

04/26/2019



west virginia department of environmental protection

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

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

Friday, April 26, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit approval for BIG333H12
47-103-03294-00-00

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: BIG333H12
Farm Name: COASTAL FOREST RESOURCES
U.S. WELL NUMBER: 47-103-03294-00-00
Horizontal 6A New Drill
Date Issued: 4/26/2019

Promoting a healthy environment.

PERMIT CONDITIONS

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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

PERMIT CONDITIONS

11. 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.

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: BIG333
County: Wetzel

February 13, 2019

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WV Department of
Environmental Protection

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 the BIG333 well site.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation.

A report is required to be submitted along with a well work permit application.

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 coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures 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 Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

EQT will recommend to these operators at a minimum to:

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 or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

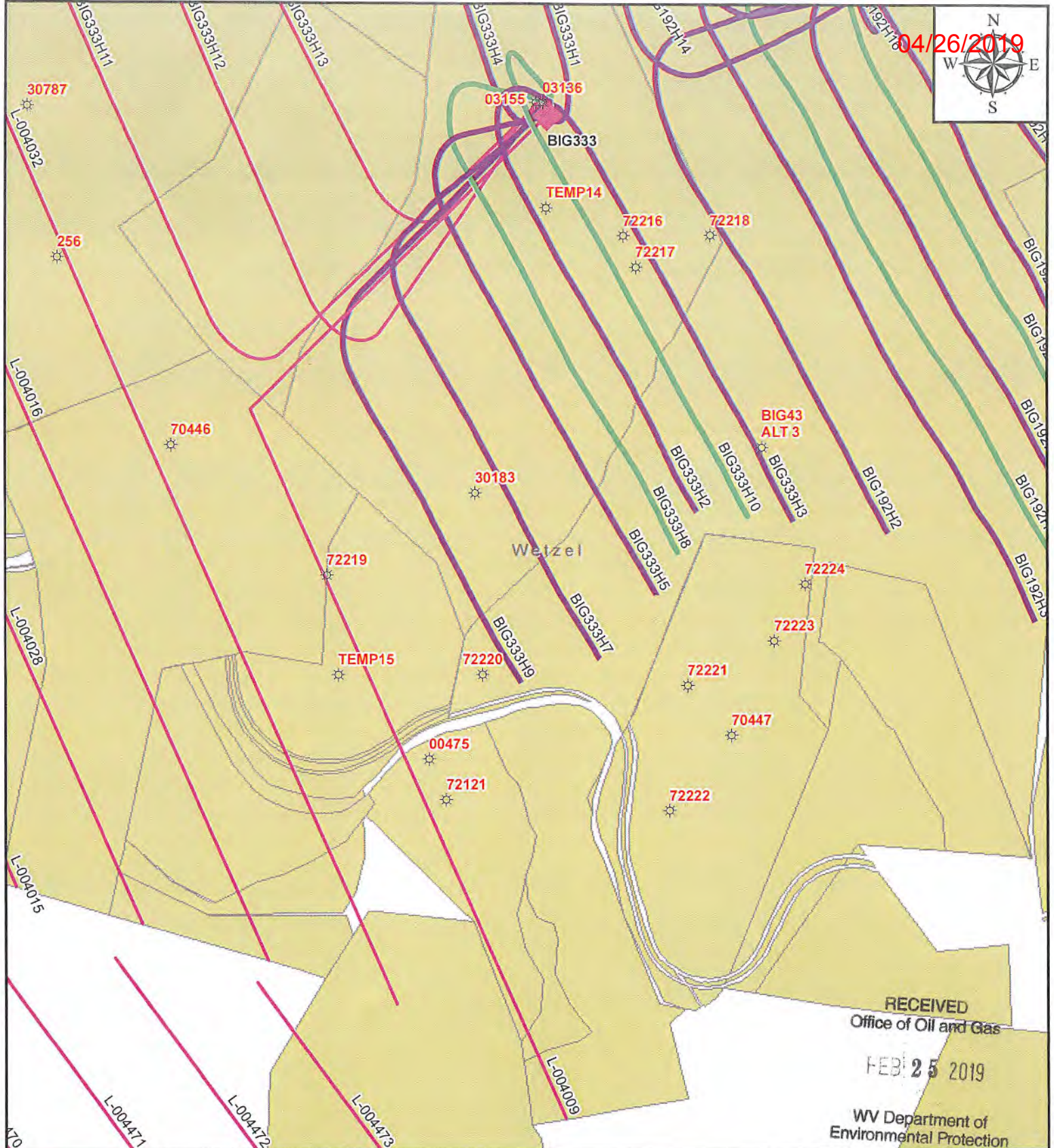
EQT will provide information relating to the hydraulic fracturing schedule, communication with other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

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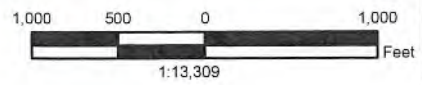
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EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

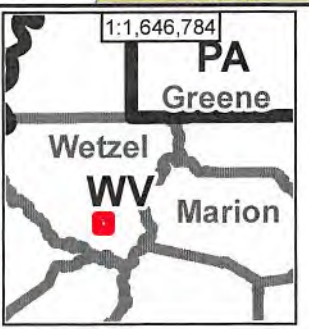
BIG 333 - South

Vertical Offsets and
Foreign Laterals
within 1500'

- Legend**
- Vertical Offset Well
 - Pad
 - Geneseo Drilled
 - Geneseo Planned
 - Marcellus Drilled
 - Marcellus Planned
 - Utica Drilled
 - Utica Planned
 - EQT Lease
 - County



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.



