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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://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 SHR60 H5  
47-095-02541-00-00

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: SHR60 H5  
Farm Name: VIVIAN J. WELLS, ET AL.  
U.S. WELL NUMBER: 47-095-02541-00-00  
Horizontal 6A New Drill  
Date Issued: 10/30/2018

Promoting a healthy environment.

## 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

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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](mailto: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: SHR60H5 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

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6) Existing Pad: Yes or No \_\_\_\_\_

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

8) Proposed Total Vertical Depth: 6596

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16800

11) Proposed Horizontal Leg Length: 9487

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

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

14) Approximate Saltwater Depths: 1198, 1865

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

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

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

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

WW-6B  
(04/15)

API NO. 47- 095 - 02541

OPERATOR WELL NO. SHR6CH5

Well Pad Name: SHR60

18)

**CASING AND TUBING PROGRAM**

| <b>TYPE</b>  | <b>Size (in)</b> | <b>New or Used</b> | <b>Grade</b> | <b>Weight per ft. (lb/ft)</b> | <b>FOOTAGE: For Drilling (ft)</b> | <b>INTERVALS: Left in Well (ft)</b>                              | <b>CEMENT: Fill-up (Cu. Ft.)/CTS</b> |
|--------------|------------------|--------------------|--------------|-------------------------------|-----------------------------------|--|--------------------------------------|
| Conductor    | 20               | New                | A-500        | 85.6                          | 60                                | 60   | 73 ft <sup>3</sup> / CTS             |
| Fresh Water  | 13 3/8           | New                | J-55         | 54.5                          | 1006                              | 1006   | 846 ft <sup>3</sup> / CTS            |
| Coal         |                  |                    |              |                               |                                   |  |                                      |
| Intermediate | 9 5/8            | New                | A-500        | 40                            | 2788                              | 2788   | 1088 ft <sup>3</sup> / CTS           |
| Production   | 5 1/2            | New                | P-110        | 20                            | 16800                             | 16800  | 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       |                  |                    |              |                               |                                   |  |                                      |

| <b>TYPE</b>  | <b>Size (in)</b> | <b>Wellbore Diameter (in)</b> | <b>Wall Thickness (in)</b> | <b>Burst Pressure (psi)</b> | <b>Anticipated Max. Internal Pressure (psi)</b> | <b>Cement Type</b>   | <b>Cement Yield (cu. ft./k)</b> |
|--------------|------------------|-------------------------------|----------------------------|-----------------------------|---|----------------------|---------------------------------|
| Conductor    | 20               | 26                            | .312                       | 1378                        | 26  | Class A              | 1.18                            |
| Fresh Water  | 13 3/8           | 17 1/2                        | .38                        | 2700                        | 2160  | See Variance 2014-17 | 1.2                             |
| Coal         |                  |                               |                            |                             |   |                      |                                 |
| Intermediate | 9 5/8            | 12 3/8                        | .395                       | 3950                        | 3160  | See Variance 2014-17 | 1.25 / 1.19                     |
| Production   | 5 1/2            | 8 1/2                         | .361                       | 12640                       | 10112   | Class H              | 1.123/2.098                     |
| Tubing       | 2 3/8            | NA                            | .19                        | 7700                        |   |                      |                                 |
| Liners       |                  |                               |                            |                             |   |                      |                                 |

**PACKERS**

|             |  |  |  |  |
|-------------|--|--|--|--|
| Kind:       |  |  |  |  |
| Sizes:      |  |  |  |  |
| Depths Set: |  |  |  |  |

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WW-6B  
(10/14)

API NO. 47-095 -  
OPERATOR WELL NO. SHR60H5  
Well Pad Name: SHR60

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 5195'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

JEB  
8/29/2018

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 sand 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 (Class A Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries  
Intermediate (Class A Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries.  
Production:  
Lead (Class H Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time). .15% SEC-10 (fluid loss). 50:50 POZ (extender)  
Tail (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.

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25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

4709502541

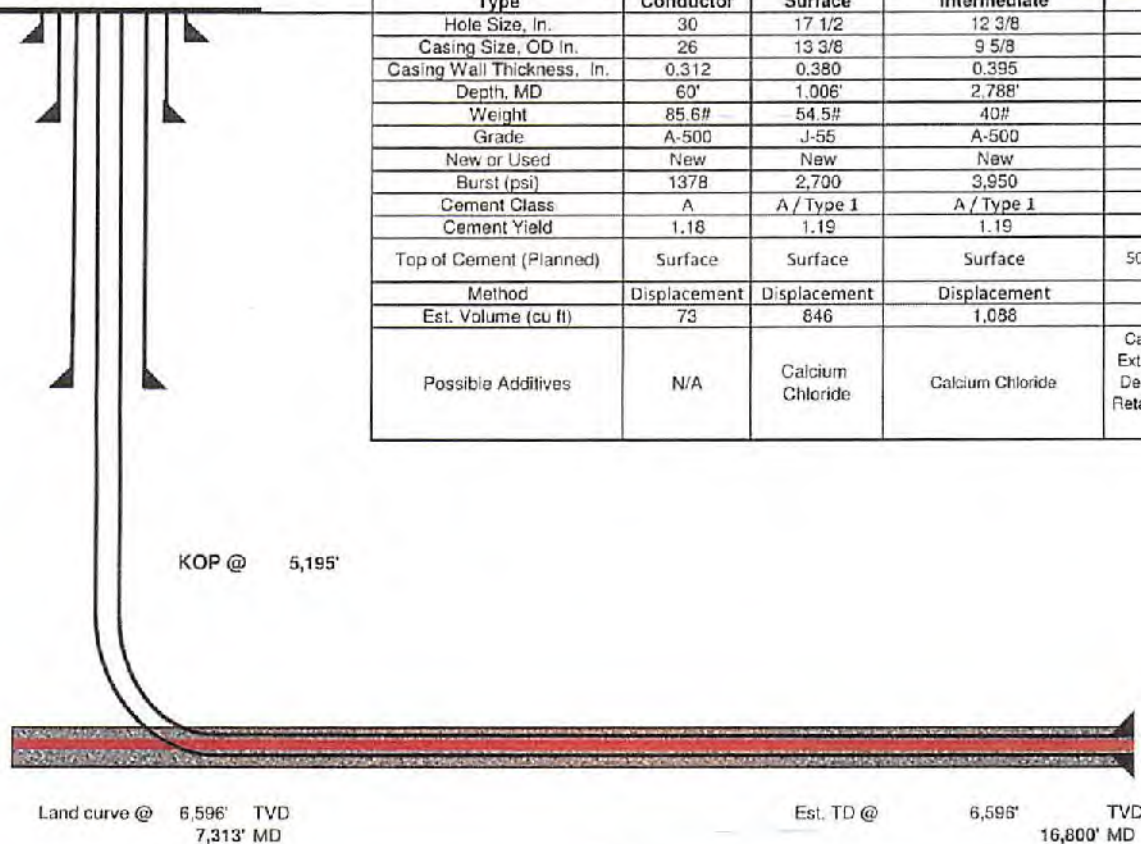
Well **SHR60H5**  
 EQT Production  
 Shirley Quad  
 Tyler County, WV

Azimuth 157  
 Vertical Section 10058  
 Enerlia # 514464

Note: Diagram is not to scale

| Formations          | Top TVD     | Base TVD |
|---------------------|-------------|----------|
| Conductor           | 60          |          |
| Base Fresh Water    | 906         |          |
| Surface Casing      | 1006        |          |
| <b>Maxton</b>       | 1534 - 1587 |          |
| Big Lime            | 1829 - 2111 |          |
| Base Red Rock       | 1876        |          |
| Weir                | 2251 - 2317 |          |
| Gantz               | 2368 - 2415 |          |
| Fifty foot          | 2461 - 2496 |          |
| Thirty foot         | 2595 - 2636 |          |
| Gordon              | 2686 - 2700 |          |
| Intermediate Casing | 2788        |          |
| 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   | 16800 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'          | 1,006'           | 2,788'           | 16,800'  |  |
| Weight                     | 85.6#        | 54.5#            | 40#              | 20#  |  |
| Grade                      | A-500        | J-55             | A-500            | P-110  |  |
| New or Used                | New          | New              | New              | New  |  |
| Burst (psi)                | 1378         | 2,700            | 3,950            | 12,640   |  |
| Cement Class               | A            | A / Type 1       | A / Type 1       | A / H  |  |
| Cement Yield               | 1.18         | 1.19             | 1.19             | 1.123 / 2.098  |  |
| Top of Cement (Planned)    | Surface      | Surface          | Surface          | 500' above top Producing Zone  |  |
| Method                     | Displacement | Displacement     | Displacement     | Displacement   |  |
| Est. Volume (cu ft)        | 73           | 846              | 1,098            | 3,165  |  |
| Possible Additives         | N/A          | Calcium Chloride | Calcium Chloride | Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent |  |



Proposed Well Work:  
 Drill and complete a new horizontal well in the Marcellus formation.  
 Drill the vertical to an approximate depth of 5195'.  
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

