



west virginia department of environmental protection

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

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

Friday, August 3, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit approval for WEU4H13
47-095-02511-00-00

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: WEU4H13
Farm Name: DONNA J. PETER
U.S. WELL NUMBER: 47-095-02511-00-00
Horizontal 6A New Drill
Date Issued: 8/3/2018

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

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

1) Well Operator: EQT Production Company 306686 Tyler Centerville West Union
Operator ID County District Quadrangle

2) Operator's Well Number: WEU4H13 Well Pad Name: WEU4

3) Farm Name/Surface Owner: Donna J Peter Public Road Access: WW-18

4) Elevation, current ground: 1079 Elevation, proposed post-construction: 1079

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

Dmt 7-31-18 *JEP 7/31/2018*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):

Target formation is Marcellus at a depth of 6680' with the anticipated thickness to 54 feet and anticipated target pressure of 2747 PSI

8) Proposed Total Vertical Depth: 6680

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 11709

11) Proposed Horizontal Leg Length: 3642

12) Approximate Fresh Water Strata Depths: 132,175,186,204

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

14) Approximate Saltwater Depths: 1128,1219,1222

15) Approximate Coal Seam Depths: 230,281,696

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

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

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

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18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	26	New	A-500	85.6	40	40	49 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	750	750	728 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	P-110	40	2865	2865	1126 ft ³ / CTS
Production	5 1/2	New	P-110	20	11709	11709	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 80° inclination	
Liners							

JOB 7/31/18 *DMH 7-31-18*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	26	30	.312	1378	18	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	6320	Class H	1.07
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 3143'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

JCB
7/31/2018
DMH
7-31-18

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.1%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 350,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 400,000 pounds of proppant per stage.

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

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

23) Describe centralizer placement for each casing string:

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

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

Conductor: Class A no additives
Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. .25% Flake Loss Circulation Material (LCM)
Intermediate (Class H Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) .6% Super FL-300 (fluid loss/lengthens thickening time)
Production:
Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix) .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50-50 POZ (extender)
Tail (Class H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time. .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss) .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 50 % Calcium Carbonate. Acid solubility

25) Proposed borehole conditioning procedures:

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

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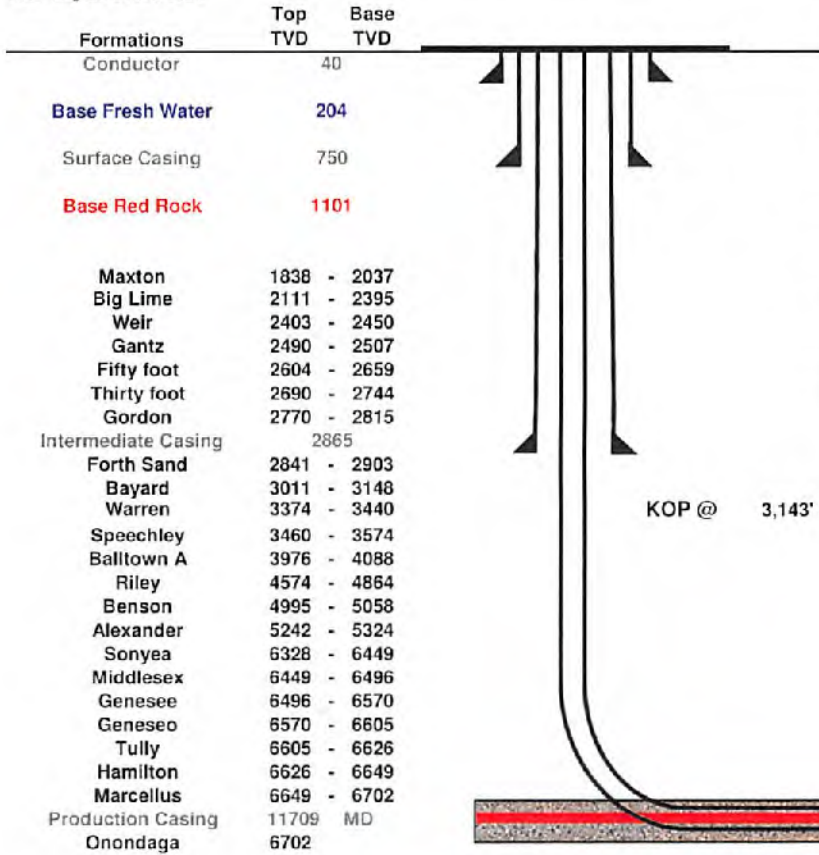
*Note: Attach additional sheets as needed.

Well (WEU4H13)
EQT Production
West Union Quad
Tyler County, WV

Azimuth 155
 Vertical Section 5336
 Enerzia # 516540

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Note: Diagram is not to scale



Casing and Cementing		Deepest Fresh Water: 204'		
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	30	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	26	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.312	0.380	0.395	0.361
Depth, MD	40'	750'	2,865'	11,709'
Weight	85.6#	54.5#	40#	20#
Grade	A-500	J-55	A-500	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	3,950	12,640
Cement Class	A	A / Type 1	H	A / H
Cement Yield	1.18	1.19	1.07	1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	49	728	1,126	1,880
Possible Additives	N/A	Calcium Chloride	Calcium Chloride, Fluid Loss, Defoamer, Dispersant, POZ, Bonding Agent, Extender, Retarder, Flake/LCM	Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

Dr-H
7-31-18
JOB
7/31/2018

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 3143'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

3,642' Lateral

4709502511

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: WEU4
County Tyler

4/01/18

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08/03/2018

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in **Tyler County, WV** prior to hydraulic fracturing at the following EQT wells on **WEU4 pad: WEU4H5, WEU4H6, WEU4H10, WEU4H11, WEU4H12, WEU4H13, WEU4H14, WEU4H15.**

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

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

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

1. Communications with Well Operators

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

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

EQT will recommend to these operators at a minimum to:

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

2. Reporting

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

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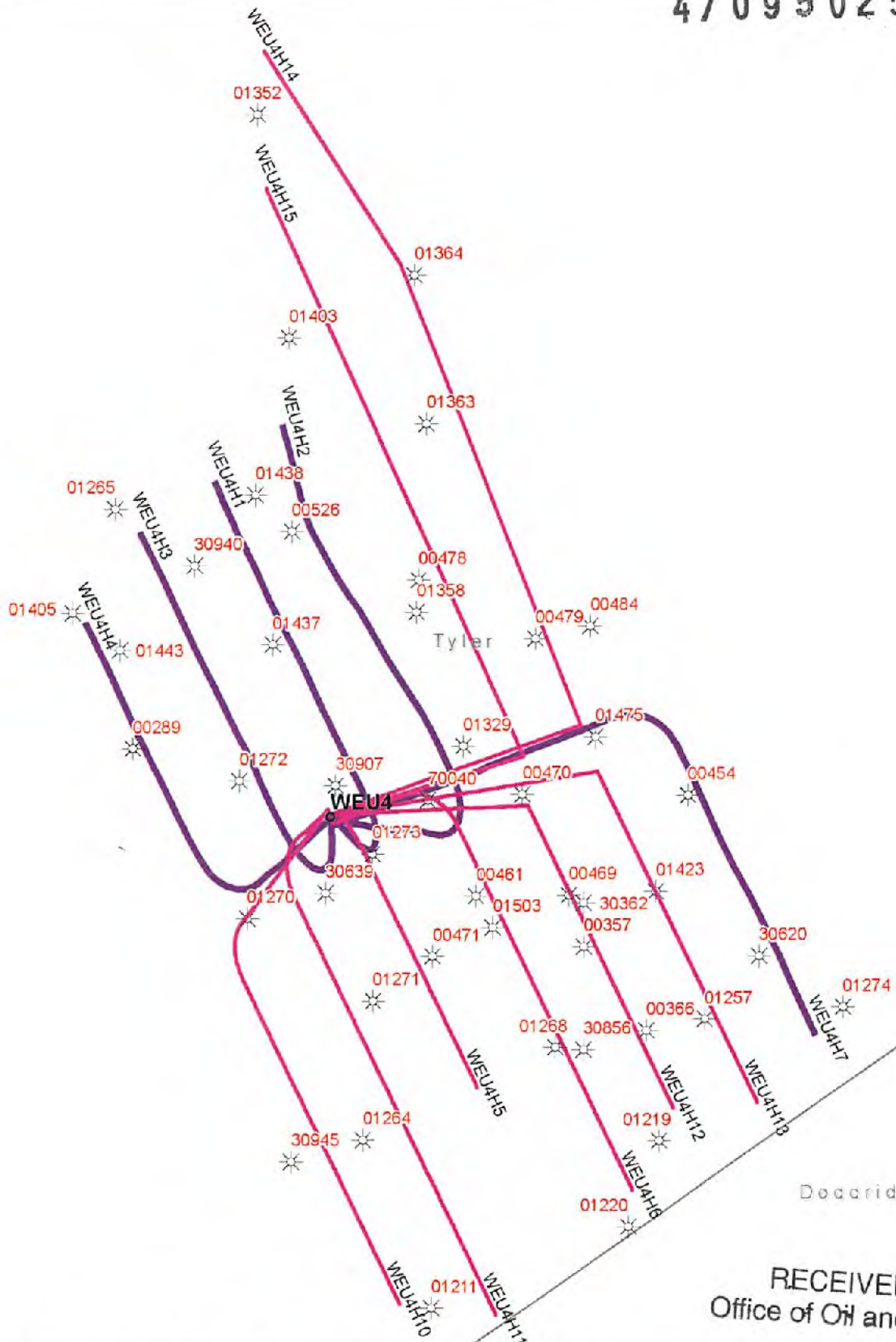
API Number	Abandoned Date	Completion Date	Current Operator	Elevation	Elevation Refere	Final Status	Lat	Long	Well Name	Permit Date	SPUD Date	TD Formation	Total Depth	Permit
47095309070000	11/8/1959	2/16/1902	HOPE NATURAL GAS			UNKWN	39.3675	-80.8207	406 J L ASH 1	1/2/1902	1/17/1902			30907
47095303620000	9/2/1944	12/6/1910	HOPE NATURAL GAS	1022	GR	ABD-GW	39.3640	-80.8112	1963 HAMMETT HEIRS 1	10/10/1910	10/25/1910	HURON LOWER	2661	30362
47095306200000	4/27/1950	3/10/1911	HOPE NATURAL GAS	905	GR	ABD-GW	39.3624	-80.8044	2085 E M B KEYS	12/28/1910	1/12/1911	GORDON	2565	30620
47095308560000	5/19/1955	6/20/1911	HOPE NATURAL GAS	968	GR	ABD-GW	39.3596	-80.8112	2202 JACOB C SMITH	5/4/1911	5/19/1911	POCONO	2091	30856
47095306390000	6/14/1950	8/12/1911	HOPE NATURAL GAS	956	GR	ABD-GW	39.3643	-80.8211	2261 S M JONES	6/2/1911	6/17/1911	POCONO	1999	30639
47095004540000	10/28/1949	6/27/1913	HOPE NATURAL GAS	1007	GR	ABD-GW	39.3672	-80.8072	2958 HATTIE B KEYS	5/1/1913	5/16/1913	HURON LOWER	2886	00454
47095309450000	12/7/1968	5/21/1914	CONSOLIDATED GAS SUPPLY CORPORATION			UNKWN	39.3563	-80.8224	3420 KEYS HEIRS	4/6/1914	4/21/1914			30945
47095002890000	10/24/1962	6/18/1960	STONESTREET LANDS	830	GR	ABDOGW	39.3686	-80.8285	1 J L ASH	5/10/1960	5/25/1960	BIG INJUN /SD/	1908	00289
47095003570000	10/23/1974	9/1/1962	LENNOX OIL & GAS	947	GR	ABD-GW	39.3627	-80.8112	2 W A BRITTON	7/18/1962	8/2/1962	POCONO	2010	00357
47095004610001		9/21/1973	EQUITABLE GAS COMPANY	919	GR	SWDOP	39.3642	-80.8153	5488/1 LUCY DAVIS	8/10/1973	8/20/1973	DEVONIAN /SD/	2556	00461
47095004700001		8/28/1974	EQUITABLE GAS COMPANY	1027	GR	GSTGW	39.3672	-80.8135	1 LUCY DAVIS	3/24/1974	4/3/1974	GORDON	2657	00470
47095004690001		1/17/1975	EQUITABLE GAS COMPANY	999	GR	SWDOP	39.3642	-80.8117	5491 CARL PERKINS	6/2/1974	6/12/1974	DEVONIAN /SD/	2659	00469
47095004710001		8/26/1975	EQUITABLE GAS COMPANY	933	GR	SWDOP	39.3624	-80.8169	5495 R E MOORE	8/2/1974	8/12/1974	GORDON /SD/	2576	00471
47095003660001		3/19/1975	EQUITABLE GAS COMPANY	914	KB	SWDOP	39.3602	-80.8087	3/5493/ CARL PERKINS	9/9/1974	9/19/1974	MISSISSIPPIAN	1942	00366
47095004780000		9/1/1976	EQUITABLE GAS COMPANY	1049	GR	GAS	39.3736	-80.8175	6229 CARRIE ROBINSON	7/18/1976	8/2/1976	BIG INJUN /SD/	2126	00478
47095004790000		7/1/1977	EQUITABLE GAS COMPANY	1010	GR	GSTG	39.3718	-80.8130	5503 ADDIE KEYS	5/17/1977	6/1/1977	GANTZ /SD/	2417	00479
47095005260000		4/23/1980	EQUITABLE GAS COMPANY	1045	GR	GSTG	39.3750	-80.8224	5507 B W PIESON	8/2/1979	8/17/1979	POCONO	2170	00526
47095012110000		10/10/1987	CONSOL GAS COMPANY	970	KB	GAS	39.3519	-80.8170	2 KEYS AUSTIN I	9/16/1987	9/26/1987	DEVONIAN /SH/	5150	01211
47095012190000		12/14/1987	CONSOL GAS COMPANY	937	KB	GAS	39.3569	-80.8082	1 BAGLEY W M	11/15/1987	11/25/1987	DEVONIAN /SH/	5020	01219
47095012200000		1/7/1988	CONSOL GAS COMPANY	827	KB	GAS	39.3543	-80.8094	1 MORRIS BURKE	12/18/1987	12/28/1987	DEVONIAN /SH/	4916	01220
47095012570000		10/24/1988	CONSOL GAS COMPANY	1030	KB	2GAS	39.3605	-80.8065	1 FREEMAN	10/8/1988	10/18/1988	DEVONIAN /SD/	5150	01257
47095012650000		11/8/1988	CONSOL GAS COMPANY	993	KB	GAS	39.3757	-80.8292	1 DAVIS GARY W	10/15/1988	10/25/1988	DEVONIAN /SD/	4992	01265
47095012640000		11/15/1988	CONSOL GAS COMPANY	936	KB	GAS	39.3569	-80.8196	2 KEYS AMOS	10/22/1988	11/1/1988	DEVONIAN /SD/	5022	01264
47095012720000		2/2/1989	CONSOL GAS COMPANY	1024	KB	GAS	39.3676	-80.8244	2 ASH HENRY & WILLIAM	1/10/1989	1/20/1989	DEVONIAN /SD/	5200	01272
47095012710000		2/11/1989	CONSOL GAS COMPANY	953	KB	GAS	39.3611	-80.8192	1 LORKOVICH LEONA	1/17/1989	1/27/1989	DEVONIAN /SD/	5102	01271
47095012730000		2/17/1989	CONSOL GAS COMPANY	1130	KB	GAS	39.3654	-80.8193	3 ASH HENRY & WILLIAM	1/23/1989	2/2/1989	DEVONIAN /SD/	5300	01273
47095012700000		2/23/1989	CONSOL GAS COMPANY	1072	KB	GAS	39.3635	-80.8241	1 SMITH WILLIAM	1/29/1989	2/8/1989	DEVONIAN /SD/	5200	01270
47095012680000		2/26/1989	CONSOL GAS COMPANY	1020	KB	GAS	39.3597	-80.8122	1 CUMBERLEDGE ASIA DELL	2/3/1989	2/13/1989	DEVONIAN /SD/	5100	01268
47095013290000		12/9/1989	CONSOL GAS COMPANY	1086	KB	GAS	39.3686	-80.8158	1 STONEKING L B	11/7/1989	11/17/1989	BENSON /SD/	5200	01329
47095013580000		1/25/1990	CONSOL GAS COMPANY	1034	KB	GAS	39.3726	-80.8176	2 KEYS ADDIE	12/20/1989	12/30/1989	DEVONIAN /SD/	5100	01358
47095013630000		1/30/1990	CONSOL GAS COMPANY	1107	KB	GAS	39.3782	-80.8172	1 ANN FAYE	12/30/1989	1/9/1990	DEVONIAN /SD/	5190	01363
47095014050000		8/1/1990	ALLIANCE PETROLEUM CORPORATION	986	KB	GAS	39.3726	-80.8308	1-A NICHOLS/DAVIS	7/9/1990	7/19/1990	BEREA	2136	01405
47095014030000		8/17/1990	CONSOL GAS COMPANY	1008	KB	GAS	39.3808	-80.8225	2 LEGRANDE MARVIN	7/23/1990	8/2/1990	DEVONIAN /SH/	5210	01403
47095014230000		9/7/1990	CONSOL GAS COMPANY	1166	KB	GAS	39.3643	-80.8084	1 SINGER	8/15/1990	8/25/1990	DEVONIAN /SD/	5225	01423
47095013640000		9/26/1990	CONSOL GAS COMPANY	1065	KB	GAS	39.3826	-80.8177	2 ANN FAYE	9/1/1990	9/11/1990	DEVONIAN /SD/	5200	01364
47095014370000		12/11/1990	CONSOL GAS COMPANY	982	KB	GAS	39.3716	-80.8231	1 DOAK CLARA ETAL & SMITH	10/23/1990	11/2/1990	DEVONIAN /SD/	5100	01437
47095014430000		1/2/1991	CONSOL GAS COMPANY	1054	KB	GAS	39.3715	-80.8290	CONRAD1 DAVIS FANNY ETAL	11/22/1990	12/2/1990	DEVONIAN /SD/	5150	01443
47095014380000		1/3/1991	CONSOL GAS COMPANY	1004	KB	GAS	39.3761	-80.8238	2 DOAK CLARA ETAL & SMITH	11/29/1990	12/9/1990	DEVONIAN /SD/	5100	01438
47095012740000		2/1/1991	CONSOL GAS COMPANY	1038	KB	GAS	39.3609	-80.8012	1 WEEKLEY ISAIAH	12/24/1990	1/3/1991	DEVONIAN /SD/	5100	01274
47095014750000		6/11/1992	CONSOL GAS COMPANY	1192	KB	GAS	39.3689	-80.8107	1 STONEKING BRUCE	5/10/1992	5/20/1992	DEVONIAN /SD/	5284	01475
47095015030000		12/8/1992	CONSOL GAS COMPANY	998	GR	GAS	39.3633	-80.8146	1 PURSLEY A A	10/4/1992	10/14/1992	DEVONIAN /SD/	5100	01503
47095309400000	7/5/1966		HOPE NATURAL GAS			PSEUDO	39.3740	-80.8261	1489 BOWERS & DAVIS					30940
47095700400000			CARTER OIL COMPANY			PSEUDO	39.3670	-80.8171	1 J L ASH					70040
4709500484		7/20/1977	EPC	1137	GR	STORAGE	39.3722	-80.8109					2226	00484
4709501352		12/1/1989	ANVIL OIL	1096	GR	GAS	39.3874	-80.8237					5170	01352

