

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 515276

API: 47 - 085 - 10094

Submission: Initial Amended

Notes: Correction to Production Cement Top
(MD)

APPROVED

NAME: *Michael Duff*

DATE: *6/13/16*

RECEIVED
Office of Oil and Gas

DEC 21 2015

WV Department of
Environmental Protection

AX
R. B. M. 6/20/16

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

API 47 - 085 - 10094 County Ritchie District Clay
Quad Pennsboro Pad Name PEN15 Field/Pool Name _____
Farm name DEWAYNE BRITTON ET UX Well Number 515276
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 4,345,846 Easting 504,204
Landing Point of Curve Northing 4,346,260 Easting 505,006
Bottom Hole Northing 4,347,633 Easting 504,338

Elevation (ft) 1,119' 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 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 05/22/2014 Date drilling commenced 06/18/2014 Date drilling ceased 03/24/2015
Date completion activities began 6/3/2015 Date completion activities ceased 6/10/2015
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 86',166',245',397',773',876' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1655',1946',2524' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 17',276',382',747' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

STAG

09/16/2016

API 47-085 - 10094 Farm name DEWAYNE BRITTON ET UX Well number 515276

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	26"	20"	40'	NEW	A-500 40LB/FT	NONE	Y
Surface	17.5"	13.375"	1,081'	NEW	J-55 54.5LB/FT	249', 582'	Y
Coal							
Intermediate 1	12.25"	9.625"	5,414'	NEW	P-110 40LB/FT	NONE	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	14,143'	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	38	15.6	1.19	45.22	0	8
Surface	CLASS A	892	15.6	1.19	1061.5	0	8
Coal							
Intermediate 1	CLASS A	240/307/1207	14.2/15.6/15.6	1.5/1.18/1.18	2146.5	0	8
Intermediate 2							
Intermediate 3							
Production	Class H / Class H	597/682	14.2/15.2	1.23/2.18	2221.1	4,910'	72
Tubing							

Drillers TD (ft) 14,164' MD Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 3,900' 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- JOINTS: 1,11,24
 INTERMEDIATE- RAN AT LEAST EVERY 500' FEET JOINTS: 1,12,24,36,48,60,72,84,96,108,120,132
 Production- 214 Composite bodied centralizers on every joint from TD up to 5,000'

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 _____

API 47- 085 - 10094 Farm name DEWAYNE BRITTON ET UX Well number 515276

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.

API 47- 085 - 10094 Farm name DEWAYNE BRITTON ET UX Well number 515276

PRODUCING FORMATION(S)	DEPTHS	
	TVD	MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

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	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

Please insert additional pages as applicable.

Drilling Contractor ALPHA HUNTER DRILLING (RIG 5)
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 Allied Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company Stingray Energy
Address 66680 Executive Drive City Saint Clairsville State OH Zip 43950

Please insert additional pages as applicable.

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

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

WR-35
Rev. 8/23/13

Page ___ of ___

API 47- 085 - 10094 Farm name DEWAYNE BRITTON ET UX Well number 515276

Drilling Contractor Savanna Drilling
Address 2204 Timberloch Place Suite 230 City Woodlands State TX Zip 77380

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

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company Baker Hughes
Address 837 Philippi Pike City Clarksburgh State WV Zip 26301

09/16/2016

API 47 - 085 - 10094

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	0	0	876	876
SAND/SHALE	0	0	17	17
WASHINGTON COAL	17	17	19	19
SAND/SHALE	19	19	276	276
COAL	276	276	284	284
SAND/SHALE	284	284	382	382
COAL	382	382	387	387
SAND/SHALE	387	387	747	747
COAL	747	747	751	751
SAND/SHALE	751	751	1,750	1,750
MAXTON	1,750	1,750	1,969	1,969
BIG LIME	1,969	1,969	2,037	2,037
KEENER	2,037	2,037	2,376	2,376
WEIR	2,376	2,376	2,581	2,581
GANTZ	2,581	2,581	2,721	2,721
50F	2,721	2,721	2,802	2,802
30F	2,802	2,802	2,846	2,846
GORDON	2,846	2,846	2,927	2,927
4TH	2,927	2,927	3,073	3,073
5TH	3,073	3,073	3,116	3,116
BAYARD	3,116	3,116	3,465	3,465
WARREN	3,465	3,465	3,508	3,508
B-5	3,508	3,508	3,546	3,546
SPEECHLEY	3,546	3,546	3,927	3,927
BALLTOWN A	3,927	3,927	4,589	4,577
RILEY	4,589	4,577	4,985	4,936
BENSON	4,985	4,936	5,312	5,205
ALEXANDER	5,312	5,205	5,348	5,233
ELKS	5,348	5,233	7,477	6,105
SONYEA	7,477	6,105	7,806	6,218
MIDDLESEX	7,806	6,218	7,969	6,276
GENESEE	7,969	6,276	8,135	6,328
GENESEO	8,135	6,328	8,256	6,356
TULLY	8,256	6,356	8,330	6,372
HAMILTON	8,330	6,372	8,362	6,378
MARCELLUS	8,362	6,378	14,164	6,436



PHOENIX
TECHNOLOGY SERVICES USA INC.

EQT Production - Marcellus

Ritchie County, WV
Ritchie County 515276
Well #515276

Main Wellbore

Design: 515276 As Drilled Surveys

Standard Survey Report

24 March, 2015



Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 As Drilled Surveys		

Project Ritchie 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		Using geodetic scale factor

Site Ritchie County 515276

Site Position:		Northing:	280,805.10 usft	Latitude:	39.26
From:	Map	Easting:	1,589,040.80 usft	Longitude:	-80.95
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.93 °

Well Well #515276

Well Position	+N/-S	0.0 usft	Northing:	280,805.10 usft	Latitude:	39° 15' 42.700 N
	+E/-W	0.0 usft	Easting:	1,589,040.80 usft	Longitude:	80° 57' 5.162 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,119.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/23/2015	-8.33	66.77	52,203

Design 515276 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 (°)
	0.0	0.0	0.0	5.24

Survey Program Date 3/24/2015

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	3,878.0	GyroData Gyro (Main Wellbore)	GYD_DP_MS	Gyrodatta gyro-compassing and drop
0.00	14,164.0	Phoenix MWD (Main Wellbore)	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	-1,135.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.29	245.30	103.0	-1,032.0	-0.1	-0.2	-0.1	0.28	0.28	0.00
203.0	0.42	271.96	203.0	-932.0	-0.2	-0.8	-0.3	0.21	0.13	26.66
303.0	0.41	273.56	303.0	-832.0	-0.2	-1.6	-0.3	0.02	-0.01	1.60
403.0	0.37	275.52	403.0	-732.0	-0.1	-2.2	-0.3	0.04	-0.04	1.96
503.0	0.38	264.74	503.0	-632.0	-0.1	-2.9	-0.4	0.07	0.01	-10.78
603.0	0.40	258.14	603.0	-532.0	-0.2	-3.6	-0.5	0.05	0.02	-6.60
703.0	0.19	206.26	703.0	-432.0	-0.4	-4.0	-0.8	0.32	-0.21	-51.88

