



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Thursday, October 25, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit Modification Approval for BIG 245 H8
47-103-03234-00-00

Modified Conductor Size to 26"

EQT PRODUCTION COMPANY

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

A handwritten signature in blue ink, appearing to read 'James A. Martin'.

James A. Martin
Chief

Operator's Well Number: BIG245H8
Farm Name: ET BLUE GRASS, LLC
U.S. WELL NUMBER: 47-103-03234-00-00
Horizontal 6A New Drill
Date Modification Issued: October 25, 2018

Promoting a healthy environment.

1

WW-6B
(04/15)

API NO. 47- 103 - 03234 MOD
OPERATOR WELL NO. BIG245H8
Well Pad Name: BIG245

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company 306686 Wetzel Grant Big Run
Operator ID County District Quadrangle

2) Operator's Well Number: BIG245H8 Well Pad Name: BIG245

3) Farm Name/Surface Owner: E.T. Bluegrass Public Road Access: Rt. 19/2

4) Elevation, current ground: 1480 Elevation, proposed post-construction: 1430

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No *DMA 8/15/18*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 7531, 51, 2620 PSI

8) Proposed Total Vertical Depth: 7531

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19304

11) Proposed Horizontal Leg Length: 10593

12) Approximate Fresh Water Strata Depths: 229, 507, 662, 752, 1011

13) Method to Determine Fresh Water Depths: From offset wells

14) Approximate Saltwater Depths: None

15) Approximate Coal Seam Depths: 925, 1024, 1132

16) Approximate Depth to Possible Void (coal mine, karst, other): None

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17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes No

OCT - 9 2018

WV Department of
Environmental Protection

(a) If Yes, provide Mine Info: Name: _____

Depth: _____

Seam: _____

Owner: _____

18)

CASING AND TUBING PROGRAM

| TYPE | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | FOOTAGE: For Drilling (ft) | INTERVALS: Left in Well (ft) | CEMENT: Fill-up (Cu. Ft.)/CTS |
|--------------|-----------|-------------|-------|------------------------|----------------------------|--|-------------------------------|
| Conductor | 26 | New | A-500 | 85.6 | 40 | 40 | 49ft ³ / CTS |
| Fresh Water | 13 3/8 | New | J-55 | 54.5 | 1179 | 1179 | 1086ft ³ / CTS |
| Coal | | | | | | | |
| Intermediate | 9 5/8 | New | A-500 | 40 | 2855 | 2855 | 1108 ft ³ / CTS |
| Production | 5 1/2 | New | P-110 | 20 | 19304 | 19304 | 500' above top producing zone |
| Tubing | 2 3/8 | | J-55 | 4.7 | | May not be run, if run set 40' above top perf or 80° inclination | |
| Liners | | | | | | | |

DMH 8/15/18

| TYPE | Size (in) | Wellbore Diameter (in) | Wall Thickness (in) | Burst Pressure (psi) | Anticipated Max. Internal Pressure (psi) | Cement Type | Cement Yield (cu. ft./k) |
|--------------|-----------|------------------------|---------------------|----------------------|--|--------------|--------------------------|
| Conductor | 26 | 30 | .312 | 1378 | 17 | Class A | 1.18 |
| Fresh Water | 13 3/8 | 17 1/2 | .38 | 2700 | 2160 | See Variance | 1.19 |
| Coal | | | | | | | |
| Intermediate | 9 5/8 | 12 3/8 | .395 | 3950 | 3160 | Class H | 1.07 |
| Production | 5 1/2 | 8 1/2 | .361 | 12640 | 10112 | Class H | 1.123/2.098 |
| Tubing | 2 3/8 | NA | .19 | 7700 | | | |
| Liners | | | | | | | |

PACKERS

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Office of Oil and Gas

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| | | | | |
|-------------|--|--|--|--|
| Kind: | | | | |
| Sizes: | | | | |
| Depths Set: | | | | |

WV Department of
Environmental Protection

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 4558'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

DMAH 8/15/18

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 350,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 400,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): +/- 40.35

22) Area to be disturbed for well pad only, less access road (acres): +/- 34.59

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500’.
- Intermediate: Bow spring centralizers– One cent at the shoe and one spaced every 500’.
- Production: One solid body cent spaced every joint from production casing shoe to KOP

