	636.6	4,539.7	0.79	0.12	-0.78
12,824.0	90.48	346.97	7,091.5	4,592.8	615.1	4,629.8	0.15	0.13	0.08
12,918.0	89.47	345.97	7,091.5	4,684.1	593.1	4,718.8	1.51	-1.07	-1.06

<b>Company:</b>	EQT PRODUCTION	<b>Local Co-ordinate Reference:</b>	Well Well #515112 -MRC - Slot 515112
<b>Project:</b>	Wetzel County, WV	<b>TVD Reference:</b>	KB @23' @ 1022.0usft
<b>Site:</b>	BIG 360	<b>MD Reference:</b>	KB @23' @ 1022.0usft
<b>Well:</b>	Well #515112 -MRC	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Main	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	515112 As Drilled	<b>Database:</b>	Compass 5000 NER

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,013.0	89.81	344.91	7,092.1	4,776.1	569.2	4,808.2	1.17	0.36	-1.12
13,107.0	89.99	342.89	7,092.3	4,866.4	543.2	4,895.7	2.16	0.19	-2.15
13,201.0	90.61	346.99	7,091.8	4,957.1	518.7	4,983.8	4.41	0.66	4.36
13,295.0	90.62	345.98	7,090.8	5,048.5	496.8	5,072.8	1.07	0.01	-1.07
13,316.0	90.71	345.45	7,090.5	5,068.9	491.6	5,092.6	2.56	0.43	-2.52
<b>Final Phoenix MWD Survey</b>									
13,393.0	90.71	345.45	7,089.6	5,143.4	472.3	5,165.0	0.00	0.00	0.00
<b>PTB/As-Drilled TD:13393'MD/7089.6'TVD</b>									

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
515112-As-Drilled KOP - hit/miss target - Shape - Point	0.00	360.00	6,348.9	-610.8	1,312.2	377,480.00	1,686,351.20	39° 31' 51.867 N	80° 36' 43.264 W
515112-As-Drilled LP - actual wellpath hits target center - Point	0.00	360.00	7,130.8	98.1	1,687.1	378,188.83	1,686,726.13	39° 31' 58.918 N	80° 36' 38.591 W

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,958.0	5,688.5	-304.1	773.9	Tie In
6,033.0	5,745.5	-325.7	817.5	First Phoenix MWD Survey
6,864.0	6,348.9	-610.8	1,312.2	KOP As-Drilled:6864'MD/6348.9'TVD
8,202.0	7,130.8	98.1	1,687.1	LP As-Drilled/8202'MD/7130.8'TVD
8,202.0	7,130.8	98.1	1,687.1	Cherry Valley Target
8,202.0	7,130.8	98.1	1,687.1	Deepest Point @ 8202'MD/7130.8'TVD
13,316.0	7,090.5	5,068.9	491.6	Final Phoenix MWD Survey
13,393.0	7,089.6	5,143.4	472.3	PTB/As-Drilled TD:13393'MD/7089.6'TVD