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
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Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)	
803.0	0.18	168.34	803.0	-332.0	-0.7	-4.0	-1.1	0.12	-0.01	-37.92	
903.0	0.23	187.22	903.0	-232.0	-1.1	-4.0	-1.5	0.08	0.05	18.88	
1,003.0	0.18	163.68	1,003.0	-132.0	-1.4	-4.0	-1.8	0.10	-0.05	-23.54	
1,103.0	0.22	161.68	1,103.0	-32.0	-1.8	-3.9	-2.1	0.04	0.04	-2.00	
1,203.0	0.58	161.80	1,203.0	68.0	-2.4	-3.7	-2.8	0.36	0.36	0.12	
1,303.0	0.57	172.05	1,303.0	168.0	-3.4	-3.4	-3.7	0.10	-0.01	10.25	
1,403.0	0.56	165.01	1,403.0	268.0	-4.4	-3.2	-4.7	0.07	-0.01	-7.04	
1,503.0	0.65	172.78	1,503.0	368.0	-5.4	-3.0	-5.7	0.12	0.09	7.77	
1,603.0	0.59	176.59	1,603.0	468.0	-6.5	-2.9	-6.7	0.07	-0.06	3.81	
1,703.0	0.50	180.25	1,703.0	568.0	-7.4	-2.9	-7.7	0.10	-0.09	3.66	
1,803.0	0.57	178.40	1,803.0	668.0	-8.4	-2.9	-8.6	0.07	0.07	-1.85	
1,903.0	0.55	178.43	1,902.9	767.9	-9.3	-2.9	-9.6	0.02	-0.02	0.03	
2,003.0	0.50	175.53	2,002.9	867.9	-10.3	-2.8	-10.5	0.06	-0.05	-2.90	
2,103.0	0.47	188.09	2,102.9	967.9	-11.1	-2.9	-11.3	0.11	-0.03	12.56	
2,203.0	0.52	184.81	2,202.9	1,067.9	-12.0	-2.9	-12.2	0.06	0.05	-3.28	
2,303.0	0.48	179.51	2,302.9	1,167.9	-12.8	-3.0	-13.1	0.06	-0.04	-5.30	
2,403.0	0.50	185.16	2,402.9	1,267.9	-13.7	-3.0	-13.9	0.05	0.02	5.65	
2,503.0	0.50	184.33	2,502.9	1,367.9	-14.6	-3.1	-14.8	0.01	0.00	-0.83	
2,603.0	0.40	183.55	2,602.9	1,467.9	-15.3	-3.1	-15.6	0.10	-0.10	-0.78	
2,703.0	0.34	191.54	2,702.9	1,567.9	-16.0	-3.2	-16.2	0.08	-0.06	7.99	
2,803.0	0.47	199.46	2,802.9	1,667.9	-16.7	-3.4	-16.9	0.14	0.13	7.92	
2,903.0	0.26	216.99	2,902.9	1,767.9	-17.2	-3.7	-17.5	0.24	-0.21	17.53	
3,003.0	0.20	235.01	3,002.9	1,867.9	-17.5	-4.0	-17.8	0.09	-0.06	18.02	
3,103.0	0.41	229.99	3,102.9	1,967.9	-17.8	-4.4	-18.2	0.21	0.21	-5.02	
3,203.0	0.27	220.86	3,202.9	2,067.9	-18.2	-4.8	-18.6	0.15	-0.14	-9.13	
3,303.0	0.23	231.61	3,302.9	2,167.9	-18.5	-5.1	-18.9	0.06	-0.04	10.75	
3,403.0	0.35	191.46	3,402.9	2,267.9	-19.0	-5.4	-19.4	0.23	0.12	-40.15	
3,503.0	0.26	204.98	3,502.9	2,367.9	-19.5	-5.5	-19.9	0.11	-0.09	13.52	
3,603.0	0.14	163.35	3,602.9	2,467.9	-19.8	-5.6	-20.2	0.18	-0.12	-41.63	
3,703.0	0.19	178.03	3,702.9	2,567.9	-20.1	-5.5	-20.5	0.07	0.05	14.68	
3,803.0	0.19	145.24	3,802.9	2,667.9	-20.4	-5.4	-20.8	0.11	0.00	-32.79	
Gyro Tie In= 3878' MD											
3,878.0	0.34	168.24	3,877.9	2,742.9	-20.7	-5.3	-21.1	0.24	0.20	30.67	
3,908.0	0.20	187.80	3,907.9	2,772.9	-20.8	-5.3	-21.2	0.55	-0.47	65.20	
3,940.0	0.30	105.50	3,939.9	2,804.9	-20.9	-5.2	-21.3	1.05	0.31	-257.19	
3,971.0	1.00	90.30	3,970.9	2,835.9	-20.9	-4.9	-21.3	2.31	2.26	-49.03	
4,003.0	1.80	88.50	4,002.9	2,867.9	-20.9	-4.1	-21.2	2.50	2.50	-5.63	
4,034.0	2.80	87.70	4,033.9	2,898.9	-20.9	-2.9	-21.1	3.23	3.23	-2.58	
4,066.0	4.10	84.20	4,065.8	2,930.8	-20.7	-0.9	-20.7	4.11	4.06	-10.94	
4,098.0	5.10	84.90	4,097.7	2,962.7	-20.5	1.6	-20.3	3.13	3.13	2.19	
4,129.0	6.30	84.90	4,128.6	2,993.6	-20.2	4.7	-19.7	3.87	3.87	0.00	
4,161.0	7.40	84.40	4,160.3	3,025.3	-19.9	8.5	-19.0	3.44	3.44	-1.56	
4,192.0	8.40	84.20	4,191.0	3,056.0	-19.4	12.7	-18.2	3.23	3.23	-0.65	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
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Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)
4,224.0	9.40	86.00	4,222.6	3,087.6	-19.0	17.7	-17.3	3.24	3.13	5.63
4,255.0	10.10	87.30	4,253.2	3,118.2	-18.7	22.9	-16.6	2.37	2.26	4.19
4,287.0	10.80	87.70	4,284.7	3,149.7	-18.5	28.7	-15.8	2.20	2.19	1.25
4,318.0	11.60	88.40	4,315.1	3,180.1	-18.3	34.7	-15.0	2.62	2.58	2.26
4,350.0	12.70	89.60	4,346.4	3,211.4	-18.2	41.4	-14.3	3.53	3.44	3.75
4,382.0	13.50	90.60	4,377.5	3,242.5	-18.2	48.7	-13.6	2.60	2.50	3.13
4,413.0	14.30	90.00	4,407.6	3,272.6	-18.2	56.1	-13.0	2.62	2.58	-1.94
4,445.0	14.80	89.90	4,438.6	3,303.6	-18.2	64.2	-12.3	1.56	1.56	-0.31
4,476.0	15.70	90.70	4,468.5	3,333.5	-18.2	72.3	-11.6	2.98	2.90	2.58
4,508.0	16.30	89.50	4,499.3	3,364.3	-18.3	81.2	-10.8	2.14	1.88	-3.75
4,539.0	17.20	89.20	4,528.9	3,393.9	-18.2	90.1	-9.8	2.92	2.90	-0.97
4,571.0	17.70	89.20	4,559.5	3,424.5	-18.0	99.7	-8.8	1.56	1.56	0.00
4,602.0	19.10	90.10	4,588.9	3,453.9	-18.0	109.5	-7.9	4.61	4.52	2.90
4,634.0	20.20	90.90	4,619.0	3,484.0	-18.1	120.2	-7.0	3.54	3.44	2.50
4,665.0	21.40	91.50	4,648.0	3,513.0	-18.3	131.2	-6.2	3.93	3.87	1.94
4,697.0	22.30	90.50	4,677.7	3,542.7	-18.5	143.1	-5.3	3.04	2.81	-3.13
4,728.0	23.20	89.40	4,706.3	3,571.3	-18.5	155.1	-4.2	3.21	2.90	-3.55
4,760.0	24.30	88.10	4,735.6	3,600.6	-18.2	168.0	-2.8	3.81	3.44	-4.06
4,792.0	25.00	87.70	4,764.7	3,629.7	-17.7	181.4	-1.1	2.25	2.19	-1.25
4,823.0	25.60	87.40	4,792.7	3,657.7	-17.1	194.6	0.7	1.98	1.94	-0.97
4,855.0	26.20	86.70	4,821.5	3,686.5	-16.4	208.6	2.7	2.10	1.88	-2.19
4,886.0	27.00	87.20	4,849.2	3,714.2	-15.7	222.4	4.7	2.68	2.58	1.61
4,918.0	28.00	87.10	4,877.6	3,742.6	-14.9	237.2	6.8	3.13	3.13	-0.31
4,949.0	28.90	87.30	4,904.8	3,769.8	-14.2	251.9	8.8	2.92	2.90	0.65
4,981.0	29.80	87.50	4,932.7	3,797.7	-13.5	267.6	11.0	2.83	2.81	0.63
5,012.0	31.00	88.00	4,959.5	3,824.5	-12.9	283.3	13.0	3.96	3.87	1.61
5,044.0	31.70	88.40	4,986.8	3,851.8	-12.4	299.9	15.1	2.28	2.19	1.25
5,075.0	32.50	88.20	5,013.0	3,878.0	-11.9	316.4	17.1	2.60	2.58	-0.65
5,107.0	33.30	88.40	5,039.9	3,904.9	-11.4	333.7	19.2	2.52	2.50	0.63
5,138.0	34.20	88.40	5,065.7	3,930.7	-10.9	351.0	21.2	2.90	2.90	0.00
5,170.0	35.10	87.90	5,092.0	3,957.0	-10.3	369.1	23.5	2.95	2.81	-1.56
5,202.0	35.90	88.00	5,118.1	3,983.1	-9.6	387.7	25.8	2.51	2.50	0.31
5,233.0	36.90	88.30	5,143.0	4,008.0	-9.0	406.1	28.1	3.28	3.23	0.97
5,265.0	37.90	88.50	5,168.4	4,033.4	-8.5	425.5	30.4	3.15	3.13	0.63
5,296.0	39.20	88.90	5,192.7	4,057.7	-8.1	444.8	32.6	4.27	4.19	1.29
5,328.0	40.30	89.60	5,217.3	4,082.3	-7.8	465.3	34.7	3.71	3.44	2.19
5,359.0	41.00	89.80	5,240.8	4,105.8	-7.7	485.5	36.7	2.30	2.26	0.65
5,375.0	41.10	89.80	5,252.9	4,117.9	-7.7	496.0	37.7	0.63	0.63	0.00
5,429.0	41.40	90.90	5,293.5	4,158.5	-7.9	531.6	40.7	1.45	0.56	2.04
5,460.0	41.80	90.40	5,316.7	4,181.7	-8.1	552.2	42.4	1.68	1.29	-1.61
5,492.0	42.20	88.30	5,340.4	4,205.4	-7.9	573.6	44.6	4.57	1.25	-6.56
5,523.0	42.60	87.00	5,363.3	4,228.3	-7.0	594.5	47.3	3.11	1.29	-4.19

