



 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

Tuesday, March 5, 2019
 WELL WORK PERMIT
 Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
 625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit approval for BIG 245 H6
 47-103-03267-00-00

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: BIG 245 H6
 Farm Name: ET BLUE GRASS, LLC
 U.S. WELL NUMBER: 47-103-03267-00-00
 Horizontal 6A New Drill
 Date Issued: 3/5/2019

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: BIG245
County: Wetzel

10/17/2018

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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 **BIG245H4, BIG245H5, BIG245H6**.

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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UWI	ABAND_DATE	COMP_DATE	CURR_OPER	ELEVATION	ELEV_REF_CD	FINL_STAT	LATITUDE	LONGITUDE	USE_NAME	PERMIT_DT	SPUD_DATE	TD_FORWALD	REASON_OF
47103002910000	5/11/1949	5/1/1949	CARRIEGE NATURAL GAS CORPORATION	1305 GR	ABD-GW	39.5703	-80.5506	1 HIBES SARAH V		3/17/1949	4/1/1949	DEVON/WV/INJUN/SD/	291
47103002034000	6/19/1948	8/4/1913	DUNNIE NATURAL GAS CORPORATION	GR	UNKNW	39.5822	-80.5758	747 C BROOKOVER 1					294
47103000509000	1/1/1948	3/19/1915	DUNN-MAR OIL & GAS COMPANY	1155 GR	ABD-GW	39.5860	-80.5608	5398 ISAAC HIGGINBOTHAM 1		12/8/1918	12/23/1918	CHEMUNG	509
47103003646000		6/1/1953	EQT PRODUCTION COMPANY	1197 GR	ABD-GW	39.5772	-80.5682	3725 F J HIGGINBOTHAM		1/10/1915	1/25/1915	HAMPSHIRE	30646
47103000386000		1/1/1962	EQUITABLE GAS COMPANY	847 GR	GAS-CB	39.5986	-80.5752	1 H L SMITH		4/7/1953	5/2/1953	CONEMAUGH /SERIES/	570
47103000523000		1/1/1963	EQUITABLE GAS COMPANY	836 GR	UNKNW	39.5794	-80.5653	5454 ADA R KING				BIG INJUN /SD/	1850
47103000517000		6/1/1962	EQUITABLE GAS COMPANY	846 GR	GSTG	39.5810	-80.5569	5451 F SHREVE		11/7/1962	12/2/1962	BIG INJUN /SD/	523
47103004990000		6/1/1962	EQUITABLE GAS COMPANY	869 GR	GSTG	39.5977	-80.5753	5449 M D SMITH		4/7/1962	5/2/1962	BIG INJUN /SD/	523
47103000524000	6/29/1990	4/5/1919	EQUITABLE GAS COMPANY	972 GR	GAS	39.5848	-80.5693	5434 SOLE		1/7/1919	1/22/1919	CHEMUNG	2712
47103000861000			EQUITABLE GAS COMPANY	1000 GR	UNKNW	39.6000	-80.5582	5198 ASHCRAFT				UNKNOWN	2882
47103005340000			EQUITABLE GAS COMPANY	1067 GR	GSTG	39.5826	-80.5590	5443 SOLE				CHEMUNG	3500
47103000494000	1/1/1962		EQUITABLE GAS COMPANY	1086 GR	GSTG	39.5863	-80.5734	5431 D KOHN				CHEMUNG	2088
47103000310000	10/4/1953	12/30/1915	EQUITABLE GAS COMPANY	1098 GR	PSEUDO	39.5771	-80.5540	5440 C BROWN ETAL 1		10/31/1915	11/15/1915	BIG INJUN /SD/	2234
47103004930000	1/1/1962		EQUITABLE GAS COMPANY	1163 GR	ABD-GW	39.5889	-80.5743	5131 S I ROBINSON 2					2254
47103311450000		11/7/1989	EQUITRANS INCORPORATED	1067 GR	PSEUDO	39.5826	-80.5683	5426 D/R LUMBER CO		10/17/1989	11/1/1989	GREENBRIER /LW/	2211
47103008840001			EQUITRANS INCORPORATED	1167 GR	D&A	39.5922	-80.5888	1770 M & J SHIBEN HEIRS					2211
47103003706000	1/1/1964	8/2/1919	HOPE NATURAL GAS	937 GR	ABD-GW	39.5794	-80.5571	5532 J M BROWN		6/18/1919	7/9/1919	BIG INJUN /SD/	2025
47103000520000			HOPE NATURAL GAS	GR	PSEUDO	39.5890	-80.5570	4983 SILAS SHREVE					2025
471030704190000			HOPE NATURAL GAS	GR	PSEUDO	39.5905	-80.5776	1 S B HIGGINBOTHAM					70267
47103074220000			HOPE NATURAL GAS	GR	PSEUDO	39.5799	-80.5619	1 L HIGGINBOTHAM					70419
47103072600000	7/22/1937		HOPE NATURAL GAS	GR	UNKNW	39.5566	-80.5484	553 GLASCOCK					70422
47103000000000			HOPE NATURAL GAS	GR	UNKNW	39.5767	-80.5640	852 F L HIGGINBOTHAM					72060
471030005160000			J & M OIL & GAS	1034 GR	UNKNW	39.5809	-80.5703	5448 L B SMITH 1					72283
47103000540000		5/1/1962	J & M OIL & GAS	1107 GR	GSTG	39.5926	-80.5617	5447 C A LONG		3/17/1962	4/1/1962	BIG INJUN /SD/	2090
47103003810000	6/24/1952	7/1/1957	J C R PETROLEUM INCORPORATED	818 GR	GAS-CB	39.5841	-80.5776	1 S B HIGGINBOTHAM		5/10/1952	5/25/1952	PITTSBURGH COAL	515
471030003710000	2/1/1951	3/1/1953	J C R PETROLEUM INCORPORATED	825 GR	GAS-CB	39.5828	-80.5756	1 S B HIGGINBOTHAM ET AL		12/18/1950	1/2/1951	CONEMAUGH /SERIES/	530
471030003840000	5/1/1953	8/1/1953	J C R PETROLEUM INCORPORATED	855 GR	GAS-CB	39.6008	-80.5724	2 J P ASHCRAFT		3/17/1953	4/1/1953	CONEMAUGH /SERIES/	585
471030005660000	1/1/1965	8/1/1953	J C R PETROLEUM INCORPORATED	880 GR	GAS-CB	39.5896	-80.5764	3 S B HIGGINBOTHAM HRS		11/17/1964	12/2/1964	CONEMAUGH /SERIES/	384
471030003850000	8/1/1953	4/10/1953	J C R PETROLEUM INCORPORATED	905 GR	GAS-CB	39.6021	-80.5734	3 J P ASHCRAFT		6/17/1953	7/2/1953	CONEMAUGH /SERIES/	548
471030003830000	4/10/1953	4/1/1952	J C R PETROLEUM INCORPORATED	960 GR	GAS-CB	39.6004	-80.5723	1 J C ASHCRAFT		10/6/1952	10/21/1952	CONEMAUGH /SERIES/	385
471030003760000	8/1/1956	9/1/1956	J C R PETROLEUM INCORPORATED	1265 GR	GAS-CB	39.5924	-80.5721	2 S J ROBINSON ET AL		2/16/1952	3/2/1952	CONEMAUGH /SERIES/	886
471030004330000	7/22/1937	3/23/1905	MEADOW RIDGE DEVELOPMENT LLC	1509 GR	GAS-CB	39.6066	-80.5830	7 J P ASHCRAFT		6/17/1936	7/2/1936	CONEMAUGH /SERIES/	1008
471030009760000			MEADOW RIDGE DEVELOPMENT LLC	GR	OIL	39.5632	-80.5473	3 M GALLAGHER		7/18/1904	8/2/1904	BIG INJUN /SD/	2449
471030011450000	1/1/1965	7/1/1957	NORTH FORK DEVELOPMENT	GR	PSEUDO	39.5830	-80.5582	122 MILLS					976
471030004510000	6/15/1957	8/1/1957	NORTH FORK DEVELOPMENT	817 GR	ABD-CB	39.5829	-80.5665	2 J HENBERT HIGGINBOTHAM		5/17/1957	6/1/1957	PENNSYLVANIAN	529
471030004490000	8/1/1957	8/1/1957	NORTH FORK DEVELOPMENT	827 GR	GAS-CB	39.5812	-80.5650			5/18/1957	6/2/1957	PENNSYLVANIAN	451
471030005100000	8/1/1961	8/1/1961	PENCO GAS INCORPORATED	886 GR	GAS-CB	39.5841	-80.5635	3 J HENBERT HIGGINBOTHAM		6/17/1957	7/2/1957	PITTSBURGH COAL	537
471030005100000			PENCO GAS INCORPORATED	934 GR	GAS-CB	39.6009	-80.5784	2 H L SMITH		6/17/1961	7/2/1961	CONEMAUGH /SERIES/	614
471030005100000			PENCO GAS INCORPORATED	GR	UNKNW	39.6031	-80.5795	5247 M & J SHIVEN HEIRS 10					662
47103000331			PH & WV GAS	1109	GAS	39.5883	-80.568						71950
47103074200000			PHILADELPHIA OIL	GR	PSEUDO	39.6022	-80.5701	1 J P ASHCRAFT ET AL					331
471030704230000			PHILADELPHIA OIL	GR	PSEUDO	39.5838	-80.5670	1 ISRAEL SNYDER					70420
471030719410000			PHILADELPHIA OIL	GR	UNKNW	39.6041	-80.5731	385 J F UTT					70423
471030720380000			PHILADELPHIA OIL	GR	UNKNW	39.5714	-80.5724	5287 CHARLES BREWER					71941
471030005330000	1/1/1962	12/11/1902	PITTSBURGH & W VA GAS	829 GR	ABD-GW	39.5841	-80.5685	1751 JOHN E SWYDER		10/12/1902	10/27/1902	POCONO	1928
471030004960000	1/1/1955	8/19/1902	PITTSBURGH & W VA GAS	844 GR	ABD-GW	39.5864	-80.5672	1737 S I ROBINSON		6/5/1902	6/20/1902	HAMPSHIRE	533
471030004520000	11/19/1952	9/22/1946	PITTSBURGH & W VA GAS	1109 GR	D&A-G	39.5884	-80.5679	1768 J M SNIDER 1		5/5/1946	5/20/1946	BIG INJUN /SD/	2785
471030008450000	11/7/1990	3/1/1932	PITTSBURGH & W VA GAS	1290 GR	ABD-GW	39.6099	-80.5860	1847 J P ASHCRAFT		7/5/1905	7/20/1905	CHEMUNG	2285
47103000640000	5/21/1934	9/1/1932	PITTSBURGH & W VA GAS	1505 GR	ABD-GW	39.6022	-80.5863	5403 J P ASHCRAFT		1/16/1932	1/31/1932	FOURTH SAND	3112
471030302320000	7/22/1937	9/13/1905	SOUTH PENN OIL	1277 GR	ABD-OW	39.5658	-80.5485	2 R D MAWFIELD		6/26/1905	7/10/1905	BIG INJUN /SD/	3634
471030002830001	3/1/1951	7/13/1944	STANDARD OIL COMPANY INCORPORATED	1515 GR	GAS	39.6093	-80.5833	1374 H L & L UTT E		5/29/1944	6/13/1944	GORDON	2393
471030007220000	8/7/1963	3/1/1951	UNKNOWN	842 GR	ABD-CB	39.5897	-80.5788						3289
471030004530000	10/1/1957	10/1/1957	UNKNOWN	979 GR	D&A	39.5823	-80.5730			1/15/1951	1/30/1951	PITTSBURGH COAL	372
471030004370000	7/18/1956	6/1/1956	UNKNOWN	994 GR	D&A	39.5810	-80.5730			8/17/1957	9/1/1957	PENNSYLVANIAN	523
471030004570000	2/14/1958	1/1/1958	UNKNOWN	1108 GR	D&A-G	39.5842	-80.5661			4/17/1956	5/2/1956	TONESTA /SD/	1495
471030005220000			UNKNOWN	1214 GR	UNKNW	39.5876	-80.5569	5441 FRANCES SHREVES		11/17/1957	12/2/1957	AMES /LW/	432
471030003800000	7/6/1952	5/1/1952	UNKNOWN	1267 GR	D&A-OG	39.5937	-80.5730			3/17/1952	4/1/1952	CONEMAUGH /SERIES/	1185

