Reviewed
8/29/18

Well Operator's Report of Well Work

EQT
Where energy meets innovation.

Well Number: 516235

API: 47 - 017 - 06747

Submission: ☑ Initial ☐ Amended

Notes: w/o FB

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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- 017 - 06747 County DODDRIDGE District SOUTH WEST / COVE
Quad OXFORD Pad Name OXF43 Field/Pool Name N/A
Farm name FRANKLIN MAXWELL HEIRS L.P. Well Number 516235
Operator (as registered with the OOG) EQT Production Company
Address 115 Professional Place, PO Box 280 City Bridgeport State WV Zip 26330

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

Top hole	Northing	4,334,245.0	Easting	517,898.6
Landing Point of Curve	Northing	4,334,242.5	Easting	517,630.2
Bottom Hole	Northing	4,335,559.1	Easting	517,060.6

Elevation (ft) 1229 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 w/o FB
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 12.6 ppg, aliphatic based non-aqueous drilling fluid, barium sulfate, calcium chloride, organophylic clay, quaternary ammonium clay, gilsonite, blended emulsifier, wetting agent, blended graphite, hydrated lime, calcium carbonate, ground walnut shells, fibrous cellulose.

Date permit issued 08/30/2016 Date drilling commenced 08/02/2017 Date drilling ceased 09/17/2017
Date completion activities began 4/4/2018 Date completion activities ceased 4/20/2018
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 73,224,310,385 Open mine(s) (Y/N) depths N
Salt water depth(s) ft No shallow SW Void(s) encountered (Y/N) depths N
Coal depth(s) ft 324 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47- 017 - 06747 Farm name FRANKLIN MAXWELL HEIRS L.P. Well number 516235

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 85.6#	N/A	Y
Surface	17-1/2"	13-3/8"	552'	NEW	J-55 54.5#	193'	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	5306'	NEW	A-500 40# & P-110 40#	5011' & 3304'	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5 1/2"	12016'	NEW	P-110 20#	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has calculated TOC of 5594' MD, which is greater than 500' TVD above the producing formation. No issues during cement job

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	57.82	0	8
Surface	CLASS A	520	15.6	1.20	624	0	8
Coal							
Intermediate 1	CLASS A / CLASS A	788 / 1100	15.6 / 15.6	1.18 / 1.18	2228	0	8
Intermediate 2							
Intermediate 3							
Production	Class H / Class H	162 / 616	15.2 / 15.6	1.25 / 2.06	1472	5594'	8
Tubing							

Drillers TD (ft) 12027' MD 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) 5830' MD

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: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE
INTERMEDIATE 1 : ON SHOE TRACK AND EVERY 500' FEET TO SURFACE
PRODUCTION: ON SHOE TRACK AND EVERY JOINT TO 5339'

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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API 47- 017 - 06747 Farm name FRANKLIN MAXWELL HEIRS L.P. Well number 516235

PERFORATION RECORD

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

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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)
								Please See
								Attached

Please insert additional pages as applicable.

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API 47- 017 - 06747 Farm name FRANKLIN MAXWELL HEIRS L.P. Well number 516235

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6,616' TVD	7,097' MD

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Please insert additional pages as applicable.

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

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

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

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME 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		

Please insert additional pages as applicable.

Drilling Contractor Savanna Drilling
Address 125 Industry Road City Waynesburg State PA Zip 15370

Logging Company Gyrodata Inc.
Address 601 Mayer St. City Bridgeville State PA Zip 15017

Cementing Company _____
Address _____ City _____ State _____ Zip _____

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

Please insert additional pages as applicable.

Completed by Bradley Maddox Telephone (412) 395-7053
Signature _____ Title Dir Completions Date 07/18/2018

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

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API 47- 017 - 06747 Farm name FRANKLIN MAXWELL HEIRS L.P. Well number 516235

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

Logging Company
Address City State Zip

Logging Company Scientific Drilling International, Inc.
Address 124 Vista Drive City Charleroi State PA Zip 15022

Cementing Company BJ Services, LLC
Address 4000 Town Center Blvd, Suite 210 City Cannonsburg State PA Zip 15317

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Well# 516235 Final Formations API# 47-017-06747-00-00				
Formation Name	Drill Top MD (ftKB)	Drill Top (TVD) (ftKB)	Drill Btm MD (ftKB)	Drill Btm (TVD) (ftKB)
SAND / SHALE	1	1	321	321
WAYNESBURG A	321	321	322	322
SAND / SHALE	322	322	1,088	1,088
MAXTON	1,088	1,088	1,128	1,128
SAND / SHALE	1,128	1,128	1,964	1,964
BIG LIME	1,964	1,964	2,032	2,032
SAND / SHALE	2,032	2,032	2,076	2,076
BIG INJUN	2,076	2,076	2,108	2,108
SAND / SHALE	2,108	2,108	2,250	2,250
WEIR	2,250	2,250	2,376	2,376
SAND / SHALE	2,376	2,376	2,450	2,450
GANTZ	2,450	2,450	2,532	2,532
FIFTY FOOT	2,532	2,532	2,589	2,589
SAND / SHALE	2,589	2,589	2,630	2,630
THIRTY FOOT	2,630	2,630	2,666	2,666
SAND / SHALE	2,666	2,666	2,672	2,672
GORDON	2,672	2,672	2,721	2,721
SAND / SHALE	2,721	2,721	2,772	2,772
FORTH SAND	2,772	2,772	2,839	2,839
SAND / SHALE	2,839	2,839	2,953	2,953
BAYARD	2,952	2,952	3,023	3,023
SAND / SHALE	3,023	3,023	3,286	3,286
WARREN	3,286	3,286	3,352	3,352
SPEECHLEY	3,352	3,352	3,857	3,857
BALLTOWN A	3,857	3,857	4,215	4,215
SAND / SHALE	4,215	4,215	4,455	4,454
RILEY	4,455	4,454	4,831	4,829
BENSON	4,831	4,829	4,925	4,923
ALEXANDER	5,133	5,130	5,226	5,222
ELKS	5,226	5,222	6,523	6,281
SONYEA	6,523	6,281	6,701	6,413
MIDDLESEX	6,701	6,413	6,788	6,473
GENESEE	6,788	6,473	6,890	6,537
GENESEO	6,890	6,537	6,890	6,537
TULLY	6,890	6,537	7,040	6,602
HAMILTON	7,040	6,602	7,097	6,616
MARCELLUS	7,097	6,616	12,027	6,711

