APPROVED
NAME: dlc & fm
DATE: 2/10/2016

Well Operator's Report of Well Work

EQT
Where energy meets innovation.

Well Number: 513149

API: 47 - 017 - 06463

Submission: ☐ Initial ☑ Amended

Notes: Add'l Inj Test - 11.01

Correction to Production Cement Top (MD)

RECEIVED
Office of Oil and Gas

DEC 21 2015

WV Department of
Environmental Protection

AX 03/31/16
04/01/2016

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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 - 06463 County DODDRIDGE District WEST UNION
Quad OXFORD 7.5' Pad Name OXFORD 157 Field/Pool Name
Farm name JUSTIN L. HENDERSON ET AL Well Number 513149
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 4,342,991 Easting 520,169
Landing Point of Curve Northing 4,343,089 Easting 520,699
Bottom Hole Northing 4,342,097 Easting 521,182

Elevation (ft) 970 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)
Water base Mud 12.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phophates, glutaraldehyde solution, calcium hydroxide,
partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 04/18/2014 Date drilling commenced 08/18/2014 Date drilling ceased 1/31/2015
Date completion activities began 5/9/2015 Date completion activities ceased 5/13/2015
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 144 Open mine(s) (Y/N) depths N
Salt water depth(s) ft - Void(s) encountered (Y/N) depths N
Coal depth(s) ft 338 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

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API 47- 017 - 06463 Farm name JUSTIN L. HENDERSON ET AL Well number 513149

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	63'	NEW	A-500 40LB/FT	NONE	Y
Surface	17.5"	13.375"	942'	NEW	J-55 54.5LB/FT	295',380'	Y
Coal							
Intermediate 1	12.375"	9.625"	5,024'	NEW	P-110 40LB/FT	1243',2947',4071'	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	11,430'	NEW	P-110 20LB/FT	NONE	N
Tubing							
Packer type and depth set							

Comment Details

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	61	15.6	1.18	71.98	0	8
Surface	CLASS A	795	15.6	1.19	946.05	0	8
Coal							
Intermediate 1	CLASS A / CLASS A	370 / 340	14.2 / 15.6	1.28 /1.18	874.8	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS A / CLASS H	460 / 525	14.2 / 15.2	1.26 / 1.97	1614	4,485'	8
Tubing							

Drillers TD (ft) 11,463' Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5,228'

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- JOINTS: 1,12

INTERMEDIATE- RAN AT LEAST EVERY 500' FEET JOINTS: 1,12,24,36,48,60,73,97,109,120

PRODUCTION- 76 Composite Body centralizers ran every joint from 4,986 to 8,145'

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 - 6463 Farm name JUSTIN L. HENDERSON ET AL Well number 513149

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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

Please insert additional pages as applicable.

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API 47- 017 - 06463 Farm name JUSTIN L. HENDERSON ET AL Well number 513149

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6,394' TVD	7,644' MD	

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 1,758 psi Bottom Hole N/A psi DURATION OF TEST 101.0 hrs

OPEN FLOW Gas 10,252 mcfpd Oil N/A bpd NGL 67.9 bpd Water 812.2 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 ALPHA HUNTER DRILLING (RIG 4)
Address P.O. BOX 430 City RENO State OH Zip 45773

Logging Company HOSSCO SERVICES, LLC
Address 614 TROTTERS LANE City CHARLESTON State WV Zip 25312

Cementing Company NABORS CEMENTING SERVICES
Address 2504 SMITH CREEK ROAD City WAYNESBURG State PA Zip 15370

Stimulating Company Keane
Address 2121 Sage Road City Houston State TX Zip 77056

Please insert additional pages as applicable.

Completed by Brad Maddox Telephone 412-395-7053
Signature [signature] Title Director of Drilling Date 12/9/2015

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

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API 47- 017 - 6463 Farm name JUSTIN L. HENDERSON ET AL Well number 513149

Drilling Contractor Patterson UTI (Rig 252)
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company GYRODATA
Address 601 MAYER ST City BRIDGEVILLE State PA Zip 15017

Logging Company BLUE DOT ENERGY SERVICES
Address P.O. BOX 784 City BIDGEPORT State WV Zip 26330

Cementing Company _____
Address _____ City _____ State _____ Zip _____

04/01/2016

513149 Final Formations API#47-017-06463

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	1		154	
SAND/SHALE	1		347	
PITTSBURGH COAL SEAM	347		351	
SAND/SHALE	351		1,599.00	
BIG LIME	1,599.00		1,884.00	
WEIR	1,884.00		2,089.00	
BEREA	2,089.00		2,093.00	
GANTZ	2,093.00		2,204.00	
50F	2,204.00		2,294.00	
30F	2,294.00		2,349.00	
GORDON	2,349.00		2,438.00	
4TH	2,438.00		2,660.00	
BAYARD	2,660.00		2,933.00	
WARREN	2,933.00		3,010.00	
SPEECHLEY	3,010.00		3,499.00	
BALLTOWN A	3,499.00		4,146.00	
RILEY	4,146.00		4,596.00	
BENSON	4,596.00		4,849.00	
ALEXANDER	4,849.00		6,003.00	5,875.70
SONYEA	6,003.00	5,875.70	6,153.00	5,944.90
MIDDLESEX	6,153.00	5,944.90	6,209.00	5,963.60
GENESEE	6,209.00	5,963.60	6,286.00	5,987.90
GENESEO	6,286.00	5,987.90	7,372.00	6,338.90
TULLY	7,372.00	6,338.90	7,510.00	6,363.70
HAMILTON	7,510.00	6,363.70	7,644.00	6,393.50
MARCELLUS	7,644.00	6,393.50		

04/01/2016

EQT Production - Marcellus

Doddridge County, WV Grid
Doddridge County 513149
Well #513149
API: 47-170476463
Main Wellbore

Design: AS Drilled Surveys

Standard Survey Report

01 February, 2015

04/01/2016

Phoenix Technologies

Survey Report

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513149
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 991 0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 991 0usft
Site:	Doddridge County 513149	North Reference:	Grid
Well:	Well #513149	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Project Doddridge County, WV Grid

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		Using geodetic scale factor

Site Doddridge County 513149

Site Position:		Northing:	270 560 90 usft	Latitude:	39.24
From:	Map	Easting:	1 641,274.50 usft	Longitude:	-80 77
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0 81 °

