



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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

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

Re: Permit Modification Approval for 514465
47-095-02341-00-00

Changing conductor casing size, shifting and lengthening lateral.

EQT PRODUCTION COMPANY

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before 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: 514465
Farm Name: WELLS, VIVIAN J
U.S. WELL NUMBER: 47-095-02341-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: 08/23/2017

Promoting a healthy environment.

08/25/2017

WW-68
(04/15)

API NO. 47-095 - 02341 MOT
OPERATOR WELL NO. 514485
Well Pad Name: SHR80

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 McElroy Shirley
Operator ID County District Quadrangle

2) Operator's Well Number: 514465 Well Pad Name: SHR60

3) Farm Name/Surface Owner: Vivian J. Wells et al Public Road Access: 60/2

4) Elevation, current ground: 1011' Elevation, proposed post-construction: 1011'

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes *DMAH 8/17/17*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6596', 52', 2747 PSI

8) Proposed Total Vertical Depth: 6596'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18942

11) Proposed Horizontal Leg Length: 11196

12) Approximate Fresh Water Strata Depths: 83, 133, 570, 906'

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

14) Approximate Saltwater Depths: 1198, 1865'

15) Approximate Coal Seam Depths: 19, 420, 686, 875, 1315'

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 *AUG 22 2017*

RECEIVED
Office of Oil and Gas

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

WV Department of
Environmental Protection

WW-6B
(04/15)

API NO. 47-095 - 02341 *Mod*
 OPERATOR WELL NO. 514465
 Well Pad Name: SHR60

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	60	60	73 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	992	992	835 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2777	2777	1084 ft ³ / CTS
Production	5 1/2	New	P-110	20	18942	18942	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							

DMAH 8/17/17

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

PACKERS

Kind:				
Sizes:				
Depths Set:				

RECEIVED
Office of Oil and Gas

AUG 22 2017

WV Department of
Environmental Protection

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 3,614'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

DMAH 8/17/17

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

RECEIVED
Office of Oil and Gas

AUG 22 2017

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

Conductor Class A no additives
 Surface (Type 1 Cement): 0-3% Calcium Chloride Used to speed the setting of cement slurries
 Intermediate (Type 1 Cement): 0-3% Calcium Chloride Used to speed the setting of cement slurries.
 Production:
 Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix) .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50-50 POZ (extender)
 Tail (Class H Cement): 0.2% Super CR-1 (Retarder) Lengthens thickening time .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss) .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 60% Calcium Carbonate Acid solubility

WV Department of
Environmental Protection

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

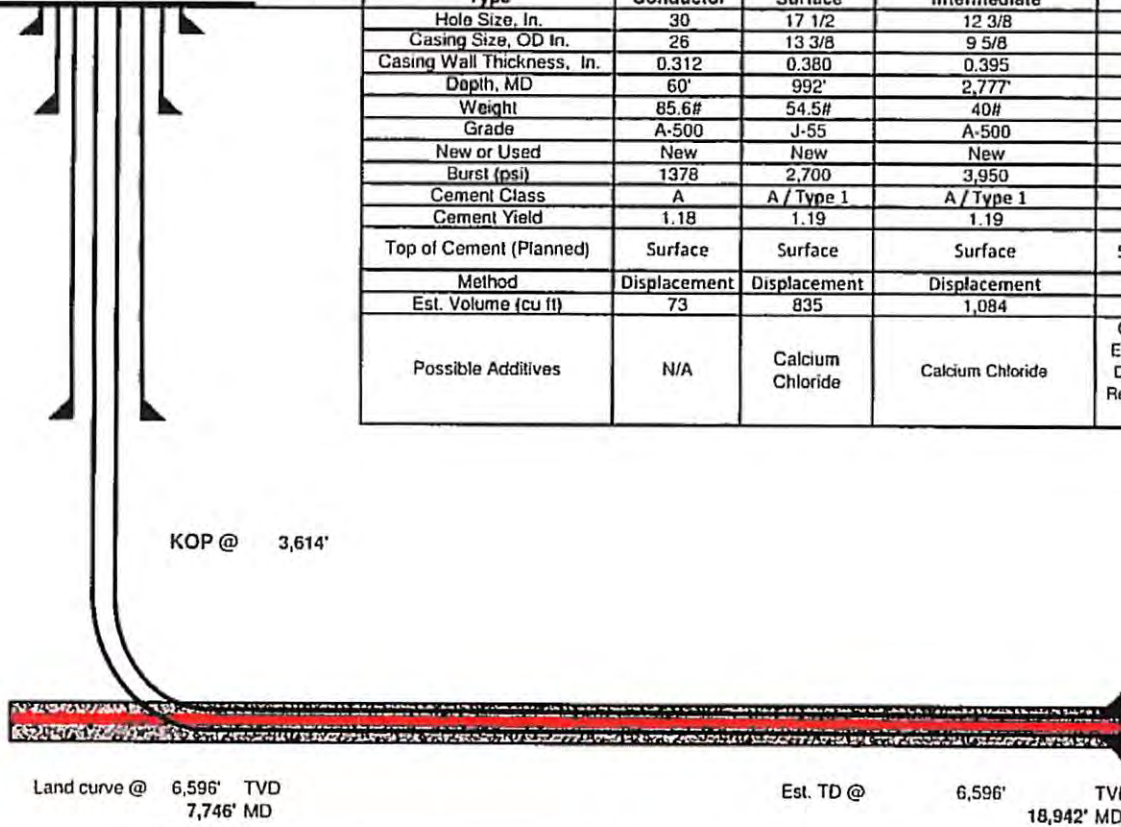
Well 514465(SHR60H6)
 EQT Production
 Shirley Quad
 Tyler County, WV

