



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

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Wednesday, November 30, 2016
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit approval for 515112
47-103-03165-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: 515112
Farm Name: COASTAL FOREST RESOURCES COMPANY D/B/A COASTAL
U.S. WELL NUMBER: 47-103-03165-00-00
Horizontal 6A / New Drill
Date Issued: 11/30/2016

Promoting a healthy environment.

12/02/2016

PERMIT CONDITIONS 4710303165

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



4710303165

August 10, 2016

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Casing plan on Wells (BIG360)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 856' KB, 100' below the workable Pittsburgh Coal seam. We will set the 9-5/8" intermediate string at 2480' KB, 50' below the base of the Weir formation.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark
Permitting Supervisor

DMH
8-25-16

Enc.

Received
Office of Oil & Gas
OCT 07 2016

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: 515112 Well Pad Name: BIG360

3) Farm Name/Surface Owner: Coastal Forest Resources Company
d/b/a Coastal Timberlands Company Public Road Access: RT 76

4) Elevation, current ground: 1008' Elevation, proposed post-construction: 998'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

DMH
4-25-16

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 7085', 51', 2620 PSI top of Marcellus 7064'

8) Proposed Total Vertical Depth: 7085'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13355'

11) Proposed Horizontal Leg Length: 5251'

12) Approximate Fresh Water Strata Depths: 280, 342'

13) Method to Determine Fresh Water Depths: By offset walls

14) Approximate Saltwater Depths: 1961'

15) Approximate Coal Seam Depths: 269, 429, 650, 752'

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

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

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

Depth: _____

Seam: _____

Owner: _____

Received
Office of Oil & Gas

OCT 07 2016

18)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20	New	A-500	78.6	40	40	60 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	856	856	757 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2480	2480	971 ft ³ / CTS
Production	5 1/2	New	P-110	20	13355	13355	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
9-24-16

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20	26	.375	1378	1102	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:				Received Office of Oil & Gas OCT 07 2016
Sizes:				
Depths Set:				

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 4496'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

DAH
9-29-16

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): 16.03

22) Area to be disturbed for well pad only, less access road (acres): 5.02

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.

Received
Office of Oil & Gas

OCT 07 2016

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 515112 (BIG360H5)
 EQT Production
 Big Run Quad
 Wetzel County, WV

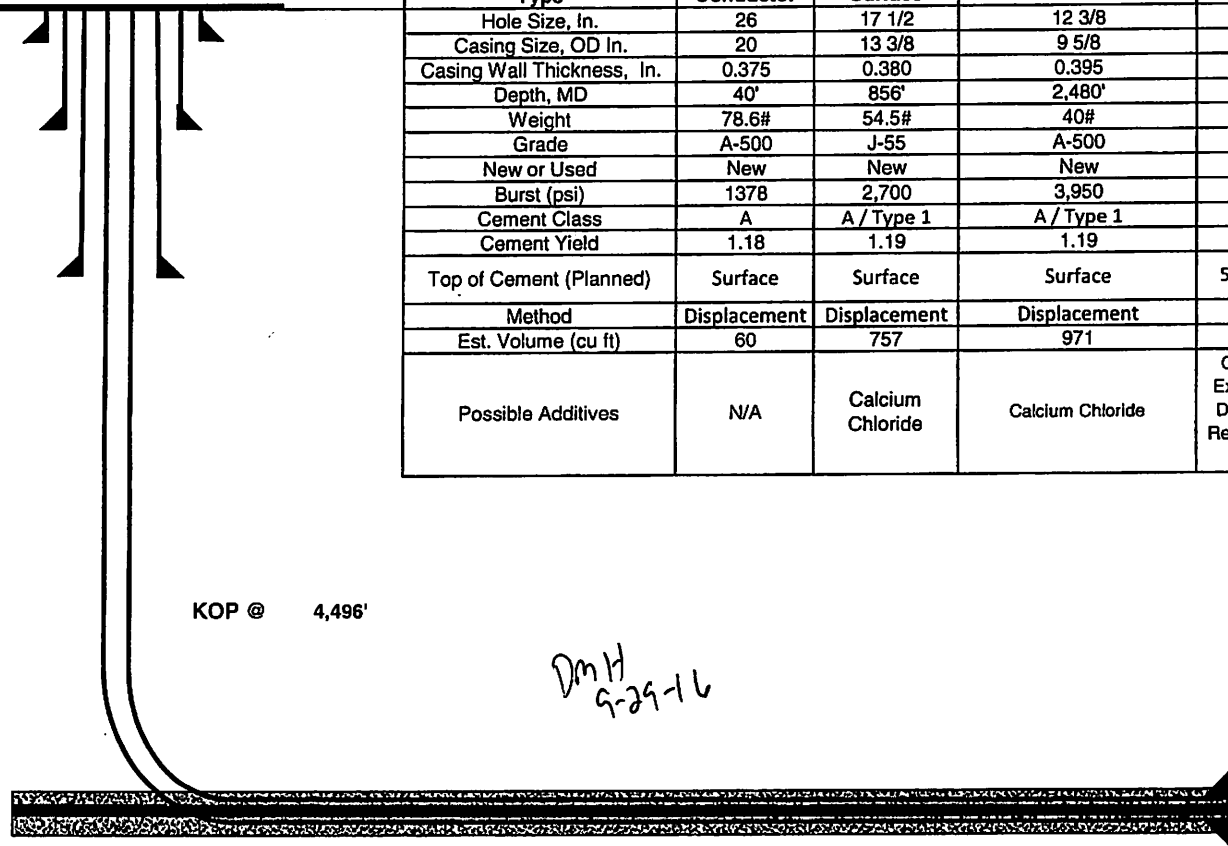
Azimuth 346.5
 Vertical Section 5166

Received
 Office of Oil & Gas

Note: Diagram is not to scale

4710303165

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	342	
Surface Casing	856	
Maxton	1781 - 1798	
Big Lime	1932 - 2071	
Big Injun	2094 - 2195	
Weir	2361 - 2430	
Intermediate Casing	2480	
Gantz	2512 - 2547	
Fifty foot	2617 - 2645	
Base Red Rock	2721	
Thirty foot	2773 - 2787	
Gordon	2789 - 2835	
Forth Sand	2875 - 2886	
Bayard	3007 - 3032	
Warren	3455 - 3512	
Speechley	3609 - 3643	
Balltown A	3962 - 4328	
Riley	4450 - 4489	
Benson	5105 - 5157	
Alexander	5445 - 5484	
Sonyea	6650 - 6801	
Middlesex	6801 - 6849	
Genesee	6849 - 6932	
Geneseo	6932 - 6960	
Tully	6960 - 6984	
Hamilton	6984 - 7064	
Marcellus	7064 - 7115	
Production Casing	13355 MD	
Onondaga	7115	



Casing and Cementing				Deepest Fresh Water: 0'
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	26	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	20	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.375	0.380	0.395	0.361
Depth, MD	40'	856'	2,480'	13,355'
Weight	78.6#	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)	60	757	971	2,776
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 @ 7,085' TVD
 8,104' MD

Est. TD @ 7,085' TVD
 13,355' MD

5,251' Lateral

Proposed Well Work:

Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 4496'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: BIG360
Wetzel County, WV

9/23/16

4710303165

RECEIVED
Oil and Gas
SEP 26 2016

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Wetzel County, WV prior to hydraulic fracturing at the following EQT wells on BIG360 pad: 515108, 515109, 516110, 515111, 515112

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (7,000 TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,400' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Conventional Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

Upon approval of this plan, EQT will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in **Attachment B**.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

EQT will provide information relating to the hydraulic fracturing schedule, communication with conventional operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

4710303165

RECEIVED
Office of Oil and Gas

SEP 25 6 12 2016

WV Department of Environmental Protection

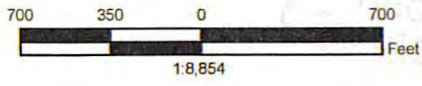


EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

BIG360

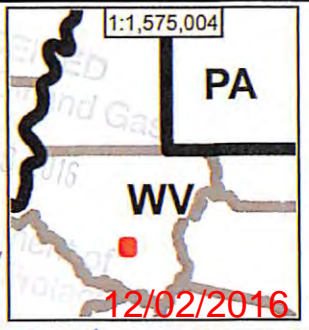
Vertical Offsets and Foreign Laterals within 500'

- Legend**
- BIG360 Vertical Offsets
 - Genesee Spud
 - Marcellus Spud
 - Middlesex Spud
 - Utica Spud
 - GENESEED
 - MARCELLEUS
 - MIDDLESEX
 - POINT PLEASANT
 - UTICA



Disclaimer:

This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT



Attachment A-c

WellID	WellStatus	Comp Date	FmatTD	Permit	Operator	Longitude	Latitude	Target Fm	Datum Eleva	SS Depth	TD
4710300918	OIL	1/25/1898		00918	PENNZOIL	-80.6206	39.5367		870.00	-1903.00	2773.00
4710300919	OIL-P	11/28/1898		00919	LUCAS WELL SERVICE	-80.6228	39.5400		1102.00	-1855.00	2957.00
4710330264	OIL GS			30264	F S DEEM	-80.6153	39.5325		967.00	-1877.00	2844.00
4710300919	GAS		HAMPSHIRE	00919	PENNZOIL COMPANY	-80.6227	39.5402		1103.00		2957.00
4710370442	PSEUDO			70442	PHILADELPHIA OIL	-80.6103	39.5373				
4710300918	OIL		GORDON	00918	PENNZOIL COMPANY	-80.6204	39.5367				2780.00
4710330264	ABD-OW		HAMPSHIRE	30264	DEEM F S	-80.6152	39.5325		967.00		2844.00
4710372248	UNKWN			72248	UNKNOWN	-80.6204	39.5356				
4710372250	UNKWN			72250	UNKNOWN	-80.6236	39.5357				
4710372251	UNKWN			72251	UNKNOWN	-80.6232	39.5380				
4710372252	UNKWN			72252	UNKNOWN	-80.6210	39.5395				
4710372253	UNKWN			72253	UNKNOWN	-80.6184	39.5379				
4710372254	UNKWN			72254	UNKNOWN	-80.6172	39.5385				
4710372255	UNKWN			72255	UNKNOWN	-80.6171	39.5370				
4710372256	UNKWN			72256	UNKNOWN	-80.6169	39.5357				
4710372257	UNKWN			72257	UNKNOWN	-80.6141	39.5395				
4710372258	UNKWN			72258	UNKNOWN	-80.6109	39.5364				
4710303030	PERMIT			03030	EQT PRODUCTION COMPANY	-80.6169	39.5328		998.00		

There is no Formation or Perforated information available through IHS

4710303165

RECEIVED
 SEP 29 2016
 UNIT 1 OF 271 GAS

Attachment # (2)



625 Liberty Ave, Suite 1700
Pittsburgh PA 15222
www.eqt.com

TEL: (412) 395-3305
FAX: (412) 395-2156

John Centofanti
Corporate Director,
Environmental Affairs

(date)

[Conventional Well Operator]
[address]
[state]

RE: Wetzel County Hydraulic Fracturing Notice

Dear Sir/Madam,

EQT has developed a Marcellus pad (Big 360 pad) located in Wetzel County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,000' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,400' TVD).

EQT anticipates conducting hydraulic fracturing at the BIG 360 pad during the [first,second, third,fourth] quarter of [year]. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during, and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified.

Please feel free to contact me at 412-395-3305 with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0440.

