

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

API 47-017-6459 County DODDRIDGE District WEST UNION
Quad OXFORD 7.5' Pad Name OXFORD 157 Field/Pool Name _____
Farm name JUSTIN L. HENDERSON ET AL Well Number 513145
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 4,343,008 Easting 520,177
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing 4,341,953 Easting 520,691

Elevation (ft) 970 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)

Water base Mud 12.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl 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 04/18/2014 Date drilling commenced 08/18/2014 Date drilling ceased 12/17/2014
Date completion activities began 5/5/2015 Date completion activities ceased 5/6/2015
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 144 Open mine(s) (Y/N) depths N
Salt water depth(s) ft - Void(s) encountered (Y/N) depths N
Coal depth(s) ft 337 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

JK

10/16/2015

API 47-017 - 6459 Farm name JUSTIN L. HENDERSON ET AL Well number 513145

| CASING STRINGS | Hole Size | Casing Size | Depth | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/N) * Provide details below* |
|---------------------------|-----------|-------------|---------|-------------|----------------|-------------------|--|
| Conductor | 24" | 20" | 63' | NEW | A-500 40LB/FT | NONE | Y |
| Surface | 17.5" | 13.375" | 946' | NEW | J-55 54.5LB/FT | 271' | Y |
| Coal | | | | | | | |
| Intermediate 1 | 12.375" | 9.625" | 5,020' | NEW | P-110 40LB/FT | 1283',2934',3601' | Y |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8.5" | 5.5" | 10,287' | 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 ²) | Cement Top (MD) | WOC (hrs) |
|----------------|----------------------|-----------------|-----------------|------------------------------|---------------------------|-----------------|-----------|
| Conductor | CLASS A | 61 | 15.6 | 1.18 | 71.98 | 0 | 8 |
| Surface | CLASS A | 790 | 15.6 | 1.19 | 940.1 | 0 | 8 |
| Coal | | | | | | | |
| Intermediate 1 | CLASS A / CLASS A | 360 / 340 | 14.2 / 15.6 | 1.28 / 1.18 | 862 | 0 | 8 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | Class A / Class H | 280 / 495 | 14.2 / 15.2 | 1.26 / 1.97 | 1328 | 5,080' | 72 |
| Tubing | | | | | | | |

Drillers TD (ft) 10,301' Loggers TD (ft) _____

Deepest formation penetrated Marcellus Plug back to (ft) _____

Plug back procedure _____

Kick off depth (ft) 5,078'

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: 1,11,21

INTERMEDIATE- RAN AT LEAST EVERY 500' FEET JOINTS: 1,12,24,36,48,60,72,84,97,109,121

PRODUCTION- Composite bodied centralizers every joint up to 4,250'

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- 017 - 6459 Farm name JUSTIN L. HENDERSON ET AL Well number 513145

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

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

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company _____
Address _____ City _____ State _____ Zip _____

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| Formation | Top (ftGL TVD) | Bottom (ftGL TVD) |
|----------------------|----------------|-------------------|
| FRESH WATER ZONE | 1 | 154 |
| SAND/SHALE | 1 | 347 |
| PITTSBURGH COAL SEAM | 347 | 351 |
| SAND/SHALE | 351 | 1,599.00 |
| BIG LIME | 1,599.00 | 1,884.00 |
| WEIR | 1,884.00 | 2,089.00 |
| BEREA | 2,089.00 | 2,093.00 |
| GANTZ | 2,093.00 | 2,204.00 |
| 50F | 2,204.00 | 2,294.00 |
| 30F | 2,294.00 | 2,349.00 |
| GORDON | 2,349.00 | 2,438.00 |
| 4TH | 2,438.00 | 2,660.00 |
| BAYARD | 2,660.00 | 2,933.00 |
| WARREN | 2,933.00 | 3,010.00 |
| SPEECHLEY | 3,010.00 | 3,499.00 |
| BALLTOWN A | 3,499.00 | 4,146.00 |
| RILEY | 4,146.00 | 4,596.00 |
| BENSON | 4,596.00 | 4,849.00 |
| ALEXANDER | 4,849.00 | 6,008.60 |
| SONYEA | 6,008.60 | 6,150.00 |
| MIDDLESEX | 6,150.00 | 6,199.90 |
| GENESEE | 6,199.90 | 6,286.60 |
| GENESEO | 6,286.60 | 6,314.40 |
| TULLY | 6,314.40 | 6,338.40 |
| HAMILTON | 6,338.40 | 6,365.20 |
| MARCELLUS | 6,365.20 | |