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03/08/2019

47103720540000	7/22/1937	UNKNOWN	GR	UNKWN	39,5634	-80,5460 2 MOBLEY
47103720580000	7/22/1937	UNKNOWN	GR	UNKWN	39,5650	-80,5454 2 AMOS MERRIFIELD
47103720590000	7/22/1937	UNKNOWN	GR	UNKWN	39,5661	-80,5443 1 GLASSCOCK
47103720530000	5/11/1949	UNKNOWN	GR	UNKWN	39,5621	-80,5471 3 MOBLEY
47103720550000	5/11/1949	UNKNOWN	GR	UNKWN	39,5634	-80,5477 2 MOBLEY
47103720610000	5/11/1949	UNKNOWN	GR	UNKWN	39,5677	-80,5464 1 Z A MERRIFIELD
47103719390000		UNKNOWN	GR	UNKWN	39,5913	-80,5763 1 S B HIGGINBOTHAM
47103719430000		UNKNOWN	GR	UNKWN	39,5923	-80,5814 2 J B HICKS
47103719470000		UNKNOWN	GR	UNKWN	39,5957	-80,5825 1 JAMES SHIRLEY
47103719480000		UNKNOWN	GR	UNKWN	39,5963	-80,5818 1 JAMES SHIRLEY
47103719490000		UNKNOWN	GR	UNKWN	39,5963	-80,5812 5933 JOLLY MINOR
47103719570000		UNKNOWN	GR	UNKWN	39,5983	-80,5916 1787 OLLIE SIX 1
47103719580000		UNKNOWN	GR	UNKWN	39,6118	-80,5903 5304 OLLIE SIX
47103719590000		UNKNOWN	GR	UNKWN	39,6140	-80,5893 1 OLLIE SIX
47103719590000		UNKNOWN	GR	UNKWN	39,6125	-80,5875 1 OLLIE SIX
47103719600000		UNKNOWN	GR	UNKWN	39,6108	-80,5839 1736 THOMAS UTT
47103719620000		UNKNOWN	GR	UNKWN	39,5829	-80,5759 1 C BROOKOVER
47103720330000		UNKNOWN	GR	UNKWN	39,5781	-80,5754 5307 JAMES JOHNSON 1
47103720350000		UNKNOWN	GR	UNKWN	39,5719	-80,5701 1 R BARR

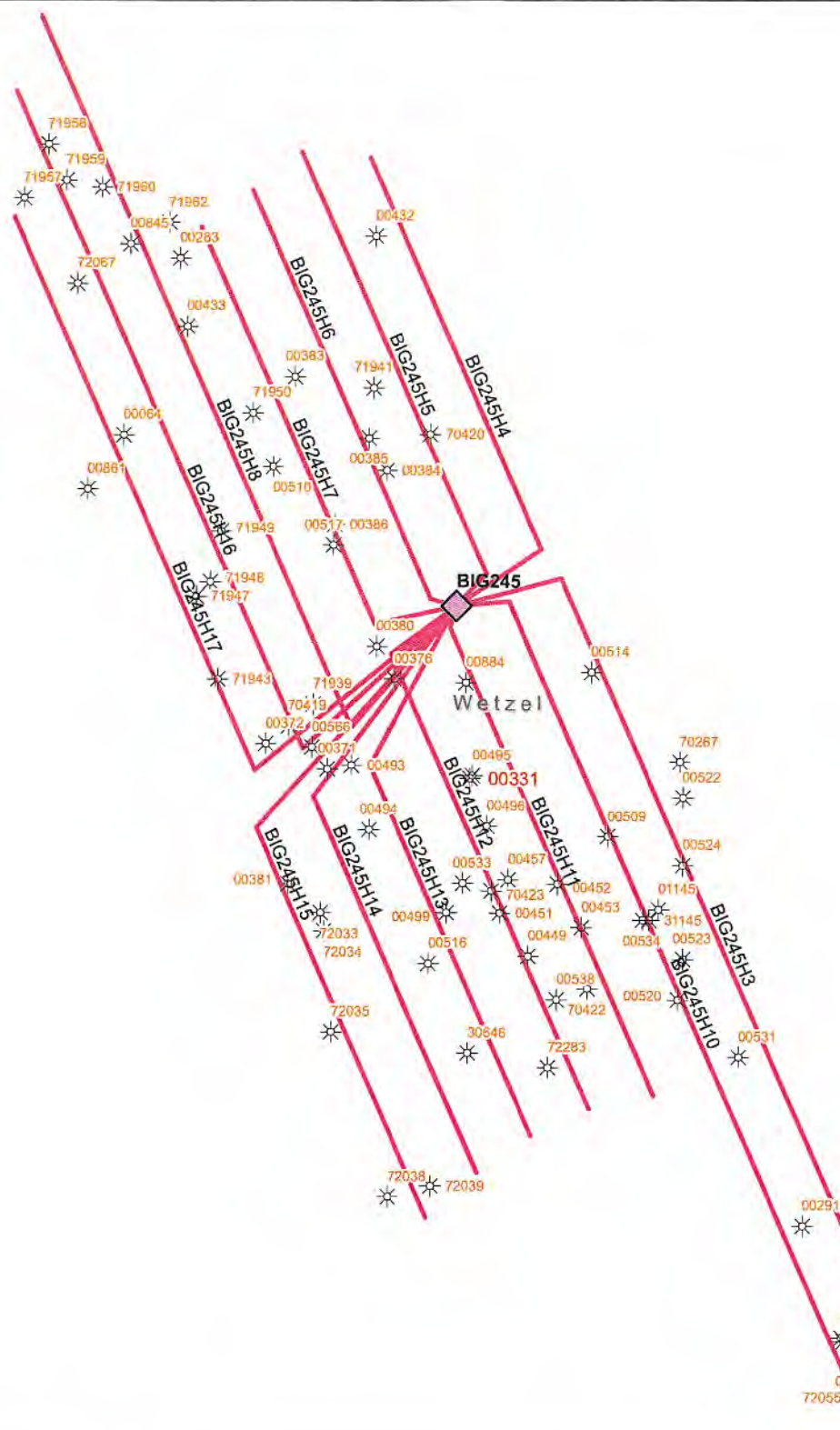
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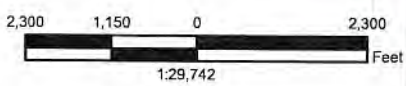
EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

BIG245 Pad

Vertical Offsets and
Foreign Laterals
within 500'

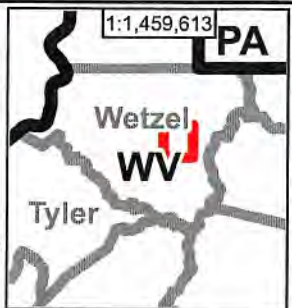
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- GO
- MD
- MR
- PT
- Planned Marcellus



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.