Well Well #513149

Well Position	+N/-S	0 0 usft	Northing:	270,560.90 usft	Latitude:	39° 14' 9.266 N
	+E/-W	0.0 usft	Easting:	1 641,274 50 usft	Longitude:	80 45' 59 293 W
Position Uncertainty		0 0 usft	Wellhead Elevation:	usft	Ground Level:	968 0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	1/19/2015	-8 50	66 71	52,194

Design AS Drilled Surveys

Audit Notes:

Version:	1 0	Phase:	ACTUAL	Tie On Depth:	0 0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	6,436 0	0 0	0 0	132 43

Survey Program Date 2/1/2015

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,180.0	513149 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	7,074.0	513149 PHX MWD (Air Curve) (Main Wellb	MWD+IGRF	MWD+IGRF v3.standard declination
0 00	11,463 0	513149 PHX MWD Curve and Lateral (Ma	MWD+IGRF	MWD+IGRF v3 standard declination

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0 0	0 00	0 00	0 0	-991 0	0 0	0.0	0.0	0.00	0.00	0.00
110 0	0 12	44 45	110 0	-881 0	0 1	0 1	0 0	0.11	0 11	0 00
210 0	0 06	27 11	210 0	-781 0	0 2	0 2	0 0	0 07	-0 06	-17 34
310 0	0 07	57 53	310 0	-681 0	0 3	0 3	0 0	0 04	0 01	30 42
410 0	0 08	36 26	410 0	-581 0	0 4	0 3	0 0	0 03	0 01	-21 27
510 0	0 15	321 49	510 0	-481 0	0 5	0 3	-0 1	0 15	0 07	-74 77
610 0	0 31	322 96	610 0	-381 0	0 8	0 1	-0 5	0 16	0 16	1 47

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	
Company:	EQT Production - Marcellus	TVD Reference:	
Project:	Doddridge County, WV Grid	MD Reference:	
Site:	Doddridge County 513149	North Reference:	
Well:	Well #513149	Survey Calculation Method:	
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
710 0	0 21	313.52	710.0	-281.0	1.2	-0.2	-1.0	0.11	-0.10	-9.44
810 0	0 26	290.93	810.0	-181.0	1.4	-0.6	-1.4	0 10	0.05	-22.59
910.0	0 33	293 94	910 0	-81 0	1 6	-1.1	-1.9	0.07	0.07	3.01
1,010.0	0.72	286 10	1,010 0	19 0	1 9	-1 9	-2 7	0 40	0 39	-7.84
1,110 0	0 85	292.72	1,110 0	119 0	2 3	-3.2	-4 0	0 16	0 13	6 62
1,210 0	0 85	290.61	1,210.0	219.0	2.9	-4 6	-5 3	0 03	0.00	-2 11
1,310.0	0 78	300 31	1,310 0	319 0	3 5	-5 9	-6 7	0 15	-0 07	9 70
1,410 0	0 83	310 78	1,410 0	419 0	4 3	-7 0	-8 1	0.16	0 05	10 47
1,510 0	0 72	313 15	1,509 9	518 9	5 2	-8 0	-9 4	0 11	-0 11	2 37
1,610 0	0 62	323 33	1,609 9	618 9	6 1	-8 8	-10 6	0 16	-0 10	10 18
1,710 0	0 56	327 54	1,709 9	718 9	6 9	-9 4	-11 6	0 07	-0 06	4 21
1,810.0	0.41	349 87	1,809 9	818 9	7 7	-9 7	-12 4	0 24	-0 15	22 33
1,910.0	0.35	2.37	1,909.9	918.9	8.4	-9.8	-12.8	0.10	-0.06	12 50
2,010.0	0.29	352.47	2,009.9	1,018.9	8.9	-9.8	-13.2	0.08	-0.06	-9.90
2,110.0	0.24	30.53	2,109.9	1,118 9	9 3	-9.7	-13.5	0.18	-0.05	38.06
2,210.0	0.27	36.63	2,209.9	1,218.9	9.7	-9.5	-13.5	0.04	0.03	6.10
2,310.0	0.19	22.20	2,309.9	1,318.9	10.1	-9.3	-13 6	0 10	-0 08	-14 43
2,410.0	0.14	58 75	2,409.9	1,418 9	10.3	-9.1	-13 6	0.11	-0 05	36 55
2,510.0	0.17	63 71	2,509 9	1,518 9	10.4	-8 8	-13 5	0 03	0 03	4 96
2,610.0	0.14	77.94	2,609 9	1,618.9	10 5	-8 6	-13.4	0.05	-0.03	14.23
2,710 0	0.20	128.88	2,709.9	1,718.9	10 4	-8.3	-13.2	0.16	0.06	50 94
2,810 0	0 24	123.18	2,809 9	1,818.9	10.2	-8.0	-12.8	0.05	0.04	-5.70
2,910 0	0 30	146.05	2,909.9	1,918.9	9.8	-7.7	-12.3	0 12	0.06	22 87
3,010.0	0.30	169.21	3,009.9	2,018.9	9.4	-7.5	-11.9	0.12	0.00	23.16
3,110 0	0 39	173.41	3,109.9	2,118.9	8.8	-7.4	-11.4	0 09	0.09	4 20
3,210 0	0 35	166.55	3,209.9	2,218.9	8.1	-7.3	-10.9	0.06	-0.04	-6.86
3,310.0	0.41	166.90	3,309.9	2,318.9	7.5	-7.2	-10.3	0.06	0.06	0.35
3,410.0	0.43	171.96	3,409.9	2,418.9	6.8	-7.0	-9.8	0.04	0.02	5.06
3,510.0	0.34	180.84	3,509.9	2,518.9	6.1	-7.0	-9.3	0.11	-0.09	8.88
3,610 0	0 39	220.67	3,609 9	2,618.9	5.6	-7.2	-9.1	0.25	0.05	39.83
3,710.0	0 50	235.05	3,709.9	2,718.9	5.0	-7.8	-9.2	0.16	0.11	14.38
3,810.0	0.61	263.98	3,809.9	2,818.9	4.7	-8.7	-9.6	0.30	0.11	28.93
3,910.0	0.90	285.27	3,909.9	2,918.9	4.9	-10.0	-10.7	0.40	0.29	21.29
4,010.0	1.09	283.20	4,009.9	3,018.9	5.3	-11.6	-12.2	0.19	0.19	-2.07
4,110.0	1.35	289.72	4,109.8	3,118.8	5.9	-13.7	-14.1	0.29	0.26	6.52
4,210 0	1.61	292.07	4,209.8	3,218.8	6.9	-16.1	-16.5	0.27	0.26	2.35
4,310.0	1.83	293.71	4,309.8	3,318.8	8.0	-18.9	-19.3	0.23	0.22	1.64
4,410.0	2.01	297.79	4,409 7	3,418.7	9.5	-21.9	-22.5	0.23	0.18	4.08
4,510.0	2.12	301.79	4,509.6	3,518.6	11.3	-25.0	-26.1	0.18	0.11	4.00
4,610.0	2.43	308.44	4,609.6	3,618.6	13.6	-28 2	-30 0	0 41	0 31	6 65
4,710.0	2.78	312.15	4,709.5	3,718.5	16.5	-31.7	-34.5	0.39	0.35	3.71
4,810.0	2.99	314 06	4,809 3	3,818 3	20 0	-35 4	-39 6	0 23	0 21	1 91
4,910 0	3 57	316 00	4,909 2	3,918 2	24 0	-39 4	-45 3	0 59	0 58	1 94

