

#### west virginia department of environmental protection

Office of Oil and Gas 601 57th Street, S.E. Charleston, WV 25304 (304) 926-0450 fax: (304) 926-0452 Earl Ray Tomblin , Governor Randy C. Huffman , Cabinet Secretary www.dep.wv.gov

Monday, August 15, 2016 WELL WORK PERMIT Horizontal 6A / Horizontal 6A Well - 1

EQT PRODUCTION COMPANY 120 PROFESSIONAL PLACE

BRIDGEPORT, WV 26330

Re: Permit approval for 514119 47-017-06774-00-00

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: 514149 Farm Name: MEYER, ELEANOR

U.S. WELL NUMBER: 47-017-06774-00-00 Horizontal 6A / Horizontal 6A Well - 1

Date Issued: 8/15/2016

Promoting a healthy environment.

API Number: 17-06774

## **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. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
- 8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
- 9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

## 4701706774

API NO. 47-017 -

OPERATOR WELL NO. 514119
Well Pad Name: WEU8

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

1) Well Operator: EQT Prod	uction Company	306686	Doddridge	West Union	West Union
		Operator ID	County		Quadrangle
2) Operator's Well Number: 5	14119	Well Pa	d Name: WEU	J8	
3) Farm Name/Surface Owner	Eleanor Meyer	Public Ros	ad Access: RT	50	
4) Elevation, current ground:	1071 Ele	evation, proposed	post-construct	ion: 1071	
5) Well Type (a) Gas <u>x</u> Other	Oil	Und	erground Stora	ge	
(b)If Gas Sh	nallow X	Deep			
	orizontal X				
6) Existing Pad: Yes or No Yes					
7) Proposed Target Formation( Marcellus, 6640' TVD, 2951 F	s), Depth(s), Anticipes, Top of Marcellus	pated Thickness a 6619	and Expected P	ressure(s):	
3) Proposed Total Vertical Dep	th: 6640				
) Formation at Total Vertical 1	Depth: Marcellus	1			
0) Proposed Total Measured I	Depth: 13906				
1) Proposed Horizontal Leg L	ength: 4727				
2) Approximate Fresh Water S	Strata Depths:	119, ,263, 294,	642		
3) Method to Determine Fresh	Water Depths: By	y Offset wells			
4) Approximate Saltwater Dep	oths: 1695, 1844				
5) Approximate Coal Seam De	epths: 213, 830				
6) Approximate Depth to Poss	ible Void (coal min	e, karst, other):	None reported		
7) Does Proposed well location irectly overlying or adjacent to	n contain coal seam o an active mine?	s Yes	No.	x	
(a) If Yes, provide Mine Info:	Name:				
	Depth:				
	Seam:			Rece	eived
	Owner:			Office of	ा। १ Gas
			0	MAY 2	7 /016

WW-6B (04/15)

API NO. 47-\_017

OPERATOR WELL NO. 514119
Well Pad Name: WEU8

18)

## **CASING AND TUBING PROGRAM**

ТҮРЕ	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	20	New	A-500	78.6	40	40	60 ft^3 / CTS
Fresh Water	13 3/8	New	J-55	54.5	933	933	821 ft^3 / CTS
Coal						•	
Intermediate	9 5/8	New	P-110	40	5460	5460	2148 ft^3 / CTS
Production	5 1/2	New	P-110	20	13906	10000	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40'	
Liners						above top perf or 80° inclination	

ТҮРЕ	Size (in)	Wellbore Diameter (in)	<u>Wall</u> <u>Thickness</u> <u>(in)</u>	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26	.375	1378	1102	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	1.19
Coal							1.10
Intermediate	9 5/8	12 3/8	.395	7900	6320	See Variance	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Н	1.07/1.86
Tubing	2 3/8	NA	.19	7700			1.0771.00
Liners							<del></del>

### **PACKERS**

Kind:		
Sizes:		
Depths Set:		
	 -u	Received

Office of Oil & Gas

MAY 27 2016

DAF 5/1465

WW-6B	
(10/14)	

API NO. 47- 017	- 06774	
OPERATOR W	/ELL NO. 514119	_
Well Pad Nan	ne: WEU8	_

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 4158'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): +\- 15.1
- 22) Area to be disturbed for well pad only, less access road (acres): +/- 3.1
- 23) Describe centralizer placement for each casing string:
- Surface: Bow spring centralizers One centralizer at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers- One centralizer at the shoe and one spaced every 500'.
- Production: One solid body centralizer spaced every joint from production casing shoe to KOP

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

Conductor: Class A no additives

Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries, .25% Flake. Loss Circulation Material (LCM) Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) Production:

Lead (Type H Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50:50 POZ (extender) Tail (Type H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss). .2% SuperF Reduces amount of water lost to formation. 60 % Calcuim Carbonate. Acid solubility.

Office of Oil & Gas

25) Proposed borehole conditioning procedures:

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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.

#### **EQT Production**

#### **Hydraulic Fracturing Monitoring Plan**

Pad ID: WEU8

**Doddridge County, WV** 

8/10/16

RESEIVED
Office of Oil and Gas

AUG 1 2 2016

WV Department of Environmental Protection

#### **Purpose**

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Doddridge County, WV prior to hydraulic fracturing at the following EQT wells on the WEU8 pad: 514119.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,600' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,200' TVD).

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

#### 1. Communications with Conventional Well Operators

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

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

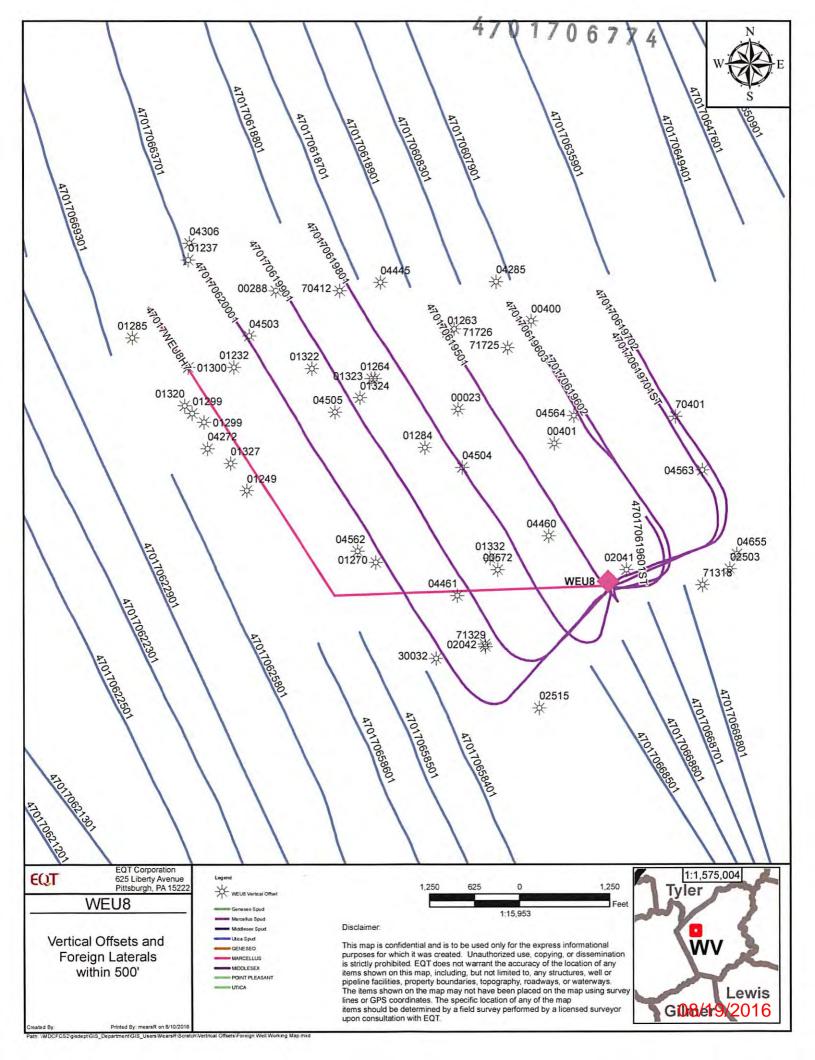
The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