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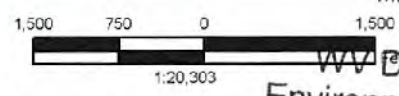


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Pittsburgh, PA 15222

WEU4
Vertical Offsets and
Foreign Laterals
within 500'

* Vertical Offsets
SPUD
MR
Planned Lateral
Marcellus



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

MAY 09 2018 276,650

OH
WV Department of
Environmental Protection
WV

08/03/2018



4709502511

May 4, 2018

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

Re: Casing plan on Wells (WEU4)

Dear Mr. Smith,

EQT is requesting the 13 3/8" surface casing to be set at 750' KB, 50' below the workable coal at 700' KB. We will set the 9-5/8" intermediate string at 2865' KB, 50' below the base of the Gordon formation.

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

Sincerely,

Rebecca Wanstreet
Landman I

Enc.

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Environmental Protection
08/03/2018

4709502511



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
(304) 925-0450
(304) 925-0452 fax

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

March 18, 2014

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

Re: Cement Variance Request

Dear Sir or Madam,

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

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

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

Sincerely,

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

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west virginia department of environmental protection

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

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

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

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

REPORT OF THE OFFICE

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

FINDINGS OF FACT

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
 - 2% Calcium Chloride (Accelerator)
 - 0.25 % Super Flake (Lost Circulation)
 - 94% Type "1" Cement
 - 5.20 % Water
- 2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Promoting a healthy environment.

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**WV Department of
Environmental Protection**
08/03/2018

CONCLUSIONS OF LAW

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

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

ORDER

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief
Office of Oil and Gas

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WV Department of
Environmental Protection

WW-9
(4/16)

API Number 47 - 95 - _____
Operator's Well No. WEU4H13

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EQT Production Company OP Code 306686

Watershed (HUC 10) Tributary of Camp Mistake Run Quadrangle West Union

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

JCB
5/14/2018
D.H.
5-14-18

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

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

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

Additives to be used in drilling medium? See Attached

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

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

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

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

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

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

Company Official Signature *Erin Spine*

Company Official (Typed Name) Erin Spine

Company Official Title Regional Land Supervisor

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Office of Oil and Gas

MAY 18 2018

WV Department of
Environmental Protection

Subscribed and sworn before me this 4 day of May, 2018

Rebecca L. Wanstreet

Notary Public

My commission expires 4-7-2020



08/03/2018

WW-9 Attachment

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

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

Additives to be used in drilling medium?

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

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Environmental Protection

08/03/2018

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed No Additional Prevegetation pH 6.3

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Title: Oil & Gas Inspector

Date: 5/14/2018

Field Reviewed? Yes No

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Site Specific Safety and Environmental Plan

EQT
WEU4 Pad
Alma
Tyler County, WV

For Wells:
WEU4H5 WEU4H0 WEU4H10 WEU4H11 WEU4H12
WEU4H13 WEU4H14 WEU4H15

Date Prepared: February 16, 2018


 EQT Production

Regional Land Supervisor
Title

5/4/2018
Date


 WV Oil and Gas Inspector

Oil & Gas Inspector
Title

5/14/2018
Date

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 MAY 18 2018
 WV Department of
 Environmental Protection

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

BROAD STREET ENERGY LLC

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

LAD LIQUID ASSETS DISPOSAL INC.

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

TRIAD ENERGY

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

TRI COUNTY WASTE WATER MANAGEMENT, INC.

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

KING EXCAVATING CO.

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

Waste Management - Meadowfill Landfill

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

Waste Management - Northwestern Landfill

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

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 Environmental Protection

08/03/2018

EQT Water Management Plan

Section V. Planned Additives to be used in Fracturing

Material	Approximate Percentage
Water	95.5%
Sand	4.2%
Friction Reducer	0.1%
Biocide	0.05%
Scale Inhibitor	0.03%
15% Hydrochloric Acid	0.06%
Gelling Agent	0.02%
Oxidizing Breaker	0.0009%
Enzyme Breaker	0.0009%

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Environmental Protection

08/03/2018

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

Waste Management - Meadowbrook Landfill

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

Waste Management - Meadowbrook Landfill

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

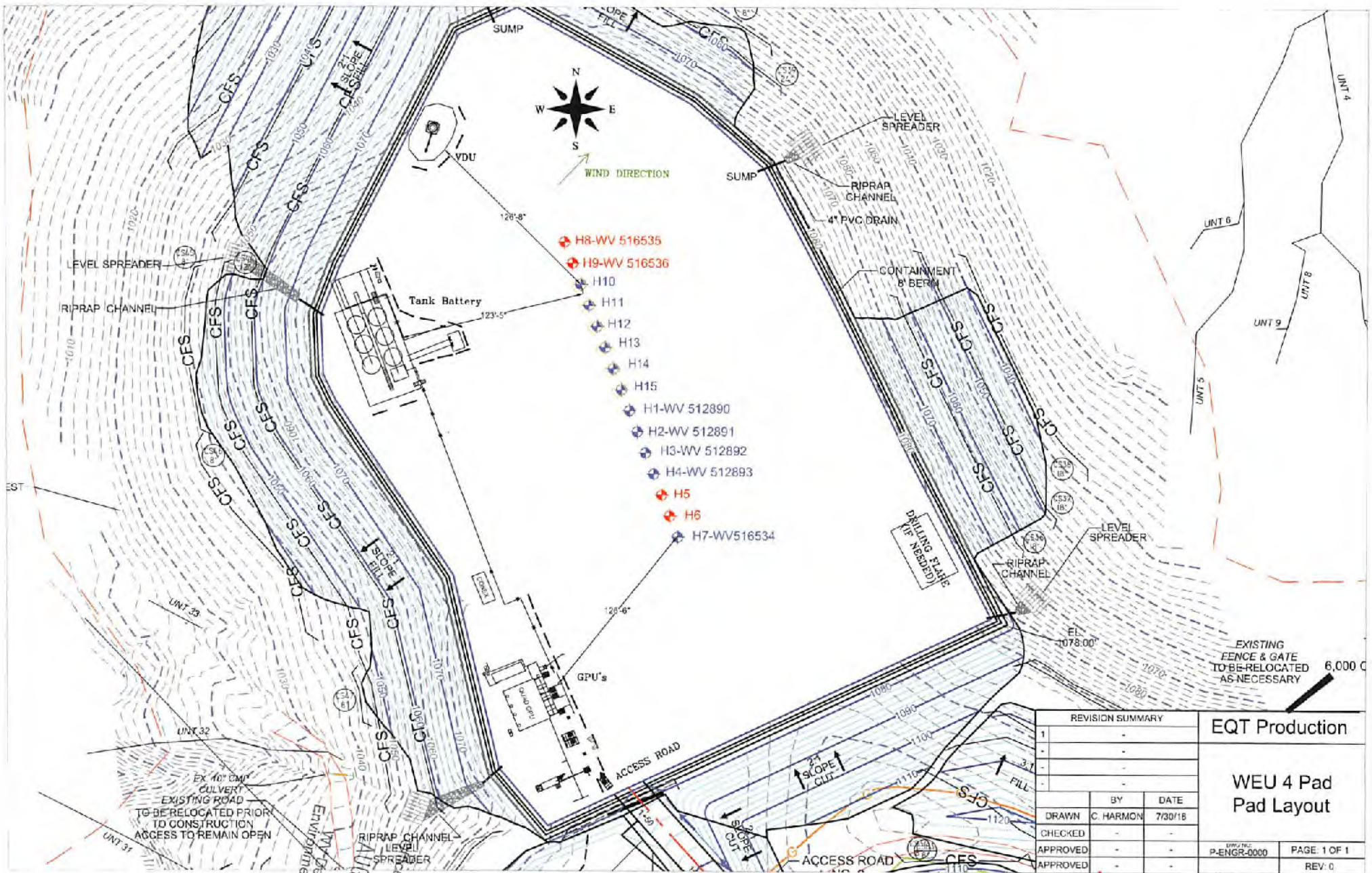
TRIAD ENERGY

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
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Facility Permit # PAR000029132