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513145 - 47-017-06359-0000 - Stimulated Stages

| Stage Number | Stimulation Date | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of Water (bbls) | Amount of Nitrogen/other (units) |
|-------------------|------------------|---------------------|------------------------------|------------------------------|------------|--------------------------|------------------------|----------------------------------|
| Initiation Sleeve | 5/3/2015 | 12.7 | 8,171.00 | 8,988.00 | 4,652.00 | 0 | 533 | 0 |
| 1 | 5/3/2015 | 96.9 | 8,281.00 | 8,792.00 | 4,007.00 | 474,140 | 11914 | 0 |
| 2 | 5/4/2015 | 97.7 | 8,090.00 | 8,959.00 | 5,361.00 | 482,900 | 11320 | 0 |
| 3 | 5/4/2015 | 96.9 | 7,998.00 | 9,694.00 | 5,020.00 | 352,208 | 9786 | 0 |
| 3.1 | 5/4/2015 | 82.9 | 8,225.00 | 8,821.00 | 5,447.00 | 128,852 | 7793 | 0 |
| 4 | 5/4/2015 | 90.8 | 7,082.00 | 7,726.00 | 5,353.00 | 485,500 | 10905 | 0 |
| 5 | 5/5/2015 | 93.6 | 7,190.00 | 8,283.00 | 5,699.00 | 482,320 | 11113 | 0 |
| 6 | 5/5/2015 | 90.4 | 8,027.00 | 9,400.00 | 3,893.00 | 486,520 | 11787 | 0 |
| 7 | 5/5/2015 | 93.8 | 7,502.00 | 9,782.00 | 3,958.00 | 486,660 | 10392 | 0 |
| 8 | 5/5/2015 | 98.4 | 6,993.00 | 7,437.00 | 5,363.00 | 460,940 | 11480 | 0 |
| 9 | 5/6/2015 | 99.4 | 7,410.00 | 8,071.00 | 5,369.00 | 480,680 | 11182 | 0 |
| 10 | 5/6/2015 | 100 | 7,531.00 | 8,805.00 | 4,734.00 | 441,040 | 10777 | 0 |
| 11 | 5/6/2015 | 100.2 | 7,460.00 | 8,373.00 | 5,358.00 | 486,900 | 11082 | 0 |
| 12 | 5/6/2015 | 100.2 | 7,339.00 | 8,179.00 | 4,994.00 | 485,800 | 11305 | 0 |
| | | | | | | | | |
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513145 - 47-017-06359-0000 - - Perforations

| Stage Number | Perforation Date | Top Perf Depth (ftKB) | Bottom Perf Depth (ftKB) | Number of Shots | Formation |
|--------------------------|-------------------------|------------------------------|---------------------------------|------------------------|------------------|
| Initiation Sleeve | 3/27/2015 | 10,285.00 | 10,287.00 | 10 | MARCELLUS |
| 1 | 5/3/2015 | 10,019.00 | 10,201.00 | 32 | MARCELLUS |
| 2 | 5/4/2015 | 9,719.00 | 9,961.00 | 40 | MARCELLUS |
| 3 | 5/4/2015 | 9,419.00 | 9,661.00 | 40 | MARCELLUS |
| 3.1 | 5/4/2015 | 9,549.00 | 9,609.00 | 16 | MARCELLUS |
| 4 | 5/4/2015 | 9,119.00 | 9,361.00 | 40 | MARCELLUS |
| 5 | 5/5/2015 | 8,819.00 | 9,061.00 | 40 | MARCELLUS |
| 6 | 5/5/2015 | 8,519.00 | 8,761.00 | 40 | MARCELLUS |
| 7 | 5/5/2015 | 8,219.00 | 8,461.00 | 40 | MARCELLUS |
| 8 | 5/5/2015 | 7,919.00 | 8,161.00 | 40 | MARCELLUS |
| 9 | 5/5/2015 | 7,622.00 | 7,861.00 | 40 | MARCELLUS |
| 10 | 5/6/2015 | 7,319.00 | 7,561.00 | 40 | MARCELLUS |
| 11 | 5/6/2015 | 7,019.00 | 7,261.00 | 40 | MARCELLUS |
| 12 | 5/6/2015 | 6,719.00 | 6,961.00 | 40 | MARCELLUS |
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Hydraulic Fracturing Fluid Product Component Information Disclosure



