



west virginia department of environmental protection

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

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

Tuesday, October 30, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
625 LIBERTY AVE., SUITE 1700

PITTSBURGH, PA 15222

Re: Permit approval for SHR60H6
47-095-02542-00-00

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: SHR60H6
Farm Name: VIVIAN J. WELLS, ET AL
U.S. WELL NUMBER: 47-095-02542-00-00
Horizontal 6A New Drill
Date Issued: 10/30/2018

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 McElroy Shirley
Operator ID County District Quadrangle

2) Operator's Well Number: SHR60H6 Well Pad Name: SHR60

3) Farm Name/Surface Owner: Vivian J. Wells 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 _____

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target formation is Marcellus at a depth of 6596 with the anticipated thickness to be 52 feet and anticipated target pressure of 2747 PSI

8) Proposed Total Vertical Depth: 6596

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19005 ✓

11) Proposed Horizontal Leg Length: 11294

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

13) Method to Determine Fresh Water Depths: By 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

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

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8/29/2018

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	19005 ✓	19005	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							

9/08/2018

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:				

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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 3,705'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

9EB
8/29/2013

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

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. 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.

*Note: Attach additional sheets as needed.

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Well SHR60HG
EQT Production Shirley Quad
 Tyler County, WV

Azimuth 157
 Vertical Section 13551
 Enerfla # 514465

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	1876	
Wellr	2251 - 2317	
Gantz	2368 - 2415	
Fifty foot	2461 - 2496	
Thirty foot	2595 - 2636	
Gordon	2685 - 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	19005 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'	19,005'	
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)	1370	2,700	3,950	12,640	
Cement Class	A	A / Type 1	A / Type 1	A / H	
Cement Yield	1.18	1.19	1.18	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	3,705	
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Chloride, Fluid Loss Extender, Dispersant, Viscosifier, Defoamer, POZ, Bending Agent, Retarder, Anti-Settling/Suspension Agent	

KOP @ 3,705'

SOB 8/29/2018

Land curve @ 6,596' TVD 7,711' MD
 Est. TD @ 6,596' TVD 19,005' MD

11,294' Lateral

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 3705'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

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EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: SHR60
County: Tyler

7/3/2018

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Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in **Tyler County**, WV prior to hydraulic fracturing at the following EQT wells on **SHR60 pad: SHR60H5, SHR60H6, SHR60H7, SHR60H8.**

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.

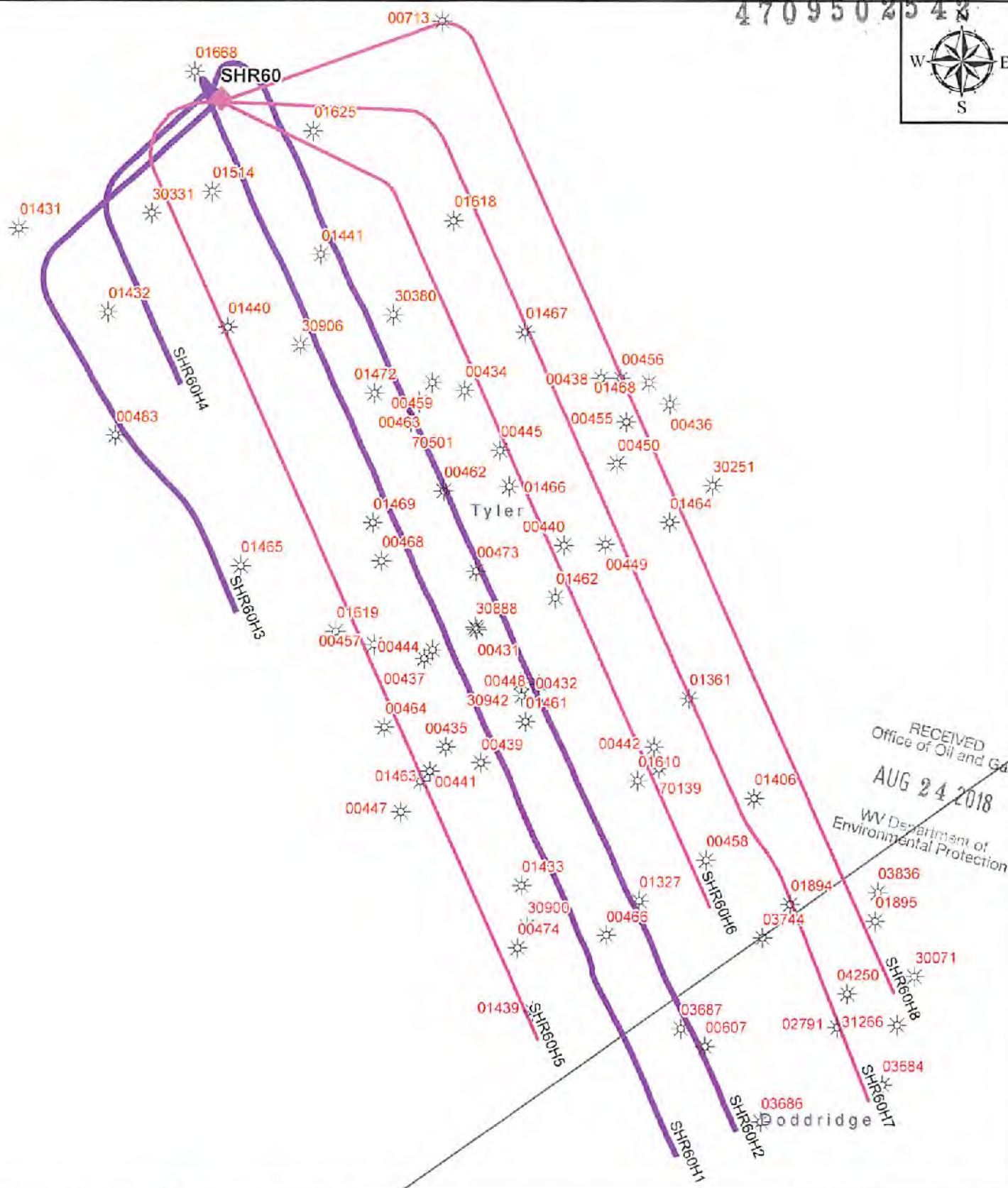
EQT will recommend to these operators at a minimum to:

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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EQT
 EQT Corporation
 525 Liberty Avenue
 Pittsburgh, PA 15222

SHR60

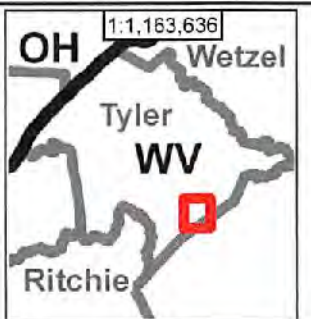
Vertical Offsets and Foreign Laterals within 500'

Created By: Kellen Waltman Printed By: jwalsh on 7/3/2018

- Vertical Offsets
- SHR60 Pad
- Planned Marcellus
- SPUD Marcellus

Disclaimer:

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



47095004660000	TYLER	UNKNOWN	1177 GR	PSUDOP	39.3661 -80.7942 5489 GERTRUDE E. WHEELER	1/1/1801	1/1/1801	0.00466
47095004370000	TYLER	UNKNOWN	1180 GR	PSUDOP	39.3756 -80.8022 5459 CARL C WHEELER	1/1/1801	1/1/1801	0.00439
47095004390000	TYLER	UNKNOWN	1201 GR	PSUDOP	39.3720 -80.7997 5464 OLIVE STEWART	1/1/1801	1/1/1801	0.00439
47095004440000	TYLER	UNKNOWN	1204 GR	PSUDOP	39.3758 -80.8018 5467 CARL C WHEELER	1/1/1801	1/1/1801	0.00444
47095004580000	TYLER	UNKNOWN	1219 GR	PSUDOP	39.3687 -80.7888 5478 TALMADEE NICHOLS	1/1/1801	1/1/1801	0.00448
47095004620000	TYLER	UNKNOWN	1257 GR	PSUDOP	39.3725 -80.7921 5465 CHARLES N WELCH	1/1/1801	1/1/1801	0.00442
47095004560001	TYLER	EQUITABLE GAS COMPANY	815 GR	SWDOP	39.3850 -80.7935 5466 GAY CLIMBERLEDGE	2/19/1973	3/1/1973 DEVONIAN /SD/	2510.00456
47095004500001	TYLER	EQUITABLE GAS COMPANY	833 GR	SWDOP	39.3821 -80.7937 5474 GEORGE H HONES	1/28/1973	2/7/1973 DEVONIAN /SD/	2530.00450
47095004400001	TYLER	EQUITABLE GAS COMPANY	865 GR	SWDOP	39.3704 -80.7960 5463/1 MOLLY S SCOTT	7/20/1972	7/19/1972 DEVONIAN /SD/	2516.00440
47095004550001	TYLER	EQUITABLE GAS COMPANY	917 GR	SWDOP	39.3866 -80.7992 5480 ALTA PRATT	7/20/1973	7/30/1973 DEVONIAN /SD/	2604.00440
47095004320000	TYLER	EQUITABLE GAS COMPANY	988 GR	SWDOP	39.3747 -80.7979 5458/1 CARL C WHEELER	6/25/1972	7/15/1972 GANTZ /SD/	2435.00432
47095004450001	TYLER	EQUITABLE GAS COMPANY	1011 GR	SWDOP	39.3826 -80.7988 5468 A H CLIMBERLEDGE	8/1/1972	8/1/1972 MISSISSIPPIAN	2658.00445
47095004480001	TYLER	EQUITABLE GAS COMPANY	1012 GR	SWDOP	39.3747 -80.7971 5472 JOHN W ASH	10/22/1972	11/1/1972 MISSISSIPPIAN	2648.00448
47095004620001	TYLER	EQUITABLE GAS COMPANY	1017 GR	SWDOP	39.3812 -80.8013 2/5485/ MARY E UNDERWOOD	8/29/1973	9/8/1973 GORDON /SD/	2688.00462
47095004570001	TYLER	EQUITABLE GAS COMPANY	1026 GR	SWDOP	39.3760 -80.8004 5479/1 ADDIE KEYS	3/9/1973	3/19/1973 DEVONIAN /SD/	2690.00457
47095004340001	TYLER	EQUITABLE GAS COMPANY	1047 GR	SWDOP	39.3846 -80.8004 5456/1 B CLIMBERLEDGE	4/16/1972	4/26/1972 DEVONIAN /SD/	2992.00434
47095004830000	TYLER	EQUITABLE GAS COMPANY	1048 GR	SWDOP	39.3831 -80.8158 5501 F & W E SMITH JR	6/25/1977	7/15/1977 MISSISSIPPIAN	2750.00483
47095004310001	TYLER	EQUITABLE GAS COMPANY	1057 GR	SWDOP	39.3765 -80.7999 5455/1 CARL C WHEELER	3/31/1972	4/10/1972 DEVONIAN /SD/	2760.00431
47095004690001	TYLER	EQUITABLE GAS COMPANY	1067 GR	SWDOP	39.3849 -80.8018 5484/2 BLANCHE CLIMBERLEDGE	7/27/1973	8/6/1973 DEVONIAN /SD/	2776.00459
47095004730001	TYLER	EQUITABLE GAS COMPANY	1075 GR	SWDOP	39.3785 -80.7999 5469 MOLLY SCOTT ETAL	7/19/1974	7/29/1974 DEVONIAN /SD/	2716.00473
47095004410001	TYLER	EQUITABLE GAS COMPANY	1108 GR	SWDOP	39.3714 -80.8024 2490/1 OLIVE STEWART	10/31/1972	10/13/1972 DEVONIAN /SD/	2810.00441
4709500470001	TYLER	EQUITABLE GAS COMPANY	1114 GR	SWDOP	39.3704 -80.8032 5471 E K FREEMAN	8/22/1972	9/1/1972 DEVONIAN /SD/	2772.00447
47095004740001	TYLER	EQUITABLE GAS COMPANY	1129 GR	SWDOP	39.3857 -80.7981 1314510 INDIAN DAMS	8/18/1974	8/28/1974 WEAIR /SD/	2402.00474
47095004660001	TYLER	EQUITABLE GAS COMPANY	1177 GR	SWDOP	39.3661 -80.7942 1/5489/ GERTRUDE PRUNTY	11/20/1973	11/30/1973 MISSISSIPPIAN	2783.00466
47095004370001	TYLER	EQUITABLE GAS COMPANY	1180 GR	SWDOP	39.3756 -80.8022 5459/2 CARL C WHEELER	7/12/1972	7/31/1972 DEVONIAN /SD/	2846.00437
47095004640000	TYLER	EQUITABLE GAS COMPANY	1181 GR	SWDOP	39.3732 -80.8039 1/5481/ ROBERT D FERGUSON	9/18/1973	9/28/1973 GORDON /SD/	2813.00464
47095004640000	TYLER	EQUITABLE GAS COMPANY	1201 GR	SWDOP	39.3720 -80.7997 5464 OLIVE STEWART	7/10/1972	7/20/1972 BIG INJUN /SD/	2156.00469
47095004440001	TYLER	EQUITABLE GAS COMPANY	1204 GR	SWDOP	39.3758 -80.8018 5467 CARL C WHEELER	9/8/1972	9/18/1972 DEVONIAN /SD/	2861.00444
47095004580001	TYLER	EQUITABLE GAS COMPANY	1219 GR	SWDOP	39.3687 -80.7898 5478/1 TALMADEE NICHOLS	5/21/1973	5/31/1973 DEVONIAN /SD/	2945.00448
47095004420001	TYLER	EQUITABLE GAS COMPANY	1257 GR	UNKNWN	39.3725 -80.7921 5465 CHARLES N WELSH	4/26/1973	5/6/1973 DEVONIAN /SD/	2750.00442
47095004390000	TYLER	HOPE NATURAL GAS		UNKNWN	39.3718 -80.7919 2063 S J FREEMAN	1/2/1910	1/17/1910	0.70139
47095007130000	TYLER	CONSOLIDATED GAS SUPPLY CORPORATION	972 KB	UNKNWN	39.3972 -80.8013 2118 UNDERWOOD	1/2/1912	1/1/1801 BIG INJUN /SD/	1998.00713

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8/21/2018

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

Re: Casing Plan on SHR60

Dear Mr. Brewer,

EQT is requesting the 13-3/8" surface casing be set at 992' KB, 86' below the deepest fresh water. We will set the 9-5/8" intermediate string at 2777' KB, below the Gordon formation.

If you have any questions, please do not hesitate to contact me at

Sincerely,

Todd Klaner
Regional Land Manager

Enc.

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WW-9
(4/16)

API Number 47 - 095 - _____
Operator's Well No. SHR60HG _____

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) Morrison Run of McElroy Creek Quadrangle Shirley

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: _____

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

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 _____)

Handwritten: EQG 8/29/2018

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

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

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

Additives to be used in drilling medium? See Attached

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

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

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

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

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

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

Company Official Signature [Signature]

Company Official (Typed Name) Erin Spire

Company Official Title Regional Land Supervisor

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Subscribed and sworn before me this 22 day of August, 2018

Debecca L Wanstreet Notary Public

My commission expires 4-7-2020

WV Department of Environmental Protection



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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Form WW-9

Operator's Well No. SHR60H6

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed no additional Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Craig Blewett*

Comments: _____

Title: Oil & Gas Inspector

Date: 8/29/2018

Field Reviewed? (X) Yes () No

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EQT Production Water plan

Offsite disposals for Marcellus wells

CWS TRUCKING INC.

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

LAD LIQUID ASSETS DISPOSAL INC.

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

TRI COUNTY WASTE WATER MANAGEMENT, INC.

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

Waste Management - Meadowfill Landfill

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

Waste Management - Northwestern Landfill

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

BROAD STREET ENERGY LLC

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

TRIAD ENERGY

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

KING EXCAVATING CO.

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

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Site Specific Safety and Environmental Plan

EQT
SHR60 Pad
Shirley
Tyler County, WV

SHR0005 SHR0010 SHR0017 ^{For Wells:} SHR0008 _____

Date Prepared: February 16, 2018

[Signature]
 EQT Production

Regional Land Supervisor
Title

8/21/2018
Date

[Signature]
 WV Oil and Gas Inspector

Oil & Gas Inspector
Title

8/29/2018
Date

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Anticipated Frac Additives
Chemical Names and CAS numbers

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

JCB
8/29/2018

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Environmental Protection



4709502542

8/21/2018

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

Re: Casing Plan on SHR60

Dear Mr. Brewer,

EQT is requesting the 13-3/8" surface casing be set at 992' KB, 86' below the deepest fresh water. We will set the 9-5/8" intermediate string at 2777' KB, below the Gordon formation.

If you have any questions, please do not hesitate to contact me at

Sincerely,

Todd Klaner
Regional Land Manager

Enc.

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Environmental Protection



west virginia department of environmental protection

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

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

March 18, 2014

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

Re: Cement Variance Request

Dear Sir or Madam,

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

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

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Promoting a healthy environment.



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.