04/01/2016

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513149
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 991.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 991.0usft
Site:	Doddridge County 513149	North Reference:	Grid
Well:	Well #513149	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,010.0	3.69	313.98	5,009.0	4,018.0	28.5	-43.9	-51.6	0.18	0.12	-2.02
5,110.0	3.43	324.72	5,108.8	4,117.8	33.2	-47.9	-57.7	0.71	-0.26	10.74
Gyro Tie In=5170' MD										
5,180.0	3.66	332.80	5,178.6	4,187.6	36.9	-50.1	-61.9	0.78	0.33	11.54
5,216.0	3.70	336.00	5,214.6	4,223.6	38.9	-51.1	-64.0	0.58	0.11	8.89
5,259.0	7.11	337.94	5,257.4	4,266.4	42.7	-52.7	-67.7	7.94	7.93	4.51
5,302.0	11.71	340.80	5,299.8	4,308.8	49.3	-55.1	-73.9	10.75	10.70	6.65
5,342.0	15.38	345.52	5,338.7	4,347.7	58.2	-57.8	-82.0	9.57	9.18	11.80
5,385.0	18.69	352.72	5,379.8	4,388.8	70.6	-60.1	-92.0	9.11	7.70	16.74
5,428.0	22.32	357.52	5,420.1	4,429.1	85.6	-61.3	-103.0	9.30	8.44	11.16
5,471.0	24.39	3.73	5,459.5	4,468.5	102.6	-61.1	-114.3	7.47	4.81	14.44
5,514.0	24.88	14.53	5,498.6	4,507.6	120.2	-58.3	-124.1	10.52	1.14	25.12
5,557.0	26.12	23.83	5,537.5	4,546.5	137.7	-52.2	-131.4	9.74	2.88	21.63
5,600.0	28.28	31.23	5,575.7	4,584.7	155.0	-43.0	-136.4	9.32	5.02	17.21
5,642.0	30.49	37.62	5,612.3	4,621.3	172.0	-31.4	-139.2	9.13	5.26	15.21
5,685.0	31.90	44.01	5,649.1	4,658.1	188.8	-16.8	-139.8	8.36	3.28	14.86
5,728.0	33.58	50.31	5,685.3	4,694.3	204.6	0.2	-137.9	8.83	3.91	14.65
5,771.0	36.41	55.12	5,720.5	4,729.5	219.5	19.9	-133.4	9.19	6.58	11.19
5,814.0	40.30	56.70	5,754.2	4,763.2	234.4	42.0	-127.2	9.33	9.05	3.67
5,857.0	44.10	57.80	5,786.1	4,795.1	250.0	66.2	-119.8	9.00	8.84	2.56
5,900.0	47.11	58.42	5,816.2	4,825.2	266.3	92.3	-111.5	7.08	7.00	1.44
5,943.0	51.22	59.21	5,844.3	4,853.3	283.1	120.2	-102.3	9.66	9.56	1.84
5,986.0	54.09	61.02	5,870.4	4,879.4	300.1	149.8	-91.9	7.47	6.67	4.21
6,029.0	57.80	63.71	5,894.4	4,903.4	316.6	181.4	-79.8	10.06	8.63	6.26
6,072.0	60.72	64.90	5,916.4	4,925.4	332.6	214.7	-66.0	7.20	6.79	2.77
6,114.0	64.52	65.82	5,935.7	4,944.7	348.2	248.6	-51.4	9.25	9.05	2.19
6,157.0	68.71	65.82	5,952.8	4,961.8	364.3	284.6	-35.8	9.74	9.74	0.00
6,200.0	71.10	66.93	5,967.6	4,976.6	380.5	321.6	-19.4	6.06	5.56	2.58
6,243.0	71.50	65.91	5,981.4	4,990.4	396.8	358.9	-2.8	2.43	0.93	-2.37
6,286.0	71.98	65.03	5,994.8	5,003.8	413.8	396.0	13.2	2.24	1.12	-2.05
6,329.0	72.21	63.93	6,008.0	5,017.0	431.4	433.0	28.5	2.49	0.53	-2.56
6,372.0	70.70	64.11	6,021.7	5,030.7	449.3	469.6	43.5	3.53	-3.51	0.42
6,415.0	68.10	63.84	6,036.8	5,045.8	466.9	505.8	58.3	6.08	-6.05	-0.63
6,457.0	67.21	64.02	6,052.8	5,061.8	484.0	540.7	72.5	2.16	-2.12	0.43
6,500.0	65.89	62.83	6,069.9	5,078.9	501.6	575.9	86.7	3.98	-3.07	-2.77
6,543.0	64.38	65.43	6,088.0	5,097.0	518.7	611.0	101.1	6.51	-3.51	6.05
6,586.0	63.28	65.74	6,107.0	5,116.0	534.6	646.2	116.3	2.64	-2.56	0.72
6,629.0	66.11	66.93	6,125.4	5,134.4	550.2	681.8	132.0	7.04	6.58	2.77
6,672.0	69.20	67.01	6,141.7	5,150.7	565.8	718.4	148.5	7.19	7.19	0.19
6,715.0	70.22	66.53	6,156.6	5,165.6	581.7	755.4	165.2	2.59	2.37	-1.12
6,758.0	69.20	67.50	6,171.5	5,180.5	597.4	792.6	181.9	3.18	-2.37	2.26
6,801.0	68.71	71.64	6,187.0	5,196.0	611.4	830.2	200.2	9.06	-1.14	9.63

