

APPROVED

NAME: *David Zuer*

DATE: *1/27/16*

Well Operator's Report of Well Work



Where energy meets innovation.

Well Number: 512482

API: 47 - 017 - 06391

Submission: Initial Amended

Notes: Injection tests - 1.01, 2.01, 13.01
Reperf/refrac - 13.1

Correction to Production Cement Top
(MD)

RECEIVED
Office of Oil and Gas

DEC 21 2015

WV Department of
Environmental Protection

02/05/2016

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

API 47 - 017 - 06391 County Doddridge District 8
Quad Oxford Pad Name OXF149 Field/Pool Name _____
Farm name Harper, Lucy E. Well Number 512482
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 4,341,360 Easting 517,203
Landing Point of Curve Northing 4,341,578 Easting 517,416
Bottom Hole Northing 4,342,348 Easting 517,041

Elevation (ft) 1240 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 11.5 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 01/21/2014 Date drilling commenced 7/10/2014 Date drilling ceased 11/23/2014
Date completion activities began 4/20/2015 Date completion activities ceased 4/26/2015
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 287', 326', 393', 438' Open mine(s) (Y/N) depths No
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths No
Coal depth(s) ft 642' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

02/05/2016

API 47-017 - 06391 Farm name Harper, Lucy E. Well number 512482

| 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 | 40 | New | MC-50, 81 #/ft | N/A | Yes |
| Surface | 17-1/2 | 13-3/8 | 927 | New | J-55, 54.5 #/ft | N/A | Yes |
| Coal | | | | | | | |
| Intermediate 1 | 12-3/8 | 9-5/8 | 3,139 | New | A-500, 40 #/ft | 1,359 | Yes |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8-1/2 | 5-1/2 | 10,465 | New | P-110, 20#/ft | N/A | No |
| 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 | 1.18 | 18.4 | Surface | 8 |
| Surface | Class A | 782 | 15.6 | 1.20 | 983 | Surface | 8 |
| Coal | | | | | | | |
| Intermediate 1 | Class A / Class A | 872 / 193 / 1065 | 15.6 / 15.6 | 1.18 / 1.18 | 1029/228/1257 | Surface | 8 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class A / Class H | 500 / 455 / 955 | 14.2 / 15.2 | 1.26 / 1.97 | 1526.35 | 3,900' | 72 |
| Tubing | | | | | | | |

Drillers TD (ft) 10,468' Loggers TD (ft) N/A
 Deepest formation penetrated Onondaga Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,023'

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 _____

20" Conductor - N/A
 13-3/8" Surface - Bowspring Centralizers - 75', 532', 925'
 9-5/8" Intermediate - Bowspring Centralizers - 220', 642', 1,062', 1,484', 1,906', 2,328', 2,749', 3,137'
 5-1/2" Production - Composite Body Centralizers - Every Joint from the shoe to 1500' above KOP.

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 All Non-Radioactive, Chemical Tracers

Drilling Contractor: Patterson UTI
Address: 207 Carlton Drive

City: Eighty Four State: PA Zip: 15330

Cementing Company Nabors Well Services

Address 2504 Smith Creek Road City Waynesburg State PA Zip 15370

Logging Company _____

Address _____ City _____ State _____ Zip _____

512482 Final Formations API#47-017-06391

| Formation Name | Final Top MD (ftGL) (ft) | Final Top TVD (ft) | Final Btm MD (ftGL) (ft) | Final Btm TVD (ft) |
|-------------------|--------------------------|--------------------|--------------------------|--------------------|
| FRESH WATER ZONE | 1 | | 438 | |
| SANDSTONE/SHALE | 1 | | 642 | |
| COAL | 642 | | 645 | |
| SANDSTONE/SHALE | 645 | | 1,518.00 | |
| MAXTON | 1,518.00 | | 1,863.00 | |
| BIG LIME | 1,863.00 | | 1,923.00 | |
| KEENER | 1,923.00 | | 2,153.00 | |
| WEIR | 2,153.00 | | 2,353.00 | |
| BEREA | 2,353.00 | | 2,365.00 | |
| GANTZ | 2,365.00 | | 2,448.00 | |
| 50F | 2,448.00 | | 2,557.00 | |
| 30F | 2,557.00 | | 2,596.00 | |
| GORDON | 2,596.00 | | 2,702.00 | |
| 4TH | 2,702.00 | | 2,839.00 | |
| 5TH | 2,839.00 | | 2,878.00 | |
| BAYARD | 2,878.00 | | 3,213.00 | |
| WARREN | 3,213.00 | | 3,283.00 | |
| SPEECHLEY | 3,283.00 | | 3,810.00 | |
| BALLTOWN A | 3,810.00 | | 3,965.00 | |
| BALLTOWN B | 3,965.00 | | 4,160.00 | |
| BRADFORD | 4,160.00 | | 4,405.00 | |
| RILEY | 4,405.00 | | 4,837.00 | 4,836.60 |
| BENSON | 4,837.00 | 4,836.60 | 5,099.00 | 5,098.10 |
| ALEXANDER | 5,099.00 | 5,098.10 | 5,792.00 | 5,683.80 |
| RHINESTREET | 5,792.00 | 5,683.80 | 6,056.00 | 5,883.30 |
| RHINESTREET UPPER | 6,056.00 | 5,883.30 | 6,550.00 | 6,277.20 |
| SONYEA | 6,550.00 | 6,277.20 | 6,736.00 | 6,431.30 |
| MIDDLESEX | 6,736.00 | 6,431.30 | 6,810.00 | 6,489.80 |
| GENESSEE | 6,810.00 | 6,489.80 | 6,920.00 | 6,568.80 |
| GENESEO | 6,920.00 | 6,568.80 | 6,974.00 | 6,602.90 |
| TULLY | 6,974.00 | 6,602.90 | 7,016.00 | 6,626.80 |
| HAMILTON | 7,016.00 | 6,626.80 | 7,048.00 | 6,642.90 |
| MARCELLUS | 7,048.00 | 6,642.90 | | |

EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 512482

Well #512482

Main Wellbore

Design: 512482 As Drilled Surveys

Standard Survey Report

26 November, 2014

Phoenix Technologies

Survey Report

| | | |
|--|--|--|
| Database: EDM 5000.1 Single User Db | Local Co-ordinate Reference: Site Doddridge County 512482 | |
| Company: ECT Production - Marcellus | TVD Reference: 23' KB @ 1263.0usft (Pat. 252) | |
| Project: Doddridge County, WV Grid | MD Reference: 23' KB @ 1263.0usft (Pat. 252) | |
| Site: Doddridge County 512482 | North Reference: Grid | |
| Well: Well #512482 | Survey Calculation Method: Minimum Curvature | |
| Wellbore: Main Wellbore | | |
| Design: 512482 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 512482 | | | | | |
| Site Position: | | Northing: 265 368.50 usft | Latitude: 39.22 | | |
| From: Map | | Easting: 1 631,450.30 usft | Longitude: -80.80 | | |
| Position Uncertainty: | 0 0 usft | Slot Radius: 13-3/16 " | Grid Convergence: -0.83 ° | | |

| | | | | | |
|-----------------------------|----------------------|-------------------------------------|-----------------------------------|--|--|
| Well Well #512482 | | | | | |
| Well Position | +N-S 0.0 usft | Northing: 265 368.50 usft | Latitude: 39 13' 16.561 N | | |
| | +E-W 0.0 usft | Easting: 1 631 450.30 usft | Longitude: 80 48 3.182 W | | |
| Position Uncertainty | 0 0 usft | Wellhead Elevation: 0 0 usft | Ground Level: 1 240 0 usft | | |

| | | | | | |
|---------------------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore Main Wellbore | | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010_14 | 8/4/2014 | -8.45 | 66.75 | 52,244 |

| | | | | | |
|---|--|--|--|--|--|
| Design 512482 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 | 351.65 |

| | | | | | |
|--|------------------|---------------------------------------|------------------|-----------------------------------|--|
| Survey Program Date: 11/26/2014 | | | | | |
| From (') | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 0 00 | 4,822 0 | 512482 Gyrodata Gyros (Main Wellbore) | GYD_DP_MS | Gyrodata gyro-compassing and drop | |
| 0 00 | 10 468 0 | 512482 PHX 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 | -1,263.0 | 0.0 | 0 0 | 0 0 | 0 00 | 0 00 | 0 00 |
| 110 0 | 0 26 | 302 70 | 110 0 | -1,153 0 | 0 1 | -0 2 | 0 2 | 0 24 | 0 24 | 0 00 |
| 210 0 | 0 17 | 82 50 | 210 0 | -1,053 0 | 0 3 | 0 3 | 0 3 | 0 40 | -0 09 | 139 80 |
| 310 0 | 0 22 | 93 19 | 310 0 | -953 0 | 0 3 | 0 1 | 0 3 | 0 06 | 0 05 | 10 69 |
| 410 0 | 0 20 | 103 89 | 410 0 | -853 0 | 0 2 | 0 4 | 0 2 | 0 04 | -0 02 | 10 70 |
| 510 0 | 0 36 | 118 62 | 510 0 | -753 0 | 0 0 | 0 9 | -0 1 | 0 17 | 0 16 | 14 73 |
| 610 0 | 0 37 | 119 60 | 610 0 | -653 0 | -0 3 | 1 4 | -0 5 | 0 01 | 0 01 | 0 98 |
| 710 0 | 0 37 | 124 34 | 710 0 | 553 0 | -0 6 | 2 0 | -0 9 | 0 03 | 0 00 | 4 74 |