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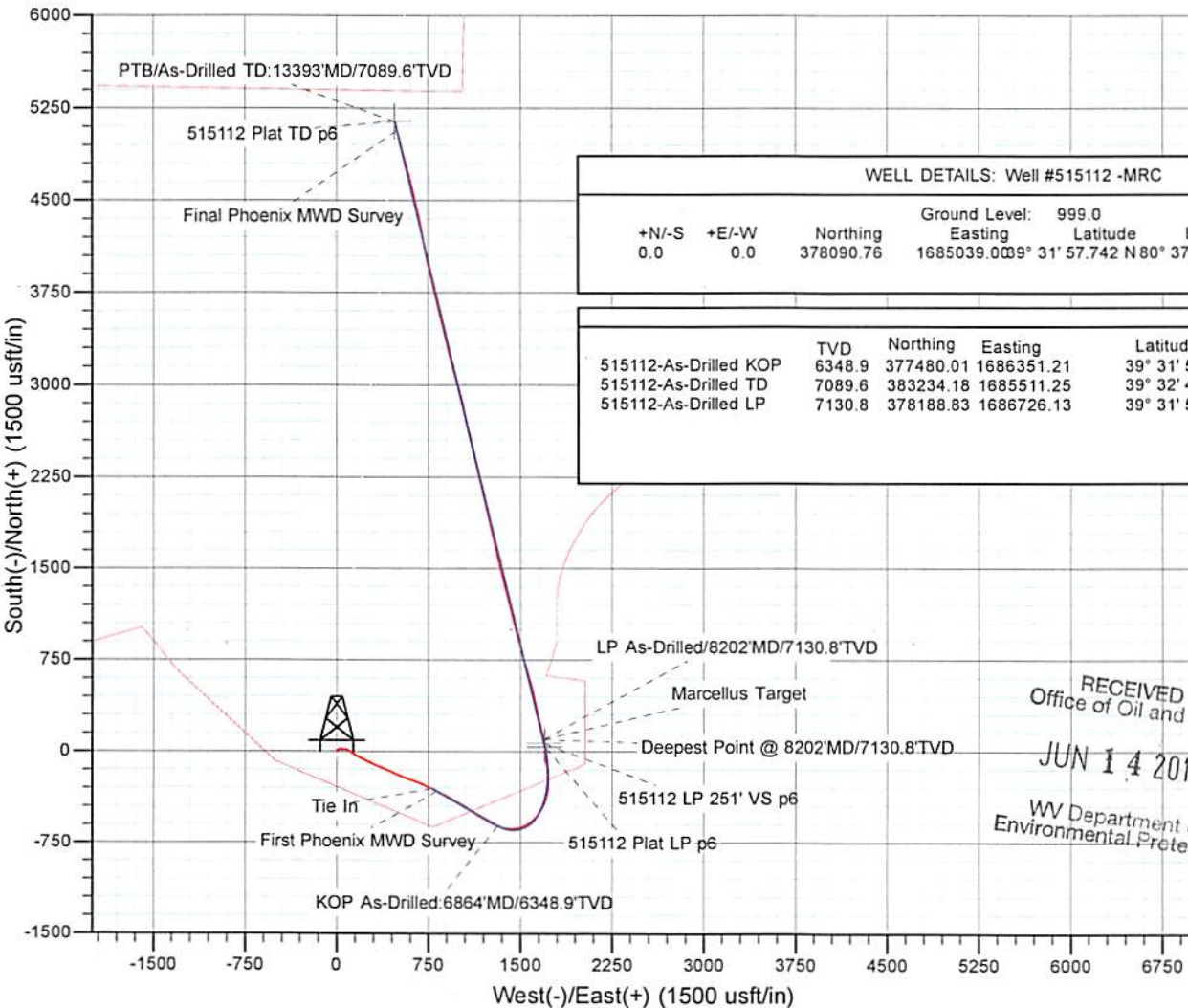
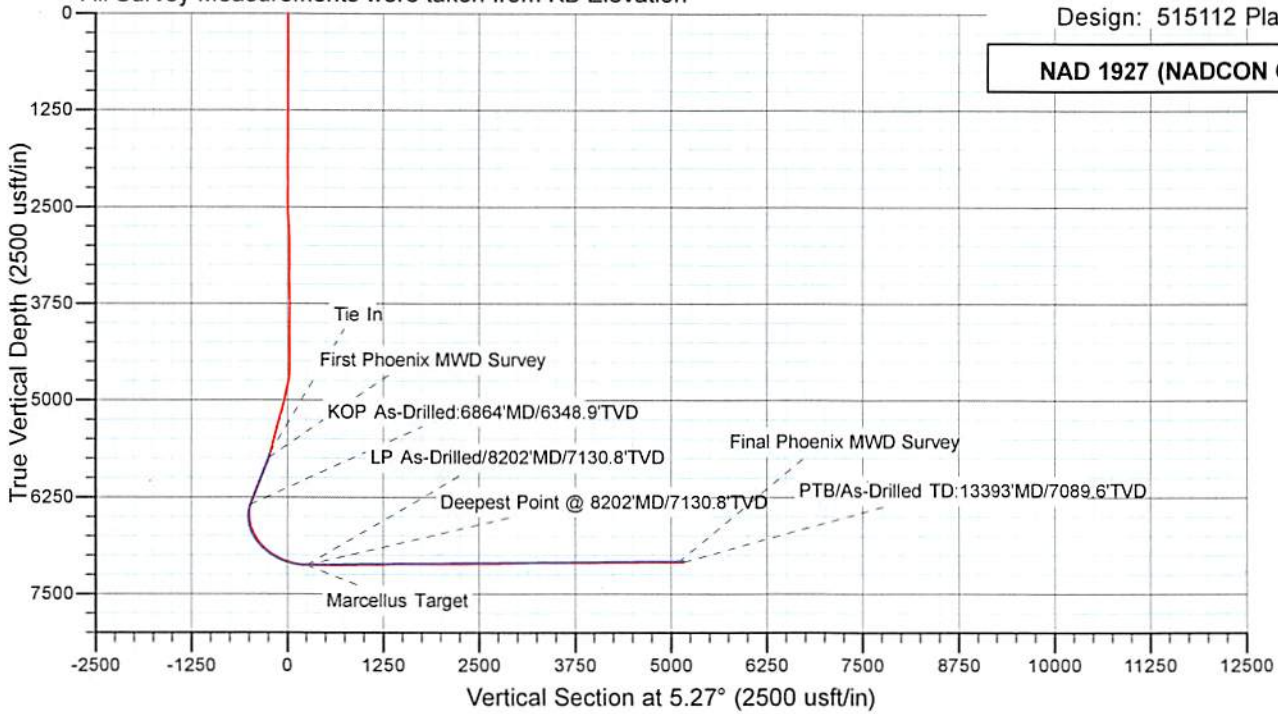
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KB Elevation=1319 FT  
Ground Elevation=1296 FT

Project: Wetzel County, WV  
Site: BIG 360  
Well: Well #515112 -MRC  
Wellbore: Main  
Design: 515112 Plan 7 NP