Vertical Section 13457
 Azimuth 157

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	60	
Base Fresh Water	906	
Surface Casing	992	
Maxton	1534	1587
Big Lime	1829	2111
Base Red Rock	1315	
Weir	2251	2317
Gantz	2368	2415
Fifty foot	2461	1496
Thirty foot	2595	2636
Gordon	2686	2700
Intermediate Casing	2777	
Bayard	3007	3067
Warren	3339	3413
Speechley	3433	3551
Balltown A	3855	3925
Riley	4548	4585
Benson	4965	5002
Alexander	5222	5294
Sonyea	6212	6381
Middlesex	6381	6425
Genesee	6425	6501
Genesee	6501	6530
Tully	6530	6554
Hamilton	6554	6571
Marcellus	6571	6623
Production Casing	18942	MD
Onondaga	6623	

Casing and Cementing		Deepest Fresh Water: 906'		
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	60'	992'	2,777'	18,942'
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	A / Type 1	A / H
Cement Yield	1.18	1.19		1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	73	835	1,084	3,690
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent



DWAH 8/17/17

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 3614'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

RECEIVED
 Office of Oil and Gas
 AUG 22 2017
 WV Department of
 Environmental Protection

11,196' Lateral

095-02341 MD

WW-6A1
(5/13)

Operator's Well No. 514465

**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

AUG 22 2017

WV Department of
Environmental Protection

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

Well Operator: EQT Production Company
By: Victoria J Roark
Its: Regional Land Supervisor

