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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Monday, June 11, 2018  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY  
625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit Modification Approval for BIG464H13  
47-103-03211-00-00

**Modified for Lateral Extension**

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.

James A. Martin  
Chief

Operator's Well Number: BIG464H13  
Farm Name: COASTAL FOREST RESOURCES COMPANY D/B/A  
U.S. WELL NUMBER: 47-103-03211-00-00  
Horizontal 6A New Drill  
Date Modification Issued: June 11, 2018

Promoting a healthy environment.

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: BIG464H13 Well Pad Name: Big464

3) Farm Name/Surface Owner: Coastal Forest Resources DBA Coastal Timberlands Company Public Road Access: RT 250

4) Elevation, current ground: 1305' Elevation, proposed post-construction: 1246'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus, 7419', 51', 2620 PSI

*DMH*  
*1-16-18*

8) Proposed Total Vertical Depth: 7419

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15777

11) Proposed Horizontal Leg Length: 6798

12) Approximate Fresh Water Strata Depths: 109,184,432

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

14) Approximate Saltwater Depths: 1724,1848

15) Approximate Coal Seam Depths: 559,796,899,919

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

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

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(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	49 ft <sup>3</sup> / CTS
Fresh Water	13 3/8	New	J-55	54.5	1019	1019	952 ft <sup>3</sup> / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2841	2841	1108 ft <sup>3</sup> / CTS
Production	5 1/2	New	P-110	20	15777	15777	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							

*Dant*  
*1-16-18*

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	See Variance	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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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 3199'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

*DMH  
1-16-18*

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 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): no additional

22) Area to be disturbed for well pad only, less access road (acres): no additional

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) is used to combat the loss of the cement slurry to a thief zone  
Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries 0 25% flake Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone  
Production:  
Lead (Type 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 (Type 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

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.

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\*Note: Attach additional sheets as needed.

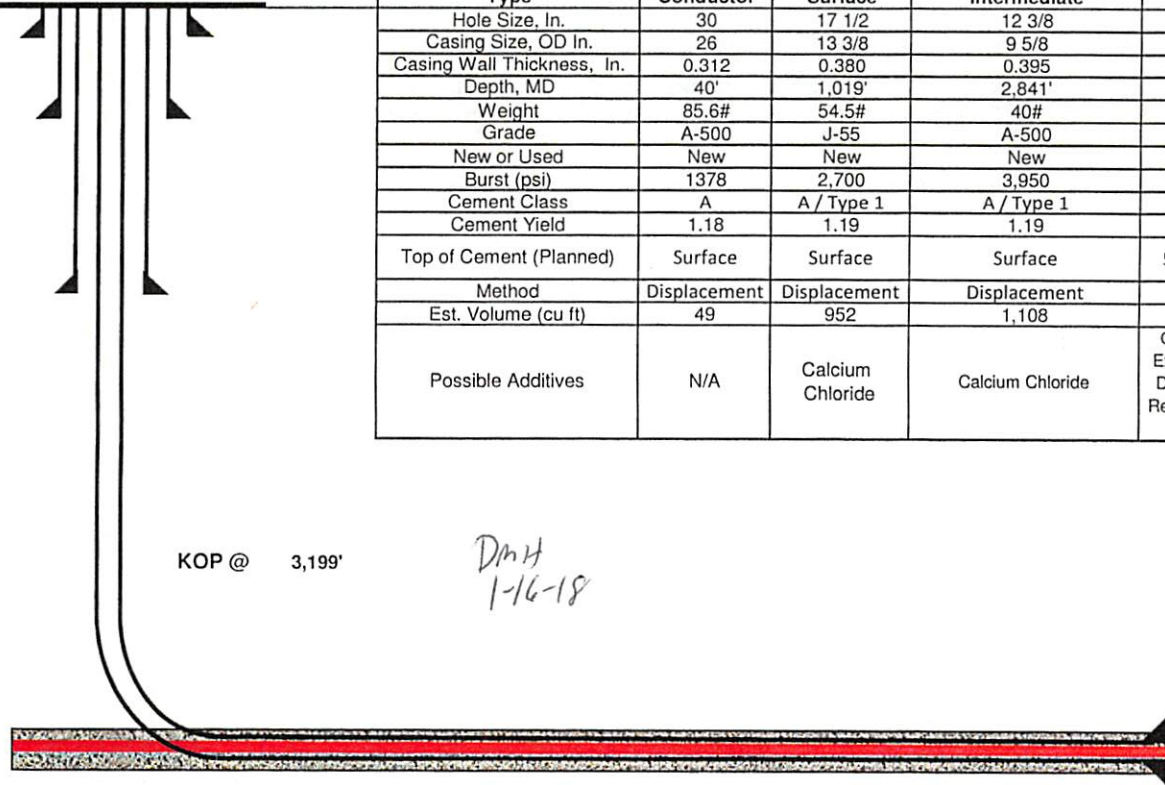
Well **BIG464H13**  
 EQT Production  
 Big Run Quad  
 Wetzel County, WV