API Number	Abandoned Date	Completion Date	County	Operator	Elevation	Datum	Final Status	Latitude	Longitude	Lease	Permit Date	Projected TD	Spud Date	State	TD Formation	Total Depth	Well Number	Permit
4710301830000	7/1/1936	3/12/1933	WETZEL	UNKNOWN		GR	ABDOGW	39.5157	-80.5940	ALEX HART	1/26/1933		2/10/1933	WEST VIRGINIA	BIG INLIN / SD/	2190	5337	30183
4710302630000	2/6/1938		WETZEL	DEEM F S	855	GR	ABDOGW	39.5325	-80.6058	E ENGLEBERT				WEST VIRGINIA	GORDON	2715	4	30263
4710302768000	1/11/1931		WETZEL	UNKNOWN	1043	GR	UNKNWN	39.5476	-80.5979	MARGARET WILEY				WEST VIRGINIA	HAMPSHIRE	2925	2	30069
4710303069000	10/27/1931		WETZEL	PHILADELPHIA OIL	878	GR	UNKNWN	39.5321	-80.5963	AUGUSTUS WYATT				WEST VIRGINIA	HAMPSHIRE	2925	C-2932	72242
47103032220000			WETZEL	UNKNOWN		GR	UNKNWN	39.5303	-80.5882	G H HEADLEE				WEST VIRGINIA	HAMPSHIRE	2920	1	30068
471030322370000			WETZEL	UNKNOWN	1234	KB	OIL	39.5309	-80.5891	HART BROS	9/20/1978	3200	9/30/1978	WEST VIRGINIA	DEVONIAN / SD/	3199	A-758	01148
47103011480000			WETZEL	DIVERSIFIED RESOURCES INCORPORATED		GR	UNKNWN	39.5321	-80.5904	WYATT AUGUSTUS				WEST VIRGINIA		1		72243
471030322430000			WETZEL	HOPE NATURAL GAS		GR	UNKNWN	39.5172	-80.5850	T J HEADLEE				WEST VIRGINIA		1		72224
471030322430000			WETZEL	UNKNOWN		GR	UNKNWN	39.5135	-80.5841	J SHREDS				WEST VIRGINIA		4		72213
471030322430000			WETZEL	UNKNOWN		GR	UNKNWN	39.5321	-80.6081	E ENGLEBERT				WEST VIRGINIA		7		72278
471030322460000			WETZEL	UNKNOWN		GR	UNKNWN	39.5444	-80.5996	MARGARET WILEY				WEST VIRGINIA		5		72264
471030322460000	11/22/1951	9/16/1916	WETZEL	VALLEY STEEL PRODUCTS COMPANY	955	GR	ABD-OW	39.5443	-80.6011	MARGARET WILEY	3/30/1916		4/14/1916	WEST VIRGINIA	HAMPSHIRE	2925	4	30935
471030322460000			WETZEL	VALLEY STEEL PRODUCTS COMPANY		GR	ABD-OW	39.5351	-80.6008	JOHN MILLS				WEST VIRGINIA		1		72215
47103031590000		3/21/1901	WETZEL	UNKNOWN		GR	OIL	39.5465	-80.5972	JAMES M ANDERSON	1/14/1901		1/29/1901	WEST VIRGINIA	HAMPSHIRE	2775	2	01139
471030322400000			WETZEL	DIVERSIFIED RESOURCES INCORPORATED		GR	OIL	39.5322	-80.5961	MARY WILEY				WEST VIRGINIA		1		72240
47103031550100			WETZEL	EQT PRODUCTION COMPANY	1452	GR	PERMIT	39.5247	-80.5922	AUGUSTUS WYATT	10/17/2016	17858	9/11/1918	WEST VIRGINIA	HAMPSHIRE	2914	8	03155
471030309570000	10/31/1951	1/17/1919	WETZEL	VALLEY STEEL PRODUCTS COMPANY	1170	GR	ABD-OW	39.5396	-80.6002	JOHN MILLS	8/27/1918		1/17/1916	WEST VIRGINIA	HAMPSHIRE	3149	7	30937
471030309570000	10/31/1951	2/16/1916	WETZEL	VALLEY STEEL PRODUCTS COMPANY	1113	GR	ABD-OW	39.5344	-80.6006	JOHN MILLS	1/2/1916		1/17/1916	WEST VIRGINIA	HAMPSHIRE	3149	7	30936
471030309560000			WETZEL	CARTER OIL COMPANY	1021	GR	PSEUDO	39.5431	-80.6045	JOHN WILLEY	11/16/1915		12/1/1915	WEST VIRGINIA	POCONO	1927	1	70443
471030309540000	2/9/1955	7/1/1920	WETZEL	VALLEY STEEL PRODUCTS COMPANY	1368	GR	ABD-OW	39.5375	-80.5996	JOHN MILLS	2/15/1920		3/1/1920	WEST VIRGINIA	HAMPSHIRE	3230	10	31012
471030322770000	10/27/1951	10/15/1917	WETZEL	UNKNOWN	1058	KB	GAS	39.5411	-80.6017	MARGARET WILEY			10/9/1977	WEST VIRGINIA	FIFTH SAND	3400	A-695	00633
471030309540000			WETZEL	VALLEY STEEL PRODUCTS COMPANY		GR	UNKNWN	39.5348	-80.5976	JOHN MILLS			10/9/1977	WEST VIRGINIA		1		70447
471030322210000			WETZEL	PHILADELPHIA OIL		GR	UNKNWN	39.5115	-80.5938	HART BROS				WEST VIRGINIA		1		72220
471030322180000			WETZEL	UNKNOWN		GR	UNKNWN	39.5112	-80.5876	JOB HEADLEE				WEST VIRGINIA		1		72221
471030309590000	3/11/1951	6/17/1921	WETZEL	VALLEY STEEL PRODUCTS COMPANY	1372	GR	ABD-OW	39.5216	-80.5869	L G ROBINSON	4/19/1921		5/4/1921	WEST VIRGINIA	BIG LIME	2287	11	30939
471030322430000			WETZEL	VALLEY STEEL PRODUCTS COMPANY		GR	UNKNWN	39.5393	-80.6002	JOHN MILLS				WEST VIRGINIA		1		72218
471030322430000			WETZEL	UNKNOWN		GR	UNKNWN	39.5330	-80.6066	S E ENGLEBERT				WEST VIRGINIA		3		72243
471030322430000	10/20/1951		WETZEL	CARTER OIL COMPANY	968	GR	UNKNWN	39.5421	-80.6043	JOHN WILEY				WEST VIRGINIA		2		70992
471030322430000			WETZEL	PHILADELPHIA OIL		GR	UNKNWN	39.5138	-80.5985	WILLIAM CARLIN				WEST VIRGINIA		13		72219
471030322430000			WETZEL	VALLEY STEEL PRODUCTS COMPANY		GR	UNKNWN	39.5414	-80.5976	JOHN MILLS				WEST VIRGINIA		3		30940
471030322430000			WETZEL	HOPE NATURAL GAS		GR	UNKNWN	39.6086	-80.5949	MARY WYATT				WEST VIRGINIA	UNKNOWN	3		72121
471030322430000		10/26/1977	WETZEL	DIVERSIFIED RESOURCES INCORPORATED		GR	GAS	39.5372	-80.5958	MILLS WETZEL LANDS	9/29/1977	2474	10/9/1977	WEST VIRGINIA	FIFTH SAND	3400	A-695	00633
471030322430000	8/27/1986		WETZEL	PHILADELPHIA OIL		GR	PSEUDO	39.5100	-80.5963	G W HEADLEE				WEST VIRGINIA		1		70444
471030322430000			WETZEL	SOUTH PENN OIL		GR	UNKNWN	39.5457	-80.6000	MARY WILEY				WEST VIRGINIA		1		01404
471030322430000	6/9/1957		WETZEL	SMITH TRUMAN C	969	GR	ABD-OW	39.5389	-80.6028	MILLS WETZEL LANDS				WEST VIRGINIA	HAMPSHIRE	2834	2	72275
471030322430000			WETZEL	UNKNOWN		GR	UNKNWN	39.5402	-80.6021	MILLS WETZEL LANDS				WEST VIRGINIA		18		72276
471030322430000			WETZEL	CARTER OIL COMPANY		GR	UNKNWN	39.5468	-80.6023	RICHWOOD OIL CO				WEST VIRGINIA		3		70293
471030322430000			WETZEL	CARTER OIL COMPANY		GR	UNKNWN	39.5433	-80.6023	JOHN WILLEY (SP)				WEST VIRGINIA		4		70444
471030313601000			WETZEL	EQT PRODUCTION COMPANY	1452	GR	PSEUDO	39.5430	-80.5972	JOHN WILEY				WEST VIRGINIA		3		70293
471030322160000			WETZEL	UNKNOWN		GR	PERMIT	39.5247	-80.5919	BIG 333				WEST VIRGINIA		1		03136
471030322160000	1/27/1951		WETZEL	UNKNOWN		GR	UNKNWN	39.5216	-80.5985	HART BROS			16313	WEST VIRGINIA		1		72212
471030308530000	11/3/1949	11/11/1914	WETZEL	INTERSTATE PIPE & SUPPLY THE	877	GR	ABD-OW	39.5168	-80.6032	LEWIS WYATT	7/16/1914		7/21/1914	WEST VIRGINIA	MAXTON	1838	1	70446
471030308530000			WETZEL	INTERSTATE PIPE & SUPPLY THE	822	GR	ABD-OW	39.5404	-80.6045	JOHN W WILLEY				WEST VIRGINIA		1		30853
471030308530000			WETZEL	INTERSTATE PIPE & SUPPLY THE		GR	ABD-OW	39.5247	-80.6075	D H COX				WEST VIRGINIA		3		70444
471030322120000			WETZEL	UNKNOWN		GR	UNKNWN	39.5303	-80.6030	E ENGLEBERT				WEST VIRGINIA		6		72212
471030322120000			WETZEL	UNKNOWN		GR	UNKNWN	39.5347	-80.6058	MILLS WETZEL LANDS				WEST VIRGINIA		1		03136
471030309510000	1/27/1951	4/1/1960	WETZEL	APPALACHIAN MID CONTINENT OIL PROD	795	GR	OIL	39.5095	-80.5955	MARY WYATT	2/16/1960		3/2/1960	WEST VIRGINIA	POCONO	2150	1	00475
471030308530000	2/5/1938	7/12/1903	WETZEL	DIVERSIFIED RESOURCES INCORPORATED	956	GR	GAS	39.5308	-80.6069	D H COX	8/27/1902		9/11/1902	WEST VIRGINIA	GORDON	3077	8	00851
471030308530000	11/14/1951	10/15/1902	WETZEL	SOUTH PENN OIL	1350	GR	ABD-OW	39.5318	-80.6056	D H COX	8/10/1902		8/25/1902	WEST VIRGINIA	GORDON	2830	7	30353
471030308530000			WETZEL	VALLEY STEEL PRODUCTS COMPANY		GR	UNKNWN	39.5364	-80.5984	JOHN MILLS	1/2/1919		1/17/1919	WEST VIRGINIA	HAMPSHIRE	2251	9	30938
471030322400000			WETZEL	UNKNOWN		GR	PERMIT	39.5315	-80.5972	AUGUSTUS WYATT				WEST VIRGINIA		3		72241
471030313600000			WETZEL	EQT PRODUCTION COMPANY	1452	GR	PERMIT	39.5247	-80.5919	BIG 333	6/23/2016	13326	6/23/2016	WEST VIRGINIA	TRENTON (LM/	WW 516341	03136	
471030315500000			WETZEL	EQT PRODUCTION COMPANY	1452	GR	PERMIT	39.5247	-80.5919	BIG 333	10/17/2016	13339	10/17/2016	WEST VIRGINIA	TRENTON	WW 516335	03135	
471030314000000	1/27/1951	6/13/1901	WETZEL	DIVERSIFIED RESOURCES INCORPORATED	877	GR	ABD-OW	39.5444	-80.5978	MARY WILEY	3/20/1901		4/10/1901	WEST VIRGINIA	HAMPSHIRE	2762	3	01440
471030308530000			WETZEL	UNKNOWN		GR	UNKNWN	39.5404	-80.6045	JOHN W WILLEY	1/21/1917		1/17/1917	WEST VIRGINIA	GORDON	2721	1	30853
471030322600000			WETZEL	UNKNOWN		GR	UNKNWN	39.5315	-80.6058	E ENGLEBERT				WEST VIRGINIA		6		72214
471030322600000			WETZEL	MARGARET WILEY		GR	UNKNWN	39.5428	-80.6013	MARGARET WILEY				WEST VIRGINIA		1		72266
471030322600000			WETZEL	UNKNOWN		GR	O&G-P	39.5212	-80.6066					WEST VIRGINIA		6		72265
4710800256				ROSS & WHARTON GAS	1152	UNK	UNK	39.5167	-80.5854					WEST VIRGINIA		-1213		256
471098043 ALT 3						UNK	UNK	39.5223	-80.5918					WEST VIRGINIA				BIG43 ALT 3
47103TEMP14						UNK	UNK	39.5323	-80.5918					WEST VIRGINIA				TEMP14
47103TEMP15						UNK	UNK	39.5115	-80.5982					WEST VIRGINIA				TEMP15

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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: BIG333H12 Well Pad Name: BIG333

3) Farm Name/Surface Owner: Coastal Forest Resources Co., d/b/a Coastal Timberlands Co. Public Road Access: CR 20

4) Elevation, current ground: 1451' (as-built) Elevation, proposed post-construction: 1451'

5) Well Type (a) Gas Oil _____ Underground Storage _____
Other _____
(b) If Gas Shallow Deep _____
Horizontal

6) Existing Pad: Yes or No _____

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target formation: Marcellus Depth: 7643' Anticipated Thickness: 51' Anticipated Target Pressure: 2620 PSI

DAH
3-9-19

8) Proposed Total Vertical Depth: 7643'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13,556'

11) Proposed Horizontal Leg Length: 4,556'

12) Approximate Fresh Water Strata Depths: 581', 753'

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

14) Approximate Saltwater Depths: 2257', 2333', 2370', 2657'

15) Approximate Coal Seam Depths: 743', 883', 919', 1011', 1240', 1333'

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

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

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

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18)

CASING AND TUBING PROGRAM

TYPE	<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	26	New	A-500	85.6	40	40	49 ft^3 / CTS
Fresh Water	13 3/8	New	J-55	54.5	985	985	924 ft^3 / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	3042	3042	1189ft^3 / CTS
Production	5 1/2	New	P-110	20	13556	13556	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
3-4-15*

TYPE	<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	26	30	.312	884	18	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	See Variance	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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MAR 20 2019

WV Department of
Environmental Protection

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 3999'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

*Drill
3419*

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 0.1%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 350,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 400,000 pounds of proppant per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): _____

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

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One centralizer at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One centralizer at the shoe and one spaced every 500'.
- Production: One solid body centralizer 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
 Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries.
 Production:
 Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50:50 POZ (extender)
 Tail (Class H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time. .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss). .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 60 % Calcuim Carbonate. Acid solubility.

25) Proposed borehole conditioning procedures:

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

Office of Oil and Gas

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*Note: Attach additional sheets as needed.

04/26/2019



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 1 (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "1" 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.

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Randy C. Huffman, Cabinet Secretary
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**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 "1" 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.

Promoting a healthy environment.

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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

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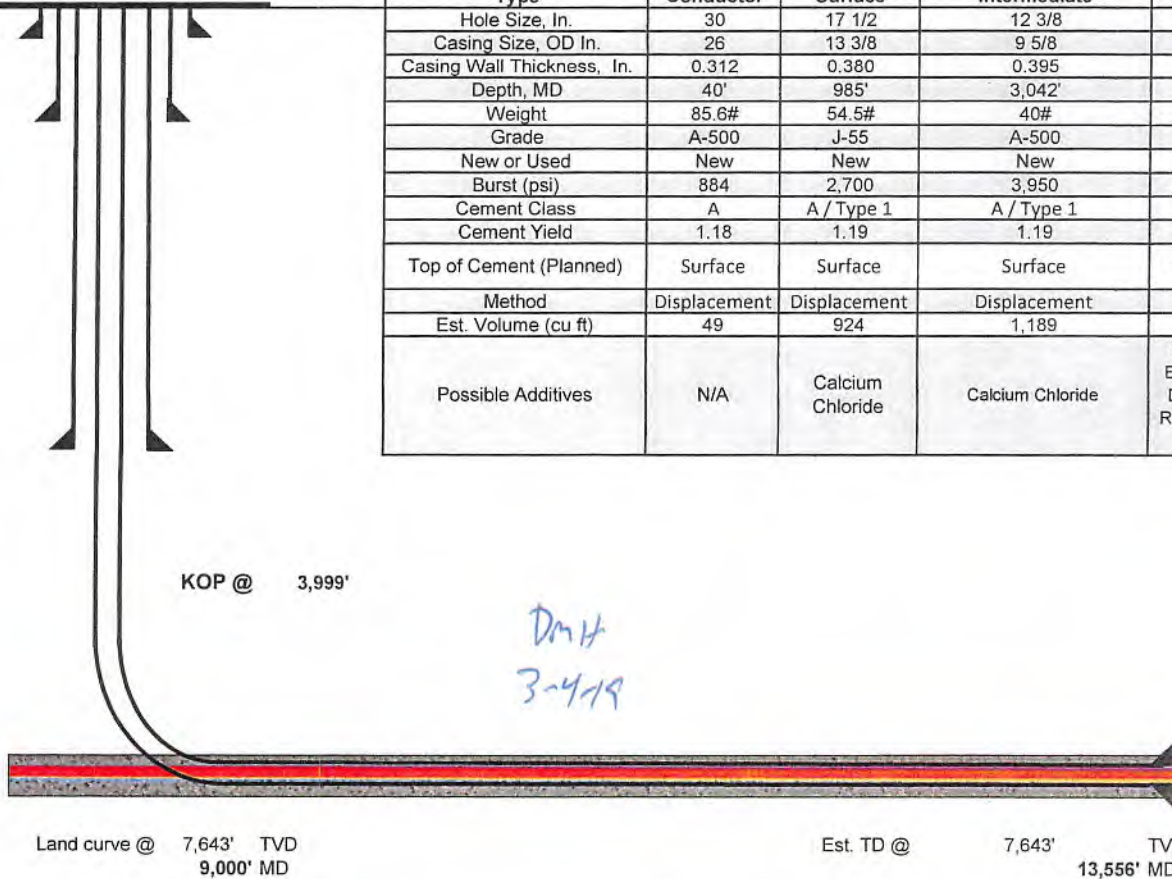
Well **BIG333H12**
EQT Production
Big Run Quad Quad
Wetzel County, WV