Sincerely,
EQT Production

John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

4710303165
RECEIVED
Office of Oil and Gas
SEP 26 2016

12/02/2016
Attachment B



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.gov

March 18, 2014

Nabors Completion & Production Services Company
1380 Route 286 Hwy E #121
Indiana PA 15701

Re: Cement Variance Request

Dear Sir or Madam,

This agency is approving a variance request for the cement blend listed below to be used on surface and coal protection strings for the drilling of oil and gas wells in the state of West Virginia. The variance cannot be used without requesting its use on a permit application and approval by this agency:

- Type I (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "I" Cement)

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment

RECEIVED
Office of Oil and Gas
SEP 28 2016
WV Department of
Environmental Protection
12/02/2016



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.gov

**BEFORE THE OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF WEST VIRGINIA**

IN THE MATTER OF A VARIANCE FROM) ORDER NO. 2014 - 17
REGULATION 35 CSR § 4-11.4/11.5/14.1)
AND 35 CSR § 8-9.2.h, 4/5/6/8 OF THE)
THE OPERATIONAL)
REGULATIONS OF CEMENTING OIL)
AND GAS WELLS)

REPORT OF THE OFFICE

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

FINDINGS OF FACT

1.) Nabors Completion & Production Services Co. proposes the following cement blend:

- 2% Calcium Chloride (Accelerator)
- 0.25 % Super Flake (Lost Circulation)
- 94% Type "I" Cement
- 5.20 % Water

2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

4710308185

Promoting a healthy environment

RECEIVED
Office of Oil and Gas

SEP 28 2016

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

12/02/2016

CONCLUSIONS OF LAW

Pursuant to Articles 6 and 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter embraced in said notice, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to 35 CSR § 4-11.5 and 35 CSR § 8-9.2.h.8 the Chief of the Office of Oil and Gas may approve different cement blends upon the well operator providing satisfactory proof that different cement types are adequate.

ORDER

It is ordered that Nabors Completion & Production Services Co. may use the cement blend listed in Findings of Fact No.1 for the cementing of surface and coal protection casing of oil and gas wells in the State as may be requested by oil and gas operators. The waiting time on the cement blend shall be 8 hours. The cement blend shall be mixed in strict accordance with the specifications for each blend and weight measurements made on-site to assure the cement slurries meet the minimum weight specifications. A sample shall be collected and, if after 8 hours the cement is not set up, additional time will be required. Nabors Completion & Production Services Co. shall keep a record of cement blend jobs in which the cement blend approved under this order is to be used and made available to the Office of Oil and Gas upon request.

Dated this, the 18th day of March, 2014.

IN THE NAME OF THE STATE OF WEST VIRGINIA

OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OF THE STATE OF WEST VIRGINIA

James Martin, Chief
Office of Oil and Gas

4710303165

RECEIVED
Office of Oil and Gas

SEP 28 2016

WV Department of Environmental Protection 12/02/2016

WW-9
(4/16)

4710303165

API Number 47 - 103
Operator's Well No. 515112

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EQT Production Company OP Code 306686

Watershed (HUC 10) Richwood Run Quadrangle Big Run

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: Flowback water and residual solids

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 60

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 0014, 8462, 4037)
- Reuse (at API Number Various)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

DH
5-25-16

Will closed loop system be used? If so, describe: Yes, The closed loop system will remove drill cuttings from the drilling fluid. The drill cuttings are then prepared for transportation to an off-site disposal facility.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. See Attached

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Mud

Additives to be used in drilling medium? See Attached

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? See Attached List

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

Company Official (Typed Name) Victoria J. Roark

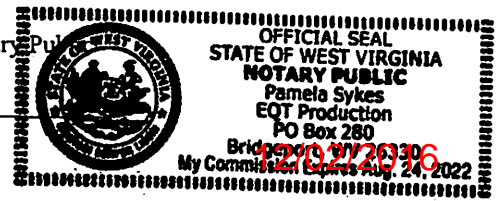
Company Official Title Permitting Supervisor

Received
Office of Oil & Gas
OCT 07 2016

Subscribed and sworn before me this 22 day of Sept, 2016

Notary Public

My commission expires 8-24-22



EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 16.03 Prevegetation pH 6.3

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Received
Office of Oil & Gas
OCT 07 2016

Title: Oil + Gas Inspector Date: 9-29-16

Field Reviewed? Yes No

WW-9 Attachment

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

- Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud.

Additives to be used in drilling medium?

- Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud – Barite, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant, defoaming, carbonates.

4710303165

4710303165

RECEIVED
Oil and Gas

SEP 26 2015

U.S. DEPARTMENT OF ENERGY
E.O. 12812

12/02/2016

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 16.03 Prevegetation pH 6.3

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Received
Office of Oil & Gas
OCT 07 2016

Title: Oil + Gas Inspector Date: 9-25-16

Field Reviewed? Yes No

WW-9 Attachment

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

- Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud.

Additives to be used in drilling medium?

- Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud – Barite, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant, defoaming, carbonates.

4710303165

4710303165

4710303165

4710303165

EQT Production Water plan
Offsite disposals for Marcellus wells

CWS TRUCKING INC.

P.O. Box 391
Williamstown, WV 26187
740-516-3586
Noble County/Noble Township
Permit # 3390

LAD LIQUID ASSETS DISPOSAL INC.

226 Rankin Road
Washington, PA 15301
724-350-2760
724-222-6080
724-229-7034 fax
Ohio County/Wheeling
Permit # USEPA WV 0014

TRI COUNTY WASTE WATER MANAGEMENT, INC.

1487 Toms Run Road
Holbrook, PA 15341
724-627-7178 Plant
724-499-5647 Office
Greene County/Waynesburg
Permit # TC-1009

Waste Management - Meadowfill Landfill

Rt. 2, Box 68 Dawson Drive
Bridgeport, WV 26330
304-326-6027
Permit #SWF-1032-98
Approval #100785WV

Waste Management - Northwestern Landfill

512 E. Dry Road
Parkersburg, WV 26104
304-428-0602
Permit #SWF-1025 WV-0109400
Approval #100833WV

BROAD STREET ENERGY LL

37 West Broad Street
Suite 1100
Columbus, Ohio 43215
740-516-5381
Washington County/Belpre Twp.
Permit # 8462

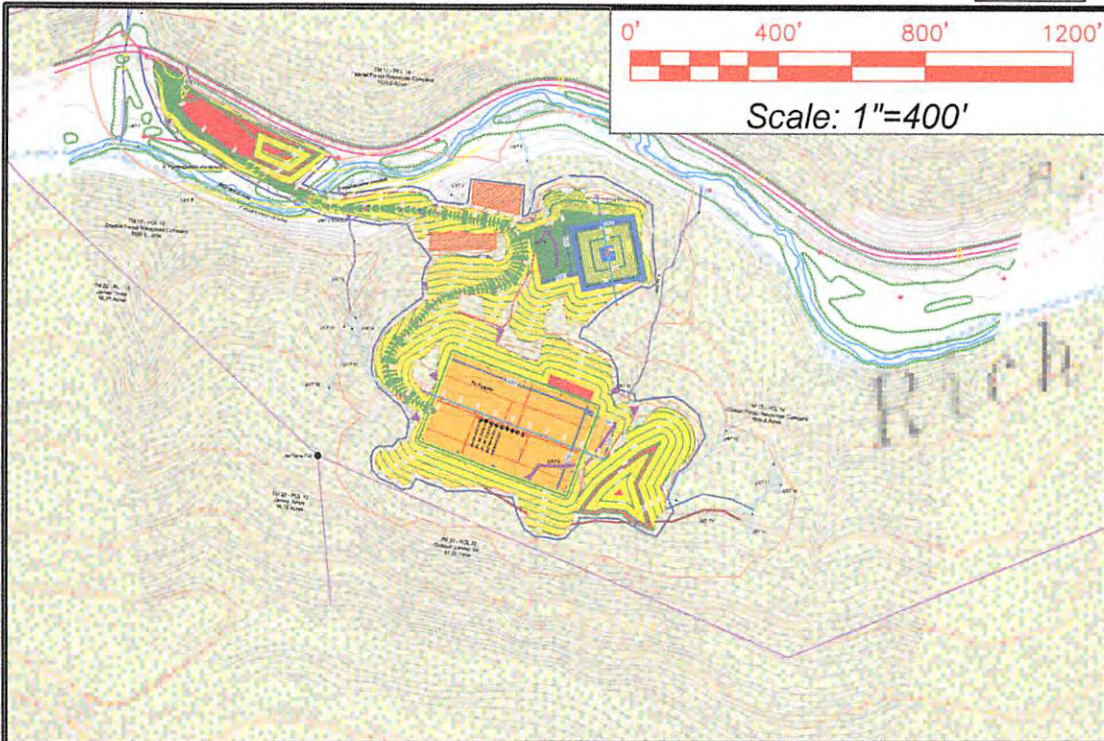
TRIAD ENERGY

P.O. Box 430
Reno, OH 45773
740-516-6021 Well
740-374-2940 Reno Office Jennifer
Nobel County/Jackson Township
Permit # 4037

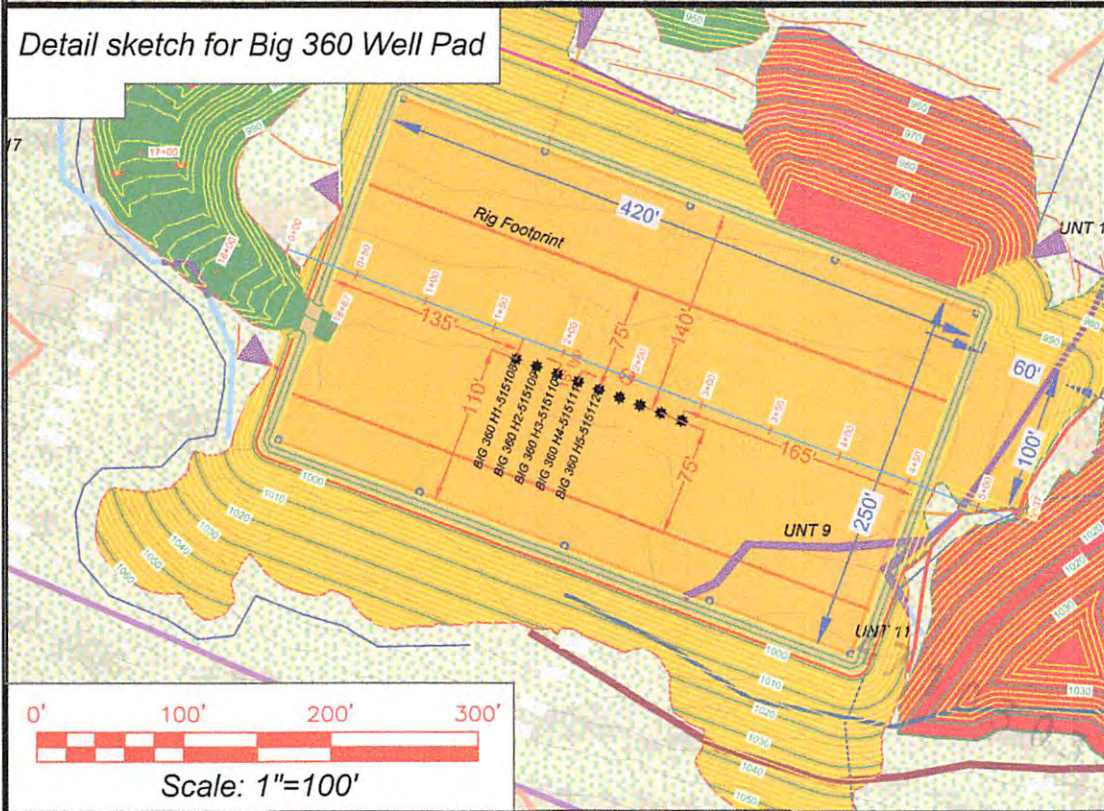
KING EXCAVATING CO.