04/01/2016

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513149
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 991.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 991.0usft
Site:	Doddridge County 513149	North Reference:	Grid
Well:	Well #513149	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,844.0	68.49	76.31	6,202.7	5,211 7	622.5	868.6	221.2	10.12	-0.51	10.86
6,886.0	69.60	80.01	6,217.7	5,226.7	630.5	907.0	244.1	8.64	2.64	8.81
6,929 0	71 01	84.51	6,232.2	5,241.2	636.0	947.1	270.0	10.38	3.28	10.47
6,972 0	70 88	88.43	6,246.2	5,255.2	638.5	987.7	298.2	8.62	-0.30	9.12
7,057 0	70 70	92.71	6,274.2	5,283.2	637.7	1,067.9	358 0	4 76	-0.21	5 04
Final Survey=7064' MD/ 6270' TVD - Plan Tie In=7074' MD										
7,074.0	71 54	93.63	6,279.7	5,288.7	636.8	1,084 0	370 5	7 12	4 94	5 41
7,105 0	72 80	92.80	6,289.2	5,298.2	635.1	1,113 4	393 3	4 80	4 06	-2 68
7,138.0	74 50	93 70	6,298 5	5,307 5	633 3	1,145 0	417 9	5 78	5 15	2 73
7,170 0	75 60	95 80	6,306 7	5,315 7	630 8	1,175 9	442 3	7 21	3 44	6 56
7,201.0	76.60	98.70	6,314.2	5,323.2	627.0	1,205 7	466 9	9 64	3 23	9 35
7,232 0	77.80	101 80	6,321 1	5,330 1	621 6	1,235 4	492 5	10 49	3 87	10.00
7,264.0	78.60	105.50	6,327.6	5,336.6	614.2	1,265.9	520.0	11.59	2.50	11.56
7,295.0	79.80	108.20	6,333.4	5,342.4	605.4	1,295.0	547.4	9.39	3.87	8.71
7,327.0	80.60	111.10	6,338.9	5,347.9	594.8	1,324.7	576.5	9.27	2.50	9.06
7,358.0	81.40	113.60	6,343.7	5,352.7	583.1	1,353.0	605.3	8.37	2.58	8.06
7,389 0	81 60	115.90	6,348.3	5,357.3	570.3	1,380.9	634.5	7.37	0.65	7.42
7,421 0	80 80	118.30	6,353.2	5,362.2	555.9	1,409.0	665.0	7.82	-2.50	7.50
7,452 0	79 20	120.20	6,358.6	5,367.6	541.0	1,435.6	694.7	7.94	-5.16	6.13
7,484 0	77 70	122.40	6,365.0	5,374 0	524.7	1,462.4	725.4	8.21	-4.69	6.88
7,515 0	77 30	125 10	6,371 7	5,380 7	507.9	1,487.6	755.4	8.60	-1.29	8.71
7,547.0	77 20	127.30	6,378.8	5,387.8	489.4	1,512.8	786.4	6.71	-0.31	6.88
7,578 0	77 10	130.70	6,385.7	5,394 7	470.4	1,536 3	816 5	10 70	-0 32	10 97
7,609 0	77 10	134.00	6,392.6	5,401.6	450.1	1,558 6	846 8	10 38	0 00	10 65
7,641.0	77.20	136 70	6,399 7	5,408 7	427 9	1,580 5	877 9	8 23	0 31	8 44
7,672 0	77 20	140.40	6,406.6	5,415.6	405 2	1,600 5	908 0	11 64	0 00	11 94
7,703 0	78.20	143.00	6,413.2	5,422.2	381.5	1,619.3	937.9	8.81	3.23	8.39
7,735.0	79.70	145.40	6,419.3	5,428.3	356.0	1,637.7	968.6	8.73	4.69	7.50
7,766.0	80.80	148.90	6,424.6	5,433.6	330 3	1,654.2	998.1	11.68	3.55	11.29
7,797.0	82.10	151.50	6,429.2	5,438.2	303.7	1,669.5	1,027.3	9.29	4.19	8.39
7,829 0	83 80	152.90	6,433.1	5,442.1	275.6	1,684.3	1,057.2	6.86	5.31	4.38
LP= 7860' MD/6436' TVD										
7,860 0	85 70	155.00	6,435.9	5,444.9	247.9	1,697.8	1,085.9	9.11	6.13	6.77
7,892 0	86 40	155.40	6,438.1	5,447.1	218.9	1,711.2	1,115.4	2.52	2.19	1.25
7,924 0	86 90	155.60	6,440 0	5,449 0	189 8	1,724.5	1,144.8	1.68	1.56	0.63
8,017 0	87 10	155 10	6,444 9	5,453 9	105.4	1 763 2	1,230.3	0 58	0.22	-0.54
8,112 0	87 40	154.60	6,449 4	5,458 4	19 5	1,803.5	1,318.0	0.61	0.32	-0.53
8,206 0	87 80	154.60	6,453 4	5,462.4	-65.3	1,843.8	1,405.0	0.43	0.43	0.00
8,301 0	87 40	153 80	6,457 4	5,466.4	-150 8	1,885.1	1,493.1	0.94	-0.42	-0.84
8,395 0	89 60	153 90	6,459 8	5,468 8	-235.1	1,926.5	1,580.6	2.34	2.34	0.11
8,489 0	89 30	151 30	6,460 7	5,469 7	-318 5	1,969.8	1,668 8	2 78	-0 32	-2 77
8,584 0	90 10	148.70	6,461.2	5,470.2	-400.8	2,017 3	1 759 4	2 86	0 84	-2 74
8,678 0	91 10	152.40	6,460.2	5,469.2	-482.6	2,063 5	1,848 7	4 08	1 06	3 94