47-095-02341
MoD

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page	
✕ <u>126101</u>	<u>George Birklein, et al (current royalty owner)</u> WM. Blaine Underwood Et ux et al (original lessor) Equitable Gas Co. Equitrans, Inc./Equitable Gas Company/Equitable Resour Equitrans, L.P. Equitrans, L.P.	Equitable Gas Co. Equitrans, Inc. Equitrans, L.P. EQT Production Company EQT Production Company	**	DB186/86 DB274/471 DB433/777 DB396/640 OG420/10	Tyler Co.
05-18-11	Susan L Spencer	EQT Production Company		513/207	Subsurface Attached
✕ <u>125951</u>	<u>Mona R. Cumberlandge, et al. (current royalty owner)</u> Jacob A. Cumberlandge, et ux (original lessor) Equitable Gas Co. Equitrans, Inc./Equitable Gas Company/Equitable Resour Equitrans, L.P.	Equitable Gas Co. Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	DB202/294 DB274/471 DB433/777 DB396/640	Tyler Co.
✕ <u>126145</u>	<u>Hester B. Britton, et al. (current royalty owner)</u> A.H. Cumberlandge, et al Equitable Gas Company Equitrans, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	192/21 DB274/471 DB433/777 DB396/640	Tyler Co.
✓ <u>126154</u>	<u>Casey Ann Jones, et al. (current royalty owner)</u> George H. Jones, et al (original lessor) Equitable Gas Company Equitrans, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	192/130 DB274/471 DB433/777 DB396/640	Tyler Co.
✓ <u>126151</u>	<u>Dorothy H. Bode, et al (current royalty owner)</u> Mollie Scott, et al (original lessor) Equitable Gas Company Equitrans, Inc. Equitrans, L.P.	Equitable Gas Company Equitrans, Inc. Equitrans, L.P. EQT Production Company		191/492 DB274/471 DB433/777 DB396/640	Tyler Co.
✕ <u>126153</u>	<u>Jeffrey T. Heflin, et al (current royalty owner)</u> John W. Ash, et al (original lessor) Equitable Gas Co. Equitrans, Inc. Equitrans, L.P.	Equitable Gas Co. Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	DB192/80 DB274/471 DB433/777 DB396/640	Tyler Co.
✕ <u>105456</u>	<u>Kimberly Wilcox (current royalty owner)</u> Olive I. Stewart, et vir (original lessor) J. L. Newman The Philadelphia Company of West Virginia Pittsburgh and West Virginia Gas Company Equitable Gas Co. Equitrans, Inc. Equitrans, L.P.	J L Newman The Philadelphia Company of West Virginia Pittsburgh and West Virginia Gas Company Equitable Gas Co. Equitrans, Inc. Equitrans, L.P. EQT Production Company	**	LB69/42 OG455/390 DB101/36 132/414 DB274/471 DB433/777 DB396/640	Tyler Co.

RECEIVED
Office of Oil and Gas
AUG 22 2017

WV Department of
Environmental Protection

47-095-02341
MoD

✕ <u>126170</u>	Mary Ann Ketelson (current royalty owner)	**		
	Charles N. Welch, et al (original lessor)		Equitable Gas Company	LB193/351
	Equitable Gas Company		Equitrans, Inc.	DB274/471
	Equitrans, Inc.		Equitrans, L.P.	DB433/777
	Equitrans, L.P.		EQT Production Company	DB396/640 Tyler Co.
✕ <u>126182</u>	Robert J. Nichols, et al (current royalty owner)	**		
	Talmage Nichols, et ux (original lessor)		Equitable Gas Company	LB195/381
	Equitable Gas Company		Equitrans, Inc.	DB274/471
	Equitrans, Inc.		Equitrans, L.P.	DB433/777
	Equitrans, L.P.		EQT Production Company	DB396/640 Tyler Co.
✕ <u>126183</u>	Robert J. Nichols, et al. (current royalty owner)	**		
	Talmage Nichols, et ux (original lessor)		Equitable Gas Company	195/378
	Equitable Gas Company		Equitrans, Inc.	DB274/471
	Equitrans, Inc.		Equitrans, L.P.	DB433/777
	Equitrans, L.P.		EQT Production Company	DB396/640 Tyler Co.
✓ <u>126146</u>	Dulcie Frances Bonnell, et al (current royalty owner)	**		
	Blanche Cumberledge, et al (original lessor)		Equitable Gas Company	191/509
	Equitable Gas Company		Equitrans, Inc.	DB274/471
	Equitrans, Inc.		Equitrans, L.P.	DB433/777
	Equitrans, L.P.		EQT Production Company	DB396/640 Tyler Co.
✕ <u>126239</u>	Paul Tallman, et al (current royalty owner)	**		
	Erma M. Pitts, et al (original lessor)		Equitable Gas Company	98/357
	Equitable Gas Company		Equitrans, Inc.	DB274/471
	Equitrans, Inc.		Equitrans, L.P.	DB433/777
	Equitrans, L.P.		EQT Production Company	DB396/640 Tyler Co.
✕ <u>126368</u>	Robin A. Smith, et al (current royalty owner)	**		
	Wilbur F. Robinson and Virginia Lee Robinson (original le		Stonewall Gas Company	152/79
	Stonewall Gas Company/Dominion Appalachian Develop		Consol Gas Appalachian Development, LLC	CB9/131 name change
	Consol Gas Appalachian Development, LLC		CNX Gas Co., LLC	CB9/206 name change
	CNX Gas Co., LLC		Noble Energy, Inc (50%)	260/39
	CNX Gas Co., LLC/Noble Energy, Inc		Antero Resources Corporation	317/379
	Antero Resources Corporation		EQT Production Company	568/760 Doddridge