24) Describe all cement additives associated with each cement type:

Conductor: Class A no additives
Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. 25% Flake Loss Circulation Material (LCM)
Intermediate (Class H Cement): 0-3% Calcium Chloride Used to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) 6% Super FL-300 (fluid loss/lengthens thickening time)
Production:
Lead (Class H Cement). 0.2% CD-20 (dispersant makes cement easier to mix). 15% SuperFL-300 (fluid loss/lengthens thickening time). 15% SEC-10 (fluid loss) 50:50 POZ (extender)
Tail (Class H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time. 3% Super FL-200 (fluid loss) 2% SEC-10 (Fluid loss). 2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation 60 % Calcium Carbonate Acid solubility.

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OCT - 9 2018

25) Proposed borehole conditioning procedures:

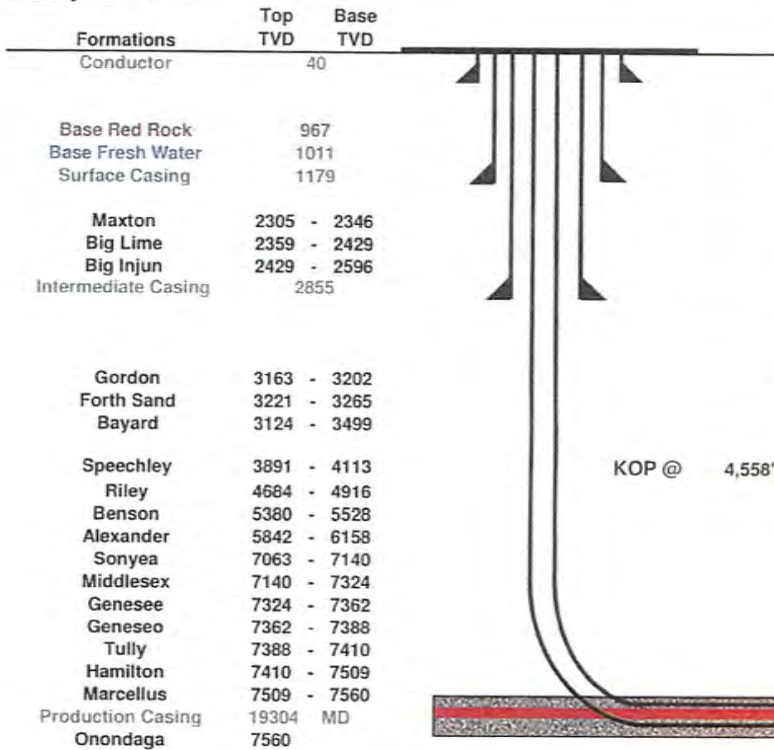
Surface: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
Intermediate: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

*Note: Attach additional sheets as needed.

Well **BIG245H8**
EQT Production
Big Run Quad
Wetzel County, WV

ENERTIA # 514369
 Azimuth 335
 Vertical Section 10576

Note: Diagram is not to scale



| Casing and Cementing | | | | Deepest Fresh Water: 1,011' |
|----------------------------|--------------|------------------|---|--|
| Type | Conductor | Surface | Intermediate | Production |
| Hole Size, In. | 30 | 17 1/2 | 12 3/8 | 8 1/2 |
| Casing Size, OD In. | 26 | 13 3/8 | 9 5/8 | 5 1/2 |
| Casing Wall Thickness, In. | 0.312 | 0.380 | 0.395 | 0.361 |
| Depth, MD | 40' | 1,179' | 2,855' | 19,304' |
| Weight | 85.6# | 54.5# | 40# | 20# |
| Grade | A-500 | J-55 | A-500 | P-110 |
| New or Used | New | New | New | New |
| Burst (psi) | 1378 | 2,700 | 3,950 | 12,640 |
| Cement Class | A | A / Type 1 | H | H |
| Cement Yield | 1.18 | 1.19 | 1.07 | 1.123/2.098 |
| Top of Cement (Planned) | Surface | Surface | Surface | 500' above top Producing Zone |
| Method | Displacement | Displacement | Displacement | Displacement |
| Est. Volume (cu ft) | 49 | 1,086 | 1,108 | 2,962 |
| Possible Additives | N/A | Calcium Chloride | Calcium Chloride, Fluid Loss, Defoamer, Dispersant, POZ, Bonding Agent, Extender, Retarder, Flake/LCM | Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent |

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 4558'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

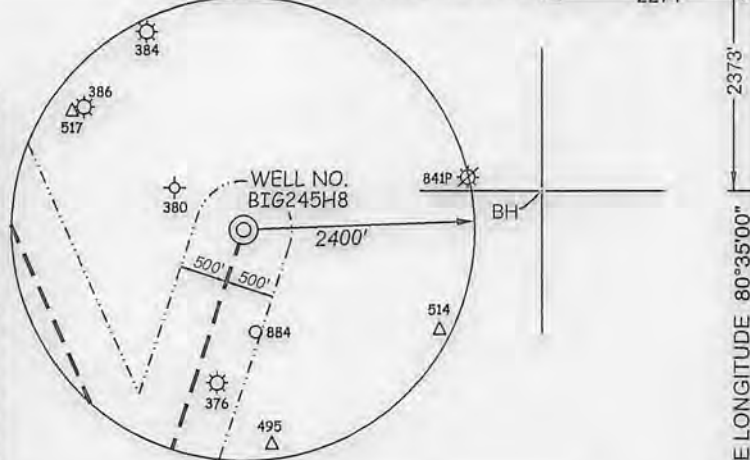
RECEIVED
 Office of Oil and Gas
 OCT - 9 2018
 WV Department of Environmental Protection

10,593' Lateral

103-03234 MW1

BIG245
BIG245H8
EQT PRODUCTION COMPANY

| TAG | TM-PAR. | SURFACE OWNERS | ACRES |
|-----|-------------|---|-------------|
| A | G-TM-3-2 | JOSEPH F & GAY BLAKE IRREVOCABLE GRANTOR TR | 194 AC. |
| B | G-TM-3-5 | COASTAL FOREST RESOURCES CO | 179 AC. |
| C | G-TM-3-6 | VIRGINIA RUTH BLAKE | 5 3/4 AC. |
| D | G-TM-3-10 | CHARLES STONEKING ET AL. | 9 3/4 AC. |
| E | G-TM-3-11 | VIRGINIA RUTH BLAKE | 2.5 AC. |
| F | G-TM-3-13 | EDWARD LEE DULANEY, II | 164 3/4 AC. |
| G | G-TM-3-14 | CHARLES STONEKING ET AL. | 70 1/2 AC. |
| H | G-TM-3-15 | CHARLES STONEKING ET AL. | 45 AC. |
| I | G-TM-3-16 | CHARLES STONEKING ET AL. | 14.11 AC. |
| J | G-TM-3-18 | VIRGINIA RUTH BLAKE | 28.75 AC. |
| K | G-TM-3-23 | COASTAL FOREST RESOURCES CO L/E H & M DULANEY | 167 3/4 AC. |
| L | G-TM-3-24 | COASTAL FOREST RESOURCES CO L/E H & M DULANEY | 35.89 AC. |
| M | G-TM-3-25 | CHARLES STONEKING ET AL. | 34.4 AC. |
| N | G-TM-3-26 | VIRGINIA RUTH BLAKE | 20.69 AC. |
| O | G-TM-3-27 | VIRGINIA RUTH BLAKE | 45.83 AC. |
| P | G-TM-3-30 | THOMAS E & CHERYL A LEASURE | 51.80 AC. |
| Q | G-TM-3-31 | HEARTWOOD FORESTLAND FUND II LP | 27.56 AC. |
| R | G-TM-3-34 | MIKE & MADELINE WHITE | 30.6 AC. |
| S | G-TM-7-3 | COASTAL FOREST RESOURCES CO | 178 AC. |
| T | G-TM-7-3.2 | COASTAL FOREST RESOURCES CO | 156.98 AC. |
| U | G-TM-8-1 | DANNY STOCKSLAGER ET AL. | 170 AC. |
| V | G-TM-8-2 | MIKE & MADELINE WHITE | 40.13 AC. |
| W | G-TM-8-3 | MIKE & MADELINE WHITE | 3 AC. |
| X | G-TM-8-4 | DUANE M GOODRICH | 1 5/8 AC. |
| Y | G-TM-8-5 | DUANE M GOODRICH | 130 SQ RDS |
| Z | G-TM-8-6 | DUANE M GOODRICH | 164 SQ RDS |
| AA | G-TM-8-7 | JAMES E & MARTIN A STONEKING | 19.12 AC. |
| BB | G-TM-8-8 | WANDA L BYARD | 59.16 AC. |
| CC | G-TM-8-10 | GARLAND E MINOR | 48.1 AC. |
| DD | G-TM-8-11 | BONNIE M HENTHORNE | 63 1/2 AC. |
| EE | G-TM-8-12 | SHIRLEY A TITUS | 41.9 AC. |
| FF | G-TM-8-12.1 | DALE F SAPP L/E, LOLA J SAPP | 10.1 AC. |
| GG | G-TM-8-13 | NEAL UTT | 3 3/4 AC. |
| HH | G-TM-8-13.1 | DUANE M GOODRICH | 3.56 AC. |
| II | G-TM-8-14 | NEAL UTT | 51 AC. |
| JJ | G-TM-8-15 | JOHN MICHAEL BYARD | 71.60 AC. |
| KK | G-TM-8-18 | COASTAL FOREST RESOURCES | 337 AC. |
| LL | G-TM-8-19 | PHILLIP & KIMBERLY BRENT | 46.45 AC. |
| MM | G-TM-8-21 | IKEY JOE WILLEY | 76.27 AC. |
| NN | G-TM-8-22 | ET BLUEGRASS LLC, C/O EQT PRODUCTION CO | 138.93 AC. |
| OO | G-TM-8-23 | DALE K, JAMES L & DONALD J DULANEY | 70.81 AC. |
| PP | G-TM-8-23.1 | JAMES L DULANEY | 3.19 AC. |
| QQ | G-TM-8-25 | JAMES ARTHUR YOHO | 6.25 AC. |