Azimuth 157  
 Vertical Section 9937

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Red Rock	132	
Base Fresh Water	432	
Surface Casing	1019	
Intermediate Casing	2841	
Maxton	1812	1991
Big Lime	2254	2330
Big Injun	2342	2411
Weir	2540	2690
Gantz	2755	2791
Fifty foot	2896	2952
Thirty foot	2991	3018
Gordon	3047	3092
Forth Sand	3117	3130
Bayard	3242	3260
Warren	3665	3689
Speechley	3785	3833
Balltown A	4143	4158
Riley	4628	4670
Benson	5257	5306
Alexander	5671	5738
Sonyea	6937	7100
Middlesex	7100	7156
Genesee	7156	7243
Genesee	7243	7275
Tully	7275	7300
Hamilton	7300	7398
Marcellus	7398	7449
Production Casing	15777	MD
Onondaga	7449	

Casing and Cementing				Deepest Fresh Water: 432'
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'	1,019'	2,841'	15,777'
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	A / Type 1	A / H
Cement Yield	1.18	1.19	1.19	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	952	1,108	3,359
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent



Land curve @ 7,419' TVD  
 8,979' MD

Est. TD @ 7,419' TVD  
 15,777' MD

Proposed Well Work:  
 Drill and complete a new horizontal well in the Marcellus formation.  
 Drill the vertical to an approximate depth of 3,199'.  
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

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6,798' Lateral

47-103-03211  
 M300

**WEST VIRGINIA GEOLOGICAL PROGNOSIS**

Horizontal Well  
BIG464H13

v 2016 5

**Drilling Objectives:** Marcellus  
**County:** Wetzel  
**Quad:** Big Run  
**Elevation:** 1259 KB 1246 GL  
**Surface location** Northing: 390422.16 Easting: 1713398.55  
**Landing Point** Northing: 388762.01 Easting: 1716746.35  
**Toe location** Northing: 382504.01 Easting: 1719402.71  
**Recommended Azimuth** 157 Degrees

TVD: 7419  
**Recommended LP to TD: 6,798'**

**Proposed Logging Suite:** @ Intermediate Casing Point: The open hole logs need to consist of Gamma Ray, Neutron, Density, and Induction CONTACT JEFF DEREUME PRIOR TO LOGGING (412.328.5054)  
 @ Pilothead TD - Run OH logs for evaluation of uphole zones.  
 An elog should be run for the first well on every horizontal well pad.  
 Please have mudloggers rigged up on location by 6892.5' TVD.

**Recommended Gas Tests:** 1800, 2050, 2600, Intm Csg Pt, 3400, 4900, 5250, KOP, (Gas test at any mine void)  
 Gas test during any trip or significant downtime while drilling the lateral section