9,487' Lateral

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*JCB*  
 8/29/2018

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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| API Number     | Abandoned Date | Completion Date | County    | Current Operator                    | Elevation | Elevation Reference | Final Status | Lat     | Long     | Well Name                                | Permit Date | SPUD Date  | TD Formation   | Total Depth | Permit |
|----------------|----------------|-----------------|-----------|-------------------------------------|-----------|---------------------|--------------|---------|----------|--|-------------|------------|----------------|-------------|--------|
| 47017036870000 |                | 1/20/1989       | DODDRIDGE | CONSOL GAS COMPANY                  | 1067 GR   |                     | 2GAS         | 39.2630 | -80.7909 | 2 ROBINSON WILBUR                        | 12/26/1988  | 1/5/1989   | DEVONIAN /SD/  | 5200        | 03687  |
| 47095004400000 | 1/20/1953      | 8/31/1911       | TYLER     | PITTSBURGH & W VA GAS               | 865 GR    |                     | ABD-GW       | 39.3794 | -80.7960 | 2427 M J FERGESON                        | 7/2/1911    | 7/17/1911  | HURON LOWER    | 2531        | 00440  |
| 47095303310000 | 12/23/1942     | 12/22/1913      | TYLER     | HOPE NATURAL GAS                    | 1003 GR   |                     | ABD-GW       | 39.3907 | -80.8141 | 3205 TAYLOR UNDERWOOD 1                  | 10/21/1913  | 11/5/1913  | HURON LOWER    | 2725        | 30331  |
| 47095303800000 | 11/7/1945      | 3/15/1910       | TYLER     | HOPE NATURAL GAS                    | 1010 GR   |                     | ABD-GW       | 39.3872 | -80.8035 | 1558 PRATT-PIERPOINT                     | 1/23/1910   | 2/7/1910   | HURON LOWER    | 2715        | 30380  |
| 47017300710000 | 8/15/1933      | 2/16/1911       | DODDRIDGE | CLIFTON OIL & GAS INCORPORATED      | 1200 GR   |                     | ABD-GW       | 39.3647 | -80.7806 | 1 STEPHEN PITTS                          | 1/2/1911    | 1/17/1911  | POCONO         | 2280        | 30071  |
| 47095004890001 | 5/2/1973       | 2/5/1973        | TYLER     | EQUITABLE GAS COMPANY               | 864 GR    |                     | ABD-SW       | 39.3794 | -80.7942 | 5473 GEORGE H JONES                      | 11/27/1972  | 12/7/1972  | UNKNOWN        | 2500        | 00449  |
| 47095004630001 | 3/25/1974      | 3/25/1974       | TYLER     | EQUITABLE GAS COMPANY               | 984 GR    |                     | D&A          | 39.3843 | -80.8024 | 1309762 M E UNDERWOOD                    | 1/25/1974   | 2/4/1974   | DEVONIAN /SD/  | 2691        | 00463  |
| 47017006070000 |                | 10/10/1961      | DODDRIDGE | ANJA RESOURCES                      | 994 GR    |                     | D&A-G        | 39.3624 | -80.7899 | 1 WEYMAN ROBINSON                        | 8/23/1961   | 9/7/1961   | POCONO         | 2040        | 00607  |
| 47095014320000 |                | 11/14/1990      | TYLER     | CONSOL GAS COMPANY                  | 892 KB    |                     | GAS          | 39.3873 | -80.8161 | 2 SECKMAN CLYDE                          | 10/7/1990   | 10/17/1990 | DEVONIAN /SD/  | 5000        | 01432  |
| 47095014640000 |                | 6/27/1991       | TYLER     | CONSOL GAS COMPANY                  | 914 KB    |                     | GAS          | 39.3802 | -80.7914 | DOLL1 DOLL A ETAL                        | 5/30/1991   | 6/9/1991   | DEVONIAN /SD/  | 5040        | 01464  |
| 47095014690000 |                | 7/30/1991       | TYLER     | CONSOL GAS COMPANY                  | 914 KB    |                     | GAS          | 39.3802 | -80.8044 | 1 DILLON CLARENCE ETAL                   | 6/9/1991    | 6/19/1991  | DEVONIAN /SD/  | 5020        | 01469  |
| 47095014610000 |                | 7/16/1991       | TYLER     | CONSOL GAS COMPANY                  | 948 KB    |                     | GAS          | 39.3734 | -80.7977 | DBODE1 SCOTT M HRS                       | 6/9/1991    | 6/19/1991  | DEVONIAN /SD/  | 5073        | 01461  |
| 47095014620000 |                | 7/6/1991        | TYLER     | CONSOL GAS COMPANY                  | 967 KB    |                     | GAS          | 39.3776 | -80.7964 | DBODE2 SCOTT M HRS                       | 6/4/1991    | 6/14/1991  | DEVONIAN /SD/  | 5066        | 01462  |
| 47095007130001 |                | 4/27/1971       | TYLER     | CONSOLIDATED GAS SUPPLY CORPORATION | 972 KB    |                     | GAS          | 39.3972 | -80.8013 | 2118 WILLIAM UNDERWOOD                   | 12/22/1970  | 1/1/1971   | UNKNOWN        | 2731        | 00713  |
| 47095016680000 |                | 11/3/1996       | TYLER     | ALLIANCE PETROLEUM CORPORATION      | 986 GR    |                     | GAS          | 39.3955 | -80.8122 | 2 KEYS MARY                              | 10/20/1996  | 10/30/1996 | DEVONIAN /SD/  | 2200        | 01668  |
| 47095016180000 |                | 6/22/1994       | TYLER     | CONSOL GAS COMPANY                  | 992 GR    |                     | GAS          | 39.3904 | -80.8008 | 2 CUMBERLEDGE JACOB A                    | 6/7/1994    | 6/17/1994  | DEVONIAN /SD/  | 5125        | 01618  |
| 47095014060000 |                | 9/5/1990        | TYLER     | CONSOL GAS COMPANY                  | 1010 KB   |                     | GAS          | 39.3708 | -80.7877 | 2 NICHOLS                                | 7/28/1990   | 8/7/1990   | DEVONIAN /SD/  | 5125        | 01406  |
| 47095016190000 |                | 6/16/1994       | TYLER     | CONSOL GAS COMPANY                  | 1020 GR   |                     | GAS          | 39.3765 | -80.8061 | 1 MERCER MARIA ET AL                     | 5/23/1994   | 6/2/1994   | DEVONIAN /SD/  | 5190        | 01619  |
| 47017038360000 |                | 9/5/1990        | DODDRIDGE | CONSOL GAS COMPANY                  | 1024 KB   |                     | GAS          | 39.3676 | -80.7822 | 2 PITTS STEPHEN                          | 8/1/1990    | 8/11/1990  | DEVONIAN /SD/  | 5150        | 03836  |
| 47095014400000 |                | 12/2/1990       | TYLER     | CONSOL GAS COMPANY                  | 1032 KB   |                     | GAS          | 39.3868 | -80.8108 | 1 PRATT H T HEIRS                        | 10/29/1990  | 11/8/1990  | DEVONIAN /SD/  | 5126        | 01440  |
| 47095014680000 |                | 8/10/1992       | TYLER     | CONSOL GAS COMPANY                  | 1032 KB   |                     | GAS          | 39.3849 | -80.7922 | MARKS1 MARKS JOHN                        | 6/26/1992   | 7/6/1992   | DEVONIAN /SD/  | 5170        | 01468  |
| 47095016250000 |                | 11/16/1994      | TYLER     | CONSOL GAS COMPANY                  | 1053 GR   |                     | GAS          | 39.3935 | -80.8070 | 2 TAYLOR UNDERWOOD HEIRS                 | 10/31/1994  | 11/10/1994 | DEVONIAN /SD/  | 5175        | 01625  |
| 47095014720000 |                | 7/25/1991       | TYLER     | CONSOL GAS COMPANY                  | 1072 KB   |                     | GAS          | 39.3846 | -80.8043 | 2 DILLON CLARENCE ET AL                  | 6/16/1991   | 6/26/1991  | DEVONIAN /SD/  | 5180        | 01472  |
| 47095015140000 |                | 2/13/1993       | TYLER     | CONSOL GAS COMPANY                  | 1075 GR   |                     | GAS          | 39.3914 | -80.8115 | 1 UNDERWOOD TAYLOR HEIRS                 | 12/20/1992  | 12/30/1992 | DEVONIAN /SD/  | 5230        | 01514  |
| 47095014390000 |                | 2/19/1991       | TYLER     | CONSOL GAS COMPANY                  | 1087 KB   |                     | GAS          | 39.3636 | -80.7975 | 2 WEEKLEY ISAJAH HRS                     | 1/13/1991   | 1/23/1991  | DEVONIAN /SD/  | 5175        | 01439  |
| 47095014660000 |                | 7/23/1991       | TYLER     | CONSOL GAS COMPANY                  | 1090 KB   |                     | GAS          | 39.3814 | -80.7984 | CLARENCE1 CUMBERLEDGE BLANCHE HEIRS ETAL | 6/15/1991   | 6/25/1991  | DEVONIAN /SD/  | 5200        | 01466  |
| 47095014410000 |                | 1/11/1991       | TYLER     | CONSOL GAS COMPANY                  | 1092 KB   |                     | GAS          | 39.3893 | -80.8067 | 2 PRATT H T HEIRS                        | 12/5/1990   | 12/15/1990 | DEVONIAN /SD/  | 5200        | 01441  |
| 47095014650000 |                | 6/25/1991       | TYLER     | CONSOL GAS COMPANY                  | 1106 KB   |                     | GAS          | 39.3787 | -80.8103 | UNDERWOOD2 STACK MARK ETUX               | 5/21/1991   | 5/31/1991  | DEVONIAN /SD/  | 5200        | 01465  |
| 47095004410000 |                | 2/5/1912        | TYLER     | EQUITABLE GAS COMPANY               | 1108 GR   |                     | GAS          | 39.3714 | -80.8024 | 2490 OLIVE I STEWART                     | 11/25/1911  | 12/10/1911 | HAMPSHIRE      | 2807        | 00441  |
| 47095014670000 |                | 7/12/1991       | TYLER     | CONSOL GAS COMPANY                  | 1117 KB   |                     | GAS          | 39.3866 | -80.7977 | CLARENCE2 CUMBERLEDGE CLARENCE           | 6/3/1991    | 6/13/1991  | DEVONIAN /SD/  | 5250        | 01467  |
| 47095013610000 |                | 1/29/1990       | TYLER     | CONSOL GAS COMPANY                  | 1148 KB   |                     | GAS          | 39.3742 | -80.7905 | 1 NICHOLAS S C                           | 1/6/1990    | 1/16/1990  | DEVONIAN /SD/  | 5200        | 01361  |
| 47095016100000 |                | 6/8/1994        | TYLER     | CONSOL GAS COMPANY                  | 1206 GR   |                     | GAS          | 39.3714 | -80.7928 | 1 STEWART D                              | 5/20/1994   | 5/30/1994  | DEVONIAN /SD/  | 5344        | 01610  |