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CONCLUSIONS OF LAW

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

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

ORDER

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

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

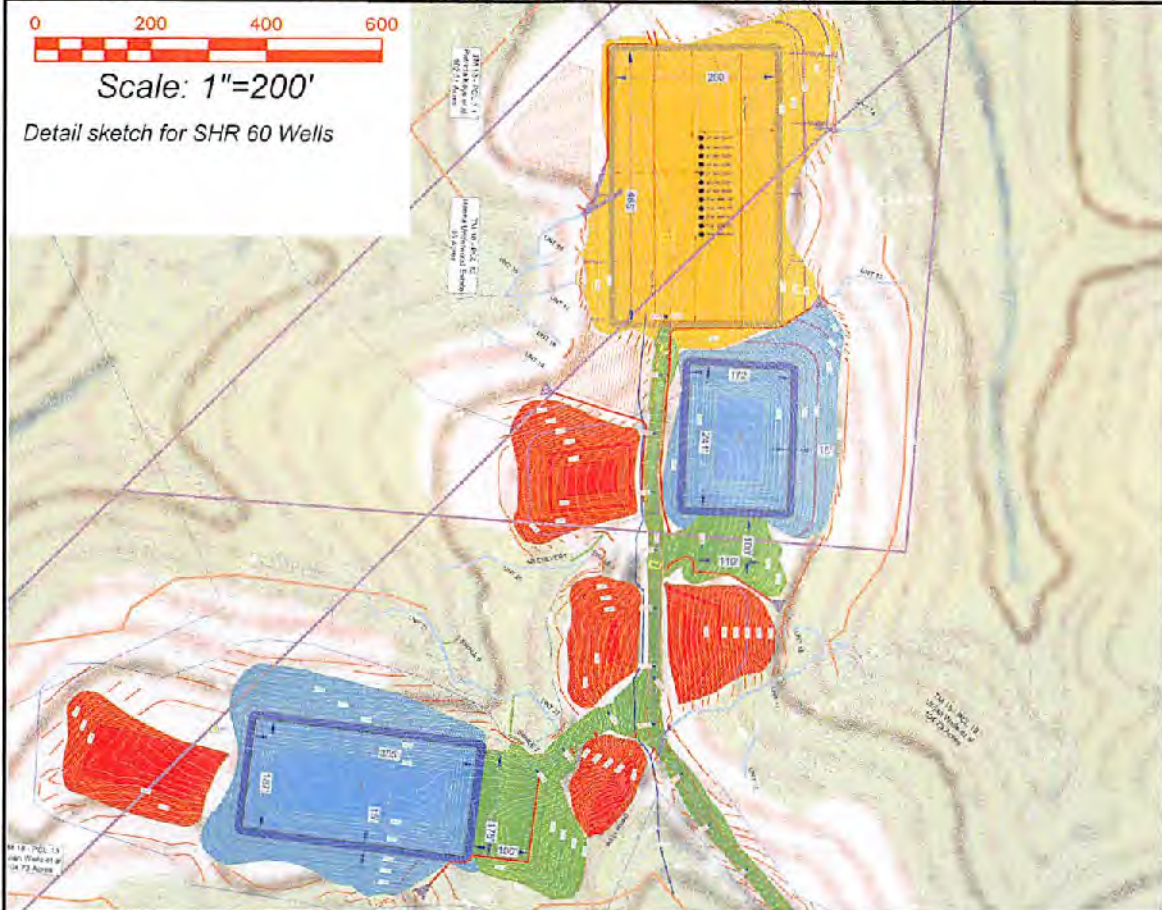
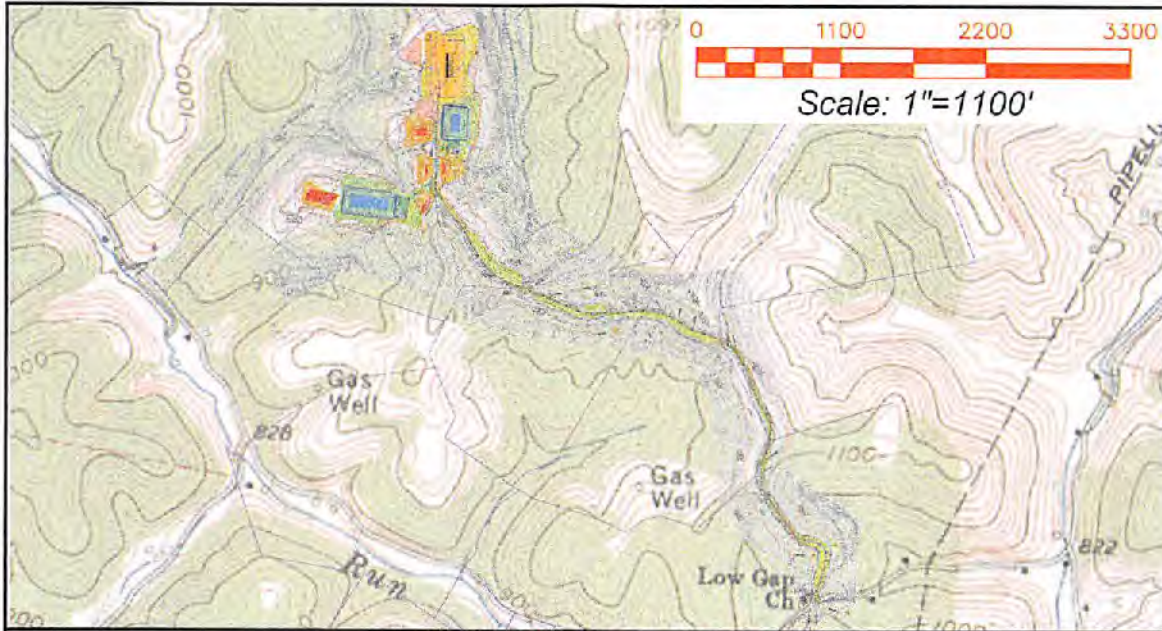
IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief
Office of Oil and Gas

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Shirley 7.5' USGS QUADRANGLE		Proposed Disturbance Area	
Projected culvert inventory (for bid purposes only)	Well Site Location	See Site Plan	
15" minimum diameter culverts	See Site Plan	Proposed Access Road	See Site Plan
24" minimum diameter culverts	See Site Plan	Approximate Total Disturbance	See Site Plan
DRAWN BY: Ben Singleton PS	DATE: July 3, 2018	FILE NO: 208-13	DRAWING FILE NO: ACAD-208-13-Rec Plan

Note: SEE SITE PLAN OF SHR 60 FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.



SURVEYING AND MAPPING SERVICES PERFORMED BY:
ALLEGHENY SURVEYS, INC.
 1-800-482-8606
 Birch River Office Phone: (304) 649-8606 Fax: (304) 649-8608
 237 Birch River Road P.O. Box 438 Birch River, WV 26610

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 WV Department of Environmental Protection



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Where energy meets innovation.™

Site Specific Safety and Environmental Plan

EQT

SHR60 Pad

Shirley

Tyler County, WV

SHR000H5 SHR000H6 SHR000H7 ^{For Wells:} SHR000H8 _____

Date Prepared: February 16, 2018

[Signature]
EQT Production
Regional Land Supervisor
Title)

8/21/2018
Date

WV Oil and Gas Inspector

Title

Date

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Topo Quad: Shirley 7.5'

Scale: 1"=1000'

County: Tyler

Date: August 3, 2018

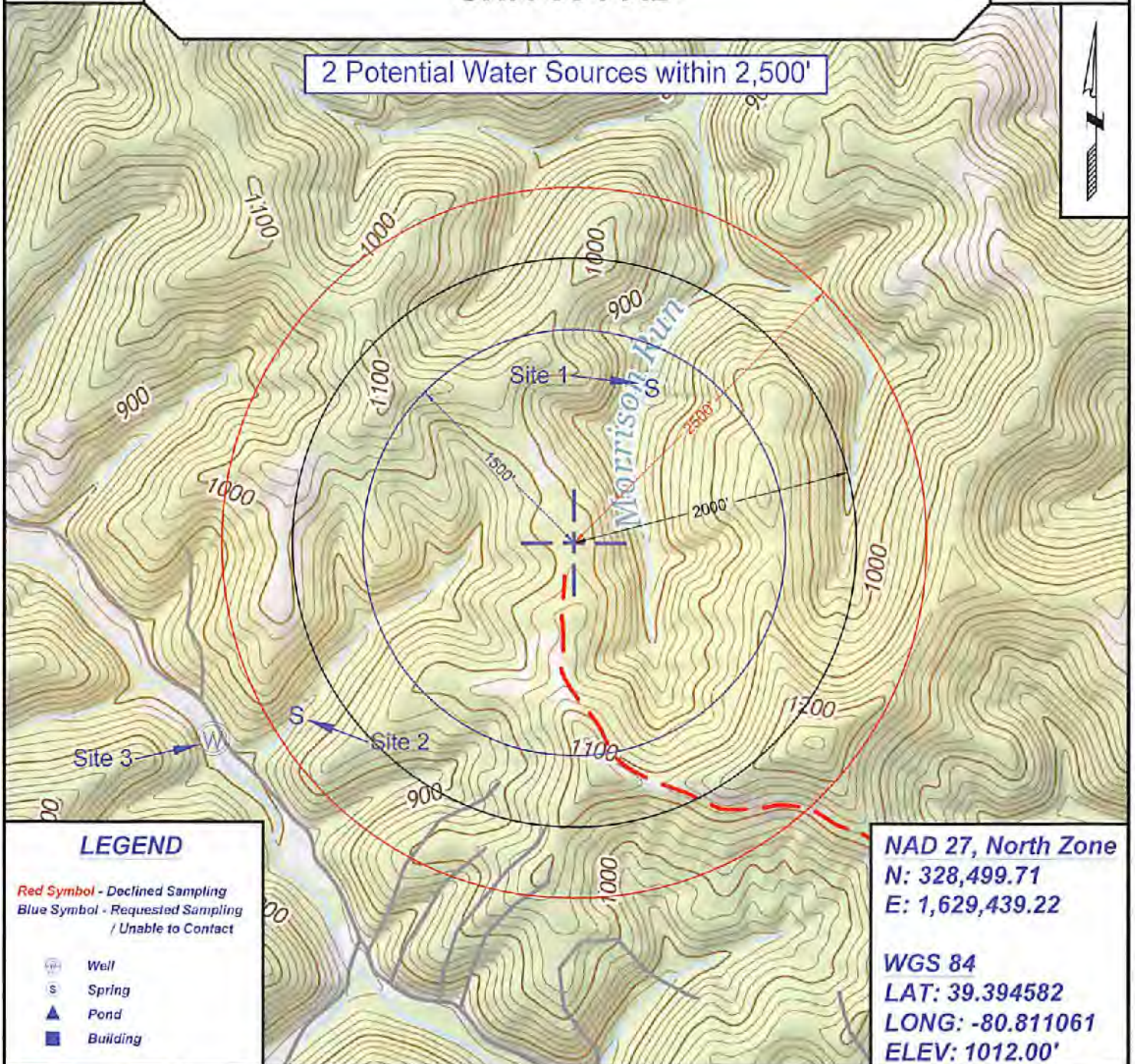
District: McElroy

Project No: 208-12-C-13

Water

SHR 60 PAD

2 Potential Water Sources within 2,500'



LEGEND

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

- Well
- Spring
- Pond
- Building

NAD 27, North Zone
 N: 328,499.71
 E: 1,629,439.22

WGS 84
 LAT: 39.394582
 LONG: -80.811061
 ELEV: 1012.00'



SURVEYING AND MAPPING SERVICES PERFORMED BY:

ALLEGHENY SURVEYS, INC.

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

PREPARED FOR:

EQT Production Company

2400 Ansys Drive, Suite 200
 Canonsburg, PA 15317

AUG 24 2018

WV Department of Environment & Natural Resources



Table 1 – Water Source Identification

EQT Well Pad Name: SHR 60 PAD

Submittal Date: 7/30/2018

EQT Well Number: _____

Survey / Engineering Company: Allegheny Surveys, Inc.