17-06459

| | |
|--------------------------------|--------------------|
| Job Start Date: | 5/5/2015 |
| Job End Date: | 5/6/2015 |
| State: | West Virginia |
| County: | Doddridge |
| API Number: | 47-017-06459-00-00 |
| Operator Name: | EQT Production |
| Well Name and Number: | 513145 |
| Longitude: | -80.76637600 |
| Latitude: | 39.23605500 |
| Datum: | NAD83 |
| Federal/Tribal Well: | NO |
| True Vertical Depth: | 6,365 |
| Total Base Water Volume (gal): | 5,937,498 |
| 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 | Keane Group | Carrier/Base Fluid | Water | 7732-18-5 | 100.00000 | 89.31220 | None |
| Sand (Proppant) | Keane Group | Proppant | Silica Substrate | 14808-60-7 | 100.00000 | 10.33650 | None |
| MC MX 437-5 | Multi-Chem | Calcium nitrate solution | Calcium nitrate | 10124-37-5 | 60.00000 | 0.05723 | None |
| Hydrochloric Acid (15%) | Keane Group | Acidizing | Hydrochloric Acid | 7647-01-0 | 15.00000 | 0.02075 | None |
| FFR 760 | Keane Group | Friction reducer | Hydrotreated Light Distillate | 64742-47-8 | 30.00000 | 0.00935 | None |
| | | | Alkyl Alcohol | Proprietary | 10.00000 | 0.00312 | None |
| | | | Oxyalkylated alcohol A | Proprietary | 5.00000 | 0.00156 | None |
| FFR 730 | Keane Group | Friction reducer | Oxyalkylated alcohol A | Proprietary | 5.00000 | 0.00303 | None |
| EC63304 | Keane Group | Scale Inhibitor | Sodium Phosphate, Tribasic | 7601-54-9 | 5.00000 | 0.00126 | None |
| AI 600 | Keane Group | Corrosion Inhibitor | Ethylene Glycol | 107-21-1 | 40.00000 | 0.00014 | None |

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|--|-------------|-------------|--|-------------|----------|---------|------|
| | | | N, N-Dimethylformamide | 68-12-2 | 20.00000 | 0.00007 | None |
| | | | Cinnamialdehyde | 104-55-2 | 15.00000 | 0.00005 | None |
| | | | 2-Butoxyethanol | 111-76-2 | 15.00000 | 0.00005 | None |
| | | | Tar bases, quinoline derivs, benzyl chloride-quaternized | 72480-70-7 | 15.00000 | 0.00005 | None |
| | | | 1-Decanol | 112-30-1 | 5.00000 | 0.00002 | None |
| | | | Poly (oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega- hydroxy-, branched | 127087-87-0 | 5.00000 | 0.00002 | None |
| | | | Triethyl Phosphate | 78-40-0 | 2.50000 | 0.00001 | None |
| | | | 1-Octanol | 111-87-5 | 2.50000 | 0.00001 | None |
| | | | Isopropyl alcohol | 67-63-0 | 2.50000 | 0.00001 | None |
| LEB-10X | Keane Group | Gel Breaker | | | | | |
| | | | Ethylene Glycol | 107-21-1 | 30.00000 | 0.00008 | 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%