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

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

#### 2. Reporting

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



WelliD WellStatus	COMP DATE FmatTi	) Permit	Operator	Longitude Latitude TargetFm	DATUM ELEVATION	SS DEPTH TD
4701701249 O&G	6/9/1965	01249	GEORGE MOSES	-80.8276 39.2735	901	-1229.0000 2130.00
4701701285 OIL	8/30/1965	01285	GEORGE MOSES	-80.8332 39.2793	1133	-1147.0000 2280.00
4701701299 OIL-P	9/11/1965	01299	MANN DRILLING	-80.8297 39.2761	1108	-1151.0000 2259.00
4701701324 PSEUDO		01324	MANN DRILLING	-80.8221 39.2770	0	0.00
4701770412 PSEUDO		70412	SOUTH PENN OIL	-80.8230 39.2811	0	0.00
4701700023 D&A-OG	2/15/1930	00023	PITTSBURGH & W VA GAS	-80.8172 39.2766 DEVONIAN UPPER /SERIES/	812	2561.00
4701701237 10&1G	5/5/1965	01237	MOSES GEORGE W	-80.8305 39.2822 BIG INJUN /SD/	1078	2280.00
4701704445 GAS	6/12/1998	04445	KEY OIL INCORPORATED	-80.8210 39.2814 ALEXANDER	1078	5520.00
4701701322 ABD-GW	10/13/1965	01322	MANN DRILLING	-80.8244 39.2781 BIG INJUN /SD/	990	2078.00
4701702515 GAS	11/20/1979		J & J ENTERPRISES	-80.8133 39.2653 DEVONIAN /SD/	1100	5457.00
4701704562 GAS	7/5/2001		KEY OIL COMPANY	-80.8222 39.2712 DEVONIAN UPPER /SERIES/	953	5375.00
4701704564 GAS	6/23/2001	04564	KEY OIL COMPANY	-80.8116 39.2763 DEVONIAN UPPER /SERIES/	811	5338.00
4701704460 GAS	12/22/1998	04460	DOMINION APPALACHIAN DEVELOPMENT INC	-80.8128 39.2718 ALEXANDER	840	5352.00
4701704461 GAS	12/8/1998	04461		-80.8173 39.2695 ALEXANDER	1048	5475.00
4701704503 GAS	5/28/1999	04503	KEY OIL INCORPORATED	-80.8275 39.2794 ALEXANDER	926	5350.00
4701704504 GAS	5/21/1999	04504	KEY OIL INCORPORATED	-80.8171 39.2744 ALEXANDER	1187	5635.00
4701704505 GAS	5/14/1999		KEY OIL INCORPORATED	-80.8233 39.2765 ALEXANDER	977	5408.00
4701704306 GAS	10/15/1996	04306	KEY OIL INCORPORATED	-80.8304 39.2829 ALEXANDER	1110	5512.00
4701704272 GAS	8/29/1996		KEY OIL INCORPORATED	-80.8295 39.2751 ALEXANDER	1175	5590.00
4701704285 GAS	8/22/1996		KEY OIL INCORPORATED	-80.8154 39.2814 DEVONIAN /SD/	1015	5457.00
4701700288 10&1G	10/1/1959	00288		-80.8262 39.2811 POCONO	975	2151.00
4701701232 ABDOGW	3/1/1965		MOSES GEORGE W	-80.8282 39.2782 BIG INJUN /SD/	979	2080.00
4701701263 10&1G	6/1/1965		MOSES GEORGE W	-80.8178 39.2795 BIG INJUN /SD/	1096	2260.00
4701701264 10&1G	6/1/1965		MOSES GEORGE W	-80.8213 39.2777 BIG INJUN /SD/	943	2047.00
4701701270 OIL	7/1/1965		MOSES GEORGE W	-80.8213 39.2708 BIG INJUN /SD/	923	2155.00
4701701284 GAS	8/7/1965	01284	MOSES GEORGE W	-80.8189 39.2751 POCONO	964	2125.00
4701701299 ABD-OW	9/1/1965		MANN DRILLING	-80.8303 39.2764 BIG INJUN /SD/	1108	2259.00
4701701300 OIL	9/1/1965	01300		-80.8305 39.2782 BIG INJUN /SD/	978	2117.00
4701701320 OIL	9/1/1965		MANN DRILLING	-80.8306 39.2767 POCONO	1050	2106.00
4701701323 OIL	11/1/1965		MANN DRILLING	-80.8215 39.2777 POCONO	935	1976.00
4701701327 OIL	10/1/1965		MANN DRILLING	-80.8284 39.2746 POCONO	1180	2251.00
4701701332 D&A	11/1/1965		MANN DRILLING	-80.8157 39.2709 POCONO	985	2225.00
4701730032 ABD-GW	10/27/1915		PITTSBURGH & W VA GAS	-80.8184 39.2671 DEVONIAN UPPER /SERIES/	1197	2909.00
4701700400 GAS	9/28/1960		WETZEL OLIN B	-80.8137 39.2799 POCONO	812	1905.00
4701700401 GAS	1/25/1961		WETZEL OLIN B	-80.8125 39.2753 BIG INJUN /SD/	807	1882.00
4701700572 ABD-GW	9/1/1961		WETZEL OLIN B	-80.8153 39.2705 BIG INJUN /SD/	880	2009.00
4701771329 UNKWN			J & J ENTERPRISES	-80.8159 39.2676	0	0.00
4701771726 UNKWN			INDUSTRIAL GAS ASSOC	-80.8174 39.2796	0	0.00
4701771725 UNKWN			PHILADELPHIA OIL	-80.8148 39.2789	. 0	0.00
4701702042 ABD-GW	6/21/1917		EQT PRODUCTION COMPANY	-80.8160 39.2677 SQUAW /SD/	752	1939.00
4701770401 PSEUDO			PHILADELPHIA OIL	-80.8066 39.2763	0	0.00
4701702503 GAS	11/20/1979		J & J ENTERPRISES	-80.8039 39.2705 DEVONIAN /SH/	825	5211.00
4701704655 GAS	3/3/2002		KEY OIL COMPANY	-80.8036 39.2711 DEVONIAN UPPER /SERIES/	1177	5627.00
4701704563 GAS	6/30/2001		KEY OIL COMPANY	-80.8053 39.2743 DEVONIAN UPPER /SERIES/	1118	5619.00
4701702041 GAS	8/6/1917	02041		-80.8090 39.2705 POCONO	999	2141.00
4701771318 UNKWN		71318	UNKNOWN	-80.8053 39.2699	0	0.00

Perforated formation

UWI	Name	Depth Top	Base Depth
47017013220000	SALT SD 3	1690	1768
47017013220000	LITTLE LIME	1905	1924
47017013220000	PENCIL CAVE	1924	1946
47017013220000	BIG LIME	1946	2006
47017013220000	BIG INJUN /SD/	2006	
47017042850000	LITTLE LIME	1950	1990
47017042850000	BIG LIME	1995	2044
47017042850000	BIG INJUN /SD/	2044	2127
47017042850000	WEIR /SD/	2279	2394
47017042850000	BEREA	2477	2484
47017042850000	GORDON /SD/	2680	2716
47017042850000	WARREN /SD/	3345	3410
47017042850000	SPEECHLEY	3420	3532
47017042850000	BALLTOWN /SD/	3846	4476
47017042850000	RILEY /SD/	4510	4573
47017042850000	RILEY 2	4760	4834
47017042850000	RILEY 3	4886	4920
47017042850000	BENSON /SD/	4968	4978
47017042850000	ALEXANDER	5212	5304
47017025030000	LITTLE LIME	1665	1680
47017025030000	BIG LIME	1680	1765
47017025030000	BIG INJUN /SD/	1765	1790
47017025030000	WEIR /SD/	2000	2090
47017025030000	ALEXANDER	4900	
47017045630000	LITTLE LIME	2022	2035
47017045630000	BIG LIME	2066	2202
47017045630000	BIG INJUN	2202	2247
47017045630000	WARREN /SD/	3459	3490
47017045630000	BALLTOWN /SD/	3869	3950
47017045630000	RILEY /SD/	4652	
47017045630000	BENSON /SD/	5050	5065
47017045630000	ALEXANDER	5310	5342
47017025150000	BIG LIME	1960	2040
47017025150000	BIG INJUN /SD/	2040	2125
47017025150000	WEIR /SD/	2296	
47017025150000	BENSON /SD/	4928	
47017025150000	ALEXANDER	5250	5318
47017042720000	LITTLE LIME	2148	
47017042720000	BIG LIME	2182	
47017042720000	BIG INJUN /SD/	2262	
47017042720000	WEIR /SD/	2474	
47017042720000	WARREN /SD/	3536	
47017042720000	SPEECHLEY	3614	
47017042720000	BALLTOWN /SD/	3960	
47017042720000	RILEY /SD/	4693	
47017042720000	BENSON /SD/	5144	5156

47017042720000	ALEXANDER	5392	5474
47017043060000	LITTLE LIME	2065	2104
47017043060000	BIG LIME	2104	2176
47017043060000	BIG INJUN /SD/	2176	2246
47017043060000	WEIR /SD/	2400	2523
47017043060000	WARREN /SD/	3467	3534
47017043060000	SPEECHLEY	3544	3662
47017043060000	BALLTOWN /SD/	3858	4494
47017043060000	RILEY /SD/	4627	4708
47017043060000	RILEY 3	4962	5030
47017043060000	BENSON /SD/	5072	5084
47017043060000	ALEXANDER	5321	5408
47017045620000	LITTLE LIME	1902	1950
47017045620000	BIG LIME	1950	2090
47017045620000	BIG INJUN	2090	2136
47017045620000	BALLTOWN /SD/	3750	3900
47017045620000	RILEY /SD/	4505	4525
47017045620000	BENSON /SD/	4925	4931
47017045620000	ALEXANDER	5104	5136
47017044450000	LITTLE LIME	2048	2084
47017044450000	BIG LIME	2084	2142
47017044450000	BIG INJUN /SD/	2142	2224
47017044450000	WEIR /SD/	2378	2495
47017044450000	WARREN /SD/	3440	3509
47017044450000	SPEECHLEY	3518	3633
47017044450000	BALLTOWN /SD/	3830	4568
47017044450000	RILEY /SD/	4601	4674
47017044450000	RILEY 2	4848	4909
47017044450000	RILEY 3	4950	5010
47017044450000	BENSON /SD/	5058	5066
47017044450000		5300	76.22.2
47017044600000	LITTLE LIME	1712	1756
47017044600000	BIG LIME	1756	1834
47017044600000	BIG INJUN /SD/	1834	2472
47017044600000	GORDON /SD/	2472	3140
47017044600000	WARREN /SD/	3140	3301
47017044600000	BALLTOWN /SD/	3301	3952
47017044600000	BRADFORD /SD/	3952	4562
47017044600000	RILEY /SD/	4562	4764
47017044600000	BENSON /SD/	4764	5020
47017044600000	ALEXANDER	5020	2106
47017044610000	BIG LIME	1981	2106
47017044610000	BIG INJUN /SD/ GORDON /SD/	2106 2701	2701 3398
47017044610000 47017044610000	WARREN /SD/	3398	3546
47017044610000	BALLTOWN /SD/	3546	4177
47017044610000	BRADFORD /SD/	4177	4817
47017044610000	DRADI OND /30/	41//	401/