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

RECEIVED
Office of Oil and Gas
AUG 22 2017
WV Department of
Environmental Protection

08/25/2017

Teresa R. Hamilton
TYLER County 01:03:47 PM
Instrument No 116403
Date Recorded 12/14/2015
Document Type SDI
Pages Recorded 2
Book-Page 513-207
Recording Fee \$5.00
Additional \$6.00

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

County Clerk please also index under the following: [Susan L. Spencer]

3. RETURN TO MAINE
COUNTY COMMISSIONER
TYLER COUNTY, WV 26228-0780

1. NAME AND ADDRESS OF GRANTOR:

Susan L. Spencer
HC 74 Box 98
Alma, WV 26320

2. NAME AND ADDRESS OF GRANTEE:

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

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

A SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT ("Agreement") dated the 29th day of October, 2015, was entered into for good and valuable consideration by and between Susan L. Spencer, a married woman dealing in her sole and separate property ("Grantor", whether one or more) and EQT Production Company ("Grantee"). Upon completion of any wellbore within the subsurface area underlying the Property (as defined in Section 4), this subsurface easement in the area of the wellbore and the one hundred (100') feet on each side of the wellbore that parallels it shall become an exclusive right of way and easement in that area. The final wellbore locations are as described in a final, as-built map(s) to be filed as a part of an affidavit in the aforesaid Clerk's Office following the completion of the following well(s) located on Grantee's SHR60 and SHR96 well pads. If an as-built map is not available for a wellbore within the subsurface area underlying the Property, any third-party with the right to operate within such area may contact Grantee's land department for a copy of such as-built map. Grantee shall provide notice of additional wellbores located within the subsurface area underlying the Property by filing an amendment, affidavit or other appropriate document.

4. DESCRIPTION OF PREMISES: That certain tract or parcel of land containing 132 acres, more or less, located in Tyler County, West Virginia, being the same lands conveyed to Grantor by Deed dated the 21st day of October, 2011, of record in the Office of the Clerk of the County Commission of Tyler County, West Virginia in Deed Book 388, at Page 164 ("the Property").

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

(REMAINDER OF PAGE LEFT BLANK INTENTIONALLY)

RECEIVED
Office of Oil and Gas

AUG 22 2017

WV Department of
Environmental Protection

08/25/2017

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

GRANTOR:

GRANTEE:
EQT Production Company

Susan L. Spencer
Susan L. Spencer

John W. Damato
By: John W. Damato
Its: Attorney in fact

STATE OF WEST VIRGINIA:

COUNTY OF TYLER:

I, Chad A. Vintorini, a Notary Public, in and for said State and County, do hereby certify that Susan L. Spencer, a married woman dealing in her sole and separate property, personally known to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person in the State and County aforesaid, and acknowledged and delivered the said instrument to be her free act and deeds for uses and purposes therein set forth.

Given under my hand this 30th day of October, 2015.

My Commission expires: Jan. 12, 2022.



Chad A. Vintorini
Notary Public

STATE OF WEST VIRGINIA;

COUNTY OF HARRISON:

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

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

My Commission expires: August 29, 2019.



Tina Maxwell
Notary Public

RECEIVED
Office of Oil and Gas

AUG 22 2017

WV Department of
Environmental Protection

47-095-02341



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

MOD

Todd Klaner
Manager, Permitting
tklaner@eqt.com

Via E-Mail

August 16, 2017

WV DEP Reviewer

**RE: EQT Production Company
PAD ID – SHR60
Well# - 514465
Tyler County**

Dear Reviewer,

This well indicated by this permit application contains a Subsurface Easement Agreement for non-productive portions of the well bore. Attached is a Memorandum of Subsurface Use Agreement which gives EQT the right to drill below the surface of the tract 5.18.11 shown on the well plat.