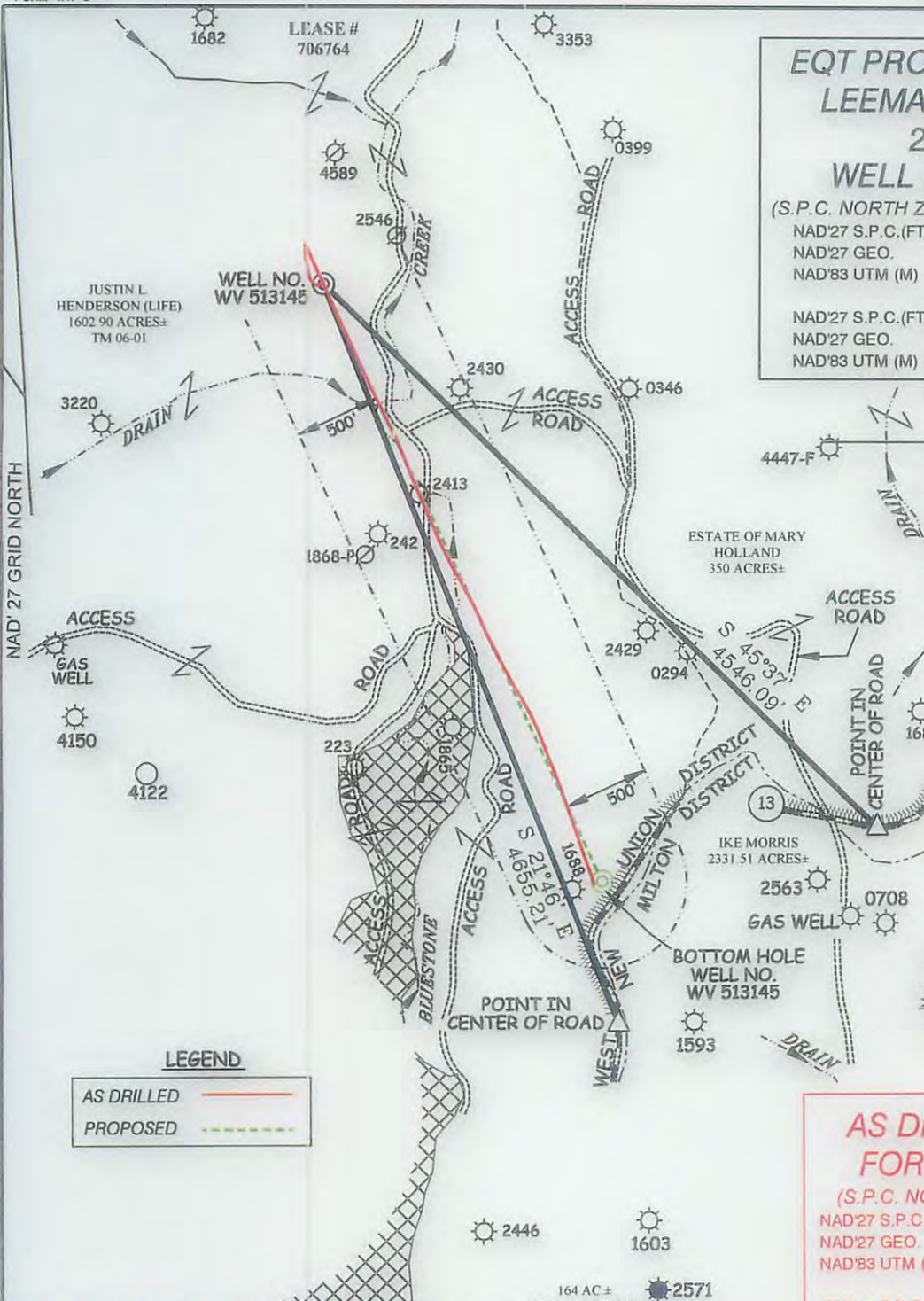
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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**EQT PRODUCTION COMPANY
LEEMAN MAXWELL LEASE
2,164 ACRES±
WELL NO. WV 513145**
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
NAD'27 S.P.C.(FT) N. 270,614.4 E. 1,641,301.8
NAD'27 GEO. LAT-(N) 39.236055 LONG-(W) 80.766376
NAD'83 UTM (M) N. 4,343,007.8 E. 520,177.4
BOTTOM HOLE
NAD'27 S.P.C.(FT) N. 267,125.1 E. 1,642,928.9
NAD'27 GEO. LAT-(N) 39.226538 LONG-(W) 80.760460
NAD'83 UTM (M) N. 4,341,953.1 E. 520,690.9