Azimuth 337
 Vertical Section 4604
 Enerzia # 516341

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	753	
Surface Casing	985	
Base Red Rock	update	
Big Lime	2526	2621
Big Injun	2636	2743
Weir	2875	2992
Gantz	3285	3340
Fifty foot	3381	3431
Thirty foot	3442	3475
Gordon	3500	3516
Fourth Sand	3534	3544
Bayard	3627	3661
Intermediate Casing	3042	
Speechley	4029	4097
Balltown A	4112	4250
Riley	5005	5064
Benson	5570	5663
Alexander	5965	6012
Sonyea	7180	7341
Middlesex	7341	7389
Genesee	7389	7475
Geneseo	7475	7501
Tully	7501	7521
Hamilton	7521	7609
Marcellus	7609	7660
Production Casing	13556	MD
Onondaga	7660	

Casing and Cementing				Deepest Fresh Water: 753'
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	30	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	26	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.312	0.380	0.395	0.361
Depth, MD	40'	985'	3,042'	13,556'
Weight	85.6#	54.5#	40#	20#
Grade	A-500	J-55	A-500	P-110
New or Used	New	New	New	New
Burst (psi)	884	2,700	3,950	12,640
Cement Class	A	A / Type 1	A / Type 1	A / H
Cement Yield	1.18	1.19	1.19	1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	49	924	1,189	#N/A
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 @ 7,643' TVD
 9,000' MD

Est. TD @ 7,643' TVD
 13,556' MD

4,556' Lateral

<NOT PILOT HOLE>

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 3999'.
 Back off and drill curve. Drill lateral in the Marcellus. Cement casing.

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WEST VIRGINIA GEOLOGICAL PROGNOSIS

Horizontal Well
BIG333H12

v 2017.4
Enertia # 516341

Drilling Objectives: Marcellus
County: Wetzcl
Quad: Big Run Quad
Elevation: 1465 KB 1452 GL
Surface location Northing: 375155.21 Easting: 1692007.92
Landing Point Northing: 373529.29 Easting: 1689966.02
Toe location Northing: 377722.70 Easting: 1688185.89
Recommended Azimuth 337 Degrees

TVD: 7643
Recommended LP to TD: 4,556'

Proposed Logging Suite:

Please have gamma tool behind bit with geosteers and/or mudloggers working by 7125' TVD.

Recommended Gas Tests:

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

ESTIMATED FORMATION TOPS

Formation	Top (TVD)	Base (TVD)	Lithology	Comments
Fresh Water Zone	1	753		FW @ 581,753,....
Washington Coal	743	745	Coal	
Waynesburg Coal	883	885	Coal	
Coal	919	920	Coal	
Uniontown Coal	1011	1012	Coal	
Pittsburgh Coal	1240	1245	Coal	No past, present, or permitted mine
Coal	1333	1337	Coal	SW @ 2257,2333,2370,2657
Big Lime	2526	2621	Limestone	
Big Injun	2636	2743	Sandstone	
Weir	2875	2992	Sandstone	Storage is NOT of concern
Int. csg pt	3042			Below Weir
Gantz	3285	3340	Silty Sand	
Fifty foot	3381	3431	Silty Sand	
Thirty foot	3442	3475	Silty Sand	
Gordon	3500	3516	Silty Sand	Offset gas production
Fourth Sand	3534	3544	Silty Sand	Offset gas production
Fifth Sand	3561	3600	Silty Sand	Offset gas production
Bayard	3627	3661	Silty Sand	Base of Offset Well Perforations at 3672' TVD
Speechley	4029	4097	Silty Sand	
Balltown A	4112	4250	Silty Sand	
Riley	5005	5064	Silty Sand	
Benson	5570	5663	Silty Sand	
Alexander	5965	6012	Silty Sand	
Elks	6012	7180	Gray Shales and Silts	
Sonyea	7180	7341	Gray shale	
Middlesex	7341	7389	Shale	
Genesee	7389	7475	Gray shale interbedded	
Genesee	7475	7501	Black Shale	
Tully	7501	7521	Limestone	
Hamilton	7521	7609	Gray shale with some	
Marcellus	7609	7660	Black Shale	
Purcell	7615	7621	Limestone	
-Lateral Zone	7643			Start Lateral at 7643'
Cherry Valley	7638	7640	Limestone	
Onondaga	7660		Limestone	

Top RR 315 Base RR 919 Base of Red Rock

Target Thickness	51 feet
Max Anticipated Rock Pressure	2620 PSI

Comments:
 Note that this is a TVD prog for a
 Intermediate casing point is
 The estimated landing point TVD

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LATERAL DRILLING TOLERANCES

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

RECOMMENDED CASING POINTS

Fresh Water/Coal	CSG OD	13 3/8	CSG DEPTH:	985	below deepest RR, as set in previous
Intermediate 1:	CSG OD	9 5/8	CSG DEPTH:	3042	Beneath the Weir formation
Production:	CSG OD	5 1/2	CSG DEPTH:	@ TD	



04/26/2019

February 12, 2019

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

Re: Casing on BIG333

Dear Mr. Brewer,

The 13-3/8" surface casing will be set at 985' KB, 232' below the deepest fresh water. The 9-5/8" intermediate string will be set at 3,042' KB, 50' below the base of the Weir formation.

If you have any questions, please do not hesitate to contact me at 724-746-9073.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Zavatchan'.

John Zavatchan
Landman - Permitting

Enc.

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WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. BIG333H12

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) Aunty Run of South Fork Fishing Creek 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: N/A

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Undergound Injection (UIC Permit Number See Attached)
- Reuse (at API Number Various)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

*DmH
3-4-19*

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 [Signature]

Company Official (Typed Name) John Zavatchan

Company Official Title Landman - Permitting

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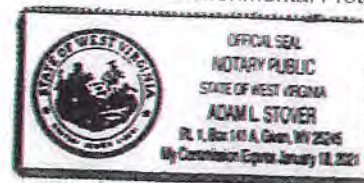
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Subscribed and sworn before me this 22nd day of February, 20 19

[Signature] Notary Public

My commission expires 1/18/2021



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.

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Operator's Well No. BIG333H12

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed No additional disturbance Prevegetation pH _____

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: _____

Title: Oil + Gas Inspector Date: 3-4-19

Field Reviewed? () Yes () No

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EQT Production Water Plan									
Offsite Disposals for Unconventional Wells									
Facility Name	Address	Address 2	City	State	Zip	Phone	County	State	Permit Number
CWS Trucking Inc.	P.O. Box 391		Williamstown	WV	26187	740-516-3586	Noble	OH	3390
Broad Street Energy LLC	37 West Broad Street	Suite 1100	Columbus	OH	43215	740-516-5381	Washington	OH	8462
LAD Liquid Assets Disposal Inc.	226 Rankin Road		Washington	PA	15301	724-350-2760	Ohio	WV	USEPA WV 0014
Triad Energy	PO Box 430		Reno	OH	45773	740-516-6021 740-374-2940	Noble	OH	4037
Tri County Waste Water Management, Inc.	1487 Toms Run Road		Holbrook	PA	15341	724-627-7178 724-499-5647	Greene	PA	TC-1009
King Excavating Co. Advance Waste Services	101 River Park Drive		New Castle	PA	16101		Lawrence	PA	PAR000029132
Waste Management - Meadowfill Landfill	Rt. 2, Box 68 Dawson Drive		Bridgeport	WV	16330	304-326-6027	Harrison	WV	SWF-1032-98 Approval #100785WV
Waste Management - Northwestern Landfill	512 E. Dry Road		Parkersburg	WV	26104	304-428-0602	Wood	WV	SWF-1025 WV-0109400
APEX Landfill	11 County Road 78	PO Box 57	Amsterdam	OH	43903	740-543-4389	Jefferson	OH	06-08438
Advanced Disposal - Chestnut Valley Landfill	1184 McClellandtown Road		McClellandtown	PA	15458	724-437-7336	Fayette	PA	100419
Westmoreland Sanitary Landfill	901 Tyrol Boulevard		Belle Vernon	PA	15012	724-929-7694	Westmoreland	PA	100277
Austin Master Services	801 North 1st Street		Martins Ferry	OH	43935	740-609-3800	Belmont	OH	2014-541
Belmont Solids Control	77505 Cadiz-New Athers Road		Cadiz	OH	43907	740-942-1739	Harrison	OH	2015-511
Diversified Resources	3111 Braun Rd.		Belpre	OH	45714	740-401-0413	Washington	OH	
Buckeye Brine	23986 Airport Road		Coshocton	OH	43812	740-610-1512 724-591-4393	Coshocton	OH	34-031-27177 34-031-27178 34-031-27241
Central Environmental Services	28333 West Belpre Pike		Coolville	OH	45723	304-488-0701	Athens	OH	
Nuverra - Nichols	10555 Veto Road		Belpre	OH	45714	330-232-5041	Washington	OH	34-119-2-8776
Nuverra - Goff	9350 East Pike Road		Norwich	OH	43767	330-232-5041	Muskingum	OH	34-167-2-3862
Nuverra - Wolf	5480 State Route 5		Newton Falls	OH	44444	330-232-5041	Trumbull	OH	34-155-2-1893
Nuverra - Pander	5310 State Route 5		Newton Falls	OH	44444	330-232-5041	Trumbull	OH	34-155-2-3795
Nuverra - AnnaRock D-1	3549 Warner Road		Fowler	OH	44418	330-232-5041	Trumbull	OH	34-155-2-2403