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

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

Regards,

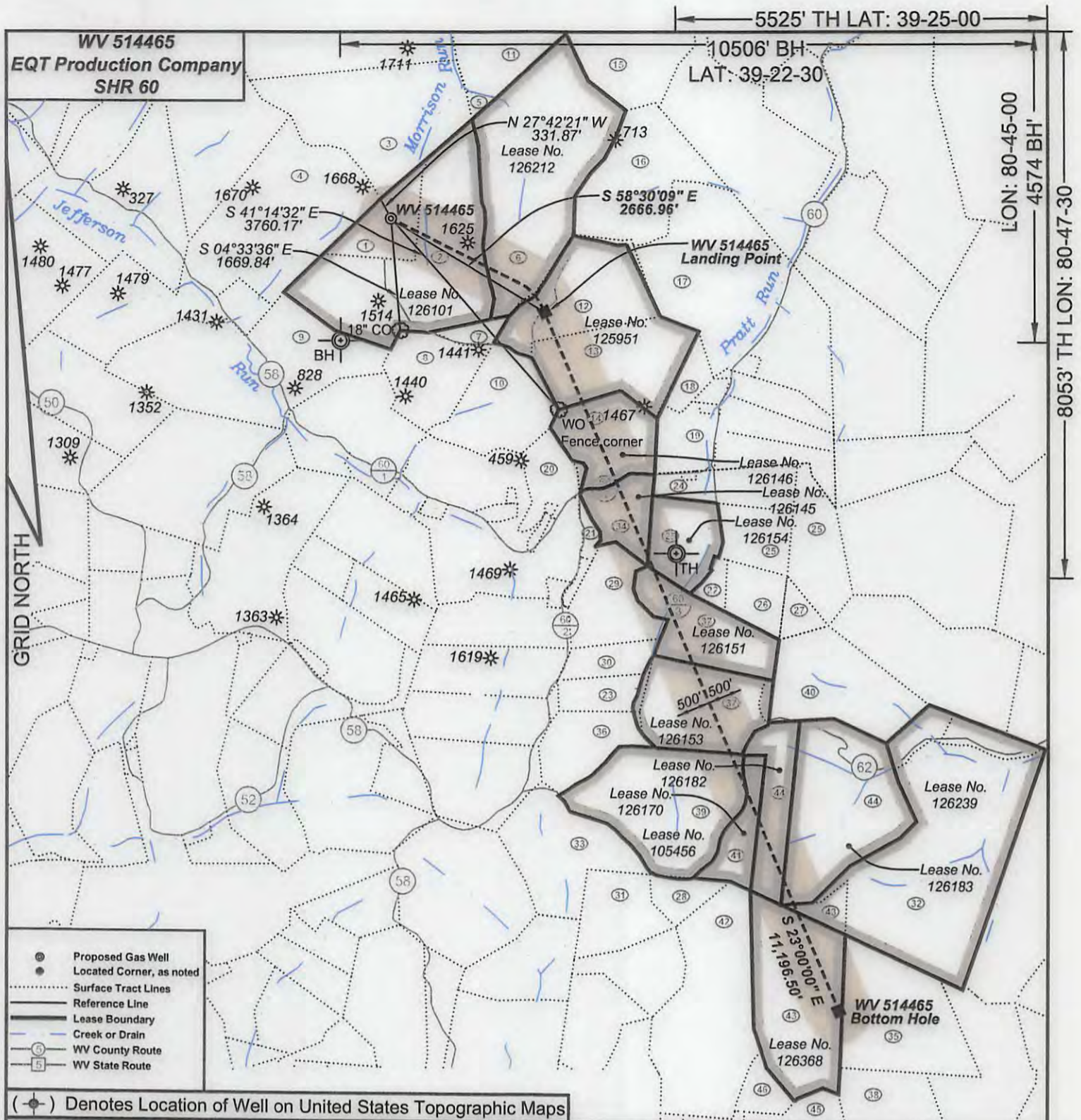
Todd Klaner
Manager, Permitting
EQT Production Company

RECEIVED
Office of Oil & Gas

AUG 22 2017

WV Department of Environmental Protection

08/25/2017



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

(●) Denotes Location of Well on United States Topographic Maps



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

Ben R. Singleton
P.S. 2092



FILE NO: 208-13
DRAWING NO: 208-13 SHR 60 H6
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