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EQT PRODUCTION

Doddridge County, WV
OXF43
#516235 -MRC - Slot 516235

Main

Design: 516235 As Drilled

Standard Survey Report

19 September, 2017

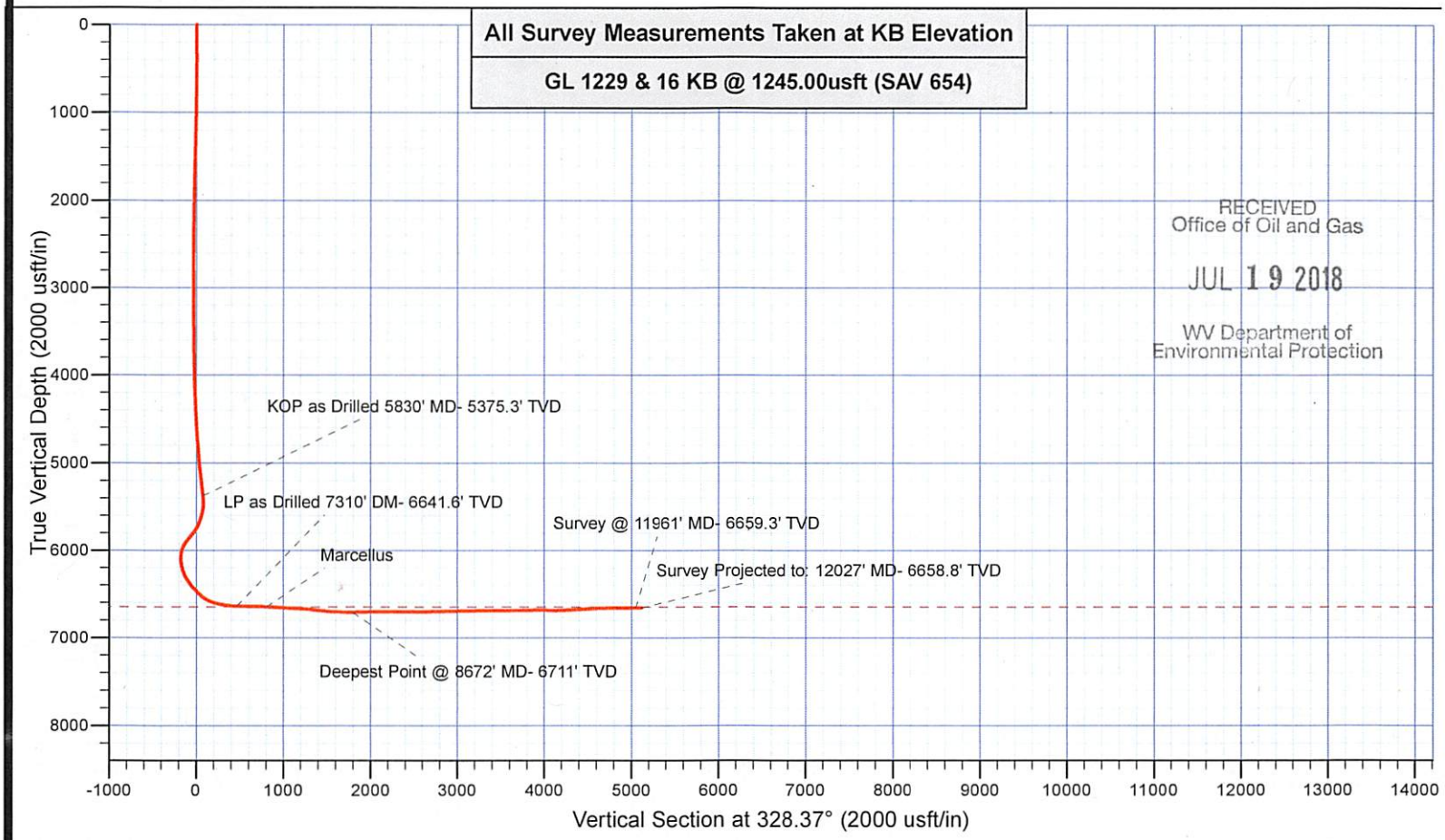
Scientific Drilling

www.scientificdrilling.com

Where energy meets innovation.

Project: Doddridge County, WV
Site: OXF43
Well: #516235 -MRC
Wellbore Main
Design: 516235 As Drilled

Scientific Drilling



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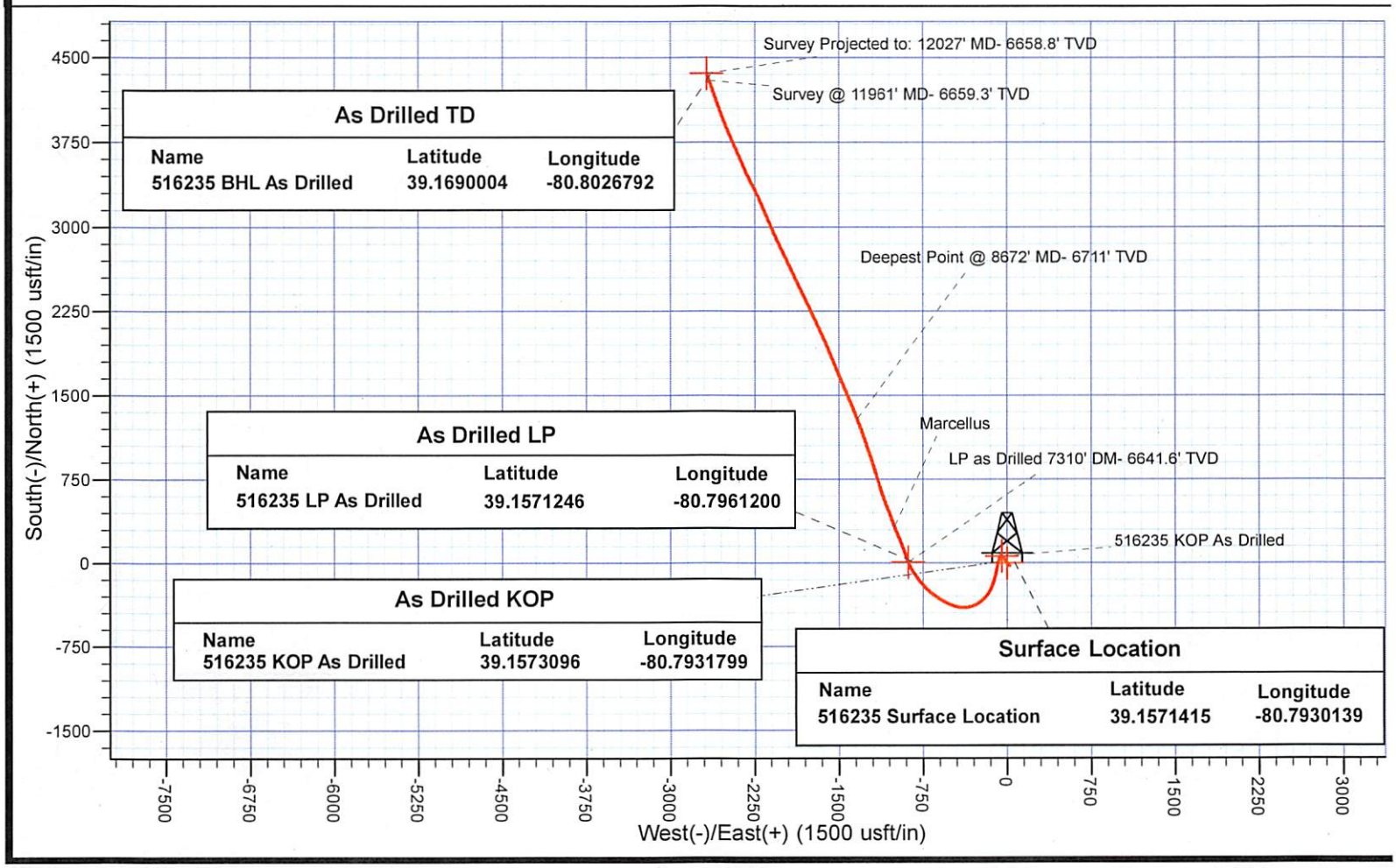

As Drilled TD

Name	Latitude	Longitude
516235 BHL As Drilled	39.1690004	-80.8026792

As Drilled LP

Name	Latitude	Longitude
516235 LP As Drilled	39.1571246	-80.7961200

As Drilled KOP

Name	Latitude	Longitude
516235 KOP As Drilled	39.1573096	-80.7931799

Surface Location

Name	Latitude	Longitude
516235 Surface Location	39.1571415	-80.7930139

WV Department of Environmental Protection

Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

Project Doddridge County, WV

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site OXF43

Site Position:		**Northing:**	241,913.00 usft	**Latitude:**	39.1569519
From:	Map	**Easting:**	1,633,421.76 usft	**Longitude:**	-80.7927349
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.82 °

Well #516235 -MRC - Slot 516235

Well Position	**+N/-S**	0.00 usft	**Northing:**	241,983.17 usft	**Latitude:**	39.1571415
	+E/-W	0.00 usft	**Easting:**	1,633,343.65 usft	**Longitude:**	-80.7930139
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	1,229.00 usft

Wellbore Main

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/6/2017	-7.77	66.42	51,935

Design 516235 As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	328.37

Survey Program **Date** 9/19/2017

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.00	5,287.00	Survey #2 Gyro Data Final Gyro (Main)	GYD_DP_MS	Gyrodata gyro-compassing and drop
5,349.00	12,027.00	Survey #3 SDI MWD (Main)	SDI MWD	SDI MWD - Standard ver 1.0.1