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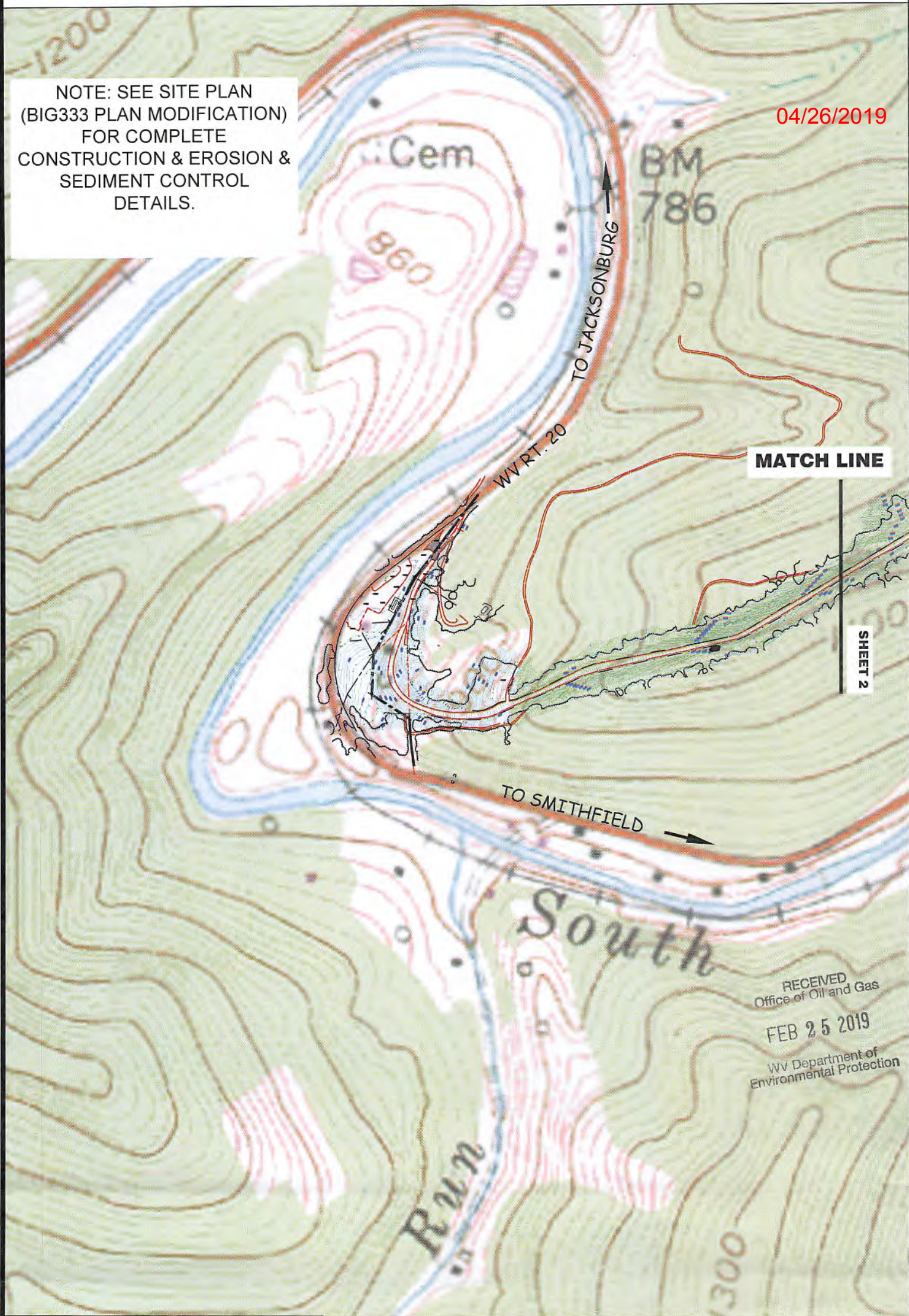
FQ Helen	199 Bowersock Road		Reno	OH	45773	740-374-2940 412-443-4397 740-236-2135	Washington	OH	34-167-2-9577
FQ Dexter	38505 Marletta Rd.		Dexter City	OH	45727	740-374-2940 412-443-4397 740-236-2135	Noble	OH	34-121-24037 34-121-24086
FQ Ritchie	122 Lonesome Pine Rd		Ellenboro	WV	26346	740-374-2940 412-443-4397 740-236-2135	Ritchie	WV	47-085-09721
FQ Mills	53610 TS Rd 706		Portland	OH	45770	740-374-2940 412-443-4397 740-236-2135	Meigs	OH	34-105-2-3619 34-105-2-3652 34-105-2-3637 34-105-2-3651
Petta Enterprises - OH	745 North 3rd Street		Cambridge	OH	43725	614-477-1368	Guernsey	OH	Ohio Chiefs Order 25-019
Petta Enterprises - WV	38 Technology Dr.		Tridelfphia	WV	26059	740-255-5727	Ohio	WV	
Deep Rock Disposal	2341 OH-821		Marietta	OH	45750	304-629-0176	Washington	OH	34-167-2-9766

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HART LEASE BIG333 WELLS

NOTE: SEE SITE PLAN
(BIG333 PLAN MODIFICATION)
FOR COMPLETE
CONSTRUCTION & EROSION &
SEDIMENT CONTROL
DETAILS.

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TOPO SECTION OF BIG RUN 7.5' TOPO
QUADRANGLE



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HART LEASE BIG333 WELLS

NOTE: SEE SITE PLAN
(BIG333 PLAN MODIFICATION)
FOR COMPLETE
CONSTRUCTION & EROSION &
SEDIMENT CONTROL
DETAILS.

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MATCH LINE

SHEET 3

MATCH LINE

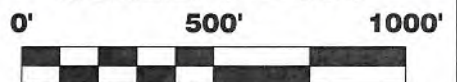
SHEET 1

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TOPO SECTION OF BIG RUN 7.5' TOPO
QUADRANGLE

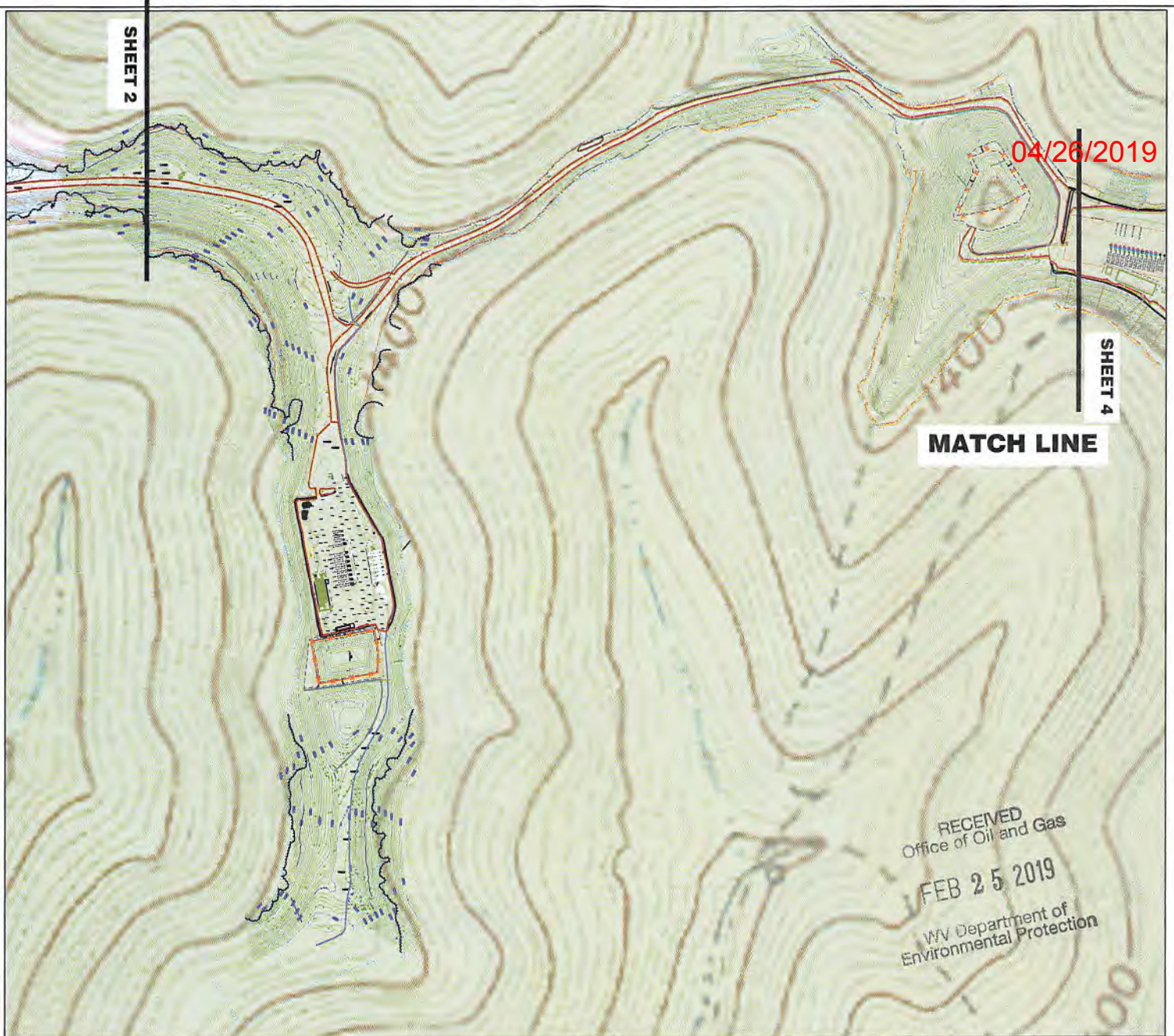
SHEET 2 OF 4
SCALE: 1"=500'



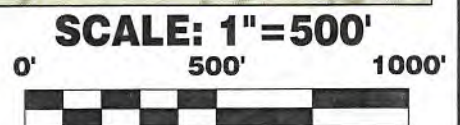
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HART LEASE BIG333 WELLS

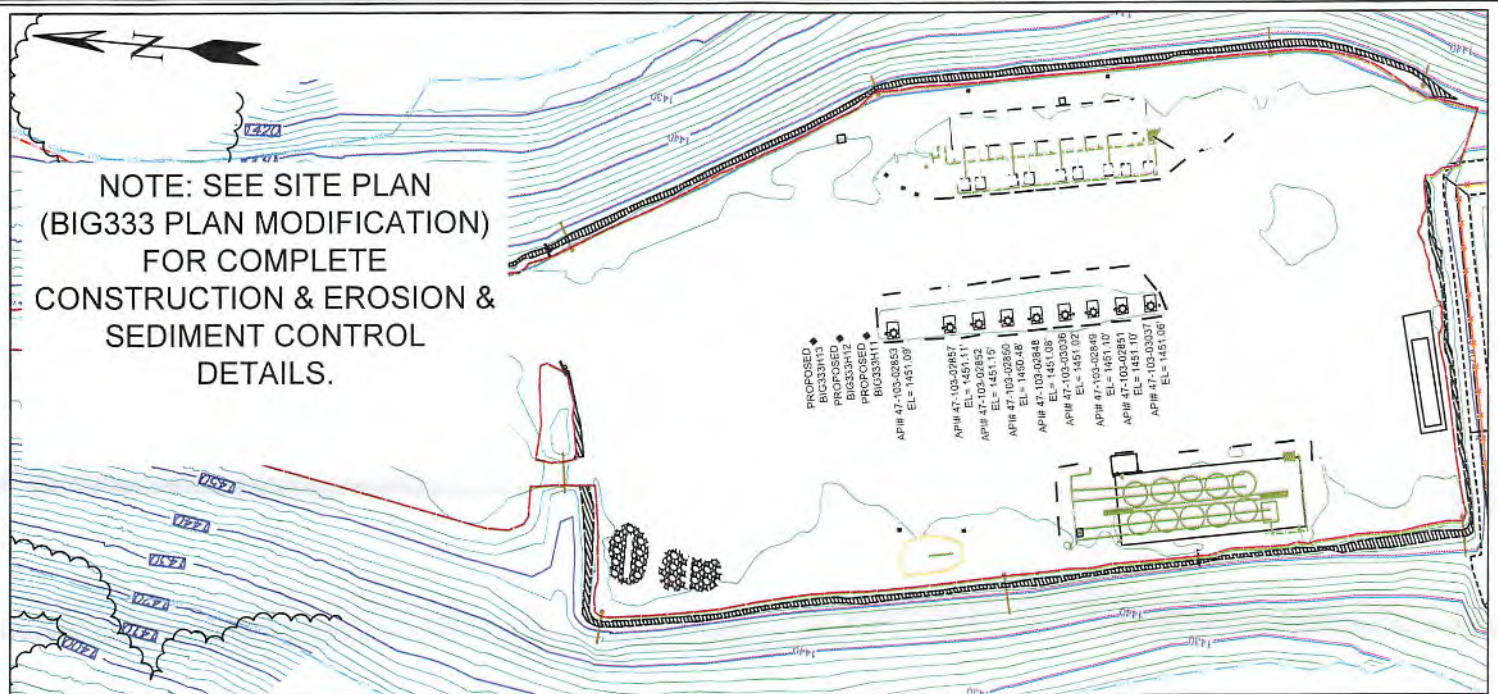
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Detail Sketch for AS BUILT BIG333