04/01/2016

Phoenix Technologies

Survey Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513149
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 991.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 991.0usft
Site:	Doddridge County 513149	North Reference:	Grid
Well:	Well #513149	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,773.0	90.50	154.00	6,458.9	5,467.9	-567.4	2,106.3	1,937.5	1.80	-0.63	1.68
8,868.0	89.90	155.00	6,458.6	5,467.6	-653.2	2,147.2	2,025.6	1.23	-0.63	1.05
8,962.0	87.70	154.20	6,460.5	5,469.5	-738.1	2,187.5	2,112.6	2.49	-2.34	-0.85
9,056.0	87.30	153.60	6,464.6	5,473.6	-822.4	2,228.8	2,200.0	0.77	-0.43	-0.64
9,150.0	87.80	154.40	6,468.7	5,477.7	-906.8	2,270.0	2,287.3	1.00	0.53	0.85
9,245.0	87.90	154.20	6,472.2	5,481.2	-992.3	2,311.2	2,375.4	0.24	0.11	-0.21
9,339.0	88.00	153.60	6,475.6	5,484.6	-1,076.7	2,352.5	2,462.8	0.65	0.11	-0.64
9,434.0	87.60	152.80	6,479.2	5,488.2	-1,161.4	2,395.3	2,551.6	0.94	-0.42	-0.84
9,529.0	88.10	153.60	6,482.8	5,491.8	-1,246.2	2,438.1	2,640.4	0.99	0.53	0.84
9,624.0	87.70	151.80	6,486.3	5,495.3	-1,330.5	2,481.6	2,729.4	1.94	-0.42	-1.89
9,718.0	88.80	154.20	6,489.1	5,498.1	-1,414.2	2,524.3	2,817.4	2.81	1.17	2.55
9,813.0	89.30	154.70	6,490.7	5,499.7	-1,499.9	2,565.3	2,905.4	0.74	0.53	0.53
9,907.0	89.50	154.20	6,491.7	5,500.7	-1,584.7	2,605.8	2,992.6	0.57	0.21	-0.53
10,002.0	88.50	151.60	6,493.4	5,502.4	-1,669.3	2,649.1	3,081.5	2.93	-1.05	-2.74
10,096.0	88.90	153.50	6,495.5	5,504.5	-1,752.7	2,692.4	3,169.8	2.07	0.43	2.02
10,191.0	89.40	154.70	6,496.9	5,505.9	-1,838.1	2,733.9	3,258.0	1.37	0.53	1.26
10,285.0	89.60	154.00	6,497.7	5,506.7	-1,922.9	2,774.6	3,345.2	0.77	0.21	-0.74
10,379.0	89.40	155.20	6,498.5	5,507.5	-2,007.8	2,814.9	3,432.3	1.29	-0.21	1.28
10,474.0	89.10	154.20	6,499.8	5,508.8	-2,093.6	2,855.5	3,520.2	1.10	-0.32	-1.05
10,568.0	88.70	154.00	6,501.6	5,510.6	-2,178.2	2,896.5	3,607.5	0.48	-0.43	-0.21
10,662.0	89.00	156.10	6,503.5	5,512.5	-2,263.4	2,936.2	3,694.3	2.26	0.32	2.23
10,756.0	88.80	155.10	6,505.3	5,514.3	-2,349.0	2,975.0	3,780.7	1.08	-0.21	-1.06
10,851.0	89.40	155.40	6,506.8	5,515.8	-2,435.2	3,014.8	3,868.2	0.71	0.63	0.32
10,945.0	89.90	155.50	6,507.4	5,516.4	-2,520.7	3,053.8	3,954.7	0.54	0.53	0.11
11,040.0	90.60	155.90	6,506.9	5,515.9	-2,607.3	3,092.9	4,042.0	0.85	0.74	0.42
11,134.0	89.30	156.20	6,507.0	5,516.0	-2,693.2	3,131.1	4,128.1	1.42	-1.38	0.32
11,228.0	89.20	154.80	6,508.2	5,517.2	-2,778.8	3,170.0	4,214.6	1.49	-0.11	-1.49
11,323.0	89.90	154.10	6,509.0	5,518.0	-2,864.5	3,211.0	4,302.7	1.04	0.74	-0.74
Final Survey= 11409' MD/6510' TVD										
11,409.0	89.10	149.70	6,509.7	5,518.7	-2,940.3	3,251.5	4,383.7	5.20	-0.93	-5.12
Projection to TD/Deepest Point of Well= 11463' MD/6511' TVD										
11,463.0	89.10	149.70	6,510.6	5,519.6	-2,986.9	3,278.8	4,435.3	0.00	0.00	0.00

04/01/2016

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513149
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 991.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 991.0usft
Site:	Doddridge County 513149	North Reference:	Grid
Well:	Well #513149	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	AS Drilled Surveys		

Design Annotations

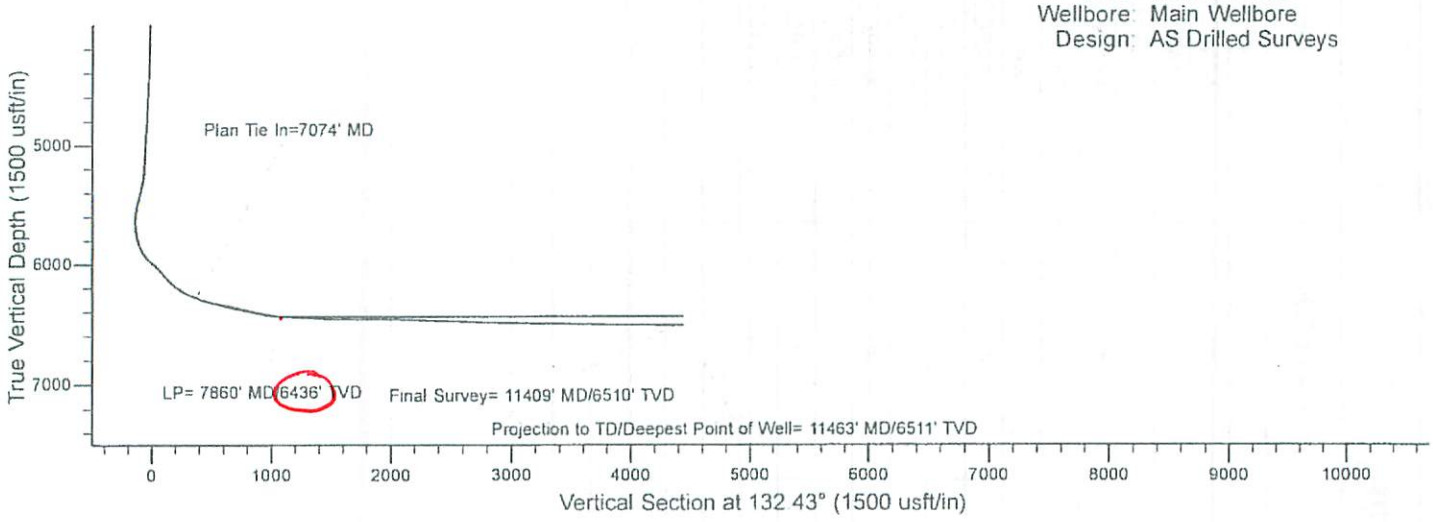
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,180.0	5,178.6	36.9	-50.1	Gyro Tie In=5170' MD
7,074.0	6,279.7	636.8	1,084.0	Final Survey=7064' MD/ 6270' TVD
7,074.0	6,279.7	636.8	1,084.0	Plan Tie In=7074' MD
7,860.0	6,435.9	247.9	1,697.8	LP= 7860' MD/6436' TVD
11,409.0	6,509.7	-2,940.3	3,251.5	Final Survey= 11409' MD/6510' TVD
11,463.0	6,510.6	-2,986.9	3,278.8	Projection to TD/Deepest Point of Well= 11463' MD/6511' TVD