Advanced Waste Services
101 River Park Drive
New Castle, Pa. 16101
Facility Permit# PAR000029132

4710303165



Detail sketch for Big 360 Well Pad



SECTION OF THE Big Run 7.5' USGS QUADRANGLE		Proposed Disturbance Area	
Projected culvert inventory. (for bid purposes only)	Well Site Location	See Site Plan	See Site Plan
15" minimum diameter culverts	Proposed Access Road	See Site Plan	See Site Plan
24" minimum diameter culverts	Approximate Total Disturbance	See Site Plan	See Site Plan
DRAWN BY: Dale Tomlin	DATE: August 23, 2016	FILE NO. 17413	DRAWING FILE NO. 17413 Rec Plan

Note: SEE SITE PLAN OF BIG 360 FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 Birch River Office Phone: (304) 649-8606 Fax: (304) 649-8608
 237 Birch River Road P.O. Box 438 Birch River, WV 26610

RECEIVED
 Office of Oil and Gas
 SEP 28 2016
 W.V. Department of Environmental Protection

12/02/2016



4710303165

Where energy meets innovation.™

Site Specific Safety Plan

EQT BIG 360 Pad

Jacksonburg

Wetzel County, WV

For Wells:

515112

4710303165

Date Prepared:

August 18, 2016

EQT Production

WV Oil and Gas Inspector

Title

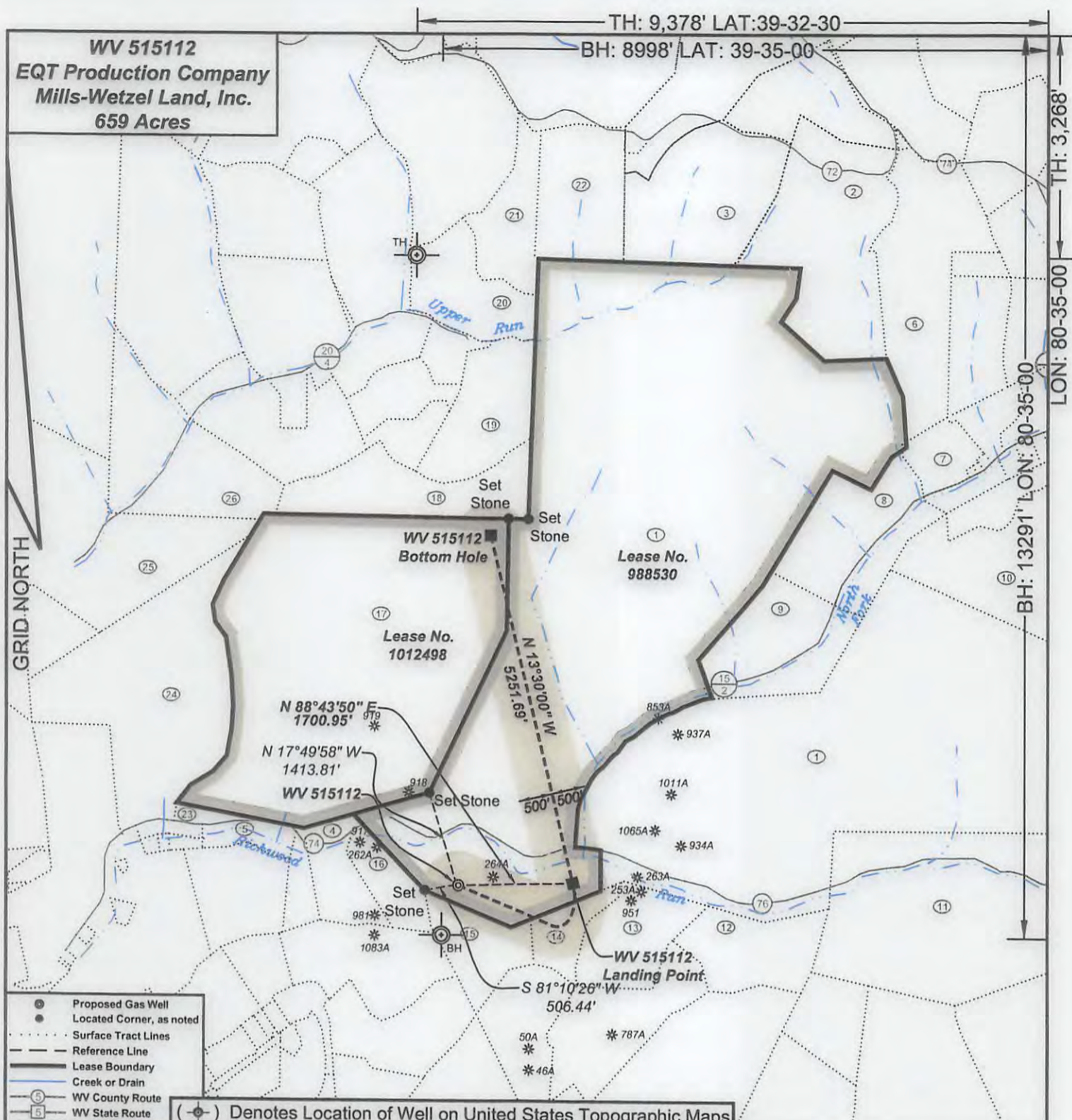
Title

Date

Date

Received
Office of Oil & Gas
OCT 07 2016

12/02/2016



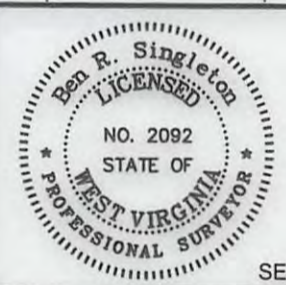
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

() 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: 174-13
DRAWING NO: 174-13 Big 360 H5
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: September 7 20 16
OPERATOR'S WELL NO. 515112
API WELL NO
47 - 103 - 03165
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: Original Ground = 1008' Proposed Ground = 998' WATERSHED Richwood Run QUADRANGLE: Big Run
DISTRICT: Grant COUNTY: Wetzel
SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 1036.5
ROYALTY OWNER: Mills-Wetzel Land, Inc. LEASE NO: 988530 ACREAGE: 659
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: 7,064'

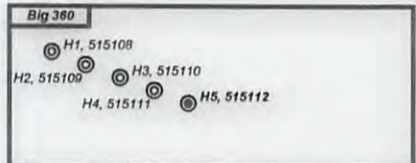
WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

WV 515112
EQT Production Company
Mills-Wetzel Land, Inc.
659 Acres

WV 515112 coordinates:
 NAD 27 N: 378,090.76 E: 1,685,039.00
 NAD 27 Lat: 39.532706 Long: -80.616696
 NAD 83 UTM N: 4,375,973.63 E: 532,956.32
 WV 515112 Landing Point coordinates:
 NAD 27 N: 378,128.45 E: 1,686,739.53
 NAD 27 Lat: 39.532868 Long: -80.610669
 NAD 83 UTM N: 4,375,993.77 E: 533,474.22
 WV 515112 Bottom Hole coordinates:
 NAD 27 N: 383,235.03 E: 1,685,513.55
 NAD 27 Lat: 39.546845 Long: -80.615241
 NAD 83 UTM N: 4,377,543.30 E: 533,074.81

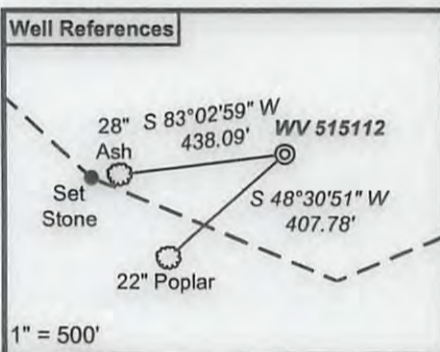
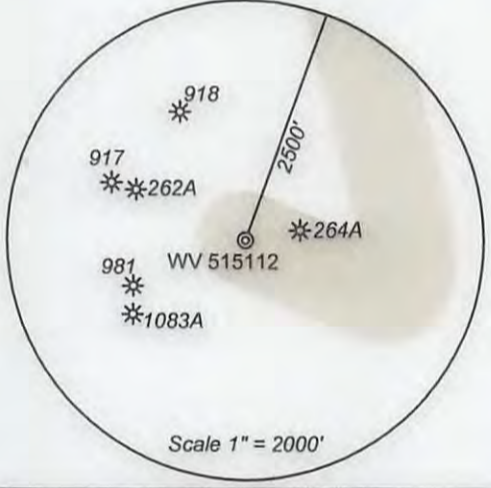
West Virginia Coordinate System of 1927 (North Zone) based upon Differential GPS Measurements.
 Plat orientation, corner and well ties are based upon the grid north meridian.
 Well location references are based upon the grid north meridian.
 UTM coordinates are NAD83, Zone 17, Meters.

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	17	14	Wetzel	Grant	Coastal Forest Resources Co.	1627.60
2	13	46	Wetzel	Grant	Burl Henthorn Est, et al.	99.00
3	12	47	Wetzel	Grant	Coastal Forest Resources Co.	87.50
4	22	12	Wetzel	Grant	James Jones, et al.	18.67
5	22	11	Wetzel	Grant	Mary M. Snodgrass	10.14
6	18	1	Wetzel	Grant	McKinley E. Calvert Heirs	100.00
7	18	14	Wetzel	Grant	Frank M. & Frankie L. Dulaney	9.55
8	18	13	Wetzel	Grant	Ralph G. Dulaney	87.50
9	18	17	Wetzel	Grant	Alan D. & Diana L. Barr	13.00
10	18	22	Wetzel	Grant	Karen R. Dennison, et al.	111.40
11	23	5	Wetzel	Grant	Thomas E. Wyatt, et al.	174.68
12	23	4	Wetzel	Grant	Dallison Lumber Inc.	36.10
13	23	2	Wetzel	Grant	Billy D. Arnolds, Jr.	38.80
14	23	1	Wetzel	Grant	Billy D. Arnolds, Jr.	16.50
15	22	27	Wetzel	Grant	Dallison Lumber Inc.	31.35
16	22	13	Wetzel	Grant	James Jones, et al.	16.75
17	17	16	Wetzel	Grant	David A. Arnolds	402.61
18	17	13	Wetzel	Grant	David A. Arnolds	62.25
19	17	12	Wetzel	Grant	Rhonda K. Spencer	57.20
20	17	4	Wetzel	Grant	George W. Cain	42.60
21	12	45	Wetzel	Grant	Jimmy L. & James C. Yoho	44.10
22	12	46	Wetzel	Grant	Jimmy L. & James C. Yoho	56.10
23	22	7	Wetzel	Grant	Billy D. Arnolds	5.20
24	17	16.1	Wetzel	Grant	Coastal Forest Resources Co.	137.39
25	16	40	Wetzel	Grant	Coastal Forest Resources Co.	412.80
26	17	6	Wetzel	Grant	Georgia Ann Smith	0.55



Sub Surface Tract 14 Acres 16.50 Owner Billy D. Arnolds, Jr.

Lease No. 1012498 Acres 514 Owner Kenneth R. Mason, et al.

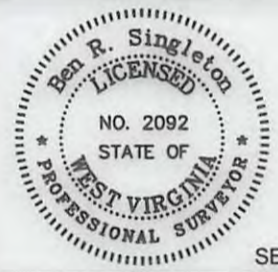


- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- - - Reference Line
- Lease Boundary
- Creek or Drain
- Ⓢ WV County Route
- Ⓟ WV State Route



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.