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.23	113.34	100.00	-0.08	0.18	-0.16	0.23	0.23	0.00
200.00	0.24	126.19	200.00	-0.28	0.54	-0.52	0.05	0.01	12.85
300.00	0.10	143.20	300.00	-0.48	0.76	-0.80	0.15	-0.14	17.01
400.00	0.13	136.90	400.00	-0.63	0.89	-1.00	0.03	0.03	-6.30
500.00	0.13	154.23	500.00	-0.81	1.02	-1.23	0.04	0.00	17.33
600.00	0.37	173.11	600.00	-1.24	1.10	-1.63	0.25	0.24	18.88
700.00	0.40	172.91	699.99	-1.90	1.19	-2.24	0.03	0.03	-0.20
800.00	0.44	169.71	799.99	-2.63	1.30	-2.92	0.05	0.04	-3.20
900.00	0.54	161.57	899.99	-3.45	1.51	-3.73	0.12	0.10	-8.14

WV Department of Environmental Protection

Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

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)
1,000.00	0.88	158.15	999.98	-4.61	1.95	-4.95	0.34	0.34	-3.42
1,100.00	1.03	157.31	1,099.97	-6.15	2.58	-6.59	0.15	0.15	-0.84
1,200.00	1.39	158.58	1,199.94	-8.11	3.37	-8.68	0.36	0.36	1.27
1,300.00	1.52	157.47	1,299.91	-10.47	4.32	-11.18	0.13	0.13	-1.11
1,400.00	1.50	154.01	1,399.88	-12.87	5.40	-13.79	0.09	-0.02	-3.46
1,500.00	1.23	138.01	1,499.85	-14.84	6.70	-16.15	0.46	-0.27	-16.00
1,600.00	1.12	119.76	1,599.83	-16.13	8.26	-18.06	0.39	-0.11	-18.25
1,700.00	1.22	121.44	1,699.81	-17.17	10.02	-19.87	0.11	0.10	1.68
1,800.00	1.34	120.64	1,799.78	-18.32	11.93	-21.85	0.12	0.12	-0.80
1,900.00	1.50	123.08	1,899.75	-19.63	14.04	-24.07	0.17	0.16	2.44
2,000.00	1.46	119.26	1,999.72	-20.96	16.24	-26.37	0.11	-0.04	-3.82
2,100.00	1.28	115.13	2,099.69	-22.06	18.37	-28.42	0.21	-0.18	-4.13
2,200.00	1.06	109.81	2,199.67	-22.85	20.25	-30.07	0.25	-0.22	-5.32
2,300.00	0.89	112.97	2,299.65	-23.47	21.83	-31.43	0.18	-0.17	3.16
2,400.00	0.55	114.21	2,399.65	-23.97	22.99	-32.46	0.34	-0.34	1.24
2,500.00	0.33	117.60	2,499.64	-24.30	23.68	-33.11	0.22	-0.22	3.39
2,600.00	0.09	82.28	2,599.64	-24.42	24.01	-33.38	0.26	-0.24	-35.32
2,700.00	0.16	38.35	2,699.64	-24.30	24.18	-33.37	0.11	0.07	-43.93
2,800.00	0.27	312.70	2,799.64	-24.03	24.09	-33.09	0.30	0.11	-85.65
2,900.00	0.30	322.12	2,899.64	-23.66	23.76	-32.61	0.06	0.03	9.42
3,000.00	0.37	320.07	2,999.64	-23.21	23.39	-32.03	0.07	0.07	-2.05
3,100.00	0.40	310.55	3,099.64	-22.73	22.92	-31.38	0.07	0.03	-9.52
3,200.00	0.38	319.26	3,199.63	-22.26	22.43	-30.72	0.06	-0.02	8.71
3,300.00	0.46	308.98	3,299.63	-21.75	21.91	-30.01	0.11	0.08	-10.28
3,400.00	0.63	321.67	3,399.63	-21.07	21.25	-29.08	0.21	0.17	12.69
3,500.00	0.58	306.92	3,499.62	-20.33	20.51	-28.07	0.16	-0.05	-14.75
3,600.00	0.60	308.42	3,599.62	-19.70	19.69	-27.10	0.03	0.02	1.50
3,700.00	0.61	310.68	3,699.61	-19.03	18.88	-26.11	0.03	0.01	2.26
3,800.00	0.64	308.09	3,799.61	-18.34	18.04	-25.07	0.04	0.03	-2.59
3,900.00	1.01	314.15	3,899.59	-17.38	16.96	-23.70	0.38	0.37	6.06
4,000.00	1.34	316.80	3,999.57	-15.92	15.53	-21.70	0.33	0.33	2.65
4,100.00	1.63	313.92	4,099.54	-14.08	13.71	-19.17	0.30	0.29	-2.88
4,200.00	1.78	314.76	4,199.50	-12.00	11.58	-16.29	0.15	0.15	0.84
4,300.00	2.12	314.06	4,299.44	-9.62	9.15	-12.98	0.34	0.34	-0.70
4,400.00	2.53	317.14	4,399.35	-6.71	6.32	-9.03	0.43	0.41	3.08
4,500.00	3.08	317.49	4,499.23	-3.11	3.00	-4.22	0.55	0.55	0.35
4,600.00	3.65	318.40	4,599.06	1.25	-0.93	1.55	0.57	0.57	0.91
4,700.00	4.60	320.92	4,698.80	6.74	-5.57	8.66	0.97	0.95	2.52
4,800.00	5.12	323.14	4,798.44	13.42	-10.78	17.08	0.55	0.52	2.22
4,900.00	5.51	322.81	4,898.01	20.82	-16.35	26.30	0.39	0.39	-0.33
5,000.00	5.56	325.42	4,997.55	28.63	-22.01	35.92	0.26	0.05	2.61
5,100.00	6.09	325.28	5,097.03	36.98	-27.78	46.05	0.53	0.53	-0.14
5,200.00	6.45	326.27	5,196.43	46.01	-33.92	56.96	0.38	0.36	0.99

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Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