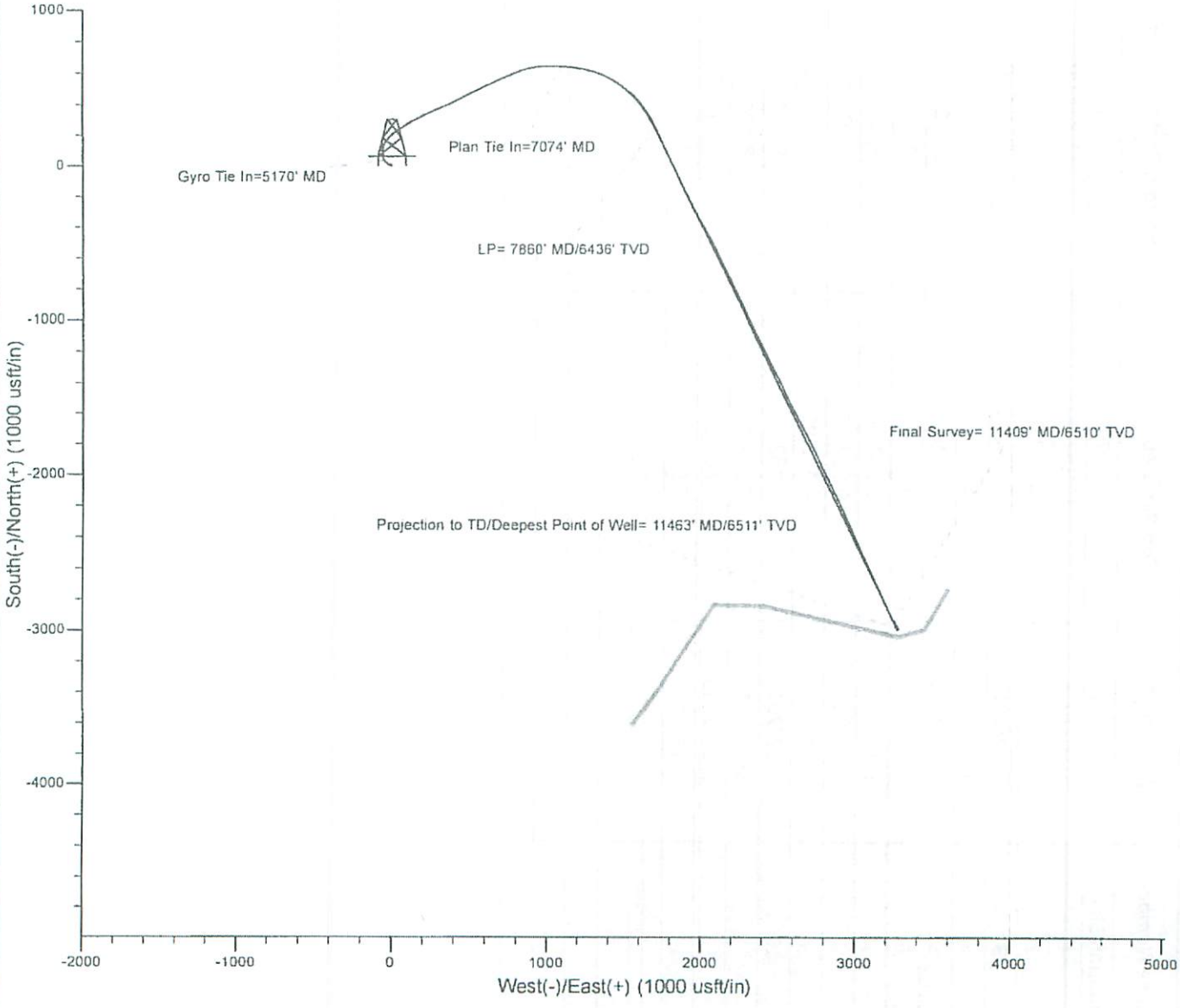
Checked By _____ Approved By: _____ Date _____

04/01/2016

EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 513149
Well: Well #513149
Wellbore: Main Wellbore
Design: AS Drilled Surveys





04/01/2016

513149 - 47-017-06463-0000- Perforations					
Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	3/29/2015	11,427.00	11,430.00	10	MARCELLUS
1	5/10/2015	11,162.00	11,344.00	32	MARCELLUS
2	5/10/2015	10,862.00	11,102.00	40	MARCELLUS
3	5/10/2015	10,562.00	10,804.00	40	MARCELLUS
4	5/11/2015	10,262.00	10,504.00	40	MARCELLUS
5	5/11/2015	9,962.00	10,204.00	40	MARCELLUS
6	5/11/2015	9,662.00	9,904.00	40	MARCELLUS
7	5/11/2015	9,362.00	9,604.00	40	MARCELLUS
8	5/11/2015	9,062.00	9,304.00	40	MARCELLUS
9	5/12/2015	8,762.00	9,004.00	40	MARCELLUS
10	5/12/2015	8,462.00	8,704.00	40	MARCELLUS
11	5/12/2015	8,162.00	8,404.00	40	MARCELLUS
12	5/13/2015	7,862.00	8,104.00	40	MARCELLUS
13	5/13/2015	7,562.00	7,804.00	40	MARCELLUS