[Signature]
 P.S. 2092



FILE NO: 174-13
 DRAWING NO: 174-13 Big 360 H5
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: September 7 20 16
 OPERATOR'S WELL NO. 515112
 API WELL NO 47 - 103 - 03165
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: Original Ground = 1008' Proposed Ground = 998' WATERSHED Richwood Run QUADRANGLE: Big Run
 DISTRICT: Grant COUNTY: Wetzel
 SURFACE OWNER: Coastal Forest Resources Company d/b/a Coastal Timberlands Company ACREAGE: 659
 ROYALTY OWNER: Mills-Wetzel Land, Inc. LEASE NO: 988530 ACREAGE: 659
 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: 7,064'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280
 Bridgeport, WV 26330 Bridgeport, WV 26330

**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

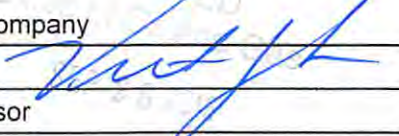
47 1 0 3 0 3 1 6 5

**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: Victoria J Roark 
 Its: Permitting Supervisor

WW-6A1 attachment

Operator's Well No.

515112

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>988530</u>	Mills Wetzel Lands, Inc.	EQT Production Company	min pd 1/8th	O&G 126A/288
<u>Subsurface Easement 04-23-1</u>	Billy Dewayne Arnolds, Jr.	EQT Production Company	N/A	O&G 115/906
<u>1012498</u>	<u>Kenneth R. Mason, et al. (current royalty owner)</u>		min pd 1/8th	
	Georgia H. Jones, et al.	H.S. Grayson		DB 53/169
	H.S. Grayson (50% assigned)	South Penn Oil Company		DB 49/154
	South Penn Oil Company	South Penn Natural Gas Company		O&G 33A/455
	South Penn Natural Gas Company	South Penn Oil Company		DB 215/478
	South Penn Oil Company	Pennzoil Company		Unrecorded Merger - See attached
	Pennzoil Company	Pennzoil United Inc.		DB 246/491
	Pennzoil United Inc.	Pennzoil Company		Unrecorded Name Change - See att
	Pennzoil Company	Pennzoil Products Company		DB 319/397
	Pennzoil Products Company	Pennzoil Exploration and Production Company		DB 363/384
	Pennzoil Exploration and Production Company	Pennzenergy Exploration and Production Company LLC		CB 12/178
	Pennzenergy Exploration and Production Company LLC	Devon Energy Production Company L.P.		CB 12/278
	Devon Energy Production Company L.P.	East Resources, Inc.		CB 370/580
	East Resources, Inc.	HG Energy, LLC		LB 118A/253
	HG Energy, LLC	American Energy - Marcellus, LLC		DB 153/238
	American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LLC		MB 114/619
	Ascent Resources - Marcellus, LLC	EQT Production Company		O&G 166A/663
	Georgia H. Jones, et al.	H.S. Grayson		DB 53/169
	H.S. Grayson (25% assigned)	Woodland Oil Company		DB 53/257
	Woodland Oil Company	South Penn Oil Company		DB 53/259
	South Penn Oil Company	Pennzoil Company		Unrecorded Merger - See attached
	Pennzoil Company	Pennzoil United Inc.		DB 246/491
	Pennzoil United Inc.	Pennzoil Company		Unrecorded Name - Change See att
	Pennzoil Company	Pennzoil Products Company		DB 319/397
	Pennzoil Products Company	Pennzoil Exploration and Production Company		DB 363/384
	Pennzoil Exploration and Production Company	Pennzenergy Exploration and Production Company LLC		CB 12/178

47103057

REC'D & FILED
 SEP 28 2011
 11:00 AM
 REC'D & FILED

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
1012498 con't	Pennzenergy Exploration and Production Company LLC	Devon Energy Production Company L.P.		CB 12/278
	Devon Energy Production Company L.P.	East Resources, Inc.		CB 370/580
	East Resources, Inc.	HG Energy, LLC		LB 118A/253
	HG Energy, LLC	American Energy - Marcellus, LLC		DB 153/238
	American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LLC		MB 114/619
	Ascent Resources - Marcellus, LLC	EQT Production Company		O&G 166A/663
	Georgia H. Jones, et al.	H.S. Grayson		DB 53/169
	H.S. Grayson (25% assigned)	W. H. Heame		DB 48/86 & 49/185
	W. H. Heame	Pennzoil Products Company		LB 71A/584
	Pennzoil Products Company	Pennzoil Exploration and Production Company		DB 363/384
	Pennzoil Exploration and Production Company	Pennzenergy Exploration and Production Company LLC		CB 12/178
	Pennzenergy Exploration and Production Company LLC	Devon Energy Production Company L.P.		CB 12/278
	Devon Energy Production Company L.P.	East Resources, Inc.		CB 370/580
	East Resources, Inc.	HG Energy, LLC		LB 118A/253
	HG Energy, LLC	American Energy - Marcellus, LLC		DB 153/238
	American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LLC		MB 114/619

4371030316

SEP 26 2013

Carol S Haught
WETZEL County 11:24:13 AM
Instrument No 192164
Date Recorded 12/07/2015
Document Type R/W
Pages Recorded 3
Book-Page 115-90a
Recording Fee \$5.00
Transfer Tax \$88.00
Additional \$25.00

**MEMORANDUM OF
SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT**

County Clerk please also index under the following: Shiben Estates, Inc.

1. NAME AND ADDRESS OF GRANTOR:

Billy Dewayne Arnolds Jr.
312 Richwood Run Rd.
Jacksonburg, WV 26377

2. NAME AND ADDRESS OF GRANTEE:

EQT Production Company
625 Liberty Avenue
Suite 1700
Pittsburgh, PA 15222

4710303165

3. SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT REFERENCE:

A SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT ("Agreement") dated the 23rd day of September, 2015, was entered into for good and valuable consideration by and between Billy Dewayne Arnolds Jr. ("Grantor", whether one or more) and EQT Production Company ("Grantee"). Upon completion of any wellbore within the subsurface area underlying the Property (as defined in Section 4), this subsurface easement in the area of the wellbore and the one hundred (100') feet on each side of the wellbore that parallels it shall become an exclusive right of way and easement in that area. The final wellbore locations are as described in a final, as-built map(s) to be filed as a part of an affidavit in the aforesaid Clerk's Office following the completion of the following well(s) located on Grantee's BIG 360 well pad. If an as-built map is not available for a wellbore within the subsurface area underlying the Property, any third-party with the right to operate within such area may contact Grantee's land department for a copy of such as-built map. Grantee shall provide notice of additional wellbores located within the subsurface area underlying the Property by filing an amendment, affidavit or other appropriate document.

4. DESCRIPTION OF PREMISES: That certain tract or parcel of land containing 16.5 acres, more or less, located in Grant District in Wetzel County, West Virginia, being the same lands conveyed to Grantor by Deed dated the 11th day of December, 2002, of record in the Office of the Clerk of the County Commission of Wetzel County, West Virginia in Deed Book 384, at Page 627 ("the Property").

5. TERM: The Agreement shall run with the land and shall remain in full force and effect until released and relinquished by the Grantee back to the Grantor, in writing.

(REMAINDER OF PAGE LEFT BLANK INTENTIONALLY)

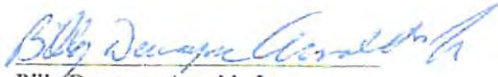
SEP 28 2016


12/02/2016

IN WITNESS WHEREOF, the parties have signed their names hereto as of the date of the Agreement referenced in Section 3 above.

GRANTOR:

GRANTEE:
EQT Production Company


Billy Dewayne Arnolds Jr.


By: John W. Damato
Its Attorney in fact

STATE OF WEST VIRGINIA

COUNTY OF WETZEL

I, Bryson J Karp, a Notary Public, in and for said State and County, do hereby certify that Billy Dewayne Arnolds Jr., personally known to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person in the State and County aforesaid, and acknowledged and delivered the said instrument to be their free act and deeds for uses and purposes therein set forth.

Given under my hand this 23rd day of SEPTEMBER, 2015.

My Commission expires: JAN 1 2021.

OFFICIAL SEAL
COMMISSIONER FOR WEST VIRGINIA
Bryson J. Karp
Weston, WV
My Commission Expires January 1, 2021


Notary Public

STATE OF WEST VIRGINIA;

COUNTY OF HARRISON:

I, Katelyn L. Liston, a Notary Public, in and for said State and County, do hereby certify that John W. Damato, personally known to be the same person whose name is subscribed to the foregoing instrument and the Attorney in fact of EQT Production Company, appeared before me this day in person in the State and County aforesaid, and acknowledged and delivered the said instrument to be his free act and deed for uses and purposes therein set forth on behalf of said company.

Given under my hand this 24th day of September, 2015.

My Commission expires: May 16, 2024.

OFFICIAL SEAL
Notary Public, State of West Virginia
KATELYN L. LISTON
1304 Severe Drive
Fairmont, WV 26554
My commission expires May 16, 2024


Notary Public

4710303165

Filed & E.O.
Office of Oil and Gas

SEP 26 2015

This instrument was prepared by EQT Production Company, 625 Liberty Avenue, Pittsburgh, PA 15222

Department of
Economic Development

12/02/2016

Declaration of Consideration of Value

The Grantee hereby declares that the consideration being paid to Grantor for the transfer of real estate is \$_____.

Given under my hand this 4th day of December, 2015.



EQT PRODUCTION COMPANY
John W. Damato
Attorney-In-Fact

4710303165

RECEIVED
Office of Oil and Gas

SEP 28 2016

WV Department of
Economic and Protection

12/02/2016



Where energy meets innovation.™

EQT Production Company
2400 Zenith Ridge Rd.
Suite 200
Canonsburg, PA 15317
www.eqt.com

Todd Klaner
Manager, Permitting
tklaner@eqt.com

September 22, 2016

WV DEP Reviewer

**RE: EQT Production Company
PAD ID – BIG360
Well# - 515112
Wetzel County**

Dear Reviewer,

This well indicated by this permit application contains a Subsurface Easement Agreement for non-productive portions of the well bore. Attached is a Memorandum of Subsurface Use Agreement which gives EQT the right to drill below the surface of the tract 23-1, shown on the well plat.

EQT Production understands that the WVDEP will issue the permit in the normal process subject to the completeness of the requirements of the Office of Oil and Gas and does not take a position with regards to the property rights under this agreement.

EQT Production agrees that the WVDEP's issuance of the permit is in no way an affirmation or validation of EQT Production's claimed rights.

Regards,

A handwritten signature in blue ink, appearing to read 'Todd Klaner', is written over a faint, larger version of the signature.

Todd Klaner
Manager, Permitting
EQT Production Company

4710303165

12/02/2016

3-1-63.18 120

ARTICLES OF MERGER
OF
ZAPATA PETROLEUM CORPORATION
AND
STETCO PETROLEUM CORPORATION
INTO
SOUTH PENN OIL COMPANY

In compliance with the requirements of Article IX of the Act of the General Assembly of the Commonwealth of Pennsylvania, known as the Business Corporation Law, approved May 5, 1941, P. L. 361, and amendments thereto, providing for the merger and consolidation of corporations, SOUTH PENN OIL COMPANY, a Pennsylvania corporation, ZAPATA PETROLEUM CORPORATION, a Delaware corporation, and STETCO PETROLEUM CORPORATION, a Delaware corporation, hereby certify under their respective corporate seals:

1. That it is proposed that Zapata Petroleum Corporation and Stetco Petroleum Corporation be merged into South Penn Oil Company in accordance with the provisions of a joint plan of merger entitled "Joint Plan and Agreement of Merger" and dated May 7, 1963, a copy of which is attached hereto and made a part hereof.

[REDACTED]

3. That a special meeting of shareholders of South Penn Oil Company to take action upon the proposed merger was held at 10:00 o'clock A.M. on July 2, 1963, at the registered office of said corporation, Drake Building, 106 Duncumb Street, Oil City, Pennsylvania; that written notice, stating the place, day, hour and purposes of the meeting, together with a copy of said joint plan of merger and a copy of subsection A of section 98 and of subsections A, B, C and D of section 515 (rights of dissenting shareholders) of the said Pennsylvania Business Corporation Law, was mailed on June 11, 1963, to all shareholders of said corporation of record on May 28, 1963, which was fixed as the record date for determining the shareholders entitled to vote at said meeting.