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)
5,555.0	45.00	87.20	5,386.4	4,251.4	-5.9	616.6	50.4	7.51	7.50	0.63
5,587.0	48.20	87.50	5,408.4	4,273.4	-4.8	639.8	53.6	10.02	10.00	0.94
5,618.0	51.20	88.70	5,428.5	4,293.5	-4.0	663.4	56.6	10.12	9.68	3.87
5,650.0	54.20	88.90	5,447.8	4,312.8	-3.5	688.9	59.4	9.39	9.38	0.63
5,682.0	57.70	88.80	5,465.8	4,330.8	-3.0	715.4	62.4	10.94	10.94	-0.31
5,713.0	61.10	88.80	5,481.5	4,346.5	-2.4	742.1	65.4	10.97	10.97	0.00
5,745.0	61.90	88.50	5,496.8	4,361.8	-1.8	770.2	68.6	2.63	2.50	-0.94
5,776.0	64.90	88.00	5,510.7	4,375.7	-0.9	797.9	72.0	9.78	9.68	-1.61
5,808.0	68.80	87.50	5,523.3	4,388.3	0.3	827.3	75.8	12.27	12.19	-1.56
5,840.0	71.10	87.00	5,534.2	4,399.2	1.7	857.3	80.0	7.34	7.19	-1.56
5,903.0	72.40	86.50	5,554.0	4,419.0	5.1	917.0	88.8	2.20	2.06	-0.79
5,966.0	71.30	85.70	5,573.6	4,438.6	9.2	976.8	98.3	2.12	-1.75	-1.27
6,029.0	68.80	87.30	5,595.1	4,460.1	12.8	1,035.9	107.3	4.63	-3.97	2.54
6,092.0	68.30	88.60	5,618.1	4,483.1	14.9	1,094.5	114.8	2.08	-0.79	2.06
6,155.0	69.10	88.10	5,641.0	4,506.0	16.6	1,153.1	121.8	1.47	1.27	-0.79
6,218.0	68.00	88.40	5,664.0	4,529.0	18.4	1,211.7	129.0	1.80	-1.75	0.48
6,281.0	68.60	88.70	5,687.3	4,552.3	19.8	1,270.3	135.8	1.05	0.95	0.48
6,344.0	69.20	88.20	5,710.0	4,575.0	21.4	1,329.0	142.7	1.21	0.95	-0.79
6,407.0	69.80	87.90	5,732.1	4,597.1	23.4	1,388.0	150.1	1.05	0.95	-0.48
6,470.0	70.30	86.90	5,753.6	4,618.6	26.1	1,447.1	158.2	1.69	0.79	-1.59
6,533.0	70.90	85.90	5,774.5	4,639.5	29.9	1,506.4	167.3	1.77	0.95	-1.59
6,596.0	69.70	87.90	5,795.7	4,660.7	33.1	1,565.7	175.9	3.54	-1.90	3.17
6,659.0	69.10	89.20	5,817.9	4,682.9	34.6	1,624.6	182.8	2.15	-0.95	2.06
6,722.0	69.10	88.90	5,840.4	4,705.4	35.5	1,683.5	189.1	0.44	0.00	-0.48
6,785.0	69.60	88.70	5,862.6	4,727.6	36.8	1,742.4	195.8	0.85	0.79	-0.32
6,849.0	68.50	89.30	5,885.5	4,750.5	37.8	1,802.2	202.3	1.93	-1.72	0.94
6,912.0	68.60	89.40	5,908.5	4,773.5	38.5	1,860.8	208.3	0.22	0.16	0.16
6,975.0	68.70	88.60	5,931.5	4,796.5	39.5	1,919.5	214.7	1.19	0.16	-1.27
7,038.0	68.80	88.70	5,954.3	4,819.3	40.9	1,978.2	221.4	0.22	0.16	0.16
7,101.0	70.00	87.80	5,976.5	4,841.5	42.7	2,037.1	228.6	2.33	1.90	-1.43
7,164.0	70.70	87.20	5,997.6	4,862.6	45.3	2,096.4	236.6	1.43	1.11	-0.95
7,227.0	69.10	88.50	6,019.3	4,884.3	47.5	2,155.5	244.2	3.19	-2.54	2.06
7,290.0	68.90	89.20	6,041.9	4,906.9	48.7	2,214.3	250.7	1.08	-0.32	1.11
7,353.0	69.30	88.70	6,064.3	4,929.3	49.8	2,273.1	257.2	0.98	0.63	-0.79
7,416.0	70.80	88.00	6,085.8	4,950.8	51.5	2,332.3	264.3	2.60	2.38	-1.11
7,479.0	71.90	87.70	6,106.0	4,971.0	53.7	2,392.0	272.0	1.80	1.75	-0.48
7,511.0	72.40	87.40	6,115.8	4,980.8	55.0	2,422.4	276.0	1.80	1.56	-0.94
7,542.0	71.60	85.00	6,125.4	4,990.4	57.0	2,451.8	280.7	7.80	-2.58	-7.74
7,574.0	71.30	81.70	6,135.6	5,000.6	60.5	2,482.0	286.9	9.82	-0.94	-10.31
7,605.0	70.60	77.70	6,145.7	5,010.7	65.7	2,510.8	294.8	12.40	-2.26	-12.90
7,637.0	70.00	74.80	6,156.5	5,021.5	72.9	2,540.0	304.6	8.74	-1.88	-9.06
7,668.0	69.20	71.70	6,167.3	5,032.3	81.2	2,567.9	315.4	9.72	-2.58	-10.00
7,700.0	69.00	68.60	6,178.7	5,043.7	91.4	2,596.0	328.1	9.07	-0.63	-9.69