Phoenix Technologies

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|---------------------------------|
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| Company: | EQT Production - Marcellus | TVD Reference: | 23' KB @ 1263.0usft (Part. 252) |
| Project: | Doddridge County, WV Grid | MD Reference: | 23' KB @ 1263.0usft (Part. 252) |
| Site: | Doddridge County 512482 | North Reference: | Grid |
| Well: | Well #512482 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Main Wellbore | | |
| Design: | 512482 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) |
|-----------------------|-----------------|-------------|-----------------------|---------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 810.0 | 0.38 | 122.67 | 810.0 | -453.0 | -1.0 | 2.5 | -1.3 | 0.01 | 0.01 | -1.67 |
| 910.0 | 0.41 | 124.03 | 910.0 | -353.0 | -1.4 | 3.1 | -1.8 | 0.03 | 0.03 | 1.36 |
| 1,010.0 | 0.42 | 122.89 | 1,010.0 | -253.0 | -1.8 | 3.7 | -2.3 | 0.01 | 0.01 | -1.14 |
| 1,110.0 | 0.49 | 127.40 | 1,110.0 | -153.0 | -2.2 | 4.4 | -2.8 | 0.08 | 0.07 | 4.51 |
| 1,210.0 | 0.55 | 134.70 | 1,210.0 | -53.0 | -2.8 | 5.0 | -3.5 | 0.09 | 0.06 | 7.30 |
| 1,310.0 | 0.53 | 147.24 | 1,310.0 | 47.0 | -3.5 | 5.6 | -4.3 | 0.12 | -0.02 | 12.54 |
| 1,410.0 | 0.49 | 138.86 | 1,410.0 | 147.0 | -4.2 | 6.2 | -5.1 | 0.08 | -0.04 | -8.38 |
| 1,510.0 | 0.54 | 136.66 | 1,510.0 | 247.0 | -4.9 | 6.8 | -5.8 | 0.05 | 0.05 | -2.20 |
| 1,610.0 | 0.59 | 140.48 | 1,610.0 | 347.0 | -5.6 | 7.4 | -6.7 | 0.06 | 0.05 | 3.82 |
| 1,710.0 | 0.56 | 136.49 | 1,710.0 | 447.0 | -6.4 | 8.1 | -7.5 | 0.05 | -0.03 | -3.99 |
| 1,810.0 | 0.47 | 139.79 | 1,810.0 | 547.0 | -7.1 | 8.7 | -8.3 | 0.09 | -0.09 | 3.30 |
| 1,910.0 | 0.49 | 129.26 | 1,909.9 | 646.9 | -7.7 | 9.3 | -8.9 | 0.09 | 0.02 | -10.53 |
| 2,010.0 | 0.45 | 131.60 | 2,009.9 | 746.9 | -8.2 | 9.9 | -9.5 | 0.04 | -0.04 | 2.34 |
| 2,110.0 | 0.45 | 130.67 | 2,109.9 | 846.9 | -8.7 | 10.5 | -10.1 | 0.01 | 0.00 | -0.93 |
| 2,210.0 | 0.50 | 127.83 | 2,209.9 | 946.9 | -9.2 | 11.1 | -10.7 | 0.06 | 0.05 | -2.84 |
| 2,310.0 | 0.51 | 132.24 | 2,309.9 | 1,046.9 | -9.8 | 11.8 | -11.4 | 0.04 | 0.01 | 4.41 |
| 2,410.0 | 0.29 | 138.91 | 2,409.9 | 1,146.9 | -10.3 | 12.3 | -12.0 | 0.22 | -0.22 | 6.67 |
| 2,510.0 | 0.26 | 132.53 | 2,509.9 | 1,246.9 | -10.6 | 12.7 | -12.3 | 0.04 | -0.03 | -6.38 |
| 2,610.0 | 0.29 | 136.67 | 2,609.9 | 1,346.9 | -11.0 | 13.0 | -12.7 | 0.04 | 0.03 | 4.14 |
| 2,710.0 | 0.19 | 155.03 | 2,709.9 | 1,446.9 | -11.3 | 13.2 | -13.1 | 0.12 | -0.10 | 16.36 |
| 2,810.0 | 0.20 | 131.17 | 2,809.9 | 1,546.9 | -11.6 | 13.4 | -13.4 | 0.08 | 0.01 | -23.86 |
| 2,910.0 | 0.23 | 139.34 | 2,909.9 | 1,646.9 | -11.8 | 13.7 | -13.7 | 0.04 | 0.03 | 8.17 |
| 3,010.0 | 0.26 | 142.06 | 3,009.9 | 1,746.9 | -12.2 | 14.0 | -14.1 | 0.03 | 0.03 | 2.72 |
| 3,110.0 | 0.36 | 143.44 | 3,109.9 | 1,846.9 | -12.6 | 14.3 | -14.5 | 0.10 | 0.10 | 1.38 |
| 3,210.0 | 0.47 | 144.82 | 3,209.9 | 1,946.9 | -13.2 | 14.7 | -15.2 | 0.11 | 0.11 | 1.38 |
| 3,310.0 | 0.51 | 136.69 | 3,309.9 | 2,046.9 | -13.8 | 15.3 | -15.9 | 0.08 | 0.04 | -8.13 |
| 3,410.0 | 0.51 | 142.65 | 3,409.9 | 2,146.9 | -14.5 | 15.8 | -16.7 | 0.05 | 0.00 | 5.96 |
| 3,510.0 | 0.36 | 140.71 | 3,509.9 | 2,246.9 | -15.1 | 16.3 | -17.3 | 0.15 | -0.15 | -1.94 |
| 3,610.0 | 0.37 | 127.16 | 3,609.9 | 2,346.9 | -15.6 | 16.8 | -17.8 | 0.09 | 0.01 | -13.55 |
| 3,710.0 | 0.35 | 126.01 | 3,709.9 | 2,446.9 | -15.9 | 17.3 | -18.3 | 0.02 | -0.02 | -1.15 |
| 3,810.0 | 0.23 | 112.98 | 3,809.9 | 2,546.9 | -16.2 | 17.7 | -18.6 | 0.14 | -0.12 | -13.03 |
| 3,910.0 | 0.68 | 312.05 | 3,909.9 | 2,646.9 | -15.9 | 17.4 | -18.2 | 0.90 | 0.45 | -160.93 |
| 4,010.0 | 0.85 | 291.93 | 4,009.9 | 2,746.9 | -15.2 | 16.3 | -17.4 | 0.32 | 0.17 | -20.12 |
| 4,110.0 | 1.21 | 290.93 | 4,109.9 | 2,846.9 | -14.5 | 14.6 | -16.5 | 0.36 | 0.36 | -1.00 |
| 4,210.0 | 1.60 | 285.98 | 4,209.8 | 2,946.8 | -13.8 | 12.3 | -15.4 | 0.41 | 0.39 | -4.95 |
| 4,310.0 | 1.64 | 284.12 | 4,309.8 | 3,046.8 | -13.0 | 9.6 | -14.3 | 0.07 | 0.04 | -1.86 |
| 4,410.0 | 1.57 | 289.30 | 4,409.8 | 3,146.8 | -12.2 | 6.9 | -13.1 | 0.16 | -0.07 | 5.18 |
| 4,510.0 | 1.67 | 293.60 | 4,509.7 | 3,246.7 | -11.2 | 4.3 | -11.7 | 0.16 | 0.10 | 4.30 |
| 4,610.0 | 1.68 | 295.59 | 4,609.7 | 3,346.7 | -10.0 | 1.6 | -10.1 | 0.06 | 0.01 | 1.99 |
| 4,710.0 | 1.83 | 299.41 | 4,709.6 | 3,446.6 | -8.6 | -1.1 | -8.3 | 0.19 | 0.15 | 3.82 |
| 4,810.0 | 1.79 | 300.68 | 4,809.6 | 3,546.6 | -7.0 | -3.8 | -6.4 | 0.06 | -0.04 | 1.27 |
| Gyro Tie In=4822 MD | | | | | | | | | | |
| 4,822.0 | 1.84 | 300.07 | 4,821.6 | 3,558.6 | -6.8 | -4.2 | -6.1 | 0.45 | 0.42 | -5.08 |