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)
5,287.00	6.49	327.60	5,282.88	54.23	-39.26	66.76	0.18	0.05	1.53
5,349.00	6.12	319.76	5,344.50	59.71	-43.28	73.53	1.51	-0.60	-12.65
5,379.99	7.67	297.05	5,375.27	61.91	-46.19	76.93	10.02	5.00	-73.30
KOP as Drilled 5830' MD- 5375.3' TVD									
5,380.00	7.67	297.04	5,375.28	61.91	-46.19	76.94	10.02	6.52	-57.05
5,412.00	10.01	272.72	5,406.91	63.01	-50.87	80.33	13.62	7.31	-76.00
5,443.00	11.89	249.56	5,437.36	62.03	-56.56	82.47	15.30	6.06	-74.71
5,475.00	12.99	228.28	5,468.63	58.48	-62.33	82.48	14.64	3.44	-66.50
5,507.00	12.93	209.90	5,499.82	52.98	-66.80	80.14	12.83	-0.19	-57.44
5,538.00	13.00	191.86	5,530.05	46.56	-69.25	75.96	13.01	0.23	-58.19
5,570.00	15.79	191.21	5,561.04	38.76	-70.84	70.15	8.73	8.72	-2.03
5,602.00	18.65	191.97	5,591.60	29.49	-72.75	63.26	8.96	8.94	2.38
5,633.00	21.42	194.44	5,620.72	19.15	-75.19	55.74	9.34	8.94	7.97
5,664.00	24.88	194.85	5,649.22	7.36	-78.27	47.32	11.17	11.16	1.32
5,696.00	28.80	193.91	5,677.77	-6.63	-81.85	37.28	12.32	12.25	-2.94
5,728.00	32.56	193.46	5,705.29	-22.49	-85.71	25.80	11.77	11.75	-1.41
5,759.00	36.21	191.73	5,730.86	-39.58	-89.51	13.25	12.19	11.77	-5.58
5,791.00	40.16	192.14	5,756.01	-58.93	-93.61	-1.08	12.37	12.34	1.28
5,822.00	43.88	191.22	5,779.04	-79.25	-97.80	-16.18	12.16	12.00	-2.97
5,854.00	47.23	192.54	5,801.44	-101.60	-102.51	-32.75	10.87	10.47	4.13
5,885.00	49.90	194.09	5,821.96	-124.21	-107.87	-49.19	9.39	8.61	5.00
5,917.00	50.94	197.54	5,842.35	-147.93	-114.59	-65.86	8.92	3.25	10.78
5,949.00	51.47	199.31	5,862.40	-171.59	-122.48	-81.87	4.62	1.66	5.53
5,980.00	51.85	200.59	5,881.63	-194.44	-130.77	-96.98	3.46	1.23	4.13
6,012.00	52.00	200.72	5,901.36	-218.02	-139.66	-112.39	0.57	0.47	0.41
6,043.00	51.67	205.39	5,920.53	-240.43	-149.20	-126.47	11.89	-1.06	15.06
6,075.00	50.99	209.91	5,940.53	-262.55	-160.78	-139.23	11.23	-2.13	14.13
6,106.00	49.54	214.72	5,960.35	-282.70	-173.51	-149.71	12.81	-4.68	15.52
6,138.00	48.70	219.59	5,981.30	-301.97	-188.11	-158.46	11.80	-2.63	15.22
6,170.00	47.14	225.22	6,002.75	-319.51	-204.10	-165.01	13.94	-4.88	17.59
6,201.00	45.41	228.70	6,024.18	-334.80	-220.46	-169.45	9.85	-5.58	11.23
6,233.00	41.77	231.96	6,047.36	-348.89	-237.43	-172.55	13.37	-11.38	10.19
6,265.00	38.40	235.00	6,071.84	-361.16	-253.97	-174.33	12.18	-10.53	9.50
6,296.00	34.76	240.14	6,096.74	-371.09	-269.53	-174.62	15.34	-11.74	16.58
6,328.00	33.77	243.42	6,123.19	-379.61	-285.39	-173.55	6.55	-3.09	10.25
6,359.00	33.60	248.64	6,148.99	-386.60	-301.09	-171.27	9.35	-0.55	16.84
6,391.00	34.14	251.78	6,175.56	-392.63	-317.87	-167.60	5.72	1.69	9.81
6,422.00	35.71	256.87	6,200.98	-397.40	-334.95	-162.72	10.67	5.06	16.42
6,454.00	37.30	261.35	6,226.71	-400.99	-353.63	-155.97	9.70	4.97	14.00
6,486.00	38.75	266.39	6,251.92	-403.07	-373.22	-147.47	10.70	4.53	15.75
6,517.00	39.33	272.25	6,276.00	-403.30	-392.72	-137.44	12.05	1.87	18.90
6,549.00	40.46	276.01	6,300.56	-401.81	-413.18	-125.44	8.32	3.53	11.75
6,581.00	40.70	280.71	6,324.87	-398.79	-433.77	-112.07	9.58	0.75	14.69

Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

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)
6,613.00	41.70	283.89	6,348.95	-394.29	-454.35	-97.44	7.25	3.13	9.94
6,644.00	42.92	288.63	6,371.88	-388.44	-474.37	-81.97	11.02	3.94	15.29
6,676.00	44.17	290.92	6,395.07	-380.98	-495.11	-64.74	6.29	3.91	7.16
6,708.00	45.67	295.28	6,417.74	-372.11	-515.88	-46.29	10.70	4.69	13.63
6,740.00	46.64	297.93	6,439.91	-361.77	-536.51	-26.67	6.70	3.03	8.28
6,771.00	47.46	299.22	6,461.03	-350.92	-556.43	-6.98	4.03	2.65	4.16
6,803.00	48.12	299.66	6,482.53	-339.27	-577.08	13.76	2.30	2.06	1.38
6,835.00	50.23	301.33	6,503.45	-326.98	-597.94	35.17	7.69	6.59	5.22
6,866.00	52.65	303.08	6,522.77	-314.06	-618.44	56.93	8.97	7.81	5.65
6,898.00	55.90	306.00	6,541.46	-299.32	-639.83	80.69	12.57	10.16	9.13
6,930.00	59.70	308.74	6,558.51	-282.88	-661.33	105.96	13.91	11.88	8.56
6,961.00	63.38	309.28	6,573.28	-265.73	-682.50	131.67	11.97	11.87	1.74
6,993.00	68.04	311.74	6,586.44	-246.78	-704.66	159.43	16.16	14.56	7.69
7,025.00	72.24	314.87	6,597.31	-226.13	-726.55	188.48	16.03	13.13	9.78
7,057.00	75.43	319.32	6,606.22	-203.62	-747.46	218.61	16.66	9.97	13.91
7,088.00	77.09	322.99	6,613.59	-180.17	-766.34	248.48	12.68	5.35	11.84
7,120.00	78.17	323.78	6,620.44	-155.09	-784.98	279.62	4.15	3.38	2.47
7,151.00	79.93	324.66	6,626.33	-130.40	-802.77	309.97	6.32	5.68	2.84
7,183.00	81.07	325.80	6,631.61	-104.47	-820.77	341.49	5.00	3.56	3.56
7,215.00	83.45	328.70	6,635.92	-77.81	-837.92	373.18	11.66	7.44	9.06
7,247.00	85.91	330.64	6,638.89	-50.31	-854.00	405.03	9.77	7.69	6.06
7,278.00	87.58	334.77	6,640.65	-22.81	-868.19	435.89	14.35	5.39	13.32
7,309.99	88.99	338.72	6,641.61	6.56	-880.81	467.51	13.10	4.41	12.34
LP as Drilled 7310' DM- 6641.6' TVD									
7,310.00	88.99	338.72	6,641.61	6.57	-880.82	467.52	13.10	4.42	12.34
7,341.00	88.72	341.36	6,642.23	35.70	-891.40	497.87	8.56	-0.87	8.52
7,404.00	88.99	341.10	6,643.49	95.34	-911.66	559.28	0.59	0.43	-0.41
7,467.00	88.72	338.81	6,644.75	154.51	-933.25	620.98	3.66	-0.43	-3.63
7,531.00	88.90	337.41	6,646.08	213.88	-957.11	684.04	2.21	0.28	-2.19
7,595.00	89.08	336.79	6,647.20	272.82	-982.01	747.29	1.01	0.28	-0.97
7,658.00	87.23	340.39	6,649.23	331.43	-1,004.99	809.25	6.42	-2.94	5.71
7,721.00	87.05	339.51	6,652.38	390.54	-1,026.56	870.89	1.42	-0.29	-1.40
7,784.00	86.61	338.72	6,655.86	449.31	-1,048.99	932.69	1.43	-0.70	-1.25
7,848.00	86.79	338.46	6,659.54	508.80	-1,072.31	995.57	0.49	0.28	-0.41
7,912.00	86.61	341.62	6,663.23	568.84	-1,094.12	1,058.13	4.94	-0.28	4.94
7,974.00	87.14	341.10	6,666.61	627.50	-1,113.91	1,118.46	1.20	0.85	-0.84
8,038.00	87.05	341.80	6,669.85	688.10	-1,134.24	1,180.72	1.10	-0.14	1.09
8,101.00	87.41	341.62	6,672.90	747.85	-1,153.99	1,241.94	0.64	0.57	-0.29
8,164.00	83.62	342.77	6,677.82	807.63	-1,173.19	1,302.92	6.28	-6.02	1.83
8,227.00	83.89	343.03	6,684.68	867.49	-1,191.60	1,363.54	0.59	0.43	0.41
8,291.00	83.89	341.80	6,691.49	928.15	-1,210.83	1,425.28	1.91	0.00	-1.92
8,354.00	84.15	341.36	6,698.05	987.60	-1,230.63	1,486.28	0.81	0.41	-0.70
8,418.00	87.05	341.45	6,702.96	1,048.07	-1,250.97	1,548.44	4.53	4.53	0.14
8,482.00	87.58	341.36	6,705.96	1,108.67	-1,271.36	1,610.72	0.84	0.83	-0.14

Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

WV Department of Environmental Protection

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)
8,545.00	87.85	341.36	6,708.47	1,168.31	-1,291.48	1,672.06	0.43	0.43	0.00
8,609.00	88.90	338.90	6,710.29	1,228.47	-1,313.22	1,734.68	4.18	1.64	-3.84
8,671.98	89.78	338.99	6,711.01	1,287.25	-1,335.85	1,796.59	1.40	1.40	0.14
Deepest Point @ 8672' MD- 6711' TVD									
8,672.00	89.78	338.99	6,711.01	1,287.26	-1,335.85	1,796.61	1.40	1.40	0.14
8,736.00	91.89	337.05	6,710.08	1,346.60	-1,359.80	1,859.69	4.48	3.30	-3.03
8,799.00	92.86	337.93	6,707.47	1,404.75	-1,383.90	1,921.84	2.08	1.54	1.40
8,862.00	91.10	337.23	6,705.29	1,462.95	-1,407.91	1,983.99	3.01	-2.79	-1.11
8,926.00	90.48	337.41	6,704.41	1,521.99	-1,432.59	2,047.20	1.01	-0.97	0.28
8,990.00	90.84	336.44	6,703.67	1,580.87	-1,457.67	2,110.48	1.62	0.56	-1.52
9,053.00	90.92	336.88	6,702.70	1,638.71	-1,482.63	2,172.82	0.71	0.13	0.70
9,117.00	88.64	337.84	6,702.95	1,697.77	-1,507.26	2,236.03	3.87	-3.56	1.50
9,180.00	88.90	337.93	6,704.30	1,756.12	-1,530.97	2,298.14	0.44	0.41	0.14
9,242.00	89.25	337.84	6,705.30	1,813.55	-1,554.31	2,359.28	0.58	0.56	-0.15
9,305.00	89.34	337.67	6,706.08	1,871.86	-1,578.16	2,421.44	0.31	0.14	-0.27
9,369.00	89.60	336.44	6,706.67	1,930.79	-1,603.11	2,484.70	1.96	0.41	-1.92
9,432.00	90.04	335.03	6,706.87	1,988.22	-1,629.00	2,547.18	2.34	0.70	-2.24
9,496.00	90.57	335.74	6,706.53	2,046.41	-1,655.65	2,610.70	1.38	0.83	1.11
9,559.00	90.92	336.18	6,705.71	2,103.94	-1,681.32	2,673.14	0.89	0.56	0.70
9,622.00	91.36	334.94	6,704.46	2,161.28	-1,707.38	2,735.63	2.09	0.70	-1.97
9,686.00	92.07	334.86	6,702.54	2,219.21	-1,734.51	2,799.18	1.12	1.11	-0.13
9,749.00	93.12	334.86	6,699.69	2,276.18	-1,761.25	2,861.72	1.67	1.67	0.00
9,812.00	91.45	334.59	6,697.18	2,333.10	-1,788.13	2,924.28	2.69	-2.65	-0.43
9,876.00	90.92	334.07	6,695.85	2,390.77	-1,815.84	2,987.92	1.16	-0.83	-0.81
9,939.00	91.89	334.07	6,694.31	2,447.41	-1,843.38	3,050.59	1.54	1.54	0.00
10,002.00	91.89	334.07	6,692.23	2,504.04	-1,870.92	3,113.24	0.00	0.00	0.00
10,065.00	89.25	336.09	6,691.60	2,561.16	-1,897.46	3,175.80	5.28	-4.19	3.21
10,128.00	89.43	335.47	6,692.33	2,618.62	-1,923.30	3,238.27	1.02	0.29	-0.98
10,191.00	89.43	334.68	6,692.96	2,675.74	-1,949.85	3,300.83	1.25	0.00	-1.25
10,255.00	89.96	333.98	6,693.30	2,733.43	-1,977.57	3,364.48	1.37	0.83	-1.09
10,318.00	90.57	333.27	6,693.00	2,789.87	-2,005.56	3,427.22	1.49	0.97	-1.13
10,381.00	91.01	336.18	6,692.14	2,846.82	-2,032.45	3,489.82	4.67	0.70	4.62
10,444.00	91.01	335.65	6,691.03	2,904.33	-2,058.16	3,552.26	0.84	0.00	-0.84
10,508.00	91.54	335.21	6,689.60	2,962.52	-2,084.76	3,615.76	1.08	0.83	-0.69
10,571.00	90.48	337.14	6,688.49	3,020.14	-2,110.20	3,678.16	3.49	-1.68	3.06
10,634.00	90.31	337.76	6,688.06	3,078.32	-2,134.36	3,740.37	1.02	-0.27	0.98
10,697.00	90.57	337.58	6,687.57	3,136.60	-2,158.30	3,802.54	0.50	0.41	-0.29
10,761.00	90.04	335.21	6,687.23	3,195.24	-2,183.92	3,865.91	3.79	-0.83	-3.70
10,824.00	90.04	333.98	6,687.19	3,252.14	-2,210.95	3,928.54	1.95	0.00	-1.95
10,887.00	89.60	332.48	6,687.39	3,308.39	-2,239.33	3,991.31	2.48	-0.70	-2.38
10,950.00	87.93	331.96	6,688.74	3,364.11	-2,268.68	4,054.15	2.78	-2.65	-0.83
11,012.00	89.16	332.48	6,690.32	3,418.95	-2,297.57	4,115.99	2.15	1.98	0.84
11,075.00	91.80	335.38	6,689.79	3,475.52	-2,325.25	4,178.68	6.22	4.19	4.60

Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

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)
11,139.00	92.59	338.11	6,687.34	3,534.27	-2,350.50	4,241.94	4.44	1.23	4.27
11,203.00	93.30	336.09	6,684.05	3,593.15	-2,375.37	4,305.11	3.34	1.11	-3.16
11,266.00	93.56	335.38	6,680.28	3,650.48	-2,401.21	4,367.48	1.20	0.41	-1.13
11,329.00	94.26	335.47	6,675.98	3,707.64	-2,427.35	4,429.86	1.12	1.11	0.14
11,392.00	93.12	337.23	6,671.93	3,765.23	-2,452.57	4,492.11	3.32	-1.81	2.79
11,456.00	92.95	336.79	6,668.54	3,824.06	-2,477.53	4,555.30	0.74	-0.27	-0.69
11,519.00	93.12	336.18	6,665.21	3,881.75	-2,502.63	4,617.58	1.00	0.27	-0.97
11,582.00	91.01	338.55	6,662.94	3,939.85	-2,526.86	4,679.76	5.03	-3.35	3.76
11,645.00	90.84	339.95	6,661.92	3,998.75	-2,549.17	4,741.62	2.24	-0.27	2.22
11,709.00	90.40	340.22	6,661.23	4,058.92	-2,570.97	4,804.28	0.81	-0.69	0.42
11,772.00	90.48	340.57	6,660.74	4,118.27	-2,592.11	4,865.89	0.57	0.13	0.56
11,835.00	90.48	340.57	6,660.21	4,177.68	-2,613.07	4,927.47	0.00	0.00	0.00
11,898.00	90.40	340.13	6,659.73	4,237.01	-2,634.25	4,989.09	0.71	-0.13	-0.70
11,960.98	90.40	340.22	6,659.29	4,296.25	-2,655.61	5,050.74	0.14	0.00	0.14
Survey @ 11961' MD- 6659.3' TVD									
11,961.00	90.40	340.22	6,659.29	4,296.27	-2,655.62	5,050.76	0.14	0.00	0.14
12,026.98	90.40	340.22	6,658.83	4,358.35	-2,677.94	5,115.33	0.00	0.00	0.00
Survey Projected to: 12027' MD- 6658.8' TVD									
12,027.00	90.40	340.22	6,658.83	4,358.37	-2,677.95	5,115.35	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
516235 Surface Locatior - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	241,983.17	1,633,343.65	39.1571415	-80.7930139
516235 KOP As Drilled - actual wellpath hits target center - Point	0.00	360.00	5,375.27	61.91	-46.19	242,045.08	1,633,297.46	39.1573096	-80.7931799
516235 LP As Drilled - actual wellpath misses target center by 0.01usft at 7310.00usft MD (6641.61 TVD, 6.57 N, -880.82 E) - Point	0.00	0.00	6,641.60	6.57	-880.82	241,989.73	1,632,462.83	39.1571247	-80.7961200
516235 BHL As Drilled - actual wellpath misses target center by 0.01usft at 12026.99usft MD (6658.83 TVD, 4358.36 N, -2677.95 E) - Point	0.00	0.00	6,658.82	4,358.36	-2,677.95	246,341.53	1,630,665.70	39.1690004	-80.8026792