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)
7,731.0	68.70	65.00	6,189.9	5,054.9	102.8	2,622.5	341.9	10.87	-0.97	-11.61
7,763.0	67.90	61.90	6,201.7	5,066.7	116.1	2,649.1	357.5	9.34	-2.50	-9.69
7,795.0	68.00	58.50	6,213.7	5,078.7	130.8	2,674.9	374.6	9.85	0.31	-10.63
7,826.0	68.70	55.00	6,225.2	5,090.2	146.6	2,699.0	392.5	10.73	2.26	-11.29
7,858.0	69.50	51.30	6,236.6	5,101.6	164.5	2,722.9	412.5	11.09	2.50	-11.56
7,889.0	69.50	48.10	6,247.5	5,112.5	183.3	2,745.0	433.2	9.67	0.00	-10.32
7,921.0	69.10	44.80	6,258.8	5,123.8	203.9	2,766.7	455.8	9.73	-1.25	-10.31
7,952.0	69.10	41.40	6,269.8	5,134.8	225.1	2,786.5	478.6	10.25	0.00	-10.97
7,984.0	70.00	37.30	6,281.0	5,146.0	248.2	2,805.5	503.4	12.33	2.81	-12.81
8,015.0	70.90	34.00	6,291.4	5,156.4	272.0	2,822.5	528.6	10.44	2.90	-10.65
8,047.0	71.10	31.30	6,301.8	5,166.8	297.5	2,838.8	555.5	8.00	0.63	-8.44
8,079.0	71.90	28.20	6,312.0	5,177.0	323.8	2,853.9	583.1	9.52	2.50	-9.69
8,110.0	73.20	25.40	6,321.3	5,186.3	350.2	2,867.2	610.6	9.58	4.19	-9.03
8,142.0	74.60	22.90	6,330.1	5,195.1	378.2	2,879.8	639.7	8.69	4.38	-7.81
8,174.0	75.90	19.00	6,338.3	5,203.3	407.1	2,890.9	669.5	12.47	4.06	-12.19
8,205.0	77.10	15.90	6,345.5	5,210.5	435.9	2,899.9	698.9	10.47	3.87	-10.00
8,237.0	78.20	12.90	6,352.4	5,217.4	466.2	2,907.7	729.8	9.78	3.44	-9.38
8,269.0	78.20	9.70	6,358.9	5,223.9	496.9	2,913.8	760.9	9.79	0.00	-10.00
8,300.0	77.50	6.80	6,365.4	5,230.4	526.9	2,918.2	791.2	9.42	-2.26	-9.35
8,332.0	78.20	3.40	6,372.2	5,237.2	558.0	2,920.9	822.5	10.61	2.19	-10.63
8,363.0	79.30	0.70	6,378.2	5,243.2	588.4	2,922.0	852.8	9.25	3.55	-8.71
8,395.0	80.40	357.90	6,383.9	5,248.9	619.9	2,921.6	884.1	9.27	3.44	-8.75
8,426.0	82.00	355.40	6,388.6	5,253.6	650.5	2,919.8	914.4	9.49	5.16	-8.06
8,458.0	83.60	352.20	6,392.6	5,257.6	682.0	2,916.4	945.5	11.11	5.00	-10.00
8,489.0	83.80	349.40	6,396.0	5,261.0	712.4	2,911.5	975.4	9.00	0.65	-9.03
8,521.0	84.80	346.90	6,399.2	5,264.2	743.6	2,904.9	1,005.8	8.38	3.13	-7.81
8,553.0	86.10	344.30	6,401.7	5,266.7	774.5	2,897.0	1,035.8	9.06	4.06	-8.13
8,584.0	87.20	341.00	6,403.6	5,268.6	804.0	2,887.8	1,064.4	11.20	3.55	-10.65
LP= 8616' MD/6405' TVD										
8,616.0	88.20	338.20	6,404.8	5,269.8	834.0	2,876.6	1,093.2	9.28	3.13	-8.75
8,647.0	89.50	335.20	6,405.5	5,270.5	862.5	2,864.4	1,120.5	10.54	4.19	-9.68
8,679.0	90.00	334.30	6,405.6	5,270.6	891.4	2,850.7	1,148.0	3.22	1.56	-2.81
8,742.0	90.90	334.30	6,405.1	5,270.1	948.2	2,823.4	1,202.1	1.43	1.43	0.00
8,805.0	89.10	334.50	6,405.1	5,270.1	1,005.0	2,796.2	1,256.2	2.87	-2.86	0.32
8,868.0	89.70	336.80	6,405.8	5,270.8	1,062.4	2,770.2	1,310.9	3.77	0.95	3.65
8,931.0	89.10	337.60	6,406.4	5,271.4	1,120.4	2,745.8	1,366.5	1.59	-0.95	1.27
8,994.0	88.50	337.60	6,407.7	5,272.7	1,178.7	2,721.8	1,422.3	0.95	-0.95	0.00
9,057.0	88.90	337.10	6,409.2	5,274.2	1,236.8	2,697.6	1,478.0	1.02	0.63	-0.79
9,120.0	86.10	335.70	6,411.9	5,276.9	1,294.5	2,672.4	1,533.1	4.97	-4.44	-2.22
9,183.0	86.90	334.90	6,415.8	5,280.8	1,351.6	2,646.1	1,587.6	1.79	1.27	-1.27
9,246.0	89.40	333.40	6,417.8	5,282.8	1,408.3	2,618.6	1,641.5	4.63	3.97	-2.38
9,309.0	90.60	333.40	6,417.8	5,282.8	1,464.6	2,590.4	1,695.1	1.90	1.90	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)
9,372.0	90.40	332.90	6,417.3	5,282.3	1,520.8	2,562.0	1,748.4	0.85	-0.32	-0.79
9,436.0	90.60	332.60	6,416.7	5,281.7	1,577.7	2,532.7	1,802.4	0.56	0.31	-0.47
9,499.0	91.40	332.60	6,415.6	5,280.6	1,633.6	2,503.7	1,855.4	1.27	1.27	0.00
9,562.0	89.40	333.40	6,415.2	5,280.2	1,689.7	2,475.1	1,908.7	3.42	-3.17	1.27
9,625.0	89.50	333.80	6,415.8	5,280.8	1,746.2	2,447.1	1,962.4	0.65	0.16	0.63
9,687.0	85.90	334.00	6,418.2	5,283.2	1,801.8	2,419.8	2,015.3	5.82	-5.81	0.32
9,750.0	86.30	334.10	6,422.5	5,287.5	1,858.3	2,392.3	2,069.0	0.65	0.63	0.16
9,813.0	88.30	334.60	6,425.5	5,290.5	1,915.0	2,365.1	2,123.0	3.27	3.17	0.79
9,876.0	90.90	337.10	6,425.9	5,290.9	1,972.5	2,339.3	2,177.9	5.72	4.13	3.97
9,939.0	92.40	337.00	6,424.1	5,289.1	2,030.5	2,314.8	2,233.4	2.39	2.38	-0.16
10,002.0	91.30	336.00	6,422.1	5,287.1	2,088.2	2,289.6	2,288.6	2.36	-1.75	-1.59
10,066.0	91.40	335.10	6,420.6	5,285.6	2,146.5	2,263.2	2,344.2	1.41	0.16	-1.41
10,129.0	90.30	335.70	6,419.7	5,284.7	2,203.8	2,236.9	2,398.8	1.99	-1.75	0.95
10,192.0	90.60	336.50	6,419.2	5,284.2	2,261.4	2,211.4	2,453.9	1.36	0.48	1.27
10,255.0	89.00	336.10	6,419.4	5,284.4	2,319.0	2,186.1	2,509.0	2.62	-2.54	-0.63
10,318.0	88.30	335.00	6,420.9	5,285.9	2,376.4	2,160.0	2,563.7	2.07	-1.11	-1.75
10,381.0	89.30	334.50	6,422.2	5,287.2	2,433.3	2,133.2	2,618.0	1.77	1.59	-0.79
10,444.0	88.20	335.10	6,423.6	5,288.6	2,490.3	2,106.3	2,672.3	1.99	-1.75	0.95
10,508.0	88.60	334.60	6,425.3	5,290.3	2,548.2	2,079.2	2,727.5	1.00	0.63	-0.78
10,571.0	90.00	334.90	6,426.1	5,291.1	2,605.2	2,052.3	2,781.8	2.27	2.22	0.48
10,634.0	89.40	334.80	6,426.4	5,291.4	2,662.2	2,025.5	2,836.1	0.97	-0.95	-0.16
10,697.0	89.90	334.90	6,426.8	5,291.8	2,719.3	1,998.7	2,890.4	0.81	0.79	0.16
10,760.0	91.10	334.60	6,426.3	5,291.3	2,776.2	1,971.9	2,944.7	1.96	1.90	-0.48
10,823.0	90.20	334.70	6,425.6	5,290.6	2,833.2	1,944.9	2,999.0	1.44	-1.43	0.16
10,886.0	90.50	334.40	6,425.2	5,290.2	2,890.1	1,917.8	3,053.1	0.67	0.48	-0.48
10,949.0	89.50	334.60	6,425.2	5,290.2	2,946.9	1,890.7	3,107.3	1.62	-1.59	0.32
11,013.0	89.50	334.80	6,425.7	5,290.7	3,004.8	1,863.4	3,162.4	0.31	0.00	0.31
11,076.0	90.50	333.80	6,425.7	5,290.7	3,061.5	1,836.0	3,216.4	2.24	1.59	-1.59
11,139.0	89.70	334.10	6,425.6	5,290.6	3,118.1	1,808.4	3,270.3	1.36	-1.27	0.48
11,202.0	89.70	334.20	6,426.0	5,291.0	3,174.8	1,780.9	3,324.2	0.16	0.00	0.16
11,265.0	89.30	335.50	6,426.5	5,291.5	3,231.9	1,754.1	3,378.6	2.16	-0.63	2.06
11,328.0	90.00	335.00	6,426.9	5,291.9	3,289.1	1,727.7	3,433.1	1.37	1.11	-0.79
11,391.0	89.80	335.30	6,427.0	5,292.0	3,346.2	1,701.3	3,487.6	0.57	-0.32	0.48
11,454.0	90.80	335.50	6,426.7	5,291.7	3,403.5	1,675.0	3,542.3	1.62	1.59	0.32
11,517.0	90.20	336.00	6,426.1	5,291.1	3,461.0	1,649.2	3,597.1	1.24	-0.95	0.79
11,580.0	90.10	336.40	6,426.0	5,291.0	3,518.6	1,623.8	3,652.2	0.65	-0.16	0.63
11,643.0	89.10	337.20	6,426.4	5,291.4	3,576.5	1,598.9	3,707.6	2.03	-1.59	1.27
11,706.0	89.10	337.00	6,427.4	5,292.4	3,634.5	1,574.4	3,763.1	0.32	0.00	-0.32
11,770.0	90.30	337.00	6,427.7	5,292.7	3,693.4	1,549.4	3,819.5	1.88	1.88	0.00
11,833.0	89.50	336.80	6,427.8	5,292.8	3,751.4	1,524.7	3,875.0	1.31	-1.27	-0.32
11,896.0	89.40	336.40	6,428.4	5,293.4	3,809.2	1,499.7	3,930.3	0.65	-0.16	-0.63
11,959.0	88.70	335.50	6,429.5	5,294.5	3,866.7	1,474.0	3,985.2	1.81	-1.11	-1.43
12,021.0	89.00	334.80	6,430.7	5,295.7	3,923.0	1,448.0	4,038.8	1.23	0.48	-1.13