Phoenix Technologies

Survey Report

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|--|--|---|
| Database: EDM 5000.1 Single User Db Company: EDT Production - Marcellus Project: Doddridge County, WV Grad Site: Doddridge County 512482 Well: Well #512482 Wellbore: Main Wellbore Design: 512482 As Drilled Surveys | Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: | Site Doddridge County 512482 23' KB @ 1200.0usft (Pat. 252) 23' KB @ 1203.0usft (Pat. 252) Grid Minimum Curvature |
|--|--|---|

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) |
|-----------------------|-----------------|-------------|-----------------------|---------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 4,903.0 | 1.30 | 296.60 | 4,902.6 | 3,639.6 | -5.7 | -6.1 | -4.8 | 0.68 | -0.67 | -4.28 |
| 4,966.0 | 1.30 | 286.20 | 4,965.5 | 3,702.5 | -5.2 | -7.4 | -4.1 | 0.37 | 0.00 | -16.51 |
| 4,998.0 | 1.10 | 277.60 | 4,997.5 | 3,734.5 | -5.1 | -8.1 | -3.8 | 0.84 | -0.63 | -26.88 |
| 5,029.0 | 1.50 | 98.20 | 5,028.5 | 3,765.5 | -5.1 | -8.0 | -3.9 | 8.39 | 1.29 | -578.71 |
| 5,060.0 | 5.70 | 104.10 | 5,059.5 | 3,796.5 | -5.5 | -6.1 | -4.6 | 13.58 | 13.55 | 19.03 |
| 5,092.0 | 9.40 | 104.60 | 5,091.2 | 3,828.2 | -6.6 | -2.0 | -6.2 | 11.56 | 11.56 | 1.56 |
| 5,124.0 | 13.00 | 102.70 | 5,122.6 | 3,859.6 | -6.0 | 4.0 | -8.5 | 11.31 | 11.25 | -5.94 |
| 5,155.0 | 15.20 | 105.10 | 5,152.6 | 3,889.6 | -9.8 | 11.4 | -11.4 | 7.34 | 7.10 | 7.74 |
| 5,186.0 | 16.40 | 108.80 | 5,182.5 | 3,919.5 | -12.3 | 19.4 | -15.0 | 5.05 | 3.87 | 11.94 |
| 5,218.0 | 18.40 | 111.20 | 5,213.0 | 3,950.0 | -15.6 | 28.4 | -19.6 | 6.64 | 6.25 | 7.50 |
| 5,249.0 | 21.10 | 113.50 | 5,242.2 | 3,979.2 | -19.6 | 38.1 | -24.9 | 9.06 | 8.71 | 7.42 |
| 5,280.0 | 23.40 | 114.10 | 5,270.9 | 4,007.9 | -24.3 | 48.8 | -31.2 | 7.46 | 7.42 | 1.94 |
| 5,312.0 | 25.90 | 113.00 | 5,299.9 | 4,036.9 | -29.7 | 61.1 | -38.2 | 7.94 | 7.81 | -3.44 |
| 5,344.0 | 27.30 | 109.80 | 5,328.6 | 4,065.6 | -34.9 | 74.4 | -45.3 | 6.26 | 4.38 | -10.00 |
| 5,375.0 | 29.30 | 108.80 | 5,355.8 | 4,092.8 | -39.7 | 88.3 | -52.1 | 6.63 | 6.45 | -3.23 |
| 5,407.0 | 31.90 | 108.80 | 5,383.4 | 4,120.4 | -45.0 | 103.7 | -59.6 | 8.13 | 8.13 | 0.00 |
| 5,438.0 | 34.40 | 110.70 | 5,409.3 | 4,146.3 | -50.7 | 119.6 | -67.5 | 8.73 | 8.06 | 6.13 |
| 5,469.0 | 37.00 | 112.20 | 5,434.5 | 4,171.5 | -57.3 | 136.5 | -76.5 | 8.85 | 8.39 | 4.84 |
| 5,532.0 | 40.90 | 112.60 | 5,483.5 | 4,220.5 | -72.4 | 173.1 | -96.8 | 6.20 | 6.19 | 0.63 |
| 5,564.0 | 39.80 | 111.70 | 5,507.9 | 4,244.9 | -80.2 | 192.3 | -107.3 | 3.89 | -3.44 | -2.81 |
| 5,659.0 | 40.30 | 111.10 | 5,580.6 | 4,317.6 | -102.5 | 249.2 | -137.6 | 0.66 | 0.53 | -0.63 |
| 5,753.0 | 38.40 | 110.10 | 5,653.3 | 4,390.3 | -123.5 | 305.0 | -166.5 | 2.13 | -2.02 | -1.06 |
| 5,847.0 | 39.70 | 108.10 | 5,726.3 | 4,463.3 | -142.9 | 360.9 | -193.8 | 1.93 | 1.38 | -2.13 |
| 5,942.0 | 41.00 | 110.20 | 5,798.7 | 4,535.7 | -163.1 | 419.0 | -222.2 | 1.98 | 1.37 | 2.21 |
| 6,036.0 | 43.00 | 110.20 | 5,868.5 | 4,605.5 | -184.8 | 478.0 | -252.3 | 2.13 | 2.13 | 0.00 |
| 6,131.0 | 39.90 | 107.50 | 5,939.7 | 4,676.7 | -205.1 | 537.5 | -281.0 | 3.77 | -3.26 | -2.84 |
| 6,225.0 | 38.90 | 103.70 | 6,012.4 | 4,749.4 | -221.2 | 595.0 | -305.3 | 2.78 | -1.06 | -4.04 |
| 6,256.0 | 38.10 | 96.20 | 6,036.7 | 4,773.7 | -224.5 | 613.9 | -311.3 | 15.27 | -2.58 | -24.19 |
| 6,288.0 | 38.80 | 91.50 | 6,061.7 | 4,798.7 | -225.9 | 633.8 | -315.5 | 9.39 | 2.19 | -14.69 |
| 6,319.0 | 37.80 | 85.50 | 6,086.1 | 4,823.1 | -225.4 | 653.0 | -317.8 | 12.42 | -3.23 | -19.35 |
| 6,350.0 | 36.50 | 79.70 | 6,110.8 | 4,847.8 | -223.0 | 671.5 | -318.1 | 12.05 | -4.19 | -18.71 |
| 6,382.0 | 35.50 | 73.00 | 6,136.7 | 4,873.7 | -218.6 | 689.8 | -318.4 | 12.69 | -3.13 | -20.94 |
| 6,413.0 | 34.00 | 68.20 | 6,162.2 | 4,899.2 | -212.7 | 706.4 | -313.0 | 10.06 | -4.84 | -15.48 |
| 6,445.0 | 32.50 | 63.00 | 6,188.9 | 4,925.9 | -205.5 | 722.4 | -308.2 | 10.06 | -4.69 | -16.25 |
| 6,477.0 | 32.10 | 57.80 | 6,216.0 | 4,953.0 | -197.1 | 737.3 | -302.0 | 8.77 | -1.25 | -16.25 |
| 6,508.0 | 32.60 | 53.40 | 6,242.2 | 4,979.2 | -187.7 | 750.9 | -294.7 | 7.76 | 1.61 | -14.19 |
| 6,540.0 | 34.10 | 47.20 | 6,268.9 | 5,005.9 | -176.4 | 764.4 | -285.6 | 11.63 | 4.69 | -19.38 |
| 6,571.0 | 34.60 | 42.80 | 6,294.5 | 5,031.5 | -164.1 | 776.8 | -275.1 | 8.17 | 1.61 | -14.19 |
| 6,603.0 | 34.20 | 38.30 | 6,320.9 | 5,057.9 | -150.4 | 788.5 | -263.3 | 8.04 | -1.25 | -14.06 |
| 6,635.0 | 33.40 | 31.50 | 6,347.5 | 5,084.5 | -135.8 | 798.7 | -250.3 | 12.08 | -2.50 | -21.25 |
| 6,666.0 | 33.40 | 26.10 | 6,373.4 | 5,110.4 | -120.8 | 806.9 | -236.7 | 9.59 | 0.00 | -17.42 |
| 6,698.0 | 33.90 | 22.70 | 6,400.0 | 5,137.0 | -104.7 | 814.3 | -221.8 | 6.09 | 1.56 | -10.63 |