| 47017036840000 |                | 2/7/1989        | DODDRIDGE | CONSOL GAS COMPANY                  | 1214 KB   |                     | GAS          | 39.3610 | -80.7821 | 1 SCOTT J N                              | 1/14/1989   | 1/24/1989  | DEVONIAN /SD/  | 5350        | 03684  |
| 47017037440000 |                | 1/13/1990       | DODDRIDGE | CONSOL GAS COMPANY                  | 1226 KB   |                     | GAS          | 39.3660 | -80.7873 | 3 SCOTT JASPER                           | 12/19/1989  | 12/29/1989 | DEVONIAN /SD/  | 5300        | 03744  |
| 47095014330000 |                | 10/11/1990      | TYLER     | CONSOL GAS COMPANY                  | 1228 KB   |                     | GAS          | 39.3678 | -80.7979 | 2 WEEKLEY ISAJAH                         | 9/17/1990   | 9/27/1990  | DEVONIAN /SD/  | 5300        | 01433  |
| 47095013270000 |                | 1/26/1990       | TYLER     | CONSOL GAS COMPANY                  | 1232 KB   |                     | GAS          | 39.3673 | -80.7928 | 2 PRUNTY S                               | 12/27/1989  | 1/6/1990   | DEVONIAN /SD/  | 5350        | 01327  |
| 47095014630000 |                | 8/1/1991        | TYLER     | CONSOL GAS COMPANY                  | 1233 KB   |                     | GAS          | 39.3717 | -80.8019 | BODES BODE DOROTHY                       | 6/30/1991   | 7/10/1991  | DEVONIAN /SD/  | 5300        | 01463  |
| 47017042500000 |                | 4/29/1996       | DODDRIDGE | CONSOL GAS COMPANY                  | 1238 GR   |                     | GAS          | 39.3641 | -80.7836 | 3 SCOTT J N HEIRS                        | 4/13/1996   | 4/23/1996  | RENSON /SD/    | 5342        | 04250  |
| 47017036860000 |                | 2/16/1989       | DODDRIDGE | CONSOL GAS COMPANY                  | 1267 KB   |                     | GAS          | 39.3598 | -80.7874 | 1 ROBINSON WILBUR                        | 1/21/1989   | 1/31/1989  | DEVONIAN /SD/  | 5400        | 03686  |
| 47017006070001 |                | 3/12/1966       | DODDRIDGE | ANJA RESOURCES                      | 994 GR    |                     | GAS-WO       | 39.3624 | -80.7899 | 1 WEYMAN ROBINSON                        | 1/20/1966   | 1/30/1966  | POCONO         | 2040        | 00607  |
| 47095004380000 |                | 10/13/1972      | TYLER     | EQUITABLE GAS COMPANY               | 832 GR    |                     | GSTG         | 39.3850 | -80.7944 | 5461 GAY CUMBERLEDGE                     | 7/1/1972    | 7/11/1972  | GORDON /SD/    | 2602        | 00438  |
| 47095004350000 |                | 9/1/1972        | TYLER     | EQUITABLE GAS COMPANY               | 1024 GR   |                     | GSTG         | 39.3725 | -80.8012 | 5460 MOLLIE SCOTT                        | 7/18/1972   | 8/2/1972   | GORDON         | 2582        | 00435  |
| 47017018940000 |                | 6/1/1978        | DODDRIDGE | EQUITABLE GAS COMPANY               | 1155 GR   |                     | GSTG         | 39.3672 | -80.7861 | 5505 E M PITTS 1                         | 4/17/1978   | 5/2/1978   | BIG INIUN /SD/ | 2217        | 01894  |
| 47017027910000 |                | 1/1/1981        | DODDRIDGE | EQUITABLE GAS COMPANY               | 1236 GR   |                     | GSTG         | 39.3630 | -80.7840 | 2061 EDWIN P BODE                        | 11/17/1980  | 12/2/1980  | BIG INIUN /SD/ | 2300        | 02791  |
| 47017018950000 |                | 9/1/1978        | DODDRIDGE | EQUITABLE GAS COMPANY               | 1263 GR   |                     | GSTG         | 39.3666 | -80.7824 | 5506 ERMA MABEL PITTS 2                  | 7/18/1978   | 8/2/1978   | BIG INIUN /SD/ | 2226        | 01895  |
| 47095004380001 |                | 9/25/1989       | TYLER     | EQUITRANS INCORPORATED              | 832 GR    |                     | GSTGW        | 39.3850 | -80.7944 | 5461 GAY CUMBERLEDGE                     | 4/1/1989    | 6/15/1989  | GORDON /SD/    | 2602        | 00438  |
| 47095004360001 |                | 8/11/1974       | TYLER     | EQUITABLE GAS COMPANY               | 983 GR    |                     | GSTGW        | 39.3842 | -80.7913 | 5462 AUMBRA PRATT                        | 7/18/1972   | 7/28/1972  | BIG INIUN /SD/ | 1984        | 00436  |
| 47095014060001 |                | 5/22/1998       | TYLER     | CONSOL GAS COMPANY                  | 1010 KB   |                     | GSTGW        | 39.3708 | -80.7877 | 2 NICHOLS                                | 5/18/1998   | 5/20/1998  | DEVONIAN /SD/  | 5125        | 01406  |
| 47095004680001 |                | 9/6/1974        | TYLER     | EQUITABLE GAS COMPANY               | 1058 GR   |                     | GSTGW        | 39.3789 | -80.8041 | 1 ADDIE KEYS                             | 6/30/1974   | 7/10/1974  | GORDON         | 2716        | 00468  |
| 47095302510000 | 6/26/1940      |                 | TYLER     | HOPE NATURAL GAS                    |           |                     | PSEUDO       | 39.3814 | -80.7895 | 3 J W JONES                              | 1/1/1801    | 1/1/1801   |                | 0           | 30251  |
| 47095308880000 | 4/25/1958      |                 | TYLER     | HOPE NATURAL GAS                    |           |                     | PSEUDO       | 39.3766 | -80.7999 | 1996 JESSE UNDERWOOD 1                   | 1/1/1801    | 1/1/1801   |                | 0           | 30888  |
| 47095309600000 | 12/9/1959      |                 | TYLER     | HOPE NATURAL GAS                    |           |                     | PSEUDO       | 39.3862 | -80.8076 | 3139 H T PRATT 1                         | 1/1/1801    | 1/1/1801   |                | 0           | 30906  |
| 47095309420000 | 3/6/1966       |                 | TYLER     | HOPE NATURAL GAS                    |           |                     | PSEUDO       | 39.3743 | -80.7979 | 1529 JESSE UNDERWOOD                     | 1/1/1801    | 1/1/1801   |                | 0           | 30942  |
| 47095705010000 |                |                 | TYLER     | HOPE NATURAL GAS                    |           |                     | PSEUDO       | 39.3836 | -80.8027 |  | 1/1/1801    | 1/1/1801   |                | 0           | 70501  |
| 47095004560000 |                |                 | TYLER     | UNKNOWN                             | 815 GR    |                     | PSEUDO       | 39.3850 | -80.7935 | 5466 GAY CUMBERLEDGE                     | 1/1/1801    | 1/1/1801   |                | 0           | 00456  |
| 47095004500000 |                |                 | TYLER     | UNKNOWN                             | 833 GR    |                     | PSEUDO       | 39.3821 | -80.7937 | 5474 GEORGE H JONES                      | 1/1/1801    | 1/1/1801   |                | 0           | 00450  |
| 47095004490000 | 5/2/1973       |                 | TYLER     | UNKNOWN                             | 864 GR    |                     | PSEUDO       | 39.3794 | -80.7942 | 5473 GEORGE H JONES                      | 1/1/1801    | 1/1/1801   |                | 0           | 00449  |
| 47095004550000 | 4/8/1973       |                 | TYLER     | UNKNOWN                             | 917 GR    |                     | PSEUDO       | 39.3836 | -80.7932 | 5480 ALTA PRATT                          | 1/1/1801    | 1/1/1801   |                | 0           | 00455  |
| 47095004360000 |                |                 | TYLER     | EQUITABLE GAS COMPANY               | 983 GR    |                     | PSEUDO       | 39.3842 | -80.7913 | 5462 AUMBRA PRATT                        | 1/1/1801    | 1/1/1801   | BIG INIUN /SD/ | 1984        | 00436  |
| 47095004630000 | 3/25/1974      |                 | TYLER     | UNKNOWN                             | 984 GR    |                     | PSEUDO       | 39.3843 | -80.8024 | 5486 MARY E UNDERWOOD                    | 1/1/1801    | 1/1/1801   |                | 0           | 00463  |
| 47095004340000 |                |                 | TYLER     | UNKNOWN                             | 988 GR    |                     | PSEUDO       | 39.3846 | -80.8004 | 5456 BLANCHE CUMBERLEDGE 1               | 1/1/1801    | 1/1/1801   |                | 0           | 00434  |
| 47095004450000 |                |                 | TYLER     | UNKNOWN                             | 1011 GR   |                     | PSEUDO       | 39.3826 | -80.7988 | 5468 A H CUMBERLEDGE                     | 1/1/1801    | 1/1/1801   |                | 0           | 00445  |
| 47095004480000 |                |                 | TYLER     | UNKNOWN                             | 1012 GR   |                     | PSEUDO       | 39.3747 | -80.7971 | 5472 JOHN W ASH                          | 1/1/1801    | 1/1/1801   |                | 0           | 00448  |
| 47095004620000 |                |                 | TYLER     | UNKNOWN                             | 1017 GR   |                     | PSEUDO       | 39.3812 | -80.8013 | 2 MARY E UNDERWOOD                       | 1/1/1801    | 1/1/1801   |                | 0           | 00462  |
| 47095004570000 |                |                 | TYLER     | UNKNOWN                             | 1026 GR   |                     | PSEUDO       | 39.3760 | -80.8044 | 5479 ADDIE KEYS                          | 1/1/1801    | 1/1/1801   |                | 0           | 00457  |
| 47095004310000 |                |                 |           |                                     |           |                     |              |         |          |  |             |            |                |             |        |