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 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)
12,085.0	91.00	334.70	6,430.7	5,295.7	3,980.9	1,420.7	4,094.0	3.13	3.13	-0.16
12,148.0	92.80	333.60	6,428.6	5,293.6	4,037.5	1,393.2	4,147.9	3.35	2.86	-1.75
12,211.0	90.50	333.70	6,426.8	5,291.8	4,093.9	1,365.3	4,201.5	3.65	-3.65	0.16
12,274.0	89.90	333.20	6,426.6	5,291.6	4,150.3	1,337.1	4,255.1	1.24	-0.95	-0.79
12,337.0	90.60	332.60	6,426.3	5,291.3	4,206.4	1,308.4	4,308.3	1.46	1.11	-0.95
12,400.0	90.30	333.70	6,425.8	5,290.8	4,262.6	1,279.9	4,361.7	1.81	-0.48	1.75
12,464.0	90.90	333.90	6,425.2	5,290.2	4,320.0	1,251.7	4,416.3	0.99	0.94	0.31
12,527.0	90.00	333.60	6,424.7	5,289.7	4,376.5	1,223.8	4,470.0	1.51	-1.43	-0.48
12,590.0	89.70	333.70	6,424.8	5,289.8	4,433.0	1,195.9	4,523.7	0.50	-0.48	0.16
12,654.0	89.70	334.30	6,425.2	5,290.2	4,490.5	1,167.8	4,578.4	0.94	0.00	0.94
12,717.0	89.90	334.30	6,425.4	5,290.4	4,547.3	1,140.5	4,632.4	0.32	0.32	0.00
12,780.0	89.30	335.10	6,425.8	5,290.8	4,604.2	1,113.6	4,686.7	1.59	-0.95	1.27
12,843.0	89.40	334.40	6,426.5	5,291.5	4,661.2	1,086.7	4,741.0	1.12	0.16	-1.11
12,906.0	88.40	335.50	6,427.7	5,292.7	4,718.2	1,060.0	4,795.3	2.36	-1.59	1.75
12,969.0	88.00	336.00	6,429.7	5,294.7	4,775.7	1,034.2	4,850.2	1.02	-0.63	0.79
13,032.0	89.60	336.40	6,431.0	5,296.0	4,833.3	1,008.7	4,905.2	2.62	2.54	0.63
13,095.0	89.40	336.60	6,431.6	5,296.6	4,891.1	983.6	4,960.5	0.45	-0.32	0.32
13,158.0	89.50	335.70	6,432.2	5,297.2	4,948.7	958.2	5,015.5	1.44	0.16	-1.43
13,222.0	90.60	334.80	6,432.1	5,297.1	5,006.8	931.4	5,070.9	2.22	1.72	-1.41
13,285.0	89.40	335.30	6,432.1	5,297.1	5,063.9	904.8	5,125.4	2.06	-1.90	0.79
13,348.0	88.80	335.20	6,433.1	5,298.1	5,121.1	878.4	5,179.9	0.97	-0.95	-0.16
13,411.0	89.90	335.70	6,433.9	5,298.9	5,178.4	852.2	5,234.6	1.92	1.75	0.79
13,474.0	91.00	335.40	6,433.4	5,298.4	5,235.8	826.2	5,289.3	1.81	1.75	-0.48
13,538.0	91.60	334.70	6,431.9	5,296.9	5,293.8	799.2	5,344.6	1.44	0.94	-1.09
13,601.0	90.40	334.30	6,430.8	5,295.8	5,350.6	772.1	5,398.8	2.01	-1.90	-0.63
13,664.0	89.20	333.80	6,431.0	5,296.0	5,407.3	744.5	5,452.7	2.06	-1.90	-0.79
13,727.0	89.20	333.30	6,431.9	5,296.9	5,463.7	716.4	5,506.3	0.79	0.00	-0.79
13,789.0	89.30	333.30	6,432.7	5,297.7	5,519.1	688.6	5,558.9	0.16	0.16	0.00
13,852.0	89.50	333.50	6,433.4	5,298.4	5,575.4	660.4	5,612.4	0.45	0.32	0.32
13,916.0	89.60	334.20	6,433.9	5,298.9	5,632.8	632.2	5,667.0	1.10	0.16	1.09
13,979.0	89.50	333.90	6,434.4	5,299.4	5,689.5	604.6	5,720.9	0.50	-0.16	-0.48
14,042.0	89.60	332.60	6,434.9	5,299.9	5,745.7	576.2	5,774.4	2.07	0.16	-2.06
Final Survey= 14105' MD/6435' TVD										
14,105.0	89.50	331.90	6,435.4	5,300.4	5,801.5	546.9	5,827.2	1.12	-0.16	-1.11
Projection to TD/ Deepest Point of Well= 14164' MD/ 6436' TVD										
14,164.0	89.50	331.90	6,435.9	5,300.9	5,853.5	519.1	5,876.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515276
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB@16 @ 1135.0usft
Site:	Ritchie County 515276	North Reference:	Grid
Well:	Well #515276	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	515276 As Drilled Surveys		