All Survey Measurements were taken from KB Elevation



WELL DETAILS: Well #515112 -MRC							
+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.0	0.0	378090.76	999.0	1685039.00	31° 57.742' N	80° 37' 0.107" W	515112

	TVD	Northing	Easting	Latitude	Longitude
515112-As-Drilled KOP	6348.9	377480.01	1686351.21	39° 31' 51.867" N	80° 36' 43.264" W
515112-As-Drilled TD	7089.6	383234.18	1685511.25	39° 32' 48.633" N	80° 36' 54.895" W
515112-As-Drilled LP	7130.8	378188.83	1686726.13	39° 31' 58.918" N	80° 36' 38.591" W

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**515112 47-103-03165-0000 - Perforations**

<b>Stage Number</b>	<b>Perforation Date</b>	<b>Top Perf Depth (ftKB)</b>	<b>Bottom Perf Depth (ftKB)</b>	<b>Number of Shots</b>	<b>Formation</b>
<b>Initiation Sleeve</b>	11/2/2017	13,361	13,388	10	Marcellus
1	3/5/2018	13,201	13,323	32	Marcellus
2	3/5/2018	13,001	13,163	40	Marcellus
3	3/6/2018	12,801	12,963	40	Marcellus
4	3/6/2018	12,601	12,763	40	Marcellus
5	3/6/2018	12,401	12,563	40	Marcellus
6	3/7/2018	12,201	12,363	40	Marcellus
7	3/8/2018	12,001	12,163	40	Marcellus
8	3/8/2018	11,801	11,963	40	Marcellus
9	3/9/2018	11,601	11,763	40	Marcellus
10	3/9/2018	11,401	11,563	40	Marcellus
11	3/10/2018	11,201	11,363	40	Marcellus
12	3/10/2018	11,001	11,163	40	Marcellus
13	3/11/2018	10,801	10,963	40	Marcellus
14	3/11/2018	10,601	10,763	40	Marcellus
15	3/11/2018	10,401	10,563	40	Marcellus
16	3/12/2018	10,201	10,363	40	Marcellus
17	3/12/2018	10,001	10,163	40	Marcellus
18	3/13/2018	9,801	9,963	40	Marcellus
19	3/13/2018	9,601	9,763	40	Marcellus
20	3/14/2018	9,401	9,563	40	Marcellus
21	3/14/2018	9,201	9,363	40	Marcellus
22	3/14/2018	9,001	9,163	40	Marcellus
23	3/15/2018	8,801	8,963	40	Marcellus
24	3/15/2018	8,601	8,659	24	Marcellus
24	3/16/2018	8,586	8,763	40	Marcellus
25	3/16/2018	8,386	8,548	32	Marcellus
26	3/16/2018	8,186	8,348	40	Marcellus
27	3/17/2018	7,986	8,148	40	Marcellus

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**515112 47-103-03165-0000 - Stimulated Stages**

<b>Stage Number</b>	<b>Stimulation Date</b>	<b>Ave Pump Rate (BPM)</b>	<b>Ave Treatment Pressure (PSI)</b>	<b>Max Breakdown Pressure (PSI)</b>	<b>ISIP (PSI)</b>	<b>Amount of Proppant (lbs)</b>	<b>Amount of Water (bbls)</b>	<b>Amount of Nitrogen/other (units)</b>
1.01	3/5/2018	25	7,853	9,274	0	0	813	0
1	3/5/2018	91	9,194	9,352	4,223	452,100	8,748	0
2	3/5/2018	99	9,159	9,370	4,204	454,200	7,564	0
3	3/6/2018	99	8,865	9,243	4,517	451,100	7,568	0
4	3/6/2018	97	9,191	9,468	4,547	452,500	7,611	0
5	3/7/2018	98	9,053	9,459	4,430	451,800	7,564	0
6	3/8/2018	98	8,878	9,375	4,565	451,500	7,474	0
7	3/8/2018	99	8,972	9,466	4,555	449,800	7,545	0
8	3/8/2018	95	8,931	9,239	4,477	449,700	7,541	0
9	3/9/2018	98	8,909	9,457	4,360	451,800	7,575	0
10	3/9/2018	93	8,999	9,357	4,310	451,700	7,423	0
11	3/10/2018	97	8,959	9,468	4,467	450,900	7,482	0
12	3/10/2018	96	8,878	9,548	4,527	451,800	7,472	0
13	3/11/2018	99	8,626	8,841	4,341	451,300	7,167	0
14	3/11/2018	99	8,671	8,899	4,469	449,800	7,416	0
15	3/12/2018	99	8,604	9,314	4,307	450,600	8,194	0
16	3/12/2018	95	9,025	9,448	4,276	451,100	7,266	0
17	3/13/2018	98	8,290	8,641	4,210	452,800	7,322	0
18	3/13/2018	100	8,451	9,099	4,401	450,400	7,182	0
19	3/14/2018	97	8,330	8,794	4,080	451,300	7,257	0
20	3/14/2018	99	8,378	8,629	4,710	451,500	8,154	0
21	3/14/2018	100	8,362	9,072	4,556	456,500	7,195	0
22	3/15/2018	99	8,279	8,574	4,668	453,800	7,213	0
23	3/15/2018	98	8,744	9,059	4,318	450,100	7,277	0
24	3/16/2018	95	8,123	8,472	4,596	452,800	10,488	0
25	3/16/2018	80	7,310	7,960	4,416	360,400	6,053	0
26	3/17/2018	98	8,245	9,056	4,446	450,100	7,057	0
27	3/17/2018	98	8,216	8,988	4,271	450,500	7,292	0