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Company:	EQT PRODUCTION	**Local Co-ordinate Reference:**	Well #516235 -MRC - Slot 516235
Project:	Doddridge County, WV	**TVD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Site:	OXF43	**MD Reference:**	GL 1229 & 16 KB @ 1245.00usft (SAV 654)
Well:	#516235 -MRC	**North Reference:**	Grid
Wellbore:	Main	**Survey Calculation Method:**	Minimum Curvature
Design:	516235 As Drilled	**Database:**	Northeast District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,379.99	5,375.27	61.91	-46.19	KOP as Drilled 5830' MD- 5375.3' TVD
7,309.99	6,641.61	6.56	-880.81	LP as Drilled 7310' DM- 6641.6' TVD
8,671.98	6,711.01	1,287.25	-1,335.85	Deepest Point @ 8672' MD- 6711' TVD
11,960.98	6,659.29	4,296.25	-2,655.61	Survey @ 11961' MD- 6659.3' TVD
12,026.98	6,658.83	4,358.35	-2,677.94	Survey Projected to: 12027' MD- 6658.8' TVD

Checked By: _____ Approved By: _____ Date: _____

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- WELL LANDING POINT
- WELL BOTTOM HOLE
- REBAR FOUND
- DRILLED LATERAL LINE
- PERMITTED LATERAL LINE
- LEASE BOUNDARY
- PROPERTY LINE
- STREAM
- 500' LATERAL COLLECTION
- BUFFER

35	UNKNOWN
36	CHARLES WALTER MUNCHMORE
18	EDRA LOUISE GRIMM
19	RANDALL L GRIMM
26	UNITED STATES OF AMERICA
27	EDWARD & GINA BASSETT
28	EDWARD & GINA BASSETT
29	CARLTON W & PATRICIA MATHENY
30	MARIAN G ZORN

NAD 27 S.P.C. (Ft.)	N: 241,989.727	E: 1,632,462.837
NAD 27 GEO	LAT: 39.157125	LONG: 80.796120
NAD 83 UTM 17N (M)	N 4,334,242.5	E: 517,630.2
NAD 83 S.P.C. (Ft.)	N 242,025.0	E: 1,601,022.0

Bottom Hole Coordinates

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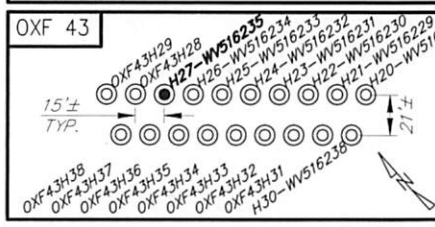
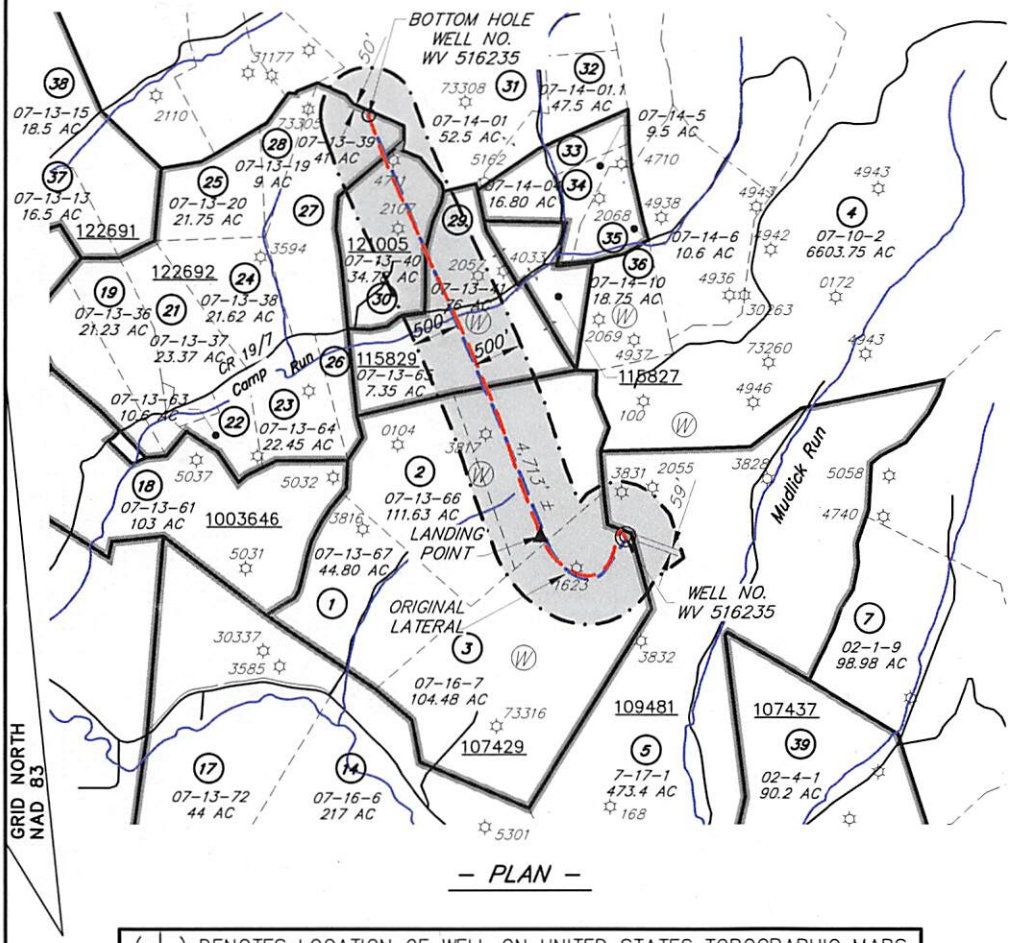
NAD 83 UTM 17N (M)	N 4,335,559.1	E: 517,060.6
NAD 83 S.P.C. (Ft.)	N 246,376.8	E: 1,599,224.8

Lease No.	Acres	Owner
115829	60	Carlton Matheny, et al
121005	36.5	Marian G. Zorn
122692	200	Jonathan D. Casto, et al
109481	2000	Adele McDougal, et al

Coordinate Notes

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.





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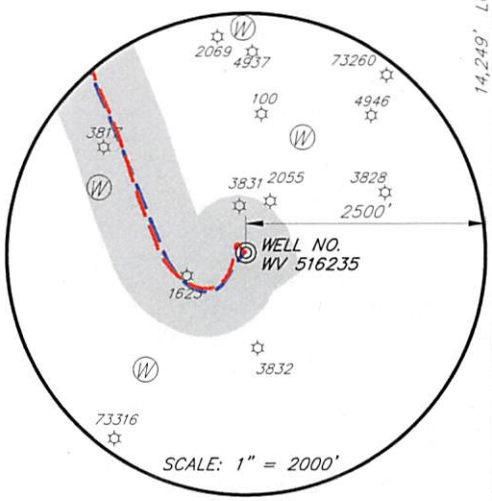

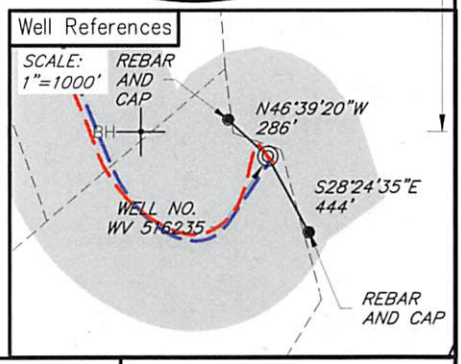

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

encompass

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

WILLIAM J. WHITMAN, II
LICENSED
No. 2005
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

FILE NO.: EES-60635
DRAWING NO.: OXF43_Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: ±3'
PROVEN SOURCE OF ELEVATION: GPS

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

DATE OCTOBER 2, 20 17
OPERATORS WELL NO. WV 516235

API WELL NO.