Phoenix Technologies

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|--------------------------------|
| Database: | EDM 5000 1 Single User Db | Local Co-ordinate Reference: | Site Doddridge County 512482 |
| Company: | EQT Production - Marcellus | TVD Reference: | 23' KB @ 1263.0usft (Fall 252) |
| Project: | Doddridge County, WV Grid | MD Reference: | 23' KB @ 1263.0usft (Fall 252) |
| Site: | Doddridge County 512482 | North Reference: | Grid |
| Well: | Well #512482 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Main Wellbore | | |
| Design: | 512482 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) |
|----------------------------|-----------------|-------------|-----------------------|---------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 6,729.0 | 35.20 | 19.00 | 6,425.6 | 5,162.6 | -88.3 | 820.5 | -206.5 | 7.96 | 4.19 | -11.94 |
| 6,761.0 | 37.10 | 15.10 | 6,451.4 | 5,188.4 | -70.2 | 826.0 | -189.4 | 9.32 | 5.94 | -12.19 |
| 6,792.0 | 38.80 | 13.50 | 6,475.9 | 5,212.9 | -51.8 | 830.7 | -171.8 | 6.34 | 5.48 | -5.16 |
| 6,823.0 | 41.00 | 11.40 | 6,499.5 | 5,236.6 | -32.3 | 835.0 | -153.3 | 8.32 | 7.10 | -6.77 |
| 6,855.0 | 43.30 | 9.40 | 6,523.4 | 5,260.4 | -11.2 | 838.9 | -132.9 | 8.32 | 7.19 | -6.25 |
| 6,886.0 | 45.50 | 6.90 | 6,545.5 | 5,282.5 | 10.2 | 841.9 | -112.1 | 9.07 | 7.10 | -8.06 |
| 6,918.0 | 48.10 | 4.50 | 6,567.4 | 5,304.4 | 33.5 | 844.2 | -89.5 | 9.79 | 8.13 | -7.50 |
| 6,950.0 | 51.10 | 2.60 | 6,588.2 | 5,325.2 | 57.8 | 845.7 | -65.7 | 10.41 | 9.38 | -5.94 |
| 513138 LP 716 VS | | | | | | | | | | |
| 6,958.9 | 51.90 | 2.37 | 6,593.7 | 5,330.7 | 64.7 | 846.0 | -58.8 | 9.26 | 9.03 | -2.65 |
| 6,981.0 | 53.90 | 1.80 | 6,607.0 | 5,344.0 | 82.3 | 846.7 | -41.5 | 9.26 | 9.03 | -2.55 |
| 7,013.0 | 57.20 | 1.10 | 6,625.1 | 5,362.1 | 108.7 | 847.3 | -15.5 | 10.47 | 10.31 | -2.19 |
| 7,044.0 | 61.60 | 0.60 | 6,640.9 | 5,377.9 | 135.4 | 847.7 | 10.9 | 14.26 | 14.19 | -1.61 |
| 7,075.0 | 65.70 | 359.40 | 6,654.7 | 5,391.7 | 163.2 | 847.7 | 38.3 | 13.67 | 13.23 | -3.87 |
| 7,107.0 | 69.60 | 356.30 | 6,666.8 | 5,403.8 | 192.7 | 846.6 | 67.7 | 15.12 | 12.19 | -9.69 |
| 7,138.0 | 71.80 | 352.50 | 6,677.1 | 5,414.1 | 221.8 | 843.8 | 97.0 | 13.57 | 7.10 | -12.26 |
| 7,170.0 | 73.00 | 348.70 | 6,686.8 | 5,423.8 | 251.9 | 838.8 | 127.5 | 11.92 | 3.75 | -11.88 |
| 7,192.0 | 74.90 | 346.50 | 6,692.8 | 5,429.8 | 272.6 | 834.2 | 148.5 | 12.92 | 6.64 | -10.00 |
| 7,201.0 | 76.10 | 345.50 | 6,695.1 | 5,432.1 | 281.0 | 832.1 | 157.2 | 17.13 | 13.33 | -11.11 |
| 7,233.0 | 80.50 | 344.20 | 6,701.6 | 5,438.6 | 311.3 | 823.9 | 188.3 | 14.31 | 13.75 | -4.06 |
| 7,264.0 | 85.10 | 343.60 | 6,705.5 | 5,442.5 | 340.8 | 815.4 | 218.8 | 14.96 | 14.84 | -1.94 |
| 7,296.0 | 91.00 | 343.30 | 6,706.6 | 5,443.6 | 371.4 | 806.3 | 250.4 | 18.46 | 18.44 | -0.94 |
| 7,327.0 | 93.70 | 343.10 | 6,705.3 | 5,442.3 | 401.1 | 797.3 | 281.1 | 8.73 | 8.71 | -0.65 |
| 512482 LP 300 VS GA | | | | | | | | | | |
| 7,344.4 | 94.20 | 343.04 | 6,704.1 | 5,441.1 | 417.7 | 792.3 | 298.2 | 2.92 | 2.90 | -0.32 |
| 7,358.0 | 94.60 | 343.00 | 6,703.0 | 5,440.0 | 430.7 | 788.3 | 311.6 | 2.92 | 2.90 | -0.32 |
| 7,452.0 | 91.40 | 338.80 | 6,698.1 | 5,435.1 | 519.3 | 757.6 | 403.8 | 5.61 | -3.40 | -4.47 |
| 7,547.0 | 87.80 | 336.70 | 6,698.8 | 5,435.8 | 607.2 | 721.7 | 496.0 | 4.39 | -3.79 | -2.21 |
| 7,641.0 | 86.60 | 333.60 | 6,703.4 | 5,440.4 | 692.4 | 682.2 | 586.0 | 3.53 | -1.28 | -3.30 |
| 512482 LP | | | | | | | | | | |
| 7,641.2 | 86.60 | 333.60 | 6,703.4 | 5,440.4 | 692.6 | 682.1 | 586.2 | 0.00 | 0.00 | 0.00 |
| 7,736.0 | 88.20 | 334.40 | 6,707.7 | 5,444.7 | 777.7 | 640.6 | 676.5 | 1.89 | 1.69 | 0.84 |
| 7,830.0 | 89.00 | 333.20 | 6,710.0 | 5,447.0 | 862.0 | 599.1 | 765.9 | 1.53 | 0.85 | -1.28 |
| 7,925.0 | 89.10 | 331.80 | 6,711.6 | 5,448.6 | 946.3 | 555.3 | 855.6 | 1.48 | 0.11 | -1.47 |
| 8,019.0 | 86.70 | 331.80 | 6,715.0 | 5,452.0 | 1,029.1 | 510.9 | 944.0 | 2.55 | -2.55 | 0.00 |
| 8,114.0 | 85.30 | 334.50 | 6,721.6 | 5,458.6 | 1,113.6 | 468.1 | 1,033.8 | 3.20 | -1.47 | 2.84 |
| 8,208.0 | 86.80 | 337.40 | 6,728.1 | 5,465.1 | 1,199.2 | 429.9 | 1,124.1 | 3.47 | 1.60 | 3.09 |
| 8,303.0 | 84.60 | 337.80 | 6,735.2 | 5,472.2 | 1,286.8 | 393.8 | 1,216.0 | 2.35 | -2.32 | 0.42 |
| 8,397.0 | 88.00 | 338.00 | 6,741.3 | 5,478.3 | 1,373.7 | 358.5 | 1,307.1 | 3.62 | 3.62 | 0.21 |
| 8,492.0 | 88.00 | 333.50 | 6,744.6 | 5,481.6 | 1,460.3 | 319.5 | 1,398.4 | 4.73 | 0.00 | -4.74 |
| 8,586.0 | 90.80 | 335.80 | 6,745.6 | 5,482.6 | 1,545.2 | 279.3 | 1,488.3 | 3.85 | 2.98 | 2.45 |
| 8,681.0 | 91.30 | 334.80 | 6,743.9 | 5,480.9 | 1,631.5 | 239.6 | 1,579.4 | 1.18 | 0.53 | -1.05 |
| 8,775.0 | 88.30 | 335.50 | 6,744.2 | 5,481.2 | 1,716.8 | 200.1 | 1,669.5 | 3.28 | -3.19 | 0.74 |