47017044610000	RILEY /SD/	4817	5005
47017044610000	BENSON /SD/	5005	5208
47017044610000	ALEXANDER	5208	
47017045040000	LITTLE LIME	2092	2106
47017045040000	BIG LIME	2134	2234
47017045040000	BIG INJUN /SD/	2234	2268
47017045040000	WEIR /SD/	2425	2542
47017045040000	BEREA	2615	2629
47017045040000	GORDON /SD/	2826	2840
47017045040000	WARREN /SD/	3494	3558
47017045040000	SPEECHLEY	3569	3681
47017045040000	BALLTOWN /SD/	3881	4627
47017045040000	RILEY /SD/	4661	4742
47017045040000	RILEY 2	4912	4965
47017045040000	RILEY 3	5030	5072
47017045040000	BENSON /SD/	5120	5128
47017045040000	ALEXANDER	5365	
47017045050000	LITTLE LIME	1922	
47017045050000	BIG LIME	1967	2024
47017045050000	BIG INJUN /SD/	2024	2257
47017045050000	WEIR /SD/	2257	2455
47017045050000	BEREA	2455	3318
47017045050000	WARREN /SD/	3318	3397
47017045050000	SPEECHLEY	3397	3702
47017045050000	BALLTOWN /SD/	3702	4484
47017045050000	RILEY /SD/	4484	4854
47017045050000	RILEY 3	4854	4934
47017045050000	BENSON /SD/	4934	5182
47017045050000	ALEXANDER	5182	
47017045640000	BIG LIME	1767	1905
47017045640000	BIG INJUN	1905	1957
47017045640000	WARREN /SD/	3160	3192
47017045640000	BALLTOWN /SD/	3570	3640
47017045640000	RILEY /SD/	4335	4365
47017045640000	BENSON /SD/	4760	4770
47017045640000	ALEXANDER	5018	5050
47017046550000	LITTLE LIME	2020	2060
47017046550000	BIG LIME	2060	2194
47017046550000	BIG INJUN	2194	2264
47017046550000	WARREN /SD/	3450	3490
47017046550000	BALLTOWN /SD/	3990	4140
47017046550000	RILEY /SD/	4640	4680
47017046550000	BENSON /SD/	5030	5050
47017046550000	ALEXANDER	5290	5360

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

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

John Centofanti Corporate Director, Environmental Affairs



(date)

[Conventional Well Operator] [address] [state]

RE: Doddridge County Hydraulic Fracturing Notice

Dear Sir/Madam.

EQT has developed a Marcellus pad (West Union 8 pad) located in Doddridge County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,600' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,200' TVD).

EQT anticipates conducting hydraulic fracturing at the West Union 8 pad during the [first,second, third,fourth] quarter of [year]. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

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

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

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

Sincerely, EQT Production

John Centofanti Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas



west virginia department of environmental protection

Office of Oil and Gas 601 57th Street, SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary dep.wv.gov

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

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

#### REPORT OF THE OFFICE

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection easing 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
- 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

Received Office of Oil & Gas MAY 0 9 2016

Promoting a healthy environment

#### 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

Received
Office of Oil 2 Gas
MAY 0 9 2016

API Number 47 - 017 -

Operator's Well No. 514119

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

## FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Watershed (HUC 10) Middle Run and Arnold Creek	OP Code 306686
	Quadrangle West Union
Do you anticipate using more than 5,000 bbls of water to comp	
Will a pit be used? Yes No ✓	res in the interest of the int
If so, please describe anticipated pit waste:	
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)	
Off Site Disposal (Supply form WW Other (Explain	-9 for disposal location)
The closed toop system be used: It so, describe: manapolianion to an o	
Drilling medium anticipated for this well (vertical and horizonta	l)? Air, freshwater, oil based, etc. See Attached
-If oil based, what type? Synthetic, petroleum, etc. Synthetic	nthetic Mud
Additives to be used in drilling medium? See Attached	
Drill cuttings disposal method? Leave in pit, landfill, removed of	offsite, etc. Landfill
-If left in pit and plan to solidify what medium will be	
-Landfill or offsite name/permit number? See Attached	
west virginia solid waste facility. The notice shall be provided	as of any load of drill cuttings or associated waste rejected at any 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 coon August 1, 2005, by the Office of Oil and Gas of the West Virgorovisions of the permit are enforceable by law. Violations of law or regulation can lead to enforcement action.  I certify under penalty of law that I have personally application form and all attachments thereto and that, based	onditions of the GENERAL WATER POLLUTION PERMIT Graved ginia Department of Environmental Protection. I understand that the sany term or condition of the general permit and/or other applicable examined and am familiar with the information submitted on this on my inquiry of those individuals immediately responsible for use accurate, and complete. Lam aware that there are significant
I certify that I understand and agree to the terms and composed in August I, 2005, by the Office of Oil and Gas of the West Virgorovisions of the permit are enforceable by law. Violations of law or regulation can lead to enforcement action.  I certify under penalty of law that I have personally application form and all attachments thereto and that, based obtaining the information, I believe that the information is trapenalties for submitting false information, including the possibility company Official Signature  Company Official (Typed Name) Victoria J. Roark	onditions of the GENERAL WATER POLLUTION PERMIT dissued ginia Department of Environmental Protection. I understand that the sany term or condition of the general permit and/or other applicable examined and am familiar with the information submitted on this on my inquiry of those individuals immediately responsible for the accurate and complete. Lam aware that there are significant
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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.

Received
Office of Oil & Gas
MAY 09 2016

Operator's Well No. 514119

	atment: Acres Disturbed 1	No Additional Prevegetation p	H 6.8
Lime 3	Tons/acre or to corre	ect to pH 6.5	
Fertilizer type Gra	anular 10-20-20		
Fertilizer amount	1/3	lbs/acre	
Mulch 2		Tons/acre	
		Seed Mixtures	
Т	emporary	Perma	anent
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		
Attach: Drawing(s) of road, location provided) Photocopied section of invol		land application (unless engineered plans in	cluding this info have be
Orawing(s) of road, location provided) Photocopied section of invol	lved 7.5' topographic sheet.		cluding this info have be
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Prawing(s) of road, location provided)  Photocopied section of involutional provided provided provided provided by:  Comments:	lved 7.5' topographic sheet		Receive Office of Oil

17-06774

# **EQT Production Water plan Offsite disposals for Marcellus wells**

#### **CWS TRUCKING INC.**

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

#### LAD LIQUID ASSETS DISPOSAL INC.

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

#### TRI COUNTY WASTE WATER MANAGEMENT, INC.

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

#### **Waste Management - Meadowfill Landfill**

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

#### **Waste Management - Northwestern Landfill**

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

#### **BROAD STREET ENERGY LLC**

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

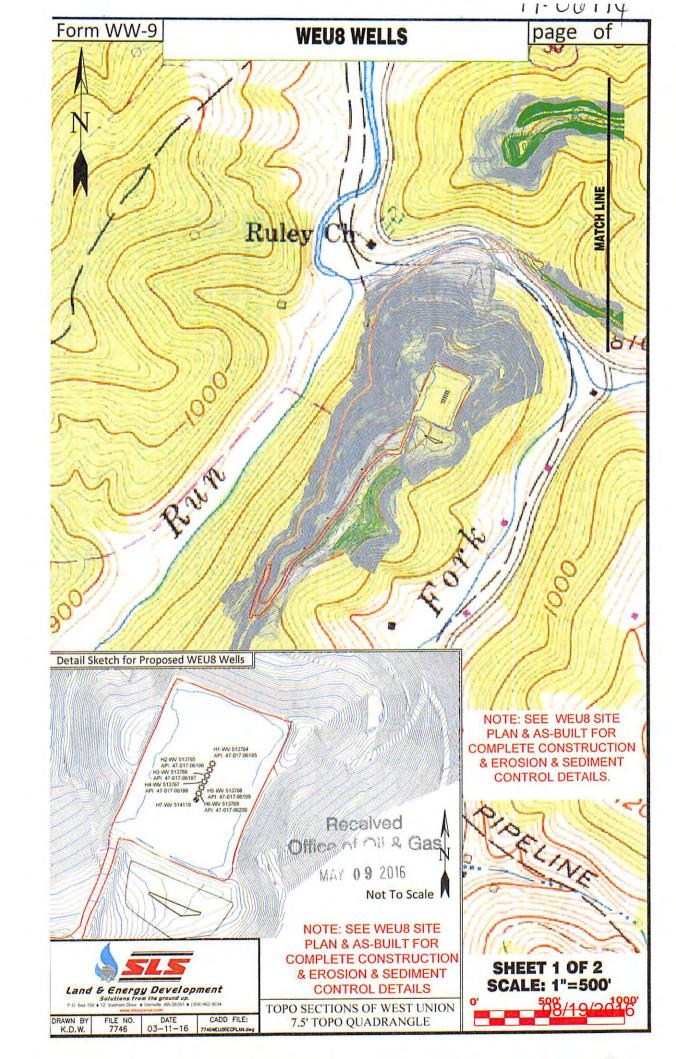
#### **TRIAD ENERGY**

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

#### KING EXCAVATING CO.

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

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Office of Oil & Gas
MAY 09 2016