Site Number: 1 Distance from Gas Well (feet): 1224.65

Surface Owner / Occupant: Todd & Kimberly James

Address: 2879 Jefferson Run Rd. Alma, WV 26320 Phone #: 304-758-2853

Field Located Date: 7/28/2018 Owner home during survey (yes/no): Yes

Coordinates: 39.235137, 80.483297 (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: 7/9/2018 2nd: _____ Door Hanger Left: _____

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

Comments: Certified letter sent July 9. Did not receive return card back. **Visit 1 - July 10:** John spoke to Kim at their residence on Jefferson Run Rd. She said they use a spring at property on Morrison Run for cattle. Property is accessed through EQT access road through well pad. Left letter with her. She will talk to Todd and get back to me. **Visit 2 – July 20:** talked to Todd 11:30 a.m. after meeting with Steve Ashley (sites 2 & 3). Todd said he estimated spring to be 200 yards north of well pad. He didn't seem to think it was necessary to test the water because he had never known of it being tested before, but refused to sign the form to decline testing. He said he would go ahead and have it tested. He indicated his phone had been out for a few weeks. **Visit 3 – 7/25:** Unable to contact Mr. James to set up meeting to get site location, drove to residence again and arranged with Kim to meet Todd on 7/28. **Visit 4 - 7/28:** Met with Todd James to do field location on Morrison Run. **Beware of dogs.** Once they get to know you, they're fine. Todd and Kim are very friendly. Cell phone: 740-228-9542

Site Number: 2 Distance from Gas Well (feet): 2311.54

Surface Owner / Occupant: Steve Ashley (formerly Keys)

Address: 3332 Jefferson Run Rd. Alma WV 26320 Phone #: 304-758-2907

Field Located Date: 7/20/2018 Owner home during survey (yes/no): Yes

Coordinates: 39.232821, 80.490465 (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: 7/9/2018 2nd: _____ Door Hanger Left: Yes

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

Comments: **Visited residence on 7/10/18, doorhanger left. Barn and stream across road from house. Steve Ashley called me on 7/19/2018 after receiving certified to arrange field visit. Stream located behind barn.**

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(Insert additional pages as needed)

Site Number: 3 Distance from Gas Well (feet): 2910.51

Surface Owner / Occupant: Steve Ashley (formerly Keys)

Address: 3332 Jefferson Run Rd. Alma WV 26320 Phone #: 304-758-2907

Field Located Date: 7/20/2018 Owner home during survey (yes/no): Yes

Coordinates: 39.232648, 80.491219 (decimal degrees – NAD 83)

Contact Attempts (Date): 1st: 7/9/2018 2nd: _____ Door Hanger Left: _____

Comments: **Water well located outside 2,500' radius.**

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

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Environmental Protection

SHR60H6

1625

**S 55°53'59" E
2589.51'**

**SHR60H6
Landing Point**

258.6276

Lease No.
126101

Lease No.
125951

1514
3" CO

1441

1440

Pratt Run

1

2

6

17

12

8

7

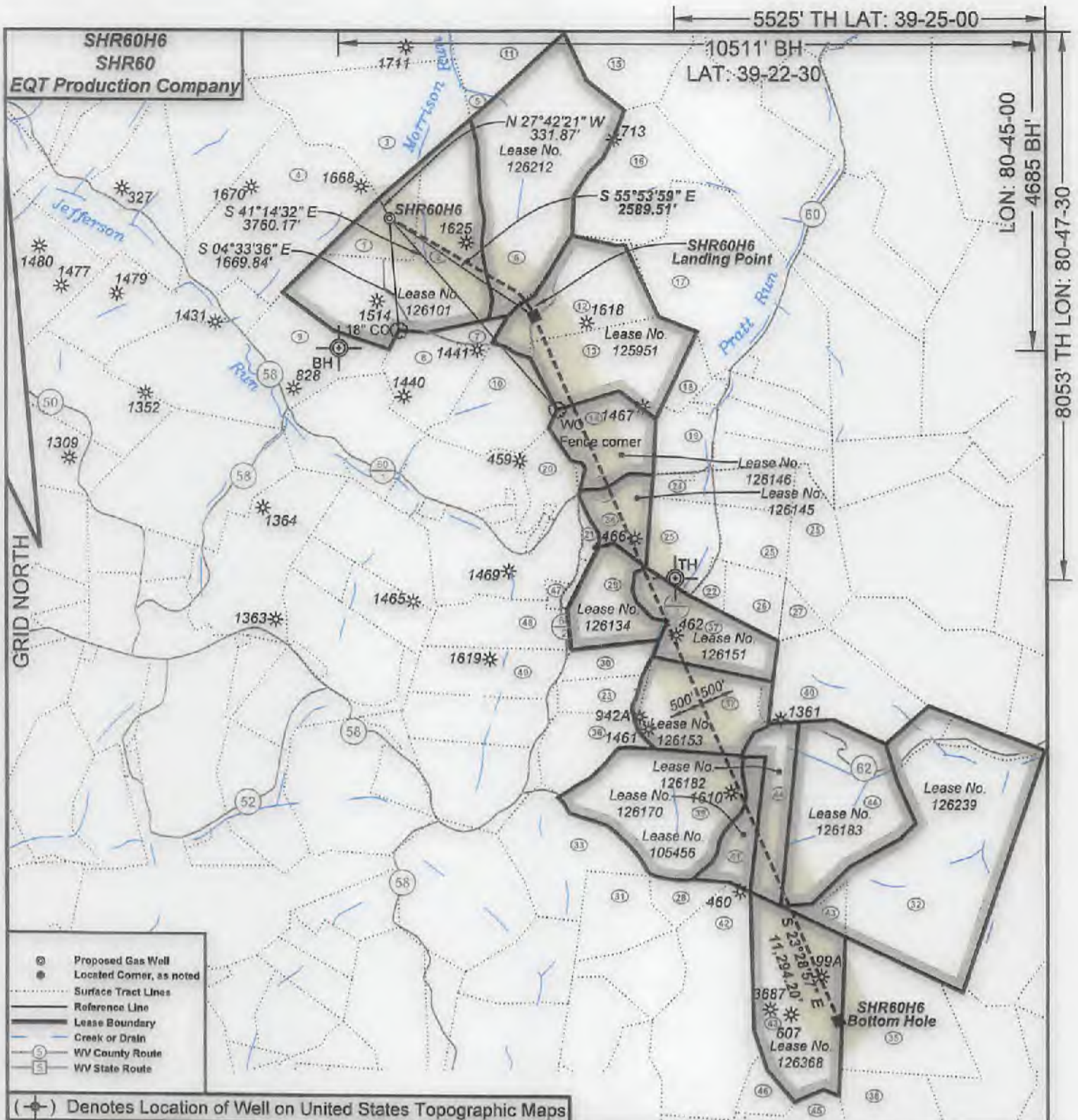
13

10

18

1467





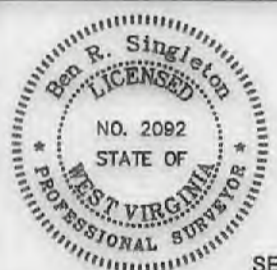
- Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- WV County Route
- WV State Route

(*) 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 SHR60H6
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

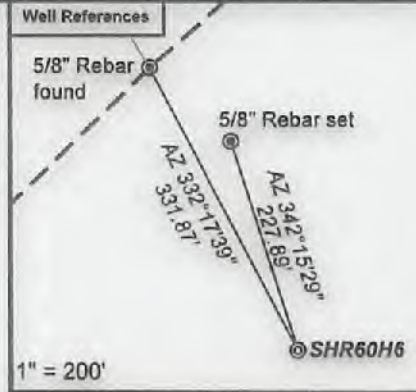
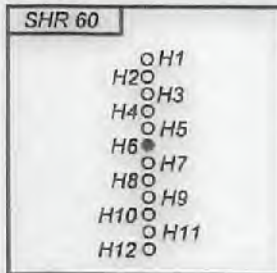
DATE: October 22 20 18
OPERATOR'S WELL NO.: SHR60H6
API WELL NO
47 - 95 - 02542
STATE COUNTY PERMIT

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: Jason Ranson
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

SHR60H6
SHR60
EQT Production Company

Tract ID	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 Formash, et al.	43.00
11	15	32	Tyler	McElroy	Betty June Wiese	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	33.00
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.	18.03
20	19	20.2	Tyler	McElroy	Richard E. Hansen	19.96
21	18	20.1	Tyler	McElroy	William R. Doll Jr., et al.	3.05
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	24.13
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	Jane 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 Weikley Est.	29.00
32	22	13	Tyler	McElroy	Warren C. Putman	147.77
33	21	33	Tyler	McElroy	Druck W. Boland	52.46
34	19	80	Tyler	McElroy	John Paul Davis	25.00
35	2	2	Doddridge	West Union	Jason J. Boggs	66.87
36	21	21	Tyler	McElroy	James B. Scott	30.00
37	22	19	Tyler	McElroy	Berclina Rose, et al.	55.00
38	2	10	Doddridge	West Union	Susan Walker, et al.	88.85
39	22	18	Tyler	McElroy	Bruce W. Boland	85.75
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	Doddridge	West Union	David R. & Elizabeth A. Beveridge	125.00
43	2	1	Doddridge	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	Doddridge	West Union	Charles C. Hital III	115.75
46	2	5.4	Doddridge	West Union	David R. & Elizabeth A. Beveridge	11.80
47	21	45	Tyler	McElroy	Clarence G. Dillon, et al.	2.43
48	21	15	Tyler	McElroy	Paul Weikley	35.00
49	21	16	Tyler	McElroy	Paul Weikley	35.00



Notes:
SHR60H6 coordinates are
NAD 27 N: 328,507.21 E: 1,629,439.17
NAD 27 Lat: 39.394622 Long: -80.811234
NAD 83 UTM N: 4,360,584.58 E: 516,269.25
SHR60H6 Landing Point coordinates are
NAD 27 N: 327,055.42 E: 1,631,583.44
NAD 27 Lat: 39.390622 Long: -80.803573
NAD 83 UTM N: 4,360,153.20 E: 516,929.88
SHR60H6 Bottom Hole coordinates are
NAD 27 N: 316,896.59 E: 1,636,083.81
NAD 27 Lat: 39.362362 Long: -80.787127
NAD 83 UTM N: 4,357,020.27 E: 518,353.59
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

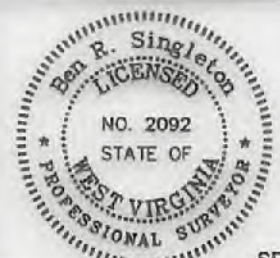
Sub Surface Easements		
Parcel No.	Acres	Owner
05-18-11	132	Susan L. Spencer