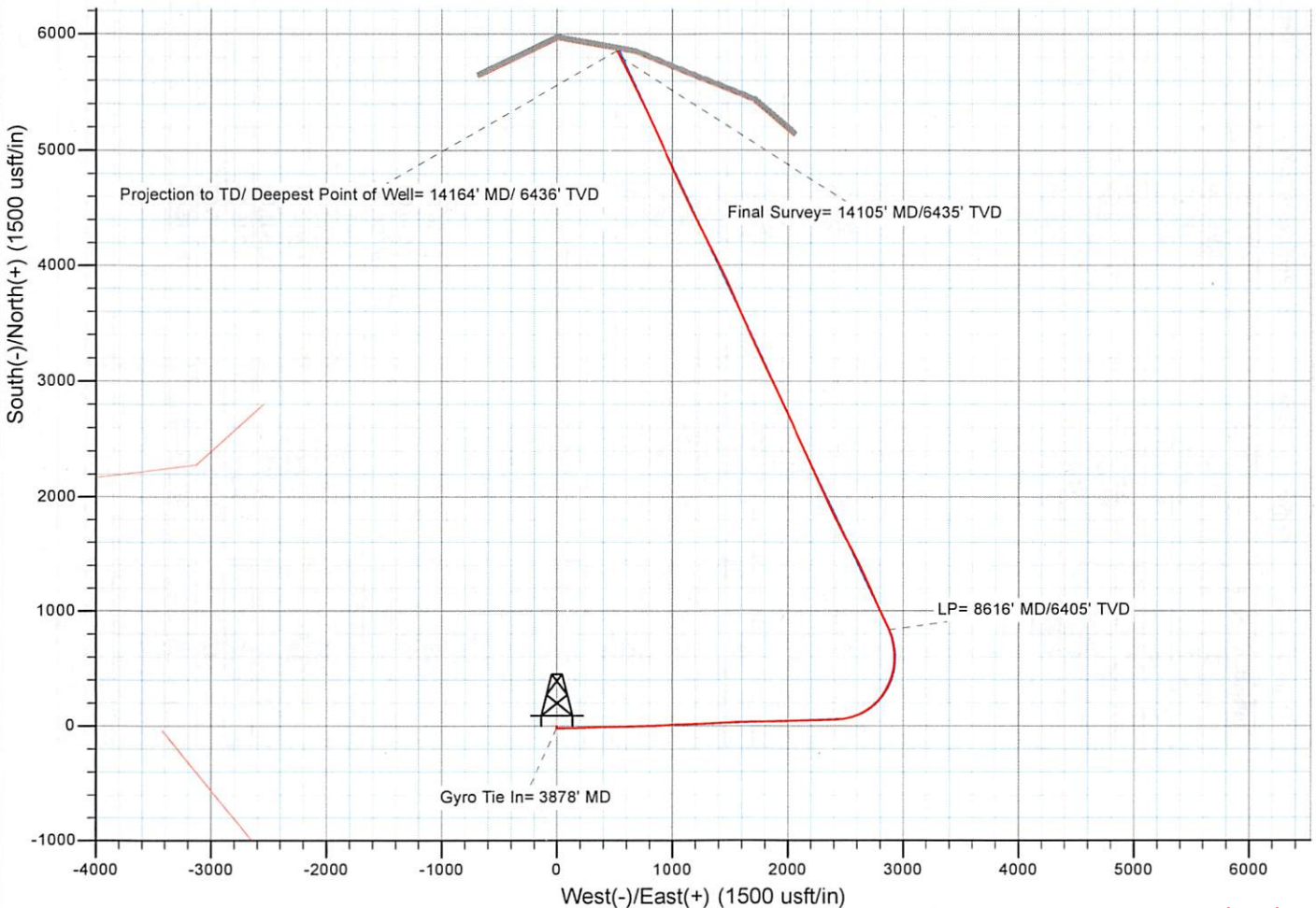
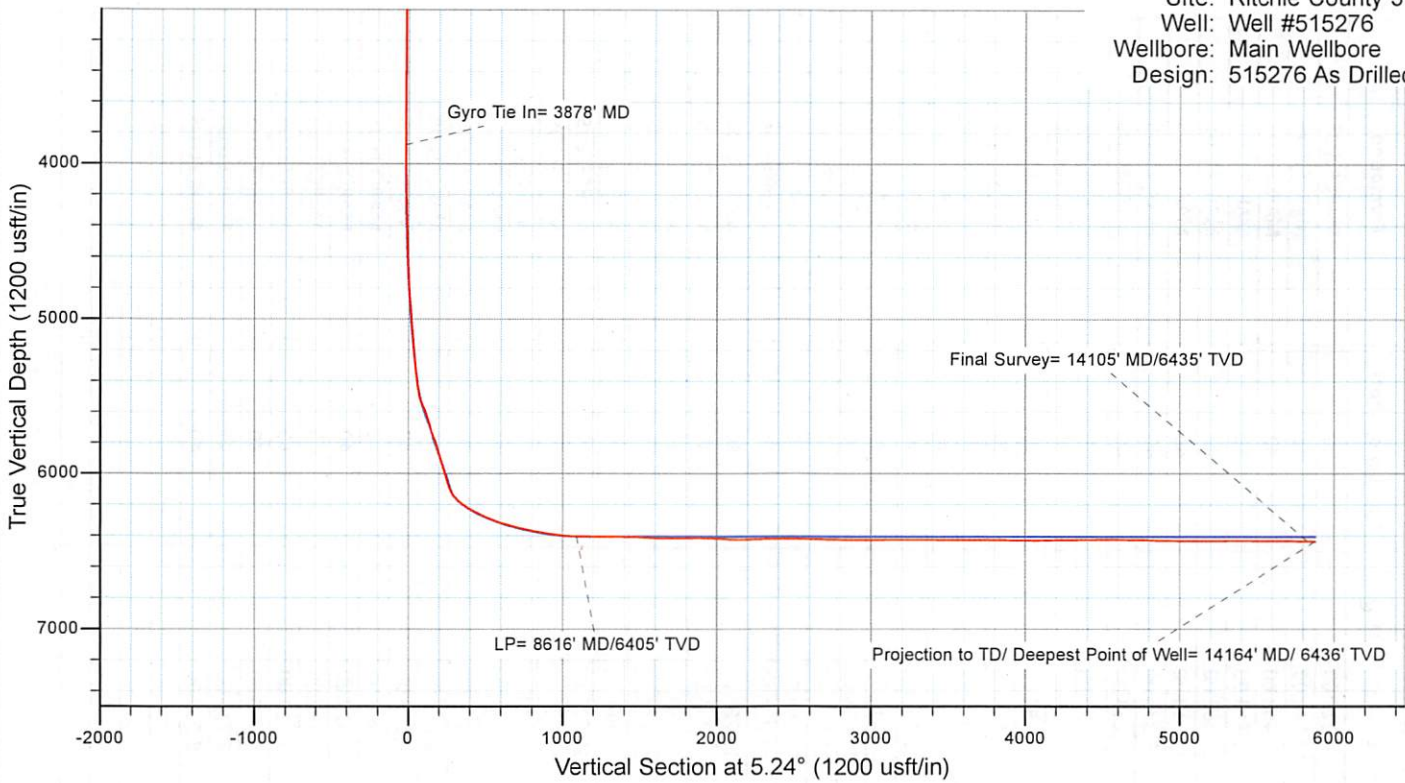
Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,878.0	3,877.9	-20.7	-5.3	Gyro Tie In= 3878' MD
8,616.0	6,404.8	834.0	2,876.6	LP= 8616' MD/6405' TVD
14,105.0	6,435.4	5,801.5	546.9	Final Survey= 14105' MD/6435' TVD
14,164.0	6,435.9	5,853.5	519.1	Projection to TD/ Deepest Point of Well= 14164' MD/ 6436' TVD

Checked By: _____ Approved By: _____ Date: _____



Project: Ritchie County, WV
Site: Ritchie County 515276
Well: Well #515276
Wellbore: Main Wellbore
Design: 515276 As Drilled Surveys