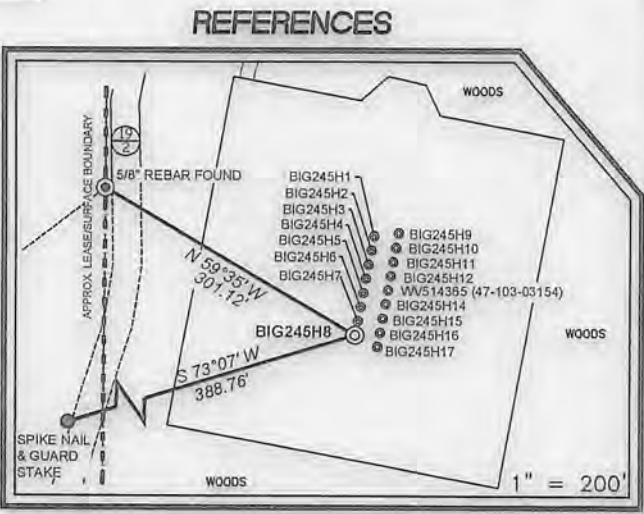
| SUBSURFACE AGREEMENT | | |
|---|------------|------------------|
| IKEY JOE WILLEY | 76.27 AC.± | G-TM-8-21 |
| ROYALTY OWNERS | | |
| ACROPOLIS INC. ET AL. | 74 AC.± | LEASE NO. 121160 |
| BONNIE M. HENTHORNE | 64 AC.± | LEASE NO. 125426 |
| GARLAND E. MINOR ET AL. | 49 AC.± | LEASE NO. 125440 |
| JOSEPH SHIBEN & MINNIE SHIBEN ESTATE ET AL. | 1030 AC.± | LEASE NO. 102814 |
| SHIBEN ESTATES INC. ET AL. | 109 AC.± | LEASE NO. 102813 |

| TAG | TM-PAR. | SURFACE OWNERS | ACRES |
|-----|-----------|--|------------|
| RR | G-TM-8-27 | JAMES ARTHUR YOHO | 21.75 AC. |
| SS | G-TM-8-28 | JAMES ARTHUR YOHO | 61 AC. |
| TT | G-TM-8-38 | DALE K & SHERRY L DULANEY | 28.82 AC. |
| UU | G-TM-8-39 | DORN H HIGGINBATHAM ET AL | 23.62 AC. |
| VV | G-TM-8-53 | DORN H HIGGINBOTHAM ET AL | 196.21 AC. |
| VV | G-TM-8-24 | DORN H HIGGINBOTHAM ET AL | 7.1 AC. |
| XX | G-TM-8-30 | JAMES & JIM YOHO | 7.50 AC. |
| YY | | FRANKLIN M. BLAKE HEIRS AND/OR ASSIGNS | 3.25 AC. |