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/5/2018
Job End Date:	3/17/2018
State:	West Virginia
County:	Wetzel
API Number:	47-103-03165-00-00
Operator Name:	EQT Production
Well Name and Number:	515112
Latitude:	39.53271000
Longitude:	-80.61670000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,090
Total Base Water Volume (gal):	8,606,346
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	Universal	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	85.28694	None
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			

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Hydrochloric Acid (15%)	Universal	Acidizing					
				Listed Below			
LD-2950	Multi Chem	Friction Reducer					
				Listed Below			
MX-5-3886	Multi-Chem	Bacteria Treatment					
				Listed Below			
Sand (Proppant)	Universal	Proppant					
				Listed Below			
MX-8-4543	Multi-Chem	Bacteria Treatment					
				Listed Below			
Scale Hib PE-18	Universal	Scale Inhibitor					
				Listed Below			
Unihib-G	GeoSafe	Acid Corrosion Inhibitor					
				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	14.37113	None
		Calcium Nitrate.4H2O	13477-34-4	100.00000	0.03743	None
		Hydrochloric Acid	7647-01-0	15.00000	0.03093	None
		Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02131	None
		Ethylene Glycol	107-21-1	40.00000	0.00983	None

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			Proprietary Scale Inhibitor	Proprietary	30.00000	0.00737	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00355	None
			Poly(oxy-1,2-ethanediyl) alpha-tridecyl-omega-hydroxy-branched	69011-36-5	5.00000	0.00355	None
			Ethoxylated alcohol	Proprietary	5.00000	0.00355	
			Poly(oxy-1,2-ethanediyl) alpha-tridecyl-omega-hydroxy-branched	69011-36-5	5.00000	0.00355	
			Contains no hazardous substances in concentrations above cut-off values according to the competent authority	Proprietary	60.00000	0.00151	None
			Butyl Diglycol	0000112-34-5	75.00000	0.00013	None
			Butyl Diglycol	0000112-34-5	75.00000	0.00013	
			Alcohols, C10-16, ethoxylated	0068002-97-1	50.00000	0.00009	
			Alcohols, C10-16, ethoxylated	0068002-97-1	50.00000	0.00009	None
			Methanol	0000067-56-1	5.00000	0.00001	None
			Methanol	0000067-56-1	5.00000	0.00001	
			Thiourea	0000062-56-6	1.00000	0.00000	
			Thiourea	0000062-56-6	1.00000	0.00000	None
			Formaldehyde	0000050-00-0	1.00000	0.00000	
			Formaldehyde	0000050-00-0	1.00000	0.00000	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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Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 515112