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: BIG245H6 Well Pad Name: BIG245

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

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

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

DMH
12-10-18

6) Existing Pad: Yes or No NO

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

8) Proposed Total Vertical Depth: 7531

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18837

11) Proposed Horizontal Leg Length: 10209

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

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

14) Approximate Saltwater Depths: None

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

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

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	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	26	New	A-500	85.6	40	40	60 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	1179	1179	734 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	P-110	40	2855	2855	2085 ft ³ / CTS
Production	5 1/2	New	P-110	20	18837	18837	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
12-10-18

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	26	30	.312	1378	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	Class H	1.07
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 4794'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

*DMH
12-10-18*

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.1%) 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): no additional

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

23) Describe centralizer placement for each casing string:

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

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

Conductor: Class A no additives
Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. .25% Flake Loss Circulation Material (LCM)
Intermediate (Class H Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) .6% Super FL-300 (fluid loss/lengthens thickening time)
Production:
Lead (Class 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 % Calcium Carbonate. Acid solubility.

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

47-103-03267

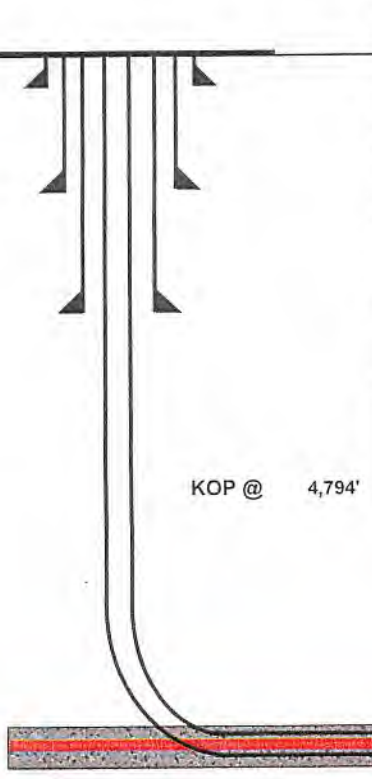
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Well **BIG245H6**
EQT Production
Big Run Quad
Wetzel County, WV

ENERTIA # 514367
Azimuth 337
Vertical Section 10344

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Red Rock	967	
Base Fresh Water	1011	
Surface Casing	1179	
Maxton	2305 - 2346	
Big Lime	2359 - 2429	
Big Injun	2429 - 2596	
Intermediate Casing	2855	
Gordon	3163 - 3202	
Forth Sand	3221 - 3265	
Bayard	3269 - 3499	
Speechley	3891 - 4113	
Riley	4684 - 4916	
Benson	5380 - 5528	
Alexander	5842 - 6158	
Sonyea	7063 - 7140	
Middlesex	7140 - 7324	
Genesee	7324 - 7362	
Geneseo	7362 - 7388	
Tully	7388 - 7410	
Hamilton	7410 - 7509	
Marcellus	7509 - 7560	
Production Casing	18837 MD	
Onondaga	7560	



Casing and Cementing				Deepest Fresh Water: 1,011'
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	30	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	26	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.312	0.380	0.395	0.361
Depth, MD	40'	1,179'	2,855'	18,837'
Weight	85.6#	54.5#	40#	20#
Grade	A-500	J-55	A-500	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	3,950	12,640
Cement Class	A	A / Type 1	H	H
Cement Yield	1.18	1.19	1.07	1.123/2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	49	1,086	1,108	2,844
Possible Additives	N/A	Calcium Chloride	Calcium Chloride, Fluid Loss, Defoamer, Dispersant, POZ, Bonding Agent, Extender, Retarder, Flake/LCM	Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

DMH
12-10-15

Land curve @ 7,531' TVD 8,628' MD Est. TD @ 7,531' TVD 18,837' MD

Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
Drill the vertical to an approximate depth of 4794'.
Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

10,209' Lateral



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
(304) 826-0450
(304) 928-0452 fax

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

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

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

REPORT OF THE OFFICE

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

FINDINGS OF FACT

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
 - 2% Calcium Chloride (Accelerator)
 - 0.25 % Super Flake (Lost Circulation)
 - 94% Type "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.

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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.

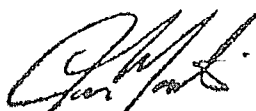
ORDER

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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03/08/2019

October 16, 2018

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

Re: Casing plan on Wells (BIG245)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 1179' KB, 50' below the deepest mineable Pittsburgh Coal. We will set the 9-5/8" intermediate string at 2855' KB, 50' below the base of the Weir formation.

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

Sincerely,

A handwritten signature in blue ink that reads "Rebecca Wanstreet".

Rebecca Wanstreet
Landman I

Enc.

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

DMH
12-10-18

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) Erin Spine
Company Official Title Regional Land Supervisor

Subscribed and sworn before me this 29 day of November, 2018
Rebecca G. Wainstreet Notary Public
My commission expires 4-7-2020

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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.

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed no additional 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: 12/10/18

Field Reviewed? Yes No

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EQT Production Water plan

03/08/2019

Offsite disposals for Marcellus wells

CWS TRUCKING INC.

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

BROAD STREET ENERGY LLC

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

LAD LIQUID ASSETS DISPOSAL INC.

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

TRIAD ENERGY

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

TRI COUNTY WASTE WATER MANAGEMENT, INC.

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

KING EXCAVATING CO.

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

Waste Management - Meadowfill Landfill

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

Waste Management - Northwestern Landfill

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

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Site Specific Safety and Environmental Plan