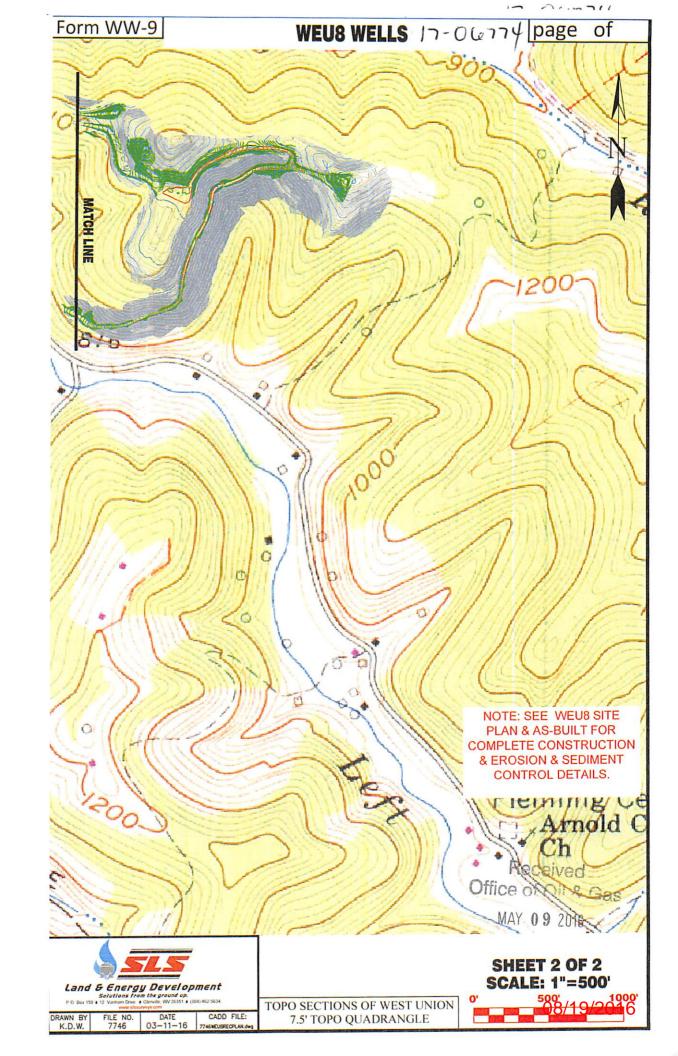




# Site Specific Safety Plan

# EQT WEU 8 Pad West Union Quadrant West Union Doddridge County, WV

5/4/19	For Wells	
EDT Production  Sens. tCing Supera  Title  5-4-16  Date	Date Prepared:	March 22, 2016  WV Oil and Gas Inspector  Title  Date  Received  Office of Oil & Gas  MAY 2 7 2016
		MAY 27 2010



#### 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:

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

See Attached

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

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

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

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

Well Operator: EQT Production Company

By: Victoria Roark

Its: Permitting Supervisor

Office of Oil & Gas

.....

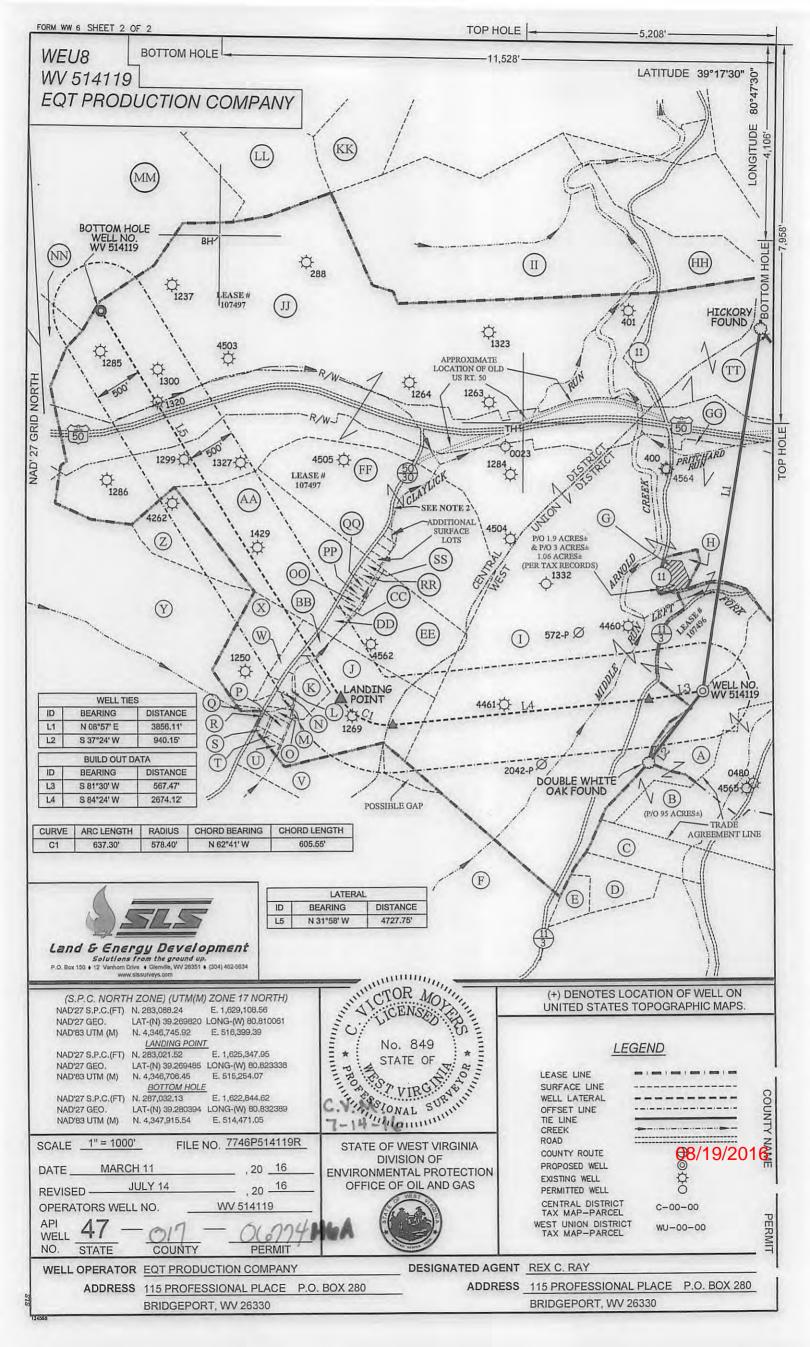
Page 1 of 2

514119

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
107497	Susan J. Childers, et al (current royalty owner)		***	
	Lewis Maxwell , et ux (original lessor)	D.P. Stout		LB 23/344
	D.P. Stout	J.F. Donaldson		LB 24/77
	J.F. Donaldson	Philadelphia Company of WV 1/2 Int. in Leasehold		LB 24/80
	Sara Donaldson	J.D. Foley 1/2 int. in Leasehold		DB 126/120
	J.D. Foley	Equitable Gas Company 1/2 int. in Leasehold		LB 62/6
	Equitable Gas Company	Philadelphia Oil Company		LB 74/214
	Philadelphia Oil Company	Pittsburgh & WV Gas Co.		DB 146/98
	Pittsburgh & WV Gas Co.	Equitable Gas Company		DB 187/32
	Equitable Gas Company	Equitrans, Inc. All RTI		LB 154/475
	Equitrans, Inc.	Equitable Production Company		LB 192/19
	Equitable Production Company	EQT Production Merger-Name Change		DB 281/346
	/			
<u>107496</u>	Eugene R. Armstrong, et al (current royalty owner)		***	
	Joseph and Flora Freeman (original lessor)	J.F. Donaldson		LB 22/430
	J.F. Donaldson	The Philadelphia Company of WV		LB 24/80
	Philadelphia Company of WV	Pittsburgh & WV Gas Company		LB 32/253
	Pittsburgh & WV Gas Company	Equitable Gas Company		DB 121/25
	Equitable Gas Company	Equitrans, Inc. All RTI		LB 154/475
	Equittrans, Inc.	Equitable Production Company		LB 192/19
	Equitable Production Company	EQT Production Merger-Name Change		DB 281/34

<sup>\*\*\*</sup> We will pay one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced or marketed before deducting the amount to be paid to or set aside for the owner of the oil or gas in place, on all such oil or gas to be extracted, produced or marketed from the well.