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 400,676.62 E. 1,698,751.10
 NAD'27 GEO. LAT-(N) 39.595169 LONG-(W) 80.569038
 NAD'83 UTM (M) N. 4,382,924.508 E. 537,019.345
LANDING POINT
 NAD'27 S.P.C.(FT) N. 399,566.93 E. 1,696,859.81
 NAD'27 GEO. LAT-(N) 39.592061 LONG-(W) 80.575701
 NAD'83 UTM (M) N. 4,382,576.793 E. 536,448.765
BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 409,244.96 E. 1,692,551.51
 NAD'27 GEO. LAT-(N) 39.618487 LONG-(W) 80.591405
 NAD'83 UTM (M) N. 4,385,503.371 E. 535,087.068

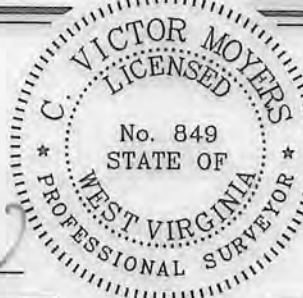
SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 482-5834
www.slsurveys.com

NOTES ON SURVEY
 1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS 2500 SQ. FT. OR GREATER WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
 2. WELL SPOT CIRCLE (SHEET 1) AND TOPO MARK SCALE ARE 1" = 2000'.



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. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MAY 1, 20 18
 REVISED 8/6/18
 OPERATORS WELL NO. BIG245H8
 API WELL NO. 47-103-03234
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 7812PBIG245H8-R.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE SEE NOTE 2

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

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: GROUND PROPOSED ELEVATION 1486' 1430' WATERSHED ROCKCAMP RUN OF WILLEY FORK
 DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER ET BLUE GRASS, LLC ACREAGE 138.93±
 ROYALTY OWNER SHIBEN ESTATES, INC ACREAGE 140±

PROPOSED WORK :
 DRILL X CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7532'