4. That at the time of the special meeting of shareholders of South Penn Oil Company on July 2, 1963, the authorized number of all shares of the capital stock of said corporation was 1,715,000 shares of common stock of the par value of \$12.50 each, of which 1,582,720 shares were outstanding and were entitled to be voted at the meeting and 112,280 shares were held in the treasury of said corporation and were not entitled to be voted at the meeting; and that at said meeting said joint plan of merger was adopted and approved by the affirmative vote of the holders of 1,766,642 shares of common stock, there having been voted against the same 24,680 shares of common stock.

5. That the Joint Plan and Agreement of Merger was duly authorized, adopted and approved by Zapata Petroleum Corporation and Stetco Petroleum Corporation in accordance with the laws of the State of Delaware, the jurisdiction in which they were formed.

6. That, as provided in Section 5 of said joint plan of merger, the Articles of Incorporation of South Penn Oil Company, as herebefore amended, shall be amended and restated in their entirety by revising same to read in full as set forth in Exhibit A to said joint plan of merger.

47 10303165

Oil and Gas

EP 28 2016

Department of

12/02/2016

Henceforth the "Articles" as defined in Article I of the Business Corporation Law of the Commonwealth of Pennsylvania shall not include any prior documents.

7. That the following are the names and addresses of the sixteen persons who shall constitute the first Board of Directors of the Surviving Corporation:

<u>Name</u>	<u>Address</u>
D. D. Howell	P. O. Box 2520 Tulsa, Oklahoma
Edward P. Boyle	205 Maple Avenue Oil City, Pennsylvania
George L. Coleman	1137 West Jackson Boulevard Chicago, Illinois
James G. S. Gammell	"Inverwick" Ellersly Road Edinburgh 12, Scotland
R. B. Gilpatrick, Jr.	Mellon National Bank and Trust Company Fifth Avenue Pittsburgh 19, Pennsylvania
R.W. Grunert	Drake Building 106 D. Schubb Street Oil City, Pennsylvania
L. F. Johnson	29335 W. 10th Los Angeles, California
J. Hugh Liedtke	Room 410, Four Gateway Center Pittsburgh, Pennsylvania
William C. Liedtke, Jr.	First National Bank Building Midland, Texas
T. L. McDowell	McDowell, McDowell, Wick & Daly 50 Boylston Street Bradford, Pennsylvania
John B. Mitchell	12 South Kendall Avenue Bradford, Pennsylvania
Thomas O'D. Murray	Room 410, Four Gateway Center Pittsburgh, Pennsylvania
A. J. Saxe	Drake Building 20 Parkway Lane Bradford, Pennsylvania
Charles L. Sohr	P. O. Box 601 Oil City, Pennsylvania
J. Z. Vahrman	50 Harbour Street Bradford, Pennsylvania
W. S. Zehring	115 Wylla Oil City, Pennsylvania

4710303165

BLU...
Oil and Gas

EP 2 8 2016

Department of
Natural Resources

12/02/2016

3-1-63.18 122

IN TESTIMONY WHEREOF, South Penn Oil Company, Zapata Petroleum Corporation and Stetco Petroleum Corporation have caused these Articles of Merger to be executed under the seal of each corporation and to be signed by two duly authorized officers of each corporation, this 2nd day of July, 1963

SOUTH PENN OIL COMPANY

Attest:

J. H. Youan

Secretary

By J. Hugh Lister

President

(Corporate Seal)

ZAPATA PETROLEUM CORPORATION

Attest:

W. M. Hadden, Jr.

Secretary

By W. A. Hoyer

President

(Corporate Seal)

STETCO PETROLEUM CORPORATION

Attest:

Maxine Mitchell

Secretary

By William C. Lister, Jr.

President

(Corporate Seal)

4710303165

RECEIVED
NATURAL GAS

28 2016

DEPARTMENT OF
REGULATION

12/02/2016

CARD TO BE REPLACED ONLY BY FILING CLERK

PENNZOIL UNITED, INC.

Foreign Corporation Delaware

Address 900 Southwest Tower
Houston, Texas

Admitted April 1, 1968

Roll ROLL 10

AMENDMENT: Certificate of Incorporation; filed September 27, 1968; Roll 15.

AMENDMENT: Certificate of Incorporation; filed February 11, 1969; Roll 20.

AMENDMENT: Certificate of Incorporation; filed May 19, 1969; Roll 23.

MERGER: Elk Refining Company, a W. Va. corp., merged with and into Pennzoil United, Inc., the survivor; filed December 31, 1969; ROLL 30.

MERGER: Wolf's Head Oil Refining Company, Incorporated, a Dela. corp., and Elk Refining Co. (See above), merged with and into Pennzoil United, Inc., the survivor; filed January 20, 1970; Roll 31.

(OVER)

Column 1	5	5	4
Column 2	5	9	3
Column 3	1	3	6
Column 4	4	6	8

303165

SEP 8 1968

AMENDMENT: Change of Name
ROLL 60.

Filed June 6, 1972;

471 303165

RECEIVED
Office of Oil and Gas

SEP 29 2016

Department of
Energy and Environment 12/02/2016



September 22, 2016

Mr. James Martin
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: BIG360 well pad, well number (515112)
Grant District, Wetzel County

Dear Mr. Martin,

EQT Production Company is submitting an application for a new well work permit for the above well number. Upon information and belief, Operator's lease and/ or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Vicki L'.

Vicki Roark
Permitting Supervisor-WV

4710303165

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION**

Date of Notice Certification: 9-23-16

API No. 47- 103 - _____
Operator's Well No. 515112
Well Pad Name: BIG360

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>WV</u>	UTM NAD 83	Easting: <u>532956.32</u>
County: <u>Wetzel</u>		Northing: <u>4375973.63</u>
District: <u>Grant</u>	Public Road Access: <u>RT 76</u>	
Quadrangle: <u>Big Run</u>	Generally used farm name: <u>Coastal Forest Resources Company d/b/a Coastal Timberlands Company</u>	
Watershed: <u>Richwood Run</u>		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY		OOG OFFICE USE ONLY
<input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)		<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION		<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE	47103031A3	<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<input type="checkbox"/> RECEIVED

Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

Certification of Notice is hereby given:

THEREFORE, I *Victoria J Roark*, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: EQT Production Company
By: Victoria J Roark
Its: Permitting Supervisor
Telephone: 304-848-0076

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041
Email: vroark@eqt.com



Subscribed and sworn before me this 22 day of Sept 2016.
Pamela Sykes Notary Public
My Commission Expires 8-24-22

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

4710303165

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION**

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 9-23-16 **Date Permit Application Filed:** 9-23-16

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)
Name: See Attached
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: See Attached
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: See Attached
Address: _____

COAL OWNER OR LESSEE
Name: See Attached
Address: _____

COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

Surface Owners:

Coastal Forest Resources Company
d/b/a Coastal Timberlands Company
PO Box 709
Buckhannon WV 26201

4710305163

INDEXED
OFFICE OF LAND GAS

SEP 23 2016

12/02/2016

Surface Owners (road or other disturbance):

Coastal Forest Resources Company
d/b/a Coastal Timberlands Company
PO Box 709
Buckhannon WV 26201

4710305162
FILED
COUNTY CLERK'S OFFICE

SEP 20 2016

DEPT. OF ENVIRONMENTAL
NATURAL RESOURCES

12/02/2016

Surface Owners (Pits or impoundments):

Coastal Forest Resources Company
d/b/a Coastal Timberlands Company
PO Box 709
Buckhannon WV 26201

✓

4710303105

Coal Owner

CNX Land Co., LLC
Engineering Operations Support Dept. Coal
1000 Consol Energy Dr.
Canonsburg, PA 15317-6506
Attn: Casey Saunders

Mills Wetzel Lands Inc.
c/o Michael G Beemer
Suite 2400
222 N LaSalle Street
Chicago IL 60601

CBM Owner

CNX Gas Company LLC
Engineering Operations Support Dept. Coal
1000 Consol Energy Dr.
Canonsburg, PA 15317-6506
Attn: Casey Saunders

4710305103

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

SEP 20 11 00 AM '16

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

4710303105

WW-6A
(8-13)

API NO. 47- 103 -
OPERATOR WELL NO. 515112
Well Pad Name: BIG360

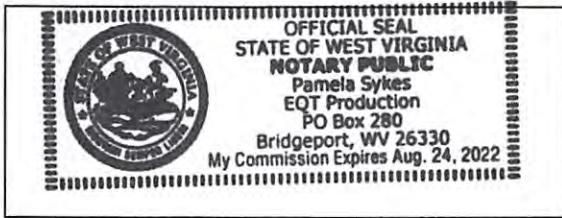
Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0076
Email: vroark@eqt.com

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



[Handwritten Signature]
Subscribed and sworn before me this 22 day of Sept, 2016.
[Handwritten Signature] Notary Public
My Commission Expires 8-24-22

4710303165

Topo Quad: Big Run 7.5' Quadrangle

Scale: 1" = 1000'

County: Wetzel

Date: August 5, 2016

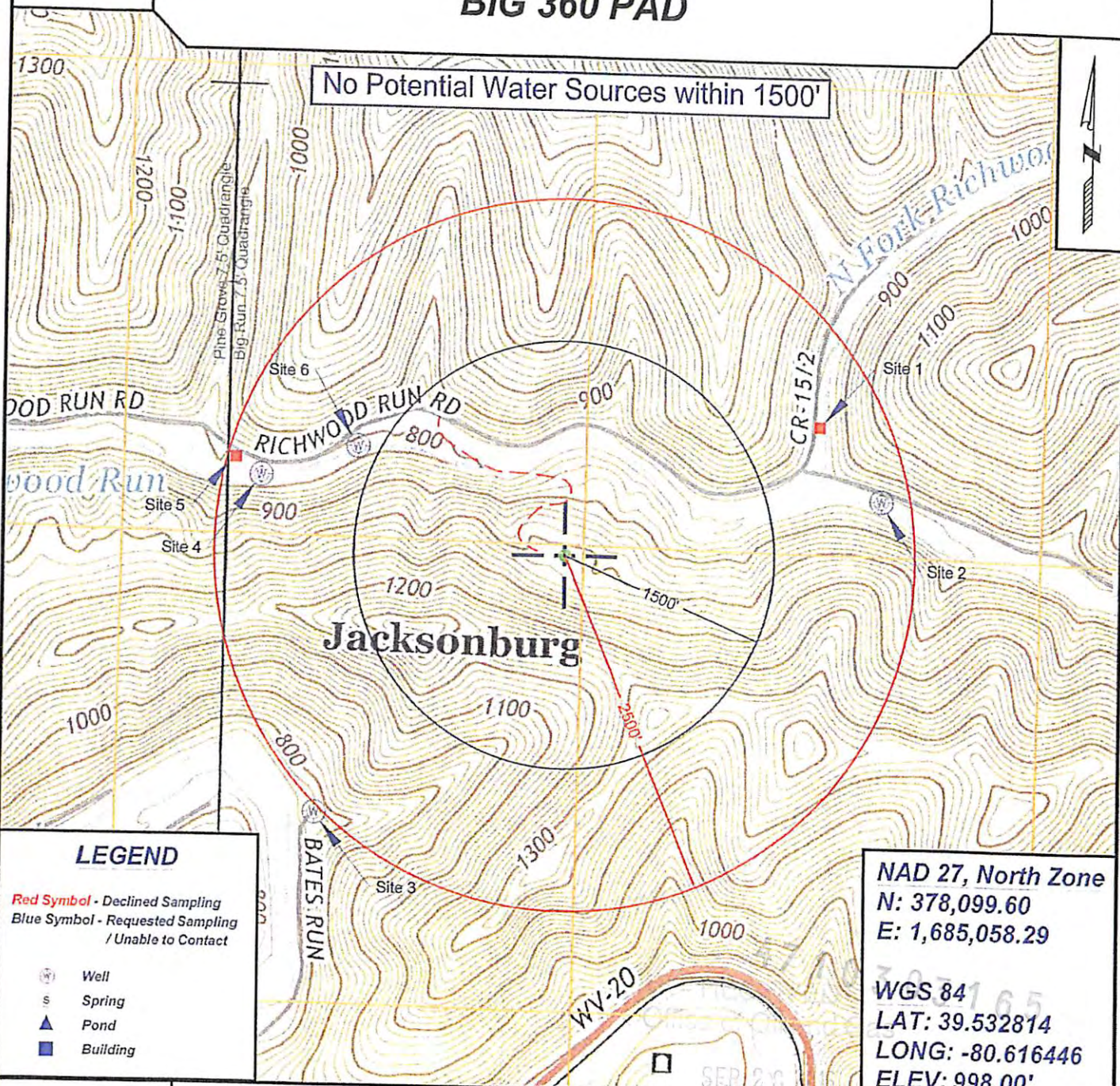
District: Grant

Project No: 174-34-G-13

Water

BIG 360 PAD

No Potential Water Sources within 1500'