**ESTIMATED FORMATION TOPS**

Formation	Top (TVD)	Base (TVD)	Lithology	Comments	Top RR	Base RR
Fresh Water Zone	1	432		FW @ 109,184,432, . .	69	73
Waynesburg Coal	556	559 Coal			76	80
Coal	795	797 Coal		No known past present and or future mining within the area	96	114
Sewickley Coal	897	899 Coal			125	132 Base of Red
Pittsburgh Coal	912	919 Coal				
Maxton	1812	1991 Sandstone		Storage is NOT of concern		
Big Lime	2254	2330 Limestone		SW @ 1724,1848, . .		
Big Injun	2342	2411 Sandstone				
Weir	2540	2690 Sandstone				
Top Devonian	2755					
Gantz	2755	2791 Silty Sand				
Int csg pt	2841					
Fifty foot	2896	2952 Silty Sand				
Thirty foot	2991	3018 Silty Sand				
Gordon	3047	3092 Silty Sand				
Forth Sand	3117	3130 Silty Sand				
Fifth Sand	3189	3208 Silty Sand		Base of Offset Well Perforations at 3129' TVD		
Bayard	3242	3260 Silty Sand				
Warren	3665	3689 Silty Sand				
Speechley	3785	3833 Silty Sand				
Balltown A	4143	4158 Silty Sand				
Riley	4628	4670 Silty Sand				
Benson	5257	5306 Silty Sand				
Alexander	5671	5738 Silty Sand				
Elks	5738	6937 Gray Shales and Silts				
Sonyea	6937	7100 Gray shale				
Middlesex	7100	7156 Shale				
Genesee	7156	7243 with black shale				
Genesee	7243	7275 Black Shale				
Tully	7275	7300 Limestone				
Hamilton	7300	7398 calcareous shales				
Marcellus	7398	7449 Black Shale				
Purcell	7413	7416 Limestone				
-Lateral Zone	7419			Start Lateral at 7418.5'		
Cherry Valley	7429	7433 Limestone				
Onondaga	7449	Limestone				

Target Thickness	51 feet
Max Anticipated Rock Pressure	2620 PSI

**Comments:**  
 Note that this is a TVD prog for a horizontal well (azimuth of 157 degrees, target formation = Marcellus). All measurements taken from estimated KB elevation. Water and coal information estimated from surrounding well data.  
 Intermediate casing point is recommended beneath the Gantz to shut off any water production from the Upper Devonian sands. Intermediate casing should be cemented into the surface string, per WV regulations.  
 The estimated landing point TVD is 7418.5', rig geologist may adjust landing point. After the well is landed, drill to reported bed dips/ geologists' recommendation. The geologic structure is unknown at this time.

**LATERAL DRILLING TOLERANCES**

**Mapview - Lateral:** Deviate as little as possible to the left or right of the planned wellbore  
**Mapview - TD:** **DO NOT EXTEND** beyond recommended wellbore to avoid lease line

**RECOMMENDED CASING POINTS**

<b>Fresh Water/Coal</b>	CSG OD	13 3/8	CSG DEPTH	1019	Beneath Pittsburgh Coal
<b>Intermediate 1:</b>	CSG OD	9 5/8	CSG DEPTH	2841	Beneath the Gantz formation
<b>Production:</b>	CSG OD	5 1/2	CSG DEPTH	@ TD	