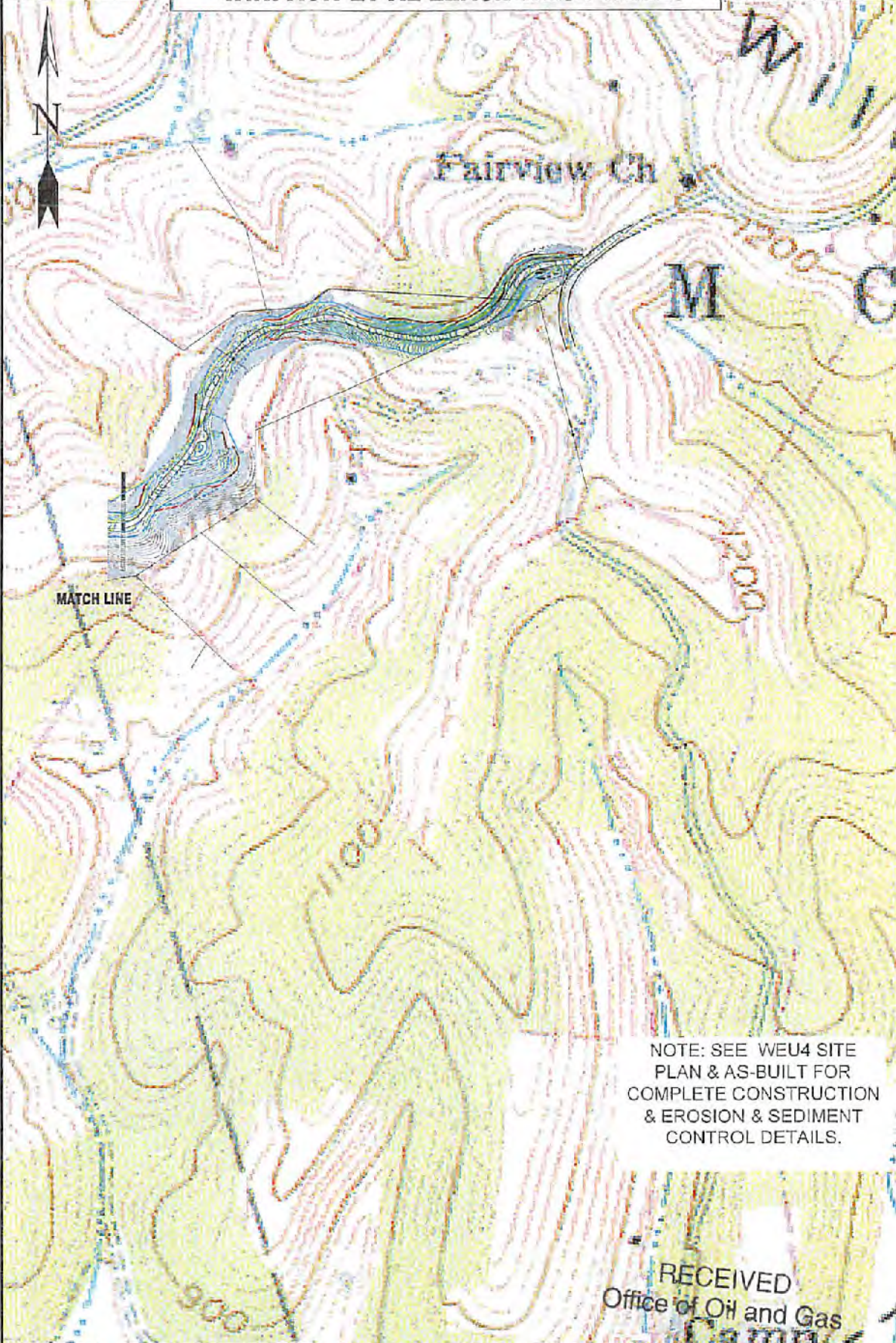
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MAY 09 2018
WV Department of
Environmental Protection
08/03/2018



REVISION SUMMARY		
1	-	-
-	-	-
-	-	-
DRAWN	C. HARMON	7/30/18
CHECKED	-	-
APPROVED	-	-
APPROVED	-	-

EQT Production	
WEU 4 Pad Pad Layout	
ENVY/ENR P-ENGR-0000	PAGE: 1 OF 1
	REV: 0

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 AUG 1 2018
 Department of
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 of Oil and Gas



NOTE: SEE WEU4 SITE PLAN & AS-BUILT FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

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CAMP
MAY 09 2018

SHEET 1 OF 2

SCALE: 1" = 500'

WV Department of Environmental Protection

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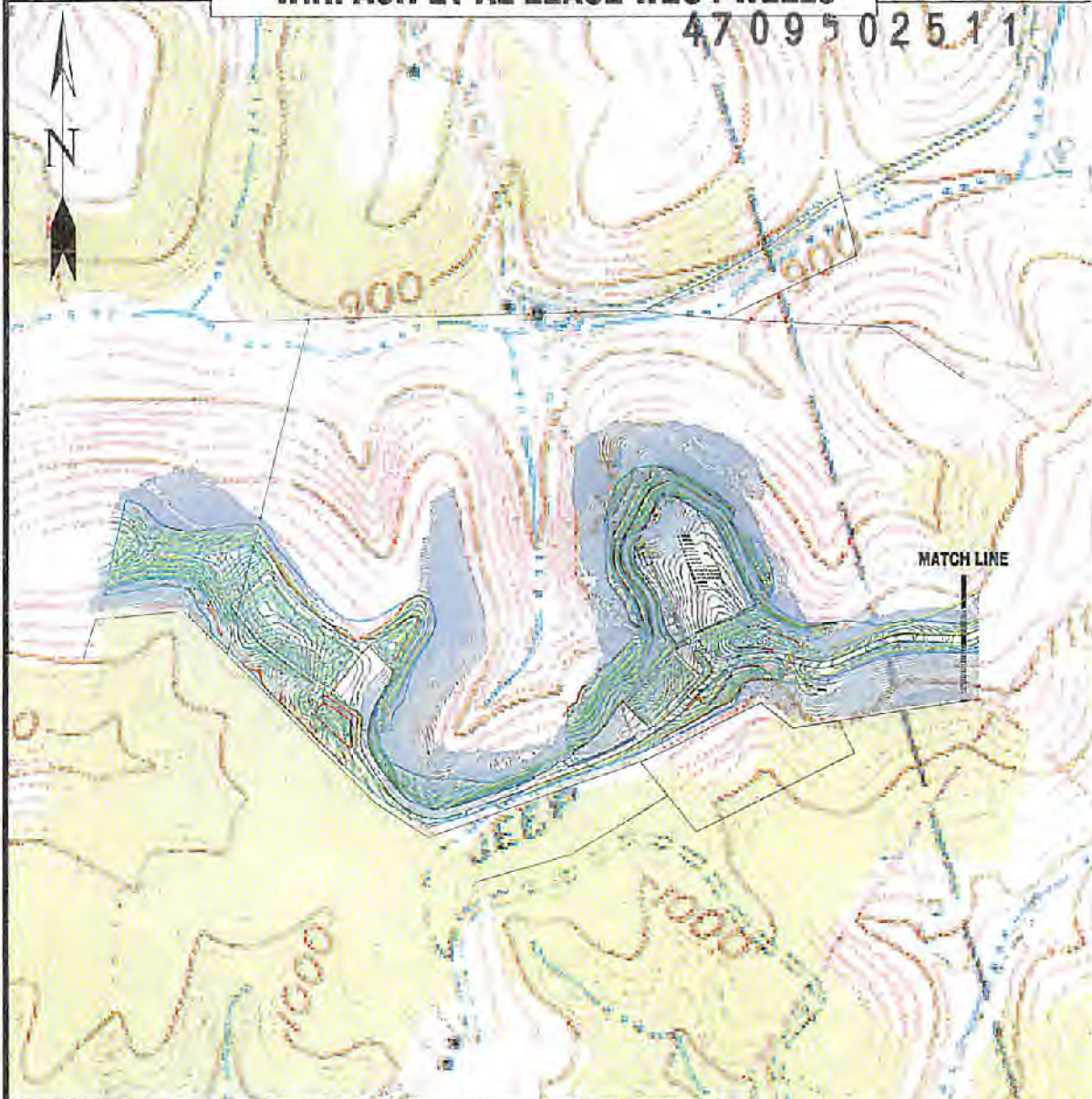
DRAWN BY: MGF	FILE NO. 7701	DATE 04-13-18	CADD FILE: 7701REPLANR4.dwg
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TOPO SECTIONS OF WEST UNION
7.5' TOPO QUADRANGLE

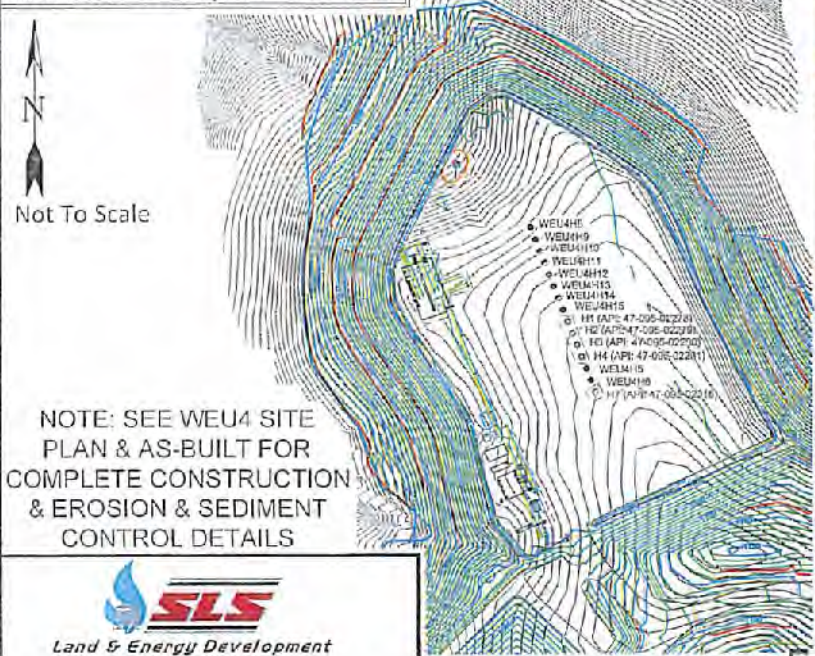
500' 1000'

08/03/2018

4709502511



Detail Sketch for Proposed WEU4 Wells



NOTE: SEE WEU4 SITE PLAN & AS-BUILT FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS

NOTE: SEE WEU4 SITE PLAN & AS-BUILT FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

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Office of Oil and Gas

MAY 09 2018



DRAWN BY	FILE NO.	DATE	CADD FILE:
MGF	7701	04-13-18	7701RECLPLAN1.dwg

TOPO SECTIONS OF WEST UNION
7.5' TOPO QUADRANGLE

SHEET 2 OF 2
WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
500' 1000'
08/03/2018



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Site Specific Safety and Environmental Plan

EQT
WEU4 Pad
Alma
Tyler County, WV

For Wells:
WEU4H5 WEU4H6 WEU4H10 WEU4H11 WEU4H12
WEU4H13 WEU4H14 WEU4H15

Date Prepared: February 16, 2018

[Signature]
EQT Production

Regional Land Supervisor
Title

5/4/2018
Date

WV Oil and Gas Inspector

Title RECEIVED
Office of Oil and Gas

Date MAY 09 2018

WV Department of
Environmental Protection
08/03/2018

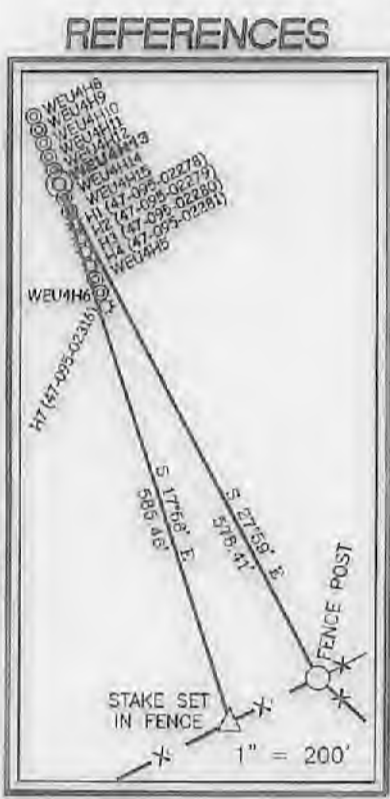
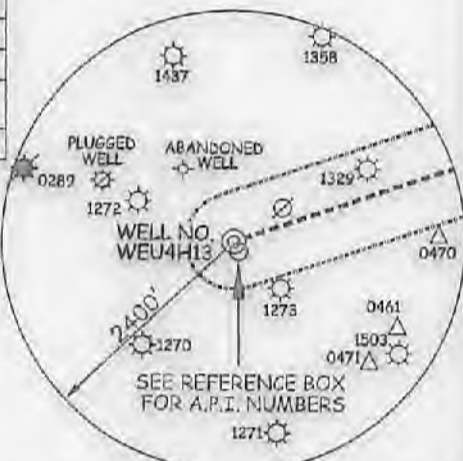
**WEU4
WEU4H13
EQT PRODUCTION COMPANY**

(S.P.C. WV NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 318,406.30 E. 1,626,558.69
 NAD'27 GEO. LAT-(N) 39.366676 LONG-(W) 80.820900
 NAD'83 UTM (M) N. 4,357,492.64 E. 515,443.06
LANDING POINT
 NAD'27 S.P.C.(FT) N. 318,843.40 E. 1,629,521.74
 NAD'27 GEO. LAT-(N) 39.367995 LONG-(W) 80.810443
 NAD'83 UTM (M) N. 4,357,640.89 E. 516,343.53
BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 315,542.63 E. 1,631,060.90
 NAD'27 GEO. LAT-(N) 39.358985 LONG-(W) 80.804830
 NAD'83 UTM (M) N. 4,356,643.14 E. 516,829.22

SURFACE OWNERSHIP			
TAG	SURFACE OWNER	ACRES	T.M. - PAR
TYLER COUNTY			
A	CHASE & REBA J. BARTRUG	109.94 ACRES±	TM-C-16-10
B	CONRAD COSTLOW	46.17 ACRES±	TM-C-16-14
C	JEFFERY E. & ANITA L. HOOVER	24.84 ACRES±	TM-C-16-16
D	RICHARD H. METCALF	61.57 ACRES±	TM-C-16-17
E	DONNA J. PETER	113.4 ACRES±	TM-C-16-22
F	CHRIS BAUM ET AL	56.84 ACRES±	TM-C-16-23
G	LEONA W. LORKOVICH ET AL	45.89 ACRES±	TM-C-16-24
H	STONEWALL GAS COMPANY	2 ACRES±	TM-C-16-24.2
I	PAUL WEEKLEY (LIFE)	18 ACRES±	TM-C-16-27
J	PAUL WEEKLEY (LIFE)	5 ACRES±	TM-C-16-28
K	PAUL WEEKLEY (LIFE)	5.37 ACRES±	TM-C-16-29
L	KENDRA WYKE ET AL	9.5 ACRES±	TM-C-18-02
M	ANZANETTA DRAIN IIRS	46.88 ACRES±	TM-C-18-03
N	GARY DAVENPORT	16 ACRES±	TM-M-21-25
O	BRUCE & SANDRA STONEKING	69.44 ACRES±	TM-M-21-28
P	BRUCE & SANDRA STONEKING	42.86 ACRES±	TM-M-21-29
Q	ASIA DELI CUMBERLEDGE	75.75 ACRES±	TM-M-21-32
R	BRUCE W. BOLAND	35.43 ACRES±	TM-M-21-34
S	GORDON L. KEYS ET AL	60.6 ACRES±	TM-M-21-35
T	THOMAS E. & RICHARD S. MARTIN	23.99 ACRES±	TM-M-21-36
U	CLAY M. PERKINS ET AL	50.25 ACRES±	TM-M-21-37
V	EDWARD D. & CAROLYN A. WHITE	40 ACRES±	TM-M-21-38
W	EDWARD D. & CAROLYN A. WHITE	12.5 ACRES±	TM-M-21-39
X	EDWARD D. & CAROLYN A. WHITE	16 ACRES±	TM-M-21-40
Y	BRYAN W. PRATT	23 ACRES±	TM-M-21-41
Z	RICHARD & LISA HINDRICKSON	44.68 ACRES±	TM-M-23-02
AA	JAMES T. & KATHRYN L. McNULTY	50.18 ACRES±	TM-M-23-3.1
BB	MYRON B. & BETTY WHITE	15.15 ACRES±	TM-M-23-07
DODDRIDGE COUNTY			
CC	MYRON B. & BETTY L. WHITE	14.88 ACRES±	TM-WU-01-01
DD	KENDRA K. (COTTRILL) WYKE	0.5 ACRES±	TM-WU-01-08
EE	JUDITH ANN BAGLEY	10.09 ACRES±	TM-WU-01-10
FF	JASON E. & JENNIFER L. BAGLEY	1.42 ACRES±	TM-WU-01-10.1

ROYALTY OWNERS		
JERRY RAY BROWN	76 AC.±	LEASE NO. 126187
ROXIE DAVIS ET AL	53 AC.±	LEASE NO. 126208
HESTER BRITTON ET AL	76 AC.±	LEASE NO. 126185
THOMAS E. & RICHARD S. MARTIN	28 AC.±	LEASE NO. 126257
FRANKLIN BUTLER ET AL	76 AC.±	LEASE NO. 126215

NOTES ON SURVEY
 1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS 2500 SQ. FT. OR GREATER WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
 2. WELL SPOT CIRCLE (SHEET 1) AND TOPO MARK SCALE ARE 1" = 3000'.