Phoenix Technologies
Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|---------------------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Site DeWitt County 512482 |
| Company: | EQT Production - Marcellus | TVD Reference: | 23' KB @ 1263 0usft (Palt. 252) |
| Project: | Doddridge County, WV Grid | MD Reference: | 23' KB @ 1263 0usft (Palt. 252) |
| Site: | Doddridge County 512482 | North Reference: | Grid |
| Well: | Well #512482 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Main Wellbore | | |
| Design: | 512482 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) | |
| 8,869.0 | 87.30 | 335.70 | 6,747.8 | 5,484.8 | 1,802.3 | 151.3 | 1,759.8 | 1.08 | -1.06 | 0.21 | |
| 8,963.0 | 89.80 | 335.90 | 6,750.2 | 5,487.2 | 1,888.0 | 122.8 | 1,850.2 | 2.67 | 2.66 | 0.21 | |
| 9,059.0 | 92.20 | 337.40 | 6,748.5 | 5,485.5 | 1,976.1 | 84.7 | 1,942.9 | 2.95 | 2.50 | 1.56 | |
| 9,153.0 | 92.80 | 336.10 | 6,744.4 | 5,481.4 | 2,062.4 | 47.6 | 2,033.6 | 1.52 | 0.64 | -1.38 | |
| 9,247.0 | 92.80 | 335.20 | 6,739.8 | 5,476.8 | 2,147.9 | 8.9 | 2,123.9 | 0.96 | 0.00 | -0.96 | |
| 9,342.0 | 91.30 | 337.90 | 6,736.4 | 5,473.4 | 2,235.0 | -28.8 | 2,215.5 | 3.25 | -1.58 | 2.84 | |
| 9,436.0 | 91.60 | 335.10 | 6,734.0 | 5,471.0 | 2,321.2 | -66.3 | 2,306.2 | 2.99 | 0.32 | -2.98 | |
| 9,531.0 | 88.60 | 334.30 | 6,733.9 | 5,470.9 | 2,407.1 | -106.9 | 2,397.1 | 3.27 | -3.16 | -0.84 | |
| 9,626.0 | 87.60 | 332.70 | 6,737.0 | 5,474.0 | 2,492.0 | -149.3 | 2,487.3 | 1.99 | -1.05 | -1.68 | |
| 9,657.0 | 87.10 | 332.20 | 6,738.4 | 5,475.4 | 2,519.5 | -163.6 | 2,516.6 | 2.28 | -1.61 | -1.61 | |
| 9,720.0 | 87.70 | 332.90 | 6,741.3 | 5,478.3 | 2,575.4 | -192.6 | 2,576.0 | 1.46 | 0.95 | 1.11 | |
| 9,815.0 | 87.60 | 331.70 | 6,745.2 | 5,482.2 | 2,659.4 | -236.7 | 2,665.6 | 1.27 | -0.11 | -1.26 | |
| 9,909.0 | 90.20 | 335.90 | 6,747.0 | 5,484.0 | 2,743.7 | -278.2 | 2,755.0 | 5.25 | 2.77 | 4.47 | |
| 10,004.0 | 90.60 | 333.80 | 6,746.3 | 5,483.3 | 2,829.7 | -318.6 | 2,845.9 | 2.25 | 0.42 | -2.21 | |
| 10,098.0 | 90.20 | 336.20 | 6,745.7 | 5,482.7 | 2,914.9 | -358.3 | 2,936.0 | 2.59 | -0.43 | 2.55 | |
| 10,192.0 | 89.60 | 335.40 | 6,745.8 | 5,482.8 | 3,000.6 | -396.8 | 3,026.4 | 1.06 | -0.64 | -0.85 | |
| 10,287.0 | 90.40 | 335.90 | 6,745.8 | 5,482.8 | 3,087.1 | -436.0 | 3,117.7 | 0.99 | 0.84 | 0.53 | |
| 10,381.0 | 89.70 | 33 | 6,745.8 | 5,482.8 | 3,172.2 | -475.9 | | 35 | 0.74 | 2.23 | |
| Prop. to TD = 10412' MD 6745' TVD | | | | | | | | | | | |
| 10,412.0 | 90.30 | 333.40 | 6,745.8 | 5,482.8 | 3,200.0 | -489.7 | 3,237.2 | 2.33 | 1.94 | -1.29 | |
| Prop. to TD | | | | | | | | | | | |
| 10,453.1 | 90.30 | 333.40 | 6,745.6 | 5,482.6 | 3,236.8 | -508.1 | 3,276.2 | 0.00 | 0.00 | 0.00 | |
| Prop. to TD = 10468' MD 6746' TVD | | | | | | | | | | | |
| 10,468.0 | 90.30 | 333.40 | 6,745.5 | 5,482.5 | 3,250.1 | -514.8 | 3,290.4 | 0.00 | 0.00 | 0.00 | |

| Design Targets | | | | | | | | | | |
|---|---------------|--------------|------------|-----------------|----------------|-----------------|----------------|------------------|------------------|--|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (3,252.0) | +E/-W (-477.3) | Northing (usft) | Easting (usft) | Latitude | Longitude | |
| 512482 TD | 0.00 | 0.00 | 6,715.0 | 3,252.0 | -477.3 | 268,620.40 | 1,630,973.00 | 39° 13' 48.631 N | 80° 48' 9.846 W | |
| - hit/miss target | | | | | | | | | | |
| - Shape | | | | | | | | | | |
| - actual wellpath misses target center by 46.0usft at 10453.1usft MD (6745.6 TVD, 3236.8 N, -508.1 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |
| 512482 LP 300' VS OA | 0.00 | 0.00 | 6,727.0 | 419.6 | 793.0 | 265,788.12 | 1,632,243.27 | 39° 13' 20.821 N | 80° 47' 53.184 W | |
| - actual wellpath misses target center by 23.0usft at 7344.4usft MD (6704.1 TVD, 417.7 N, 792.3 E) | | | | | | | | | | |
| - Rectangle (sides W1,000.0 H1,000.0 DD 0) | | | | | | | | | | |
| 512482 LP | 0.00 | 0.00 | 6,727.0 | 705.1 | 710.3 | 266,073.60 | 1,632,160.60 | 39° 13' 23.631 N | 80° 47' 54.287 W | |
| - actual wellpath misses target center by 38.9usft at 7641.2usft MD (6703.4 TVD, 692.6 N, 682.1 E) | | | | | | | | | | |
| - Point | | | | | | | | | | |

Phoenix Technologies

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|---------------------------------|
| Database: | EDM 5000.1 Single User Db | Local Co-ordinate Reference: | Site Doddridge County 512482 |
| Company: | EQT Production - Marcellus | TVD Reference: | 23' KB to 1263.0usft (Pat. 252) |
| Project: | Doddridge County, WV Grid | MD Reference: | 23' KB to 1263.0usft (Pat. 252) |
| Site: | Doddridge County 512482 | North Reference: | Grid |
| Well: | Well #512482 | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Main Wellbore | | |
| Design: | 512482 As Drilled Surveys | | |