TOPO SECTION OF BIG RUN 7.5' TOPO QUADRANGLE



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HART LEASE BIG333 WELLS

NOTE: SEE SITE PLAN
(BIG333 PLAN MODIFICATION)
FOR COMPLETE
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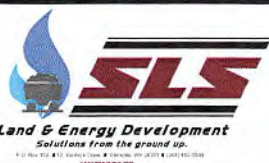
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SHEET 3

MATCH LINE

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SHEET 4 OF 4
SCALE: 1"=500'



TOPO SECTION OF BIG RUN 7.5' TOPO
QUADRANGLE

DRAWN BY K.L.H.	FILE NO. 7856	DATE 11-08-18	CADD FILE: 7856RECPLAN R2.dwg
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Where energy meets innovation™

Site Specific Safety and Environmental Plan

EQT

BIG333 Pad

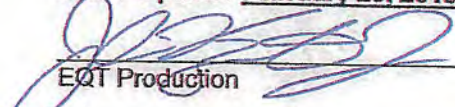
Jacksonburg

Wetzel County, WV

For Wells:

BIG333H11 BIG333H12 BIG333H13

Date Prepared: **February 23, 2018**

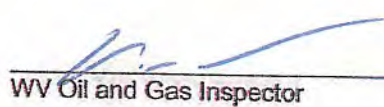


EQT Production

Title

2/23/18

Date



WV Oil and Gas Inspector

Title

3-4-19

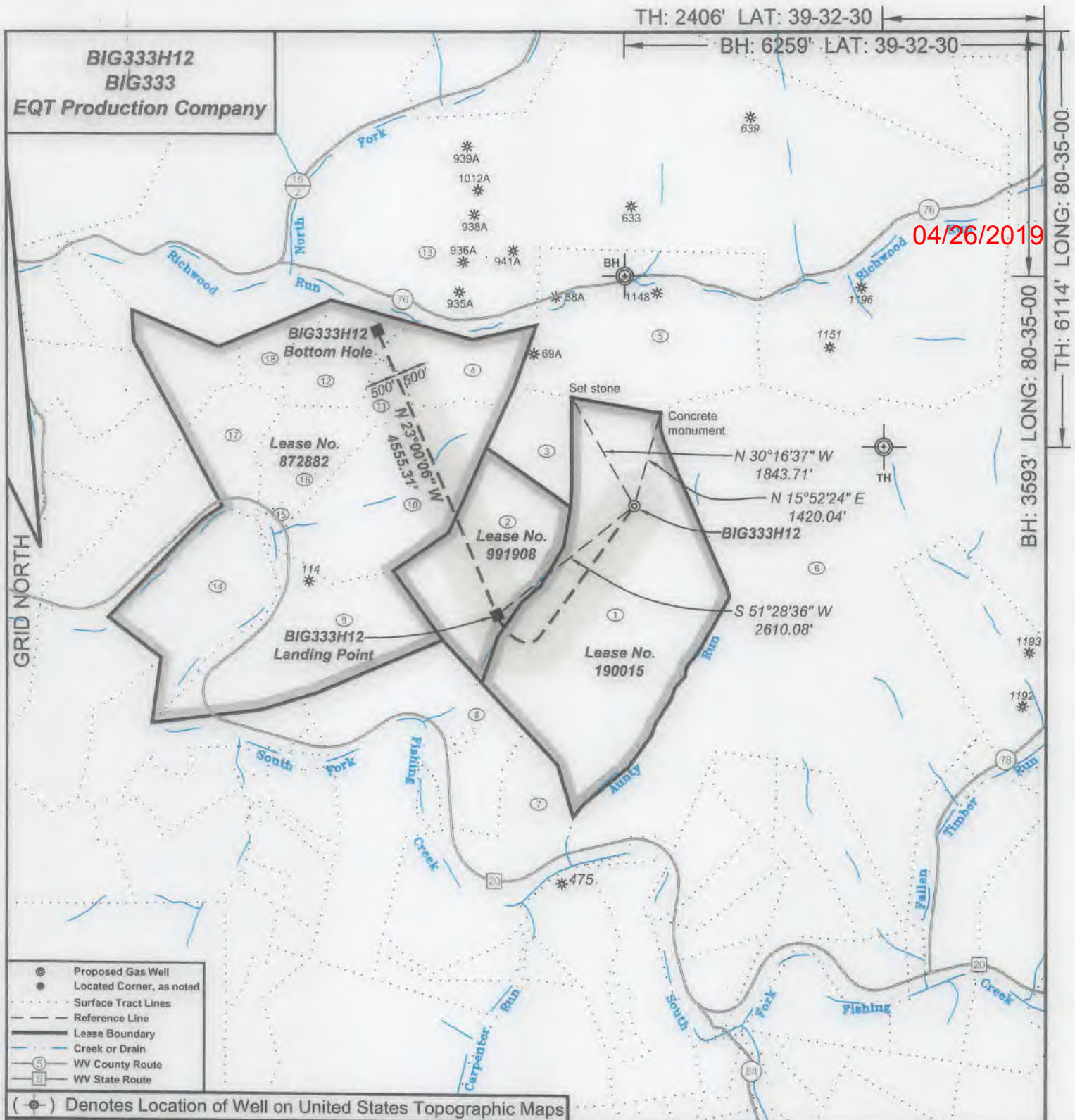
Date

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Office of Oil and Gas

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04/26/2019

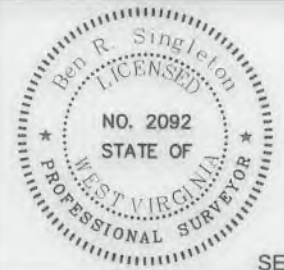
- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- - - Reference Line
- Lease Boundary
- Creek or Drain
- Ⓢ WV County Route
- ⓔ WV State Route

(⊙) 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. Statk
P.S. 2092



SEAL

FILE NO: 33-15
DRAWING NO: 33-15 BIG333H12
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: February 19 20 19
OPERATOR'S WELL NO.: BIG333H12
API WELL NO
47 - 103 - 03294
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built - 1451' WATERSHED Aunty Run of South Fork Fishing Creek QUADRANGLE: Big Run
DISTRICT: Grant COUNTY: Wetzel
SURFACE OWNER: Coastal Forest Resources Co., d/b/a Coastal Timberlands Co. ACREAGE: 283.6±
ROYALTY OWNER: Equitrans, Inc. LEASE NO: 190015 ACREAGE: 285±
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: 7,643'

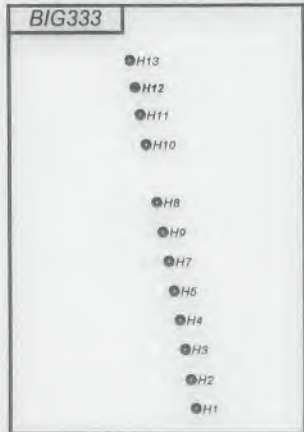
WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson
ADDRESS: 2400 Ansys Drive, Suite 200 ADDRESS: 115 Professional Place PO Box 280
Canonsburg, PA 15317 Bridgeport, WV 26330

BIG333H12
BIG333
EQT Production Company

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	23	13	Wetzel	Grant	Coastal Forest Resources Co.	283.60
2	23	12	Wetzel	Grant	Larry Larew, et al.	104.80
3	23	9	Wetzel	Grant	Larry Larew, et al.	31.50
4	23	4	Wetzel	Grant	Dallison Lumber, Inc.	36.10
5	23	5	Wetzel	Grant	Al Wyatt Hairs	174.68
6	23	14	Wetzel	Grant	Richard B. Dallison, et al.	879.30
7	28	8	Wetzel	Grant	Joseph W. Carlin	112.00
8	28	6	Wetzel	Grant	Joseph W. Carlin	190.74
9	23	11.4	Wetzel	Grant	Richard & Roxanne Funk, et al.	88.21
10	23	8	Wetzel	Grant	Richard & Roxanne Funk, et al.	113.61
11	23	3	Wetzel	Grant	Dallison Lumber, Inc.	15.00
12	23	2	Wetzel	Grant	Billy Dewayne Arnolds, Jr.	38.80
13	17	14	Wetzel	Grant	Coastal Forest Resources Co.	1627.60
14	22	44	Wetzel	Grant	Lydle Martyn & Sharon Irvin	88.15
15	23	7	Wetzel	Grant	Marcus E. & Linda S. Derby	3.19
16	23	7.1	Wetzel	Grant	Dallison Lumber, Inc.	49.65
17	23	6	Wetzel	Grant	Dallison Lumber, Inc.	46.62
18	23	1	Wetzel	Grant	Billy Dewayne Arnolds, Jr.	16.50

Notes:
 BIG333H12 coordinates are
 NAD 27 N: 375,155.21 E: 1,692,007.92
 NAD 27 Lat: 39.524882 Long: -80.591864
 NAD 83 UTM N: 4,375,114.78 E: 535,094.39
 BIG333H12 Landing Point coordinates are
 NAD 27 N: 373,529.56 E: 1,689,965.91
 NAD 27 Lat: 39.520351 Long: -80.599032
 NAD 83 UTM N: 4,374,609.10 E: 534,480.51
 BIG333H12 Bottom Hole coordinates are
 NAD 27 N: 377,722.70 E: 1,692,007.92
 NAD 27 Lat: 39.531803 Long: -80.605524
 NAD 83 UTM N: 4,375,877.52 E: 533,916.93
 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.

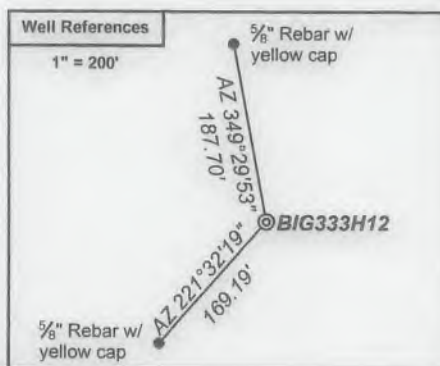
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Lease No.	Acres	Owner
991908	104.8	Brian C. Fox, et al.
872882	436	Shiben Estates



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

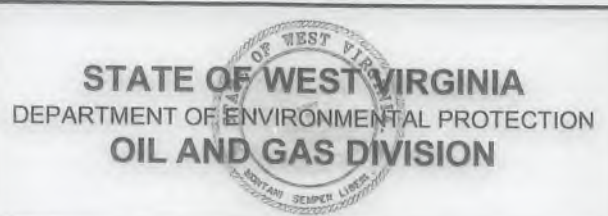


I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.