EQT

BIG245 Pad

Burton

Wetzel County, WV

BIG245H4, BIG245H5, BIG245H6, For Wells: BIG245H8, BIG245H16, BIG245H17

Date Prepared: February 23, 2018

[Signature]
EQT Production

Regional Land Supervisor
Title

11/29/2018
Date

[Signature]
WV Oil and Gas Inspector

Oil + Gas Inspector
Title

12-10-18
Date

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Anticipated Frac Additives

Chemical Names and CAS numbers

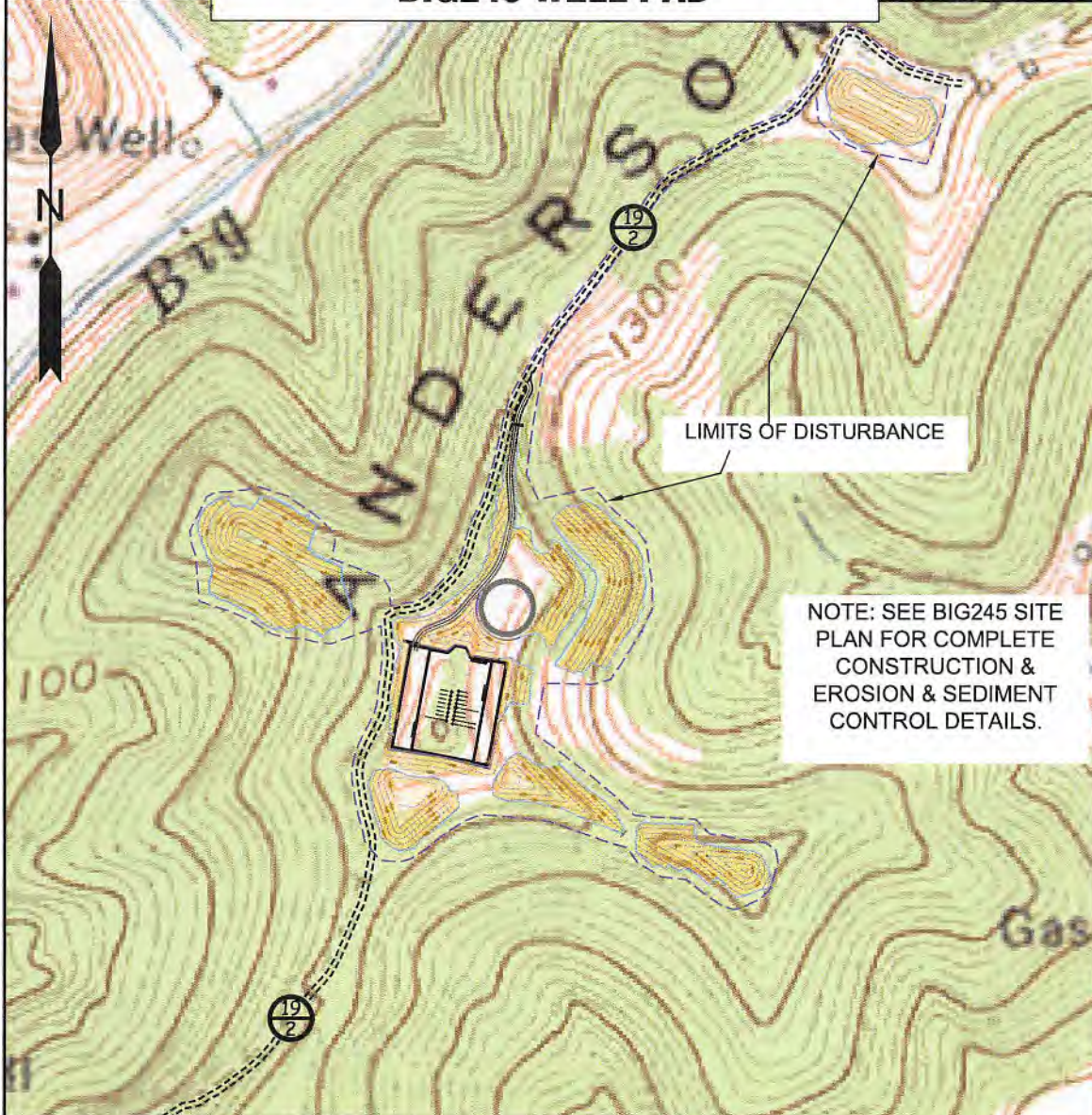
<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
Friction Reducer	Tributyl tetradecyl phosphonium chloride	64742-47-8
Biocide	Ammonium chloride	81741-28-8
Scale Inhibitor	Hydrochloric Acid	12125-02-9
15% Hydrochloric Acid	Propargyl Alcohol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

DGH
11-5-18

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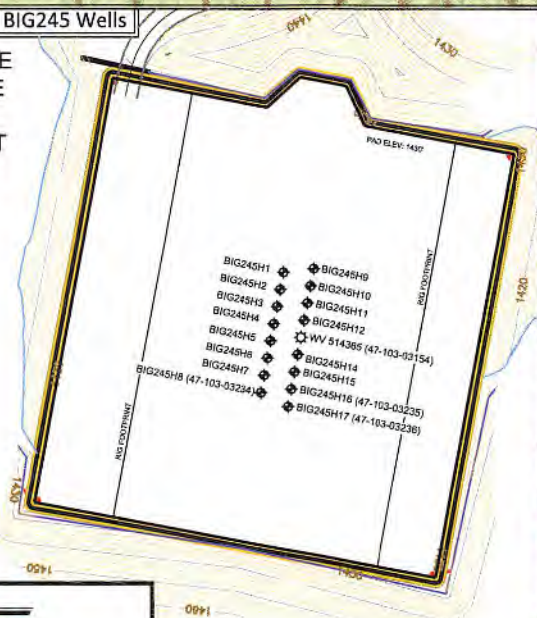
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Detail Sketch for Proposed BIG245 Wells

NOTE: SEE BIG245 SITE PLAN FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.



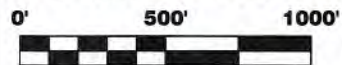
Not To Scale

SLS
Land & Energy Development
Solutions From the ground up.
P.O. Box 150 • 12 Vinton Drive • Glenfield, WV 26031 • (304) 452-5634
www.slsenergy.com

DRAWN BY MGF	FILE NO. 7812	DATE 09-21-18	CADD FILE: 781282243REPLAN-13.dwg
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TOPO SECTION OF BIG RUN 7.5' USGS TOPO QUADRANGLE

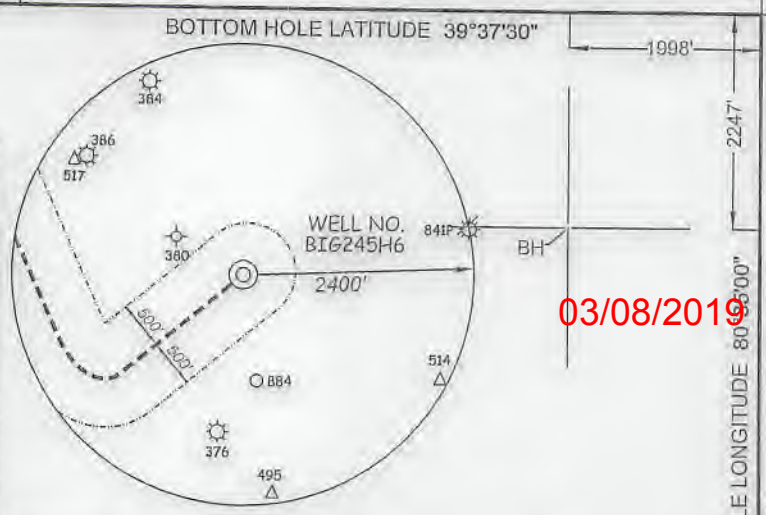
SCALE: 1"=500'



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**BIG245
BIG245H6
EQT PRODUCTION COMPANY**

TAG	TM-PAR.	SURFACE OWNERS	ACRES
A	G-TM-3-2	JOSEPH F & GAY BLAKE IRREVOCABLE GRANTOR TR.	194 AC.
B	G-TM-3-5	COASTAL FOREST RESOURCES CO	179 AC.
C	G-TM-3-6	VIRGINIA RUTH BLAKE	5 3/4 AC.
D	G-TM-3-10	CHARLES STONEKING ET AL.	9 3/4 AC.
E	G-TM-3-11	VIRGINIA RUTH BLAKE	2.5 AC.
F	G-TM-3-13	EDWARD LEE DULANEY, II	164 3/4 AC.
G	G-TM-3-14	CHARLES STONEKING ET AL.	70 1/2 AC.
H	G-TM-3-15	CHARLES STONEKING ET AL.	45 AC.
I	G-TM-3-16	CHARLES STONEKING ET AL.	14 11 AC.
J	G-TM-3-18	VIRGINIA RUTH BLAKE	28 75 AC.
K	G-TM-3-23	COASTAL FOREST RESOURCES CO L/E H & M DULANEY	167 3/4 AC.
L	G-TM-3-24	COASTAL FOREST RESOURCES CO L/E H & M DULANEY	35 89 AC.
M	G-TM-3-25	CHARLES STONEKING ET AL.	34.4 AC.
N	G-TM-3-26	VIRGINIA RUTH BLAKE	20.69 AC.
O	G-TM-3-27	VIRGINIA RUTH BLAKE	45.83 AC.
P	G-TM-3-30	THOMAS E & CHERYL A LEASURE	51.80 AC.
Q	G-TM-3-31	HEARTWOOD FORESTLAND FUND II LP	27.56 AC.
R	G-TM-3-34	MIKE & MADELINE WHITE	30.6 AC.
S	G-TM-7-3	COASTAL FOREST RESOURCES CO	178 AC.
T	G-TM-7-3.2	COASTAL FOREST RESOURCES CO	156.98 AC.
U	G-TM-8-1	DANNY STOCKSLAGER ET AL.	170 AC.
V	G-TM-8-2	MIKE & MADELINE WHITE	40.13 AC.
W	G-TM-8-3	MIKE & MADELINE WHITE	3 AC.
X	G-TM-8-4	DUANE M GOODRICH	1 5/8 AC.
Y	G-TM-8-5	DUANE M GOODRICH	130 SQ RDS
Z	G-TM-8-6	DUANE M GOODRICH	164 SQ RDS
AA	G-TM-8-7	JAMES E & MARTIN A STONEKING	19.12 AC.
BB	G-TM-8-8	WANDA L BYARD	59.18 AC.
CC	G-TM-8-10	GARLAND E MINOR	48.1 AC.
DD	G-TM-8-11	BONNIE M HENTHORNE	63.12 AC.
EE	G-TM-8-12	SHIRLEY A TITUS	41.9 AC.
FF	G-TM-8-12.1	DALE F SAPP L/E, LOLA J SAPP	10.1 AC.
GG	G-TM-8-13	NEAL UTT	3.34 AC.
HH	G-TM-8-13.1	DUANE M GOODRICH	3.56 AC.
II	G-TM-8-14	NEAL UTT	51 AC.
JJ	G-TM-8-15	JOHN MICHAEL BYARD	71.80 AC.
KK	G-TM-8-18	COASTAL FOREST RESOURCES CO.	337 AC.
LL	G-TM-8-19	PHILLIP & KIMBERLY BRENT	46.45 AC.
MM	G-TM-8-21	IKEY JOE WILLEY	76.27 AC.
NN	G-TM-8-22	ET BLUEGRASS LLC, C/O EQT PRODUCTION CO	138.93 AC.
OO	G-TM-8-23	DALE K, JAMES L & DONALD J DULANEY	70.81 AC.
PP	G-TM-8-23.1	JAMES L DULANEY	3.19 AC.
QQ	G-TM-8-25	JAMES ARTHUR YOHO	6.25 AC.