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

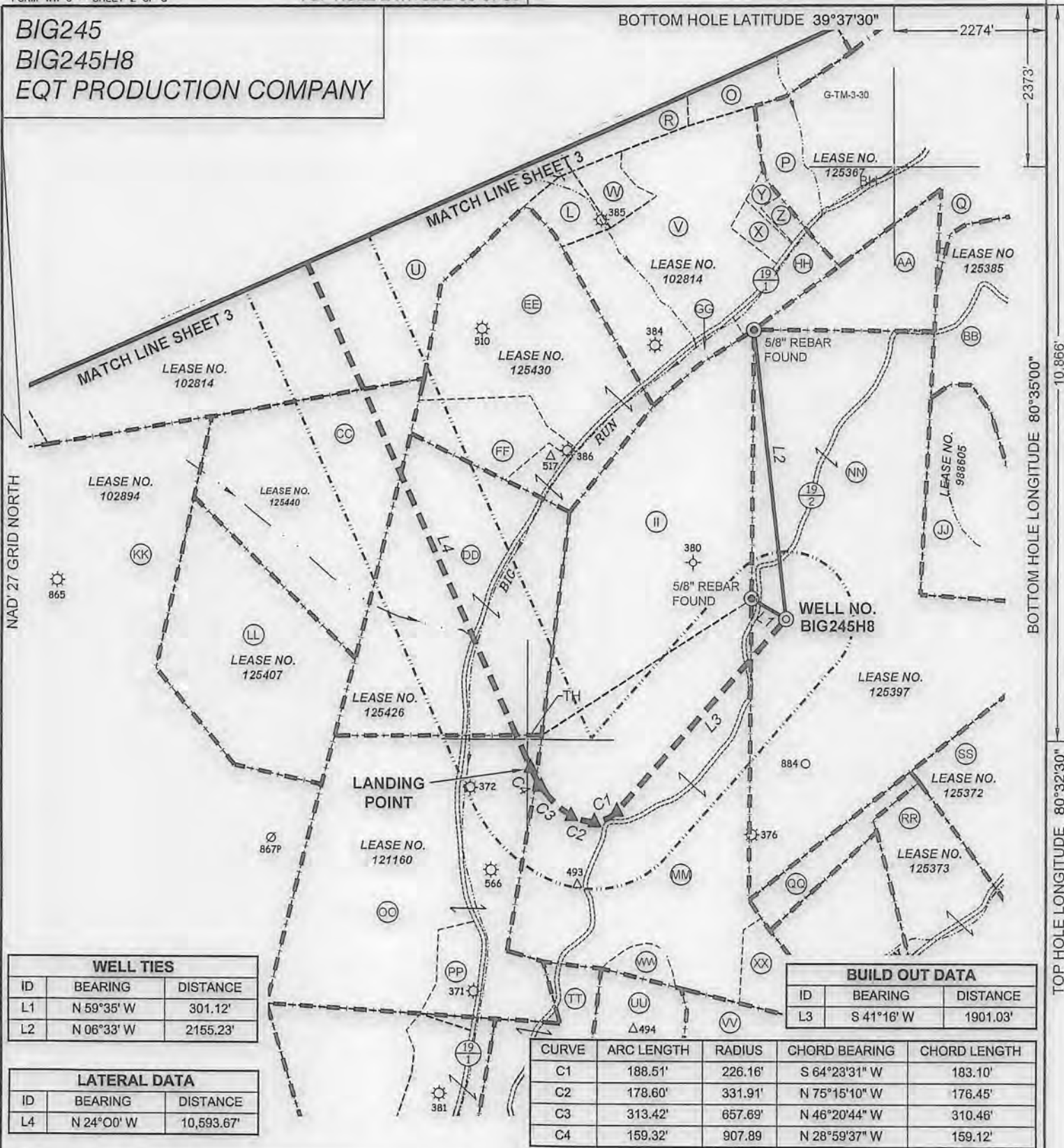
BOTTOM HOLE LONGITUDE 80°35'00" 10,866' TOP HOLE LONGITUDE 80°32'30"

BIG245
BIG245H8
EQT PRODUCTION COMPANY

NAD'27 GRID NORTH

BOTTOM HOLE LONGITUDE 80°35'00"

TOP HOLE LONGITUDE 80°32'30"



| WELL TIES | | |
|-----------|------------|----------|
| ID | BEARING | DISTANCE |
| L1 | N 59°35' W | 301.12' |
| L2 | N 06°33' W | 2155.23' |

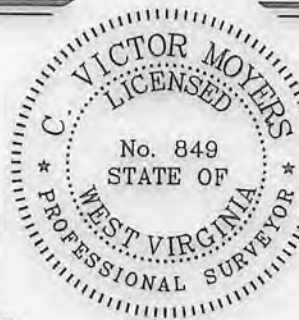
| LATERAL DATA | | |
|--------------|------------|------------|
| ID | BEARING | DISTANCE |
| L4 | N 24°00' W | 10,593.67' |

| BUILD OUT DATA | | | |
|----------------|------------|----------|--|
| ID | BEARING | DISTANCE | |
| L3 | S 41°16' W | 1901.03' | |

| CURVE | ARC LENGTH | RADIUS | CHORD BEARING | CHORD LENGTH |
|-------|------------|---------|---------------|--------------|
| C1 | 188.51' | 226.16' | S 64°23'31" W | 183.10' |
| C2 | 178.60' | 331.91' | N 75°15'10" W | 176.45' |
| C3 | 313.42' | 657.69' | N 46°20'44" W | 310.46' |
| C4 | 159.32' | 907.89' | N 28°59'37" W | 159.12' |



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 www.slsurveys.com



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

FILE NO. 7812PBIG245H8-R.dwg SCALE SEE NOTE 2

DATE MAY 1, 20 18

REVISED 8/6/18

OPERATORS WELL NO. BIG245H8

API WELL NO. 47 - 103 - 03234
 STATE COUNTY PERMIT

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.