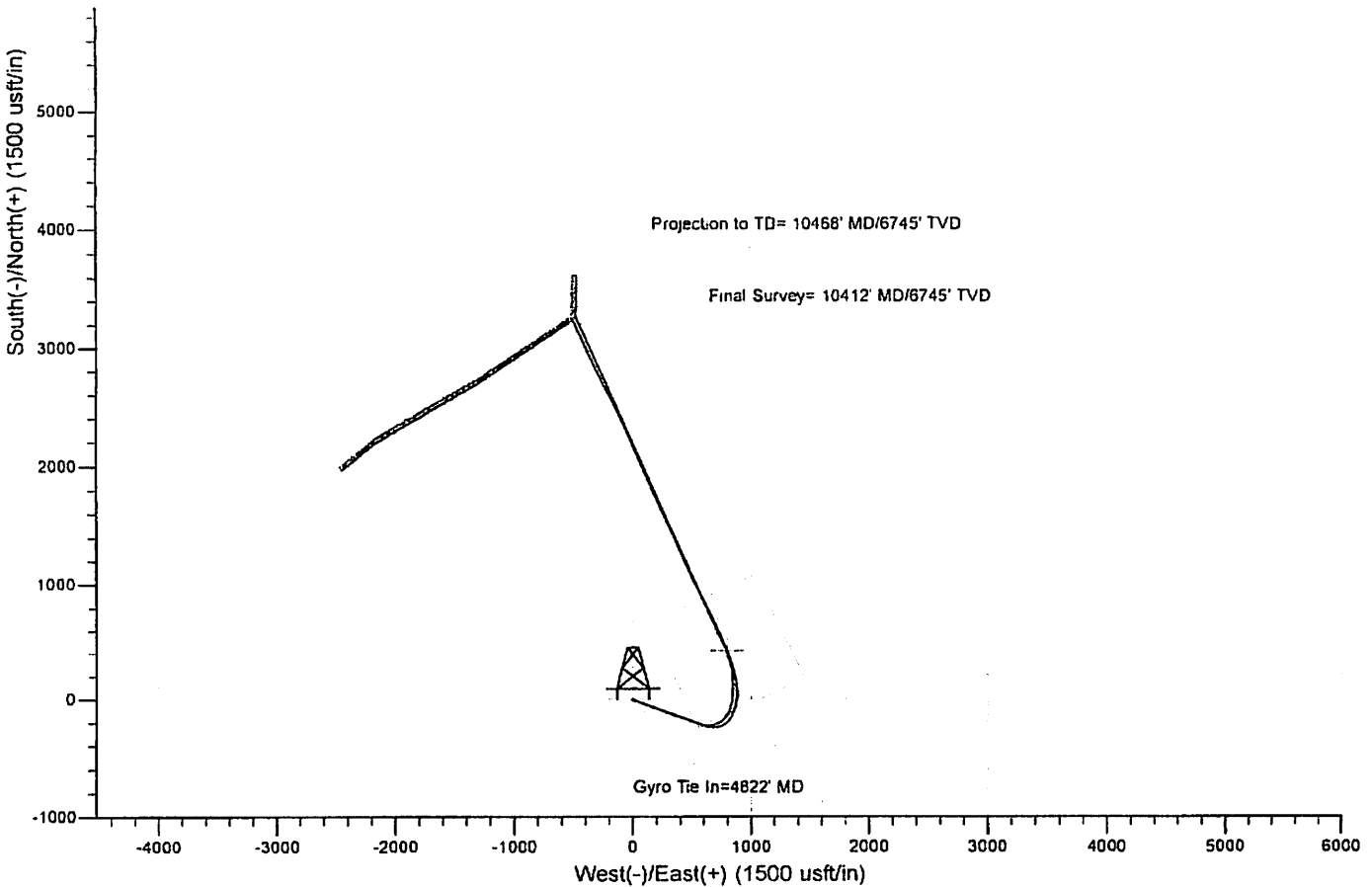
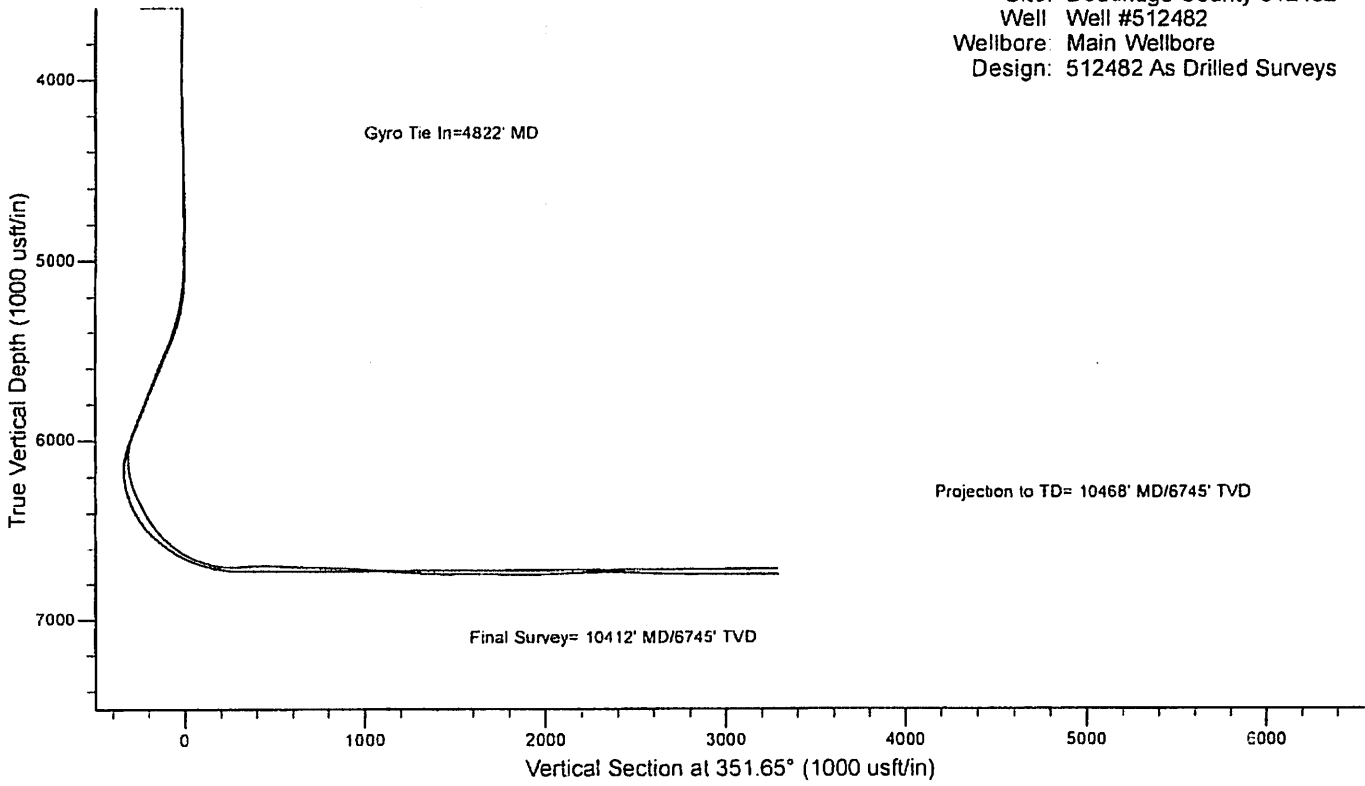
| Design Annotations | | | | |
|-----------------------------|-----------------------------|-------------------|-----------------|---------------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 4,822.0 | 4,821.6 | -6.8 | -4.2 | Gyro Tie In=4822' MD |
| 10,412.0 | 6,745.8 | 3,200.0 | -489.7 | Final Survey= 10412' MD/6745' TVD |
| 10,468.0 | 6,745.5 | 3,250.1 | -514.8 | Projection to TD= 10468' MD/6745' TVD |

Checked By: _____ Approved By: _____ Date: _____



EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 512482
Well: Well #512482
Wellbore: Main Wellbore
Design: 512482 As Drilled Surveys



512482-47-017-06391-0000 - 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 | 4/20/2015 | 8.7 | 808 | 9013 | 5680 | 0 | 666 | 0 |
| 1 | 4/21/2015 | 95.8 | 8637 | 9101 | 4817 | 196,673 | 6820 | 0 |
| 2 | 4/21/2015 | 92.8 | 8339 | 9249 | 6655 | 188,122 | 7985 | 0 |
| 2:01 | 4/22/2015 | 7.6 | 6492 | 7531 | 6421 | 0 | 2417 | |
| 3 | 4/22/2015 | 100 | 7687 | 7874 | 5572 | 198,850 | 5486 | 0 |
| 4 | 4/22/2015 | 100.8 | 8255 | 8676 | 5945 | 200,414 | 6414 | 0 |
| 5 | 4/22/2015 | 99.4 | 7991 | 8554 | 5179 | 201,160 | 5513 | 0 |
| 6 | 4/23/2015 | 99.8 | 8324 | 8737 | 5398 | 202,591 | 5595 | 0 |
| 7 | 4/23/2015 | 99.1 | 8261 | 8839 | 5738 | 183,636 | 5306 | 0 |
| 8 | 4/23/2015 | 97 | 8580 | 9146 | 5468 | 201,192 | 6032 | 0 |
| 9 | 4/23/2015 | 100 | 7815 | 8574 | 4835 | 200,751 | 5510 | 0 |
| 10 | 4/23/2015 | 96.9 | 7748 | 9184 | 5103 | 200,783 | 6105 | 0 |
| 11 | 4/24/2015 | 99.2 | 7857 | 8823 | 5423 | 188,833 | 5370 | 0 |
| 12 | 4/24/2015 | 100.3 | 7860 | 8878 | 5351 | 199,214 | 5594 | 0 |
| 13 | 4/24/2015 | 93.1 | 7168 | 8951 | 4579 | 111,343 | 6701 | 0 |
| 13:01 | 4/24/2015 | 0 | 5346 | 5682 | 0 | 0 | 1689 | 0 |
| 13:1 | 4/25/2015 | 100 | 7357 | 7940 | 5165 | 86,289 | 1238 | 0 |
| 14 | 4/25/2015 | 100.3 | 7091 | 7384 | 5291 | 200,616 | 5343 | 0 |
| 15 | 4/25/2015 | 94.4 | 7811 | 8360 | 5269 | 201,123 | 5303 | 0 |
| 16 | 4/25/2015 | 99.2 | 7682 | 8741 | 5659 | 199,764 | 5228 | 0 |
| 17 | 4/25/2015 | 97.30 | 7715 | 8723 | 6187 | 199,463 | 5,314 | 0 |
| 18 | 4/26/2015 | 91.40 | 8113 | 9228 | 5577 | 198,838 | 5,975 | 0 |
| 19 | 4/26/2015 | 94.80 | 7927 | 8929 | 5181 | 200,499 | 6,529 | 0 |
| 20 | 4/26/2015 | 90.70 | 7767 | 8910 | 4946 | 170,028 | 6,055 | 0 |
| 21 | 4/26/2015 | 97.80 | 7905 | 8517 | 5573 | 198,664 | 5,138 | 0 |
| 22 | 4/26/2015 | 99.50 | 7548 | 9019 | 4009 | 193,514 | 5,274 | 0 |