Received
Office of Oil & Gas
MAY 09 2016



## EQT PRODUCTION COMPANY

Α	MARY NESLER	59.15 ACRES±	TM WU-14-20
В	MARY NESLER	16,4 ACRES±	TM WU-14-13
C	HOMER BROOKS ET AL	#0.1 ACRES±	TM WU-14-15.6
D	CYNTHIA & HOMER BROOKS JR.	12.9 ACRES±	TM WU-14-15
E	CYNTHIA & HOMER BROOKS JR.	6.5 ACRES±	TM WU-14-11
F	LIVINGSTONE BEE	49 ACRES±	TM WU-14-12
G	RULEY CHURCH	1.9 ACRES±	TM WU-14-8
H	TRUSTEES OF M.P. CHURCH	3 ACRES±	TM WU-14-8.1
I	ELEANOR MEYER	349.75 ACRES±	TM WU-14-06
J	GREGORY CROSS ET AL BI	P23.04 ACRES±	TM C-10-25.11
K	GREGORY CROSS ET AL	3.54 ACRES±	TM C-10-25.15
L	RYAN HOSKINSON	0.56 ACRES±	TM C-10-25.10
M	DAVID SCHWEINEBRATEN ET AL	0.75 ACRES±	TM C-10-25.12
N	DAVID SCHWEINEBRATEN ET AL	D.01 ACRES±	TM C-10-25,14
0	JILL MYERS	1 ACRES±	TM C-10-25.7
P	JOHN & SUE HILEMAN	LOTS 8 & 9	TM C-10-25,1
.Q	DARRELL MOORE	0.26 ACRES±	TM C-10-25.13
R	JOHN & SUE HILEMAN	LOTS 2 & 3	TM C-10-25.2
S	DONALD & PAMELA SPONAUGLE	LOT I	TM C-10-25.9
T	JOHN & SUE HILEMAN	LOT 7	TM C-10-25.5
U	DONALD & PAMELA SPONAUGLE	LOT 6	TM C-10-25.6
V	PAULINE GREAVER	13 ACRES±	TM C-10-32
W	RICHARD & ROBERTA TODD	2.18 ACRES±	TM C-10-25.16
X	DARRELL MOORE	28.16 ACRES±	TM C-10-25
Y	DARRELL MOORE	125 ACRES±	TM C-10-20
Z	DARRELL MOORE	15 ACRES±	TM C-10-21
AA	CARY & PATRICIA MEANS	32.63 ACRES±	TM C-10-22
BB	VIRGINIA CROSS	1.05 ACRES±	TM C-10-25.17
CC	JAMES & MARTHA MESSENGER	0.37 ACRES±	TM C-10-24.02
DD	MICHAEL SHEETS	1.10 ACRES±	TM C-10-24.01
EE	MICHAEL SHEETS	33.53 ACRES±	TM C-10-24
FF	MARK & CLARA McGILL	53.50 ACRES±	TM C-10-23
GG	ANTHONY & LINDA ERVOLINA	1.48 ACRES±	TM WU-14-05
HH	SOLOMON TRUST	20 ACRES±	TM C-10-05
П	RALPH & JUDITH VALENTINE	104.62 ACRES±	TM C-10-04
IJ	ANTHONY MANCUSO	217.64 ACRES±	TM C-10-03
KK	ELLEN MARTIN	41.26 ACRES±	TM C-07-87
LL	ROBERT TOWNER ET AL	34.71 ACRES±	TM C-07-86
MM	MICHAEL & ROSALIND WEBB	75.43 ACRES±	TM C-07-85
NN	FOUR LEAF LAND COMPANY	105.14 ACRES±	TM C-10-02
00	CLARA & MARVIN BRISSEY ET AL	0.541 ACRES±	TM C-10-22.1
PP	FREDDIE MOORE ET UX	0.546 ACRES±	TM C-10-22.2
QQ	MARY TOWNER	0.551 ACRES±	TM C-10-22.5
RR	MARY TOWNER	0.58 ACRES±	TM C-10-22.4
SS	WAYMAN POSTLEHWAITE ET AL	0.564 ACRES±	TM C-10-22.3
TT	A.D. PERINE	2.91 ACRES±	TM C-14-1.2

ROYALTY OWNERS			
SUSAN J. CHILDERS ET AL	960 AC,±	LEASE NO. 107497	

#### NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS 2500 SQ, FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD. 2. CO. RT. 50/30 IN THIS AREA WAS FORMERLY KNOWN AS OLD US RT 50, PORTIONS OF WHICH WERE ALSO KNOWN AS OLD NORTHWEST TURNPIKE.

11.528

LATITUDE 39°17'30"

80°47

LONGITUDE

-4,106

TOP HOLE

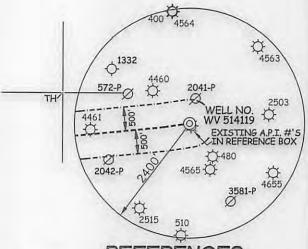
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH) NAD'27 S.P.C.(FT) N. 283,088.24 N. 283,088.24 E. 1,629,108.56 LAT-(N) 39.269820 LONG-(W) 80.810061 NAD'27 GEO. NAD'83 UTM (M) N. 4,346,745.92 E. 516,399.39

LANDING POINT

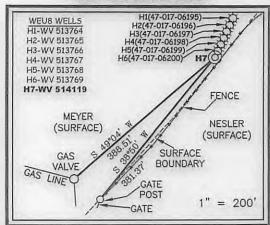
NAD'27 S.P.C.(FT) N. 283,021.52 E. 1,625,347.95 NAD'27 GEO. LAT-(N) 39.269485 LONG-(W) 80.823338 NAD'83 UTM (M) N. 4,346,706.45 E. 515,254.07 **BOTTOM HOLE** 

NAD'27 S.P.C.(FT) N. 287,032.13 E. 1,622,844.62 NAD'27 GEO. LAT-(N) 39.280394 LONG-(W) 80.832389 NAD'83 UTM (M) N. 4,347,915.54 E. 514,471.05

BOTTOM



REFERENCES



Land & Energy Development

Solutions from the ground up.
P.O. Box 150 • 12 Vanhom Drive • Glerville, WV 26351 • (304) 462-5634

www.elsaurveya.com

No. 849
STATE OF VIRCHIA 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

MINIMUM DEGREE

WELL STATE

API

DATE MARCH 11

REVISED JULY 14

OPERATORS WELL NO.

COUNTY

WV 514119 101 PERMIT

, 20 \_16

\_ , 20 16

OF ACCURACY

HORIZONTAL & VERTICAL

CONTROL DETERMINED BY\_

1/2500

FILE NO.

DGPS (SURVEY GRADE TIE TO CORS NETWORK)

7746P514119R

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

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



LIQUID WASTE WELL \_ INJECTION\_ DISPOSAL "GAS" PRODUCTION\_X STORAGE\_ \_ DEEP\_\_ SHALLOW TYPE: LOCATION: 1,071 MIDDLE RUN AND ARNOLD CREEK PAD ELEVATION \_ WATERSHED\_ DISTRICT WEST UNION WEST UNION 7.5 DODDRIDGE COUNTY\_ QUADRANGLE \_ SURFACE OWNER \_\_ELEANOR MEYER 349.75± ACREAGE \_ ROYALTY OWNER \_\_\_EUGENE R. ARMSTRONG ET AL 107496 08/19/20 ACREAGE -PROPOSED WORK: LEASE NO .. \_ CONVERT \_ DRILL DEEPER\_\_\_\_ REDRILL\_ FRACTURE OR STIMULATE \_ X PLUG OFF OLD FORMATION\_ PERFORATE NEW FORMATION \_\_\_\_ PLUG AND ABANDON\_ CLEAN OUT AND REPLUG\_ . OTHER

WELL OPERATOR EQT PRODUCTION COMPANY

PHYSICAL CHANGE IN WELL (SPECIFY)

DESIGNATED AGENT REX C. RAY

TARGET FORMATION

ESTIMATED DEPTH\_

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

MARCELLUS

6.619



January 13, 2016

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

Re: WEU8 well pad, well number 514119 West Union District, Doddridge County

Dear Mr. Martin,

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

Sincerely,

Vicki Roark

Permitting Supervisor-WV

Well

514119(WEU8H7)

**EQT Production** 

West Union Quad Doddridge County, WV

Azimuth 328 7402 Vertical Section

Note: Diagram is not to scale Top Base Casing and Cementing Deepest Fresh Water: 642' TVD TVD **Formations** Type Conductor Surface Intermediate Production Conductor 40 Hole Size, In. 26 17 1/2 12 3/8 8 1/2 Casing Size, OD In. 13 3/8 20 9 5/8 5 1/2 Base Fresh Water Casing Wall Thickness, In. 642 0.375 0.380 0.395 0.361 Depth, MD 40' 933' 5.460' 13,906 Surface Casing 933 Weight 78.6# 54.5# 40# 20# Grade A-500 J-55 P-110 P-110 Base Red Rock 1139 New or Used New New New New Maxton 1573 - 1740 Burst (psi) 1378 2,700 7,900 12,640 **Big Lime** 1987 - 2094 Cement Class A A / Type 1 A / Type 1 H 2101 - 2125 Big Injun Cement Yield 1.18 1.19 1.19 1.07/1.86 Weir 2225 - 2394 Top of Cement (Planned) Surface Surface Surface 500' above top Producing Zone Gantz 2477 - 2490 Method Displacement Displacement Displacement Displacement Fifty foot Est. Volume (cu ft) 2604 - 2638 60 821 2,148 1,715 Thirty foot 2677 - 2695 Calcium Carbonate, Fluid Loss. Gordon 2759 - 2769 Extender, Dispersent, Viscosifier, Calcium Forth Sand 2808 - 2815 Possible Additives N/A Calcium Chloride Defoamer, POZ, Bonding Agent, Chloride Bayard 2890 - 2900 Retarder, Anti-Warren 3326 - 3401 Settling/Suspension Agent Speechlev 3417 - 3523 KOP@ Balltown A 4009 - 4186 4,158 Riley 4547 - 4574 Benson 4968 - 4994 5220 - 5299 Alexander Intermediate Casing 5349 Sonyea 6284 - 6424 Middlesex 6424 - 6476 Genesee 6476 - 6541 Geneseo 6541 - 6580 Tully 6580 - 6601 Hamilton 6601 - 6619 Marcellus 6619 - 6674 **Production Casing** MD 13906 Designation of the second Onondaga 6674

Proposed Well Work:

Drill and complete a new horizontal well in the Marcellus formation.

Drill the vertical to an approximate depth of 4158'.