|                |                  |                                     |         |        |         |          |                             |            |            |                |            |
|----------------|------------------|-------------------------------------|---------|--------|---------|----------|-----------------------------|------------|------------|----------------|------------|
| 47095004660000 | TYLER            | UNKNOWN                             | 1177 GR | PSEUDO | 39.3661 | -80.7942 | 5489 GERTRUDE PRUNTY        | 1/1/1801   | 1/1/1801   | 0              | 00466      |
| 47095004370000 | TYLER            | UNKNOWN                             | 1180 GR | PSEUDO | 39.3756 | -80.8022 | 5459 CARL C WEEKLEY 2       | 1/1/1801   | 1/1/1801   | 0              | 00437      |
| 47095004390000 | TYLER            | UNKNOWN                             | 1201 GR | PSEUDO | 39.3720 | -80.7997 | 5464 OLIVE I STEWART        | 1/1/1801   | 1/1/1801   | 0              | 00439      |
| 47095004440000 | TYLER            | UNKNOWN                             | 1204 GR | PSEUDO | 39.3758 | -80.8018 | 5467 CARL C WEEKLEY         | 1/1/1801   | 1/1/1801   | 0              | 00444      |
| 47095004580000 | TYLER            | UNKNOWN                             | 1219 GR | PSEUDO | 39.3687 | -80.7898 | 5478 TALMADGE NICHOLS       | 1/1/1801   | 1/1/1801   | 0              | 00458      |
| 47095004200000 | TYLER            | UNKNOWN                             | 1257 GR | PSEUDO | 39.3725 | -80.7921 | 5465 CHARLES N WELCH        | 1/1/1801   | 1/1/1801   | 0              | 00442      |
| 47095004560001 | 5/11/1973 TYLER  | EQUITABLE GAS COMPANY               | 815 GR  | SWDOP  | 39.3850 | -80.7935 | 5466 GAY CUMBERLEDGE        | 2/19/1973  | 3/1/1973   | DEVONIAN /SD/  | 2510 00456 |
| 47095004500001 | 4/19/1973 TYLER  | EQUITABLE GAS COMPANY               | 833 GR  | SWDOP  | 39.3821 | -80.7937 | 5474 GEORGE H JONES         | 1/28/1973  | 2/7/1973   | DEVONIAN /SD/  | 2530 00450 |
| 47095004400001 | 7/27/1973 TYLER  | EQUITABLE GAS COMPANY               | 865 GR  | SWDOP  | 39.3794 | -80.7960 | 5463/1 MOLLY S SCOTT        | 7/9/1972   | 7/19/1972  | DEVONIAN /SD/  | 2516 00440 |
| 47095004550001 | 8/4/1973 TYLER   | EQUITABLE GAS COMPANY               | 917 GR  | SWDOP  | 39.3836 | -80.7932 | 5480 ALTA PRATT             | 7/20/1973  | 7/30/1973  | DEVONIAN /SD/  | 2604 00455 |
| 47095004320000 | 10/10/1972 TYLER | EQUITABLE GAS COMPANY               | 988 GR  | SWDOP  | 39.3747 | -80.7979 | 5458/1 CARL C WEEKLEY       | 6/25/1972  | 7/5/1972   | GANTZ /SD/     | 2435 00432 |
| 47095004450001 | 9/6/1972 TYLER   | EQUITABLE GAS COMPANY               | 1011 GR | SWDOP  | 39.3826 | -80.7988 | 5468 A H CUMBERLEDGE        | 8/1/1972   | 8/11/1972  | MISSISSIPPIAN  | 2658 00445 |
| 47095004480001 | 7/19/1973 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 | 11/20/1973 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 | 8/13/1973 TYLER  | EQUITABLE GAS COMPANY               | 1026 GR | SWDOP  | 39.3760 | -80.8044 | 5479/1 ADDIE KEYS           | 3/9/1973   | 3/19/1973  | DEVONIAN /SD/  | 2690 00457 |
| 47095004340001 | 7/27/1972 TYLER  | EQUITABLE GAS COMPANY               | 1047 GR | SWDOP  | 39.3846 | -80.8004 | 5456/1 B CUMBERLEDGE        | 4/16/1972  | 4/26/1972  | DEVONIAN /SD/  | 2992 00434 |
| 47095004830000 | 8/23/1977 TYLER  | EQUITABLE GAS COMPANY               | 1048 KB | SWDOP  | 39.3831 | -80.8158 | 5501 F & W E SMITH JR       | 6/25/1977  | 7/5/1977   | MISSISSIPPIAN  | 2350 00483 |
| 47095004310001 | 7/3/1972 TYLER   | EQUITABLE GAS COMPANY               | 1057 GR | SWDOP  | 39.3765 | -80.7999 | 5455/1 CARL C WEEKLEY       | 3/31/1972  | 4/10/1972  | DEVONIAN /SD/  | 2760 00431 |
| 47095004590001 | 9/13/1973 TYLER  | EQUITABLE GAS COMPANY               | 1067 GR | SWDOP  | 39.3849 | -80.8018 | 5484/2 BLANCHE CUMBERLEDGE  | 7/27/1973  | 8/6/1973   | DEVONIAN /SD/  | 2776 00459 |
| 47095004730001 | 1/29/1975 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 | 9/19/1973 TYLER  | EQUITABLE GAS COMPANY               | 1108 GR | SWDOP  | 39.3714 | -80.8024 | 2490/1 OLIVE I STEWART      | 10/3/1972  | 10/13/1972 | DEVONIAN /SD/  | 2810 00441 |
| 47095004470001 | 3/22/1973 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 | 3/27/1975 TYLER  | EQUITABLE GAS COMPANY               | 1129 KB | SWDOP  | 39.3657 | -80.7981 | 1314510 INDIA DAVIS         | 8/18/1974  | 8/28/1974  | WEIR /SD/      | 2402 00474 |
| 47095004660001 | 2/15/1974 TYLER  | EQUITABLE GAS COMPANY               | 1177 GR | SWDOP  | 39.3661 | -80.7942 | 5489/ GERTRUDE PRUNTY       | 11/20/1973 | 11/30/1973 | MISSISSIPPIAN  | 2783 00466 |
| 47095004370001 | 8/1/1973 TYLER   | EQUITABLE GAS COMPANY               | 1180 GR | SWDOP  | 39.3756 | -80.8022 | 5459/2 CARL C WEEKLEY       | 7/21/1972  | 7/31/1972  | DEVONIAN /SD/  | 2846 00437 |
| 47095004640000 | 2/28/1974 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 |
| 47095004390001 | 10/24/1972 TYLER | EQUITABLE GAS COMPANY               | 1201 GR | SWDOP  | 39.3720 | -80.7997 | 5464 OLIVE I STEWART        | 7/10/1972  | 7/20/1972  | BIG INIUN /SD/ | 2156 00439 |
| 47095004440001 | 8/8/1973 TYLER   | EQUITABLE GAS COMPANY               | 1204 GR | SWDOP  | 39.3758 | -80.8018 | 5467 CARL C WEEKLY          | 9/8/1972   | 9/18/1972  | DEVONIAN /SD/  | 2861 00444 |
| 47095004580001 | 8/20/1973 TYLER  | EQUITABLE GAS COMPANY               | 1219 GR | SWDOP  | 39.3687 | -80.7898 | 5478/1 TALMADGE NICHOLS     | 5/21/1973  | 5/31/1973  | DEVONIAN /SD/  | 2945 00458 |
| 47095004420001 | 8/15/1973 TYLER  | EQUITABLE GAS COMPANY               | 1257 GR | SWDOP  | 39.3725 | -80.7921 | 5465 CHARLES N WELSH        | 4/26/1973  | 5/6/1973   | DEVONIAN /SD/  | 2750 00442 |
| 47095701390000 | 2/16/1910 TYLER  | HOPE NATURAL GAS                    |         | UNKWN  | 39.3718 | -80.7919 | 2063 S J FREEMAN            | 1/2/1910   | 1/17/1910  |                | 0 70139    |
| 47095309000000 | 10/24/1958       | HOPE NATURAL GAS                    |         | UNKWN  | 39.3664 | -80.7977 | 2374 ISAAH & LEAH WEEKLEY J | 1/2/1912   | 1/17/1912  |                | 0 30900    |
| 47095007130000 | TYLER            | CONSOLIDATED GAS SUPPLY CORPORATION | 972 KB  | UNKWN  | 39.3972 | -80.8013 | 2118 UNDERWOOD              | 1/1/1801   | 1/1/1801   | BIG INIUN /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,