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Attached				

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

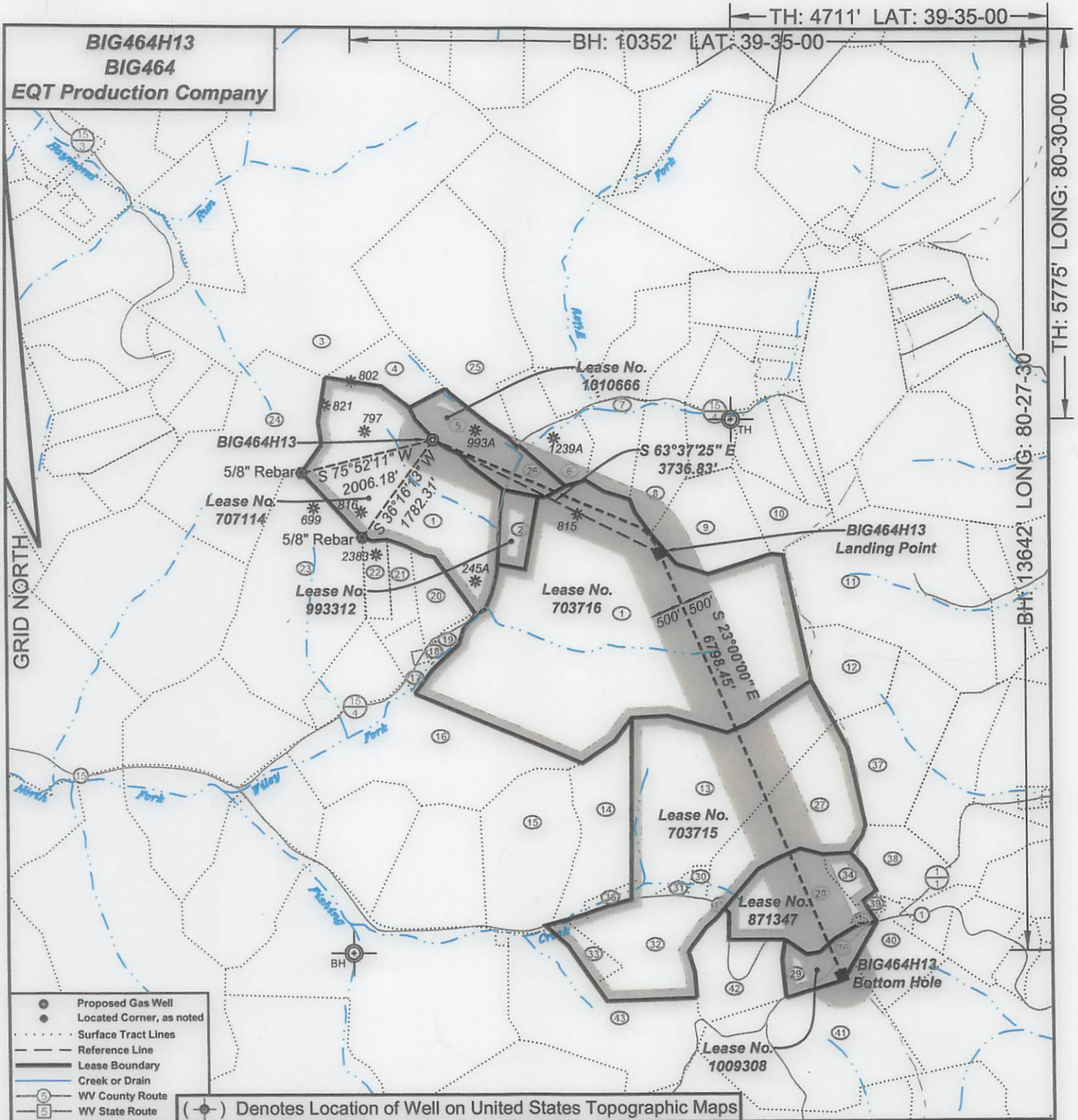
The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company  
 By: Todd Klaner  
 Its: Regional Land Manager

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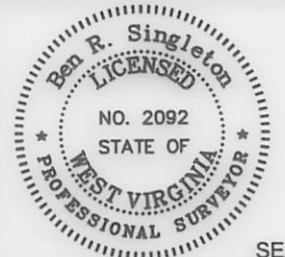
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

(⊙) Denotes Location of Well on United States Topographic Maps



*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 Department of Environmental Protection.*

*Ben R. Singleton*  
P.S. 2092



SEAL

FILE NO: 125-16  
DRAWING NO: 125-16 BIG464H13  
SCALE: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: November 6 20 17  
OPERATOR'S WELL NO.: BIG464H13  
API WELL NO  
47 - 103 - 03211  
STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Existing: 1305.0 Proposed: 1246.0 WATERSHED: Wiley Fork QUADRANGLE: Big Run  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 542.5  
 ROYALTY OWNER: Ridgetop Royalties LLC, et al LEASE NO: 707114 ACREAGE: 78  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,419'

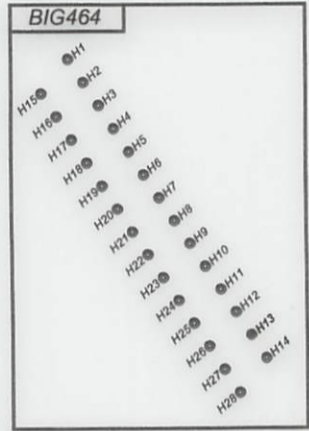
WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
 Bridgeport, WV 26330 Bridgeport, WV 26330



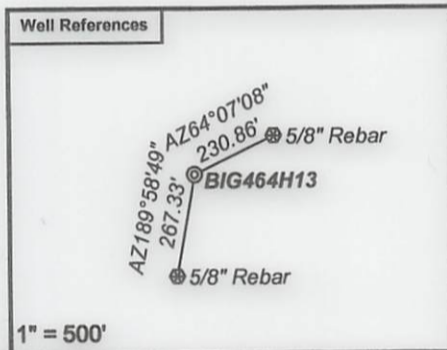
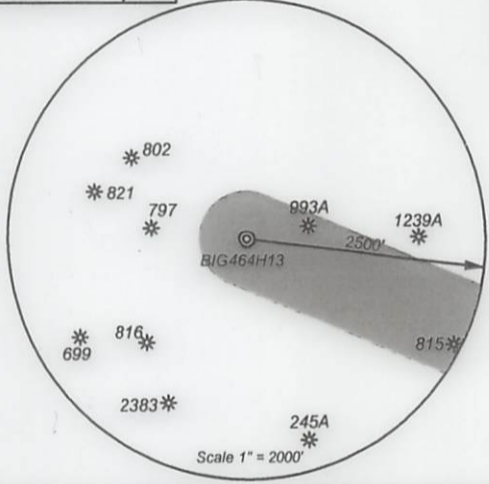
**BIG464H13**  
**BIG464**  
**EQT Production Company**