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



)ffice

Land curve @

6,640' TVD

9,179' MD

4,727' Lateral

Est. TD @

6,640

13,906'

TVD

MD

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

Date of Noti	ce Certification: 5-4-110		API No. 4	7- 017 -	06774
				Well No. 514	119
				Name: WEU8	
Notice has	been given:			VVVV 1	-
Pursuant to th	ne provisions in West Virginia Code	§ 22-6A, the Operator has provi-	ded the red	quired parties	with the Notice Forms listed
below for the	tract of fand as follows:				
State:	W		Easting:	516399.39	
County:	Doddridge	0 IM NAD 83	Northing:	4346745.92	
District:	West Union	Public Road Acces		RT50	
Quadrangle:	West Union	Generally used fari	m name:	Eleanor Meyer	
Watershed:	Middle Run and Arnold Creek				
of giving the requirements Virginia Code of this article	equired by subsections (b) and (c), so surface owner notice of entry to so of subsection (b), section sixteen of § 22-6A-11(b), the applicant shall have been completed by the applicant	rivey pursuant to subsection (a) f this article were waived in we ender proof of and certify to the at.	), section to writing by secretary	ten of this arti the surface ov that the notice	cle six-a; or (iii) the notice vner; and Pursuant to West
that the Ope	West Virginia Code § 22-6A, the Operator has properly served the require	d parties with the following:	s Notice C	ertification	OOG OFFICE USE
*PLEASE CHE	ECK ALL THAT APPLY				ONLY
☐ 1. NOT	TICE OF SEISMIC ACTIVITY or	NOTICE NOT REQUIRE SEISMIC ACTIVITY WAS			RECEIVED/ NOT REQUIRED
☐ 2. NO	TICE OF ENTRY FOR PLAT SURV	YEY or 🔳 NO PLAT SURVEY	WAS CO	ONDUCTED	☐ RECEIVED
■ 3. NO	TICE OF INTENT TO DRILL or	NOTICE NOT REQUIRE NOTICE OF ENTRY FOR PL WAS CONDUCTED or			☐ RECEIVED/ NOT REQUIRED
		☐ WRITTEN WAIVER BY (PLEASE ATTACH)	SURFAC	CE OWNER	
■ 4. NOT	TICE OF PLANNED OPERATION				☐ RECEIVED
■ 5. PUB	LIC NOTICE				☐ RECEIVED
■ 6. NOT	TICE OF APPLICATION				☐ RECEIVED

#### Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-64-0 Pursuant to West Virginia Code § 22-64-11(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.

MAY 09 2016

Certification of Notice is hereby given;

THEREFORE, I \_\_\_\_\_\_\_\_, 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 CompanyAddress:115 Professional Place PO Box 280By:Victoria RoarkBridgeport WV 26330Its:Permitting SupervisorFacsimile:304-848-0041Telephone:304-848-0076Email:vroark@eqt.com

NOTARY STOLL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
REBECCA L. WANSTREET
EOT PRODUCTION COMPANY
PO 80X 280
BRIDGEPORT, WY 28330
Bry commission expires April 07, 2020

Subscribed and sworn before me this 4 day of May 2016.

Rule Clar & Wanstreet Notary Public

My Commission Expires\_\_\_\_\_

#### 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 <a href="mailto:deprivacyofficer@wv.gov">deprivacyofficer@wv.gov</a>.

WW-6A (9-13)

API NO. 47-017 - 0(077 )

OPERATOR WELL NO. 514119

Well Pad Name: WEU8

# 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 the	nan the filing date of permit application.			
Date of Notice: Date Permit Application Filed: Notice of:	DILLIN			
PERMIT FOR ANY WELL WORK CONSTRUCTION OF	PROVAL FOR THE AN IMPOUNDMENT OR PIT			
Delivery method pursuant to West Virginia Code § 22-6A-1	0(b)			
☐ PERSONAL ☐ REGISTERED ☑ METI	HOD OF DELIVERY THAT REQUIRES A			
	EIPT 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 the records of the sheriff required to be maintained pursuant to section eight, ar				
☐ Application Notice ☐ WSSP Notice ☐ E&S Plan Notice				
☑ SURFACE OWNER(s) Name: See Attached	☐ COAL OWNER OR LESSEE  Name: See Attached			
Address:	Address:			
Name:	COAL OPERATOR			
Address:	Name:			
TISLIDEACE OWNER(a) (Day 1 and	Address:			
☑ SURFACE OWNER(s) (Road and/or Other Disturbance) Name: See Attached ☑ SURFACE OWNER OF WATER WELL				
Address:	AND/OR WATER PURVEYOR(s)			
	Name: See Attached			
Name:	Address:			
Address:				
	OPERATOR OF ANY NATURAL GAS STORAGE FIELD			
☑ SURFACE OWNER(s) (Impoundments or Pits)	Name:			
Name: See Attached	Address:			
Address:	Name: Address: Received			
	*Please attach additional forms if necessifice of Oil & Gas			

WW-6A (8-13)

API NO. 47-017 - C	(0774
OPERATOR WELL NO.	514119
Well Pad Name: _WEU8	

#### 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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting <a href="https://www.dep.wv.gov/oil-and-gas/pages/default.aspx">www.dep.wv.gov/oil-and-gas/pages/default.aspx</a>.

#### **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 path and the section in this section. of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 10 120 to the Gas 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 sequence of the section will be sequenced to the section of the sequence of the seq the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

API NO. 47-017 OPERATOR WELL NO. 514119

Well Pad Name: WEU8

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

Received Office of Oil & Gas

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: VOII ARE NOT REQUIRED TO FILE ANY COMMENT.

MAY 0 9 2016

API NO. 47-017 - O 677 4

OPERATOR WELL NO. 514119

Well Pad Name: WEU8

#### 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 <a href="http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx">http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx</a> 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.

Received Office of Oil & Gas MAY 09 2016

API NO. 47-017 OPERATOR WELL NO. 514119 Well Pad Name: WEU8

Notice is hereby given by:

Well Operator: EQT Production Company

Telephone: 304-848-0076

Email: vroark@eqt.com

Address: 115 Professional Place PO Box 280

Bridgeport WV 26330

Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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

DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

PO BOX 280
BRIDGEPORT, WV 26330
commission expires April 07, 2020

Subscribed and sworn before me this

Notary Public

My Commission Expires

Received Office of Oil & Gas MAY 09 2016

Land & Energy Development
Solutions from the ground FA
PO Box 90 112 symmotors 120min Widdle 120min Model 1

DRAWN BY FILE NO. DATE CADD FILE:
K.D.W. 7746 03/15/16 7746WEUBWS.dwg

TOPO SECTION OF: WEST UNION, WV 7.5' QUAD.

COUNTY DISTRICT TAX MAP-PARCEL NO.

DODDRIDGE WEST UNION 14 - 06

eqt production company 115 professional place P.O. BOX 280 BRIDGEPORT, WV 26338/2016

# Surface Owner (Access Roads and Other Disturbance)

Eleanor Meyer
19 Heath Place
Garden City NY 11530

Mary Nesler 857 Arnolds Creek Road West Union WV 26456

Dennis and Sonya Hayes Art. 1 Box 45
West Union WV 26456





# Surface Owner (Pits and Impoundments)

Eleanor Meyer / 19 Heath Place Garden City NY 11530



### Surface Owner:

Eleanor Meyer
19 Heath Place

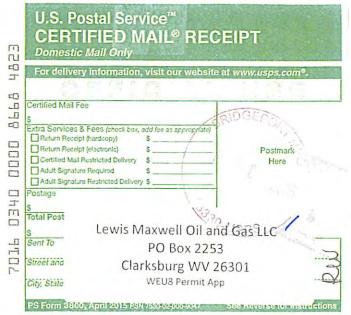
Garden City NY 11530

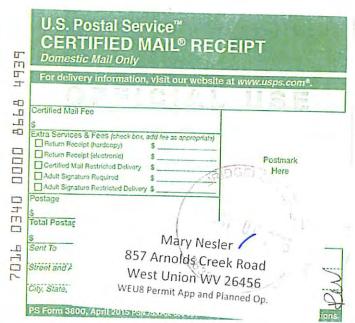


### Coal Owners:

Lewis Maxwell Oil and Gas LLC PO Box 2253 Clarksburg WV 26301

Mary Nesler 857 Arnolds Creek Road West Union WV 26456





## Owners of Water Wells:

Mary Nesler / 857 Arnolds Creek Road West Union WV 26456

Ruley Church 149 Pennsylvania St. West Union WV 26456

	U.S. Postal Service <sup>™</sup> CERTIFIED MAIL <sup>®</sup> RECEIPT
H	Domestic Mail Only
49	For delivery information, visit our website at www.usps.com®.
9999	OFFICIAL USE
卫	s
0000	Extra Services & Fees (check box, add fee as appropriate)   Return Receipt (hardcopy) \$   Return Receipt (electronic) \$   Certified Mail Restricted Delivery \$   Adult Signature Required \$   Adult Signature Restricted Delivery \$
0460	Postage \$ Total Postag \$ Mary Nesler
7076	Sent To  Street and West Union WV 26456
	City, State, WEU8 Permit App and Planned Op.
	PS Form 3800, April 2015 PSN 7550-02-000-00