A handwritten signature in blue ink, appearing to read 'Todd Klaner', with a long, sweeping underline.

Todd Klaner  
Regional Land Manager

Enc.

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west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> 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 "1" Cement)

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

Sincerely,

James Peterson  
Environmental Resources Specialist / Permitting

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west virginia department of environmental protection

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

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

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

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

**REPORT OF THE OFFICE**

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

**FINDINGS OF FACT**

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

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**CONCLUSIONS OF LAW**

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

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

**ORDER**

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief  
Office of Oil and Gas

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WW-9  
(4/16)

API Number 47 - 095 - \_\_\_\_\_  
Operator's Well No. SHR60H5

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 306886

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 \_\_\_\_\_)

*QEP  
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 Spine

Company Official Title Regional Land Supervisor

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Subscribed and sworn before me this 02 day of August, 20 18

*Rebecca L. Wangstreet* Notary Public

My commission expires 4-7-2020



**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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**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: *J. Craig Peters*

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Title: Oil & Gas Inspector

Date: 8/29/2018

Field Reviewed? (  ) 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

**BROAD STREET ENERGY LLC**

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

**LAD LIQUID ASSETS DISPOSAL INC.**

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

**TRIAD ENERGY**

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

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

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

**KING EXCAVATING CO.**

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

**Waste Management - Meadowfill Landfill**

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

**Waste Management - Northwestern Landfill**

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

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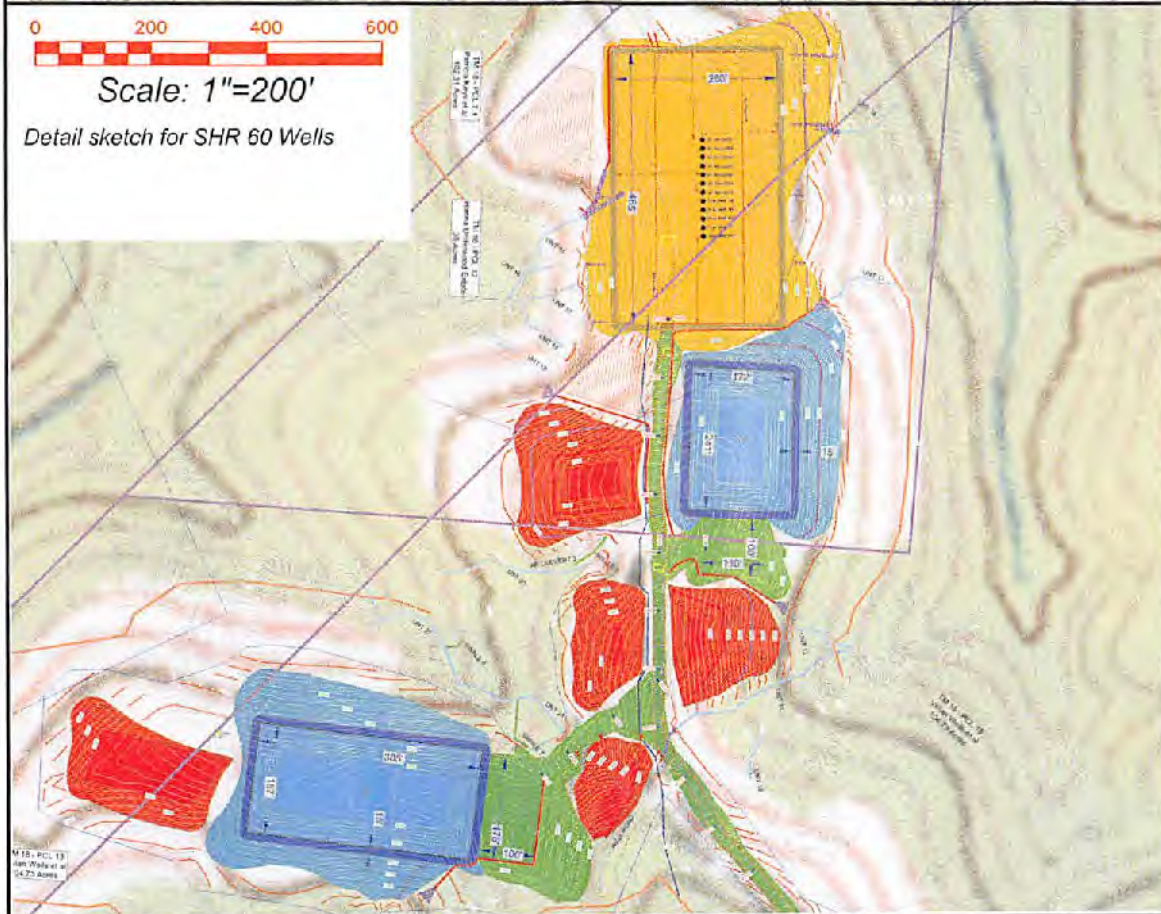
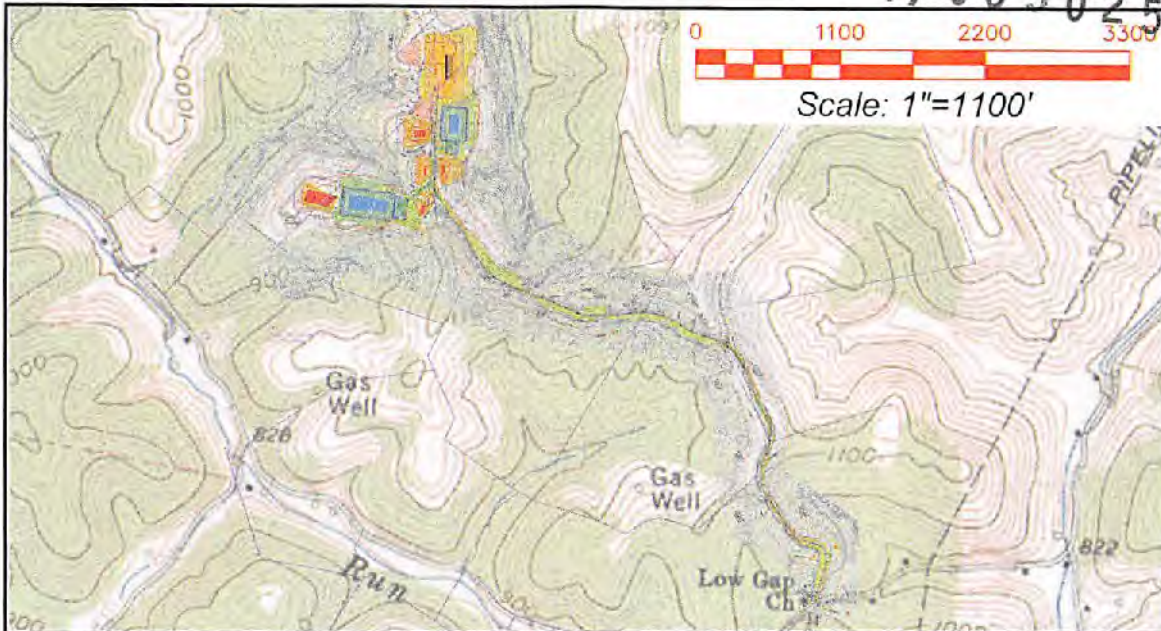
**Anticipated Frac Additives**  
**Chemical Names and CAS numbers**

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

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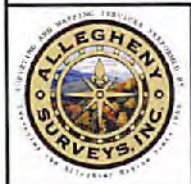
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*gcp*  
*8/29/2018*



|   |                    |                               |                                       |
|---|--------------------|-------------------------------|---------------------------------------|
| Shirley 7.5' USGS QUADRANGLE                            |                    | Proposed Disturbance Area     |                                       |
| Projected culvert inventory.<br>(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) 649-8608 237 Birch River Road P.O. Box 438  
 Fax: (304) 649-8608 Birch River, WV 26610

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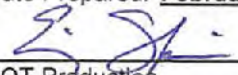


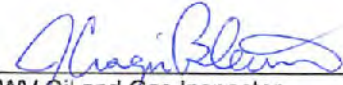
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# Site Specific Safety and Environmental Plan

EQT  
SHR60 Pad  
Shirley  
Tyler County, WV

For Wells: SHR100H5 SHR100H6 SHR100H7 SHR100H8

Date Prepared: February 16, 2018  
  
 EQT Production  
Regional Land Supervisor  
 Title  
8/21/2018  
 Date

  
 WV Oil and Gas Inspector  
Oil & Gas Inspector  
 Title  
8/29/2018  
 Date

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Topo Quad: Shirley 7.5'

Scale: 1"=1000' **4709502541**

County: Tyler

Date: August 3, 2018

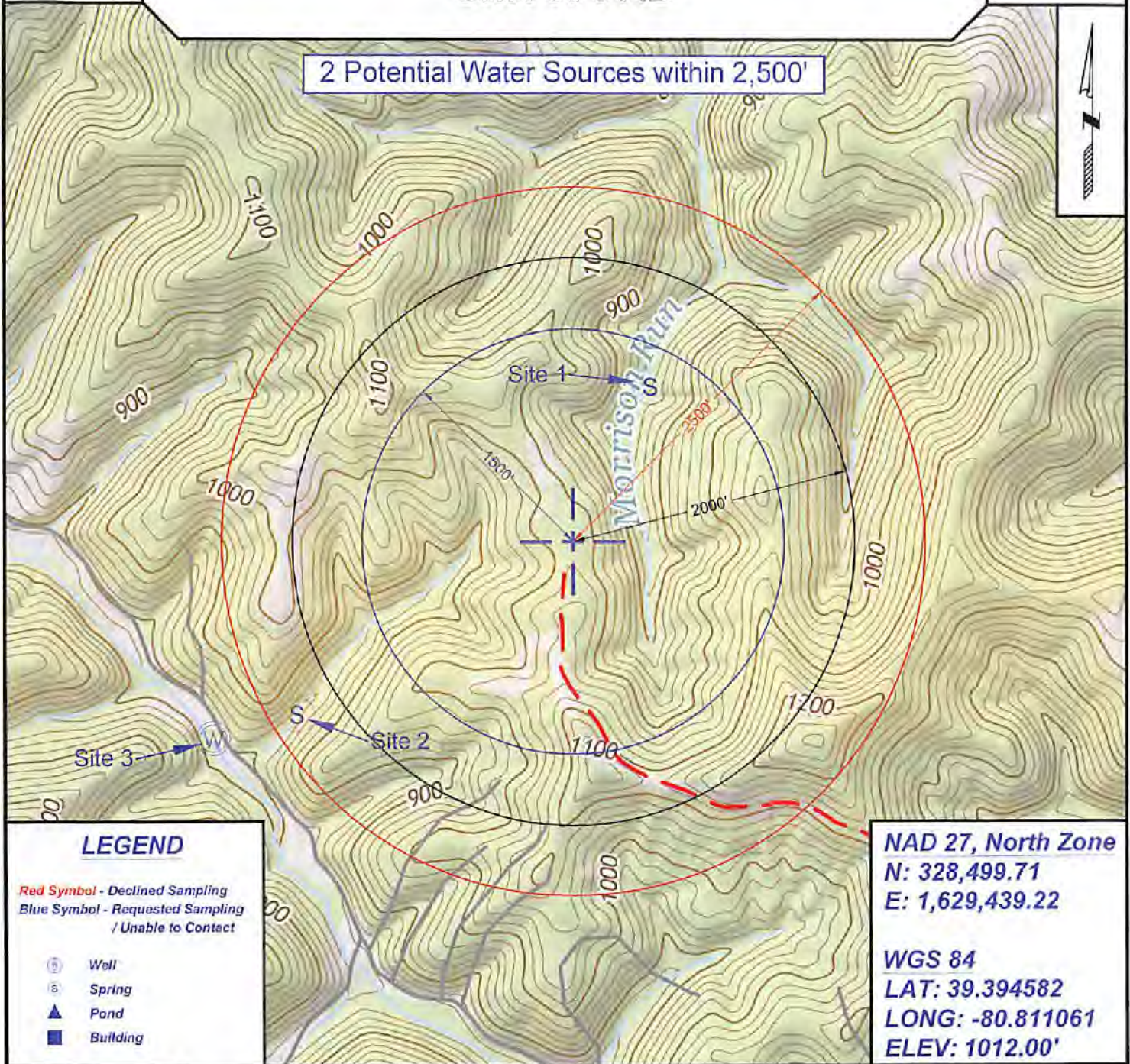
District: McElroy

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

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## 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): 1<sup>st</sup>: 7/9/2018 2<sup>nd</sup>: \_\_\_\_\_ Door Hanger Left: \_\_\_\_\_

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

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

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): 1<sup>st</sup>: 7/9/2018 2<sup>nd</sup>: \_\_\_\_\_ Door Hanger Left: Yes

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.**

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

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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): 1<sup>st</sup>: 7/9/2018 2<sup>nd</sup>: \_\_\_\_\_ Door Hanger Left: \_\_\_\_\_