Ben R. Stahl
 P.S. 2092



FILE NO: 33-15
 DRAWING NO: 33-15 BIG333H12
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: February 19 20 19
 OPERATOR'S WELL NO.: BIG333H12
 API WELL NO
 47 - 103 - 03294
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built - 1451' WATERSHED Aunty Run of South Fork Fishing Creek QUADRANGLE: Big Run
 DISTRICT: Grant COUNTY: Wetzel
 SURFACE OWNER: Coastal Forest Resources Co., d/b/a Coastal Timberlands Co. ACREAGE: 283.6±
 ROYALTY OWNER: Equitrans, Inc. LEASE NO: 190015 ACREAGE: 285±
 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: 7,643'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Jason Ranson
 ADDRESS: 2400 Ansys Drive, Suite 200 ADDRESS: 115 Professional Place PO Box 280
Canonsburg, PA 15317 Bridgeport, WV 26330

WW-6A1
(5/13)Operator's Well No. BIG333H12

**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				

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**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 CompanyBy: John ZavatchanIts: Landman - Permitting

WW-6A1 attachment

BIG333H12

<u>Lease No.</u>	<u>Grantor, Lessor, etc.</u>	<u>Grantee, Lessee, etc.</u>	<u>Royalty</u>	<u>Book/Page</u>
<u>190015</u>	(current royalty owner)		**	
	Alex Hart, et al. (original lessor)	The Philadelphia Company of West Virginia		DB 93/392
	The Philadelphia Company of West Virginia	Pittsburgh & West Virginia Gas Company		DB 146/98
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		DB 187/321
	Equitable Gas Company	Equitrans, Inc.		DB 71A/453
	Equitrans, Inc.	Equitrans, L.P		DB 105/908
	Equitrans, L.P	Equitable Production-Eastern States, Inc.		DB 320/607
	Equitable Production-Eastern States, Inc.	Equitable Production Company		CB13/14
	Equitable Production Company	EQT Production Company		CB13/14
<u>991908</u>	Colleen Ann Chapman	EQT Production Company		134A/805
<u>872882</u>	Shiben Estates, Inc (current royalty owner)			
	David Cox and Samantha Cox (original lessor)	Greenlee and Forst		39/109
	Forst	Greenlee		46/511
	Greenlee	United States Oil Company		46/411
	United States Oil Company	South Penn Oil Company		88/208
	South Penn Oil Company	South Penn Natural Gas Company		33A/455
	South Penn Natural Gas Company	South Penn Oil Company (Pennzoil Company)		215/478
	Pennzoil Company	Pennzoil Products Company		319/397
	Pennzoil Products Company	Pennzoil Exploration and Production Company		363/384
	Pennzoil Exploration and Production Company	Devon Energy Produciton Company, L.P.		12/278 merger
	Devon Energy Produciton Company, L.P.	East Resources, Inc		370/580
	East Resources, Inc	HG Energy, LLC		118A/253
	East Resources, Inc/HG Energy	American Energy - Marcellus, LLC		153A/238
	American Energy - Marcellus, LLC	Ascent Resources - Marcellus LLC		114/619 name change
	Ascent Resources- Marcellus, LLC	EQT Production Company		182A/183

** Per West Virginia Code Section 22-6-8.

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04/26/2019

EQT Production Company
2400 Ansys Drive, Suite 200
Canonsburg, PA 15317
www.eqt.com

John Zavatchan
Landman - Permitting
O:724-746-9073
jzavatchan@eqt.com



February 12, 2019

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

Re: BIG333H12 Gas Well
Grant District, Wetzel County

Dear Mr. Brewer,

EQT Production Company is applying for a new well work permit for the well referenced above. Upon information and belief, the 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 'J. Zavatchan', is written over a light blue horizontal line.

John Zavatchan
Landman - Permitting

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

Date of Notice Certification: 02/22/2019

API No. 47- _____ - _____
Operator's Well No. BIG333H12
Well Pad Name: BIG333

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>West Virginia</u>	UTM NAD 83	Easting:	<u>4,375,114.78</u>
County:	<u>Wetzel</u>		Northing:	<u>535,094.39</u>
District:	<u>Grant</u>	Public Road Access:	<u>CR 20</u>	
Quadrangle:	<u>Big Run</u>	Generally used farm name:	<u>Coastal Forest Resources Co., d/b/a Coastal Timberlands Co.</u>	
Watershed:	<u>Aunty Run of South Fork Fishing Creek</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

- 1. NOTICE OF SEISMIC ACTIVITY or NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED
- 2. NOTICE OF ENTRY FOR PLAT SURVEY or NO PLAT SURVEY WAS CONDUCTED
- 3. NOTICE OF INTENT TO DRILL or NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)
- 4. NOTICE OF PLANNED OPERATION
- 5. PUBLIC NOTICE
- 6. NOTICE OF APPLICATION

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OOG OFFICE USE ONLY

- RECEIVED/ NOT REQUIRED
- RECEIVED
- RECEIVED/ NOT REQUIRED
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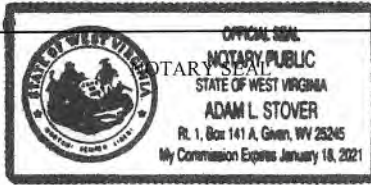
Required Attachments:

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 John Zavatchan, 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:	<u>EQT Production Company</u>	Address:	<u>2400 Ansys Drive, Suite 200</u>
By:	<u>John Zavatchan</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Landman - Permitting</u>	Facsimile:	<u>724-745-2418</u>
Telephone:	<u>724-746-9073</u>	Email:	<u>jzavatchan@eqt.com</u>



Subscribed and sworn before me this 22nd day of February 2019.

[Signature] Notary Public

My Commission Expires 1/18/2021

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.

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WW-6A
(9-13)

4710303294
API NO. 47- _____
OPERATOR WELL NO. BIG333H12
Well Pad Name: BIG333

04/26/2019

**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: 02/22/2019 **Date Permit Application Filed:** 02/22/2019

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 List
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: See Attached List
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: See Attached List
Address: _____

COAL OWNER OR LESSEE

Name: See Attached List
Address: _____

COAL OPERATOR

Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: N/A
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: N/A
Address: _____

*Please attach additional forms if necessary

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Surface Owners:

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

Surface Owners (road or other disturbance):

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

Richard B. and Jaynee C. Dallison
28855 Shortline Hwy.
Folsom, WV 26348

Thomas P. Dallison
452 Trader Fork Road
Smithfield, WV 26437

Trenton D. Dallison
2975 Barker Run Road
Pine Grove, WV 26419

Richard and Roxanne Funk
4832 Fairport Road
Newton Falls, OH 44444

Larry Larew
12750 W Middletown Road
Salem, OH 44460

Lydle M. Martyn
P.O. Box 7
Jacksonburg, WV 26377

Surface Owners (Pits or impoundments):

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

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4710303294

Coal Owner

CNX Land LLC
Attn: Analyst Engineering and Operations Support Dept. Coal
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317 – 6506

Roxanna Yost Hafer
460 N Main Street
New Martinsville, WV 26155

Betty Jean Woods
7 Ross Street
New Martinsville, WV 26155

Forrest O. Miller
P.O. Box 1664
Lexington, KY 40588

Murray American Energy, Inc.
1 Bridge Street
Monongah, WV 26554

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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 and Gas 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.

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WV Department of Environmental Protection

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

WW-6A
(8-13)

4710303294
API NO. 47- - 04/26/2019
OPERATOR WELL NO. BIG333H12
Well Pad Name: BIG333

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

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.**

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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.

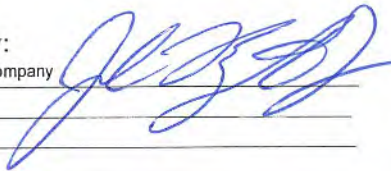
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WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 4710303294
OPERATOR WELL NO. BIG333H12 **04/26/2019**
Well Pad Name: BIG333

Notice is hereby given by:

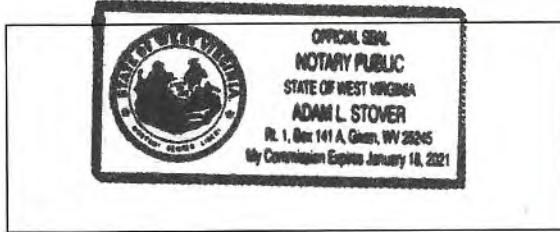
Well Operator: EQT Production Company
Telephone: 724-746-9073
Email: jzavatchan@eqt.com



Address: 2400 Ansys Drive, Suite 200
Canonsburg, PA 15317
Facsimile: 724-745-2418

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.



Subscribed and sworn before me this 22nd day of Feb, 2019.

[Signature] Notary Public

My Commission Expires 1/18/2021

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Topo Quad: Big Run

Scale: 1"=1500'

4710303294
04/26/2019

County: Wetzel

Date: February 19, 2019

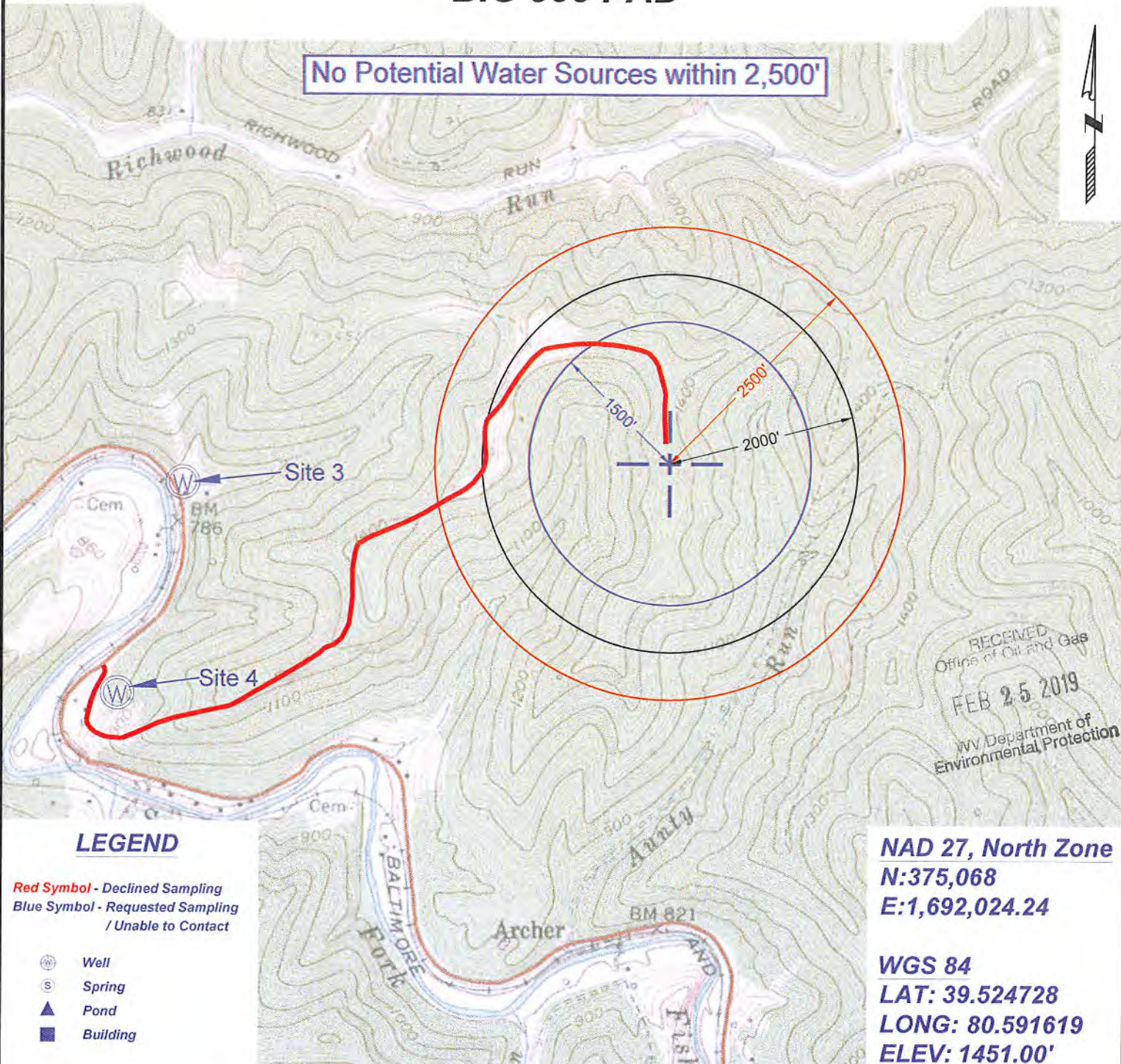
District: Grant

Project No: 33-34-G-15

Water

BIG 333 PAD

No Potential Water Sources within 2,500'