513149 - 47-017-06463-0000- Stimulated Stages								
Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
Initiation Sleeve	5/10/2015	14.1	5,573.00	8,018.00	5,204.00	0	292	0
1	5/10/2015	100.5	7,871.00	8,339.00	5,256.00	481,300	11230	0
2	5/10/2015	99.9	7,454.00	7,901.00	4,874.00	482,580	10963	0
3	5/10/2015	100.2	7,369.00	8,001.00	4,992.00	484,240	11345	0
4	5/11/2015	88.7	7,888.00	8,864.00	4,986.00	484,820	10953	0
5	5/11/2015	99	7,653.00	8,368.00	4,867.00	483,640	11181	0
6	5/11/2015	100.7	7,342.00	8,131.00	4,311.00	478,560	11640	0
7	5/11/2015	99.7	7,501.00	8,548.00	4,944.00	486,860	11491	0
8	5/11/2015	100.3	7,313.00	8,024.00	4,931.00	482,540	11030	0
9	5/12/2015	101	7,010.00	7,375.00	4,705.00	482,720	10946	0
10	5/12/2015	99.9	7,183.00	7,754.00	3,922.00	477,900	10910	0
11	5/12/2015	97.8	7,281.00	9,749.00	7,548.00	457,440	10922	0
11.01	5/12/2015	9.09	4,500.00	6,501.00	4,549.00	0	2473	0
12	5/13/2015	100.5	6,738.00	7,049.00	4,944.00	498,740	11377	0
13	5/13/2015	98.4	6,850.00	7,379.00	3,807.00	499,300	10930	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/9/2015
Job End Date:	5/13/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06463-00-00
Operator Name:	EQT Production
Well Name and Number:	513149
Longitude:	-80.76647000
Latitude:	39.23590700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,394
Total Base Water Volume (gal):	6,246,030
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Interstate Oil & Gas Compact Commission

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	Keane Group	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	88.96568	None
Sand (Proppant)	Keane Group	Proppant					
			Silica Substrate	14808-60-7	100.00000	10.72003	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05610	None
Hydrochloric Acid (15%)	Keane Group	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.01748	None
FFR760	Keane Group	Friction Reducer					
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.00534	None
			Alkyl Alcohol	Proprietary	10.00000	0.00178	None
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00089	None
FFR730	Keane Group	Friction Reducer					
			Oxyalkylated alcohol A	Proprietary	5.00000	0.00307	None
EC6330A	Keane Group	Scale Inhibitor					
			Sodium Phosphate, Tribasic	7601-54-9	5.00000	0.00123	None
AI 600	Keane Group	Corrosion Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00012	None

			N, N-Dimethylformamide	68-12-2	20.00000	0.00006	None
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00005	None
			Cinnamaldehyde	104-55-2	15.00000	0.00005	None
			2-Butoxyenthanol	111-76-2	15.00000	0.00005	None
			Poly (oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl)-.omega.-hydroxy-, branched	127087-87-0	5.00000	0.00002	None
			1-Decanol	112-30-1	5.00000	0.00002	None
			1-Octanol	111-87-5	2.50000	0.00001	None
			Triethyl Phosphate	78-40-0	2.50000	0.00001	None
			Isopropyl alcohol	67-63-0	2.50000	0.00001	None
LEB-10X	Keane Group	Gel Breaker					
			Ethylene Glycol	107-21-1	30.00000	0.00006	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS) Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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)

Welcome Michelle N., Operator - OpNo. E1210363 [Log Out]

Hydraulic Fracturing DISCLOSURE

FracFocus Chemical Disclosure Registry

Submission to FracFocus using Excel Spreadsheets has been turned off.

FIND A WELL BY STATE ABOUT PROJECT PARTNERS

(Note: Clicking the FracFocus, FIND A WELL links will open a new window.)

Prepare Disclosure for FracFocus Submission

Disclosure Lists | Dashboard

Disclosure has been submitted.

Note: This window expires with 10 minutes of inactivity. After that you will be taken back to the dashboard.

Preview Disclosure PDF | Validate Disclosure | Submit To FracFocus

Hydraulic Fracturing Data

Edit

Job Start Date	Job End Date	API Number	State & County
5/9/2015	5/13/2015	47-017-06463-00-00	West Virginia --- Doddridge

Well Name
513149

Longitude	Latitude	Datum	Federal/Tribal Well?
-80.76647	39.235907	NAD83	

True Vertical Depth (ft)	Total Water Vol (gal)	Total Non Water Vol	Total Mass (lbs)
6393.5	6246030	0	58587896

MSDS Chemical Ingredients

New Additive | Select Additive | Add Additive

	Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass
Edit	Water	Keane Group	Carrier/Base Fluid						
				Water	7732-18-5	100%	88.9656807904%	None	52123120.35
Edit	Sand (Proppant)	Keane Group	Proppant						
				Silica Substrate	14808-60-7	100%	10.7200299914%	None	6280640
Edit	MC MX 437-5	Multi-Chem	Calcium nitrate solution						
				Calcium nitrate	10124-37-5	60%	.0560993416%	None	32867.424
Edit	Hydrochloric Acid (15%)	Keane Group	Acidizing						
				Hydrochloric Acid	7647-01-0	15%	.0174767984%	None	10239.288
Edit	FFR760	Keane Group	Friction Reducer						
				Hydrotreated Light Distillate	64742-47-8	30%	.0053423165%	None	3129.951
				Alkyl Alcohol	Proprietary	10%	.0017807722%	None	1043.317
				Oxyalkylated alcohol A	Proprietary	5%	.0008903861%	None	521.658
Edit	FFR730	Keane Group	Friction Reducer						
				Oxyalkylated alcohol A	Proprietary	5%	.0030702253%	None	1798.78
Edit	EC6330A	Keane Group	Scale Inhibitor						
				Sodium Phosphate, Tribasic	7601-54-9	5%	.0012272782%	None	719.036
Edit	Al 600								

04/01/2016

	Keane Group	Corrosion Inhibitor						
			Ethylene Glycol	107-21-1	40%	.0001241195%	None	72.719
			N, N-Dimethylformamide	68-12-2	20%	.0000620597%	None	36.359
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15%	.0000465448%	None	27.27
			Cinnamiaidehyde	104-55-2	15%	.0000465448%	None	27.27
			2-Butoxyenthanol	111-76-2	15%	.0000465448%	None	27.27
			Poly (oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl) -.omega.-hydroxy-,branched	127087-87-0	5%	.0000155149%	None	9.09
			1-Decanol	112-30-1	5%	.0000155149%	None	9.09
			1-Octanol	111-87-5	2.5%	.0000077575%	None	4.545
			Triethyl Phosphate	78-40-0	2.5%	.0000077575%	None	4.545
			Isopropyl alcohol	67-63-0	2.5%	.0000077575%	None	4.545
Edit	LEB-10X	Keane Group	Gel Breaker					
			Ethylene Glycol	107-21-1	30%	.0000630705%	None	36.952