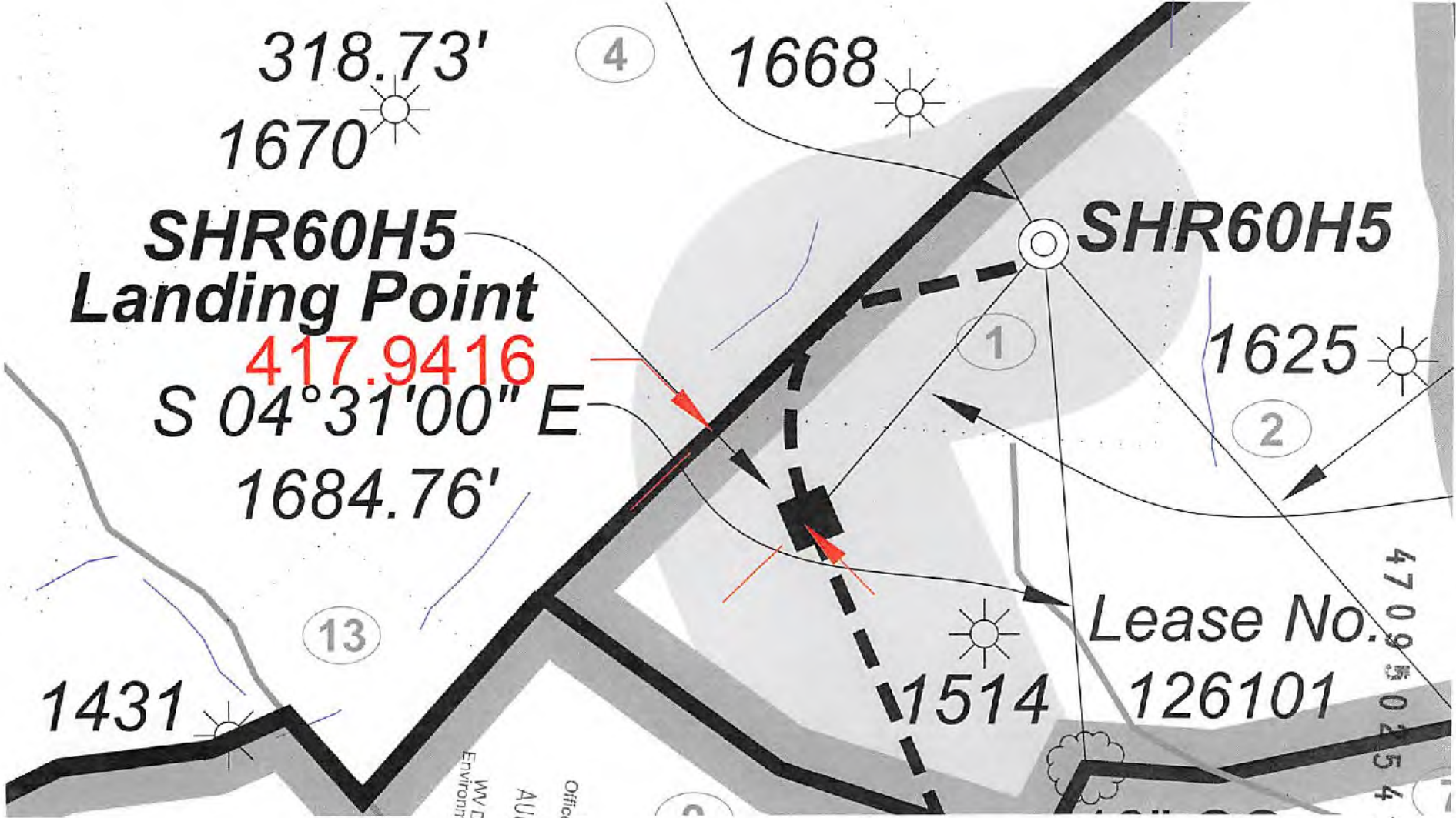
Comments: **Water well located outside 2,500' radius.**

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

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318.73'  
 1670  
**SHR60H5**  
**Landing Point**  
 417.9416  
 S 04°31'00" E  
 1684.76'

4

1668

**SHR60H5**

1

1625

2

13

1431

Lease No.  
126101

1514

4709502541

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WW-6A1  
(5/13)

Operator's Well No. SHR60H5

**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<br>Number | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|-------------------------|-----------------------|-----------------------|---------|-----------|
| See Attached            |                       |                       |         |           |

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

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

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

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, 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

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WW-6A1 attachment

SHR60HS

| Lease No.       | Grantor, Lessor, etc.  | Grantee, Lessee, etc.   | Royalty | Book/Page   |
|-----------------|--|---|---------|---|
| <u>126101</u>   | <b>George Birklein, et al (current royalty owner)</b><br>WM. Blaine Underwood Et ux et al (original lessor)<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.<br>Equitrans, L.P.  | Equitable Gas Co.<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company<br>EQT Production Company   | **      | DB186/86<br>DB274/471<br>DB433/777<br>DB396/640<br>OG420/10   |
| <u>5-18-7.1</u> | Brenda J. Ashley, et al  | EQT Production Company  |         | 508/181 Subsurface  |
| <u>5-18-7.1</u> | Patricia A. Keys   | EQT Production Company  |         | 514/375 Subsurface  |
| <u>126164</u>   | <b>Stephen Seckman, et al (current royalty owner)</b><br>Retha Seckman, et al<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, LP   | Equitable Gas Co.<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company   |         | DB192/351<br>DB274/471<br>DB433/777<br>DB396/640  |
| <u>126124</u>   | <b>Donald Bible, et al (current royalty owner)</b><br>Clyde Stewart, et ux<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.  | Equitable Gas Co.<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company   | **      | LB191/165<br>DB274/471<br>DB433/777<br>DB396/640  |
| <u>126167</u>   | <b>Berdina Rose, et al (current royalty owner)</b><br>Savannah Pratt, et al (original lessor)<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.   | Equitable Gas Co.<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company   | **      | DB192/425<br>DB274/471<br>DB433/777<br>DB396/640  |
| <u>126211</u>   | <b>Below the Fifth Sand</b><br><b>John A. Dillon, et al (current royalty owner)</b><br>Mary E. Underwood, et vir (original lessor)<br>Hope Natural Gas Co.<br>Consolidated Gas Supply Corp<br>Consolidated Gas Transmission Corp.<br>Consolidated Gas Transmission Corp.<br>CNG Development Co.<br>Dominion Appalachian Development, Inc.<br>Consol Gas Appalachian Development, LLC<br>CNX Gas Co., LLC<br>CNX Gas Co., LLC/Noble Energy, Inc | Hope Natural Gas Co.<br>Consolidated Gas Supply Corp.<br>Consolidated Gas Transmission Corp<br>CNG Development Co.<br>Dominion Appalachian Development, Inc.<br>Consol Gas Appalachian Development, LLC<br>CNX Gas Co., LLC<br>EQT Production Co.<br>EQT Production Co. | **      | DB70/477<br>DB169/26<br>DB249/287<br>DB253/57<br>DB337/340<br>CB9/131 name change<br>CB9/206 name change<br>DB479/55<br>AB505/222 |
| <u>1022825</u>  | <b>Paul Weekley (current royalty owner)</b><br>Paul Weekley, et al (original lessor)   | EQT Production Co.  |         | DB548/119   |
| <u>126186</u>   | <b>Bruce L. Stoneking, et al (current royalty owner)</b><br>Addie Keys & Paul Weekley (original lessor)<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.   | Equitable Gas Company<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company   | **      | DB195/372<br>DB274/471<br>DB433/777<br>DB396/640  |
| <u>126268</u>   | <b>Logan Hassig, et al (current royalty owner)</b><br>Logan Hassig, et ux (original lessor)<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.   | Equitable Gas Company<br>Equitrans, Inc.<br>Equitrans, L.P.<br>Equitable Production Company   | **      | 205/119<br>DB274/471<br>DB433/777<br>DB396/640  |
| <u>126133</u>   | <b>Dorothy H. Bode (current royalty owner)</b><br>Mollie Scott (original lessor)<br>Equitable Gas Co.<br>Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.<br>Equitrans, L.P.  | Equitable Gas Company<br>Equitrans, Inc.<br>Equitrans, L.P.<br>EQT Production Company   | **      | DB191/417<br>DB274/471<br>DB433/777<br>DB396/640  |

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**AMP Fund III, LP (current royalty owner)**

Oliver I. Stewart, et vir (original lessor)  
 J. L. Newman  
 The Philadelphia Company of West Virginia  
 Pittsburgh and West Virginia Gas Company  
 Equitable Gas Co.  
 Equitrans, Inc./Equitable Gas Company/Equitable Resources, Inc.  
 Equitrans, L.P.

J. L. Newman  
 The Philadelphia Company of West Virginia  
 Pittsburgh and West Virginia Gas Company  
 Equitable Gas Co.  
 Equitrans, Inc.  
 Equitrans, L.P.  
 EQT Production Company

LB69/42  
 OG455/390  
 DB101/36  
 132/414  
 DB274/471  
 DB433/777  
 DB396/640

\*\*

126138

**Sandra Lee Freeman-Carrao, et al (current royalty owner)**

E.K. Freeman, Et ux (original lessor)  
 Equitable Gas Co.  
 Equitrans, Inc.  
 Equitrans, L.P.

Equitable Gas Company  
 Equitrans, Inc.  
 Equitrans, L.P.  
 EQT Production Company

224/463  
 DB274/471  
 DB433/777  
 DB396/640

\*\*

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

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4709502541

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,

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

Erin Spine  
Regional Land Supervisor

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

Date of Notice Certification: 07/26/2018

API No. 47- 095 -  
Operator's Well No. SHR60H5  
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>516269.14</u>  |
| County:     | <u>Tyler</u>                         |                           | Northing:              | <u>4360589.15</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.

|  |  |  |
|--|--|--|
| 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:<br><br>*PLEASE CHECK ALL THAT APPLY<br><br><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED<br><br><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED<br><br><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<br><br><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)<br><br><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION<br><br><input checked="" type="checkbox"/> 5. PUBLIC NOTICE<br><br><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION |  | <b>OOG OFFICE USE ONLY</b><br><br><input type="checkbox"/> RECEIVED/<br>NOT REQUIRED<br><br><input type="checkbox"/> RECEIVED<br><br><input type="checkbox"/> RECEIVED/<br>NOT REQUIRED<br><br><br><input type="checkbox"/> RECEIVED<br><br><input type="checkbox"/> RECEIVED<br><br><input type="checkbox"/> RECEIVED |
|--|--|--|

**Required Attachments:**


The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. 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.

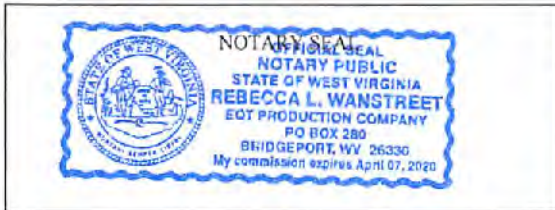


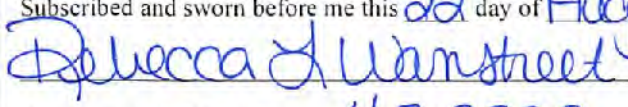
4709502541

**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.  
 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](mailto:depprivacyofficer@wv.gov).