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LEGEND

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

- ⊙ Well
- ⊙ Spring
- ▲ Pond
- Building

NAD 27, North Zone
N:375,068
E:1,692,024.24

WGS 84
LAT: 39.524728
LONG: 80.591619
ELEV: 1451.00'



SURVEYING AND MAPPING SERVICES PERFORMED BY: **ALLEGHENY SURVEYS, INC.** PREPARED FOR: **EQT Production Company**

1-800-482-8606
237 Birch River Road
Birch River, WV 26610
PH: (304) 649-8606
FAX: (304) 649-8608

2400 Ansys Drive
Canonsburg, PA 15317



Table 1 – Water Source Identification

EQT Well Pad Name: **Big 333**

Submittal Date: **February 19, 2019**

EQT Well Number: _____

Survey / Engineering Company: **Allegheny Surveys, Inc.**

Site Number: **1** Distance from Gas Well (feet): _____

Surface Owner / Occupant: **Coastal Forest Resources Co.**

Address: **PO BOX 709 BUCKHANNON WV 26201** Phone #: **304-460-7000 ext. 130**

Field Located Date: _____ Owner home during survey (yes/no): _____

Coordinates: _____ (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: **10/12/2018** 2nd: _____ Door Hanger Left: _____

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Landowner Requested Sampling |
| <input checked="" type="checkbox"/> | Landowner Decline Sampling |
| <input type="checkbox"/> | Unable to Contact
(Further contact attempts to be made by EQT's third party pre-drill sampling lab) |

Comments: **Certified letter sent October 12, 2018. Signed for by Nathan Feather. Letter returned declining sampling, signed by Matt Cornett.**

Site Number: **2** Distance from Gas Well (feet): _____

Surface Owner / Occupant: **Richard and Jaynee Dallison**

Address: **28855 Shortline Hwy. Folsom WV 26348-6021** Phone #: _____

Field Located Date: _____ Owner home during survey (yes/no): _____

Coordinates: _____ (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: **10/12/2018** 2nd: _____ Door Hanger Left: _____

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Landowner Requested Sampling |
| <input checked="" type="checkbox"/> | Landowner Decline Sampling |
| <input type="checkbox"/> | Unable to Contact
(Further contact attempts to be made by EQT's third party pre-drill sampling lab) |

Comments: **Certified letter sent October 12, 2018. Signed for by Richard Dallison. Letter returned declining sampling and indicated that there is no well, signed by Jaynee Dallison on 10/30/2018.**

Site Number: **3** Distance from Gas Well (feet): **5,100 ±**

Surface Owner / Occupant: **Richard and Roxanne Funk**

Address: **12750 MIDDLETOWN RD. SALEM OH 44460** Phone #: **304-889-2215**

Field Located Date: _____ Owner home during survey (yes/no): _____

Coordinates: **39.523752, -80.609663** (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: **10/12/2018** 2nd: _____ Door Hanger Left: _____

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Landowner Requested Sampling |
| <input type="checkbox"/> | Landowner Decline Sampling |
| <input checked="" type="checkbox"/> | Unable to Contact
(Further contact attempts to be made by EQT's third party pre-drill sampling lab) |

Comments: **Certified letter sent October 12, 2018. Was not delivered and returned marked "Insufficient address." Tax records double checked and no other address found. According to previous report, water well was sampled 03/2013.**

(Insert additional pages as needed)

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Site Number: 4 Distance from Gas Well (feet): 6,361 ±

Surface Owner / Occupant: **Bryan Brown**

Address: **PO BOX 46 Jacksonburg, WV 26377** Phone #: _____

Field Located Date: _____ Owner home during survey (yes/no): **No**

Coordinates: **39.517796, -80.612321** (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: **10/12/2018** 2nd: _____ Door Hanger Left: **Yes**

<input checked="" type="checkbox"/>	Landowner Requested Sampling
<input type="checkbox"/>	Landowner Decline Sampling
<input type="checkbox"/>	Unable to Contact <small>(Further contact attempts to be made by EQT's third party pre-drill sampling lab)</small>

Comments: **Certified letter mailed 10/12/2018 and signed for by Tracey Brown. Field visit on 10/15/2018 - doorhanger was left. Received signature page in mail on 11/27/2018 requesting testing, with this note: "Yes, in the house only -- We had to get a whole house system after they caused damage to our well building the road."**

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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: 10/10/2018 **Date Permit Application Filed:** 02/22/2019

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: See Attached List Name: _____
Address: _____ 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: West Virginia UTM NAD 83 Easting: 535,094.39
County: Wetzel Northing: 4,375,114.78
District: Grant Public Road Access: CR 20
Quadrangle: Big Run Generally used farm name: Coastal Forest Resources Co., d/b/a Coastal Timberland Co.
Watershed: Aunty Run of South Fork Fishing Creek

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: 2400 Ansys Drive, Suite 200
Canonsburg, PA 15317
Telephone: 724-746-9073
Email: jzavatchan@eqt.com
Facsimile: 724-745-2418

Authorized Representative: John Zavatchan
Address: 2400 Ansys Drive, Suite 200
Canonsburg, PA 15317
Telephone: 724-746-9073
Email: jzavatchan@eqt.com
Facsimile: 724-745-2418

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Environmental Protection

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 dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

Surface Owners (road or other disturbance):

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

Richard B. and Jaynee C. Dallison
28855 Shortline Hwy.
Folsom, WV 26348

Thomas P. Dallison
452 Trader Fork Road
Smithfield, WV 26437

Trenton D. Dallison
2975 Barker Run Road
Pine Grove, WV 26419

Richard and Roxanne Funk
4832 Fairport Road
Newton Falls, OH 44444

Larry Larew
12750 W Middletown Road
Salem, OH 44460

Lydle M. Martyn
P.O. Box 7
Jacksonburg, WV 26377

Surface Owners (Pits or impoundments):

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

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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: 02/22/2019 **Date Permit Application Filed:** 02/22/2019

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

- CERTIFIED MAIL 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 List</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>West Virginia</u>	UTM NAD 83	Easting: <u>535,094.39</u>
County: <u>Wetzel</u>		Northing: <u>4,375,114.78</u>
District: <u>Grant</u>	Public Road Access: <u>CR 20</u>	
Quadrangle: <u>Big Run</u>	Generally used farm name: <u>Coastal Forest Resources Co., d/b/a Coastal Timberlands Co.</u>	
Watershed: <u>Aunty Run of South Fork Fishing Creek</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>2400 Ansys Drive, Suite 200</u>
Telephone: <u>724-746-9073</u>	<u>Canonsburg, PA 15317</u>
Email: <u>jzavatchan@eqt.com</u>	Facsimile: <u>724-745-2418</u>

Oil and Gas Privacy Notice:

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Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

Surface Owners (road or other disturbance):

Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
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Lydle M. Martyn
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Coastal Forest Resources dba Coastal Timberlands Company
P.O. Box 709
Buckhannon, WV 26201

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04/26/2019

Coal Owner

CNX Land LLC
Attn: Analyst Engineering and Operations Support Dept. Coal
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317 – 6506

Roxanna Yost Hafer
460 N Main Street
New Martinsville, WV 26155

Betty Jean Woods
7 Ross Street
New Martinsville, WV 26155

Forrest O. Miller
P.O. Box 1664
Lexington, KY 40588

Murray American Energy, Inc.
1 Bridge Street
Monongah, WV 26554

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04/26/2019

Owners of Water Wells
N/A

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Thomas J. Smith, P. E.
 Secretary of Transportation/
 Commissioner of Highways

November 9, 2018

Jill M. Newman
 Deputy Commissioner

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 BIG333 Pad Site, Wetzel County
 BIG333H11 Big333 H12 Big333 H13

Dear Mr. Martin,

This well site will be accessed from existing Permits # 06-2012-0519 & 06-2014-0558 issued to EQT Production Company for access to the State Road for a well site located off of Wetzel County Route 76 SLS and WV Route 20 F.

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

RECEIVED
 Office of Oil and Gas

FEB 25 2019

WV Department of
 Environmental Protection

Anticipated Frac Additives
Chemical Names and CAS numbers

4710303294
04/26/2019

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

RECEIVED
Office of Oil and Gas
FEB 25 2019
WV Department of
Environmental Protection

BIG-333 AS-BUILT SITE PLAN EQT PRODUCTION COMPANY



PROJECT INFORMATION

PROJECT NAME: BIG-333 AS-BUILT SITE PLAN

TAX PARCEL:
GRANT DISTRICT
MAP 23 13

SURFACE OWNER
COASTAL FOREST RESOURCES COMPANY A/R/A
COASTAL TIMBERLANDS COMPANY
GRANT DISTRICT
WETZEL COUNTY, WV
TOTAL PROPERTY AREA: 289.0 ACRES

ROYALTY OWNER
ALEX HART ET AL
GRANT DISTRICT
WETZEL COUNTY, WV
TOTAL PROPERTY AREA: 289.0 ACRES

SITE LOCATION

THE BIG-333 SITE IS LOCATED ON A RIDGE SOUTH OF CO RT 78 AND NORTH OF WV RT 20. THE SITE IS APPROXIMATELY 7,225 FT NORTHWEST OF THE CO RT 78 AND WV RT 20 INTERSECTION. ACCESS TO THE BIG-333 SITE BEGINS AT COUNTY RT 78. THE BIG-192 AS-BUILT ACCESS ROAD IS INCLUDED IN THIS PLAN.

LOCATION COORDINATES

BIG-333 COUNTY RT 78 ENTRANCE
LATITUDE: 39 534.87 LONGITUDE: 80 885982 (NAD 83)

BIG-332 WELL PAD
LATITUDE: 39 524.97 LONGITUDE: 80 881810 (NAD 83)

BIG-333 ASSOCIATED PIT
LATITUDE: 39 523600 LONGITUDE: 80 881815 (NAD 83)

SITE DISTURBANCE COMPUTATIONS

ACCESS ROAD AREA: 2.6 ACRES
PAD AREA: 3.92 ACRES
PIT & STOCKPILE AREA: 10.7 ACRES
TOTAL AS-BUILT DISTURBANCE: 17.4 ACRES

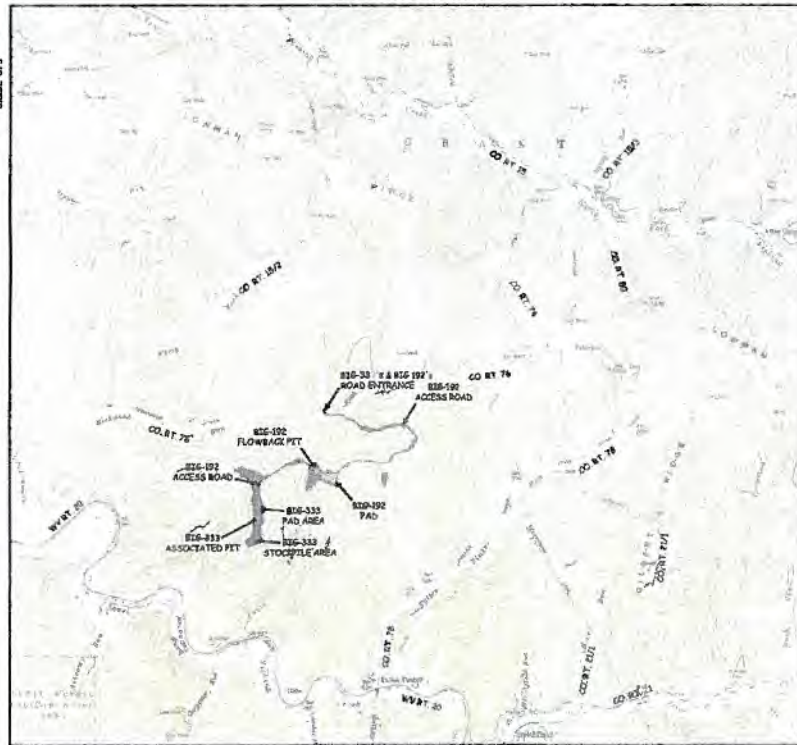
GENERAL DESCRIPTION

THE WELL PAD AND ASSOCIATED PIT HAVE BEEN CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

API NO. 47-103-02851, 47-103-02849, 47-103-02848, 47-103-02850, 47-103-02852, 47-103-02857, 47-103-02853, & 47-103-03025. PROPOSED WELLS WV 514416 & WV 514419.