515276- 47-085-10094-0000- Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	4/29/2015	14,117.00	14,119.00	10	MARCELLUS
1	6/3/2015	13,996.00	14,088.00	32	MARCELLUS
2	6/3/2015	13,846.00	13,968.00	40	MARCELLUS
3	6/3/2015	13,696.00	13,818.00	40	MARCELLUS
4	6/3/2015	13,546.00	13,668.00	40	MARCELLUS
5	6/4/2015	13,396.00	13,518.00	40	MARCELLUS
6	6/4/2015	13,246.00	13,370.00	40	MARCELLUS
7	6/4/2015	13,096.00	13,218.00	40	MARCELLUS
8	6/4/2015	12,946.00	13,068.00	40	MARCELLUS
9	6/5/2015	12,796.00	12,918.00	40	MARCELLUS
10	6/5/2015	12,646.00	12,768.00	40	MARCELLUS
11	6/5/2015	12,496.00	12,618.00	40	MARCELLUS
12	6/5/2015	12,346.00	12,468.00	40	MARCELLUS
13	6/5/2015	12,196.00	12,316.00	40	MARCELLUS
14	6/6/2015	12,046.00	12,166.00	40	MARCELLUS
15	6/6/2015	11,896.00	12,018.00	40	MARCELLUS
16	6/6/2015	11,750.00	11,868.00	40	MARCELLUS
17	6/6/2015	11,596.00	11,718.00	40	MARCELLUS
18	6/6/2015	11,446.00	11,568.00	40	MARCELLUS
19	6/6/2015	11,296.00	11,418.00	40	MARCELLUS
20	6/7/2015	11,146.00	11,268.00	40	MARCELLUS
21	6/7/2015	10,996.00	11,116.00	40	MARCELLUS
22	6/7/2015	10,846.00	10,968.00	40	MARCELLUS
23	6/7/2015	10,693.00	10,818.00	40	MARCELLUS
24	6/7/2015	10,546.00	10,668.00	40	MARCELLUS
25	6/7/2015	10,396.00	10,516.00	40	MARCELLUS
26	6/7/2015	10,246.00	10,368.00	40	MARCELLUS
27	6/8/2015	10,096.00	10,218.00	40	MARCELLUS
28	6/8/2015	9,944.00	10,068.00	40	MARCELLUS
29	6/8/2015	9,796.00	9,918.00	40	MARCELLUS
30	6/8/2015	9,646.00	9,768.00	40	MARCELLUS
31	6/8/2015	9,496.00	9,618.00	40	MARCELLUS
32	6/9/2015	9,346.00	9,468.00	40	MARCELLUS
33	6/9/2015	9,196.00	9,318.00	40	MARCELLUS
34	6/9/2015	9,046.00	9,168.00	40	MARCELLUS
35	6/9/2015	8,901.00	9,018.00	40	MARCELLUS
36	6/9/2015	8,746.00	8,868.00	40	MARCELLUS
37	6/10/2015	8,596.00	8,718.00	40	MARCELLUS
38	6/10/2015	8,446.00	8,568.00	40	MARCELLUS

515276- 47-085-10094-0000- 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	6/3/2015	24.9	6,171.00	6,751.00	4,466.00	0	398	0
1	6/3/2015	89.1	8,280.00	8,538.00	3,915.00	202,520	5399	0
2	6/3/2015	87.6	8,187.00	8,461.00	3,435.00	202,560	5568	0
3	6/3/2015	83.3	8,001.00	8,458.00	3,246.00	203,300	5551	0
4	6/4/2015	89.3	8,039.00	8,365.00	3,917.00	201,100	5374	0
5	6/4/2015	91.1	8,219.00	8,457.00	4,133.00	200,660	5429	0
6	6/4/2015	87.4	8,193.00	8,504.00	5,207.00	202,400	5553	0
7	6/4/2015	88.4	8,172.00	8,468.00	4,051.00	200,980	5379	0
8	6/4/2015	90.3	7,928.00	8,414.00	3,959.00	202,380	5582	0
9	6/5/2015	90.6	8,020.00	8,253.00	3,533.00	202,420	5497	0
10	6/5/2015	98.8	8,536.00	8,829.00	3,827.00	200,790	5597	0
11	6/5/2015	98.5	8,508.00	8,884.00	4,156.00	202,140	5439	0
12	6/5/2015	99.2	8,465.00	8,842.00	3,512.00	201,500	5511	0
13	6/5/2015	99.1	8,484.00	8,790.00	3,558.00	203,020	5218	0
14	6/6/2015	97.3	8,433.00	8,927.00	4,210.00	201,860	5126	0
15	6/6/2015	95.7	8,625.00	8,829.00	4,626.00	199,680	5529	0
16	6/6/2015	95	8,608.00	8,861.00	4,055.00	201,420	5249	0
17	6/6/2015	98.5	8,569.00	8,868.00	3,687.00	201,000	5298	0
18	6/6/2015	98.8	8,254.00	8,662.00	3,648.00	201,820	5125	0
19	6/6/2015	96.7	8,391.00	8,649.00	3,604.00	201,800	4780	0
20	6/7/2015	99	8,369.00	8,636.00	3,919.00	202,340	5203	0
21	6/7/2015	100.6	8,438.00	8,819.00	3,662.00	202,100	5380	0
22	6/7/2015	99.4	8,484.00	8,874.00	4,127.00	200,500	5335	0
23	6/7/2015	100.5	8,468.00	8,975.00	4,304.00	198,480	5277	0
24	6/7/2015	99.2	8,330.00	8,532.00	3,790.00	202,720	5189	0
25	6/7/2015	94.6	8,265.00	8,478.00	3,445.00	202,800	5150	0
26	6/8/2015	99.4	8,224.00	8,543.00	4,401.00	201,480	5101	0
27	6/8/2015	99.6	8,093.00	8,401.00	3,680.00	202,300	4943	0
28	6/8/2015	100.8	8,342.00	8,934.00	3,502.00	198,980	5135	0
29	6/8/2015	100.8	8,349.00	8,936.00	4,099.00	199,720	5143	0
30	6/8/2015	100.90	8,450.00	8,847.00	4,058	198,740	5,100	0
31	6/9/2015	99.50	7,720.00	8,144.00	3,430	201,940	5,042	0
32	6/9/2015	100.10	7,819.00	8,294.00	3,720	202,180	4,967	0
33	6/9/2015	100.90	8,500.00	8,934.00	3,692	201,220	5,173	0
34	6/9/2015	100.80	8,529.00	8,773.00	3,777	202,680	5,227	0
35	6/9/2015	99.10	7,553.00	8,122.00	3,414	202,340	5,072	0
36	6/9/2015	100.00	7,666.00	8,175.00	3,372	201,940	4,860	0
37	6/10/2015	100.60	7,702.00	8,219.00	3,863	202,840	5,283	0
38	6/10/2015	100.4	8,175.00	8,522.00	3,542.00	202,920.00	5154	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/3/2015
Job End Date:	6/10/2015
State:	West Virginia
County:	Ritchie
API Number:	47-085-10094-00-00
Operator Name:	EQT Production
Well Name and Number:	515276
Longitude:	-80.95143400
Latitude:	39.26186100
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,436
Total Base Water Volume (gal):	8,414,112
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	Stingray Pressure Pumping, LLC	Carrier/Base Fluid	Water	7732-18-5	100.00000	89.83481	None
			Sand (Proppant)	Stingray Pressure Pumping, LLC	Proppant	Silica Substrate	14808-60-7
MC MX 437-5	Multi-Chem	Calcium nitrate solution	Calcium nitrate	10124-37-5	60.00000	0.05619	None
			Hydrochloric Acid (15%)	Stingray Pressure Pumping, LLC	Acidizing	Hydrochloric Acid	7647-01-0
FRA-405	Stingray Pressure Pumping, LLC	Friction reducer	Petroleum distillates	64742-47-8	40.00000	0.00286	None
			Sodium chloride	7647-14-5	10.00000	0.00072	None
			Ammonium chloride	12125-02-9	7.00000	0.00050	None
			Alcohols, C12-16, Ethoxylated	68551-12-2	7.00000	0.00050	None
ScaleClear 125	Stingray Pressure Pumping, LLC	Scale inhibitor	Phosphonomethylated polymine, compd. w/ substituted amine	Proprietary	15.00000	0.00370	None
			Ammonium chloride	12125-02-9	2.50000	0.00062	None

AI 600	Stingray Pressure Pumping, LLC	Acid corrosion inhibitor					
			Ethylene glycol	107-21-1	40.00000	0.00063	None
			N,N-Dimethylformamide	68-12-2	20.00000	0.00031	None
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00024	None
			2-Butoxyethanol	111-76-2	15.00000	0.00024	None
			Cinnamaldehyde	104-55-2	15.00000	0.00024	None
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy- branched	127087-87-0	5.00000	0.00008	None
			1-Decanol	112-30-1	5.00000	0.00008	None
			Isopropanol	67-63-0	2.50000	0.00004	None
			1-Octanol	111-87-5	2.50000	0.00004	None
			Triethyl phosphate	78-40-0	2.50000	0.00004	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]



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

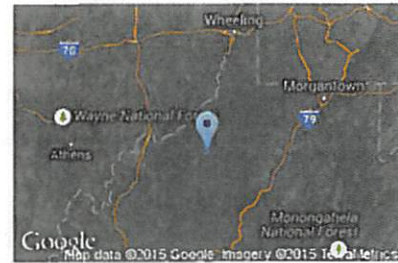
[Disclosure Lists](#) | [Dashboard](#)

i Disclosure has been submitted.