03/08/2019

SUBSURFACE AGREEMENT		
IKEY JOE WILLEY	76.27 AC.±	G-TM-8-21
ROYALTY OWNERS		
ACROPOLIS INC. ET AL.	80 AC.±	LEASE NO. 121160
BONNIE M. HENTHORNE	64 AC.±	LEASE NO. 125426
GARLAND E. MINOR ET AL.	49 AC.±	LEASE NO. 125440
JOSEPH SHIBEN & MINNIE SHIBEN ESTATE ET AL.	1030 AC.±	LEASE NO. 102814
SHIBEN ESTATES INC. ET AL.	109 AC.±	LEASE NO. 102813

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

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 400,706.11 E. 1,698,756.59
 NAD'27 GEO. LAT-(N) 39.595250 LONG-(W) 80.569019
 NAD'83 UTM (M) N. 4,382,933.521 E. 537,020.869

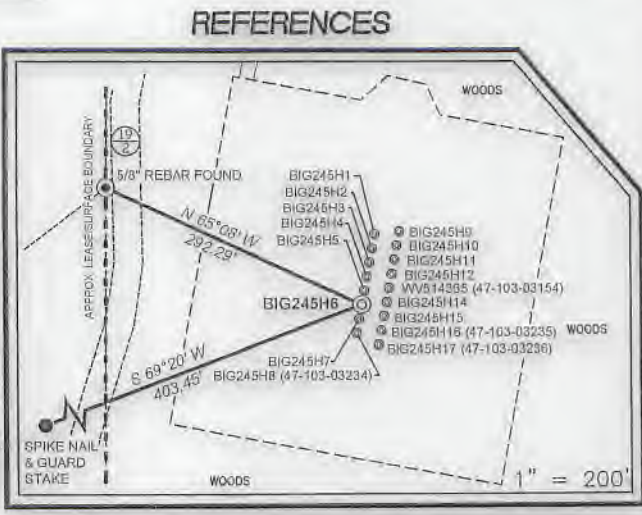
LANDING POINT
 NAD'27 S.P.C.(FT) N. 399,969.89 E. 1,696,817.93
 NAD'27 GEO. LAT-(N) 39.593166 LONG-(W) 80.575867
 NAD'83 UTM (M) N. 4,382,699.347 E. 536,433.962

BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 409,366.72 E. 1,692,828.92
 NAD'27 GEO. LAT-(N) 39.618831 LONG-(W) 80.590426
 NAD'83 UTM (M) N. 4,385,541.879 E. 535,170.966



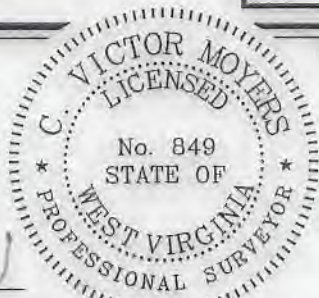
NOTES ON SURVEY

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



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

P.S. *C. Victor Moyers*
 849



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MARCH 6, 20 18
 REVISED 10/31/18, 11/30/18
 OPERATORS WELL NO. BIG245H6
 API WELL NO. 47 - 103 - 03267
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 7812PBIG245H8-R2.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE SEE NOTE 2

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

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

LOCATION: GROUND PROPOSED
 ELEVATION 1486' 1430' WATERSHED ROCKCAMP RUN OF WILLEY FORK

DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER ET BLUE GRASS, LLC ACREAGE 138.93±

ROYALTY OWNER SHIBEN ESTATES, INC ACREAGE 140±

PROPOSED WORK:
 DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___

PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7531'

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

BOTTOM HOLE LONGITUDE 80°36'00"
 TOP HOLE LONGITUDE 80°32'30"

**BIG245
BIG245H6
EQT PRODUCTION COMPANY**

WELL TIES		
ID	BEARING	DISTANCE
L1	N 65°08' W	292.29'
L2	N 06°47' W	2126.58'

03/08/2019

NAD'27 GRID NORTH

BOTTOM HOLE LONGITUDE 80°35'00"

TOP HOLE LONGITUDE 80°32'30"

LATERAL DATA		
ID	BEARING	DISTANCE
L4	N 24°03' W	2223.09'
L5	N 22°43' W	7985.84'
TOTAL:		10,208.93'

BUILD OUT DATA			
ID	BEARING	DISTANCE	
L3	S 50°42' W	1698.52'	

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	212.20'	246.80'	S 75°28'28" W	205.72'
C2	237.83'	444.91'	N 64°15'20" W	235.01'
C3	362.33'	801.23'	N 36°26'17" W	359.25'

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Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5034
www.slsurveys.com



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
FILE NO. 7812PBIG245H6-R2.dwg SCALE 1"=1000'
DATE MARCH 6, 2018
REVISED 10/31/18, 11/30/18
OPERATORS WELL NO. BIG245H6
API WELL NO. 47 - 103 - 03267
STATE COUNTY PERMIT

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

P.S. 849 *C. Victor Moyers*

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



(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'27 S.P.C.(FT)	N. 400,706.11	E. 1,698,756.59	
NAD'27 GEO.	LAT-(N) 39.595250	LONG-(W) 80.569019	
NAD'83 UTM (M)	N. 4,382,933.521	E. 537,020.869	
LANDING POINT			
NAD'27 S.P.C.(FT)	N. 399,969.89	E. 1,696,817.93	
NAD'27 GEO.	LAT-(N) 39.593166	LONG-(W) 80.575867	
NAD'83 UTM (M)	N. 4,382,699.347	E. 536,433.962	
BOTTOM HOLE			
NAD'27 S.P.C.(FT)	N. 409,366.72	E. 1,692,828.92	
NAD'27 GEO.	LAT-(N) 39.618891	LONG-(W) 80.590426	
NAD'83 UTM (M)	N. 4,385,541.879	E. 535,170.966	

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

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

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

BIG245
BIG245H6
EQT PRODUCTION COMPANY

BOTTOM HOLE LATITUDE 39°37'30"

1998'

2247'

03/08/2019

NAD'27 GRID NORTH

BOTTOM HOLE LONGITUDE 80°35'00"

10,836'

TOP HOLE LONGITUDE 80°32'30"

LATERAL DATA		
ID	BEARING	DISTANCE
L4	N 24°03' W	2223.09'
L5	N 22°43' W	7985.84'
TOTAL:		10,208.93'

BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	S 50°42' W	1698.52'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	212.20'	246.80'	S 75°28'28" W	205.72'
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C3	362.33'	801.23'	N 36°26'17" W	359.25'

WELL TIES		
ID	BEARING	DISTANCE
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L2	N 06°47' W	2126.58'



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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 FILE NO. 7812PBIG245H6-R2.dwg SCALE 1"=1000'
 DATE MARCH 6, 20 18
 REVISED 10/31/18, 11/30/18
 OPERATORS WELL NO. BIG245H6
 API WELL NO. 47 - 103 - 03267
 STATE COUNTY PERMIT

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

P.S. 849 *C. Victor Moyers*

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



(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 400,706.11 E. 1,698,756.59
 NAD'27 GEO. LAT-(N) 39.593166 LONG-(W) 80.569019
 NAD'83 UTM (M) N. 4,382,939.521 E. 537,020.869
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 NAD'27 GEO. LAT-(N) 39.593166 LONG-(W) 80.575867
 NAD'83 UTM (M) N. 4,382,699.347 E. 536,433.962
BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 409,366.72 E. 1,692,828.92
 NAD'27 GEO. LAT-(N) 39.618831 LONG-(W) 80.590426
 NAD'83 UTM (M) N. 4,385,541.879 E. 535,170.966

LEGEND

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

COUNTY NAME PERMIT

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

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

WW-6A1
(5/13)

Operator's Well No. BIG245H6

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

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

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

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

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

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

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

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

Well Operator: EQT Production Company
 By: Erin Spine
 Its: Regional Land Supervisor

WW-6A1 attachment

Operator's Well No.