API: 47 - 103 - 03165

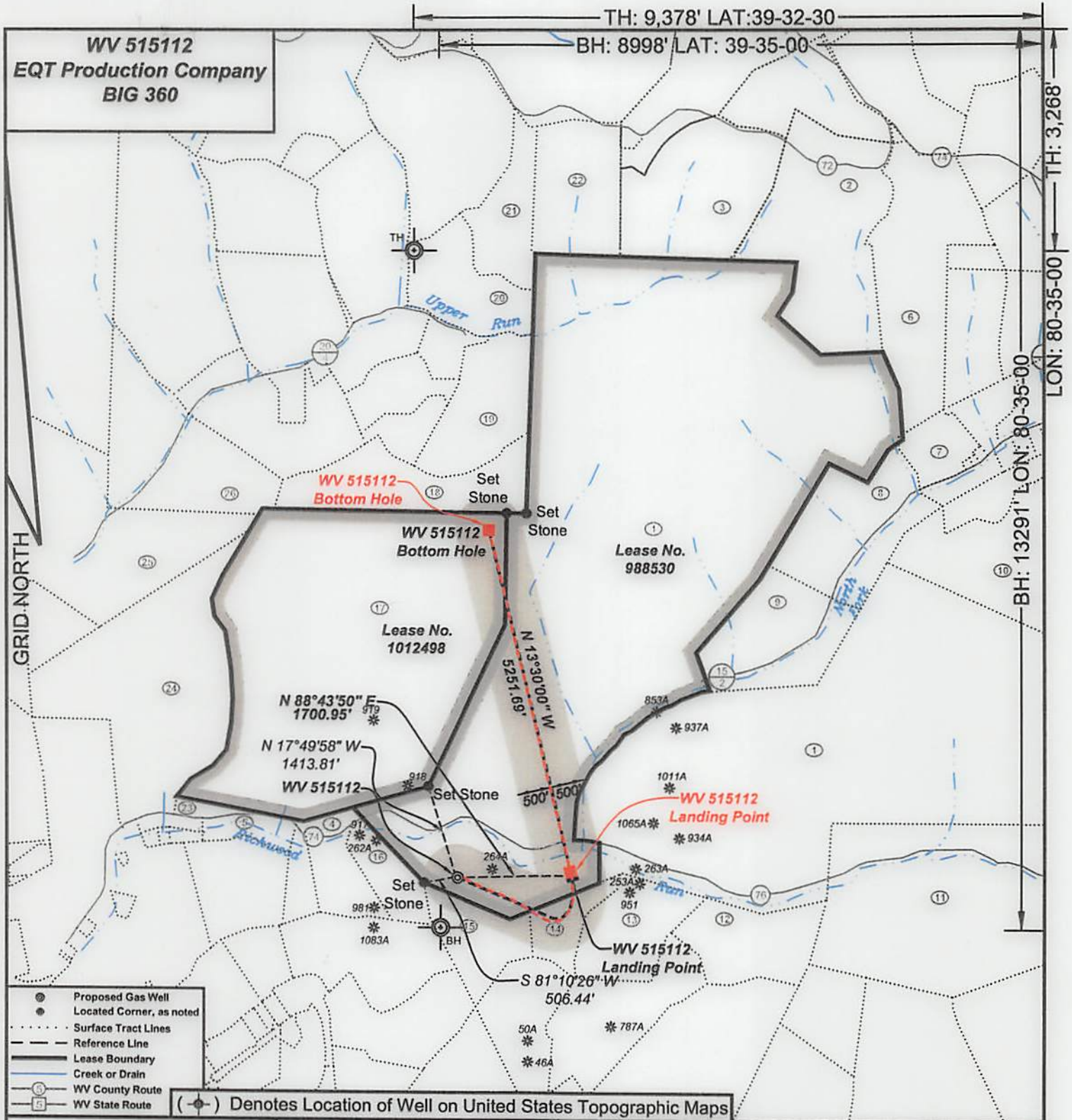
Submission:  Initial  Amended

Notes:

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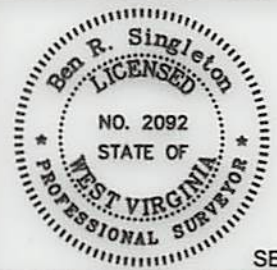
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Environmental Protection



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.

*Ben R. Singleton*  
P.S. 2092



SEAL

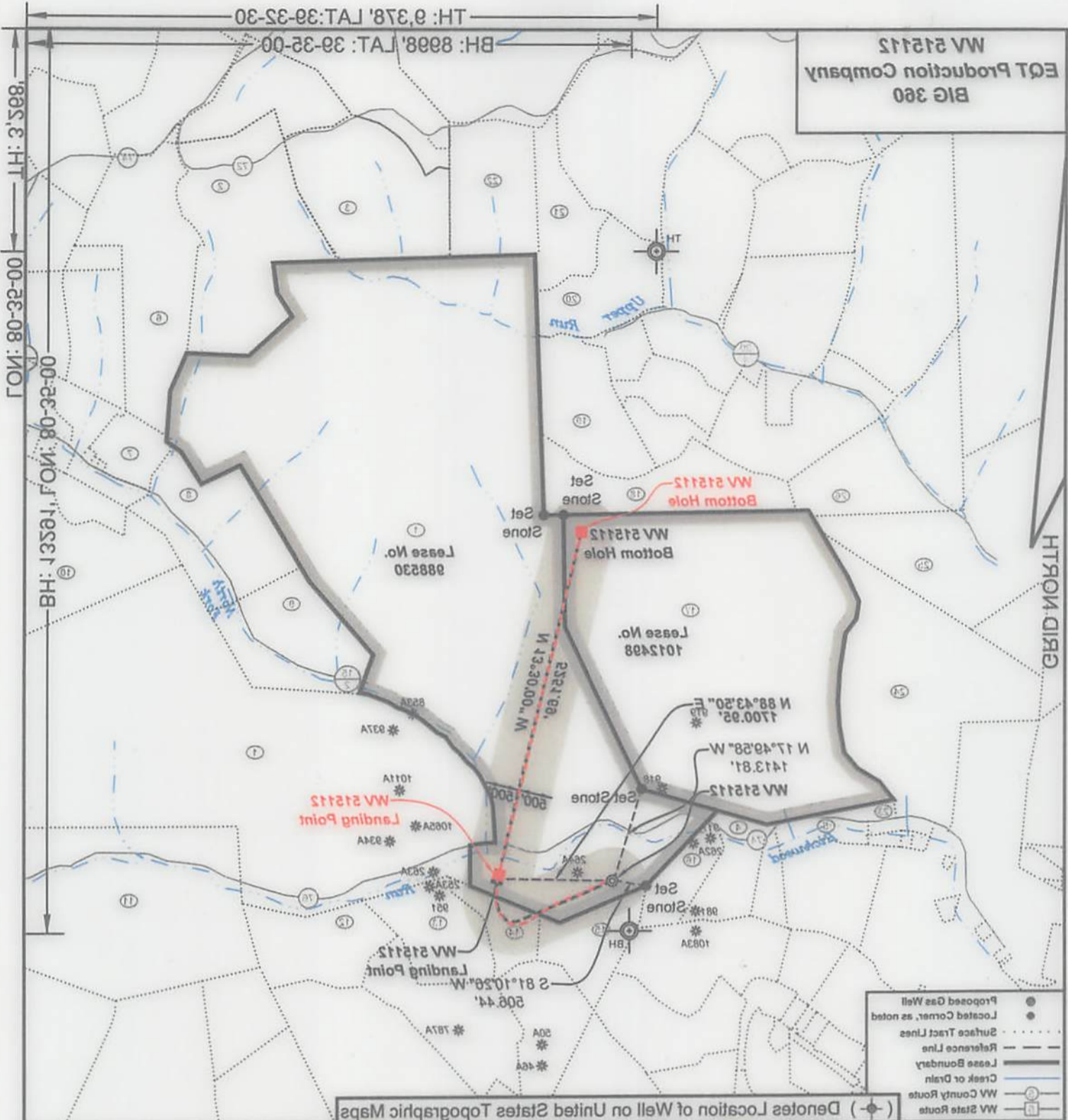
FILE NO: 174-13  
DRAWING NO: 174-13 Big 360 H5  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: October 4 20 17  
OPERATOR'S WELL NO. 515112  
API WELL NO  
47 - 103 - 03165  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
LOCATION: ELEVATION: Original Ground = 1008' Proposed Ground = 998' WATERSHED Richwood Run QUADRANGLE: Big Run  
DISTRICT: Grant COUNTY: Wetzel  
SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 1,636.5  
ROYALTY OWNER: Mills-Wetzel Land, Inc. LEASE NO: 988530 ACREAGE: 659  
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: 7,064'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330