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

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

Date of Noti	Requirement: ce: 03/09/2016	Notice shall be p	provided at least  Date Permit A	TEN (10) days prior to fi application Filed: 03/19/20	iling a	permit application.
Delivery me	thod pursuant	to West Virginia	a Code § 22-6A	-16(b)		
☐ HAND		CERTIFIED MA	AII.			
DELIV	ERY	RETURN REC		TED		
receipt reque drilling a hor of this subsection m	sted or hand del rizontal well: P ction as of the da ay be waived in	ivery, give the sure ovided, That not the notice was writing by the sure.	orface owner no tice given pursu s provided to the ourface owner. T	tice of its intent to enter u ant to subsection (a), sect a surface owner: <i>Provide</i> the notice, if required, sha	upon the tion tented, how all inclu	an operator shall, by certified mail return e surface owner's land for the purpose of this article satisfies the requirement ever, That the notice requirements of the the name, address, telephone number's authorized representative.
Notice is he	ereby provide	to the SURFA	ACE OWNER	R(s):		
Name: See Att		A Section of the section of		Name: See Attached		
Address:				Address:		
Pursuant to \	ereby given: Vest Virginia Couver's land for t	ode § 22-6A-16(t	b), notice is here	eby given that the undersi	igned v	well operator has an intent to enter upo
Pursuant to V the surface of State:	West Virginia Co wner's land for to W	ode § 22-6A-16(bhe purpose of dri	b), notice is here	al well on the tract of land	d as fol	lows: 516399,39
Pursuant to V the surface of State: County:	Vest Virginia Co wner's land for t WV Doddridge	ode § 22-6A-16(t he purpose of dri	b), notice is here illing a horizont	al well on the tract of land UTM NAD 83 Eastin Northi	d as fol ng: ing:	lows: 516399.39 4346745.92
Pursuant to V the surface of State: County: District:	West Virginia Councer's land for two Doddridge West Union	ode § 22-6A-16(l he purpose of dri	b), notice is here illing a horizont	al well on the tract of land UTM NAD 83  Eastin Northi Public Road Access:	d as foling:	lows: 516399,39 4346745.92 RT50
Pursuant to V the surface of State: County: District: Quadrangle:	Vest Virginia Co wner's land for t WV Doddridge	he purpose of dri	b), notice is here illing a horizont	al well on the tract of land UTM NAD 83 Eastin Northi	d as foling:	lows: 516399.39 4346745.92
Pursuant to V the surface of State: County: District: Quadrangle: Watershed: This Notice Pursuant to facsimile nur related to ho	West Virginia Cowner's land for two Doddridge West Union West Union Middle Run and And Shall Include West Virginia Comber and electrorizontal drilling	nold Creek  Code § 22-6A-16 onic mail addres may be obtained	6(b), this notices of the operate	UTM NAD 83  Public Road Access: Generally used farm nar shall include the name, or and the operator's aut	d as folling: ing: me: , addre	lows: 516399,39 4346745.92 RT50
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Pursuant to V the surface of State: County: District: Quadrangle: Watershed:  This Notice Pursuant to facsimile nur related to ho located at 60  Notice is he Well Operato	West Virginia Councr's land for the Wooddridge West Union West Union Middle Run and And Shall Include West Virginia Comber and electroizental drilling 1 57th Street, SE  Treby given by Trice EQT Production	nold Creek  Code § 22-6A-16 onic mail addres may be obtained Charleston, WV	6(b), this notices of the operate	UTM NAD 83  Public Road Access: Generally used farm nar shall include the name, or and the operator's autetary, at the WV Department of the company of the tary, at the WV Department of the company of the tary, at the WV Department of the tary of the ta	d as follog: ing: ing: me: , addre thorized nent of ww.dep	lows: 516399.39 4346745.92 RT50 Eleanor Meyer  ess, telephone number, and if available representative. Additional information for the company of the company
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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.

Received Office of Oil & Gas

### Surface Owner:

Eleanor Meyer 19 Heath Place Garden City NY 11530

7954	U.S. Postal Service <sup>™</sup> CERTIFIED MAIL <sup>®</sup> REC Domestic Mail Only For delivery information, visit our website	
7015 3010 0001 6902	Eleanor Meyer 19 Heath Place	Postmark Here
]~	Garden City NY 11530 WEU8 Notice of Intent	r Instructions

# Surface Owner (Access Roads and Other Disturbance)

Eleanor Meyer 19 Heath Place Garden City NY 11530

Mary Nesler 857 Arnolds Creek Road West Union WV 26456

Dennis and Sonya Hayes Rt. 1 Box 45 West Union WV 26456

7954	U.S. Postal Service™ CERTIFIED MAIL® REC Domestic Mail Only  For delivery information, visit our website	
701,5 301,0 0001, 6902	Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate)  Return Receipt (hardcopy)  Return Receipt (electronic)  Certified Mail Restricted Delivery  Adult Signature Required  Adult Signature Restricted Delivery \$  Postage  \$  Eleanor Meyer  19 Heath Place  Garden City NY 11530  WEU8 Notice of Intent	Postmark Here

13	U.S. Postal Service™ CERTIFIED MAIL® RECI Domestic Mail Only	EIPT
78	For delivery information, visit our website a	t www.usps.com®.
0001 6902	Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate)   Return Receipt (hardcopy) \$   Return Receipt (electronic) \$   Certified Mail Restricted Delivery \$   Adult Signature Required \$   Adult Signature Restricted Delivery \$	Postmark Here
3010	Postage S Total Pastage and Face	MAR 0 3 2016
7015	Mary Nesler 857 Arnolds Creek Road West Union WV 26456 WEU8 Notice of Intent	5

7967	U.S. Postal Service™ CERTIFIED MAIL® REC Domestic Mail Only  For delivery information, visit our website	
7015 3010 0001 6902	Certified Mail Fee \$  Extra Services & Fees (check box, add fee as appropriate)   Return Receipt (hardcopy)	456

# Surface Owner (Pits and Impoundments)

Eleanor Meyer / 19 Heath Place Garden City NY 11530

7954	U.S. Postal Service™ CERTIFIED MAIL® REC Domestic Mail Only  For delivery information, visit our website	
7015 3010 0001 6902	Certified Mail Fee  \$ Extra Services & Fees (check box, add fee as appropriate)  Return Receipt (leardcopy)  Certified Mail Restricted Delivery  Adult Signature Restricted Delivery \$  Postage  \$ To'  S  Eleanor Meyer  19 Heath Place  Garden City NY 11530  WEU8 Notice of Intent	Postmark Here

WW-6A5 (1/12)

17-06774 Operator Well No. 514119

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

Notice Date	e Time R of Notice	tequirement: notice shall be provided no late:	er than the filing cation Filed:	date of permit	t application. 2
Delive	ery meth	od pursuant to West Virginia Code § 22-6	A-16(c)	•	
			AND ELIVERY		
the pla require drilling damage	receipt reanned op anned op ed to be p g of a ho ges to the e notices	Va. Code § 22-6A-16(c), no later than the equested or hand delivery, give the surface of ceration. The notice required by this subseprovided by subsection (b), section ten of this prizontal well; and (3) A proposed surface a surface affected by oil and gas operations to required by this section shall be given to the	owner whose lan ection shall inclus s article to a sur- use and compen the extent the d	d will be used for ide: (1) A copy face owner who sation agreemer amages are com	or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the at containing an offer of compensation for pensable under article six-b of this chapter
(at the Name:	e is hereb address I See Attacho	by provided to the SURFACE OWNER(s) listed in the records of the sheriff at the time	of notice): Name:	See Attached	
Pursua	ion on th y: <u>v</u> t: <u>v</u> angle: <u>v</u>	by given: st Virginia Code § 22-6A-16(c), notice is here e surface owner's land for the purpose of dri w Doddridge West Union West Union Hiddle Run and Amold Creek	illing a horizonta UTM NAD 8 Public Road	al well on the tra  Basting: Northing:	well operator has developed a planned ct of land as follows:  516399.39  4346745.92  RT50  Eleanor Meyer
Pursua to be p horizon surface inform headqu	nt to West provided ntal well; affected ation rela	all Include: st Virginia Code § 22-6A-16(c), this notice st Virginia Code § 22-6A-10(b) to a surfact and (3) A proposed surface use and compete by oil and gas operations to the extent the steed to horizontal drilling may be obtained ocated at 601 57th Street, SE, Charlestor It.aspx.	ce owner whose nsation agreeme damages are co from the Secret	e land will be un the containing and compensable und carv. at the WV	ased in conjunction with the drilling of a offer of compensation for damages to the er article six-b of this chapter. Additional Department of Environmental Protection
Well O	perator:	EQT Production Company	Address:	115 Professional Pla	ice PO Box 280
Teleph	one:	304-848-0076	<b>-</b>	Bridgeport WV 2633	
Email:		vroark@eqt.com	Facsimile:	304-848-0041	
Oil and	d Gas Pr	ivacy 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.

Received Office of Oil & Gas

MAY 09 2016

### Surface Owner:

Eleanor Meyer 19 Heath Place Garden City NY 11530



# Surface Owner (Access Roads and Other Disturbance)

Eleanor Meyer 19 Heath Place Garden City NY 11530

Mary Nesler 857 Arnolds Creek Road West Union WV 26456

Dennis and Sonya Hayes Rt. 1 Box 45 West Union WV 26456

P.C.	Bollestic Mail Only
口口	For delivery information, visit our website at www.usps.com*.
8668	Certified Mail Fee
0000	Return Resident Check box, add fee as appropriate)
0340	Postage \$ Total Postag
7076	Street and A West Union VVV 26456 WEUS Permit App and Planned On
	PS Form 3800, April 2015 PSN 7650-92-909

U.S. Postal Service™  CERTIFIED MAIL® RECEIPT  Domestic Mail Only  For delivery information, visit our website at www.usps.com®	
Certified Mail Fee \$ Extra Services & Fees (check box, add fee as appropriate)   Return Receipt (hardcopy)	
U.S. Postal Service™  CERTIFIED MAIL® RECEIPT  Domestic Mail Only	

9464 8999 Extra Services & Fees (check bo)

Return Receipt (hardcopy)

Return Receipt (electronic) 0000 Certified Mall Restricted De Adult Signature Required Adult Signature Restricted De 0460 Total Post Dennis and Sonya Hayes 7076 Sent To Rt. 1 Box 45 West Union WV 26456 City, State WEU8 Permit App and Planned Op. PS Form

# Surface Owner (Pits and Impoundments)

Eleanor Meyer 19 Heath Place Garden City NY 11530





# WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways** 

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

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

February 4, 2016

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

Subject: DOH Permit for the WEU8 Well Site, Doddridge County

WEU8H7 #514119 WEU8H8 #514120 WEU8H9 #514121 WEU8H10 #514122

Dear Mr. Martin,

This well site will be accessed from Permit # 04-12-1110 issued to by EQT Production Company for access to the State Road for a well pad located off of County Rt. 11/3 in Doddridge County.