47	17	06747
STATE	COUNTY	PERMIT

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

LOCATION,
ELEVATION: 1254' (Ground) 1229' (Prop.) WATERSHED: Middle Fork Hughes River QUADRANGLE: OXFORD
DISTRICT: SOUTH WEST / COVE COUNTY: DODDRIDGE
SURFACE OWNER: Cathy Wetzel ACREAGE: 104.48± AC
ROYALTY OWNER: Franklin Maxwell Heirs L. P. LEASE NO.: 107429 ACREAGE: 255± AC

ES.COM PLOT DATE: 10/2/2017 CAD FILE: OXF 43_WELL PLAT-2017-10-02.DWG

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516235 47-017-06747-0000 - Perforations					
Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	12/15/2017	11,988	12,016	10	Marcellus
1	4/6/2018	11,828	11,950	32	Marcellus
2	4/6/2018	11,628	11,790	40	Marcellus
3	4/6/2018	11,428	11,590	40	Marcellus
4	4/6/2018	11,228	11,390	40	Marcellus
5	4/7/2018	11,048	11,190	40	Marcellus
5	4/7/2018	11,028	11,090	16	Marcellus
6	4/8/2018	10,828	11,000	40	Marcellus
7	4/8/2018	10,628	10,790	40	Marcellus
8	4/10/2018	10,428	10,590	16	Marcellus
8	4/9/2018	10,338	10,450	40	Marcellus
9	4/10/2018	10,188	10,350	40	Marcellus
10	4/10/2018	9,988	10,150	40	Marcellus
11	4/12/2018	9,788	9,950	40	Marcellus
12	4/13/2018	9,588	9,750	24	Marcellus
12	4/12/2018	9,528	9,570	40	Marcellus
13	4/13/2018	9,326	9,488	24	Marcellus
14	4/14/2018	9,126	9,288	40	Marcellus
15	4/14/2018	8,926	9,088	40	Marcellus
16	4/16/2018	8,726	8,888	40	Marcellus
17	4/16/2018	8,526	8,688	40	Marcellus
18	4/17/2018	8,326	8,488	40	Marcellus
19	4/18/2018	8,126	8,288	40	Marcellus
20	4/19/2018	7,926	8,088	40	Marcellus
21	4/19/2018	7,726	7,888	40	Marcellus
22	4/19/2018	7,526	7,688	40	Marcellus
23	4/20/2018	7,326	7,488	40	Marcellus
24	4/20/2018	7,126	7,288	40	Marcellus
25	4/20/2018	6,926	7,088	40	Marcellus

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516235 47-017-06747-0000 - 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)
1.01	4/5/2018	16	7,224	8,554	5,017	0	996	0
1	4/6/2018	93	8,129	9,243	3,528	450,021	7,945	0
2	4/6/2018	81	8,838	9,699	4,774	452,921	9,331	0
3	4/6/2018	83	8,743	9,463	5,085	449,754	9,241	0
4	4/7/2018	93	8,649	9,255	4,854	450,021	8,856	0
5	4/7/2018	65	8,907	9,407	4,941	66,180	6,148	0
5	4/8/2018	80	8,524	9,134	4,912	384,263	7,505	0
6	4/8/2018	100	8,612	9,526	4,944	417,981	7,791	0
7	4/9/2018	97	8,335	9,678	4,958	330,855	7,039	0
8	4/9/2018	94	8,454	9,598	5,015	224,732	6,092	0
8	4/10/2018	74	8,234	9,562	5,411	174,153	5,192	0
9	4/10/2018	100	8,205	9,251	5,683	431,332	8,869	0
10	4/11/2018	91	7,514	10,121	7,169	294,769	8,484	0
11	4/12/2018	90	8,128	9,507	4,600	450,031	9,541	0
12	4/13/2018	79	9,039	9,656	5,268	11,971	3,343	0
12	4/13/2018	96	8,185	8,688	4,335	433,895	8,551	0
13	4/14/2018	100	7,357	7,790	4,819	449,684	8,282	0
14	4/14/2018	98	8,160	8,948	4,020	449,443	10,267	0
15	4/16/2018	100	7,836	9,142	5,089	322,743	9,872	0
16	4/16/2018	93	7,771	9,239	4,398	449,708	10,567	0
17	4/17/2018	99	7,349	7,565	4,848	449,709	8,449	0
18	4/17/2018	97	7,978	9,132	4,792	450,037	9,206	0
19	4/19/2018	100	7,539	8,081	5,247	450,081	8,142	0
20	4/19/2018	100	7,621	7,936	4,930	450,842	7,297	0
21	4/19/2018	100	7,514	8,786	5,626	402,088	6,812	0
22	4/19/2018	98	7,601	8,220	5,288	450,053	9,138	0
23	4/20/2018	86	8,287	9,101	5,171	309,144	9,751	0
24	4/20/2018	93	7,701	7,854	5,573	450,522	7,681	0
25	4/20/2018	99	6,879	7,108	4,258	450,045	8,045	0

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	4/4/2018
Job End Date:	4/20/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06747-00-00
Operator Name:	EQT Production
Well Name and Number:	516235
Latitude:	39.15714000
Longitude:	-80.79301000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,711
Total Base Water Volume (gal):	9,594,186
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	87.96482	None
MX-8-2544	Multi-Chem	Bacteria Treatment					
				Listed Below			

CI-150	FTS International	Acid Corrosion Inhibitor					
				Listed Below			
Sand (Proppant)	FTS International	Proppant					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			
MX-5-3886	Multi-Chem	Bacteria Treatment					
				Listed Below			
FRW-1450	FTS International	Mixture					
				Listed Below			
CS-1000-SI	FTS International	Scale Inhibitor					
				Listed Below			
Hydrochloric Acid (15%)	FTS International	Acidizing					
				Listed Below			
ABP-1	FTS International	Breaker					
				Listed Below			
HVG-14.0	FTS International	Gelling Agent					

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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	11.59883	None
			Hydrochloric Acid	7647-01-0	15.00000	0.04138	None
			Calcium Nitrate.4H2O	13477-34-4	100.00000	0.03869	
			Calcium Nitrate.4H2O	13477-34-4	100.00000	0.03869	None
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.02791	
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.02791	None
			Phosphonic Acid, (Nitrilotris (methylene) Tris	6419-19-8	35.00000	0.00868	None
			Phosphonic Acid, (Nitrilotris (methylene) Tris	6419-19-8	35.00000	0.00868	
			Alcohols. C-11-14-iso, C13-rich, ethoxylated	78330-21-9	5.00000	0.00465	
			Alcohols. C-11-14-iso, C13-rich, ethoxylated	78330-21-9	5.00000	0.00465	None
			Sodium Chloride	7647-14-5	100.00000	0.00238	None
			Sodium Chloride	7647-14-5	100.00000	0.00238	
			Phosphonic Acid, (Dimethylamino) Methylene) Bis-	29712-30-9	5.00000	0.00124	
			Phosphonic Acid, (Dimethylamino) Methylene) Bis-	29712-30-9	5.00000	0.00124	None
			Phosphorous Acid	10294-56-1	2.00000	0.00050	None
			Phosphorous Acid	10294-56-1	2.00000	0.00050	
			Raffinates, Sorption Process	64741-85-1	55.00000	0.00045	None
			Raffinates, Sorption Process	64741-85-1	55.00000	0.00045	
			Guar Gum	9000-30-0	50.00000	0.00041	
			Guar Gum	9000-30-0	50.00000	0.00041	None
			Ammonium Persulfate	7727-54-0	95.00000	0.00026	None