WV 51512  
EQT Production Company  
BIG 360

GON: 80-32-00

BH: 13501, GON: 80-32-00

BH: 8998, LAT: 39-35-00

HT: 0.378, LAT: 39-32-30

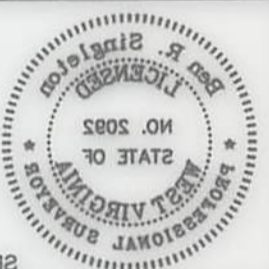
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Lines
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

Denotes Location of Well on United States Topographic Maps



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.

P.S. 2092



PROVEN SOURCE OF ELEVATION:  
NGS CORS Station  
MINIMUM DEGREE OF ACCURACY:  
1:2500  
SCALE:  
1" = 2000'  
DRAWING NO.: 174-13 Big 360 HS  
FILE NO.: 174-13

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

STATE PERMIT NO. 03165  
COUNTY: 103  
API WELL NO. 47  
DATE: October 4, 2017  
OPERATOR'S WELL NO.: 51512

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

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

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL

(IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: Original Ground = 1008', Proposed Ground = 998', WATERSHED: Richwood Run  
DISTRICT: Grant  
SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timbers Company  
ROYALTY OWNER: Mills-Wetzel Land, Inc.  
PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PLUG AND ABANDON  CLEAN OUT AND REPLUG  TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7064'

ACREAGE: 659  
ACREAGE: 1,636.5

COUNTY: Wetzel  
QUADRANGLE: Big Run

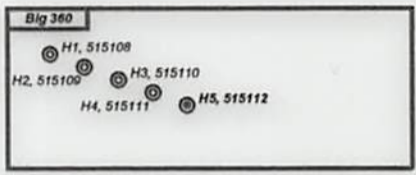


**WV 515112**  
**EQT Production Company**  
**BIG 360**

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	17	14	Wetzel	Grant	Coastal Forest Resources Co.	1627.60
2	13	46	Wetzel	Grant	Burl Henthorn Est, et al.	99.00
3	12	47	Wetzel	Grant	Coastal Forest Resources Co.	87.50
4	22	12	Wetzel	Grant	James Jones, et al.	18.67
5	22	11	Wetzel	Grant	Mary M. Snodgrass	10.14
6	18	1	Wetzel	Grant	McKinley E. Calvert Heirs	100.00
7	18	14	Wetzel	Grant	Frank M. & Frankie L. Dulaney	9.55
8	18	13	Wetzel	Grant	Ralph G. Dulaney	87.50
9	18	17	Wetzel	Grant	Alan D. & Diana L. Barr	13.00
10	18	22	Wetzel	Grant	Karen R. Dennison, et al.	111.40
11	23	5	Wetzel	Grant	Thomas E. Wyatt, et al.	174.68
12	23	4	Wetzel	Grant	Dallison Lumber Inc.	36.10
13	23	2	Wetzel	Grant	Billy D. Arnolds, Jr.	38.80
14	23	1	Wetzel	Grant	Billy D. Arnolds, Jr.	16.50
15	22	27	Wetzel	Grant	Dallison Lumber Inc.	31.35
16	22	13	Wetzel	Grant	James Jones, et al.	16.75
17	17	16	Wetzel	Grant	David A. Arnolds	402.61
18	17	13	Wetzel	Grant	David A. Arnolds	62.25
19	17	12	Wetzel	Grant	Rhonda K. Spencer	57.20
20	17	4	Wetzel	Grant	George W. Cain	42.60
21	12	45	Wetzel	Grant	Jimmy L. & James C. Yoho	44.10
22	12	46	Wetzel	Grant	Jimmy L. & James C. Yoho	56.10
23	22	7	Wetzel	Grant	Billy D. Arnolds	5.20
24	17	16.1	Wetzel	Grant	Coastal Forest Resources Co.	137.39
25	16	40	Wetzel	Grant	Coastal Forest Resources Co.	412.80
26	17	6	Wetzel	Grant	Georgia Ann Smith	0.55