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

Hydraulic Fracturing Data

Job Start Date 6/3/2015	Job End Date 6/10/2015	API Number 47-085-10094-00-00	State & County West Virginia --- Ritchie
Well Name 515276			
Longitude -80.951434	Latitude 39.261861	Datum NAD83	Federal/Tribal Well?
True Vertical Depth (ft) 6436	Total Water Vol (gal) 8414112	Total Non Water Vol 0	Total Mass (lbs) 78160973



MSDS Chemical Ingredients

	Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass
<input type="button" value="Edit"/>	Water	Stingray Pressure Pumping, LLC	Carrier/Base Fluid	Water	7732-18-5	100%	89.8348143192%	None	70215764.64
<input type="button" value="Edit"/>	Sand (Proppant)	Stingray Pressure Pumping, LLC	Proppant	Silica Substrate	14808-60-7	100%	9.802296135%	None	7661570
<input type="button" value="Edit"/>	MC MX 437-5	Multi-Chem	Calcium nitrate solution	Calcium nitrate	10124-37-5	60%	.0561882779%	None	43917.305
<input type="button" value="Edit"/>	Hydrochloric Acid (15%)	Stingray Pressure Pumping, LLC	Acidizing	Hydrochloric Acid	7647-01-0	15%	.0353820591%	None	27654.962
<input type="button" value="Edit"/>	FRA-405	Stingray Pressure Pumping, LLC	Friction reducer	Petroleum distillates	64742-47-8	40%	.0028643451%	None	2238.8
				Sodium chloride	7647-14-5	10%	.0007160863%	None	559.7
				Ammonium chloride	12125-02-9	7%	.0005012604%	None	391.79
				Alcohols, C12-16, Ethoxylated	68551-12-2	7%	.0005012604%	None	391.79

<input type="button" value="Edit"/>	ScaleClear 125	Stingray Pressure Pumping, LLC	Scale inhibitor	Phosphonomethylated polymine, compd. w/ substituted amine	Proprietary	15%	.0036950668%	None	2888.1
				Ammonium chloride	12125-02-9	2.5%	.0006158445%	None	481.35
<input type="button" value="Edit"/>	Al 600	Stingray Pressure Pumping, LLC	Acid corrosion inhibitor	Ethylene glycol	107-21-1	40%	.000626952%	None	490.032
				N,N-Dimethylformamide	68-12-2	20%	.000313476%	None	245.016
				Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15%	.000235107%	None	183.762
				2-Butoxyethanol	111-76-2	15%	.000235107%	None	183.762
				Cinnamaldehyde	104-55-2	15%	.000235107%	None	183.762
				Poly(oxy-1,2-ethanediyl), .alpha.-(4-nonylphenyl) .omega.-hydroxy-,branched	127087- 87-0	5%	.000078369%	None	61.254
				1-Decanol	112-30-1	5%	.000078369%	None	61.254
				Isopropanol	67-63-0	2.5%	.0000391845%	None	30.627
				1-Octanol	111-87-5	2.5%	.0000391845%	None	30.627
				Triethyl phosphate	78-40-0	2.5%	.0000391845%	None	30.627

Non-MSDS Chemical Ingredients

Trade Name	Supplier	Purpose	Ingredients	CAS #	% High Additive	% HF Job	Comments	Ingredient Mass
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**EQT PRODUCTION COMPANY
TAYLOR LEASE
1,600 ACRES±
WELL NO. WV 515276**

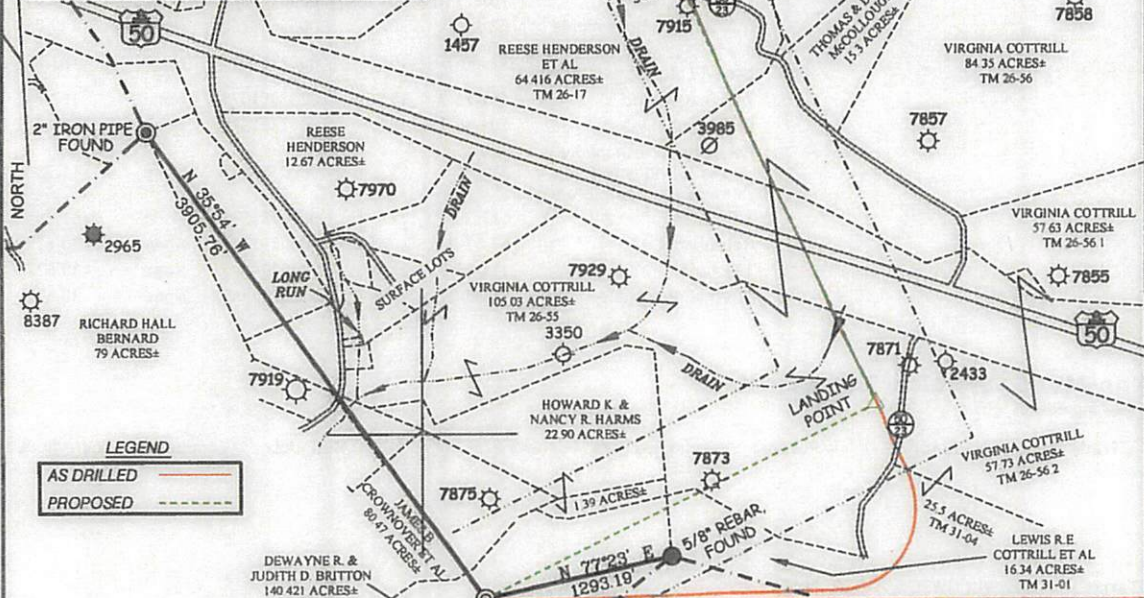
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD27 S.P.C.(FT) N. 290,805.1 E. 1,589,040.8
 NAD27 GEO. LAT.(N) 39.261861 LONG.(W) 80.951434
 NAD83 UTM (M) N. 4,345,846.3 E. 504,204.4

LANDING POINT
 NAD27 S.P.C.(FT) N. 282,119.6 E. 1,591,895.1
 NAD27 GEO. LAT.(N) 39.265567 LONG.(W) 80.942135
 NAD83 UTM (M) N. 4,348,260.3 E. 505,008.4

BOTTOM HOLE
 NAD27 S.P.C.(FT) N. 286,860.2 E. 1,589,577.8
 NAD27 GEO. LAT.(N) 39.277958 LONG.(W) 80.940871
 NAD83 UTM (M) N. 4,347,632.8 E. 504,338.3

LATITUDE 39° 17' 30"
NOTES ON SURVEY

1. TIES TO WELLS, CORNERS AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SURVEY GRADE TIE TO CORS NETWORK).
3. NO WATER WELLS WERE FOUND WITHIN 250 FEET OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS (GREATER THAN 2500 SQUARE FEET) OR DWELLINGS WERE FOUND WITHIN 625 FEET OF CENTER OF PROPOSED WELL PAD. AS DRILLED INFORMATION PROVIDED BY EUT.



LEGEND
 AS DRILLED ———
 PROPOSED - - - - -

A	THOMAS A. & D. DIANE McCOLLough	12.7 AC±	TM 26-18.2
B	CLARIN D. & CAROLYN J. DAVIS	5.453 AC±	TM 26-18.1
C	CLARIN D. & CAROLYN J. DAVIS	18.55 AC±	TM 26-18
D	KARL E. & KAREN M. KNUTSEN	14.35 AC±	TM 43A-14
E	HAROLD L. & GLORIA A. SHIVE	2.897 AC±	TM 26-17.8
F	HAROLD L. & GLORIA A. SHIVE	2.162 AC±	TM 26-17.9
G	RICHARD C. & DONNA M. OWENS	2.110 AC±	TM 26-17.10

**AS DRILLED COORDINATES
FOR WELL NO. WV 515276**
 (S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD27 S.P.C.(FT) N. 290,805.1 E. 1,589,040.8
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I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE JANUARY 10 20 14
 REVISED APRIL 08 20 15
 OPERATORS WELL NO. WV 515276
 API WELL NO. 47-085-10094-H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7498AD515276
 PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 1000'

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

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

LOCATION:
 ELEVATION 1,119' (PAD ELEVATION) WATERSHED LONG RUN OF NORTH FORK HUGHES RIVER
 DISTRICT CLAY COUNTY RITCHIE QUADRANGLE PENNSBORO 7.5'
 SURFACE OWNER DEWAYNE BRITTON ET UX ACREAGE 140.421
 ROYALTY OWNER E. R. TAYLOR HEIRS ACREAGE 1,600±
 PROPOSED WORK:
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE 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 _____

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

09/16/2016