Lease No.	Acres	Owner
126212	131	Susan L. Spencer
125951	225	Mona R. Cumberledge, et al.
126146	35	Dlucie Frances Bonnell, et al.
126145	25	Hester B. Britton, et al.
126134	30	Dorothy H. Bode
126151	30	Dorothy H. Bode, et al.
126153	55	Jeffrey T. Hefflin, et al.
105456	96	AMP Fund III LP
126170	15	Mary Ann Ketelson
126182	38	Robert J. Nichols, et al.
126183	89	Robert J. Nichols, 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 SHR60H6
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: October 22 20 18
OPERATOR'S WELL NO.: SHR60H6
API WELL NO
47 - 95 - 02542
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: Jason Ranson
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

WW-6A1
(5/13)

Operator's Well No. SHR60H6

**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
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See Attached

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

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

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

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

Well Operator: EQT Production Company

By: Erin Spine

Its: Regional Land Supervisor

WW-6A1 attachment

SHR60H6

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
126101	<u>George Birklein, et al (current royalty owner)</u>		**	
	WM. Blaine Underwood Et ux et al (original lessor)	Equitable Gas Co.		DB186/86
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company		DB396/640
	Equitrans, L.P.	EQT Production Company ✓		OG420/10
126212	Susan L Spencer	EQT Production Company ✓		513/207 Subsurface
125951	<u>Mona R. Cumberledge, et al. (current royalty owner)</u>		**	
	Jacob A. Cumberledge, et ux (original lessor)	Equitable Gas Co.		DB202/294
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640
126146	<u>Dulcie Frances Bonnell, et al (current royalty owner)</u>		**	
	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
126145	<u>Hester B. Britton, et al. (current royalty owner)</u>		**	
	A.H. Cumberledge, et al	Equitable Gas Company		192/21
	Equitable Gas Company	Equitrans, Inc.		DB274/471
	Equitrans, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640
126134	<u>Dorothy H Bode (current royalty owner)</u>		**	
	Mollie Scott	Equitable Gas Company		191/420
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640
126151	<u>Dorothy H. Bode, et al (current royalty owner)</u>		**	
	Mollie Scott, et al (original lessor)	Equitable Gas Company		191/492
	Equitable Gas Company	Equitrans, Inc.		DB274/471
	Equitrans, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640
126153	<u>Jeffrey T. Heflin, et al (current royalty owner)</u>		**	
	John W. Ash, et al (original lessor)	Equitable Gas Co.		DB192/80
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640
105456	<u>AMP Fund III, LP (current royalty owner)</u>		**	
	Olive I. Stewart, et vir (original lessor)	J L Newman		LB69/42
	J. L. Newman	The Philadelphia Company of West Virginia		OG455/390
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		DB101/36
	Pittsburgh and West Virginia Gas Company	Equitable Gas Co.		132/414
	Equitable Gas Co.	Equitrans, Inc.		DB274/471
	Equitrans, Inc.	Equitrans, L.P.		DB433/777
	Equitrans, L.P.	EQT Production Company ✓		DB396/640

126170	<u>Mary Ann Ketelson (current royalty owner)</u>		..	
	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
126182	<u>Robert J. Nichols, et al (current royalty owner)</u>		**	
	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
126183	<u>Robert J. Nichols, et al. (current royalty owner)</u>		**	
	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
126239	<u>Paul Tallman, et al (current royalty owner)</u>		..	
	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
126368	<u>Robin A. Smtih, et al (current royalty owner)</u>		..	
	Wilbur F. Robinson and Virginia Lee Robinson (original lessor)	Stonewall Gas Company		152/79
	Stonewall Gas Company/Dominion Appalachian Development, Inc	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

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

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Environmental Protection



4709502542

July 16, 2018

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

Re: SHR60 well pad, well numbers SHR60H5, **SHR60H6**, SHR60H7, SHR60H8
McElroy 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,

Erin Spine
Regional Land Supervisor

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Environmental Protection

4709 02542

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

Date of Notice Certification: 07/26/2018

API No. 47- 095 -
Operator's Well No. SHR60H6
Well Pad Name: SHR60

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>516269.25</u>
County: <u>Tyler</u>		Northing: <u>4360584.58</u>
District: <u>McElroy</u>	Public Road Access: <u>60/2</u>	
Quadrangle: <u>Shirley</u>	Generally used farm name: <u>Vivian J. Wells</u>	
Watershed: <u>Morrison Run of McElroy Creek</u>		

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

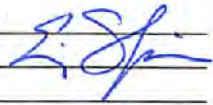
<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p>RECEIVED Office of Oil and Gas AUG 24 2018</p> <p>WV Department of Environmental Protection</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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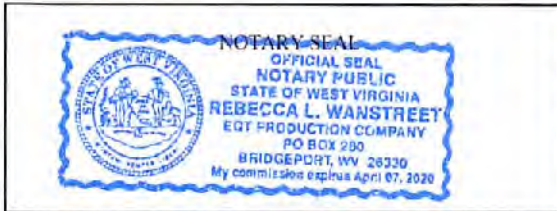
Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been notified as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

Certification of Notice is hereby given:

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

Well Operator:	<u>EQT Production Company</u>	Address:	<u>2400 Ansys Drive, Suite 200</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 22 day of August 2018.
Rebecca L. Wanstreet Notary Public
 My Commission Expires 4-7-2020

Oil and Gas Privacy Notice:

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

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

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

Date of Notice: 8/24/18 Date Permit Application Filed: 8/24/18

Notice of:

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

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

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

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

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

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

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 GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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WV Department of
Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

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Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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WV Department of
Environmental Protection

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47-095 -
OPERATOR WELL NO. SHR60H6
Well Pad Name: SHR60

4709502542

Notice is hereby given by:

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



Address: 2400 Ansys Drive Suite 200
Canonsburg PA 15317
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 22 day of August 2018.

Rebecca L. Wanstreet Notary Public

My Commission Expires 4-7-2020

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Topo Quad: Shirley 7.5'

Scale: 1"=1000' 47 09 N 025 E
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AUG 24 2018

County: Tyler

Date: August 3, 2018

District: McElroy

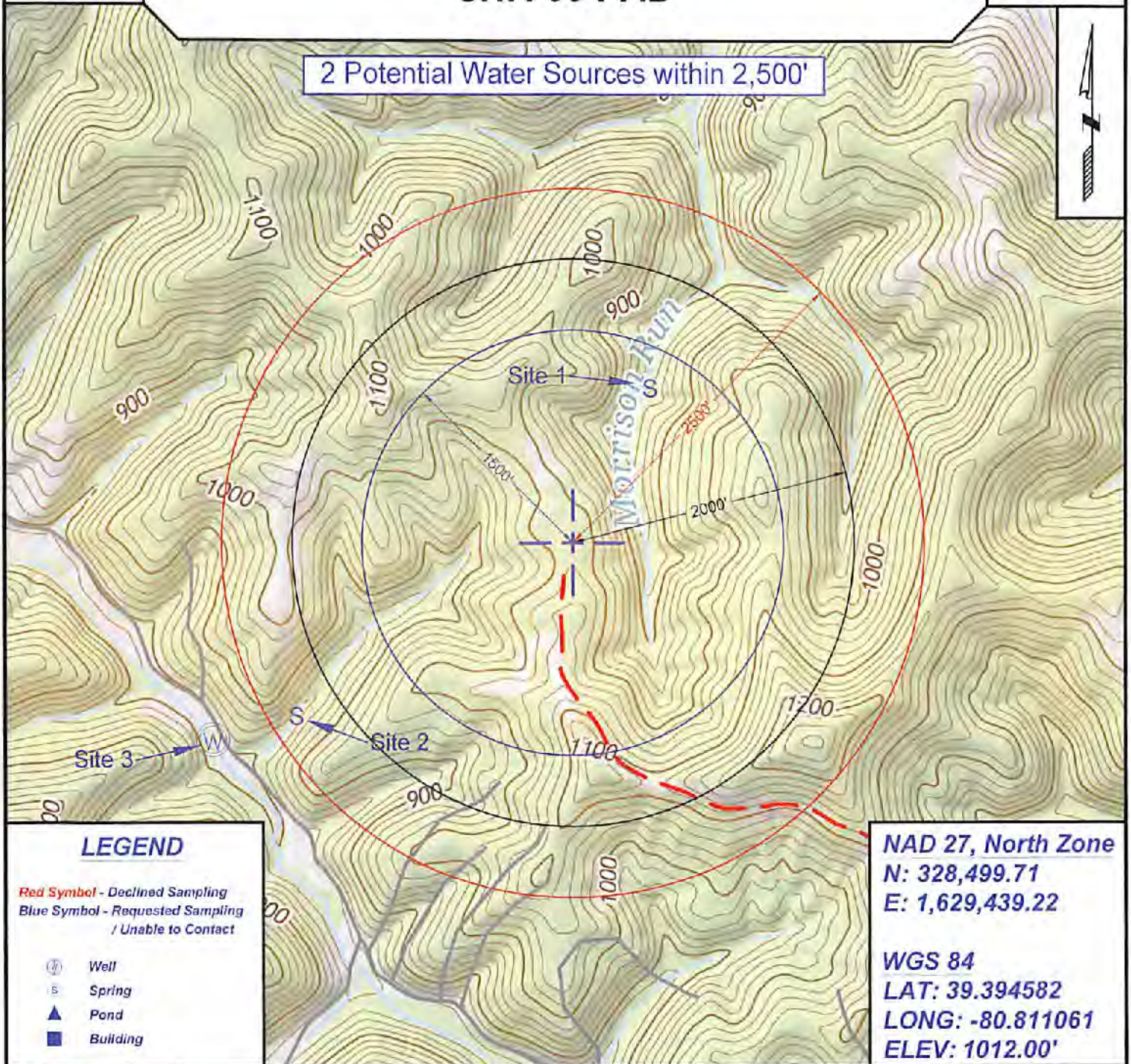
Project No: 208-12-C-13

WV Department of
Environmental Protection

Water

SHR 60 PAD

2 Potential Water Sources within 2,500'



LEGEND

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

- Well
- Spring
- Pond
- Building

NAD 27, North Zone
N: 328,499.71
E: 1,629,439.22

WGS 84
LAT: 39.394582
LONG: -80.811061
ELEV: 1012.00'



SURVEYING AND MAPPING SERVICES PERFORMED BY:

ALLEGHENY SURVEYS, INC.