LEGEND

Red Symbol - Declined Sampling
 Blue Symbol - Requested Sampling / Unable to Contact

- Well
- Spring
- Pond
- Building

NAD 27, North Zone
 N: 378,099.60
 E: 1,685,058.29

WGS 84
 LAT: 39.532814
 LONG: -80.616446
 ELEV: 998.00'



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 237 Birch River Road
 Birch River, WV 26610
 PH: (304) 649-8606
 FAX: (304) 649-8608

PREPARED FOR:
EQT Production Company
 P.O. Box 280
 Bridgeport, WV 26330

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 09/08/2016 **Date Permit Application Filed:** 09/18/2016

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Coastal Forest Resources Company d/b/a Coastal Timberlands Company
Address: P. O. Box 709
Buckhannon, WV 26201

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: WV UTM NAD 83 Easting: 532956.32
County: Wetzel Northing: 4375973.63
District: Grant Public Road Access: RT 76
Quadrangle: Big Run Generally used farm name: Coastal Forest Resources Company d/b/a Coastal Timberlands Company
Watershed: Richwood Run

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

Authorized Representative: Victoria Roark
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 9-23-14 **Date Permit Application Filed:** 9-23-14

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

- | | |
|--|-------------------------------|
| <input checked="" type="checkbox"/> CERTIFIED MAIL | <input type="checkbox"/> HAND |
| RETURN RECEIPT REQUESTED | DELIVERY |

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: <u>See attached</u>	Name: _____
Address: _____	Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>WV</u>	UTM NAD 83 Easting: <u>532956.32</u>
County: <u>Wetzel</u>	Northing: <u>4375973.63</u>
District: <u>Grant</u>	Public Road Access: <u>RT 76</u>
Quadrangle: <u>Big Run</u>	Generally used farm name: <u>Coastal Forest Resources Company d/b/a Coastal Timberlands Company</u>
Watershed: <u>Richwood Run</u>	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: <u>EQT Production Company</u>	Address: <u>115 Professional Place PO Box 280</u>
Telephone: <u>304-848-0076</u>	<u>Bridgeport WV 26330</u>
Email: <u>vroark@eqt.com</u>	Facsimile: <u>304-848-0041</u>

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Surface Owners:

Coastal Forest Resources Company
d/b/a Coastal Timberlands Company
PO Box 709
Buckhannon WV 26201

4710303165

DEPARTMENT OF
MINE, MARIONETTES AND GAS

SEP 20 2016

DEPARTMENT OF

12/02/2016



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

Reissued September 23, 2016

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the BIG360 Pad Site, Wetzel County
#515109 BIG360H2 #515110 BIG360H3
#515111 BIG360H4 #515112 BIG360H5

Dear Mr. Martin,

This well site will be accessed from existing Permit # 06-2014-0638 issued to EQT Production Company for access to the State Road for a well site located off of Wetzel County Route 76 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Nick Bumgardner
EQT Production Company
CH, OM, D-6, File

4710305165

SEP 20 2016

Chemical Names and CAS numbers for Frac additives

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand		14808-60-7
Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8
Scale Inhibitor	Ammonium chloride	12125-02-9
15% Hydrochloric Acid	Hydrochloric Acid	7647-01-0
Corrosion Inhibitor	Propargyl Alcohol	107-19-7
Corrosion Inhibitor	Methanol	67-56-1
Gelling Agent	Guar Gum	9000-30-0
Oxidizing Breaker	Sodium Persulfate	7775-27-1
Buffering Agent	Potassium Carbonate	584-08-7

4710503100

SEP 2016

12/02/2016

EQT - BIG 360

FINAL SITE DESIGN, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY

West Virginia Coordinate System of 1983
 State Plane Grid North
 Elevations NAVD83
 Established By Survey Grade GPS



Allegheny Surveys, Inc.
 172 Thompson Drive
 Bridgeport, WV 26330
 (304) 646-5030

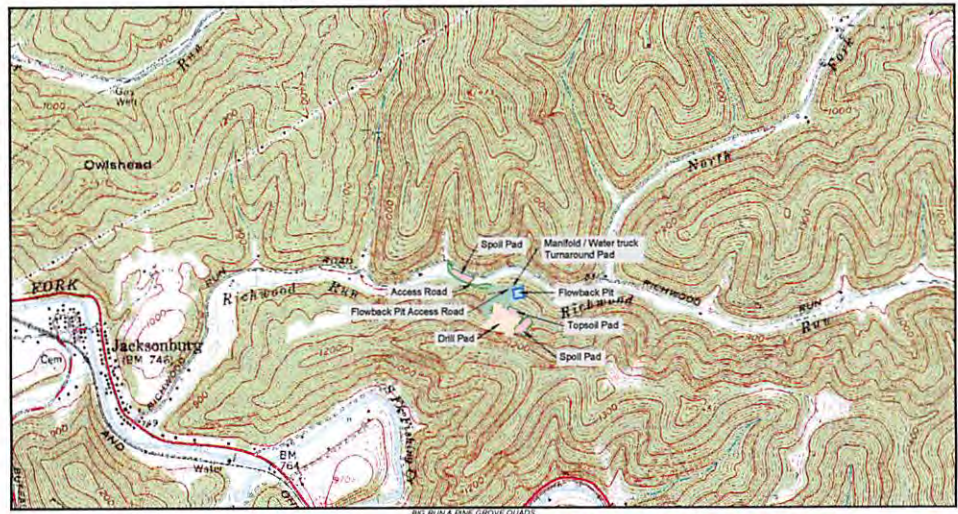


Hornor Bros. Engineers
 Since 1898
 Civil, Mining, Environmental and
 Consulting Engineering
 1400 Lee Street, Suite 200
 Morgantown, West Virginia, WV 26505



THIS DOCUMENT
 PREPARED FOR
 EQT PRODUCTION
 COMPANY

COVER SHEET / LOCATION MAP
BIG 360
DRILL PAD SITE
 GRANT DISTRICT
 WETZEL COUNTY, WV



AFFECTED TAX PARCEL: 17/14
 GRANT DISTRICT - WETZEL COUNTY, WV

TM 17 - Pct. 14
 Coastal Forest Resources Company
 1636.5 Acres

**APPROVED
WVDEP OOG**
 10/23/2014

SITE DISTURBANCE

- DRILL PAD = 5.02 ACRES
- FLOWBACK PIT = 1.85 ACRES
- ACCESS ROADS = 4.45 ACRES
- MANIFOLD PAD & TRUCK TURNAROUND = 1.10 ACRES
- PRODUCTION UNIT PAD = 0.70 ACRES
- SPOIL PADS = 2.52 ACRES
- TIMBER STORAGE = 0.39

TOTAL DISTURBANCE = 16.03 ACRES
 TOTAL WOODED AREA = 14.83 ACRES

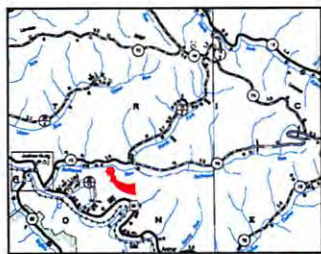
WELL LEGEND

- BIG 360 H1 - 515108
- BIG 360 H2 - 515109
- BIG 360 H3 - 515110
- BIG 360 H4 - 515111
- BIG 360 H5 - 515112
- BIG 360 H6 - 515113
- BIG 360 H7 - 515213
- BIG 360 H8 - 515214
- BIG 360 H9 - 515215

FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54103C0215C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

Electronic Version of These Plans May Be Viewed at www.eqt.com/Q:\OIL GAS\SAY FILES\REVIEWS

SITE LOCATIONS		
WGS 84 (NAD 83) NORTH ZONE		
POINT	EASTING	NORTHING
Center of Pad	32 532814	50 818448
Center of Flow Back Pit	32 534075	50 815518



PROJECT NOTES:

1. FOR SUBSURFACE AND SOIL REINFORCEMENT INFORMATION, SEE "REPORT OF GEOTECHNICAL EXPLORATION, BIG 360 DRILL PAD SITE" BY TRIAD ENGINEERING, INC. DATED APRIL 4, 2014 AND THE PLANS AND TECHNICAL SPECIFICATIONS FOR REINFORCED EARTH SCLOPES BY TRIAD ENGINEERING DATED JULY 7, 2014.
2. CONTRACTOR TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE OWNER AND ENGINEER OF ANY CONFLICTS WITH EXISTING UTILITIES. DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. "MISS UTILITY OF WEST VIRGINIA" AND EQT MUST BE CONTACTED A MINIMUM OF FORTY EIGHT (48) HOURS PRIOR TO EXCAVATION AT THE SITE FOR UTILITY LOCATIONS.
3. CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ANY AND ALL PERMITS REQUIRED PRIOR TO STARTING WORK AND SHALL ADHERE TO THE CONDITIONS IMPOSED.
4. ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN THE DRAWINGS SHALL IMMEDIATELY REPORTED TO THE OWNER AND ENGINEER IN WRITING. SUCH INCONSISTENCIES OR AMBIGUITIES SHALL BE PROMPTLY ADDRESSED BY THE CONTRACTOR. ENGINEERING IN WRITING PERFORMED BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES, WITHOUT CLARIFICATION FROM THE OWNER AND/OR ENGINEER, SHALL BE AT THE CONTRACTOR'S RISK.
5. ANY UNUSUAL, SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
6. THE "REPORT OF GEOTECHNICAL EXPLORATION" ALONG WITH THE PLANS AND TECHNICAL SPECIFICATIONS FOR THE BIG 360 DRILL PAD SITE AS PREPARED BY TRIAD ENGINEERING, INC ARE CONSIDERED AS A SUPPLEMENT TO THESE PLANS. IN THE EVENT THAT THERE ARE DISCREPANCIES BETWEEN ANY OF THE DOCUMENTS PREPARED BY HORNOR BROTHERS ENGINEERS AND TRIAD ENGINEERING, INC, THE MORE STRINGENT OF THE TWO SHALL APPLY.