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			Isopropanol	67-63-0	30.00000	0.00014	None
			Ethylene Glycol	107-21-1	30.00000	0.00014	None
			Organic Amine Resin Salt	Proprietary	30.00000	0.00014	None
			Sodium Nitrate	7631-99-4	5.00000	0.00012	None
			Sodium Nitrate	7631-99-4	5.00000	0.00012	
			Dimethylformamide	68-12-2	10.00000	0.00005	None
			Aromatic Aldehyde	Proprietary	10.00000	0.00005	None
			Quaternary Ammonium Compound	Proprietary	10.00000	0.00005	None
			Quartz	14808-60-7	4.00000	0.00003	
			Quartz	14808-60-7	4.00000	0.00003	None
			Isotridecanol, ethoxylated	9043-30-5	2.00000	0.00002	None
			Isotridecanol, ethoxylated	9043-30-5	2.00000	0.00002	

* 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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WV Department of
Environmental Protection

382' LATITUDE: 39°10'00" TH

3,278' LATITUDE: 39°12'30" BH

H27 – WV 516235
OXF43
EQT Production Company

LEGEND

- EXISTING OIL/GAS WELL
- WATER FEATURE
- WELL HEAD TOP HOLE
- WELL LANDING POINT
- WELL BOTTOM HOLE
- REBAR FOUND
- DRILLED LATERAL LINE
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109481	2000	Adele McDougal, et al

NO.	ADJACENT OWNER
4	MORRIS I L IKE
7	HUFF WILLIAM LEE
32	MICHAEL D & SUSAN H ZORN
33	MATHENY M & PATRICIA M CARLTON
34	CHARLES WALTER MUNCHMORE
35	UNKNOWN
36	CHARLES WALTER MUNCHMORE

NO.	SURFACE OWNER
1	CHARLES R & EVELYN GREATHOUSE GAPN
2	JAMES P GREATHOUSE
3	CATHY JEAN WETZEL ETAL
5	HUFF RANDY E DECEDENT'S
14	BETTY M. RYAN
17	EDWARD DALE PRUNTY
18	EDRA LOUISE GRIMM
19	RANDALL L GRIMM
26	UNITED STATES OF AMERICA
27	EDWARD & GINA BASSETT
28	EDWARD & GINA BASSETT
29	CARLTON W & PATRICIA MATHENY
30	MARIAN G ZORN

WV 516235 Well Point Coordinates

Top Hole Coordinates

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NAD 83 S.P.C. (Ft.)	N 242,018.5	E: 1,601,902.8

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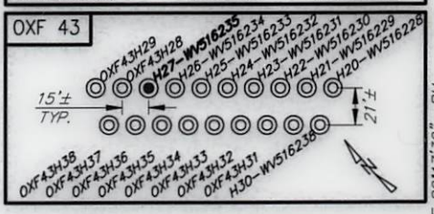
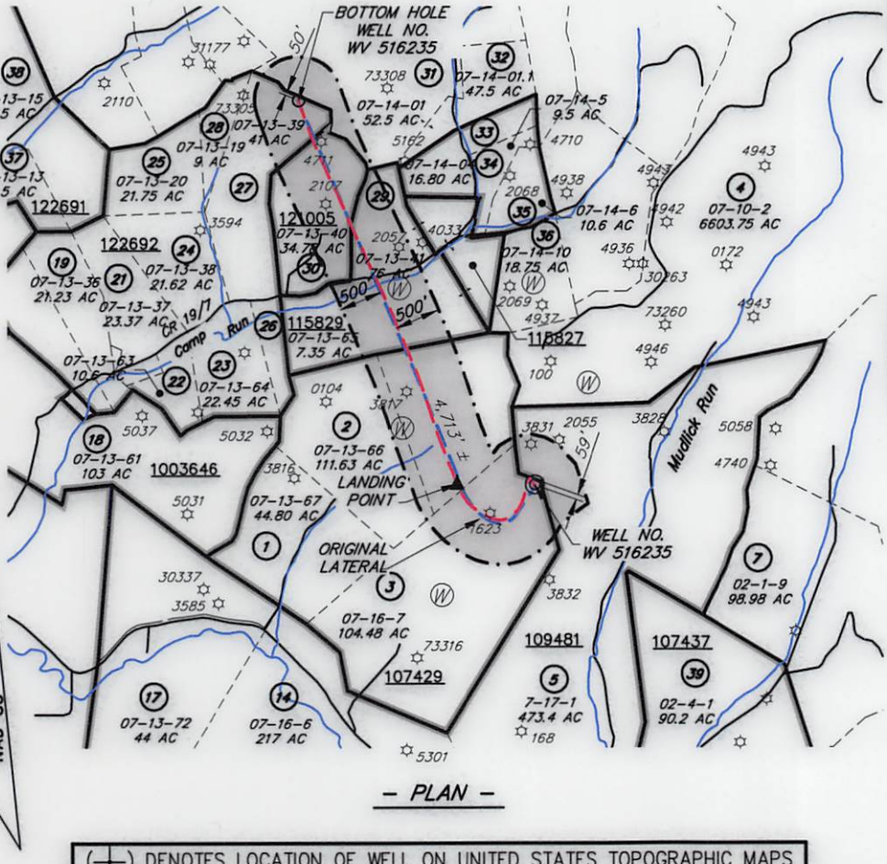
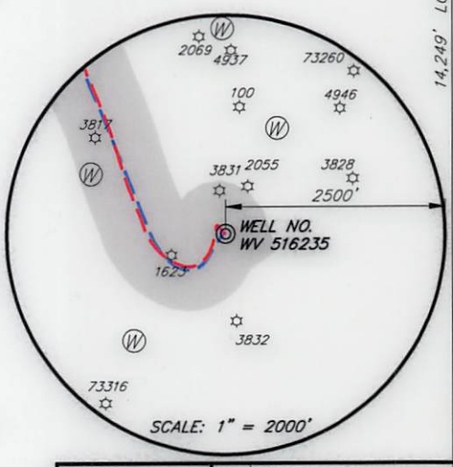
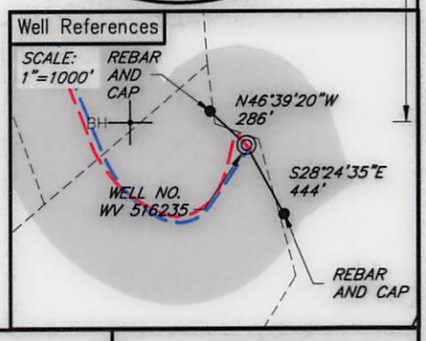




– PLAN –

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS





encompass

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WILLIAM J. WHITMAN, II LICENSED No. 2005 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

FILE NO.: EES-60635
DRAWING NO.: OXF43_Well Plat
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: ±3'
PROVEN SOURCE OF ELEVATION: GPS

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

DATE OCTOBER 2, 20 17
OPERATORS WELL NO. WV 516235
API WELL NO.
47 (STATE) 17 (COUNTY) 06747 (PERMIT)

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL ☒ (IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☐ SHALLOW
LOCATION,
ELEVATION: 1254' (Ground) 1229' (Prop.) WATERSHED: Middle Fork Hughes River QUADRANGLE: OXFORD
DISTRICT: SOUTH WEST / COVE COUNTY: DODDRIDGE
SURFACE OWNER: Cathy Wetzel ACREAGE: 104.48± AC
ROYALTY OWNER: Franklin Maxwell Heirs L. P. LEASE NO.: 107429 ACREAGE: 255± AC
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: 6666'

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

14,249' LONGITUDE: 80°47'30" BH
3,433' LONGITUDE: 80°47'30" TH

WWW.ENCOMPASSSERVICES.COM PLOT DATE: 10/4/2017 CAD FILE: OXF 43_WELL PLAT-2017-10-02.DWG