512482-47-017-06391-0000 - Perforations

| Stage Number | Perforation Date | Top Perf Depth (ftKB) | Bottom Perf Depth (ftKB) | Number of Shots | Formation |
|--------------------------|-------------------------|------------------------------|---------------------------------|------------------------|------------------|
| Initiation Sleeve | 4/15/2015 | | | 10 | MARCELLUS |
| 1 | 4/20/2015 | 10,319.00 | 10,411.00 | 32 | MARCELLUS |
| 2 | 4/21/2015 | 10,169.00 | 10,290.00 | 40 | MARCELLUS |
| 3 | 4/22/2015 | 10,019.00 | 10,141.00 | 40 | MARCELLUS |
| 4 | 4/22/2015 | 9,869.00 | 9,991.00 | 40 | MARCELLUS |
| 5 | 4/22/2015 | 9,719.00 | 9,841.00 | 40 | MARCELLUS |
| 6 | 4/23/2015 | 9,579.00 | 9,681.00 | 40 | MARCELLUS |
| 7 | 4/23/2015 | 9,429.00 | 9,526.00 | 40 | MARCELLUS |
| 8 | 4/23/2015 | 9,279.00 | 9,377.00 | 40 | MARCELLUS |
| 9 | 4/23/2015 | 9,129.00 | 9,231.00 | 40 | MARCELLUS |
| 10 | 4/23/2015 | 8,979.00 | 9,081.00 | 40 | MARCELLUS |
| 11 | 4/24/2015 | 8,829.00 | 8,931.00 | 40 | MARCELLUS |
| 12 | 4/24/2015 | 8,669.00 | 8,791.00 | 40 | MARCELLUS |
| 13 | 4/24/2015 | 8,519.00 | 8,641.00 | 40 | MARCELLUS |
| 14 | 4/25/2015 | 8,367.00 | 8,487.00 | 40 | MARCELLUS |
| 15 | 4/25/2015 | 8,219.00 | 8,341.00 | 40 | MARCELLUS |
| 16 | 4/25/2015 | 8,069.00 | 8,191.00 | 40 | MARCELLUS |
| 17 | 4/25/2015 | 7,919.00 | 8,041.00 | 40 | MARCELLUS |
| 18 | 4/25/2015 | 7,779.00 | 7,881.00 | 40 | MARCELLUS |
| 19 | 4/26/2015 | 7,633.00 | 7,731.00 | 40 | MARCELLUS |
| 20 | 4/26/2015 | 7,479.00 | 7,581.00 | 40 | MARCELLUS |
| 21 | 4/26/2015 | 7,331.00 | 7,431.00 | 40 | MARCELLUS |
| 22 | 4/26/2015 | 7,139.00 | 7,233.00 | 40 | MARCELLUS |
| | | | | | |

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|--------------------------------|--------------------|
| Job Start Date: | 4/20/2015 |
| Job End Date: | 4/26/2015 |
| State: | West Virginia |
| County: | Doddridge |
| API Number: | 47-017-06391-00-00 |
| Operator Name: | EQT Production |
| Well Name and Number: | 512482 |
| Longitude: | -80.80088400 |
| Latitude: | 39.22126700 |
| Datum: | NAD83 |
| Federal/Tribal Well: | NO |
| True Vertical Depth: | 6,642 |
| Total Base Water Volume (gal): | 5,653,200 |
| 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 | 91.19679 | None |
| | | | Crystalline Silica | 14808-60-7 | 100.00000 | 8.35564 | None |
| Sand (Proppant) | FTS International | Proppant | Crystalline Silica | 14808-60-7 | 100.00000 | 8.35564 | None |
| | | | Calcium nitrate solution | 10124-37-5 | 60.00000 | 0.05473 | None |
| MC MX 437-5 | Multi-Chem | Calcium nitrate solution | Calcium nitrate | 10124-37-5 | 60.00000 | 0.05473 | None |
| FRW-900 | FTS International | Friction reducer | Hydrotreated light distillate | 64742-47-8 | 30.00000 | 0.02497 | None |
| | | | Alkyl Alcohol | Proprietary | 10.00000 | 0.00832 | None |
| | | | Oxyalkylated alcohol A | Proprietary | 5.00000 | 0.00416 | None |
| Hydrochloric Acid (15%) | FTS International | Acidizing | Hydrochloric Acid | 7647-01-0 | 15.00000 | 0.03690 | None |
| CS-500-SI | FTS International | Scale inhibitor | Ethylene glycol | 107-21-1 | 10.00000 | 0.00242 | None |
| FE-100L | FTS International | Iron control | Citric acid | 77-92-9 | 55.00000 | 0.00082 | None |
| HVG-1 | FTS International | Gelling agent | Petroleum distillate | 64742-47-8 | 55.00000 | 0.00035 | None |

| | | | | | | | |
|--------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------|----------|---------|------|
| | | | Guar gum | 9000-30-0 | 50.00000 | 0.00032 | None |
| | | | Clay | 14808-60-7 | 2.00000 | 0.00001 | None |
| | | | Surfactant | 68439-51-0 | 2.00000 | 0.00001 | None |
| CI-150 | FTS International | Acid Corrosion Inhibitor | | | | | |
| | | | Organic amine resin salt | Proprietary | 30.00000 | 0.00014 | None |
| | | | Ethylene glycol | 107-21-1 | 30.00000 | 0.00014 | None |
| | | | Isopropanol | 67-63-0 | 30.00000 | 0.00014 | None |
| | | | Dimethylformamide | 68-12-2 | 10.00000 | 0.00005 | None |
| | | | Quaternary ammonium compound | Proprietary | 10.00000 | 0.00005 | None |
| | | | Aromatic aldehyde | Proprietary | 10.00000 | 0.00005 | None |
| NE-100 | FTS International | Non-emulsifier | | | | | |
| | | | 2-Propanol | 67-63-0 | 10.00000 | 0.00004 | None |
| | | | 2-Butoxyethanol | 111-76-2 | 10.00000 | 0.00004 | None |
| | | | Dodecylbenzenesulfonic acid | 27176-87-0 | 5.00000 | 0.00002 | None |
| Windshield Washer fluid | Spectrum Tracer Services | Diagnostics | | | | | |
| | | | Methanol | 67-56-1 | 40.00000 | 0.00001 | None |
| | | | Inert Ingredients | Proprietary | 60.00000 | 0.00001 | None |
| Frac Fluid Identifier (FFI) | Spectrum Tracer Services | Diagnostics | | | | | |
| | | | Water | 7732-18-5 | 94.00000 | 0.00002 | None |
| | | | Sodium Salts | Proprietary | 6.00000 | 0.00000 | None |
| APB-1 | FTS International | Breaker | | | | | |
| | | | Ammonium persulfate | 7727-54-0 | 95.00000 | 0.00001 | None |
| Oil/Water Soluble Tracer (OST)/(WST) | Spectrum Tracer Services | Diagnostics | | | | | |
| | | | Charcoal | 7440-44-0 | 90.00000 | 0.00000 | None |
| | | | Inert Ingredients | Proprietary | 10.00000 | 0.00000 | None |
| Kelzan L | Spectrum Tracer Services | Diagnostics | | | | | |
| | | | Xanthan Gum | 11138-66-2 | 50.00000 | 0.00000 | None |
| | | | Dipropylene glycol monomethyl ether | 34590-94-8 | 50.00000 | 0.00000 | 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]



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](#)

i 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 4/20/2015 Job End Date 4/26/2015 API Number 47-017-06391-00-00 State & County West Virginia --- Doddridge

Well Name 512482

Longitude -80.800884 Latitude 39.221267 Datum NAD83 Federal/Tribal Well?