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STATE OF WEST VIRGINIA
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 OFFICE OF OIL AND GAS



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

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 NAD'27 GEO. LAT-(N) 39.618487 LONG-(W) 80.591405
 NAD'83 UTM (M) N. 4,385,503.371 E. 535,087.068

LEGEND

| | | | |
|-------------------------------|------------|--------------|-------|
| COUNTY ROUTE | ⊖ | LEASE LINE | ----- |
| PROPOSED WELL | ⊙ | SURFACE LINE | ----- |
| EXISTING WELL | ⊗ | WELL LATERAL | ----- |
| PERMITTED WELL | ⊕ | OFFSET LINE | ----- |
| DRILL PATH BEND POINT | ⊙ | TIE LINE | ----- |
| GRANT DISTRICT TAX MAP-PARCEL | ▲ | CREEK | ----- |
| | G-TM-00-00 | ROAD | ----- |

WELL OPERATOR EQT PRODUCTION COMPANY
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
 BRIDGEPORT, WV 26330

DESIGNATED AGENT JASON RANSON
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

BIG245
BIG245H8
EQT PRODUCTION COMPANY

BOTTOM HOLE LATITUDE 39°37'30"

2274'

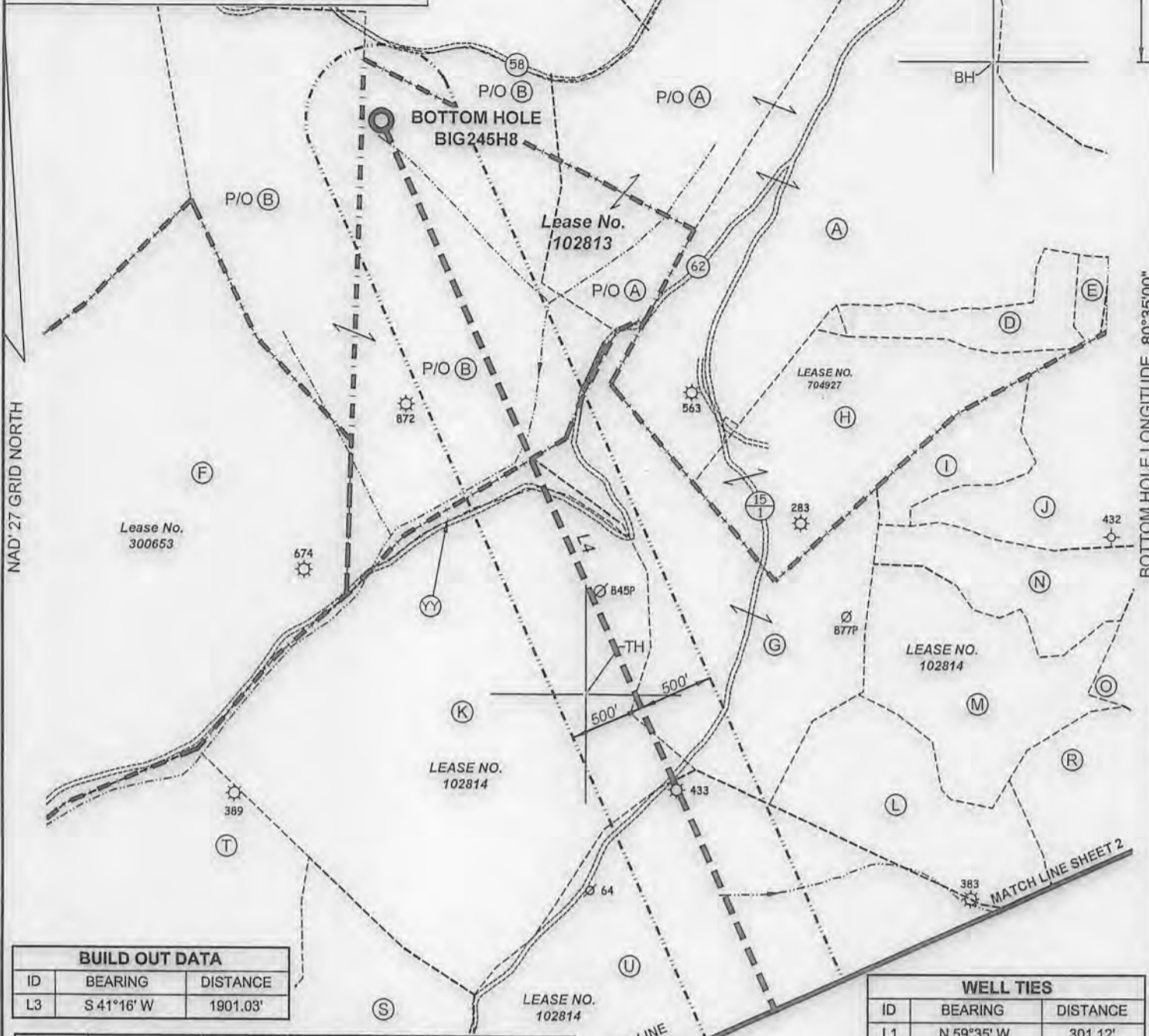
2373'