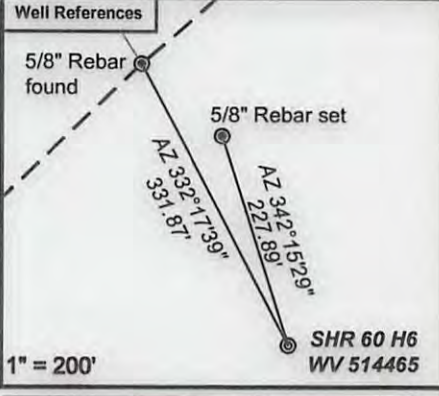
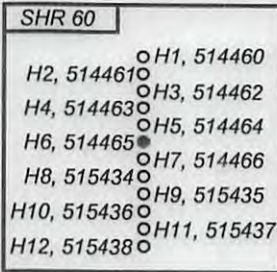
DATE: August 9 20 17
OPERATOR'S WELL NO.: WV 514465
API WELL NO *MOD*
47 - 95 - *0234*
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley
DISTRICT: McElroy COUNTY: Tyler
SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: *08/25/2017* 35.38
ROYALTY OWNER: George Birklein, et al. LEASE NO: 126101 ACREAGE: 240
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6596

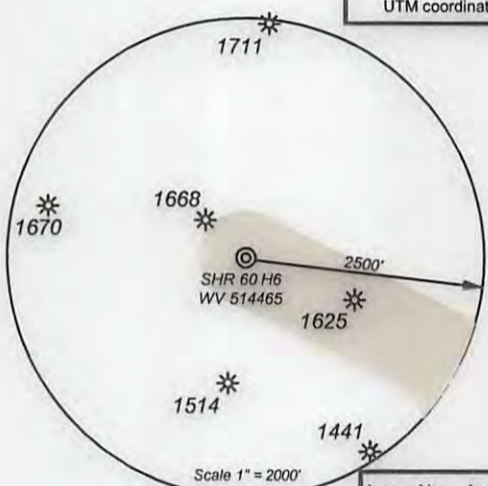
WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

WV 514465
EQT Production Company
SHR 60

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	18	12	Tyler	McElroy	Hanna A. Underwood Estate	35.00
2	18	13	Tyler	McElroy	Blaine Underwood Estate, et al.	104.73
3	18	9	Tyler	McElroy	Lawrence Rayburn, et al.	100.00
4	18	7.1	Tyler	McElroy	Patricia A. Keys, et al.	102.31
5	18	10	Tyler	McElroy	Susan Spencer	2.92
6	18	11	Tyler	McElroy	Susan Spencer	132.00
7	18	15	Tyler	McElroy	Susan Spencer	8.00
8	18	16	Tyler	McElroy	Donald E. Bible Sr.	35.50
9	18	23	Tyler	McElroy	Clyde Seckman Estate	111.75
10	18	17	Tyler	McElroy	Allen Dale Fornash, et al.	43.00
11	15	32	Tyler	McElroy	Betty June Wense	360.00
12	18	14	Tyler	McElroy	Terry J. Cumberledge, et al.	54.81
13	18	18	Tyler	McElroy	Terry J. Cumberledge, et al.	49.87
14	18	19	Tyler	McElroy	John Paul Davis	35.00
15	19	1.0	Tyler	McElroy	Susan L. Spencer	53.00
16	19	49	Tyler	McElroy	James Edward Cumberledge, et al.	57.50
17	19	50.0	Tyler	McElroy	Ronald L. Cumberledge	123.15
18	19	70.1	Tyler	McElroy	Edith J. Pratt	8.77
19	19	72	Tyler	McElroy	Terry A. Cumberledge, et al.	18.09
20	18	20.2	Tyler	McElroy	Richard E. Hansen	19.96
21	18	20.1	Tyler	McElroy	William R. Doll Jr., et al.	3.06
22	22	1.1	Tyler	McElroy	Nick A. & Anthony W. Demoss	6.83
23	21	19	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
24	19	75	Tyler	McElroy	Roger L. Pratt	24.19
25	19	78	Tyler	McElroy	Roger L. Pratt, et al.	43.81
26	22	1.2	Tyler	McElroy	James B. Scott	40.00
27	22	2	Tyler	McElroy	June Pratt	7.00
28	22	17	Tyler	McElroy	David R. & Elizabeth A. Beveridge	12.00
29	22	20	Tyler	McElroy	James B. Scott	30.00
30	21	18	Tyler	McElroy	Richard E. & Barbara A. Mullins	20.00
31	22	16.0	Tyler	McElroy	Leah Weekley Est.	29.00
32	22	13	Tyler	McElroy	Warren C. Putman	147.77
33	21	33	Tyler	McElroy	Bruce W. Boland	52.46
34	19	80	Tyler	McElroy	John Paul Davis	25.00
35	2	2	Doddrige	West Union	Jason J. Boggs	66.87
36	21	21	Tyler	McElroy	James B. Scott	30.00
37	22	19	Tyler	McElroy	Berdina Rose, et al.	55.00
38	2	10	Doddrige	West Union	Susan Walker, et al.	88.65
39	22	18	Tyler	McElroy	Bruce W. Boland	86.75
40	22	3	Tyler	McElroy	Jacqueline Wickman, et al.	71.62
41	22	18.1	Tyler	McElroy	Bruce W. Boland	18.91
42	2	18	Doddrige	West Union	David R. & Elizabeth A. Beveridge	125.00
43	2	1	Doddrige	West Union	James M. Petrovich, et al.	70.00
44	22	14	Tyler	McElroy	Paul Dean Steinman Jr. & Marc J. Steinman	126.00
45	2	9	Doddrige	West Union	Charles C. Hittel III	115.75
46	2	5.4	Doddrige	West Union	David R. & Elizabeth A. Beveridge	11.90