Project Contacts

- Fred Gray - EQT Production Company**
304-848-0085 Off.
- Surveyor & Engineer**
Ben Singleton - PS - Allegheny Surveys Inc.
304-648-6606 Off.
- James D. Fields EIT - Hornor Brothers Engineers**
304-624-6445 Office
- Tom Conners - PE, PS - Hornor Brothers Engineers**
304-624-6445 Office

SHEET INDEX

COVER SHEET / LOCATION MAP	1
SCHEDULE OF QUANTITIES	2
EXISTING CONDITIONS PLAN	3
CONSTRUCTION GENERAL AND E&S NOTES	4
FINAL SITE DESIGN PLANS	5-6
DRILL PAD PROFILE & CROSS SECTIONS	7-8
FLOWBACK PIT PROFILE & CROSS SECTIONS	9
ACCESS ROADS PROFILES	10
ACCESS ROADS CROSS SECTIONS	11-14
CONSTRUCTION DETAILS	15-18
RECLAMATION PLANS	17-18

DATE	REVISIONS	Date: 7-16-2014
7.03.2014	Add Project Notes	Scale: AS SHOWN
7.23.2014	Change EQT Contact Information & Update Cover Map	Designed By: DIF A TRC
8.06.2014	Remove Impacts Table per EQT & Potesta	File No: 16-00000-10 Rev 000
10.06.2014	Impervious base at sump locations	Page 1 of 18

MISS Utility of West Virginia
 1-800-245-4848
 West Virginia State Law
 (Section XIV: Chapter 24-C)
 Requires that you call two business
 days before you dig in the state of
 West Virginia.
IT'S THE LAW!!



Know what's below.
Call before you dig.

Design Certification
 The drawings, construction notes, and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §35-4-21. The information reflects a temporary frac pit pond. The computed above grade storage volume is less than 15 acre feet. Filling method pumped frac pond is lined.

W:\EQT\PROJECTS\BIG 360\14-13 EQT BIG 360\2014-07-16

DESIGN PLAN (2)

APPROVED
WVDEP OOG
 10/23/2014



All topographic information shown herein is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of Spring 2013.



Allegheny Surveys, Inc.
 172 Thompson Drive
 Bridgeport, WV 26330
 (304) 846-6035

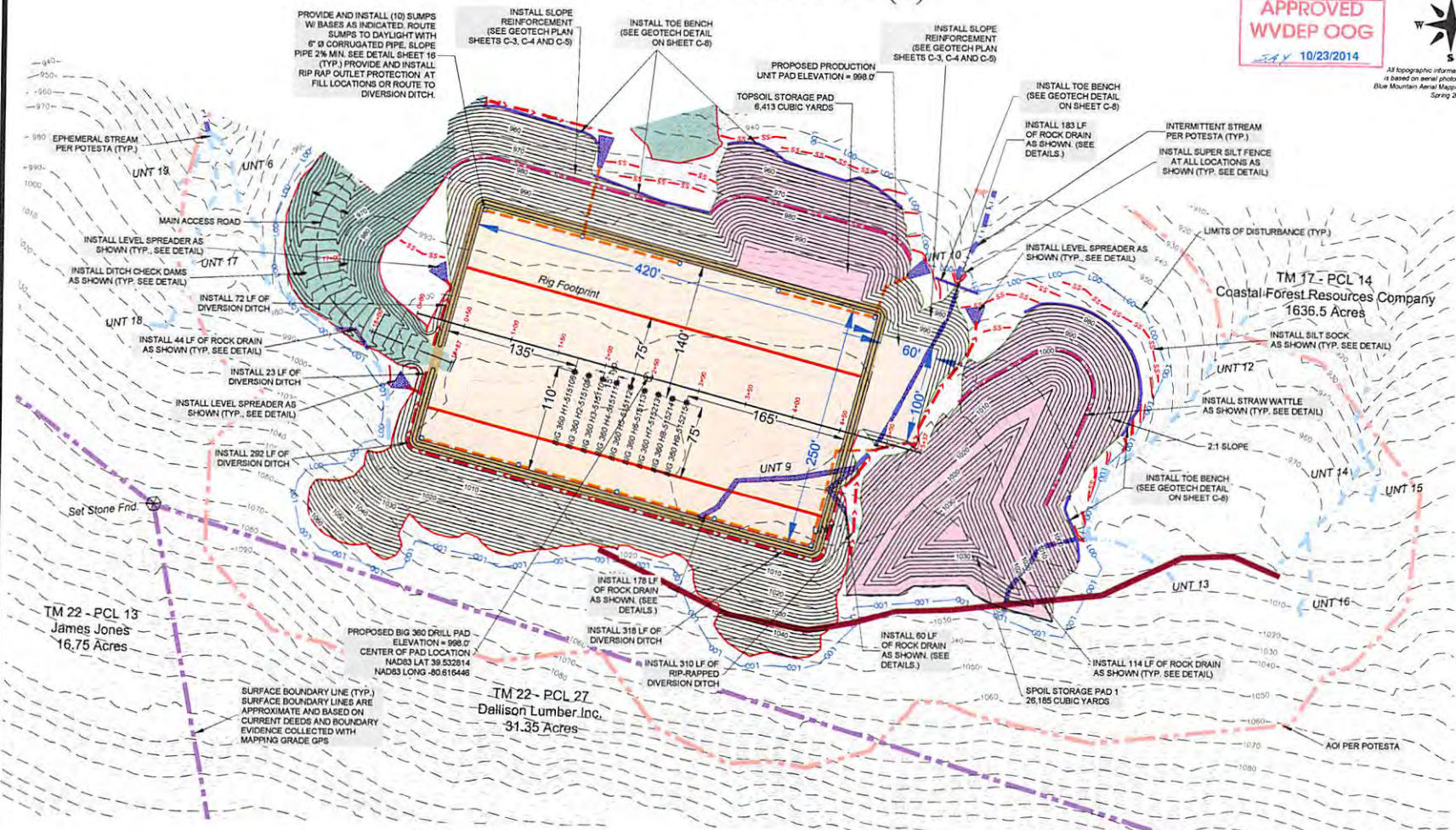


Hornor Bros. Engineers
 1902
 Civil, Mining, Environmental and Consulting Engineering
 1000 University Blvd., Suite 1000
 Charleston, West Virginia, 25301-1000

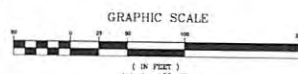


THIS DOCUMENT PREPARED FOR EQT PRODUCTION COMPANY

FINAL SITE DESIGN PLAN AL-1
BIG 360
DRILL PAD SITE
 GRANT DISTRICT
 WETZEL COUNTY, WV



NOTES:
 1. CONSTRUCTION OF ALL FILL EMBANKMENTS (INCLUDING SPOIL PADS) REQUIRE TOE BENCHES AND SIDEHILL BENCHES (SEE EMBANKMENT FILL BENCH DETAIL)
 2. SEE REINFORCED EARTH SLOPES PLANS PREPARED BY TRIAD ENGINEERING FOR GEOGRID PLACEMENT, LENGTHS AND TYPE



Legend

	Proposed Road Area		Existing 2' Contour
	Proposed Drill Pad Area		Existing 10' Contour
	Proposed Spoil Area		Existing Tree Line
			Existing Utility Pole
			Existing Overhead Utility
			Existing Gas Line CL
			Existing Fence
			Proposed 2' Contour
			Proposed 10' Contour
			Proposed Toe Bench

ALL WOOD WASTE SHALL BE USED AS A SEDIMENT BARRIER, CHIPPED, LEGALLY HAULED OFF, OR LEGALLY BURNED ON SITE

DATE	REVISIONS	Date: 7-16-2014
6.25.2014	Relocated Wells per EQT	Scale: 1"=50'
7.02.2014	Add Toe Benches, Note & Geogrid Note	Designed by: JEF & TBC
10.06.2014	Impervious base at sump locations	Drawn by: JEF & TBC
		Year: 8 of 18

EQT - BIG 360

FINAL SITE DESIGN, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY

West Virginia Coordinate System of 1983
State Plane Grid North
All Geographic Information System
is based on data received from EQT
Production Company



Allegheny Surveys, Inc.
172 Thompson Drive
Blacksport, WV 26030
(304) 648-5035

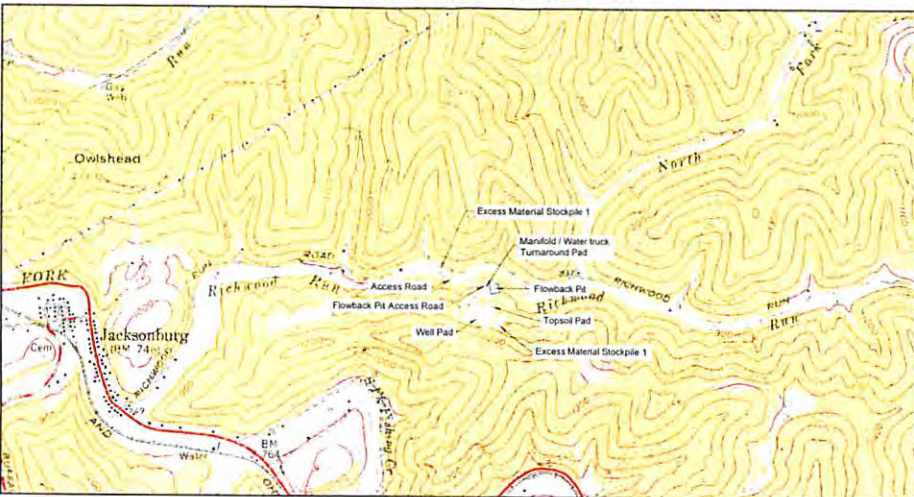
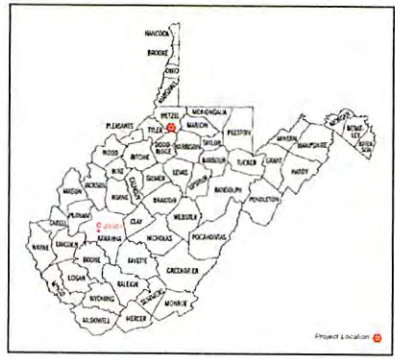


Hornor Bros. Engineers
and
Consulting Engineering
140 South New Street, 14th Floor, New York, NY 10038
Chicago, New York, New York, 2010 (312) 551-1144



THIS DOCUMENT
PREPARED FOR
EQT PRODUCTION
COMPANY

COVER SHEET / LOCATION MAP
BIG 360
DRILL PAD SITE
GRANT DISTRICT
WETZEL COUNTY, WV



AFFECTED TAX PARCEL 17/14
GRANT DISTRICT - WETZEL COUNTY, WV

TM 17 - Pcl 14
Coastal Forest Resources Company
1636 5 Acres

SITE DISTURBANCE

DRILL PAD = 5.02 ACRES
FLOWBACK PIT = 1.85 ACRES
ACCESS ROADS = 4.45 ACRES
MANIFOLD PAD & TRUCK TURNAROUND = 1.10 ACRES
PRODUCTION UNIT PAD = 0.70 ACRES
SPOIL PADS = 2.52 ACRES
TIMBER STORAGE = 0.39

TOTAL DISTURBANCE = 16.03 ACRES
TOTAL WOODED AREA = 14.83 ACRES

FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC-RAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER(S) FOR SITE	54103C0215C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN	N/A

WELL LEGEND
WGS #4 (WV NORTH ZONE)

515108 - LAT 39 532844 / LONG -80 616714
515109 - LAT 39 532830 / LONG -80 616664
515110 - LAT 39 532817 / LONG -80 616614
515111 - LAT 39 532803 / LONG -80 616564
515112 - LAT 39 532789 / LONG -80 616514

SITE LOG-TOWNS		
WGS #4 (WV NORTH ZONE)		
Center of Pad	EASTING	NORTHING
Center of Flowback Pit	31 532814	80 616665
Proposed Access Road Sta 0+00	31 532775	80 616558
Proposed Flowback Road Sta 0+00	31 531370	80 616563
Proposed Flowback Road Sta 0+00	31 531379	80 616377