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

Very Truly Yours,

Gary K. Clayton, P.E.

Regional Maintenance Engineer Central Office O&G Coordinator

Cc: Nick Bumgardner

**EQT Production Company** 

CH, OM, D-4

File

Received Office of Oil & Gas

MAY 0 9 2016

# **Anticipated Frac Additives Chemical Names and CAS numbers**

<u>Material</u>	Ingredient	<b>CAS Number</b>
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

FILE NO.: 6LS-7746 SHEET 1 OF 36

**EQT WEU 8 SITE PLAN** EQT PRODUCTION COMPANY

EXISTING WELL NO. H1-WV 513764 (AP# 47-017-06195), H2-WV 513765 (AP# 47-017-06196), H3-WV 513766 (AP# 47-017-06197), H4-WV 513767 (AP# 47-017-06198), H5-WV 513768 (AP# 47-017-06199), H6-WV 513769 (AP# 47-017-06200) PROPOSED WELL NO. H7-WV 516808, H8-WV 516809, H9-WV 516810, H10-WV 516811, H11-WV 516812, H12-WV 516813

#### PROJECT INFORMATION

PROJECT NAME: FOT WELL &

TAY PARCEL WEST UNION DISTRICT, DODDRIDGE COUNTY, WV MAP 14 PARCEL 6, 20

#### SURFACE OWNER:

CHARLES E. & MARY L. NESLER CHARLES E. & MARY L. RESLEY
MAP 14, PARCEL 20
WEST UNION DISTRICT, DODDRIDGE COUNTY, WY
TOTAL PROPERTY AREA: 59.15 + 4-ACRES
TOTAL DISTURBANCE AREA: 2.9 + 4-ACRES ELEANOR MEYER

MAP 14. PARCEL 06

WEST UNION DISTRICT, DODDRIDGE COUNTY, WY TOTAL PROPERTY AREA: 349.75 +/- ACRES TOTAL DISTURBANCE AREA: 12.2 +/- ACRES

### OIL AND GAS ROYALTY OWNER

SUZAN J, CHILDERS, ET AL WEST UNION DISTRICT, DODDRIDGE COUNTY, WV TOTAL PROPERTY AREA: 960 ++ ACRES

#### SITE LOCATION:

THE EQT WEU 8 ACCESS ROAD ENTRANCE IS LOCATED 4,096"+/-SOUTH OF THE JUNCTION OF US RT, 50 AND CO. RT, 11, THE WELL PAD IS LOCATED 0.6 MILES +1- SOUTH OF THE JUNCTION OF US RT, 50 AND CO. RT, 11

APPROVED

WVDEP OOG

9 1 6/22/2016

#### LOCATION COORDINATES

FOT WEU & CONSTRUCTION ENTRANCE LATITUDE: 39.266117 LONGITUDE: 80.814236

EQT WEU 8 WELL PAD CENTER LATITUDE: 39.270036 LONGITUDE: 60.809869

#### EQT WEU 8 FLOWBACK PAD CENTER LATITUDE: 39.269258 LONGITUDE: 80.809994

EQT WEU 8 COMPLETION PAD CENTER LATITUDE: 39,273419 LONGITUDE: 80,803850

#### GENERAL DESCRIPTION

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

#### SITE DISTURBANCE COMPUTATIONS

WELL PAD AREA = 3.1 +/- ACRES FLOWBACK PAD AREA = 2.3 +/- ACRES COMPLETION PAD AREA = 2.1 +/- ACRES ACCESS ROAD AREA = 4.8 +/- ACRES STOCKPILE AREA= 2.8 +/- ACRES
TOTAL SITE DISTURBANCE AREA = 15.1 +/- ACRES

#### ENTRANCE PERMIT

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

#### MISS UTILITY STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN: TICKET #1220759450. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

#### ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED ON APRIL 6, 2011, JANUARY 24-25, 2012, MARCH A WETLAND DELINEATION WAS PER COMED ON APPILE 2011, ANULAYY 24-22, 2011, MAY 21-22, 2011, M 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 WADER. IT IS STRONGLY RECOMMENDED THAT THE REGULATED BY THE USACE OF THE WIDEP. IT IS STRINGERY TRECOMMENDED THAT IT A PROMERITIONAD AGENCIES BE CONSULTED IN A HEFORT TO GAM WRITTEN INCOMPRISED THAT IT AND A PROPERTY OF THE PROPERTY AGENCIES THE PROPERTY OF THE WISH OF THE PROPERTY AGENCIES OF THE USACE OF THE PROPERTY OF THE PROPERTY OF THE WISH OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE WISH OF THE PROPERTY OF THE PROPERTY OF THE WISH OF THE PROPERTY OF THE WISH OF THE WISH OF THE WISH OF THE PROPERTY OF THE WISH OF T

#### AND STREAM CROSSINGS. GEOTECHNICAL NOTES

A SUBSURFACE GEOTECHNICAL INVESTIGATION HAS NOT BEEN PERFORMED AS OF 02-20-2015. THE ENGINEER AND SURVEYOR ARE NOT RESPONSIBLE FOR UNFORESEEN 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 COMPLICATIONS ENCOUNTERED SITUATE ON THE WATERS OF TRIBUTARIES OF ARNOLD CREEK IN WEST UNION DISTRICT, DODDRIDGE COUNTY, WV



#### RESTRICTIONS NOTES

- 1. THERE ARE INTERMITTENT/EPHEMERAL/PERENNIAL STREAMS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE NO WETLANDS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LOD.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD . THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF
- THER AND NOT LOD.
   THER AND AND LOD.
   THERE ARE NO KNOWN EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 259 FEET OF THE WELL(8) BEING DRILED. STANTEC AND SMITH LAND SURVEYING ARE NOT RESPONSIBLE FOR ANY EXISTING WATER WELL OR DEVELOPED SPRING DISCOVERED DURING CONSTRUCTION.
- 5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE PAD. 6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD

WEST UNION QUADRANGLE WEST VIRGINIA 7.5 MINUTE SERIES 2000

MISS Utility of West Virginia West Virginia State Law (Section XIV, Chapter 24-C) Requires that you call two

#### OPERATOR

EQT PRODUCTION COMPANY OPERATOR ID: 306686 P.O. BOX 280 BRIDGEPORT, WV 26630 PHONE: (304) 348-3870

#### ENGINEER

LIST OF DRAWINGS

DESCRIPTION COVER SHEET

OVERALL PLAN SHEET INDEX

SITE PLAN

ACCESS BOAD DROFT FE

ACCESS ROAD CROSS SECTIONS

PAD AND STOCKPILE CROSS SECTIONS

RECLAMATION PLAN

CONSTRUCTION DETAILS

CONSTRUCTION QUANTITIES

PROP. CUT LINE

PROP. FILL LINE

PROP. WELL HEAD

PROP. CELLAR

HOTTON 9089

WITH CHECK DAMS

PROP. CULVERT

PROP. TREELINE

ROP, INDEX CONTOUR

PROP. INTERMEDIATE CONTOUR

ROP, LIMITS OF DISTURBANCE

ENVIRONMENTAL ASSESSMENT AREA OF DELINEATION

ROP, CONTAINMENT BERM

ROP, RIP-RAP OUTLET PROTECTION

ROP, RIP-RAP INLET PROTECTION

PROP. COMPOST FILTERSOCK

PROP STONE CONSTRUCTION

SECTION GRID INTERMEDIATE

X-SECTION PROPOSED GRADE

X-SECTION EXISTING GRADE

K-SECTION GRID INDEX

PROP, ROAD CENTERLINE

LEGEND

SHEET NO.

2

4 - B

9-11

12 - 22

23

24 - 29

30 - 32

33 - 35

EX. INDEX CONTOUR

EX. BOUNDARY LINE

EX. GUARDRAIL

EX. FENCELINE

EX. UTILITY POLE

EX. TELEPHONE LINE

EX. GLIY WIRE

EX. GASLINE

EX. GASLINE RAY

EX. WATERLINE

EX WATER WELL

EX. GAS WELL

EX. CELLAR

EX. TREELINE

EX BUR DING

EX. REFERENCE TREE

EX. DELINEATED STREAM

EX. DELINEATED WETLAND

EX. GATE EX. OVERHEAD UTILITY

EX. INTERMEDIATE CONTOUR

EX. EDGE OF ROAD PAVEMEN

EX. OVERHEAD UTILITY RAW

STANTEC CONSULTING,INC. 111 ELKINS STREET FAIRMONT, WV 26554 PHONE: (304) 367-9401

#### SURVEYOR

SMITH LAND SURVEYING, INC. PO BOX 150 226 WEST MAIN STREET GLENVILLE, WV 26351 PHONE: (304) 452-5634

Stante

U







EQT

DATE: 05-03-2016 CALF-AS SHOWN

ESIGNED: KDS HECKED: CSH WEWED: RLG