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

P.S. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE JULY 27, 20 18
 REVISED _____
 OPERATORS WELL NO. WEU4H13
 API WELL NO. 47-95-0251
 STATE WV COUNTY TYLER PERMIT 08/03/2018

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 7701PWU4H13.dwg (516540)
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

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

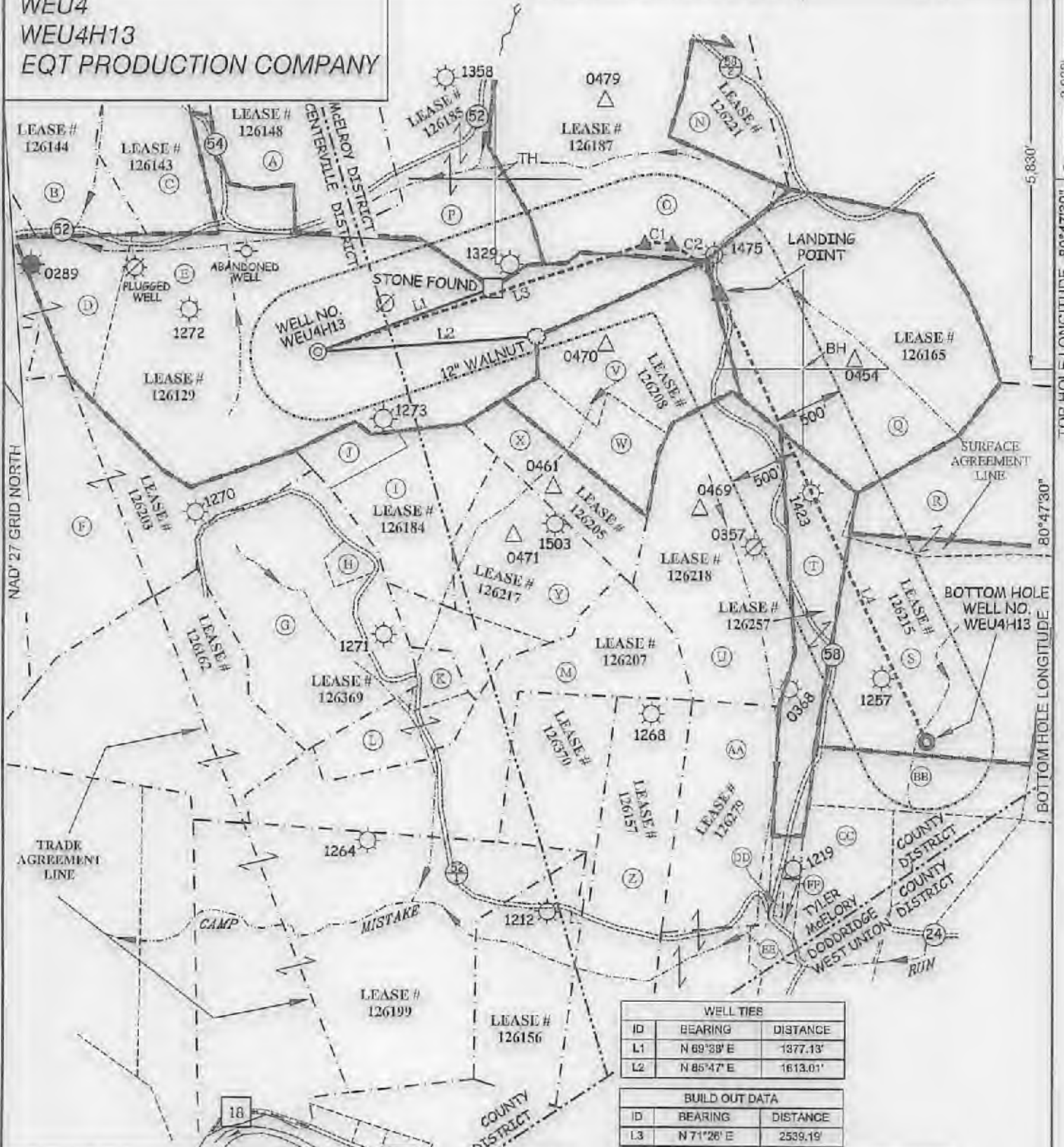
LOCATION:
 PAD ELEVATION 1,079' WATERSHED TRIBUTARY OF CAMP MISTAKE RUN
 DISTRICT CENTERVILLE COUNTY TYLER QUADRANGLE WEST UNION 7.5'
 SURFACE OWNER DONNA J. PETER ACREAGE 113.40±
 ROYALTY OWNER WACO OIL AND GAS INC. ET AL ACREAGE 152± LEASE NO. 126129

PROPOSED WORK:
 DRILL X CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____ OTHER _____
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,680'

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

TOP HOLE LONGITUDE 80°47'30"
 BOTTOM HOLE LONGITUDE 80°47'30"
 COUNTY NAME
 PERMIT

**WEU4
WEU4H13
EQT PRODUCTION COMPANY**



WELL TIES		
ID	BEARING	DISTANCE
L1	N 69°38' E	1377.13'
L2	N 85°47' E	1613.01'

BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	N 71°26' E	2539.19'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	204.90'	293.33'	S 87°32'47" E	200.67'
C2	520.53'	677.13'	S 44°25'44" E	607.81'

LATERAL		
ID	BEARING	DISTANCE
L4	S 25°00' E	3841.99'

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Land & Energy Development
Solutions from the ground up.
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www.slsunleis.com

(S.P.C. WV NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 318,406.90 E. 1,626,558.68
 NAD'27 GEO. LAT-(N) 39.368676 LONG-(W) 80.820900
 NAD'83 UTM (M) N. 4,357,492.64 E. 515,443.06
LANDING POINT
 NAD'27 S.P.C.(FT) N. 318,643.40 E. 1,629,521.74
 NAD'27 GEO. LAT-(N) 39.367995 LONG-(W) 80.810443
 NAD'83 UTM (M) N. 4,357,610.88 E. 516,343.83
BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 315,542.83 E. 1,631,080.90
 NAD'27 GEO. LAT-(N) 39.353995 LONG-(W) 80.804830
 NAD'83 UTM (M) N. 4,356,643.14 E. 516,829.22



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

LEGEND	
LEASE LINE	---
SURFACE LINE	----
WELL LATERAL	- - - -
OFFSET LINE	=====
TIE LINE	=====
CREEK	~~~~~
ROAD	====
FENCE LINE	XXXXXX
COUNTY ROUTE	-----
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
PLUGGED WELL	⊙
STORAGE WELL	⊙
CENTERVILLE DISTRICT TAX MAP-PARCEL	C-00-00
McELROY DISTRICT TAX MAP-PARCEL	M-00-00
WEST UNION DISTRICT TAX MAP-PARCEL	WJ-00-00

SCALE 1" = 1000' FILE NO. 7701PWEU4H13.dwg (519540)
 DATE JULY 27, 20 18
 REVISED _____
 OPERATORS WELL NO. WEU4H13
 API WELL 47
 NO. STATE COUNTY PERMIT

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

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

TOP HOLE LONGITUDE 80°47'30" BOTTOM HOLE LONGITUDE 80°47'30" COUNTY NAME PERMIT

WW-6A1
(5/13)

Operator's Well No. WEU4H13

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

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

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

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


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

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

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

RECEIVED
Office of Oil and Gas
MAY 09 2018

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 that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

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

4709502511

WW-6A1 attachment

Operator's Well No.

516540

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>126129</u>	<u>Waco Oil & Gas Co. Inc., et al (current royalty owner)</u> William H. Ash, et ux, et al (original lessor) Equitable Gas Company Equitrans, Inc. Equitrans, LP Equitrans, LP	Equitable Gas Company Equitrans, Inc. Equitrans, LP EQT Production Company EQT Production Company	**	LB191/321 DB 274/471 DB433/777 DB 396/640 OG 440/107
<u>126187</u>	<u>Jerry R Brown, et al (current royalty owner)</u> Addie Keys, et al (original lessor) Equitable Gas Company Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	LB195/475 DB 274/471 DB 433/777 DB 396/640
<u>126208</u>	<u>Roxie Davis, et al (current royalty owner)</u> Lucy Davis, et al. (original lessor) Equitable Gas Company Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	DB 197/551 DB 274/471 DB 433/777 DB 396/640
<u>126165</u>	<u>Hester Britton, et al (current royalty owner)</u> Asia Dell Cumberledge, et al (original lessor) Equitable Gas Company Equitrans, Inc. Equitrans, LP	Equitable Gas Company Equitrans, Inc. Equitrans, LP EQT Production Company	**	LB192/360 DB 274/471 DB 433/777 DB 396/640
<u>126257</u>	<u>Thomas E & Richard S Martin (current royalty owner)</u> Daisy Martin and Eli B. Martin (original lessor) M.S. Lantz Columbia Gas Transmission Corp Columbia Natural Resources, Inc Chesapeake Appalachia, LLC Statoil USA Onshore Properties, Inc Antero Resources Corporation	M.S. Lantz Columbia Gas Transmission Corp Columbia Natural Resources, Inc Chesapeake Appalachia, LLC Statoil USA Onshore Properties, Inc Antero Resource Corporation EQT Production Company	**	197/259 197/225 291/175 349/536 363/391 544/291 677/62
<u>126215</u>	<u>Franklin Butler, et al (current royalty owner)</u> Christine Hylibert, et vir (original lessor) Equitable Gas Company Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	198/402 DB 274/471 DB 433/777 DB 396/640

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

*Assignment
Attchd*

RECEIVED
Office of Oil and Gas
MAY 09 2018
WV Department of
Environmental Protection

08/03/2018

ASSIGNMENT OF LEASES

THIS ASSIGNMENT OF LEASES (“Assignment”) is made as of this 3rd day of April, 2018 (the “Effective Date”), by and between Antero Resources Corporation, a Delaware corporation, with an address of 1615 Wynkoop Street, Denver, Colorado 80202, as “Assignor”, and EQT Production Company, a Pennsylvania corporation, with an address of 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222, as “Assignee.” Each of Assignor and Assignee shall be referred to herein collectively as the “Parties” and individually as a “Party”.

WHEREAS, Assignor and Assignee entered into a Closing Letter Agreement – Acreage Trade and Imbalance (the “Trade Agreement”) dated April 3, 2018, pursuant to which Assignor has agreed to assign, and transfer and Assignee has agreed to acquire all of Assignor’s and its affiliates’ right, title, and interest in and under those certain oil and gas leases situated in Tyler County, West Virginia, that are described on “Exhibit A” attached hereto and made a part hereof, insofar and only insofar as such leases cover depths within the Marcellus Rights (subject to such depth limitations, the “Leases”);

NOW, THEREFORE, in consideration of One Hundred and 00/100 Dollars (\$100.00) and other valuable and sufficient consideration, the receipt and sufficiency of which is hereby acknowledged by Assignor, and intending to be legally bound, the parties hereto agree as follows:

Assignor hereby grants, bargains, sells, transfers, assigns and conveys to Assignee all of Assignor’s right, title and interest in the Leases and all associated Records, *provided, however*, that this Assignment shall not include and Assignor expressly reserves and retains all of the Excluded Assets.

1. Assignor agrees to specially warrant and forever defend title to the Leases unto Assignee, its successors and assigns, against the claims and demands of all persons claiming the same, or any part thereof, by, through or under Assignor, but not otherwise.

2. Assignor hereby transfers and assigns unto Assignee all of its right, title and interest in and to all warranties pertaining to the Leases, express or implied (including, without limitation, title warranties and manufacturers’, suppliers’ and contractors’ warranties), that have heretofore been made by any of Assignor’s predecessors in title (excluding any affiliate of Assignor) or by any third party manufacturers, suppliers and contractors, in each case, except for the Excluded Assets. This Assignment is made with full substitution and subrogation in and to all of the warranties that Assignor has or may have against predecessors in title (other than any affiliate of Assignor) and with full subrogation of all rights accruing under the applicable statutes of limitations and all rights and actions of warranty against all former owners of the Leases (other than any affiliate of Assignor), in each case, except for the Excluded Assets.

3. This Agreement is made subject to any and all licenses, leases, easements, rights of way, restrictions, covenants and restrictions, to the extent the same are matters of record, affecting the Leases, and all land use or similar laws, rules or regulations.