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 Environmental Protection

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: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: See Attached  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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

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

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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

\*Please attach additional forms if necessary

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**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.  
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

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

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**Surface Owners (Pits or impoundments):**

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

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

George Birklein  
121 Oxford Street  
Sistersville, WV 26175

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

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

Cynthia Kryzwicki  
213 Nicholson Street  
Wilkes-Barre, PA 18702

Albina Pasko  
18 Jensen St.  
East Brunswick NJ 08816

Lisa Wesolowski  
254 Lampman Street  
Avoca, PA 18641-1010

Clifford Haug  
3894 Cellar Creek Rd  
Blackstone VA 23824

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Mary Jean Ross  
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Holtwood PA 17532

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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

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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  
Shavertown, PA 18708-1027

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

Cynthia Kryzwicki  
213 Nicholson Street  
Wilkes-Barre, PA 18702

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

Lisa Wesolowski  
254 Lampman Street  
Avoca, PA 18641-1010

Anthony Jackubowski, Jr.  
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Clifford Haug  
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Blackstone VA 23824

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3890 Cellar Creek Rd  
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3415 River Road  
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Lancaster, PA 17601

Theodore Jackubowski  
1212 Kelso Blvd  
Windermere FL 34786

Albina Pasko  
18 Jensen St.  
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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**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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



WW-6A  
(8-13)

API NO. 47-095 -  
OPERATOR WELL NO. SHR60H5  
Well Pad Name: SHR60

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 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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WV Department of  
Environmental Protection

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

**Time Limits and Methods for Filing Comments.**

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WW-6A  
(8-13)

4709502541

API NO. 47-095 -  
OPERATOR WELL NO. SHR60H5  
Well Pad Name: SHR60

**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](mailto: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

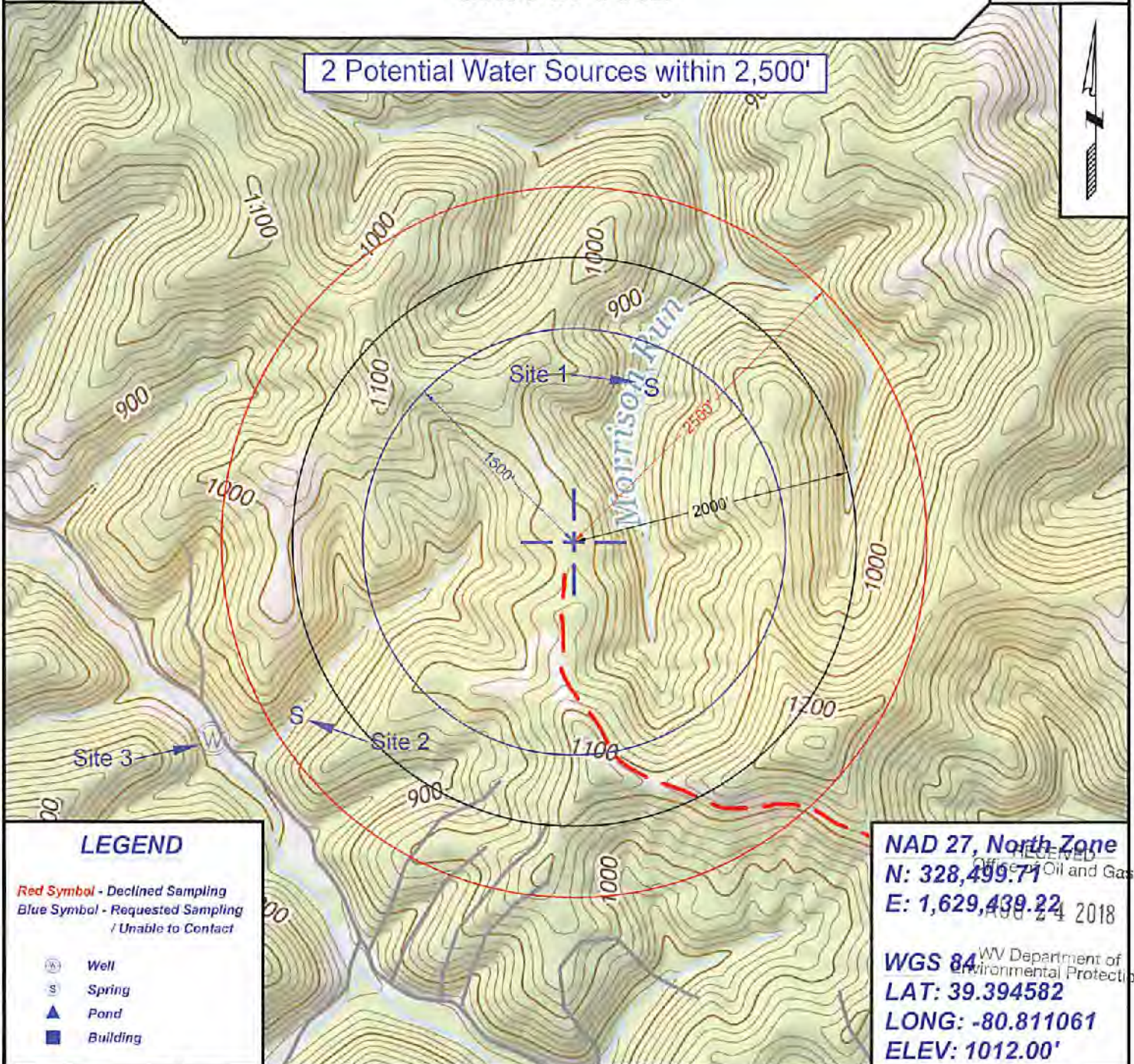
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|                         |                         |
|-------------------------|-------------------------|
| Topo Quad: Shirley 7.5' | Scale: 1"=1000'         |
| County: Tyler           | Date: August 3, 2018    |
| District: McElroy       | Project 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

**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

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1212 Kelso Blvd  
Windermere FL 34786

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Lancaster, PA 17601

Mary Jean Ross  
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Holtwood PA 17532

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Willow Street PA 17584

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1059 Wyomissing Blvd.  
Wyomissing PA 19601

Virginia Hornberger  
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Reading PA 19605

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254 Lampman Street  
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Gary A Midcap etal  
55 Temple Circle  
Sistersville WV 26175

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Cannonsburg, PA 15317

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Sistersville WV

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

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**Coal Owner**

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**Owners of Water Wells**

**No water owners within 2000 feet.**

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**Environmental Protection**



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*See ww-6A and Receipt 10/19/18*

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**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>516269.14</u>   |
| County: <u>Tyler</u>                            |  | Northing: <u>4360589.15</u> |
| District: <u>McElroy</u>                        | Public Road Access: <u>80/2</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(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

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

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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 of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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See WW-6A 10/19/18 : Receipt 10/19/18

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*See WV-6A Mail Receipt  
10/15/18*

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

4709502541

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 57<sup>th</sup> 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 |            |            |

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.

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Office of Oil and Gas

AUG 24 2018

Very Truly Yours,  
*Gary K. Clayton*

WV Department of  
Environmental Protection

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**

4709502541

| <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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# SHR - 60 - ALT

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

West Virginia Coordinate System of 1983  
State Plane Grid North  
Elevation MWD50  
Established By Survey Grade GPS

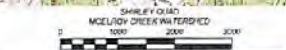


| FLOODPLAIN CONDITIONS                                     |             |
|---|-------------|
| DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN: | NO          |
| PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:         | NO          |
| HEC-RAS STUDY COMPLETED:                                  | N/A         |
| FLOODPLAIN SHOWN ON DRAWINGS:                             | N/A         |
| FIRM MAP NUMBER(S) FOR SITE:                              | 5426SD0175C |
| ACREAGES OF CONSTRUCTION IN FLOODPLAIN:                   | N/A         |

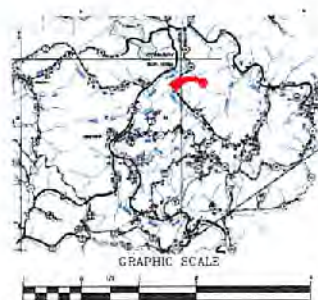
NO WETLANDS ARE IMPACTED  
THE CURRENT SOIL IS 6.3

**APPROVED  
WVDEP OOG**

8/20 3-24-15



| SITE LOCATIONS                  |          |          |
|---------------------------------|----------|----------|
| NO.                             | EASTING  | NORTHING |
| Drill Pad                       | 14877.00 | 10521.00 |
| Completion Pit                  | 14877.00 | 10521.00 |
| Completion Pit Access Road      | 14877.00 | 10521.00 |
| Manifold/Water Truck Turnaround | 14877.00 | 10521.00 |
| Flowback Pit                    | 14877.00 | 10521.00 |



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

**Project Contacts**

**Chris Metzger - EQT Production Company**  
304-848-2073 Office

**Steve Zum - Dominion Hope**  
304-572-9271

**Don Taylor - Geotech**  
1-724-463-4014

**Surveyor & Engineer**

**Ben Singleton - PS - Allegheny Surveys Inc.**  
304-542-8006 Office

**Tom Cashiers - PE - PS - Horner Engineers and**  
304-224-9443 Office

- AFFECTED PROPERTIES**  
MELROY DR (WV) - 1 YEAR COUNTY, WV
- TM 18 - PCL 12**  
LARRY UNDERWOOD ESTATE  
26 ACRES  
SITE DISTURBANCE
- DRILL PAD # 1**  
FLOWBACK PIT # 2 ACRES  
FLOWBACK ACCESS ROAD # 0.33 ACRES  
FLOWBACK PIT MANFOLD/WTTA PAD # 0.11 ACRES  
MAIN ACCESS ROAD # 0.47 ACRES  
TOPSOIL PAD # 1.12 ACRES  
TURNPIKE STORAGE # 0.36 ACRES  
TOTAL DISTURBANCE # 3.63 ACRES  
TOTAL WOODED AREA DISTURBANCE # 10.10 ACRES
- TM 18 - PCL 13**  
WORM WELLS # 4  
104.72 ACRES  
SITE DISTURBANCE
- FLOWBACK PIT MANFOLD/WTTA PAD # 0.41 ACRES**  
FLOWBACK PIT # 0.28 ACRES  
FLOWBACK PIT ACCESS ROAD # 0.10 ACRES  
MAIN ACCESS ROAD # 0.73 ACRES  
COMPLETION PIT # 4.15 ACRES  
COMPLETION PIT TRUCK TURNAROUND (WTTA) # 2.0  
COMPLETION PIT WTTA ACCESS # 0.33 ACRES  
SIDE FILL # 4.77 ACRES  
TOTAL DISTURBANCE # 14.02 ACRES  
TOTAL WOODED AREA DISTURBANCE # 12.77 ACRES
- TM 18 - PCL 11**  
LARRY CUMBERLEDGE # 14  
54.17 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 0.36 ACRES**  
TOTAL DISTURBANCE # 0.36 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.23 ACRES
- 1P 18 - WCL 15**  
SUSAN SPENCER  
# 4 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 0.86 ACRES**  
TOTAL DISTURBANCE # 0.86 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.51 ACRES
- TM 16 - PCL 10**  
DONALD E. BIRLE  
35.5 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 1.24 ACRES**  
TOTAL DISTURBANCE # 1.24 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.94 ACRES
- TM 18 - PCL 17**  
ALVIN FORNASH  
43 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 1.14 ACRES**  
TOTAL DISTURBANCE # 1.14 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.74 ACRES
- TM 18 - PCL 18**  
TERRY CUMBERLEDGE # 4  
46.8 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 1.13 ACRES**  
TOTAL DISTURBANCE # 1.13 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.81 ACRES
- TM 18 - PCL 19**  
JOHN PAUL DAVIS  
19 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 1.14 ACRES**  
TOTAL DISTURBANCE # 1.14 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.72 ACRES
- TM 18 - PCL 20 2**  
RICHARD HANCOCK  
15.26 ACRES  
SITE DISTURBANCE
- MAIN ACCESS ROAD # 1.13 ACRES**  
TOTAL DISTURBANCE # 1.13 ACRES  
TOTAL WOODED AREA DISTURBANCE # 0.83 ACRES