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

PREPARED FOR:

EQT Production Company

2400 Ansys Drive, Suite 200
Canonsburg, PA 15317

Surface Owners:

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko
18 Jensen St.
East Brunswick NJ 08816

Clifford Haug
3894 Cellar Creek Rd
Blackstone VA 23824

Timothy M. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Benjamin A. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Jean Jackubowski
158 Baumgardner Road
Willow Street PA 17584

Theodore Jackubowski
1212 Kelso Blvd
Windermere FL 34786

Louis Jackubowski, Jr.
1922 Robindale Ave
Lancaster, PA 17601

Mary Jean Ross
904 Truce Road
Holtwood PA 17532

Susan Buzzard
21 Cherokee Road
Willow Street PA 17584

Sharon Graeff
3217 Eisenbrown Rd
Reading PA 19605

Virginia Hornberger
3415 River Road
Reading PA 19605

Anthony Jackubowski, Jr.
535 Shawnee Street
Wilkes-barre PA 18702

Raymond A. Jackubowski
123 North Pioneer Avenue
Shavertown, PA 18708-1027

Beverly A. Chisdock
213 Lehigh Street
Avoca, Pa 18641-1011

Cynthia Kryzwicki
213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

Gary A Midcap etal
55 Temple Circle
Sistersville WV 26175

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Environmental Protection

Surface Owners (road or other disturbance):

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

Raymond A. Jackubowski
123 North Pioneer Avenue
Shavertown, PA 18708-1027

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East Brunswick NJ 08816

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Avoca, PA 18641-1010

Clifford Haug
3894 Cellar Creek Rd
Blackstone VA 23824

John Paul Davis
45 Crystal Lake Road,
West Union, WV 26456-8932

Timothy M. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Richard E. Hansen
1043 Low Gap Road
Wilbur WV 26459

Benjamin A. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Joyce K. Hill
88 Arvilla Road
Bens Run, WV 26146

Jean Jackubowski
158 Baumgardner Road
Willow Street PA 17584

Terry J. Cumberledge
1384 Pratts Run Road
Alma, WV 26320

Theodore Jackubowski
1212 Kelso Blvd
Windermere FL 34786

BC Farm Investments LLC
P. O. Box 1183
Cannonsburg, PA 15317

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Lancaster, PA 17601

Gary A Midcap etal
55 Temple Circle
Sistersville WV

Mary Jean Ross
904 Truce Road
Holtwood PA 17532

Susan L. Spencer
HC 74 Box 98
Alma WV 26320 -9710

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Willow Street PA 17584

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Virginia Hornberger
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Reading PA 19605

Anthony Jackubowski, Jr.
535 Shawnee Street
Wilkes-barre PA 18702

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Surface Owners (Pits or impoundments):

Vivian Janice Wells ✓
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein ✓
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts ✓
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko ✓
18 Jensen St.
East Brunswick NJ 08816

Clifford Haug ✓
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Blackstone VA 23824

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Theodore Jackubowski ✓
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Windermere FL 34786

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Holtwood PA 17532

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21 Cherokee Road
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Sharon Graeff ✓
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Reading PA 19605

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Anthony Jackubowski, Jr. ✓
535 Shawnee Street
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Raymond A. Jackubowski ✓
123 North Pioneer Avenue
Shavertown, PA 18708-1027

Beverly A. Chisdock ✓
213 Lehigh Street
Avoca, Pa 18641-1011

Cynthia Kryzwicki ✓
213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

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Coal Owner

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

Jean Jackubowski
158 Baumgardner Road
Willow Street PA 17584

Raymond A. Jackubowski
123 North Pioneer Avenue
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East Brunswick NJ 08816

George Birklein
121 Oxford Street
Sistersville, WV 26175

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Owners of Water Wells

No water owners within 2000 feet.

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 06/01/2018 **Date Permit Application Filed:** 06/10/2018

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>516269.25</u>
County: <u>Tyler</u>	Northing: <u>4360584.58</u>
District: <u>McElroy</u>	Public Road Access: <u>60/2</u>
Quadrangle: <u>Shirley</u>	Generally used farm name: <u>Vivian J. Wells</u>
Watershed: <u>Morrison Run of McElroy Creek</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: 2400 Ansys Drive, Suite 200
Canonsburg PA 15317
Telephone: 304-848-0035
Email: espine@eqt.com
Facsimile: 304-848-0041

Authorized Representative: Erin Spine
Address: 2400 Ansys Drive, Suite 200
Canonsburg PA 15317
Telephone: 304-848-0035
Email: epine@eqt.com
Facsimile: 304-848-0041

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WV Department of
Environmental Protection

Oil and Gas Privacy Notice:

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

Surface Owners:

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko
18 Jensen St.
East Brunswick NJ 08816

Clifford Haug
3894 Cellar Creek Rd
Blackstone VA 23824

Timothy M. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Benjamin A. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Jean Jackubowski
158 Baumgardner Road
Willow Street PA 17584

Theodore Jackubowski
1212 Kelso Blvd
Windermere FL 34786

Louis Jackubowski, Jr.
1922 Robindale Ave
Lancaster, PA 17601

Mary Jean Ross
904 Truce Road
Holtwood PA 17532

Susan Buzzard
21 Cherokee Road
Willow Street PA 17584

Sharon Graeff
3217 Eisenbrown Rd
Reading PA 19605

Virginia Hornberger
3415 River Road
Reading PA 19605

Anthony Jackubowski, Jr.
535 Shawnee Street
Wilkes-barre PA 18702

Raymond A. Jackubowski
123 North Pioneer Avenue
Shavertown, PA 18708-1027

Beverly A. Chisdock
213 Lehigh Street
Avoca, Pa 18641-1011

Cynthia Kryzwicki
213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

Gary A Midcap etal
55 Temple Circle
Sistersville WV 26175

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Surface Owners (road or other disturbance):

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

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121 Oxford Street
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Joyce K. Hill
88 Arvilla Road
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Terry J. Cumberledge
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BC Farm Investments LLC
P. O. Box 1183
Cannonsburg, PA 15317

Gary A Midcap etal
55 Temple Circle
Sistersville WV

Susan L. Spencer
HC 74 Box 98
Alma WV 26320 -9710

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Surface Owners (Pits or impoundments):

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

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Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

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WV Department of
Environmental Protection

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

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

Date of Notice: 8/24/18 **Date Permit Application Filed:** 8/24/18

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

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

Name: <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>516269.25</u>
County: <u>Tyler</u>		Northing: <u>4360584.58</u>
District: <u>McElroy</u>	Public Road Access: <u>60/2</u>	
Quadrangle: <u>Shirley</u>	Generally used farm name: <u>Vivian J. Wells</u>	
Watershed: <u>Morrison Run of McElroy Creek</u>		

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(h) 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, Office of Oil and Gas 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.

AUG 24 2018

Well Operator: <u>EQT Production Company</u>	Address: <u>2400 Ansys Drive, Suite 200</u>	WV Department of Environmental Protection
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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Surface Owners:

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko
18 Jensen St.
East Brunswick NJ 08816

Clifford Haug
3894 Cellar Creek Rd
Blackstone VA 23824

Timothy M. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Benjamin A. Haug
3890 Cellar Creek Rd
Blackstone VA 23824

Jean Jackubowski
158 Baumgardner Road
Willow Street PA 17584

Theodore Jackubowski
1212 Kelso Blvd
Windermere FL 34786

Louis Jackubowski, Jr.
1922 Robindale Ave
Lancaster, PA 17601

Mary Jean Ross
904 Truce Road
Holtwood PA 17532

Susan Buzzard
21 Cherokee Road
Willow Street PA 17584

Sharon Graeff
3217 Eisenbrown Rd
Reading PA 19605

Virginia Hornberger
3415 River Road
Reading PA 19605

Anthony Jackubowski, Jr.
535 Shawnee Street
Wilkes-barre PA 18702

Raymond A. Jackubowski
123 North Pioneer Avenue
Shavertown, PA 18708-1027

Beverly A. Chisdock
213 Lehigh Street
Avoca, Pa 18641-1011

Cynthia Kryzwicki
213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

Gary A Midcap etal
55 Temple Circle
Sistersville WV 26175

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Surface Owners (road or other disturbance):

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko
18 Jensen St.
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123 North Pioneer Avenue
Shavertown, PA 18708-1027

Beverly A. Chisdock
213 Lehigh Street
Avoca, Pa 18641-1011

Cynthia Kryzwicki
213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

John Paul Davis
45 Crystal Lake Road,
West Union, WV 26456-8932

Richard E. Hansen
1043 Low Gap Road
Wilbur WV 26459

Joyce K. Hill
88 Arvilla Road
Bens Run, WV 26146

Terry J. Cumberledge
1384 Pratts Run Road
Alma, WV 26320

BC Farm Investments LLC
P. O. Box 1183
Cannonsburg, PA 15317

Gary A Midcap etal
55 Temple Circle
Sistersville WV

Susan L. Spencer
HC 74 Box 98
Alma WV 26320 -9710

Surface Owners (Pits or impoundments):

Vivian Janice Wells
1814 Oil Ridge Rd.
Sistersville, WV 26175

George Birklein
121 Oxford Street
Sistersville, WV 26175

Andrea Shotts
432-2 East Main Street
Plymouth, PA 18651

Albina Pasko
18 Jensen St.
East Brunswick NJ 08816

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Avoca, Pa 18641-1011

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213 Nicholson Street
Wilkes-Barre, PA 18702

Lisa Wesolowski
254 Lampman Street
Avoca, PA 18641-1010

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Environmental Protection



4709502542

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 July 3, 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 SHR 60 Well Pad, Tyler County