4. EXCEPT AS AND TO THE EXTENT EXPRESSLY SET FORTH IN THE SECTION 1 ABOVE OR SECTION 7 OF THE TRADE AGREEMENT, (I) ASSIGNOR MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING WITH RESPECT TO ASSIGNOR'S TITLE TO THE ASSETS AND MERCHANTABILITY, FREEDOM FROM LATENT VICES OR DEFECTS, FITNESS FOR A PARTICULAR PURPOSE OR CONFORMITY TO MODELS OR SAMPLES OF MATERIALS OF ANY ASSETS, RIGHTS OF A PURCHASER UNDER APPROPRIATE STATUTES TO CLAIM DIMINUTION OF CONSIDERATION, IT BEING EXPRESSLY UNDERSTOOD AND AGREED BY THE PARTIES HERETO THAT ASSIGNEE SHALL BE DEEMED TO BE OBTAINING THE APPLICABLE LEASES IN THEIR PRESENT STATUS, CONDITION AND STATE OF REPAIR, "AS IS" AND "WHERE IS" WITH ALL FAULTS OR DEFECTS, AND (II) ASSIGNOR EXPRESSLY DISCLAIMS ALL LIABILITY AND RESPONSIBILITY FOR ANY REPRESENTATION, WARRANTY, STATEMENT OR INFORMATION MADE OR COMMUNICATED (ORALLY OR IN WRITING) TO ASSIGNEE OR ANY OF SUCH PARTY AFFILIATES, EMPLOYEES, AGENTS, CONSULTANTS OR REPRESENTATIVES. EACH PARTY AGREES THAT, TO THE EXTENT REQUIRED BY APPLICABLE LAW TO BE EFFECTIVE, THE DISCLAIMERS OF CERTAIN REPRESENTATIONS AND WARRANTIES CONTAINED IN THIS SECTION 4 ARE "CONSPICUOUS" DISCLAIMERS FOR THE PURPOSE OF ANY APPLICABLE LAW.

5. THIS ASSIGNMENT AND THE LEGAL RELATIONS OF THE PARTIES SHALL BE GOVERNED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF WEST VIRGINIA, EXCLUDING, HOWEVER IN EACH CASE, ANY CONFLICTS OF LAW RULE OR PRINCIPLE THAT MIGHT REFER CONSTRUCTION OF SUCH PROVISIONS TO THE LAWS OF ANOTHER JURISDICTION. EACH PARTY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY ACTION, SUIT OR PROCEEDING ARISING OUT OF OR RELATING TO THIS ASSIGNMENT.

6. This Assignment is made specifically subject to the terms and conditions of the Trade Agreement, which is incorporated herein by reference as though set forth in full herein. The Trade Agreement contains certain representations, warranties, obligations, and agreements between Assignor and Assignee as to the Leases which survive the delivery of this Assignment and shall not be merged into the Assignment, or otherwise negated by the execution and delivery of this Assignment. In the event of any conflict between the terms of this Assignment and the terms of the Trade Agreement, the terms of the Trade Agreement shall control. This Section shall constitute a memorandum of the Trade Agreement and record notice to third parties of the Trade Agreement's existence.

7. Each party agrees upon request, from time to time to execute, acknowledge and deliver such further instruments of conveyance and/or take such other action as the other party

hereto may reasonably request that are necessary to effect the Assignment contemplated hereunder and in the Trade Agreement, including without limitation as necessary to correct inadvertent or clerical errors; provided further, if the transfer of any property or asset shall require consent of a third party, this Assignment shall not constitute an assignment or an agreement to assign the same in the absence thereof if it would be a breach resulting in termination by such third party. Pending receipt of such consent, Assignor shall cooperate in any commercially reasonable alternative arrangement Assignee requests so the relative benefits, privileges and/or burdens of such property or asset are provided to the appropriate party.

8. The provisions of this Assignment shall be construed as covenants running with the land and shall inure to the benefit of and are binding upon Assignee, its successors and assigns.

9. This Assignment may be executed by Assignor and Assignee in any number of counterparts, each of which shall be deemed an original instrument, but all of which shall collectively constitute one and the same instrument.

10. This Assignment is effective for all purposes as of 7:00 A.M. Eastern Time on the Effective Date.

11. Subject to the indemnification obligations in the Trade Agreement, Assignee shall pay, perform, discharge and assume and does hereby assume all responsibilities, liabilities, obligations, damages, causes of action for damage to property, suits, rights, demands, costs, and losses, whether known or unknown, in each case, relating to the Leases and the Records that accrue on or after the Effective Date.

12. Definitions.

A. "Marcellus Rights" as used in this Assignment means those depths and formations from the top of the Rhinestreet formation (as seen by the Bear Rocks #1 well, API number 37-051-22785, at a depth of 4805') to five hundred feet (500') below the top of the Helderberg formation (with the top of the Helderberg formation as seen by the Bear Rocks #1 well, API number 37-051-22785, at a depth of 7,577').

B. "Records" as used in this Assignment means, all of the files, records, information and data, whether written or electronically stored, to the extent relating to the Leases and in Assignor's or its affiliates' possession or control.

C. "Excluded Assets" as used in this Assignment means, (i) all of Assignor's other assets or other interests other than Leases or the Records, including, for the avoidance of doubt, all of Assignor's rights in the oil and gas leases and mineral interests described on "Exhibit A", insofar as such interests cover depths other than the Marcellus Rights (the "Retained Interests"), and including any wells located on such Retained Interests insofar as such wells are completed to depths other than the Marcellus Rights; (ii) any corporate minute books and corporate financial records that relate to Assignor's business generally (excluding such

books and records that solely relate to the ownership and operation of the Leases); (iii) all of Assignor's computer software, patents, trade secrets, copyrights, names, trademarks, logos and other intellectual property (including, for the avoidance of doubt, geophysical data or other data, if any, relating to Leases); (iv) all documents and instruments of Assignor that are protected by an attorney-client privilege; (v) any swap, forward, future or derivative transaction or option or similar agreement, whether exchange traded, over-the-counter or otherwise, involving, or settled by reference to, one or more rates, currencies, commodities, equity or debt instruments or securities, or economic, financial or pricing indices or measures of economic, financial or pricing risk or value or any similar transaction or any combination of these transactions and (vi) all data and information that cannot be disclosed as a result of confidentiality arrangements under agreements with third parties (provided that Assignor will use its commercially reasonable efforts to obtain a waiver of any such confidentiality restrictions).

13. In the event that any well drilled by or on behalf of Assignor on the Retained Interests (or lands pooled therewith) and under Assignor's control is not capable of producing oil and/or gas in paying quantities or a producing well on the Retained Interests (or lands pooled or unitized therewith) ceases to produce oil and/or gas in paying quantities, and such well is the only well capable of production in paying quantities on the respective oil and lease (or lands pooled or unitized therewith) and (a) the Assignor is required to plug and abandon such well pursuant to applicable law, rule, administrative order, or other requirement, (b) Assignor otherwise desires to plug and abandon such well, or (c) such well ceases to produce in paying quantities and any Lease hereunder will, absent production in paying quantities, terminate by its terms within sixty (60) days, then, in each such case, Assignor shall provide written notice (or if during the drilling of such well, verbal notice) (any such notice, the "Abandonment Notice") to Assignee (1) in the case of clause (a) or (b) above, at least thirty (30) days (or, if during the drilling of such well, forty eight (48) hours) prior to the anticipated plugging and abandonment of such well or (2) in the case of clause (c) above, at least sixty (60) days prior to the date on which such Lease will, absent production in paying quantities, terminate by its terms, in each case, in order to permit Assignee the option, in its sole discretion, to take over operation of such well. In the event that Assignee desires to take over the operation of such well on the Retained Interest, then Assignee shall provide written notice (or, if during the drilling of such well, verbal notice) (the "Take Over Notice") to Assignor within fifteen (15) days (or, if during the drilling of such well, forty eight (48) hours) of receiving such Abandonment Notice applicable thereto. Promptly following such receipt of such Take Over Notice, Assignor shall assign to Assignee, free and clear of all encumbrances, all of Assignor's right, title and interest in such well and the entire Retained Interests associated with such well pursuant to a mutually agreeable form of assignment containing no warranties except for a special warranty of title by, through and under the assignor and its Affiliates. If Assignee takes over the operations of any such well, then Assignee agrees to plug and abandon such well and reclaim, restore and clean up the drillsite location and access routes associated therewith in accordance with all applicable rules, regulations and laws and the terms of the applicable lease. If Assignee does not elect to take over the operations of such well within the time period specified, then Assignor agrees to plug and abandon such well and reclaim, restore and clean up the drillsite location and access routes associated therewith in accordance with all applicable laws and the terms of the applicable lease. All verbal notices provided under this Section 13 shall be followed with written notice as soon as reasonably practicable.

14. ASSIGNEE DEDICATION OF LEASES. Assignee, on behalf of itself and its affiliates and subsidiaries (collectively, "Assignee Parties"), hereby irrevocably and unconditionally: (a) dedicates and commits to EQM Gathering Opco, LLC, a Delaware limited liability company ("EQM") and each of EQM's affiliates, sister companies, successors and assigns, the exclusive right to receive from, gather, and redeliver to Assignee Parties, all oil, gas and related hydrocarbons on, in, and under those specific Leases described on "Exhibit B" attached hereto (the "Dedicated Leases") that is produced or producible from the Marcellus Rights in the Dedicated Leases (the "Dedicated Gas"); and (b) grants a servitude in the nature of real covenants burdening all of the rights, titles and interests of Assignee Parties and their respective successors and assigns in and to the Dedicated Leases and Dedicated Gas, which covenants shall be (i) deemed to be covenants running with the land with respect to the Dedicated Leases and (ii) binding on the respective successors and assigns of the interests of Assignee Parties in and to the Dedicated Leases and Dedicated Gas.

TO HAVE AND TO HOLD the same unto Assignee, its successors and assigns, forever **LESS AND EXCEPTING** the Excluded Assets.

ASSIGNOR:

Antero Resources Corporation

By: Tim Rady

Title: Vice President – Land

ASSIGNEE:



EQT Production Company

By: Erin R. Centofanti

Title: Senior Vice President – Asset Development



JOINING SOLELY TO ACKNOWLEDGE AND ACCEPT
THE DEDICATION IN SECTION 14 OF THIS ASSIGNMENT:

GATHERER:



EQM Gathering Opco, LLC

By: Ralph D. Deer

Title: Vice President

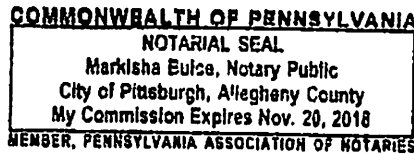
DW

**COMMONWEALTH OF PENNSYLVANIA;
COUNTY OF ALLEGHENY:**

On this 6 day of April, 2018, before me, the undersigned, personally appeared Erin R. Centofanti, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument, and said person acknowledged that she executed this instrument in her capacity as Senior Vice President – Asset Development of EQT PRODUCTION COMPANY, a Pennsylvania corporation, and that the same was executed for the purposes contained therein on behalf of said corporation.

My commission expires: 11-20-2018

[notary seal]



Markisha Bulca
Notary Public

**STATE OF COLORADO;
COUNTY OF DENVER:**

On this, the ___ day of April, 2018, before me a Notary Public, the undersigned officer, Tim Rady, personally appeared and acknowledged himself to be the Vice President – Land of ANTERO RESOURCES CORPORATION, a Delaware corporation, and that he as such officer and being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Vice President – Land.

My commission expires: _____

[notary seal]

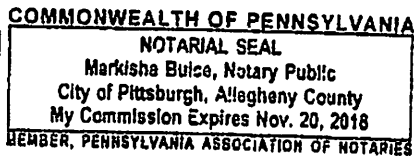
Notary Public

**COMMONWEALTH OF PENNSYLVANIA;
COUNTY OF ALLEGHENY:**

On this 9 day of April, 2018, before me, the undersigned, personally appeared Ralph D. Dear, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument, and said person acknowledged that he executed this instrument in his capacity as Vice Pres. of EQM GATHERING OPCO, LLC, a Delaware limited liability company, and that the same was executed for the purposes contained therein on behalf of said limited liability company.

My commission expires: 11-20-2018

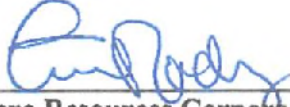
[notary seal]



Markisha Bulca
Notary Public

This instrument was prepared jointly by EQT Production Company, 625 Liberty Avenue, Suite 1700, Pittsburgh, PA 15222, and Antero Resources Corporation, 1615 Wynkoop St, Denver, CO 80202

ASSIGNOR:



Antero Resources Corporation *Jc/w*

By: Tim Rady

Title: Vice President – Land

ASSIGNEE:

EQT Production Company

By: Erin R. Centofanti

Title: Senior Vice President – Asset Development

JOINING SOLELY TO ACKNOWLEDGE AND ACCEPT
THE DEDICATION IN SECTION 14 OF THIS ASSIGNMENT:

GATHERER:

EQM Gathering Opco, LLC

By: _____

Title: _____

**COMMONWEALTH OF PENNSYLVANIA;
COUNTY OF ALLEGHENY:**

On this ____ day of April, 2018, before me, the undersigned, personally appeared Erin R. Centofanti, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument, and said person acknowledged that she executed this instrument in her capacity as Senior Vice President – Asset Development of **EQT PRODUCTION COMPANY**, a Pennsylvania corporation, and that the same was executed for the purposes contained therein on behalf of said corporation.

My commission expires: _____

[notary seal]

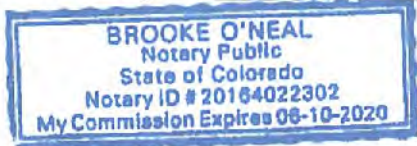
Notary Public

**STATE OF COLORADO;
COUNTY OF DENVER:**

On this, the 6th day of April, 2018, before me a Notary Public, the undersigned officer, Tim Rady, personally appeared and acknowledged himself to be the Vice President – Land of **ANTERO RESOURCES CORPORATION**, a Delaware corporation, and that he as such officer and being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself as Vice President – Land.

My commission expires: 6/10/2020

[notary seal]



[Signature]

Notary Public

**COMMONWEALTH OF PENNSYLVANIA;
COUNTY OF ALLEGHENY:**

On this ____ day of April, 2018, before me, the undersigned, personally appeared _____, known to me or satisfactorily proven to be the person whose name is subscribed to the foregoing instrument, and said person acknowledged that he executed this instrument in his capacity as _____ of **EQM GATHERING OPCO, LLC**, a Delaware limited liability company, and that the same was executed for the purposes contained therein on behalf of said limited liability company.