SPECIAL NOTE
THERE IS NO SURVEY OR LEGAL DESCRIPTION DEFINING THE ACTUAL LOCATION OF THE 164 ACRE MEADOWLAND RESERVATION, DUE TO THE PASSAGE OF TIME SINCE THE RESERVATION WAS CREATED IT APPEARS THERE IS NO LIVING PERSON(S) WITH KNOWLEDGE OF ITS TRUE LOCATION. LOCATION OF RESERVATION SHOWN HEREON COMPILED FROM: "A" A MAP TITLED "CARNegie NATURAL GAS CO. LEEMAN MAXWELL LEASES, DODDRIDGE COUNTY, WEST VA" "B" PERIMETER OF RESERVATION AS SHOWN BY GLENN TRADER "CARETAKER OF HENDERSONS' PORTION OF MAXWELL LANDS" WHICH WAS LOCATED USING A MAPPING GRADE GPS RECEIVER "C" DETAILS SHOWN ON 1939 USDA ARIEL PHOTOGRAPHY OBTAINED FROM THE WV GEOLOGICAL SURVEY. SLS RECOMMENDS THAT PROPER LEGAL STEPS BE TAKEN TO CONFIRM CONCURRENCE OF ALL APPROPRIATE PARTIES RELATIVE TO THE RESERVATION AS SHOWN HEREON. THIS PLAN IS SUBJECT TO ANY ADDITIONAL INFORMATION (UNDISCOVERED TO DATE) WHICH MAY CHANGE THE LOCATION AND/OR CONFIGURATION OF THE RESERVATION AS SHOWN HEREON.

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. AS DRILLED INFORMATION PROVIDED BY EQT.

LEGEND

AS DRILLED ———
PROPOSED - - - - -

AS DRILLED COORDINATES FOR WELL NO. WV 513145

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
NAD'27 S.P.C.(FT) N. 270,614.4 E. 1,641,301.8
NAD'27 GEO. LAT-(N) 39.236055 LONG-(W) 80.766376
NAD'83 UTM (M) N. 4,343,007.8 E. 520,177.4
BOTTOM HOLE
NAD'27 S.P.C.(FT) N. 267,105.1 E. 1,642,887.9
NAD'27 GEO. LAT-(N) 39.226482 LONG-(W) 80.760604
NAD'83 UTM (M) N. 4,341,946.8 E. 520,678.5

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.
604) 462-5534 WWW.SLSURVEYS.COM



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

P.S. 677 *Gregory A. Smith*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE DECEMBER 06, 20 13
REVISED 03/06/14 & 01/12/15
OPERATORS WELL NO. WV 513145
API WELL NO. 47-017-06459
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7889ASDRILLED513145
SCALE 1" = 1000'
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

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

LOCATION: ELEVATION 970'(GROUND) 968'(PROPOSED) WATERSHED BLUESTONE CREEK
DISTRICT WEST UNION COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'
SURFACE OWNER JUSTIN L. HENDERSON (LIFE) ACREAGE 1,602.90±
ROYALTY OWNER LEEMAN MAXWELL HRS ACREAGE 2,164± LEASE NO. 706764
PROPOSED WORK: DRILL 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 6399'

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

10/16/2015