SHR 60 H1	SHR 60 H2	SHR 60 H3
SHR 60 H4	SHR 60 H5	SHR 60 H6
SHR 60 H7	SHR 60 H8	SHR 60 H9
SHR 60 H10	SHR 60 H11	SHR 60 H12
SHR 60 H13		

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WV Department of
Environmental Protection

Dear Mr. Martin,

This well site will be accessed from DOH Permit #06-2014-0798 issued to EQT Production Company for access to the State Road for a well site located off of Tyler County Route 60/1 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
Gary K. Clayton P.E.
Regional Maintenance Engineer
Central Office Oil & Gas Coordinator

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

Anticipated Frac Additives
Chemical Names and CAS numbers

4709 02542

<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		

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AUG 24 2018
WV Department of
Environmental Protection



Office of Oil and Gas

West Virginia Department of
Environmental Protection
Office of Oil & Gas
601 57th Street SE
Charleston, WV 25304-2345

DEP Office Use only	
Date Received by Oil & Gas:	
Assigned Impoundment ID #:	095-WPA00013

Permit Associated Impoundment / Pit Registration

Instruction: This form is to be used to register impoundments or waste pits, greater than 5,000 bbls, that are associated with a WVDEP, Office of Oil and Gas, well drilling permit. An **associated impoundment or pit** means it has been designed and included in the well drilling permit application, will follow the reclamation time frame of well work permit, and will be approved in conjunction with the well work permit. An impoundment ID number will be assigned by WVDEP, Office of Oil and Gas, to all impoundments and pits. This impoundment ID number will be sent to the applicant following receipt of this form by WVDEP. Please reference this impoundment ID number with all future correspondence and reference to this impoundment. Conditions as described in W.Va. State Rule §35-4-21 will be followed as it relates to impoundments and pits.

Section 1 – Operator Information

Operator Name:	EQT Production Company		
Operator ID:	306686		
Address: Street	175 Industry Road		
City:	Waynesburg	State:	PA Zip: 15370
Contact Name:	Douglas Conklin	Contact Title:	Optimization Analyst
Contact Phone:	(724) 271-7534	Contact Email:	dconklin@eqt.com

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Section 2 – Engineering / Design Contractor Information

Design will be contracted <input checked="" type="checkbox"/> Designed in-house <input type="checkbox"/>	AUG 24 2018		
Company Name:	Hornor Brothers Engineers		
Address: Street	P.O. Box 386		
City:	Clarksburg	State:	WV Zip: 26302
Contact Name:	Thomas D. Corathers	Contact Title:	PE, PS
Contact Phone:	304-624-6445	Contact Email:	tom@hbe1902.com
Certifying Professional Engineer:	Thomas D. Corathers		
Professional Engineer Registration Number:	14161		

WV Department of
Environmental Protection



Office of Oil and Gas

Section 3 - Impoundment / Pit InformationType of Structure. Check one of two choices below: Freshwater Impoundment Waste Pit**Note:** Any waste in a pit will make it a waste pit.Name of Structure (Company Name :) EQT-SHR 60 Flow Back PitCounty: TylerDistrict: McElroyUSGS 7.5' Quad Map Name: Shirley

Farm Name: _____

Pad Name: SHR 60Surface Owner Name: Hannah Underwood EstatePhysical Description of Location: From intersection Tyler Co Rte 60/2 & Tyler Co.Rte 60/1 & Site Access Road travel northwesterly along access road 1 mile to completion pit on right

(Note: Give general location, example: 2 miles south of Smalltown, WV on Rt. 22, left on Buffalo Creek)

Watershed (nearest perennial): Morrison RunDistance (Drainage Distance) to nearest perennial stream: approximately 400 feet

Location Coordinates (NAD83, Decimal Degrees (xx.xxxx, -xx.xxxx))

Latitude: 39.393399 Longitude (Use negative sign): -80.810802UTM Coordinates : UTM 83-17NF:1693867.689569 E UTM 83-17NF:14305913.201097 N

Access Road Coordinates (junction of state highway access)

Latitude: 39.383561 Longitude (Use negative sign): -80.800865UTM Coordinates : UTM 83-17NF:1696682.830031 E UTM 83-17NF:14302337.088710 N

Approximate Dimensions

Length: 235 Width: 174 Height: 14'

Note: If irregularly shaped, give approximate dimensions of long axis.

Total Capacity – Provide all units of measure below:

Barrels: 66,028 Gallons: 2,773,363 Acre-Feet: 8.511

Capacity with 2' Freeboard – Provide all units of measure below:

Barrels: 52,185 Gallons: 2,191,927 Acre-Feet: 6.727

Incised volume:

Barrels: 8,616 Gallons: 361,906 Acre-Feet: 1.111

Net impounded volume: (Total volume less incised volume.)

Barrels: 43,569 Gallons: 1,830,021 Acre-Feet: 5.616

Anticipated Construction Start Date (estimation, non-binding): _____

Note: No construction may begin on **Associated** impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction."

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WV Department of
Environmental Protection



Section 4 - Associated Well Numbers and API Numbers. List associated well numbers and API number. API numbers may not be assigned at time of registering this impoundment, if so list as pending.

Well Number(s):	API Number(s) – If issued:
SHR60H1 SHR60H2	47-095-02257 47-095-02264
SHR60H3 SHR60H4	47-095-02255 47-095-02220
SHR60H5 SHR60H6	
SHR60H7 SHR60H8	
SHR60H9 SHR60H10	
SHR60H11 SHR60H12	

Section 5 - Required Information Checklist To Register Permit Associated Impoundments or Pits. Include the following information and plans with application.

- Engineered Construction Plans, certified by WV Registered P.E.
- Erosion and Sediment Control Plan, certified by WV Registered P.E.
- Reclamation Plan, certified by WV Registered P.E.

Section 6 – Dam Standard Qualifying Evaluation

- The design of this structure has been evaluated by the applicant to determine it does NOT qualify to be defined as a dam, under W.Va Rule §47-34. If the design of this structure qualifies it to be defined as a dam, all permits regulating dams will be required prior to registering the structure with the Office of Oil and Gas. The dam standard, from the WVDEP, Div. Of Water and Waste, is available for review at: <http://www.dep.wv.gov/WWE/ee/ds/Pages/default.aspx>

Section 7 –Comments – Provide any additional comments concerning this project

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AUG 24 2018
 WV Department of
 Environmental Protection



Office of Oil and Gas

Section 8 - Application Certification

I hereby certify that the information listed above is true and accurate. I understand that this pit/impoundment is to be constructed only in a location appropriate for the storage of water, including wastewater, and will be constructed in accordance with plans designed and certified by a West Virginia registered professional engineer. I further recognize that all required plans have been submitted to the Office of Oil and Gas. I understand that after construction, and prior to any fluid being placed in the pit/impoundment, it shall be inspected by a West Virginia registered professional engineer to ensure compliance with the certified design and construction plan, and that the professional engineer shall certify that this structure was constructed in accordance with design and construction plans. I understand that such certification shall be in writing to the Chief and that no fluids may be placed in the pit/impoundment until the certification has been filed with the chief. I agree that this pit/impoundment shall be constructed, maintained, operated and closed in accordance with all applicable laws and rules, including the requirements of W. Va. Code R § 35-4-2 .

Name: Erin Spine

Title: Regional Land Supervisor

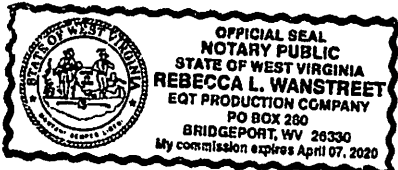
Signature:

Taken, subscribed and sworn to before me this, 24 Day of July 20 18

Notary Public: Rebecca L Wanstreet

My commission expires: 4-7-2020

Notary Seal:



Section 9. Submittal Instructions

Submit original paper copy of application to:
West Virginia Department of Environmental Protection
Office of Oil and Gas
Impoundment Registration
601 57th Street, SE
Charleston WV 25304

Email PDF file format of this application and all related engineering Plans to :
Depimpoundments@wv.gov

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WV Department of
Environmental Protection

SHR - 60 - ALT

FINAL SITE DESIGN ALT, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS EQT PRODUCTION COMPANY

West Virginia Coordinate System of 1283
State Plane Grid North
Elevations NAVD83
Established by Survey Grade GPS



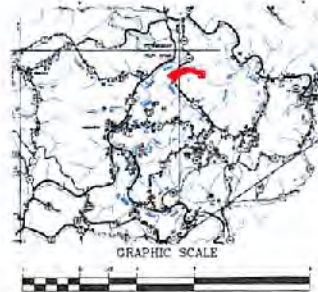
FLOODPLAIN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HECRAS STUDY COMPLETED:	N/A
FLOODPLAIN DISCRIPTION DRAWINGS:	N/A
FORM MAP NUMBER(S) FOR SITE:	3198C0175C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

NO WETLANDS ARE IMPACTED
THE CURRENT SOIL pH IS 6.9

**APPROVED
WVDEP OOG**

8/22/23 3-24-15

SITE ELEVATIONS		
MAP BT	EASTING	NORTHING
Center of Flowback Pit	79,204.52	48,617.005
Center of Completion Pit	79,204.92	48,617.004
Center of Gas Well	79,211.77	48,617.200
Beginning of Access Road	79,213.72	48,618.000



SHEET INDEX	
COVER SHEET / LOCATION MAP	1
SCHEDULE OF QUANTITIES	2
EXISTING CONDITIONS PLAN	3
CONSTRUCTION GENERAL AND EAS NOTES	4
FINAL SITE DESIGN PLANS	5-9
DRILL PAD PROFILES & CROSS SECTIONS	10
COMPLETION PIT PROFILES & CROSS SECTIONS	11
FLOWBACK PIT PROFILES AND CROSS SECTIONS	12
ACCESS ROAD PROFILES	13
ACCESS ROAD CROSS SECTIONS	14-20
FLOWBACK ACCESS PROFILES & CROSS SECTIONS	21
COMPLETION PIT ACCESS PROFILE & CROSS SECTIONS	22
CONSTRUCTION DETAILS	23-24
DECLARATION PLANS	25-29