My commission expires: _____

[notary seal]

Notary Public

This instrument was prepared jointly by EQT Production Company, 625 Liberty Avenue, Suite 1700, Pittsburgh, PA 15222, and Antero Resources Corporation, 1615 Wynkoop St, Denver, CO 80202

“EXHIBIT A” TO ASSIGNMENT OF LEASES
LEASES

See Attached

“EXHIBIT B” TO ASSIGNMENT OF LEASES
LEASES DEDICATED TO EQM

See Attached

Exhibit A

Leases

COUNTY	DISTRICT	LESSOR	LEASE DATE	ACRES	BOOK	PAGE	TAX ID
Tyler	McElroy	Kearns, Douglas	4/18/2012	20.25000	404	351	5-23-1
Tyler	McElroy	Daisy Martin And Eli B. Martin, Her Husband	2/5/1973	28.00000	197	259	p/o 5-12-3.1, 5-12-4, p/o 5-12-35, & p/o 5- 12-36

Exhibit B

Leases

COUNTY	DISTRICT	LESSOR	LEASE DATE	ACRES	BOOK	PAGE	TAX ID
Tyler	McElroy	Kearns, Douglas	4/18/2012	20.25000	404	351	5-23-1
Tyler	McElroy	Daisy Martin And Eli B. Martin, Her Husband	2/5/1973	28.00000	197	259	p/o 5-12-3.1, 5-12-4, p/o 5-12-35, & p/o 5- 12-36



4709502511

May 4, 2018

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

Re: WEU4 well pad, wells WEU4H5, WEU4H6, WEU4H10, WEU4H11, WEU4H12,
WEU4H13, WEU4H14, WEU4H15,
Centerville District, Tyler 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,

Rebecca Wanstreet
Landman I -Permitting

RECEIVED
Office of Oil and Gas
MAY 09 2018
WV Department of
Environmental Protection

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

Date of Notice Certification: 05/07/2018

API No. 47- 95 - _____
Operator's Well No. WEU4H13
Well Pad Name: WEU4

Notice has been given:

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>515443.055</u>
County: <u>Tyler</u>		Northing: <u>4357492.636</u>
District: <u>Centerville</u>	Public Road Access: <u>WV-18</u>	
Quadrangle: <u>West Union</u>	Generally used farm name: <u>Donna J Peters</u>	
Watershed: <u>Tributary of Camp Mistake Run</u>		

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:

*PLEASE CHECK ALL THAT APPLY

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

OOG OFFICE USE ONLY

- RECEIVED/ NOT REQUIRED
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- 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 West Virginia II Legal Advertisement with publication date verification or the associated Affidavit of Publication. Attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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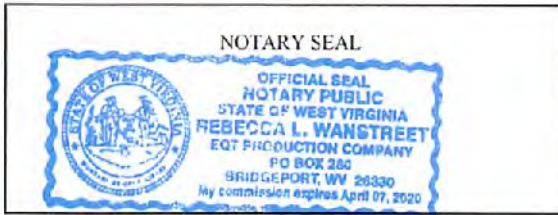
WV Department of
Environmental Protection
08/03/2018

4709502511

Certification of Notice is hereby given:

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

Well Operator:	<u>EQT Production Company</u>	Address:	<u>2200 Energy Drive</u>
By:	<u>Erin Spine</u>		<u>Canonsburg PA 15317</u>
Its:	<u>Regional Land Supervisor</u>	Facsimile:	<u>304-848-0041</u>
Telephone:	<u>304-848-0035</u>	Email:	<u>espine@eqt.com</u>



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

Oil and Gas Privacy Notice:

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

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

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

Date of Notice: 5/7/2018 **Date Permit Application Filed:** 5/7/2018

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: See Attached

Address: _____

Name: _____

Address: _____

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

Name: See Attached

Address: _____

Name: _____

Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: See Attached

Address: _____

COAL OWNER OR LESSEE

Name: See Attached

Address: _____

COAL OPERATOR

Name: _____

Address: _____

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

Name: See Attached

Address: _____

OPERATOR OF ANY NATURAL

Name: _____

Address: _____

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Office of Field
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*Please attach additional forms if necessary

**WV Department of
Environmental Protection**

08/03/2018

47 09 5025 11

Surface Owners:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

Access/ Other Disturbance:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

JAMES B. and BRENDA J. STONEKING
2 DEERHAVEN DRIVE
WHEELING, WV 26003

DIANE L. and GLENN W. MORGAN
590 ISNER CREEK ROAD
ELKINS, WV 26241

RICHARD METCALF
415 WILDLIFE LANE
BRIDGEPORT, WV 26330

Pit/ Impoundment or AST

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

Coal Owners:

ROSEMARY BRANDON
3013 DELEWARE AVE
KENNER LA 70065

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WV Department of
Environmental Protection
08/03/2018

WW-6A
(8-13)

API NO. 47- 95 - _____
OPERATOR WELL NO. WEU4H13
Well Pad Name: WEU4

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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(8-13)

API NO. 47- 95 -
OPERATOR WELL NO. WEU4H13
Well Pad Name: WEU4

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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Environmental Protection

08/03/2018

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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(8-13)

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API NO. 47- 95 -
OPERATOR WELL NO. WEU4H13
Well Pad Name: WEU4

Notice is hereby given by:

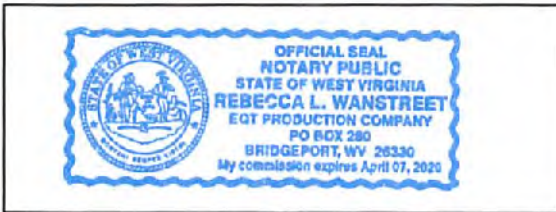
Well Operator: EQT Production Company
Telephone: 304-848-0035
Email: espine@eqt.com



Address: 2200 Energy Drive
Canonsburg PA 15317
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 4 day of May 2018.

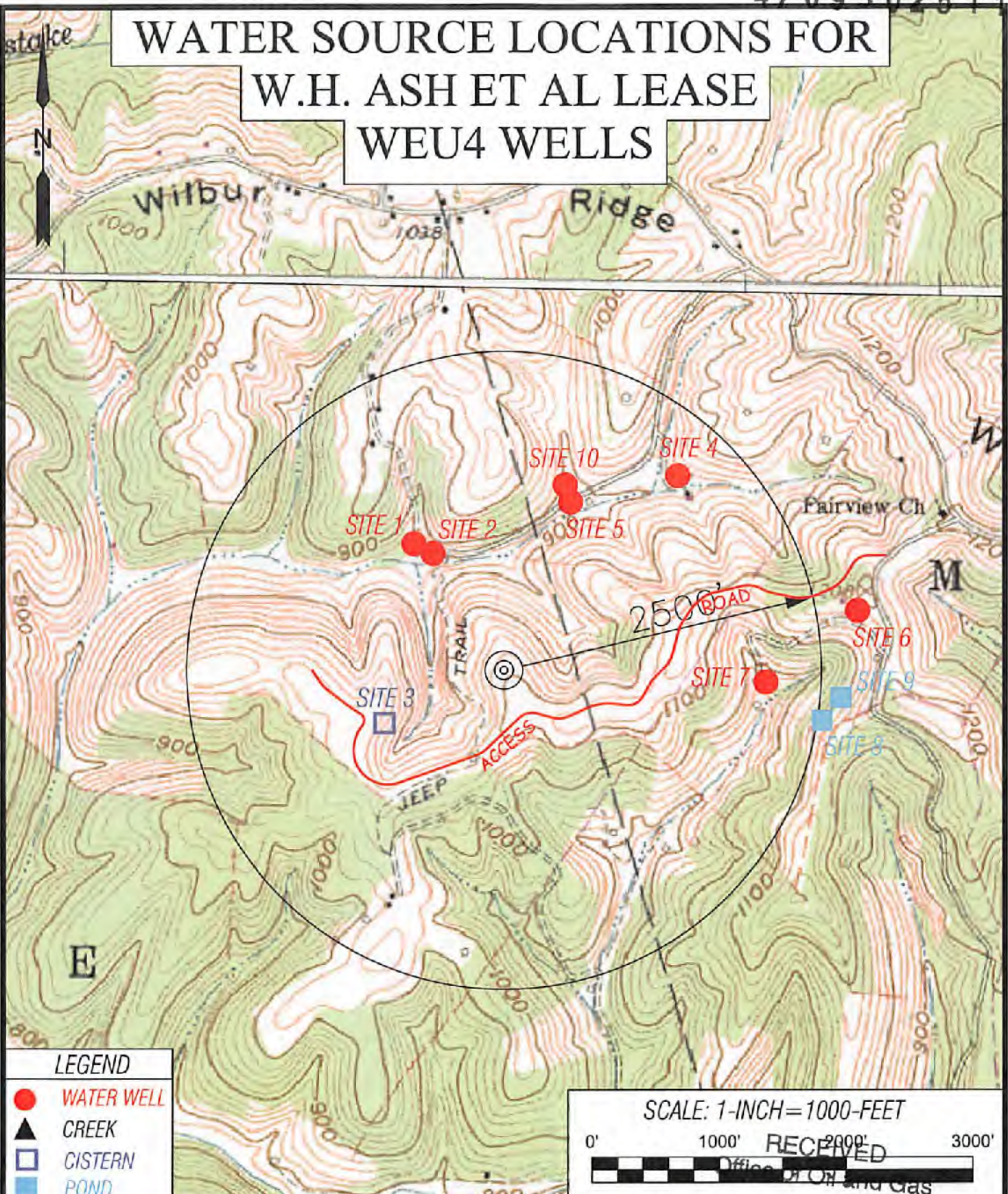
Rebecca L. Wanstreet Notary Public

My Commission Expires 4-7-2020

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WATER SOURCE LOCATIONS FOR W.H. ASH ET AL LEASE WEU4 WELLS



LEGEND

- WATER WELL
- ▲ CREEK
- ◻ CISTERN
- ◻ POND

SCALE: 1-INCH=1000-FEET



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www.slsenergy.com

TOPO SECTION OF:
WEST UNION, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
CENTERVILLE	TYLER	16-22

OPERATOR: MAY 09 2018
EQT PRODUCTION COMPANY
115 PROFESSIONAL PLACE
P.O. Box 280
Department of
Environmental Protection
BRIDGEPORT, WV 26030

DRAWN BY	FILE NO.	DATE	CADD FILE:
MGF	7701	04/16/18	7701WSMEU4-R3.dwg

08/03/2018

4709502511

Surface Owners:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

Access/ Other Disturbance:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

JAMES B. and BRENDA J. STONEKING
2 DEERHAVEN DRIVE
WHEELING, WV 26003

DIANE L. and GLENN W. MORGAN
590 ISNER CREEK ROAD
ELKINS, WV 26241

RICHARD METCALF
415 WILDLIFE LANE
BRIDGEPORT, WV 26330

Pit/ Impoundment or AST

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

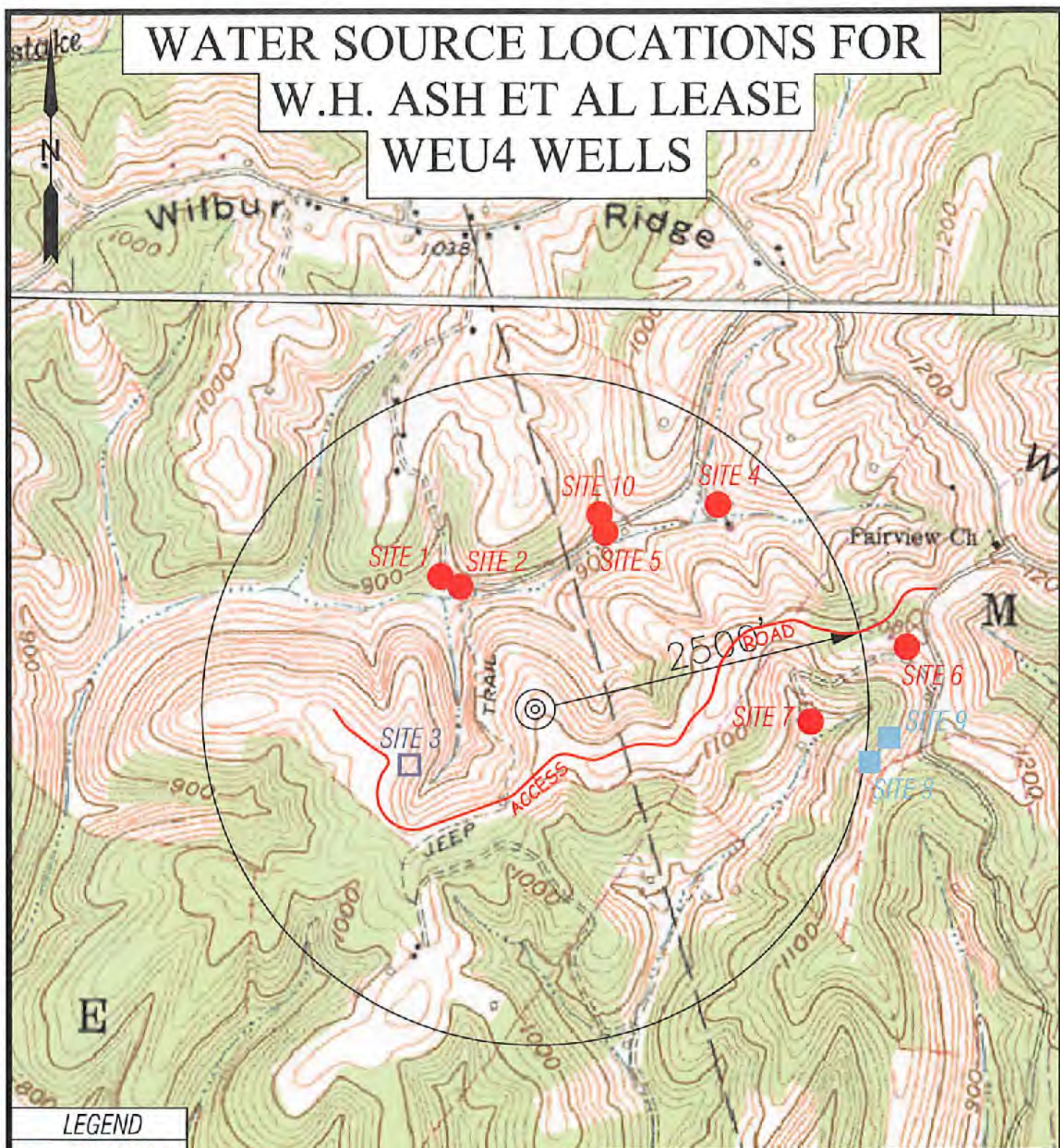
Coal Owners:

ROSEMARY BRANDON
3013 DELEWARE AVE
KENNER LA 70065

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Environmental Protection

08/03/2018

WATER SOURCE LOCATIONS FOR W.H. ASH ET AL LEASE WEU4 WELLS



LEGEND

- WATER WELL
- ▲ CREEK
- CISTERN
- POND

SCALE: 1-INCH = 1000 FEET

0' 1000' 2000' 3000'

Office of Oil and Gas

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Land & Energy Development

P.O. Box 150 & 12, Vinton Drive & Central, WV 26031 & (204) 492-0534

www.slsenergy.com

DRAWN BY: MGF
FILE NO.: 7701
DATE: 04/16/18
CADD FILE: 7701WSWEU4-R3.dwg

TOPO SECTION OF:
WEST UNION, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
CENTERVILLE	TYLER	16-22

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



WELL INFORMATION AND POTENTIAL WATER WELL SAMPLE DATA SHEET

OPERATOR: EQT Production Company
LEASE NAME AND NUMBER: WEU-4

COMMENTS

The initial field and/or mapping review of the area surrounding the proposed well site revealed the below listed surface owner(s) that were potentially utilizing groundwater (potable) for Human Consumption or other purposes within 2500' of the proposed well site. (For location of each site see attached area map.)