BIG245H6

<u>Lease No.</u>	<u>Grantor, Lessor, etc.</u>	<u>Grantee, Lessee, etc.</u>	<u>Royalty</u>	<u>Book/Page</u>
<u>125397</u>	<u>ET Blue Grass LLC, et al. (current royalty owner)</u>		**	
	Joseph Shiben, et al.	Equitable Gas Company		DB 44A/224
	Equitable Gas Company	Equitrans, Inc.		OG 71A/453
	Equitrans, Inc.	Equitrans, LP		DB 105/908
	Equitrans, LP	EQT Production Company		OG 131A/81
<u>102836</u>	<u>Shiben Estates, Inc. (Current Royalty Owner)</u>		**	
	S I Robinson	The Philadelphia Company		DB 47/469
	The Philadelphia Company	Pittsburgh and West Virginia Gas Co.		DB 146/98
	Pittsburgh and West Virginia Gas Co.	Equitable Gas Company		DB 187/374
	Equitable Gas Company	Equitrans, Inc.		OG 71A/453
	Equitrans, Inc.	Equitrans, LP		DB 105/908
	Equitrans, LP	EQT Production Company		OG 131A/81
<u>102814</u>	<u>Shiben Estates, Inc. (Current Royalty Owner)</u>		**	
	J. P. Ashcraft, et al	The Oxford Oil Company		DB 39/471
	The Oxford Oil Company	The Philadelphia Company		LB 47/553
	The Philadelphia Company	The Philadelphia Company of WV		DB 47/561
	The Philadelphia Company of WV	Pittsburgh & West Virginia Gas Company		OG 22A/352
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		DB 187/321
	Equitable Gas Company	Equitrans, Inc.		OG 71A/453
	Equitrans, Inc.	Equitrans, LP		DB 105/908
	Equitrans, LP	EQT Production Company		OG 131A/81

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

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4710300287 03/08/2019

October 17, 2018

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

Re: BIG245 well pad, well numbers BIG245H4, BIG245H5, BIG245H6,
Grant District, Wetzel County

Dear Mr. Brewer,

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'Erin Spine'.

Erin Spine
Regional Land Supervisor

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

Date of Notice Certification: 11/1/18

API No. 47- 103 -
Operator's Well No. BIG245H6
Well Pad Name: BIG245

Notice has been given:

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

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>537030.54</u>
County:	<u>Wetzel</u>		Northing:	<u>4382945.02</u>
District:	<u>Grant</u>	Public Road Access:		<u>Rt. 19/2</u>
Quadrangle:	<u>Big Run</u>	Generally used farm name:		<u>E.T. Bluegrass LLC</u>
Watershed:	<u>Rockcamp Run of Wiley Fork</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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input checked="" type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p style="text-align: center;">OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p style="text-align: center;">RECEIVED Office of Oil and Gas NOV 7 2018</p>
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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 Erin Spine, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: EQT Production Company
By: Erin Spine
Its: Regional Land Supervisor
Telephone: 304-848-0035

Address: 2400 Ansys Drive, Suite 200 Canonsburg PA 15317
Facsimile: 304-848-0041
Email: espine@eqt.com



Subscribed and sworn before me this 1 day of November 2018.
Rebecca L. Wanstreet Notary Public
My Commission Expires 4-7-2020

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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**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: 11/2/18 **Date Permit Application Filed:** 11/2/18

Notice of:

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

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

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

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

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

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

COAL OWNER OR LESSEE
Name: See Attached
Address: _____

Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

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

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

Name: _____
Address: _____

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

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

*Please attach additional forms if necessary

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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 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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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

WV Department of
Environmental Protection

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47- 103 - 03/08/2019
OPERATOR WELL NO. BIG245M6
Well Pad Name: BIG245

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0035
Email: espine@eqt.com



Address: 2400 Ansys Drive Suite 200 Canonsburg PA 15317

Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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



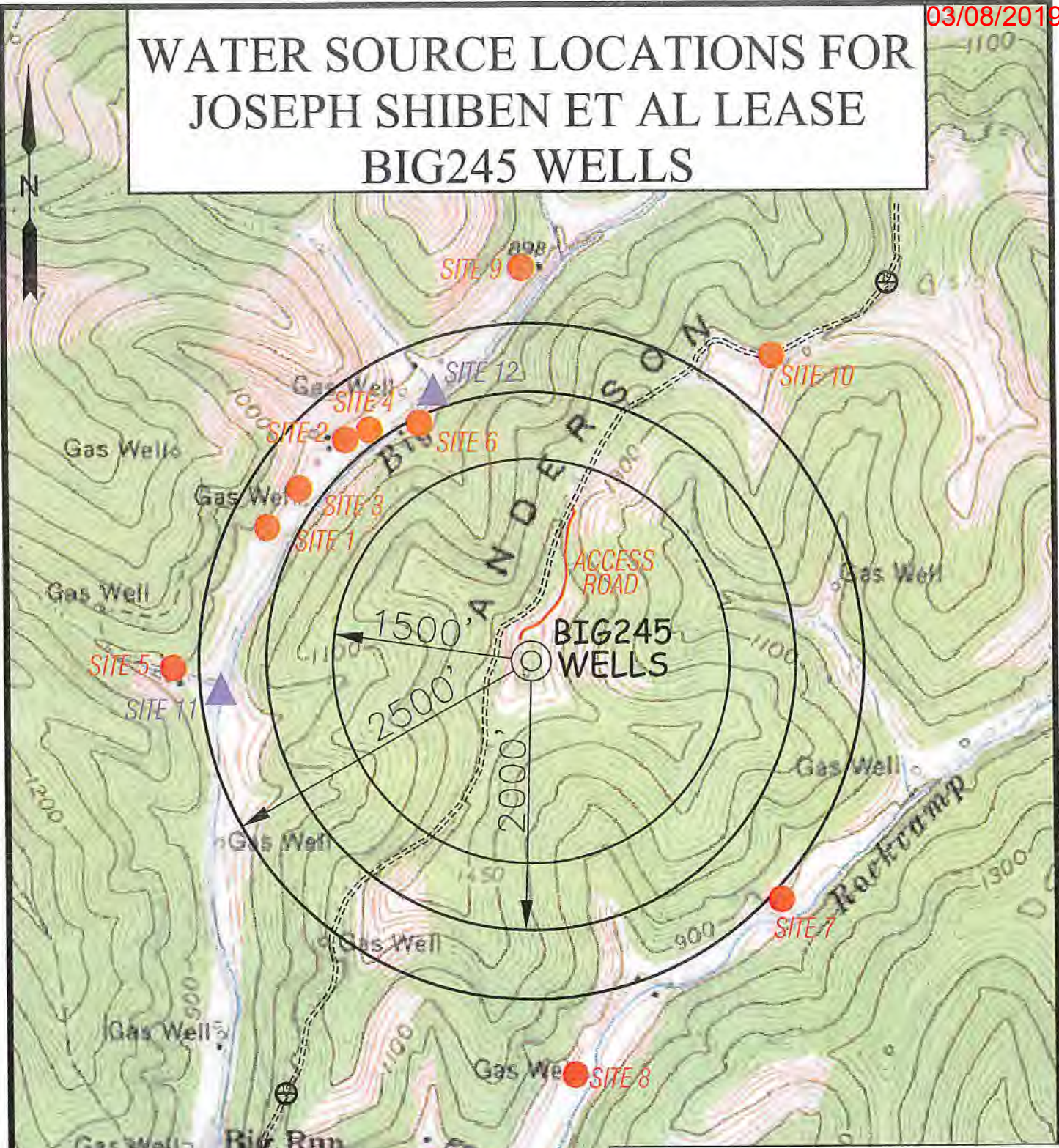
Subscribed and sworn before me this 1 day of November 2018.

Rebecca L. Wanstreet Notary Public

My Commission Expires 4-7-2020

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WATER SOURCE LOCATIONS FOR JOSEPH SHIBEN ET AL LEASE BIG245 WELLS



LEGEND

- WATER WELL
- ▲ CREEK

SCALE: 1-INCH = 1000-FEET

0' 1000' 2000' 3000'

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Land & Energy Development
Solutions from the ground up.
P.O. Box 150 & 12 Walker Drive & Stone, WV 26101 (304) 852-0634
www.slsenergy.com

DRAWN BY: MGF
FILE NO.: 7812
DATE: 07/19/18
CADD FILE: 7812WSE0245-R3.dwg

TOPO SECTION OF:
BIG RUN, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
GRANT	WETZEL	08-22

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

WV Department of Environmental Protection

03/08/2019

Surface Owners:

ET Blue Grass LLC
625 Liberty Avenue Suite 1700 ✓
Pittsburgh, PA 15222

Ikey J. Willey
12359 Willey Fork Road ✓
Pine Grove, WV 26419

Surface Owners (road or other disturbance):

ET Blue Grass LLC ✓
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

Wanda L. Byard ✓
1250 Meadowlane Drive
Lewisport, KY 42351

Neal Utt ✓
1204 Big Run Road
Burton, WV 26562

Surface Owners (Pits or impoundments or AST):

ET Blue Grass LLC ✓
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

Coal Owner

ET Blue Grass LLC ✓
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

Western Pocahontas Properties LLC ✓
5260 Irwin Road
Huntington, WV 25705

CNX Land LLC ✓
Engineering Operations Support Dept. Coal
1000 Consol Energy Drive
Canonsburg, PA 15317

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Surface Owners:

W
ET Blue Grass LLC
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

/
Ikey J. Willey
12359 Willey Fork Road
Pine Grove, WV 26419

Surface Owners (road or other disturbance):

✓
ET Blue Grass LLC
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

/
Wanda L. Byard
1250 Meadowlane Drive
Lewisport, KY 42351

/
Neal Utt
1204 Big Run Road
Burton, WV 26562

Surface Owners (Pits or impoundments or AST):

W
ET Blue Grass LLC
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

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

WAIVER

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.