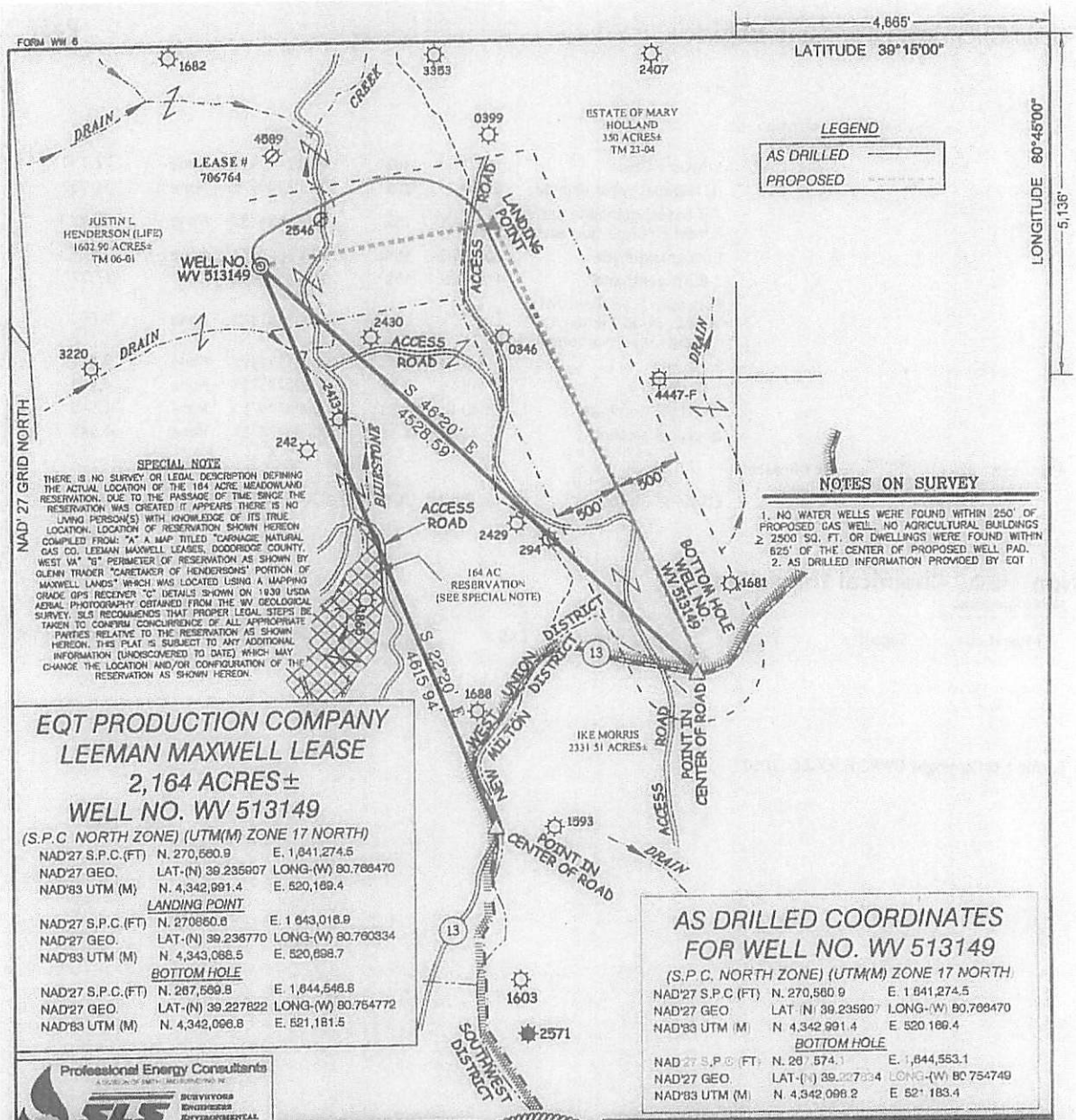
Non-MSDS Chemical Ingredients

New Ingredients

Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass

04/01/2016

FORM WW-6



EQT PRODUCTION COMPANY
LEEMAN MAXWELL LEASE
2,164 ACRES±
WELL NO. WV 513149

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 270,560.9	E. 1,641,274.5
NAD'27 GEO.	LAT-(N) 39.235907	LONG-(W) 80.766470
NAD'83 UTM (M)	N. 4,342,991.4	E. 520,169.4
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 270850.8	E. 1 643,016.9
NAD'27 GEO.	LAT-(N) 39.236770	LONG-(W) 80.760334
NAD'83 UTM (M)	N. 4,343,068.5	E. 520,698.7
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 267,569.8	E. 1,644,546.8
NAD'27 GEO.	LAT-(N) 39.227822	LONG-(W) 80.754772
NAD'83 UTM (M)	N. 4,342,096.8	E. 521,181.5

AS DRILLED COORDINATES FOR WELL NO. WV 513149

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C (FT)	N. 270,560.9	E. 1,641,274.5
NAD'27 GEO.	LAT-(N) 39.235907	LONG-(W) 80.766470
NAD'83 UTM (M)	N. 4,342,991.4	E. 520,169.4
BOTTOM HOLE		
NAD'27 S.P.C. (FT)	N. 267,574.1	E. 1,644,553.1
NAD'27 GEO.	LAT-(N) 39.227834	LONG-(W) 80.754749
NAD'83 UTM (M)	N. 4,342,096.2	E. 521,183.4

Professional Energy Consultants
SLS
SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-8424 www.slssurveys.com

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 2288 Earl N. Thompson

EARL N. THOMPSON LICENSED No. 2288 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE DECEMBER 06, 20 13

REVISED 03/06/14 & 02/10/15

OPERATORS WELL NO WV 513149

API WELL NO 47 – 017 – 06463
STATE – COUNTY – PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO 7889ASDRILLED513149

SCALE 1" = 1000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION:
ELEVATION 967'(GROUND) 968'(PROPOSED) WATERSHED BLUESTONE CREEK
DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'
SURFACE OWNER JUSTIN L. HENDERSON (LIFE) ACREAGE 1,602.90±
ROYALTY OWNER LEEMAN MAXWELL HRS ACREAGE 2,164± LEASE NO. 706764

PROPOSED WORK:
DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___
PHYSICAL CHANGE IN WELL (SPECIFY) ___ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH 6399'

COUNTY NAME / PERMIT

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

04/01/2016