INDIVIDUAL CONTACTED OR NOTIFIED

Site: 1 Spacing 1220' Owner/Occupant: Donna Peter
 Address: 733 Ridge Rd. Alma, WV 26320 Ph: (304)-758-4495
 Field Contact Date: 04/23/2015 Located: Yes Date Located: 04/23/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.369336, Long : -80.823230
Tax Map 16, Parcel 22
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 2 Spacing 1075' Owner/Occupant: Donna Peter
 Address: 733 Ridge Rd. Alma, WV 26320 Ph: (304)-758-4495
 Field Contact Date: 04/23/2015 Located: Yes Date Located: 04/23/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.369112, Long : -80.822699
Tax Map 16, Parcel 22
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 3 Spacing 1030' Owner/Occupant: Donna Peter
 Address: 733 Ridge Rd. Alma, WV 26320 Ph: (304)-758-4495
 Field Contact Date: 04/23/2015 Located: Yes Date Located: 04/23/2015 Source: Spring
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.365439, Long : -80.823990
Tax Map 16, Parcel 22
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 4 Spacing 2050' Owner/Occupant: Bruce & Sandra Stoneking
 Address: RR.1 Box 304 BB, Elkins, WV 26241 Ph: _____
 Field Contact Date: 04/23/2015 Located: Yes Date Located: 04/23/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.370837, Long : -80.815910
Tax Map 21, Parcels 28 and 29
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

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Site: 5 Spacing 1425' Owner/Occupant: Bruce & Sandra Stoneking
 Address: RR.1 Box 304 BB, Elkins, WV 26241 Ph: Unknown
 Field Contact Date: 04/23/2015 Located: Yes Date Located: 04/23/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.370270, Long : -80.818867
Tax Map 21, Parcels 28 and 29
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 6 Spacing 2830' Owner/Occupant: Edward and Carolyn White
 Address: 4316 Teen Barnes Rd., Jefferson, MD 21755 Ph: (301)-371-8521
 Field Contact Date: 05/20/2015 Located: Yes Date Located: 05/20/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.368035, Long : -80.810833
Tax Map 21, Parcel 38, 39, & 40
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 7 Spacing 2070' Owner/Occupant: Edward and Carolyn White
 Address: 4316 Teen Barnes Rd. Jefferson, MD 21755 Ph: (301)-371-8521
 Field Contact Date: 05/20/2015 Located: Yes Date Located: 05/20/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.366470, Long : -80.813358
Tax Map 21, Parcel 38, 39, & 40
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 8 Spacing 2540' Owner/Occupant: Edward and Carolyn White
 Address: 4316 Teen Barnes Rd., Jefferson, MD 21755 Ph: (301)-371-8521
 Field Contact Date: 05/20/2015 Located: Yes Date Located: 05/20/2015 Source: Pond
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.365666, Long : -80.811781
Tax Map 21, Parcel 38, 39, & 40
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 9 Spacing 2665' Owner/Occupant: Edward and Carolyn White
 Address: 4316 Teen Barnes Rd., Jefferson, MD 21755 Ph: (301)-371-8521
 Field Contact Date: 05/20/2015 Located: Yes Date Located: 05/20/2015 Source: Pond
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.366163, Long : -80.811260
Tax Map 21, Parcel 38, 39, & 40
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

Site: 10 Spacing 3655' Owner/Occupant: Chase E. & Reba J. Bartrug
 Address: 3163 Jefferson Run Rd., Alma, WV 26320 Ph: Unknown
 Field Contact Date: 05/20/2015 Located: Yes Date Located: 05/20/2015 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Lat : 39.370659, Long : -80.819027
Tax Map 16, Parcel 10
Previously indicated sampling wanted. Has been renotified for any changes by certified letter on 4/16/18.

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MAY 09 2018

WV Department of
Environmental Protection

Site: _____ Spacing _____ Owner/Occupant: Conrad Costilow
 Address: 13310 Middle Island Rd., West Union, WV 26456 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Tax Map 16, Parcel 14
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Bryan W. Pratt
 Address: 525 Cabin Lane, Alma, WV 26320 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/2016 2nd 11/21/16 Certified (3rd) 11/10/16
 Comments: Tax Map 21, Parcel 41
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Paul Weekley c/o Paula Miller
 Address: 4500 McElroy Creek Rd., Alma, WV 26320 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/16 2nd 11/21/16 Certified (3rd) 11/01/16
 Comments: Tax Map 16, Parcel 27, 28, & 29
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Chris Baum Jr. & Lynn k. Herstine
 Address: 7214 Ridgeview Dr. SE, Waynesburg, OH 44688 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/16 2nd 11/21/16 Certified (3rd) 11/10/16
 Comments: Tax Map 16, Parcel 23
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Leona Lorkovich
 Address: 302 Lynn Dr., New Brighton, PA 15066 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/15 2nd 04/26/15 Certified (3rd) 04/17/15
 Comments: Tax Map 16, Parcel 24
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Stonewall Gas Company
 Address: 501 Martindale St. Suite 500, Pittsburgh, PA 15212 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/15 2nd 04/26/15 Certified (3rd) 04/17/15
 Comments: Tax Map 16, Parcel 24.2
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

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Office of Oil and Gas

MAY 09 2018

Site: _____ Spacing _____ Owner/Occupant: Richard H. Metcalf
 Address: 425 Wildlife Ln., Bridgeport, WV 26330 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/2016 2nd 11/21/2016 Certified (3rd) 11/10/2016
 Comments: Tax Map 16, Parcels 14.1 & 17
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: John Anders II
 Address: 804 Peters Run Rd., Wheeling, WV 26003 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/15 2nd 04/23/16 Certified (3rd) 04/17/15
 Comments: Tax Map 16, Parcel 14.2
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Mark A. & Joel A. Prossor
 Address: HC 74 Box 21, Wilbur, WV 26320 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 04/09/2015 2nd 04/23/2015 Certified (3rd) 04/17/2015
 Comments: Tax Map 16, Parcel 15
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Jeffrey & Anita Hoover
 Address: 305 Ridge Rd., Alma, WV 26320 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/16 2nd 11/21/16 Certified (3rd) 11/10/16
 Comments: Tax Map 16, Parcel 16
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Pearlie Davis
 Address: 122 Elm St., Davisville, WV 26142 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/16 2nd 11/21/16 Certified (3rd) 4/16/18
 Comments: Tax Map 16, Parcel 25
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

Site: _____ Spacing _____ Owner/Occupant: Anzaretta Drain Hrs. c/o Paula Miller
 Address: 4500 McElroy Creek Rd., Alma, WV 26320 Ph: Unknown
 Field Contact Date: N/A Located: No Date Located: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 11/11/16 2nd 11/21/16 Certified (3rd) 11/10/16
 Comments: Tax Map 18, Parcel 3
No Response To Previous Certified Letter
New certified letter was sent for renotification on 4/16/18.

RECEIVED
 Office of Oil and Gas

MAY 09 2018

4709502511

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

Date of Notice: 02/27/2018 **Date Permit Application Filed:** 03/08/2018

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

HAND DELIVERY **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

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

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

Name: See Attached
Address: _____

Name: See Attached
Address: _____

Notice is hereby given:

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

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>515443.055</u>
County:	<u>Tyler</u>		Northing:	<u>4357492.636</u>
District:	<u>Centerville</u>	Public Road Access:	<u>WV-18</u>	
Quadrangle:	<u>West Union</u>	Generally used farm name:	<u>Donna J Peters</u>	
Watershed:	<u>Tributary of Camp Mistake Run</u>			

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 2200 Energy Drive
Canonsburg PA 15317
Telephone: 304-848-0035
Email: espine@eqt.com
Facsimile: 304-848-0041

Authorized Representative: Erin Spine
Address: 2200 Energy Drive
Canonsburg PA 15317
Telephone: 304-848-0035
Email: espine@eqt.com
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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

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Office of Oil and Gas
MAY 10 2018
WV Department of Environmental Protection
08/03/2018

4709502511

Surface Owners:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

Access/ Other Disturbance:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

JAMES B. and BRENDA J. STONEKING
2 DEERHAVEN DRIVE
WHEELING, WV 26003

DIANE L. and GLENN W. MORGAN
590 ISNER CREEK ROAD
ELKINS, WV 26241

RICHARD METCALF
415 WILDLIFE LANE
BRIDGEPORT, WV 26330

Pit/ Impoundment or AST

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

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Office of Oil and Gas
MAY 09 2018
WV Department of
Environmental Protection

08/03/2018

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

47 09 5025 11

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

Date of Notice: 05/07/2018 **Date Permit Application Filed:** 05/07/2018

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

- CERTIFIED MAIL HAND
- RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

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

Notice is hereby given:

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>515443.055</u>
County: <u>Tyler</u>		Northing: <u>4357492.636</u>
District: <u>Centerville</u>	Public Road Access: <u>WV-18</u>	
Quadrangle: <u>West Union</u>	Generally used farm name: <u>Donna J Peters</u>	
Watershed: <u>Tributary of Camp Mistake Run</u>		

This Notice Shall Include:

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

Well Operator: <u>EQT Production Company</u>	Address: <u>2200 Energy Drive</u>
Telephone: <u>304-848-0035</u>	<u>Canonsburg PA 15317</u>
Email: <u>espine@eqt.com</u>	Facsimile: <u>304-848-0041</u>

Oil and Gas Privacy Notice:

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

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MAY 09 2018
WV Department of
Environmental Protection
08/03/2018

Surface Owners:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

47 09 5025 11

Access/ Other Disturbance:

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

JAMES B. and BRENDA J. STONEKING
2 DEERHAVEN DRIVE
WHEELING, WV 26003

DIANE L. and GLENN W. MORGAN
590 ISNER CREEK ROAD
ELKINS, WV 26241

RICHARD METCALF
415 WILDLIFE LANE
BRIDGEPORT, WV 26330

Pit/ Impoundment or AST

DONNA J PETER
733 RIDGE ROAD
WILBUR, WV 26320

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WV Department of
Environmental Protection

08/03/2018



4709502511

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

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

Revised February 28, 2018

Jill M. Newman
Deputy Commissioner

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

Subject: DOH Permit for the WEU 4 Well Pad, Tyler County

WEU4H5
WEU4H12

WEU4H6
WEU4H13

WEU4H10
WEU4H14

WEU4H11
WEU4H15

Dear Mr. Martin,

This well site will be accessed from DOH Permit #06-2015-0241 issued to EQT Production Company for access to the State Road for a well site located off of Tyler County Route 58 SLS.

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

Very Truly Yours,

Gary K. Clayton P.E.
Regional Maintenance Engineer
Central Office Oil & Gas Coordinator

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

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WV Department of
Environmental Protection

08/03/2018

95-02511

Anticipated Frac Additives Chemical Names and CAS numbers

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

JEB
5/19/2018

DMH
5-19-18

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Office of Oil and Gas

MAY 18 2018

WV Department of
Environmental Protection

08/03/2018

**WVDEP OOG
ACCEPTED AS-BUILT**

4/4/2016

WEU-4 AS-BUILT SITE PLAN EQT PRODUCTION COMPANY

PERMITTED WELLS: API# 47-095-02278, 47-095-002279, 47-095-02280, 47-095-02281,
47-095-02316, 47-095-02317 AND 47-095-02318

PROPOSED WELL NUMBERS: H6-WV512894, H6-WV512895, H8-WV516535,
H9-WV516536, H11-WV516538, H13-WV516540, H14-WV516600 AND H15-WV516601

SITUATE ON WATERS OF CAMP MISTAKE RUN IN MCELROY AND CENTER DISTRICTS,
TYLER COUNTY, WEST VIRGINIA

PROJECT INFORMATION

PROJECT NAME WEU-4 AS-BUILT SITE PLAN

TAX PARCEL:
CENTERVILLE DISTRICT
MAP 16
MCELROY DISTRICT
MAP 21

SURFACE OWNER:
L. B. SANDER & SONS
MURKIN CENTER
TYLER COUNTY, WV
TOTAL PROPERTY AREA: 90.44 ACRES

DOYNA, J. PETER
MCELROY & CENTERVILLE DISTRICT
TYLER COUNTY, WV
TOTAL PROPERTY AREA: 113.86 ACRES

EDWARD & WYOMIE HETCALF
CENTERVILLE CENTER
TYLER COUNTY, WV
TOTAL PROPERTY AREA: 91.576 ACRES

OIL AND GAS ROYALTY OWNER
WACO OIL & GAS COMPANY, INC. ET AL
CENTERVILLE DISTRICT
TYLER COUNTY, WV
TOTAL PROPERTY AREA: 1524 ACRES

SITE LOCATION

THE WEU-4 SITE IS NORTH OF CAMP MISTAKE RUN COUNTY ROUTE 56, THE
ENTRANCE TO THE SITE IS APPROXIMATELY 0.2 MILE SOUTH WEST OF COUNTY
ROUTE 56 AND COUNTY ROUTE 6027 INTERSECTION.