- PROJECT NOTES:**
- FOR SUBSURFACE AND SOIL REINFORCEMENT INFORMATION SEE REPORT OF GEOTECHNICAL EXPLORATION BIG 360 DRILL PAD SITE BY TRAD ENGINEERING INC DATED APRIL 4 2014 AND THE PLANS AND TECHNICAL SPECIFICATIONS FOR REINFORCED EARTH SLOPES BY TRAD ENGINEERING DATED JULY 7 2014
 - CONTRACTOR TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE OWNER AND ENGINEER OF ANY CONFLICTS WITH EXISTING UTILITIES. DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. MASS UTILITY OF WEST VIRGINIA AND EQT MUST BE CONTACTED A MINIMUM OF FORTY EIGHT HOURS PRIOR TO EXCAVATION AT THE SITE FOR UTILITY LOCATIONS.
 - CONTRACTOR SHALL OBTAIN AT HIS EXPENSE ANY AND ALL PERMITS REQUIRED PRIOR TO STARTING WORK AND SHALL ADHERE TO THE CONDITIONS THEREOF.
 - ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN THE DRAWINGS SHALL IMMEDIATELY BE REPORTED TO THE OWNER AND ENGINEER IN WRITING. SUCH INCONSISTENCIES OR AMBIGUITIES SHALL BE PROMPTLY ADDRESSED BY THE OWNER AND/OR ENGINEER IN WRITING. WORK PERFORMED BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES, WITHOUT CLARIFICATION FROM THE OWNER AND/OR ENGINEER SHALL BE AT THE CONTRACTOR'S RISK.
 - ANY UNUSUAL SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
 - THE REPORT OF GEOTECHNICAL EXPLORATION, ALONG WITH THE PLANS AND TECHNICAL SPECIFICATIONS FOR THE BIG 360 DRILL PAD SITE AS PREPARED BY TRAD ENGINEERING INC ARE CONSIDERED AS SUPPLEMENT TO THESE PLANS. IN THE EVENT THAT THERE ARE DISCREPANCIES BETWEEN ANY OF THE DOCUMENTS PREPARED BY HORNOR BROS ENGINEERS AND TRAD ENGINEERING INC, THE MORE STRINGENT OF THE TWO SHALL APPLY.

Project Contacts

Fred Gray - EQT Production Company
304-648-0085 Off

Surveyor & Engineer

Ben Singleton - PS - Allegheny Surveys Inc
304-649-8606 Off

Tom Corathers - PE - Hornor Brothers Engineers
304-624-6445 Office

SHEET INDEX	
COVER SHEET / LOCATION MAP	1
SCHEDULE OF QUANTITIES	2
EXISTING CONDITIONS PLAN	3
CONSTRUCTION, GENERAL AND E&S NOTES	4
FINAL SITE DESIGN PLANS	5-6
DRILL PAD PROFILE & CROSS SECTIONS	7-8
FLOWBACK PIT PROFILE & CROSS SECTIONS	9
ACCESS ROADS PROFILES	10
ACCESS ROADS CROSS SECTIONS	11-14
EXCESS MATERIAL STOCKPILE 1	15
CONSTRUCTION DETAILS	16-20
RECLAMATION PLANS	21-22

DATE	REVISIONS	Date
08 23 2016	REMOVE FOUR WELL NUMBERS PER EQT	07-29-2016
		Scale AS SHOWN
		Designed By: BJA & JHK
		Drawn By:
		Page: 1 of 22

- WELL LOCATION RESTRICTIONS**
- Well Pad complies with the Well Location Restrictions of WV code 22-6A-12
- *250' from an existing well or developed spring used for human or domestic animals.
 - *625' to occupied dwelling or barn greater 2500 SF used for poultry or dairy measured from the center of the pad.
 - *100' from edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.
 - *300' from edge of disturbance to naturally reproducing forest streams.
 - *1000' of surface or ground water intake to a public water supply.

Design Certification

The drawings, construction notes, and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §35-4-21. The information reflects a temporary frac pit pond. The computed above grade storage volume is less than 15 acre feet. Filling method pumped; frac pond is lined.



MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section XIV, Chapter 24-C)
Requires that you call two business days before you dig in the state of West Virginia.
IT'S THE LAW!!



**Know what's below.
Call before you dig.**

Received
Office of Oil & Gas
OCT 07 2016

4710303165

DESIGN PLAN (1)



All topographic information shown herein is based on aerial photography provided by Blue Mountain Aerial Mapping with a flight date of August 2013.



Allegheny Surveyors, Inc.
172 Thompson Drive
Bridgeport, WV 26330
(304) 448-5035



Horner Bros. Engineers and
Civil Consulting Engineering, Inc.
140 South West Street, Third Floor
Martinsburg, West Virginia 26150
(304) 263-1100



THIS DOCUMENT
PREPARED FOR
EQT PRODUCTION
COMPANY

FINAL SITE DESIGN PLAN ALT
BIG 360
DRILL PAD SITE
GRANT DISTRICT
WETZEL COUNTY, WV

"EQT PRODUCTION COMPANY WILL OBTAIN ENCROACHMENT PERMITS (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES"

PROPOSED ACCESS ROAD
STATION 0+00
NAD83 LAT = 39 535395
NAD 83 LONG = -80 619683

PROVIDE AND INSTALL
60 LF OF NEW 30" Ø HPDE
PIPE SLOPE 1% MIN PROVIDE
RIPRAP INLET/OUTLET
(SEE DETAIL 6 SHEET 16)
STA 4+82.78
INLET ELEVATION = 822.00
OUTLET ELEVATION = 798.00

EXISTING GAS LINES
WILL REQUIRE
PROTECTION FROM
DAMAGE BY
TRUCK TRAFFIC

INSTALL LEVEL SPREADER AS SHOWN
(TYP. SEE DETAIL 5 SHEET 16)

INSTALL SLOPE
REINFORCEMENT
(SEE GEOTECH PLAN
SHEETS C-3 AND C-7)

INSTALL 77 LF OF ROCK DRAIN
AS SHOWN (TYP. SEE DETAIL)

INSTALL TOE BENCH
(SEE GEOTECH DETAIL
ON SHEET C-6)

WATER WAY PER AERIAL MAP (TYP)

INSTALL SLOPE
REINFORCEMENT
(SEE GEOTECH PLAN
SHEETS C-3 AND C-6)

PROVIDE AND INSTALL
50 LF OF NEW 30" Ø HPDE
PIPE SLOPE 2% MIN PROVIDE
RIPRAP INLET/OUTLET
(SEE DETAIL 6 SHEET 16)
STA 0+41.86
INLET ELEVATION = 877.50
OUTLET ELEVATION = 879.00

FLOW BACK PAD
ACCESS ROAD
20' TRAVEL WAY

INSTALL SUPER SILT FENCE
AT ALL LOCATIONS AS
SHOWN (TYP. SEE DETAIL)

INSTALL 24 DOUBLE
SWAG GATE

INSTALL 191 LF OF ROCK DRAIN
AS SHOWN (TYP. SEE DETAIL)

INSTALL TOE BENCH
(SEE GEOTECH DETAIL
ON SHEET C-8)

PROPOSED FLOW BACK PIT
BERM ELEV = 881.0' - 18' DEEP
CENTER OF PIT LOCATION
NAD83 LAT 39 534078
NAD83 LONG -80 615518

INSTALL TOE BENCH
(SEE GEOTECH DETAIL
ON SHEET C-8)

INSTALL TOE BENCH -
REINFORCEMENT
(SEE GEOTECH PLAN
SHEETS C-3 AND C-6)

PROVIDE AND INSTALL
68 LF OF NEW 15" Ø HPDE
PIPE SLOPE 2% MIN PROVIDE
RIPRAP INLET/OUTLET
(SEE DETAIL 6 SHEET 16)
STA 1+52.14
INLET ELEVATION = 824.34
OUTLET ELEVATION = 802.30'

LIMITS OF DISTURBANCE (TYP.)

UNT 2
EPHEMERAL

PROVIDE AND INSTALL (1) PRE MANUFACTURED
SINGLE LANE BRIDGE 50' 0" LONG X 13' 0" WIDE
BRIDGE TO HAVE 12'-6" MAX TRAVEL WAY
BEGIN STA 5+18.19 END STA 5+68.19
PROPOSED DECK ELEVATION = 805.90'
SEE SHEET 20 FOR BRIDGE DETAILS

PROVIDE AND INSTALL
50 LF OF NEW 30" Ø HPDE
PIPE SLOPE 2% MIN PROVIDE
RIPRAP INLET/OUTLET
(SEE DETAIL 6 SHEET 16)
STA 6+52.81
INLET ELEVATION = 824.75
OUTLET ELEVATION = 801.84'

INSTALL 210 LF OF ROCK DRAIN
AS SHOWN (TYP. SEE DETAIL)

2:1 SLOPE
AOI PER POSTESA

INSTALL SLOPE
REINFORCEMENT
(SEE GEOTECH PLAN
SHEETS C-3 AND C-7)

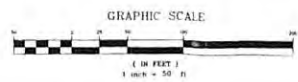
PROVIDE AND INSTALL
30 LF OF NEW 15" Ø HPDE
PIPE SLOPE 2% MIN PROVIDE
RIPRAP INLET/OUTLET (SEE DETAIL 6 SHEET 16)
STA 14+60.35
INLET ELEVATION = 828.75'
OUTLET ELEVATION = 824.00'

INSTALL DITCH CHECK DAMS
AS SHOWN (TYP. SEE DETAIL 1 SHEET 16)

INSTALL TOE BENCH
(SEE GEOTECH DETAIL
ON SHEET C-8)

INSTALL 126 LF OF DIVERSION DITCH
AND 210 LF OF DIVERSION DITCH AND
LEVEL SPREADERS; SEE DETAILS 4 & 5
SHEET 16

- Legend
- Proposed Road Area
 - Proposed Drill Pad Area
 - Proposed Pit Areas
 - Proposed Stockpile Area
 - Existing 2' Contour
 - Existing 10' Contour
 - Existing Tree Line
 - Existing Utility Pole
 - Existing Overhead Utility
 - Existing Gas Line CL
 - Existing Fence
 - Proposed 2' Contour
 - Proposed 10' Contour
 - Proposed Toe Bench



PROPOSED PRODUCTION TANK
PAD / WATER TRUCK
TURNAROUND ELEV = 881.0'

PROPOSED FLOWBACK
ACCESS ROAD
STATION 0+00
NAD83 LAT = 39 534175
NAD 83 LONG = -80 615377

INSTALL TOE BENCH
(SEE GEOTECH DETAIL
ON SHEET C-8)

INSTALL 584 LF OF 6"
WOVEN WIRE FENCE

INSTALL 395 LF OF
DIVERSION DITCH
SEE DETAIL 4
SHEET 16

DATE	REVISIONS	Date

- NOTES:
- CONSTRUCTION OF ALL FILL EMBANKMENTS (INCLUDING SPOIL PADS) REQUIRE TOE KEY BENCHES AND SIDEBENCHES (SEE EMBANKMENT FILL BENCH DETAIL)
 - SEE REINFORCED EARTH SLOPES PLANS PREPARED BY TRIAD ENGINEERING FOR GEOGRID PLACEMENT, LENGTHS AND TYPE

TM 17 - PCL 14
Coastal Forest Resources Company
1636.5 Acres

TM 22 - PC 13
James Jones
16.75 Acres

SURFACE BOUNDARY LINE (TYP.)
SURFACE BOUNDARY LINES ARE
APPROXIMATE AND BASED ON
CURRENT DEEDS AND BOUNDARY
EVIDENCE COLLECTED WITH
MAPPING GRADE GPS

Received
Office of Oil & Gas
OCT 07 2016

4710303165