NAD '27 GRID NORTH

BOTTOM HOLE LONGITUDE 80°35'00"

10,866'

TOP HOLE LONGITUDE 80°32'30"



| BUILD OUT DATA | | |
|----------------|------------|----------|
| ID | BEARING | DISTANCE |
| L3 | S 41°16' W | 1901.03' |

| CURVE | ARC LENGTH | RADIUS | CHORD BEARING | CHORD LENGTH |
|-------|------------|---------|---------------|--------------|
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| C4 | 159.32' | 907.89' | N 28°59'37" W | 159.12' |

| WELL TIES | | |
|-----------|------------|----------|
| ID | BEARING | DISTANCE |
| L1 | N 59°35' W | 301.12' |
| L2 | N 06°33' W | 2155.23' |

| LATERAL DATA | | |
|--------------|------------|------------|
| ID | BEARING | DISTANCE |
| L4 | N 24°00' W | 10,593.67' |



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 FILE NO. 7812PBIG245H8-R.dwg SCALE SEE NOTE 2
 DATE MAY 1, 20 18
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P.S. 849 *C. Victor Moyers*

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



| (S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH) | | | |
|--|-------------------|--------------------|--|
| NAD'27 S.P.C.(FT) | N. 400,676.62 | E. 1,698,751.10 | |
| NAD'27 GEO. | LAT-(N) 39.595169 | LONG-(W) 80.569038 | |
| NAD'83 UTM (M) | N. 4,382,924.508 | E. 537,019.345 | |
| LANDING POINT | | | |
| NAD'27 S.P.C.(FT) | N. 399,566.93 | E. 1,696,859.81 | |
| NAD'27 GEO. | LAT-(N) 39.592061 | LONG-(W) 80.575701 | |
| NAD'83 UTM (M) | N. 4,382,576.793 | E. 536,448.765 | |
| BOTTOM HOLE | | | |
| NAD'27 S.P.C.(FT) | N. 409,244.96 | E. 1,692,551.51 | |
| NAD'27 GEO. | LAT-(N) 39.618487 | LONG-(W) 80.591405 | |
| NAD'83 UTM (M) | N. 4,385,503.371 | E. 535,087.068 | |

| LEGEND | |
|-------------------------------|------------|
| COUNTY ROUTE | ⊖ |
| PROPOSED WELL | ⊙ |
| EXISTING WELL | ⊗ |
| PERMITTED WELL | ⊕ |
| DRILL PATH BEND POINT | ⊙ |
| GRANT DISTRICT TAX MAP-PARCEL | ▲ |
| | G-TM-00-00 |
| LEASE LINE | ----- |
| SURFACE LINE | ----- |
| WELL LATERAL | ----- |
| OFFSET LINE | ----- |
| TIE LINE | ----- |
| CREEK | ----- |
| ROAD | ----- |

WELL OPERATOR EQT PRODUCTION COMPANY
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

DESIGNATED AGENT JASON RANSON
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330

COUNTY NAME PERMIT



Laura Adkins
WVDEP
Office of Oil and Gas
601 57th Street SE
Charleston WV 25304-2345

Re: Modification of wells BIG245H8 (47-103-03234), BIG245H16 (47-103-03235), and
BIG245 (47-103-03236)

Dear Ms. Adkins

Attached are the modifications for the above API numbers. The conductor casing size has
been changed for the conductor only.

If you have any questions, please do not hesitate to contact me at (304) 848-0035.

Sincerely,

Rebecca Wanstreet
Landman I – Permitting WV

Enc.

RECEIVED
Office of Oil and Gas
OCT - 9 2018
WV Department of
Environmental Protection