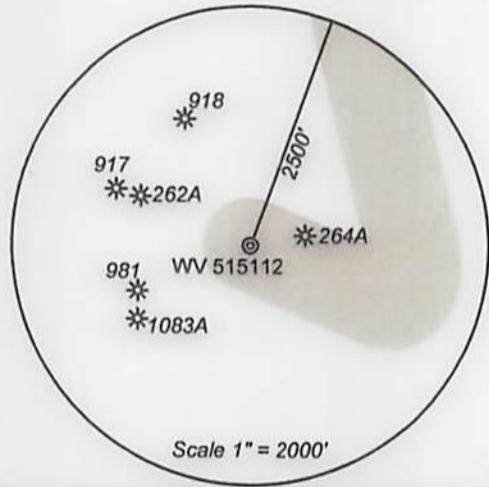
**As-Drilled Well Information:**  
**WV 515112 coordinates:**  
 NAD 27 N: 378,090.76 E: 1,685,039.00  
 NAD 83 UTM N: 4,375,973.63 E: 532,956.32  
**WV 515112 Landing Point coordinates:**  
 NAD 27 N: 378,188.83 E: 1,686,726.13  
 NAD 83 UTM N: 4,376,012.10 E: 533,469.83  
**WV 515112 Bottom Hole coordinates:**  
 NAD 27 N: 383,234.18 E: 1,685,511.25  
 NAD 83 UTM N: 4,377,543.03 E: 533,074.11

West Virginia Coordinate System of 1927 (North Zone) based upon Differential GPS Measurements.  
 Plat orientation, corner and well ties are based upon the grid north meridian.  
 Well location references are based upon the grid north meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.

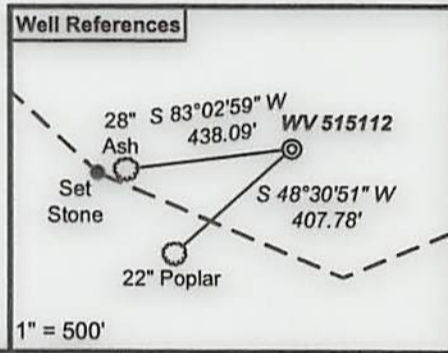


Sub Surface	Acres	Owner
Tract 14	16.50	Billy D. Arnolds, Jr.

Lease No.	Acres	Owner
1012498	514	Kenneth R. Mason, et al.

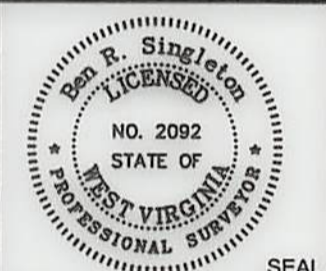


- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⊙ WV County Route
- ⊙ WV State Route



*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.*

*Ben R. Singleton*  
 P.S. 2092



FILE NO: 174-13  
 DRAWING NO: 174-13 Big 360 H5  
 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: October 4 20 17  
 OPERATOR'S WELL NO. 515112  
 API WELL NO  
 47 - 103 - 03165  
 STATE COUNTY PERMIT

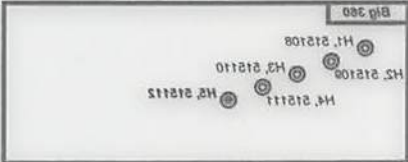
WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Original Ground = 1008' Proposed Ground = 998' WATERSHED Richwood Run QUADRANGLE: Big Run  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 1,636.5  
 ROYALTY OWNER: Mills-Wetzel Land, Inc. LEASE NO: 988530 ACREAGE: 659  
 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: 7,064'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
 Bridgeport, WV 26330 Bridgeport, WV 26330