Project Contacts

Chris Metzgar - EQT Production Company
304-848-0273 Office

Steve Rubin - Dominion Maps
304-672-4921

Das Taylor - Coastal
1-724-455-4214

Surveyor & Engineer:

Ben Singleton - PE - EQT
304-648-0500 DR

Tom Conners - PE - PS - Horner Brothers Engineers
304-624-6443 DRCS

APPROVED/REGISTERED
MEASURING DISTRICT - TYLER COUNTY, WV

TM 18 - PCL 17
HAROLD UNDERWOOD STATE
35 ACRES
SITE DISTURBANCE

DRILL PAD = 8.36 ACRES
FLOWBACK PIT = 2.35
FLOWBACK ACCESS ROAD = 0.20 ACRES
FLOWBACK PIT MANIFOLD WITH TANK = 3.14 ACRES
MAIN ACCESS ROAD = 0.43 ACRES
TOPSOIL PAD = 1.39 ACRES
TIMBER STORAGE = 3.91 ACRES
TOTAL DISTURBANCE = 10.82 ACRES
TOTAL WOODED AREA DISTURBANCE = 10.16 ACRES

TM 18 - PCL 13
VINNIE WELLS #41
34.71 ACRES
SITE DISTURBANCE

FLOWBACK PIT MANIFOLD WITH TANK = 0.42 ACRES
FLOWBACK PIT = 0.33 ACRES
FLOWBACK PIT ACCESS ROAD = 0.10 ACRES
MAIN ACCESS ROAD = 2.22 ACRES
COMPLETION PIT = 4.43 ACRES
COMPLETION PIT TRUCK TURNAROUND (WTTA) = 1.23
COMPLETION PIT WITH ACCESS = 0.32 ACRES
SPILL PAD = 4.14 ACRES
TOTAL DISTURBANCE = 14.67 ACRES
TOTAL WOODED AREA DISTURBANCE = 12.71 ACRES

TM 18 - PCL 14
TERRY CURRIER FOSTER #1
34.81 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 0.33 ACRES
TOTAL DISTURBANCE = 0.33 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.28 ACRES

TM 18 - PCL 15
SUSAN SPENGLER
8 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 0.81 ACRES
TOTAL DISTURBANCE = 0.81 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.61 ACRES

TM 18 - PCL 16
DONALD E. BIRLE
15.84 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 1.24 ACRES
TOTAL DISTURBANCE = 1.24 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.74 ACRES

TM 18 - PCL 17
ALLEN FORNASH
43 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 1.19 ACRES
TOTAL DISTURBANCE = 1.19 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.74 ACRES

TM 18 - PCL 18
FRYBURN OVERSHED #11
40 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 1.11 ACRES
TOTAL DISTURBANCE = 1.11 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.81 ACRES

TM 18 - PCL 19
JOHN PAUL DAVIS
25 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 1.24 ACRES
TOTAL DISTURBANCE = 1.24 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.72 ACRES

TM 18 - PCL 20
RICHARD HANSON
19 ACRES
SITE DISTURBANCE

MAIN ACCESS ROAD = 1.13 ACRES
TOTAL DISTURBANCE = 1.13 ACRES
TOTAL WOODED AREA DISTURBANCE = 0.86 ACRES



Allegheny Surveys Inc.
P.O. Box 438
237 Birch River Road
Birch River, WV 26610
304-616-8606



Horner Bros. Engineers
Civil, Mining, Environmental and
Consulting Engineers
1000 Main Street, Suite 100
Martinsburg, WV 26150



THIS DOCUMENT
PREPARED FOR
EQT PRODUCTION
COMPANY

COVER SHEET AND LOCATION MAP
SHR - 60
DRILL PAD SITE - ALT
MEASURING DISTRICT
TYLER COUNTY, WV

DATE	REVISIONS	DATE
11/01/2014	REVISIONS TO MEASURING DISTRICT	11/01/2014
11/01/2014	REVISIONS TO MEASURING DISTRICT	11/01/2014
11/01/2014	REVISIONS TO MEASURING DISTRICT	11/01/2014

Scale: AS NOTED
Drawn by: TDC/13/13
Rev by: JWS/23/23
Page: 1 of 29

Design Certification

The drawings, construction notes, and reference diagrams attached herein have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Land and Gas (25-4-21). The information reflects a temporary final permit. The computer shown graphic storage system is less than 15 years old. Being certified pursuant to P.E. codes is true.

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!!

**Know what's below.
Call before you dig.**

EQT SHR-60 - ALT DESIGN PLAN (5)



All geographic information shown herein is based on aerial photography provided by Dun Mountain Aerial Mapping with a flight date of Spring 2013



Allegriano Surveys Inc.
P.O. Box 438
237 Birch River Road
Birch River, WV 26610
304-654-9800

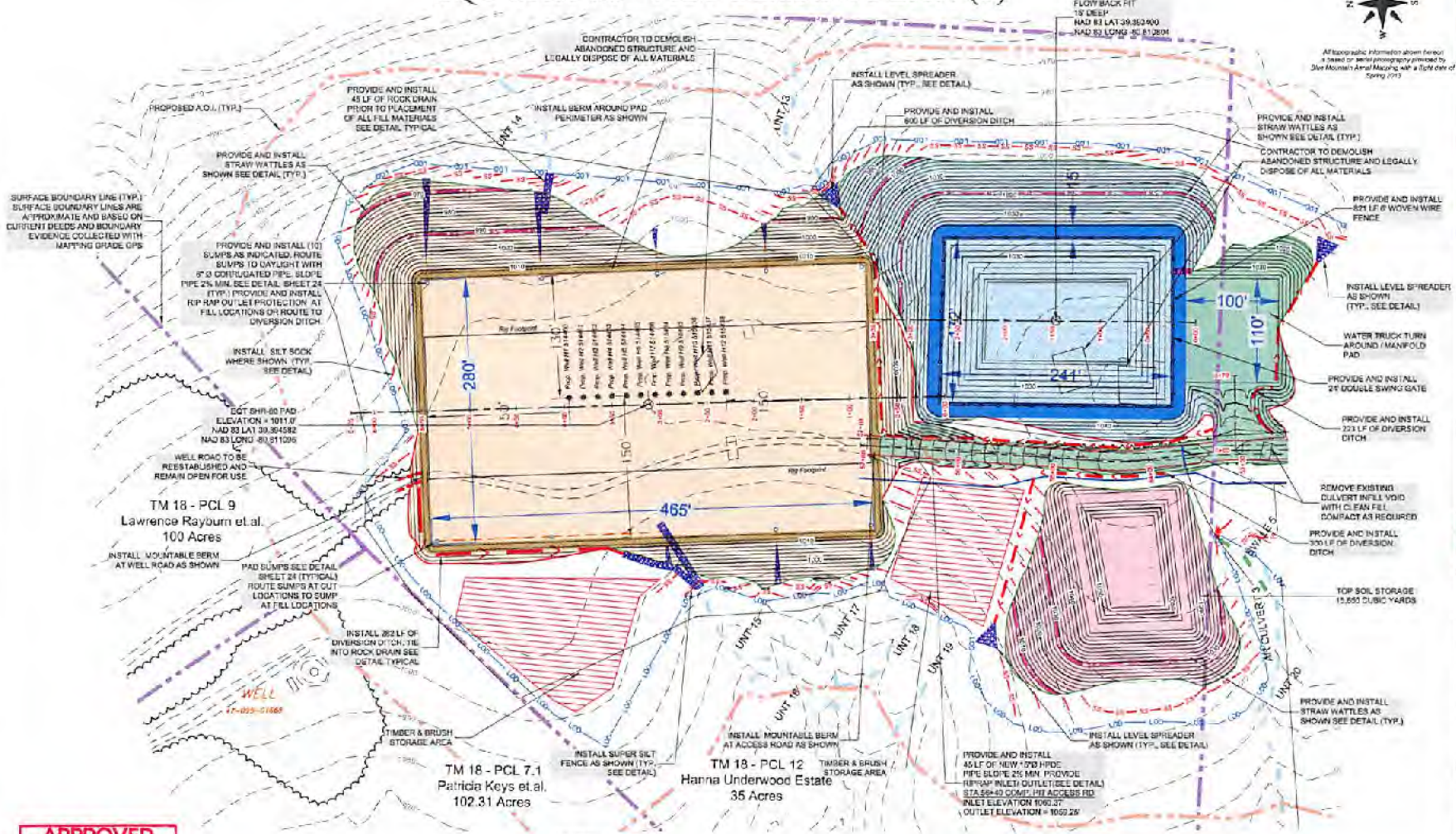


Horner Bros. Engineers
Soil, Water, Environmental and
Consulting Engineering
1000 West Virginia Ave., Suite 200
Martinsburg, WV 26150
304-251-1100



THIS DOCUMENT
PREPARED FOR
EQT PROJECT COMPANY

FINAL SITE DESIGN PLAN - ALT
SHR 60
DRILL PAD SITE - ALT
NAGLE RAY DISTRICT
TYLER COUNTY, WV



APPROVED WVDEP OOG
3-24-15



NOTE:
CONSTRUCTION OF ALL FILL
EMBANKMENTS (INCLUDING SPOIL
PADS) REQUIRE TOE KEY BENCHES
AND SIDEHILL BENCHES.
(SEE EMBANKMENT FILL BENCH DETAIL)

Legend

Proposed Hoist Area	Existing 2' Contour
Proposed Daily Pad Area or Manifold Pad	Existing 10' Contour
Proposed Rip-poured Area	Existing 50' Contour
Proposed Spill Area	Existing 100' Contour
	Existing 200' Contour

DATE	REVISIONS	Date:
11/1/2014	ISSUED FOR PERMIT REVIEW	11/1/2014
04/1/2015	REVISED TO REFLECT PERMIT COMMENTS	Scale: 1"=50'
02/23/2015	REVISED TO REFLECT WELL PERMIT COMMENTS	Drawn by: JBC
		File No: EQT-SHR-60-ALT-05
		Page: 5 of 12