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	20	1	Wetzel	Grant	Coastal Forest Resources Co.	542.50
2	15	27	Wetzel	Grant	William J. Barr	10.00
3	14	6	Wetzel	Grant	Coastal Lumber Co.	332.90
4	14	27	Wetzel	Grant	The E. Lorna Howard Trust, LLC, et al.	22.00
5	14	34	Wetzel	Grant	The E. Lorna Howard Trust, LLC, et al.	25.25
6	15	16	Wetzel	Grant	Donald J. D'Lusky	25.00
7	15	18	Wetzel	Grant	Donald J. D'Lusky	36.40
8	15	29	Wetzel	Grant	Terry W. & Carolyn P. Phillips	40.00
9	15	34	Wetzel	Grant	John C. & Donald J. D'Lusky	42.00
10	15	35	Wetzel	Grant	John C. & Donald J. D'Lusky	17.63
11	43	11	Marion	Mannington	Robert & Maxine Tonkery	85.00
12	43	11.1	Marion	Mannington	David A. & Diane E. Floyd	30.00
13	20	3	Wetzel	Grant	Chester R. & Audra I. Powell	99.82
14	20	2	Wetzel	Grant	Marsha L. Barr, et al.	41.40
15	20	2.1	Wetzel	Grant	Larry & Marry Shimp	63.00
16	19	10.3	Wetzel	Grant	Richard M. & Mary G. Underwood	99.82
17	19	14	Wetzel	Grant	William D. & Mabel F. Barr	1.00
18	19	12	Wetzel	Grant	William D. & Mabel F. Barr	1.10
19	19	13	Wetzel	Grant	William D. & Mabel F. Barr	2.00
20	14	45	Wetzel	Grant	Coastal Forest Resources Co.	11.06
21	14	44	Wetzel	Grant	Mabel F. Barr	11.00
22	14	43	Wetzel	Grant	Mabel F. Barr	11.01
23	14	42	Wetzel	Grant	Donald J. D'Lusky	111.00
24	14	33	Wetzel	Grant	Atlee & Hilda Conaway	108.00
25	14	20	Wetzel	Grant	Elsie L. Hill Trust	126.50
26	none	none	Wetzel	Grant	Unknown	unknown
27	20	4	Wetzel	Grant	Jennifer L. Archer, et al.	70.00
28	20	10	Wetzel	Grant	Chester R. & Sandra L. Craver	46.76
29	20	11	Wetzel	Grant	Nancy Wyckoff, et al.	16.41
30	20	3.1	Wetzel	Grant	Gary F. Fisher	2.25
31	20	3.2	Wetzel	Grant	Linda Corwin, et al.	1.18
32	20	8	Wetzel	Grant	Stephen J. & Richard M. Underwood	64.00
33	20	7	Wetzel	Grant	Bernard D. Holbert, et al.	6.00
34	20	12	Wetzel	Grant	Beverly Powell, et al.	6.74
35	20	14	Wetzel	Grant	Chester R. & Sandra L. Craver	1.00
36	20	7.1	Wetzel	Grant	John H. Frye, Jr. & Denise Frye	3.91
37	45	29	Marion	Mannington	Raymond C. Teagarden	61.017
38	45	30	Marion	Mannington	Keith A. & Rita G. Powell	21.50
39	20	13	Wetzel	Grant	Beverly Powell, et al.	1.80
40	45	1	Marion	Mannington	Nancy Wyckoff, et al.	26.75
41	20	18	Wetzel	Grant	EQT Production Company	107.93
42	20	9	Wetzel	Grant	Roger B. & Marry A. Powell	34.50
43	20	6	Wetzel	Grant	Bernard D. Holbert, et al.	102.50