True Vertical Depth (ft) 6642 Total Water Vol (gal) 5653200 Total Non Water Vol 0 Total Mass (lbs) 51729840



MSDS Chemical Ingredients

[New Additive](#) [Add Additive](#)

| | Trade Name | Supplier | Purpose | Ingredients | CAS # | % High Additive | % HF Job | Comments | Ingredient Mass |
|----------------------|-------------------------|-------------------|--------------------------|-------------------------------|-------------|-----------------|----------------|----------|-----------------|
| Edit | Water | FTS International | Carrier/Base Fluid | Water | 7732-18-5 | 100% | 91.1967913514% | None | 47175954 |
| Edit | Sand (Proppant) | FTS International | Proppant | Crystalline Silica | 14808-60-7 | 100% | 8.3556415852% | None | 4322360 |
| Edit | MC MX 437-5 | Multi-Chem | Calcium nitrate solution | Calcium nitrate | 10124-37-5 | 60% | .0547263086% | None | 28309.832 |
| Edit | FRW-900 | FTS International | Friction reducer | Hydrotreated light distillate | 64742-47-8 | 30% | .0249671784% | None | 12915.481 |
| | | | | Alkyl Alcohol | Proprietary | 10% | .0083223928% | None | 4305.16 |
| | | | | Oxyalkylated alcohol A | Proprietary | 5% | .0041611964% | None | 2152.58 |
| Edit | Hydrochloric Acid (15%) | FTS International | Acidizing | Hydrochloric Acid | 7647-01-0 | 15% | .0368956452% | None | 19086.058 |
| Edit | CS-500-SI | FTS International | Scale inhibitor | Ethylene glycol | 107-21-1 | 10% | .0024197026% | None | 1251.708 |
| Edit | FE-100L | FTS International | Iron control | Citric acid | 77-92-9 | 55% | .0008166285% | None | 422.441 |
| Edit | HVG-1 | | Gelling agent | | | | | | |

| | | | | | | | | | |
|-------------------------------------|--------------------------------------|--------------------------|--------------------------|-------------------------------------|-------------|-----|--------------|------|---------|
| | | FTS International | | Petroleum distillate | 64742-47-8 | 55% | .0003529052% | None | 182.557 |
| | | | | Guar gum | 9000-30-0 | 50% | .0003208229% | None | 165.961 |
| | | | | Clay | 14808-60-7 | 2% | .0000128329% | None | 6.638 |
| | | | | Surfactant | 68439-51-0 | 2% | .0000128329% | None | 6.638 |
| <input type="button" value="Edit"/> | CI-150 | FTS International | Acid Corrosion Inhibitor | Organic amine resin salt | Proprietary | 30% | .000138944% | None | 71.875 |
| | | | | Ethylene glycol | 107-21-1 | 30% | .000138944% | None | 71.875 |
| | | | | Isopropanol | 67-63-0 | 30% | .000138944% | None | 71.875 |
| | | | | Dimethylformamide | 68-12-2 | 10% | .0000463147% | None | 23.958 |
| | | | | Quaternary ammonium compound | Proprietary | 10% | .0000463147% | None | 23.958 |
| | | | | Aromatic aldehyde | Proprietary | 10% | .0000463147% | None | 23.958 |
| <input type="button" value="Edit"/> | NE-100 | FTS International | Non-emulsifier | 2-Propanol | 67-63-0 | 10% | .0000367323% | None | 19.002 |
| | | | | 2-Butoxyethanol | 111-76-2 | 10% | .0000367323% | None | 19.002 |
| | | | | Dodecylbenzenesulfonic acid | 27176-87-0 | 5% | .0000183662% | None | 9.501 |
| <input type="button" value="Edit"/> | Windshield Washer fluid | Spectrum Tracer Services | Diagnostics | Methanol | 67-56-1 | 40% | .0000144984% | None | 7.5 |
| | | | | Inert Ingredients | Proprietary | 60% | .0000144984% | None | 7.5 |
| <input type="button" value="Edit"/> | Frac Fluid Identifier (FFI) | Spectrum Tracer Services | Diagnostics | Water | 7732-18-5 | 94% | .0000157549% | None | 8.15 |
| | | | | Sodium Salts | Proprietary | 6% | .0000004833% | None | 0.25 |
| <input type="button" value="Edit"/> | APB-1 | FTS International | Breaker | Ammonium persulfate | 7727-54-0 | 95% | .0000073459% | None | 3.8 |
| <input type="button" value="Edit"/> | Oil/Water Soluble Tracer (OST)/(WST) | Spectrum Tracer Services | Diagnostics | Charcoal | 7440-44-0 | 90% | .0000038276% | None | 1.98 |
| | | | | Inert Ingredients | Proprietary | 10% | .0000004253% | None | 0.22 |
| <input type="button" value="Edit"/> | Ketzan L | Spectrum Tracer Services | Diagnostics | Xanthan Gum | 11138-66-2 | 50% | .0000019331% | None | 1 |
| | | | | Diporpylene glycol monomethyl ether | 34590-94-8 | 50% | .0000019331% | None | 1 |

Non-MSDS Chemical Ingredients

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

Use Terms | © Copyright GWPC & IOGCC, 2010

LEWIS MAXWELL LEASE

2654 ACRES ±

WELL NO. WV 512482

LATITUDE 39° 15' 00"

LONGITUDE 80° 47' 30"

BOTTOM HOLE
WELL NO. WV 512482
STATE PLANE COORDINATES
(NORTH ZONE) NAD 27
N. 268,620.4
E. 1,630,973.0

LAT=(N) 39.230175
LONG=(W) 80.802736

UTM (NAD83)(METERS)
N. 4,342,347.8
E. 517,041.0

HAESSLY LAND &
TIMBER, LLC
266.38 ACRES ±

ZOE K. WALTERS
261 ACRES ±

BOTTOM HOLE
WELL NO. WV 512482

LANDING POINT
WELL NO. WV 512482
STATE PLANE COORDINATES
(NORTH ZONE) NAD 27

N. 266,073.6
E. 1,632,160.6

LAT=(N) 39.223231
LONG=(W) 80.798413

UTM (NAD83)(METERS)
N. 4,341,578.0
E. 517,415.7

HAESSLY LAND &
TIMBER, LLC
485 ACRES ±

WILLIAM RANDALL
HAMBLET, ET AL
442.60 ACRES ±
TM 23-3.1

LUCY E. HARPER
442.60 ACRES ±
TM 23-03

WELL NO. WV 512482
STATE PLANE COORDINATES
(NORTH ZONE) NAD 27

N. 265,368.5
E. 1,631,450.3

LAT=(N) 39.221267
LONG=(W) 80.800884

UTM (NAD83)(METERS)
N. 4,341,359.6
E. 517,202.9

NORTH

FENCE POST
FOUND

NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD'27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 28 PAGE 177.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF DODDRIDGE COUNTY IN JULY, 2013.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SURVEY GRADE).
5. PLAT DATED 03/11/10 REVISED 12/26/12 TO EXTEND HORIZONTAL LEG AND CHANGE BOTTOM HOLE COORDINATES, REVISED 06/06/13 TO SHOW NEW TOP HOLE COORDINATES, REVISED 08/12/13 TO CONFORM TO WV CODE R. 35-8 ETC.
6. AS DRILLED INFORMATION PROVIDED BY EQT.



HAESSLY LAND &
TIMBER, LLC
615 ACRES ±

I.L. MORRIS
6,603.75 ACRES ±

LEGEND

AS DRILLED ———
PROPOSED - - - - -

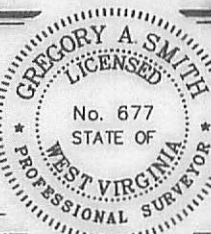
AS DRILLED INFORMATION

| BOTTOM HOLE WELL NO. WV 512482 STATE PLANE COORDINATES (NORTH ZONE) NAD 27 | WELL NO. WV 512482 STATE PLANE COORDINATES (NORTH ZONE) NAD 27 |
|---|--|
| N. 268,618.5 E. 1,630,935.5 | N. 265,368.5 E. 1,631,450.3 |
| LAT=(N) 39.230168 LONG=(W) 80.802867 | LAT=(N) 39.221267 LONG=(W) 80.800884 |
| UTM (NAD83)(METERS) N. 4,342,347.0 E. 517,028.5 | UTM (NAD83)(METERS) N. 4,341,359.6 E. 517,202.9 |

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.
677

Gregory A. Smith



(*) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE AUGUST 29, 20 13
REVISED DATE DECEMBER 04, 20 14
OPERATORS WELL NO. WV 512482
API WELL NO. 47
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 6980ASDRILLED512482
PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE TIE TO CORS NETWORK)
SCALE 1" = 1,000'

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

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

LOCATION:
ELEVATION 1,240'(GROUND) 1,242.5'(PROPOSED) WATERSHED LEFT FORK
DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'
SURFACE OWNER LUCY E. HARPER ACREAGE 442.6±
ROYALTY OWNER LEWIS MAXWELL HEIRS LEASE ACREAGE 2,654±
PROPOSED WORK:
LEASE NO. 080616
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 P.O. BOX 280 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

02/05/2016