Allegheny Surveys Inc.  
P. O. Box 438  
237 Birch River Road  
Birch River, WV 26610  
304-649-8996

Ben Singleton  
Professional Engineer  
No. 12345  
WV

Tom Cashiers  
Professional Engineer  
No. 12345  
WV

**EQT**  
Erosion Control Technology

THIS DOCUMENT  
PREPARED FOR  
EQT PRODUCTION  
COMPANY

COVER SHEET AND LOCATION MAP  
**SHR - 60 - ALT**  
**DRILL PAD SITE - ALT**  
MELROY DR (WV)  
TYLER, CLAYTON, WV

| DATE       | REVISIONS                   | DATE      |
|------------|-----------------------------|-----------|
| 10.13.2014 | DESIGN REVIEW AND REVISIONS | 8/16/2014 |
| 10.13.2014 | DESIGN REVIEW AND REVISIONS |           |

Scale: AS NOTED  
Designed By: T.D.C./T.B.C.  
Title No.: EQT 002014  
Page: 1 of 30

**Design Certification**

The drawings, construction notes, and reference diagrams indicated herein have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §33-4-21. The information reflects a temporary frac pit pond. The computed active grade storage volume is less than 15 acre feet. Rilling method pumped, frac, pond is lined.

**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 existing structures shown herein are shown as existing and are not to be removed by Blue Mountain Aerial Blasting with a flight date of Spring 2013.



**Allegany Surveys Inc.**  
P.O. Box 438  
237 Birch River Road  
Gurch River, WV 26030  
304-619-8606

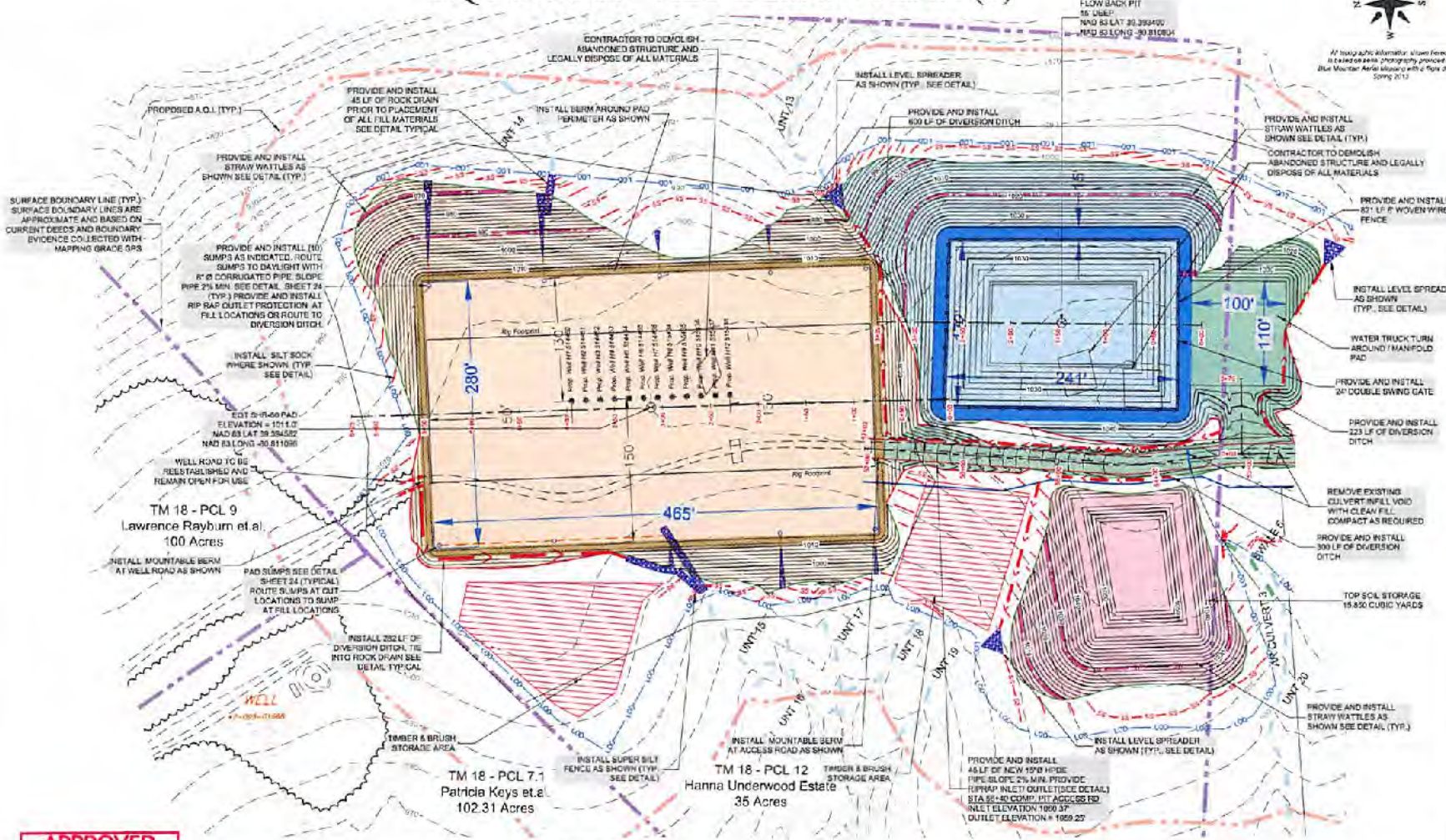


**Horner Survey Engineers**  
Chris, M. Horner, P.E. and  
Consulting Engineering  
2000 West Virginia Ave., Suite 101  
Martinsburg, WV 26101-1011



THIS DOCUMENT PREPARED FOR  
EQT PROJECT, INC.

FINAL SITE DESIGN PLAN ALT  
**SHR 60**  
**DRILL PAD SITE - ALT**  
AGLEIGH DISTRICT  
TYLER COUNTY, WV



**APPROVED WVDEP OOG**  
3-24-13



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

**Legend**

|   |  |
|---|--|
| <span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> Proposed Road Area                  | <span style="display:inline-block; width:15px; border-bottom:1px solid black;"></span> Existing 2" Contour   |
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> Proposed Drill Pad Area or Manifold Pad | <span style="display:inline-block; width:15px; border-bottom:1px dashed black;"></span> Existing 10' Contour |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> Proposed Impoundment Area            | <span style="display:inline-block; width:15px; border-bottom:1px solid black;"></span> Existing Tree Line    |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightpink; border:1px solid black;"></span> Proposed Spoil Area                  | <span style="display:inline-block; width:15px; border-bottom:1px solid black;"></span> Existing Geo Line CL  |
|   | <span style="display:inline-block; width:15px; border-bottom:1px solid black;"></span> Proposed 2" Contour   |
|   | <span style="display:inline-block; width:15px; border-bottom:1px solid black;"></span> Proposed 10' Contour  |

| DATE      | REVISIONS                             |
|-----------|---------------------------------------|
| 8/31/2011 | REVISIONS TO THE PROPOSED DESIGN PLAN |
| 8/31/2011 | REVISIONS TO THE PROPOSED DESIGN PLAN |
| 1/23/2013 | REVISED TO REFLECT THE OOG            |

Date: 11/01/2014  
Scale: 1"=50'  
Drawn By: EHC  
Title: SHR 60 - ALT  
Page: 4 of 10



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 |

4709502541

## 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     |

### Section 2 – Engineering / Design Contractor Information

|  |                           |  |                 |
|--|---------------------------|--|-----------------|
| Design will be contracted <input checked="" type="checkbox"/> Designed in-house <input type="checkbox"/> |                           |  |                 |
| 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                     | RECEIVED<br>Office of Oil and Gas<br>AUG 24 2018 |                 |

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Environmental Protection



Office of Oil and Gas

**Section 3 - Impoundment / Pit Information**Type of Structure. Check one of two choices below: Freshwater Impoundment Waste PitNote: Any waste in a pit will make it a waste pit.Name of Structure (Company Name :) EQT-SHR 60 Flow Back PitCounty: Tyler District: 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."RECEIVED  
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Environmental Protection



Office of Oil and Gas

**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<br>SHR60H2   | 47-095-02257<br>47-095-02264 |
| SHR60H3<br>SHR60H4   | 47-095-02255<br>47-095-02220 |
| SHR60H5<br>SHR60H6   |                              |
| SHR60H7<br>SHR60H8   |                              |
| SHR60H9<br>SHR60H10  |                              |
| SHR60H11<br>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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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

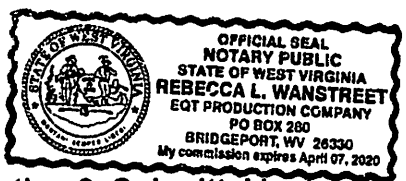
Signature: \_\_\_\_\_

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**

|  |   |
|--|---|
| <p>Submit original paper copy of application to:<br/> West Virginia Department of Environmental Protection<br/> Office of Oil and Gas<br/> Impoundment Registration<br/> 601 57<sup>th</sup> Street, SE<br/> Charleston WV 25304</p> <p>Email PDF file format of this application and all related engineering Plans to :<br/> <a href="mailto:Depimpoundments@wv.gov">Depimpoundments@wv.gov</a></p> | <p>RECEIVED<br/> Office of Oil and Gas<br/> AUG 24 2018<br/> WV Department of<br/> Environmental Protection</p> |
|--|---|