**Notes:**  
**BIG464H13 coordinates are**  
 NAD 27 N: 390,422.16 E: 1,713,398.55  
 NAD 27 Lat: 39.567484 Long: -80.516651  
 NAD 83 UTM N: 4,379,874.97 E: 541,533.96  
**BIG464H13 Landing Point coordinates are**  
 NAD 27 N: 388,762.01 E: 1,716,746.35  
 NAD 27 Lat: 39.563030 Long: -80.504711  
 NAD 83 UTM N: 4,379,386.23 E: 542,562.34  
**BIG464H13 Bottom Hole coordinates are**  
 NAD 27 N: 382,504.01 E: 1,719,402.71  
 NAD 27 Lat: 39.546015 Long: -80.494854  
 NAD 83 UTM N: 4,377,493.16 E: 543,403.38  
 West Virginia Coordinate system of 1927 (North Zone)  
 based upon Differential GPS Measurements.  
 Plat orientation, corner and well ties are based upon  
 the grid north meridian.  
 Well location references are based upon the grid north  
 meridian.  
 UTM coordinates are NAD83, Zone 17, Meters.



Lease No.	Acres	Owner
703716	400	Ridgetop Royalties LLC, et al
1010666	32	Ridgetop Royalties LLC, et al
703715	375.67	Nancy Hobbs, et al
871347	52.5	William B. Francik & Pamela Francik, et al
1009308	16.41	Keith A. Powell, et al

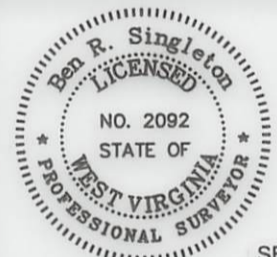


- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- - - Reference Line
- Lease Boundary
- Creek or Drain
- ⊖ WV County Route
- ⊖ WV State Route



*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 Department of Environmental Protection.*

*Ben R. Slade*  
P.S. 2092



FILE NO: 125-16  
 DRAWING NO: 125-16 BIG464H13  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: November 6 20 17  
 OPERATOR'S WELL NO.: BIG464H13  
 API WELL NO  
 47 - 103 - 03211  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: Existing: 1305.0 Proposed: 1246.0 WATERSHED: Wiley Fork QUADRANGLE: Big Run  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 542.5  
 ROYALTY OWNER: Ridgetop Royalties LLC, et al LEASE NO: 707114 ACREAGE: 78  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,419'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson  
 ADDRESS: 115 Professional Place PO Box 280 Bridgeport, WV 26330  
 ADDRESS: 115 Professional Place PO Box 280 Bridgeport, WV 26330

47-103-03011

WW-6A1 attachment

Operator's Well No.

BIG 4101H13

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>707114</u>	<b><u>Ridgetop Royalties LLC, et al. (current royalty owner)</u></b>		**	
	W.S. Furbee, et ux	Carnegie Natural Gas Company		DB 2A/182
	Carnegie Natural Gas Company	Carnegie Production Company		DB 78A/513
	Carnegie Production Company	Equitable Production - Eastern States, Inc.		see attached merger
	Equitable Production - Eastern States, Inc.	Equitable Production Company		see attached merger
	Equitable Production Company	EQT Production Company		CB 281/347
<u>1010666</u>	Ridgetop Royalties LLC, et al.	EQT Production Company	**	DB 166A/638
	<b><u>Ridgetop Royalties LLC, et al. (current royalty owner)</u></b>		**	
<u>703716</u>	Sara J. Furbee	C.D. Greenlee		DB 63/89
	C.D. Greenlee	Carnegie Natural Gas Company		See attached assignment
	Carnegie Natural Gas Company	Carnegie Production Company		DB 78A/513
	Carnegie Production Company	Equitable Production - Eastern States, Inc.		see attached merger
	Equitable Production - Eastern States, Inc.	Equitable Production Company		see attached merger
	Equitable Production Company	EQT Production Company		CB 281/347
<u>703715</u>	Nancy Hobbs, et al.	EQT Production Company	**	DB 176A/176
<u>871347</u>	William B. Francik and Pamela S. Francik, et al.	Statoil USA Onshore Properties, Inc.	**	DB 169A/765
	Statoil USA Onshore Properties, Inc.	EQT Production Company		DB 175A/707
<u>1009308</u>	Keith A. Powell, et al.	EQT Production Company	**	DB 165A/325
	<b>**Per West Virginia Code Section 22-6-8.</b>			

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