SITUATE ON THE WATERS OF TRIBUTARIES OF SOUTH FORK,
OF FISHING CREEK & AUNTY RUN
IN GRANT DISTRICT, WETZEL COUNTY, WEST VIRGINIA.

LOCATION MAP



BIG RUN QUAD



SCALE 1"=2000'

LIST OF DRAWINGS

- 1 COVER SHEET
- 2 CONSTRUCTION NOTES
- 3 INDEX SHEET
- 4 BIG-333 SITE AS-BUILT (PAD AND PIT)
- 5 BIG-333 STOCKPILE AS-BUILT
- 6 BIG-192 ACCESS ROAD AS-BUILT
- 7 BIG-192 ACCESS ROAD AS-BUILT
- 8 BIG-192 BTRV AS-BUILT (PAD AND PIT)
- 9 BIG-192 ACCESS ROAD AS-BUILT
- 10 BIG-192 ACCESS ROAD AS-BUILT
- 11 BIG-192 ACCESS ROAD AS-BUILT
- 12 BIG-192 ACCESS ROAD AS-BUILT
- 13 BIG-192 ACCESS ROAD AS-BUILT
- 14 CONSTRUCTION DETAILS

LEGEND

LINE OF DISTURBANCE	---
COMPOST FILTER SORE	---
BOUNDARY LINE	---
ROAD EDGE OF CULVERT/DRY	---
ROAD EDGE OF PAVEMENT	---
ROAD CENTERLINE	---
ENCLOSURE	---
CULVERT	---
FENCELINE	---
GATE	---
OVERHEAD UTILITY	---
OVERHEAD UTILITY R/W	---
POWER POLE	---
CUT FILL	---
TELEPHONE LINE	---
CABLE R/W	---
WATERLINE	---
WATERING WELL	---
TRENCH	---
REFERENCE TREE	---
DETERMINED STREAM	---
DETERMINED WETLAND	---
STRUCTURE	---
PIPELINE MARKER	---
FOOTPRINT	---
EDGE OF GRAVEL PAD	---
EDGE OF BERM	---
SUPER BAY FENCE	---
NONFORCED SELF FENCE	---
BERM	---
GRAVEL	---
ORIGINAL GROUND & CONTROLS AS BUILT BY COMPUTER	---
PHOTO NUMBER & LOCATION AS BUILT WELL LOCATIONS	---
PROPOSED WELL LOCATIONS	---
SPOT ELEVATIONS	---
MATCHLINE	---

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!



Dm4
12-17-14

DATE: 8-21-14
 BY: [Signature]
 SCALE: 1"=2000'
 DESIGNED BY: WAV
 FILE NO: 7858
 SHEET: 1 OF 14
 100% COMPLETE

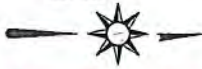
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 Where energy needs inspire innovation.

Professional Energy Consultants
 A Division of SLS
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 Charleston, WV 25301
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 Fax: 304.763.1112
 www.slsinc.com

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BIG-333 AS-BUILT SITE PLAN
 THIS DOCUMENT WAS PREPARED BY SLS INC. ENGINEERS, INC. FOR EQT.

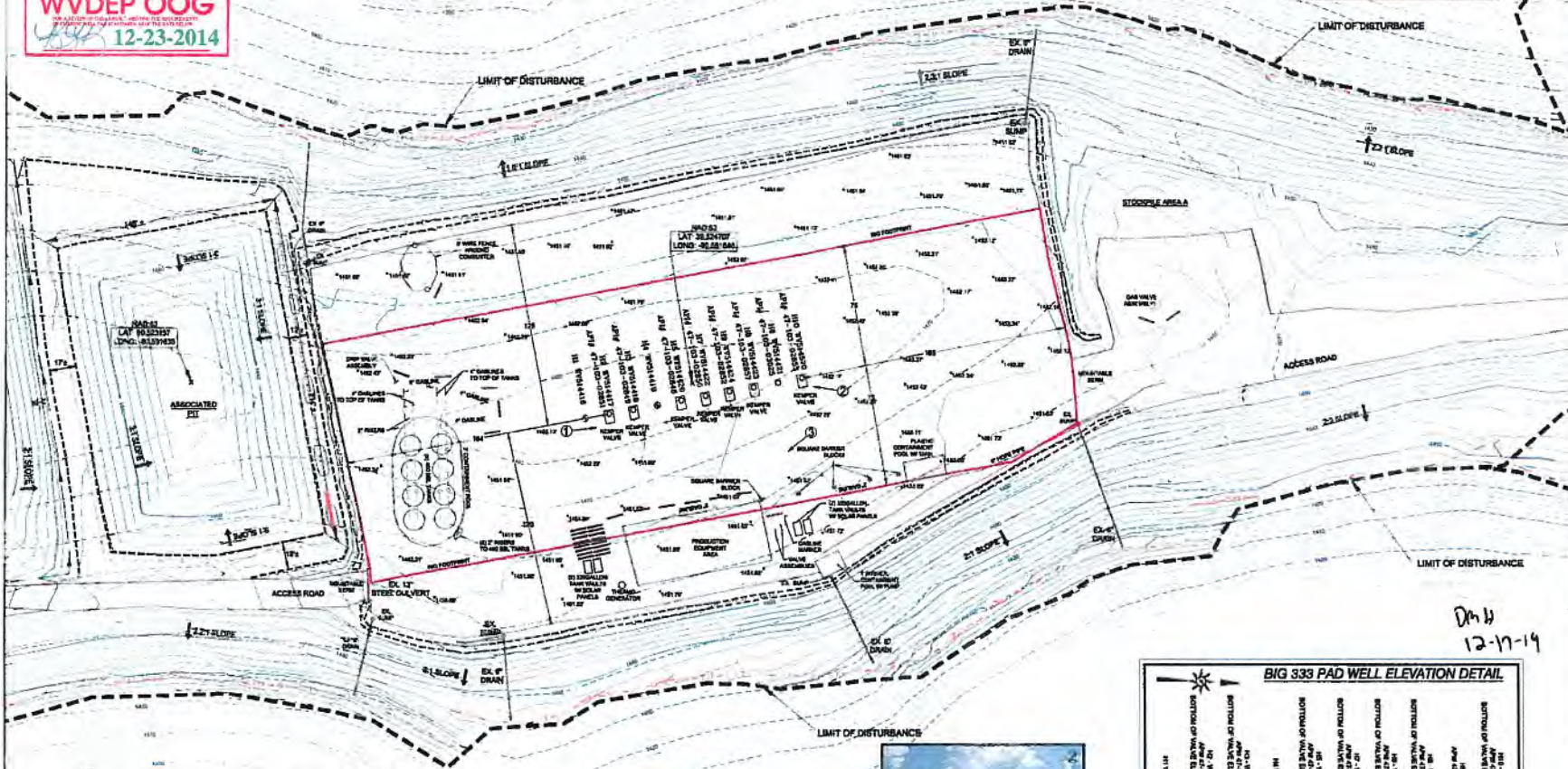
GRID NORTH AND ELEVATIONS SHOWN
HEREIN WERE OBTAINED BY D.P.P.
SURVEY GRADE



**APPROVED
WVDEP OOG**
ON BEHALF OF THE STATE DEPARTMENT OF ENVIRONMENTAL
PROTECTION
12-23-2014

BIG 333 AS-BUILT SITE PLAN

SITUATE ON THE WATERS OF TRIBUTARIES OF SOUTH FORK,
OF FISHING CREEK & AUNTY RUN
IN GRANT DISTRICT, WETZEL COUNTY, WEST VIRGINIA.



REVISED: DATE: 12/23/14, DESCRIPTION: UPDATE AND REVISION: PLAN VIEW: P.L.S.

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SLS
SOUTH LANE SURVEYING, INC.
1004 42ND ST
MARTINSBURG, WV 26151
304-251-1111

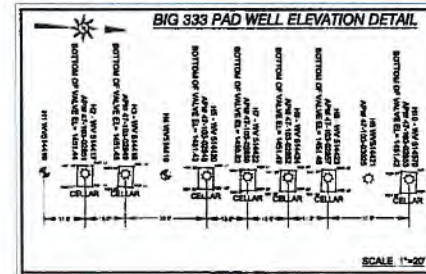
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**BIG 333
AS-BUILT SITE PLAN**

THIS DOCUMENT WAS PREPARED BY
SOUTH LANE SURVEYING, INC.
FOR EQT PRODUCTION COMPANY

DATE: 9-21-14
DWT
SCALE: 1" = 30'
DESIGNED BY: DWS
FILE NO: 7854
SHEET 4 OF 14
THIS IS A PART OF A SET OF PLANS.

DW 11
12-17-14



LEGEND

- PROPOSED LIMITS OF DISTURBANCE
- BOUNDARY PER RECORD
- ADJACENT PROPERTY
- EDGE OF DRIVE
- ADJACENT PROPERTY
- TOP OF BANK
- SPURVEY
- PROPOSED WELL LOCATIONS
- EXISTING WELL LOCATIONS
- SPURVEY
- PHOTO NUMBER & LOCATION

ADVERTISEMENTS

IF THE CERTIFICATION OF THIS DRAWING APPLIES ONLY TO ONE PORTION OF THE DRAWING, THE CERTIFICATION SHALL BE LIMITED TO THAT PORTION OF THE DRAWING. THE PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR ANY CHANGES MADE AFTER THE DATE APPROVED WHICH MAY AFFECT THE RESPONSIBILITY OF THE ENGINEER.

1. AREA IS COMPILED FROM THE AS-BUILT DRAWINGS AND SHOWS AND ASSES FOR THE INFORMATION OF THE CLIENT. THE PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR ANY CHANGES MADE AFTER THE DATE APPROVED WHICH MAY AFFECT THE RESPONSIBILITY OF THE ENGINEER.

2. THE WELL LOCATIONS SHOWN HEREON ARE FOR INFORMATION ONLY AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE.

3. THE AS-BUILT FOR THE COMPANIES IS SHOWN HEREON AND APPROVED FOR THE AS-BUILT DRAWINGS SHOWN HEREON AND APPROVED.

CONSTRUCTION NOTES

1. This well pad construction forms and materials shall be used in accordance with the approved plans and shall be installed prior to commencement of any additional well work or other activities on the pad.