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	17	14	Wetzel	Grant	Coastal Forest Resources Co.	182.80
2	13	46	Wetzel	Grant	Bud Herthorn Et. al.	99.00
3	12	47	Wetzel	Grant	Coastal Forest Resources Co.	87.20
4	22	12	Wetzel	Grant	James Jones, et. al.	18.67
5	22	11	Wetzel	Grant	Mary M. Snodgrass	10.14
6	18	1	Wetzel	Grant	McKinley E. Calvert Heirs	100.00
7	18	14	Wetzel	Grant	Frank M. & Frankie J. Dulaney	9.22
8	18	13	Wetzel	Grant	Ralph G. Dulaney	87.20
9	18	17	Wetzel	Grant	Alan D. & Diana J. Barr	13.00
10	18	22	Wetzel	Grant	Karen R. Denton, et. al.	11.40
11	23	2	Wetzel	Grant	Thomas E. Wyatt, et. al.	174.88
12	23	4	Wetzel	Grant	Dallison Lumber Inc.	38.10
13	23	2	Wetzel	Grant	Billy D. Arnold, Jr.	38.80
14	23	1	Wetzel	Grant	Billy D. Arnold, Jr.	18.20
15	22	27	Wetzel	Grant	Dallison Lumber Inc.	31.32
16	22	13	Wetzel	Grant	James Jones, et. al.	18.72
17	17	16	Wetzel	Grant	David A. Arnold	402.61
18	17	13	Wetzel	Grant	David A. Arnold	62.22
19	17	12	Wetzel	Grant	Rhonda K. Spencer	27.20
20	17	4	Wetzel	Grant	George W. Cain	42.60
21	12	42	Wetzel	Grant	Jimmy L. & James C. Yoho	44.10
22	12	46	Wetzel	Grant	Jimmy L. & James C. Yoho	28.10
23	22	7	Wetzel	Grant	Billy D. Arnold	2.20
24	17	16.1	Wetzel	Grant	Coastal Forest Resources Co.	137.39
25	16	40	Wetzel	Grant	Coastal Forest Resources Co.	412.80
26	17	6	Wetzel	Grant	Georgia Ann Smith	0.22

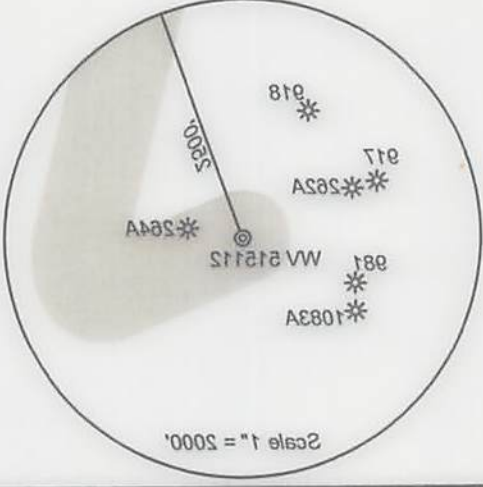
**As-Drilled Well Information:**  
**WV 51512 coordinates:**  
 NAD 83 UTM N: 4378, 973.83 E: 532, 966.32  
 NAD 83 UTM E: 1, 888, 039.00  
**WV 51512 Landline Point coordinates:**  
 NAD 83 UTM N: 4378, 973.83 E: 1, 888, 728.13  
 NAD 83 UTM E: 1, 888, 039.00  
**WV 51512 Bottom Hole coordinates:**  
 NAD 83 UTM N: 4378, 973.83 E: 532, 966.32  
 NAD 83 UTM E: 1, 888, 039.00

Well location references are based upon the grid north meridian. UTM coordinates are NAD83, Zone 17, Meters.  
 Flat orientation, corner and well ties are based upon the grid north meridian.  
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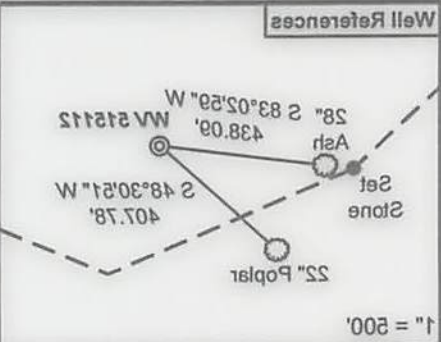


Sub Surface  
 Tract 14  
 Acres 18.20  
 Owner Billy D. Arnold, Jr.

Lease No.  
 1012498  
 Acres 214  
 Owner Kenneth R. Mason, et al.



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



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.

*Ben R. Singletary*  
 P.S. 2092



DATE: October 4, 2017  
 OPERATOR'S WELL NO.: 515112  
 API WELL NO.: 47-103-03165  
 STATE COUNTY PERMIT

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

FILE NO.: 174-13  
 DRAWING NO.: 174-13 Big 380 HS  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Original Ground = 1008', Proposed Ground = 988', WATERSHED: Richwood Run  
 DISTRICT: Grant COUNTY: Wetzel SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timbers Company ACREAGE: 1,636.5  
 ROYALTY OWNER: Mills-Wetzel Land, Inc. LEASE NO.: 988530 ACREAGE: 689  
 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: 7,064'

WELL OPERATOR: EQT Production Company  
 ADDRESS: 115 Professional Place PO Box 280 Bridgeport, WV 26330  
 DESIGNATED AGENT: Rex C. Ray