LOCATION COORDINATES

WEU-4 SITE BOUNDARY
LATITUDE: 38.289178 LONGITUDE: 80.812114 (NAD 83)
LATITUDE: 4,357,272 LONGITUDE: 516,363 (UTM NAD 83 METERS)

WEU-4 CENTER OF WELL PAD
LATITUDE: 38.286820 LONGITUDE: 80.823845 (NAD 83)
LATITUDE: 4,357,427 LONGITUDE: 515,448 (UTM NAD 83 METERS)

WEU-4 FLOW CENTER OF FLOWBACK PIT
LATITUDE: 38.285305 LONGITUDE: 80.821021 (NAD 83)
LATITUDE: 4,357,350 LONGITUDE: 515,431 (UTM NAD 83 METERS)

WEU-4 FLOW CENTER OF COMPLETION PIT
LATITUDE: 38.285695 LONGITUDE: 80.821772 (NAD 83)
LATITUDE: 4,357,406 LONGITUDE: 515,254 (UTM NAD 83 METERS)

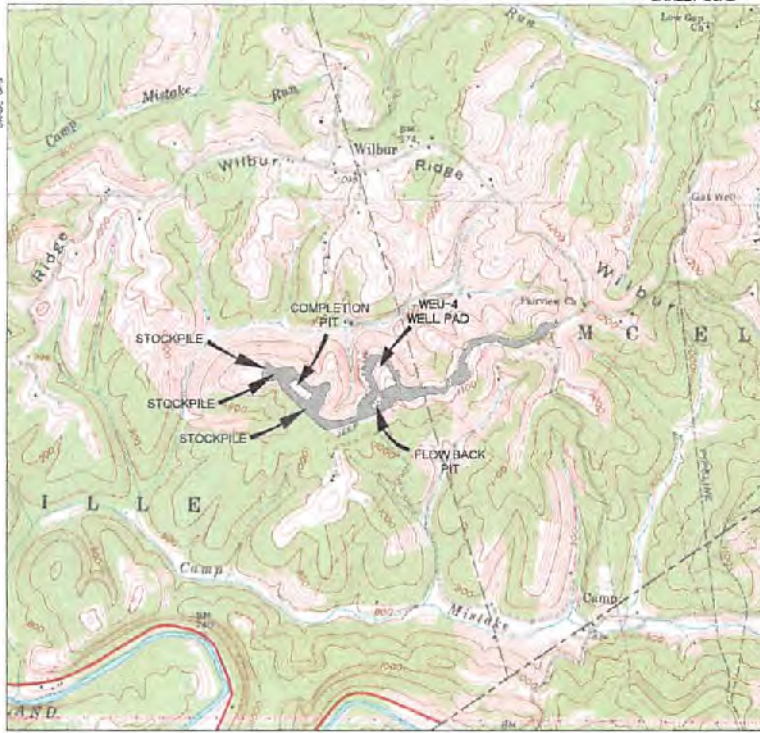
SITE DISTURBANCE COMPUTATIONS

TOTAL AS-BUILT DISTURBANCE = 35.61 ACRES

GENERAL DESCRIPTION

THE WEU-4 PAD AND PIT & FLOWBACK PITS WERE CONSTRUCTED TO AID IN THE DEVELOPMENT
OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

LOCATION MAP



LIST OF DRAWINGS

1. COVER SHEET
2. INDEX SHEET
3. WEU-4 ACCESS ROAD
4. WEU-4 FLOWBACK PIT PAD
5. WEU-4 COMPLETION PIT SET POINTS
6. ACCESS ROAD PROFILE
7. ACCESS ROAD PROFILE, FLOWBACK PIT AND COMPLETION PIT PROFILES

LEGEND	
LIMIT OF DISTURBANCE	---
CONCRETE FILLER EDGE	---
AS-BUILT LID	---
EDGE OF GRAVEL/DIRT	---
EDGE OF PAVEMENT	---
ROAD CENTERLINE	---
STREETLINE	---
CULVERT	---
FENCELINE	---
GATE	---
OVERHEAD UTILITY R/W	---
OVERHEAD UTILITY R/W	---
POWER POLE	---
CITY WIRE	---
TELEPHONE LINE	---
GASLINE	---
GASLINE R/W	---
WATERLINE	---
STRUCTURE	---
POLELINE MARKER	---
BIG FOOTPRINT	---
EDGE OF GRAVEL PAD	---
EDGE OF BERM	---
SUPER BILT FENCE	---
RESURFACED BILT FENCE	---
TOP BERM	---
GRAVEL	---
RED BILT	---
ORIGINAL GRADING & CONTOURS	---
AS-BUILT & CONTOURS	---
PHOTO NUMBER & LOCATION	---
AS-BUILT WELL LOCATIONS	---
PROPOSED WELL LOCATIONS	---
SPOT ELEVATIONS	---
MANUSCRIPT	---

DMH 4/4/16

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



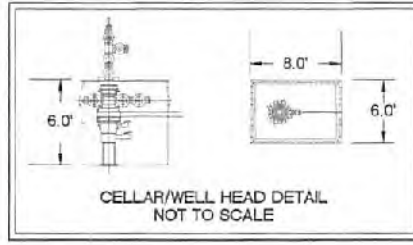
DATE	REVISION	DATE	REVISION	DESCRIPTION
<p>THIS DOCUMENT WAS PREPARED BY SOUTH LAND SURVEYING, INC. FOR EQT</p>				
<p>WEU-4 AS-BUILT SITE PLAN</p> <p>THIS DOCUMENT WAS PREPARED BY SOUTH LAND SURVEYING, INC. FOR EQT PRODUCTION COMPANY</p>				
DATE: 03/02/2016				
BY:				
SCALE: 1" = 1000'				
DESIGNED BY: K.S.S.				
FILE NO: 770				
SHEET: 1 OF 2				
DATE: 4/4/16				
DRAWN BY: ASBUILT.TS.dwg				

CIRCUIT NORTH AND SURVICED ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY EOPM SURVEY GRADE.

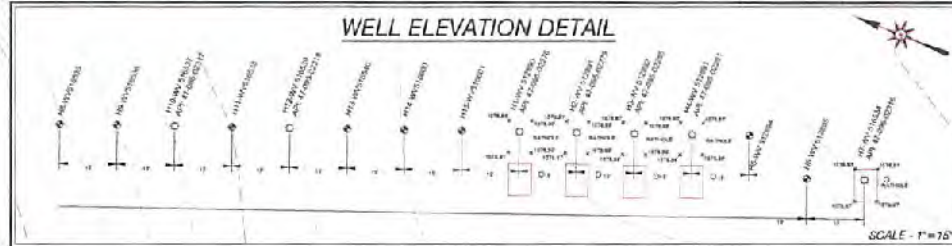
WEU-4 AS BUILT SITE PLAN

SITUATE ON WATERS OF CAMP MISTAKE RUN IN MOELCROY AND CENTER DISTRICTS, TYLER COUNTY, WEST VIRGINIA

**WVDEP OOG
ACCEPTED AS-BUILT**
4/4/2016



L. B. & SANDRA STONER KING
42.66 ACRES



Donna J. Peter
113.4 Acres
TM 16-22

WEU-4 FLOWBACK PIT VOLUMES AT 1' INTERVALS

Storage Volume	Flowback	IC-3	IC-4	IC-5	IC-6	IC-7
15	1084.21	0	0	0	0	0
17	1084.21	17.5	0.20777	882.0	0	20.4
18	1071.21	121.0	0.23381	2448.0	0	45.9
19	1071.21	223.0	0.14814	4848.0	0	112.7
19	1071.21	288.0	0.24898	8073.0	0	139.1
19	1071.21	315.0	0.38165	12411.0	0	200.4
19	1071.21	333.0	0.50885	17773.0	0	262.3
19	1071.21	333.0	0.74115	24162.0	0	375.4
19	1071.21	333.0	0.96942	31551.0	0	488.1
19	1071.21	333.0	1.20142	39940.0	0	600.7
19	1071.21	333.0	1.43270	49329.0	0	713.4
19	1071.21	333.0	1.66280	59718.0	0	826.1
19	1071.21	333.0	1.89140	71107.0	0	938.8
19	1071.21	333.0	2.11830	83496.0	0	1051.5
19	1071.21	333.0	2.34440	96885.0	0	1164.2
19	1071.21	333.0	2.56960	111274.0	0	1276.9
19	1071.21	333.0	2.79380	126663.0	0	1389.6
19	1071.21	333.0	3.01700	143052.0	0	1502.3
19	1071.21	333.0	3.23920	160441.0	0	1615.0
19	1071.21	333.0	3.46040	178830.0	0	1727.7
19	1071.21	333.0	3.68060	198219.0	0	1840.4
19	1071.21	333.0	3.90080	218608.0	0	1953.1
19	1071.21	333.0	4.12000	240000.0	0	2065.8
19	1071.21	333.0	4.33920	262392.0	0	2178.5
19	1071.21	333.0	4.55840	285784.0	0	2291.2
19	1071.21	333.0	4.77760	310176.0	0	2403.9
19	1071.21	333.0	4.99680	335568.0	0	2516.6
19	1071.21	333.0	5.21600	361960.0	0	2629.3
19	1071.21	333.0	5.43520	389352.0	0	2742.0
19	1071.21	333.0	5.65440	417744.0	0	2854.7
19	1071.21	333.0	5.87360	447136.0	0	2967.4
19	1071.21	333.0	6.09280	477528.0	0	3080.1
19	1071.21	333.0	6.31200	508920.0	0	3192.8
19	1071.21	333.0	6.53120	541312.0	0	3305.5
19	1071.21	333.0	6.75040	574704.0	0	3418.2
19	1071.21	333.0	6.96960	609096.0	0	3530.9
19	1071.21	333.0	7.18880	644488.0	0	3643.6
19	1071.21	333.0	7.40800	680880.0	0	3756.3
19	1071.21	333.0	7.62720	718272.0	0	3869.0
19	1071.21	333.0	7.84640	756664.0	0	3981.7
19	1071.21	333.0	8.06560	796056.0	0	4094.4
19	1071.21	333.0	8.28480	836448.0	0	4207.1
19	1071.21	333.0	8.50400	877840.0	0	4319.8
19	1071.21	333.0	8.72320	920232.0	0	4432.5
19	1071.21	333.0	8.94240	963624.0	0	4545.2
19	1071.21	333.0	9.16160	1008016.0	0	4657.9
19	1071.21	333.0	9.38080	1053408.0	0	4770.6
19	1071.21	333.0	9.60000	1100800.0	0	4883.3
19	1071.21	333.0	9.81920	1149192.0	0	4996.0
19	1071.21	333.0	10.03840	1208584.0	0	5108.7
19	1071.21	333.0	10.25760	1269976.0	0	5221.4
19	1071.21	333.0	10.47680	1333368.0	0	5334.1
19	1071.21	333.0	10.69600	1398760.0	0	5446.8
19	1071.21	333.0	10.91520	1466152.0	0	5559.5
19	1071.21	333.0	11.13440	1535544.0	0	5672.2
19	1071.21	333.0	11.35360	1606936.0	0	5784.9
19	1071.21	333.0	11.57280	1680328.0	0	5897.6
19	1071.21	333.0	11.79200	1755720.0	0	6010.3
19	1071.21	333.0	12.01120	1833112.0	0	6123.0
19	1071.21	333.0	12.23040	1912504.0	0	6235.7
19	1071.21	333.0	12.44960	1993896.0	0	6348.4
19	1071.21	333.0	12.66880	2077288.0	0	6461.1
19	1071.21	333.0	12.88800	2162680.0	0	6573.8
19	1071.21	333.0	13.10720	2250072.0	0	6686.5
19	1071.21	333.0	13.32640	2339464.0	0	6799.2
19	1071.21	333.0	13.54560	2430856.0	0	6911.9
19	1071.21	333.0	13.76480	2524248.0	0	7024.6
19	1071.21	333.0	13.98400	2619640.0	0	7137.3
19	1071.21	333.0	14.20320	2717032.0	0	7250.0
19	1071.21	333.0	14.42240	2816424.0	0	7362.7
19	1071.21	333.0	14.64160	2917816.0	0	7475.4
19	1071.21	333.0	14.86080	3021208.0	0	7588.1
19	1071.21	333.0	15.08000	3126592.0	0	7700.8
19	1071.21	333.0	15.29920	3233984.0	0	7813.5
19	1071.21	333.0	15.51840	3343376.0	0	7926.2
19	1071.21	333.0	15.73760	3454768.0	0	8038.9
19	1071.21	333.0	15.95680	3568160.0	0	8151.6
19	1071.21	333.0	16.17600	3683552.0	0	8264.3
19	1071.21	333.0	16.39520	3800944.0	0	8377.0
19	1071.21	333.0	16.61440	3920336.0	0	8489.7
19	1071.21	333.0	16.83360	4041728.0	0	8602.4
19	1071.21	333.0	17.05280	4165120.0	0	8715.1
19	1071.21	333.0	17.27200	4290512.0	0	8827.8
19	1071.21	333.0	17.49120	4417904.0	0	8940.5
19	1071.21	333.0	17.71040	4547296.0	0	9053.2
19	1071.21	333.0	17.92960	4678688.0	0	9165.9
19	1071.21	333.0	18.14880	4812080.0	0	9278.6
19	1071.21	333.0	18.36800	4947472.0	0	9391.3
19	1071.21	333.0	18.58720	5084864.0	0	9504.0
19	1071.21	333.0	18.80640	5224256.0	0	9616.7
19	1071.21	333.0	19.02560	5365648.0	0	9729.4
19	1071.21	333.0	19.24480	5509040.0	0	9842.1
19	1071.21	333.0	19.46400	5654432.0	0	9954.8
19	1071.21	333.0	19.68320	5801824.0	0	10067.5
19	1071.21	333.0	19.90240	5951216.0	0	10180.2
19	1071.21	333.0	20.12160	6102608.0	0	10292.9
19	1071.21	333.0	20.34080	6256000.0	0	10405.6
19	1071.21	333.0	20.56000	6411392.0	0	10518.3
19	1071.21	333.0	20.77920	6568784.0	0	10631.0
19	1071.21	333.0	21.0	6728176.0	0	10743.7

VOLUME OF WATER AT 2" PRESSURE
6884 21" = 1,341,927.7 GALLONS
1084 21" = 21,942.4 BARRELS

DMH 4/4/16

DATE	04/16/2008
REV	1
DESCRIPTION	ADDED TYPICAL CELLAR DETAIL
DATE	3/21/16
REV	1
DESCRIPTION	



THIS DOCUMENT WAS PREPARED BY SLS AND SUPPORTING, INC. FOR EQT.

WEU-4 AS-BUILT SITE PLAN
THIS DOCUMENT WAS PREPARED BY SLS AND SUPPORTING, INC. FOR EQT.

DATE: 04/16/2008
REV: 1
SCALE: 1" = 60'
DESIGNED BY: K.E.B.
SHEET NO: 1103
SHEET: 4 OF 3
1316
700' WEU-4 AS-BUILT SITE PLAN