Notes:
 WV 514465 coordinates are
 NAD 27 N: 328,507.21 E: 1,629,439.17
 NAD 27 Lat: 39.394522 Long: -80.811234
 NAD 83 UTM N: 4,360,584.58 E: 516,269.25
 WV 514465 Landing Point coordinates are
 NAD 27 N: 327,113.83 E: 1,631,713.19
 NAD 27 Lat: 39.390787 Long: -80.803117
 NAD 83 UTM N: 4,360,171.66 E: 516,969.11
 WV 514465 Bottom Hole coordinates are
 NAD 27 N: 316,807.40 E: 1,636,088.02
 NAD 27 Lat: 39.362666 Long: -80.787117
 NAD 83 UTM N: 4,357,054.05 E: 518,354.30
 West Virginia Coordinate system of 1927 (North Zone)
 based upon Differential GPS Measurements.
 Plat orientation, corner and well ties are based upon
 the grid north meridian.
 Well location references are based upon the grid north
 meridian.
 UTM coordinates are NAD83, Zone 17, Meters.



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

Sub Surface Easements

Parcel No.	Acres	Owner
05-18-11	132	Susan L. Spencer

Lease No.	Acres	Owner
125951	225	Mona R. Cumberledge, et al.
126145	25	Hester B. Britton, et al.
126154	28	Casey Ann Jones, et al.
126151	30	Dorothy H. Bode, et al.
126153	55	Jeffrey T. Heflin, et al.
105456	96	Kimberly Wilcox
126170	15	Mary Ann Ketelson
126182	38	Robert J. Nichols, et al.
126183	89	Robert J. Nichols, et al.
126146	35	Glucie Frances Bonnell, et al.
126239	234	Paul Tallman, et al.
126368	75	Robin A. Smith, et al.



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

Ben R. Singleton
 P.S. 2092



FILE NO: 208-13
 DRAWING NO: 208-13 SHR 60 H6
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1:2500
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: August 9 20 17
 OPERATOR'S WELL NO.: WV 514465
 API WELL NO *MOD*
 47 - 95 *02341*
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: As-Built 1,011' WATERSHED Morrison Run of McElroy Creek QUADRANGLE: Shirley
 DISTRICT: McElroy COUNTY: Tyler
 SURFACE OWNER: Vivian J. Wells, et al. ACREAGE: 35.38
 ROYALTY OWNER: George Birklein, et al. LEASE NO: 126101 ACREAGE: 240
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 6596

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

08/25/2017