Surface Owner Waiver:

I, E.T. Bluegrass LLC, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State: WV
County: Wetzel
District: Grant
Quadrangle: Big Run
Watershed: Rockcamp Run of Wiley Fork

UTM NAD 83 Easting: 537030.54
Northing: 4382945.02
Public Road Access: Rt. 19/2
Generally used farm name: E.T. Bluegrass LLC

Name: Jason Ranson- Director, Drilling Land
Address: 625 Liberty Ave, Suite 1700
Pittsburgh, PA 15222

Signature: 
Date: _____

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-6A5
(1/12)

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: 11/2/18 **Date Permit Application Filed:** 11/2/18

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: See Attached Name: _____
 Address: _____ Address: _____

Notice is hereby given:

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>537030.54</u>
County: <u>Wetzel</u>		Northing: <u>4382945.02</u>
District: <u>Grant</u>	Public Road Access: <u>RI, 19/2</u>	
Quadrangle: <u>Big Run</u>	Generally used farm name: <u>E.T. Bluegrass LLC</u>	
Watershed: <u>Rockcamp Run of Wiley Fork</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: EQT Production Company Address: 2400 Ansys Drive, Suite 200 Canonsburg PA 15317
 Telephone: 304-848-0035
 Email: espine@eqt.com Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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

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WV Department of Environmental Protection

Surface Owners:

ET Blue Grass LLC ✓
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

Ikey J. Willey ✓
12359 Willey Fork Road
Pine Grove, WV 26419

Surface Owners (road or other disturbance):

ET Blue Grass LLC W
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

Wanda L. Byard ✓
1250 Meadowlane Drive
Lewisport, KY 42351

Neal Utt ✓
1204 Big Run Road
Burton, WV 26562

Surface Owners (Pits or impoundments or AST):

ET Blue Grass LLC W
625 Liberty Avenue Suite 1700
Pittsburgh, PA 15222

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

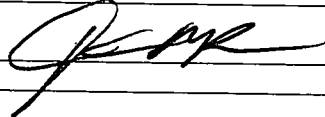
Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Jason Ranson, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>537030.54</u>
County:	<u>Wetzel</u>		Northing:	<u>4382945.02</u>
District:	<u>Grant</u>	Public Road Access:		<u>Rt. 19/2</u>
Quadrangle:	<u>Big Run</u>	Generally used farm name:		<u>E.T. Bluegrass LLC</u>
Watershed:	<u>Rockcamp Run of Wiley Fork</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input checked="" type="checkbox"/> SURFACE OWNER</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input checked="" type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p>
	<p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: <u>E.T. Bluegrass LLC.</u></p> <p>By: <u>Jason Ranson</u></p> <p>Its: <u>Director, Drilling Land</u></p> <p>Signature: </p> <p>Date: _____</p>

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.



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

Reissued July 18, 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 BIG245 Pad Site, Wetzel County

- | | | | |
|-----------|-----------|-----------|-----------|
| BIG245H1 | BIG245H2 | BIG245H3 | BIG245H4 |
| BIG245H5 | BIG245H6 | BIG245H7 | BIG245H8 |
| BIG245H9 | BIG245H10 | BIG245H11 | BIG245H12 |
| BIG245H13 | BIG245H14 | BIG245H15 | BIG245H16 |
| BIG245H17 | BIG245H18 | BIG245H19 | BIG245H20 |
| BIG245H21 | BIG245H22 | BIG245H23 | BIG245H24 |
| BIG245H25 | BIG245H26 | BIG245H27 | BIG245H28 |
| BIG245H29 | BIG245H30 | | |

Dear Mr. Martin,

This well site will be accessed from existing Permit # 06-2016-0430 issued to EQT Production Company for access to the State Road for a well site located off of Wetzel County Route 19/2 SLS.

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

Very Truly Yours,

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

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JUL 25 2018

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

Anticipated Frac Additives
Chemical Names and CAS numbers

4710303267
03/08/2019

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

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PROJECT INFORMATION
 TAX PARCEL
 SURFACE OWNER
 Q/L AND GAS ROYALTY OWNER
 SITE LOCATION
 LOCATION COORDINATES
 GENERAL DESCRIPTION
 SITE DISTURBANCE COMPUTATIONS
 ENTRANCE PERMIT
 MISS UTILITY STATEMENT
 GEOTECHNICAL NOTES
 ENVIRONMENTAL NOTES
 RESTRICTIONS NOTES
 OPERATOR
 ENGINEER
 SURVEYOR

PROJECT INFORMATION

PROJECT NAME: EQT BIG 245
 TAX PARCEL:
 GRANT DISTRICT, WETZEL COUNTY, WV
 MAP 08 PARCELS 08, 14, 21, 22

SURFACE OWNER:
 WANDA L. BYARD
 MAP 08, PARCEL 08
 GRANT DISTRICT, WETZEL COUNTY, WV
 TOTAL PROPERTY AREA: 58.16 +/- ACRES
 TOTAL DISTURBANCE AREA: 4.05 +/- ACRES
 NEAL UTT
 MAP 08, PARCEL 14
 GRANT DISTRICT, WETZEL COUNTY, WV
 TOTAL PROPERTY AREA: 51.0 +/- ACRES
 TOTAL DISTURBANCE AREA: 6.14 +/- ACRES
 KEYE JOE WILLEY
 MAP 08, PARCEL 21
 GRANT DISTRICT, WETZEL COUNTY, WV
 TOTAL PROPERTY AREA: 76.27 +/- ACRES
 TOTAL DISTURBANCE AREA: 0.48 +/- ACRES
 ET BLUE GRASS LLC
 MAP 08, PARCEL 22
 GRANT DISTRICT, WETZEL COUNTY, WV
 TOTAL PROPERTY AREA: 136.93 +/- ACRES
 TOTAL DISTURBANCE AREA: 29.07 +/- ACRES

Q/L AND GAS ROYALTY OWNER:
 SHIBEN ESTATE, INC.
 GRANT DISTRICT, WETZEL COUNTY, WV
 TOTAL PROPERTY AREA: 140.0 +/- ACRES

SITE LOCATION:
 THE EQT BIG 245 ACCESS ROAD ENTRANCE IS LOCATED 4.477 +/- NORTH EAST OF THE JUNCTION OF CO RT. 16 AND CO. RT. 162. THE WELL PAD IS LOCATED 1.4 MILES +/- NORTH EAST OF THE JUNCTION OF CO. RT. 15 AND CO. RT. 18.

LOCATION COORDINATES

EQT BIG 245 CONSTRUCTION ENTRANCE
 LATITUDE: 39.599650 LONGITUDE: -80.567893 (NAD 83)
 EQT BIG 245 WELL PAD CENTER
 LATITUDE: 39.595411 LONGITUDE: -80.568809 (NAD 83)
 EQT BIG 245 AST TANK CENTER
 LATITUDE: 39.596373482 LONGITUDE: -80.56789453 (NAD 83)

GENERAL DESCRIPTION

THE WELL PAD, ACCESS ROAD AND TANK PAD ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

WELL PAD = 5.76 +/- ACRES
 AST PAD = 3.00 +/- ACRES
 MAIN ACCESS ROAD = 5.79 +/- ACRES
 STOCKPILES = 25.33 +/- ACRES
 TOTAL SITE DISTURBANCE AREA = 40.35 +/- ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MW-100) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MISS UTILITY STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN; TICKET # 32596855 IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION HAS BEEN PERFORMED FOR THIS SITE AND GEO-TECHNICAL REPORT HAS BEEN PREPARED BY LARSON DESIGN GROUP DATED 10/23/2015. THE ENGINEER AND SURVEYOR ARE NOT RESPONSIBLE FOR UN-ORSEEN SUBSURFACE IRREGULARITIES CAUSING ADDITIONAL WORK OR ADDITIONAL CONSTRUCTION MEASURES REQUIRED BEYOND THOSE STANDARD PRACTICES SHOWN ON THIS PLAN AS A RESULT OF ANY OTHER GEOTECHNICAL COMPUTATIONS ENCOUNTERED DURING CONSTRUCTION.

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED ON JULY 7, 2011; MAY 30, 2012; AUGUST 14, 2012; MARCH 11-13, 2015; APRIL 3, 2015; AND MAY 8, 2015, BY POTESTA & ASSOCIATES TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE MAY 27, 2015 REPORT FOR THE BIG 245 SITE WAS PREPARED BY POTESTA & ASSOCIATES, INC. SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE REPORT DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDNR. IT IS STRONGLY RECOMMENDED THAT THE AFORESAID AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION DESCRIBED BY THIS REPORT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

EQT BIG 245 SITE PLAN EQT PRODUCTION COMPANY

PERMITTED WELL NO. WV 514365, API 47-103-03154 PROPOSED WELL NO. BIG245H1, BIG245H2, BIG245H3, BIG245H4, BIG245H5, BIG245H6, BIG245H7, BIG245H8, BIG245H9, BIG245H10, BIG245H11, BIG245H12, BIG245H14, BIG245H15, BIG245H16, BIG245H17

SITUATED ON THE WATERS OF BIG RUN, A TRIBUTARY OF WILLEY FORK, GRANT DISTRICT, WETZEL COUNTY, WV



RESTRICTIONS NOTES

1. THERE ARE INTERMITTENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE LOD, AND A WAIVER FROM THE WVDEP WILL BE APPLIED FOR THROUGH THE ARMY CORPS OF ENGINEERS BY EQT PRODUCTION COMPANY.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD.
4. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELLS/IS BEING DRILLED, STANTEC AND SMITH LAND SURVEYING ARE NOT RESPONSIBLE FOR ANY EXISTING WATER WELL DEVELOPED SPRING DISCOVERED DURING CONSTRUCTION.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 650 FEET OF THE CENTER OF THE PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQUARE FEET OF THE CENTER OF THE PAD.

BIG RUN QUADRANGLE
WEST VIRGINIA
7.5 MINUTE SERIES

MISS Utility of West Virginia
1-800-344-6468
West Virginia State Law
(Section 20V, Chapter 25-2c)
Requires that you call two
business days before you dig in
the state of West Virginia.
IT'S THE LAW!



LIST OF DRAWINGS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	OVERALL PLAN SHEET INDEX
4-9	WELL PAD LAYOUT
9	ACCESS ROAD PROFILES
10	WELL PAD PROFILES
11-12	ACCESS ROAD CROSS SECTIONS
13-17	WELL PAD CROSS SECTIONS
18-22	AST TANK PAD CROSS SECTIONS
23-24	EXCESS MATERIAL STOCKPILE PROFILES
25-46	EXCESS MATERIAL STOCKPILE CROSS SECTIONS
47	RECLAMATION PLAN
48	TYPICAL ACCESS ROAD CROSS SECTIONS
49-51	CONSTRUCTION DETAILS
52	CONSTRUCTION QUANTITIES
53	RECLAMATION QUANTITIES

LEGEND	
EX. INDEX CONTOUR	PRDP. INDEX CONTOUR
EX. INTERMEDIATE CONTOUR	PRDP. INTERMEDIATE CONTOUR
EX. BOUNDARY LINE	PRDP. CUT LINE
EX. EDGE OF ROAD PAVEMENT	PRDP. FILL LINE
EX. GUARDRAIL	PRDP. LIMITS OF DISTURBANCE
EX. FENCELINE	ENVIRONMENTAL ASSESSMENT AREA OF DELINEATION
EX. GATE	PROP. WELL HEAD
EX. OVERHEAD UTILITY	PROP. CONTAINMENT BERM
EX. OVERHEAD UTILITY RW	PROP. RIP-RAP INLET PROTECTION
EX. GUY WIRE	PROP. COMPOST FILTERSOCK
EX. UTILITY POLE	PROP. DITCH WITH CHECK DAMS
EX. TELEPHONE LINE	PROP. CULVERT
EX. GASLINE	PROP. RIP-RAP OUTLET PROTECTION
EX. GASLINE RW	PROP. STONE CONSTRUCTION ENTRANCE
EX. WATERLINE	PROP. TIRELINE
EX. GAS WELL	PROP. STONE CONSTRUCTION ENTRANCE
EX. TREELINE	X-SECTION GRID INDEX
EX. REFERENCE TREE	X-SECTION GRID INTERMEDIATE
EX. DELINEATED STREAM	X-SECTION PROPOSED GRADE
EX. DELINEATED WETLAND	X-SECTION EXISTING GRADE
EX. BUILDING	

OPERATOR EQT PRODUCTION COMPANY OPERATOR ID: 305695 P.O. BOX 280 BRIDGEPORT, WV 26330 PHONE: (204) 348-3870	ENGINEER STANTEC CONSULTING, INC. 111 ELKINS STREET FARMINGTON, WV 26564 PHONE: (304) 357-9401	SURVEYOR SMITH LAND SURVEYING, INC. PO BOX 190 220 WEST MAIN STREET GLENNVILLE, WV 26031 PHONE: (304) 482-5654
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TITLE SHEET
 EQT BIG 245
 GRANT DISTRICT
 WETZEL COUNTY, WV

DATE: 01-16-2018
 SCALE: AS SHOWN
 DESIGNED: CSR
 CHECKED: JMW
 REVIEWED: RLD
 FILE NO.: SLS17932
 SHEET 1 OF 51
 REV: 07/25/2018

REVERSED DISTURBANCE AREAS

EQT BIG 245 SITE PLAN

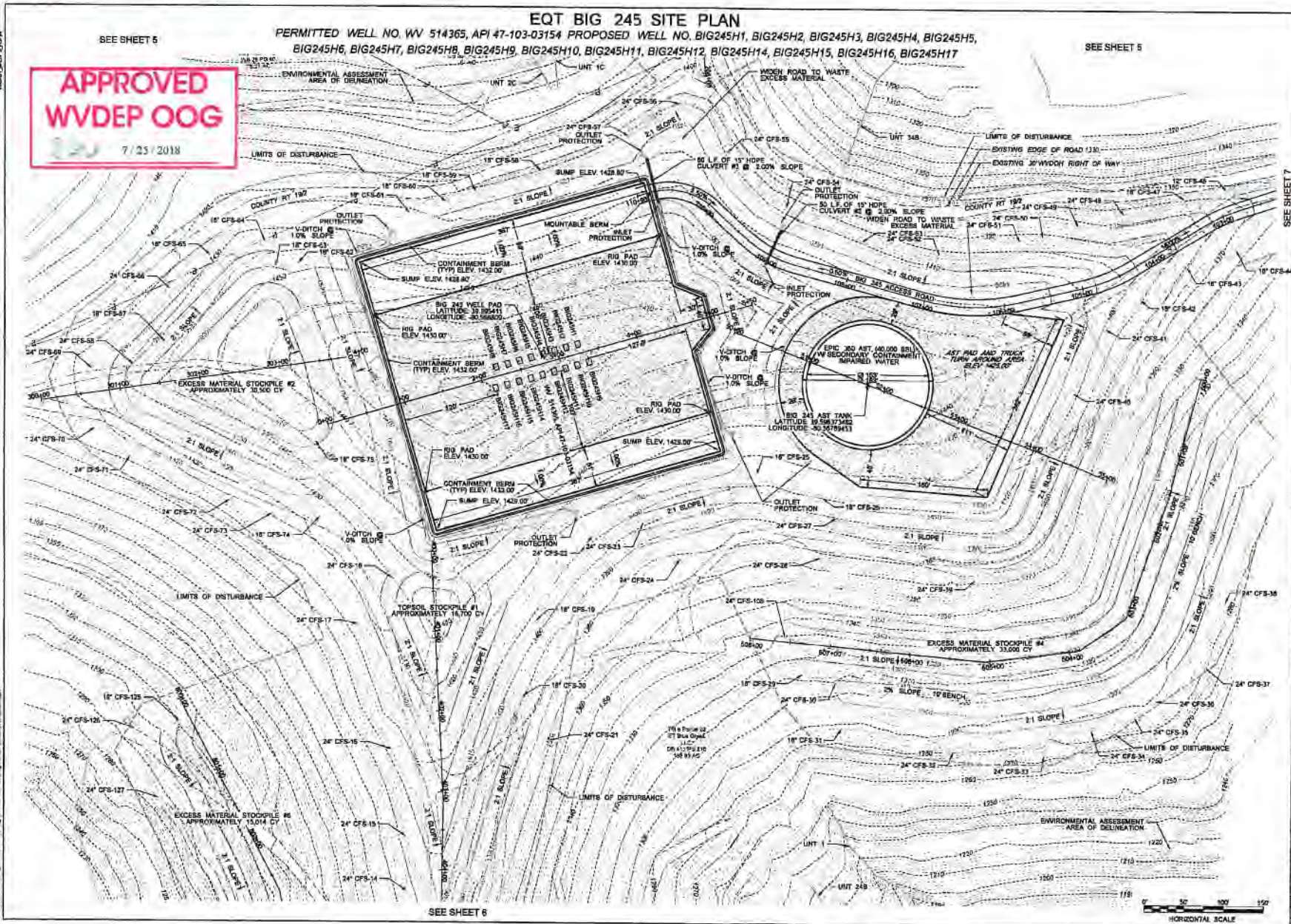
PERMITTED WELL NO. WV 514365, API 47-103-03154 PROPOSED WELL NO. BIG245H1, BIG245H2, BIG245H3, BIG245H4, BIG245H5, BIG245H6, BIG245H7, BIG245H8, BIG245H9, BIG245H10, BIG245H11, BIG245H12, BIG245H14, BIG245H15, BIG245H16, BIG245H17

SEE SHEET 5

SEE SHEET 5

APPROVED
WVDEP OOG

7/25/2018



SEE SHEET 6



UNIT 23



THIS DOCUMENT HAS BEEN PREPARED BY ENGINEER FOR PROJECT NO. 1007

SITE PLAN
EQT BIG 245
GRANT DISTRICT
WETHEL COUNTY, WV

DATE: 04-18-2018
SCALE: AS SHOWN
DESIGNED: GSH
CHECKED: JAV
REVISED: N/A
FILE NO.: 1007-1812
SHEET: 4 OF 10
REV: