



**west virginia** department of environmental protection

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

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

December 16, 2014

**WELL WORK PERMIT**


**Horizontal 6A Well**

This permit, API Well Number: 47-10303039, issued to EQT PRODUCTION COMPANY, 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 all 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 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: 513984  
Farm Name: SCYOC, SHARON ANN  
**API Well Number: 47-10303039**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 12/16/2014

Promoting a healthy environment.

12/19/2014

## 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 fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production Company

|             |     |          |   |            |     |
|-------------|-----|----------|---|------------|-----|
| Operator ID | 103 | District | 4 | Quadrangle | 548 |
|-------------|-----|----------|---|------------|-----|

2) Operator's Well Number: 513984 Well Pad Name: PNG103

3) Farm Name/Surface Owner : Sharon Ann Scyoc Public Road Access: 20

4) Elevation, current ground: 1,458.0 Elevation, proposed post-construction: 1,458.0

5) Well Type: (a) Gas  Oil  Underground Storage   
Other \_\_\_\_\_

(b) If Gas: Shallow  Deep   
Horizontal

6) Existing Pad? Yes or No: yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):  
Target formation is Middlesex at a depth of 7215 with the anticipated thickness to be 50 feet and anticipated target pressure of 4724 PSI

8) Proposed Total Vertical Depth: 7215

9) Formation at Total Vertical Depth: Middlesex

10) Proposed Total Measured Depth: 14,833

11) Proposed Horizontal Leg Length 6,470

12) Approximate Fresh Water Strata Depths: 66,141, 777

13) Method to Determine Fresh Water Depth: By offset wells

14) Approximate Saltwater Depths: 2187, 2487

15) Approximate Coal Seam Depths: 1054, 1161

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?

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

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CASING AND TUBING PROGRAM

18)

| <u>TYPE</u>  | <u>Size</u> | <u>New or Used</u> | <u>Grade</u> | <u>Weight per ft.</u> | <u>FOOTAGE: for Drilling</u> | <u>INTERVALS: Left in Well</u> | <u>CEMENT: Fill-up (Cu.Ft.)</u>                      |
|--------------|-------------|--------------------|--------------|-----------------------|------------------------------|--------------------------------|--|
| Conductor    | 26          | New                | MC-50        | 77                    | 80                           | 80                             | 98 C.T.S.  |
| Fresh Water  | 13 3/8      | New                | MC-50        | 54                    | 1,299                        | 1,299                          | 1,118 C.T.S.   |
| Coal         | -           | -                  | -            | -                     | -                            | -                              | -  |
| Intermediate | 9 5/8       | New                | MC-50        | 40                    | 3,367                        | 3,367                          | 1,307 C.T.S.   |
| Production   | 5 1/2       | New                | P-110        | 20                    | 14,833                       | 14,833                         | See Note 1   |
| Tubing       | 2 3/8       |                    | J-55         | 4.6                   |                              |                                | May not be run, if run will be set 100' less than TD |
| Liners       |             |                    |              |                       |                              |                                |  |

| <u>TYPE</u>  | <u>Size</u> | <u>Wellbore Diameter</u> | <u>Wall Thickness</u> | <u>Burst Pressure</u> | <u>Cement Type</u> | <u>Cement Yield (cu. ft./k)</u> |
|--------------|-------------|--------------------------|-----------------------|-----------------------|--------------------|---------------------------------|
| Conductor    | 26          | 30                       | 0.312                 |                       | Construction       | 1.18                            |
| Fresh Water  | 13 3/8      | 17 1/2                   | 0.38                  | 2,480                 | * See Note 2       | 1.21                            |
| Coal         |             |                          |                       |                       |                    |                                 |
| Intermediate | 9 5/8       | 12 3/8                   | 0.395                 | 3,590                 | * See Note 2       | 1.21                            |
| Production   | 5 1/2       | 8 1/2                    | 0.361                 | 12,640                | -                  | 1.27/1.86                       |
| Tubing       |             |                          |                       |                       |                    |                                 |
| Liners       |             |                          |                       |                       |                    |                                 |

Packers

|             |     |  |  |  |
|-------------|-----|--|--|--|
| Kind:       | N/A |  |  |  |
| Sizes:      | N/A |  |  |  |
| Depths Set: | N/A |  |  |  |

**Note 1:** EQT plans to bring the TOC on the production casing cement job 1,000' above kick off point, which is at least 500' above the shallowest production zone, to avoid communication.

**Note 2:** Reference Variance 2014-17. (Attached)

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*9-3-14*

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4710303039

August 12, 2014

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

Re: Casing on Well 513983 & 513984 (PNG103)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 1299' KB, 50' below the red rock base at 1249' without setting below elevation. The previous wells drilled on this pad set 13-3/8" casing at approximately 850' KB. This will cover up red rock formations that have given EQT drilling issues in the past. We will set the 9-5/8" intermediate string at 3367' KB, 50' below the base of the Gordon formation.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark  
Permitting Supervisor

Enc.

*Dm2  
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12/19/2014

(3/13)

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

Drill and complete a new horizontal well in the Middlesex formation. The vertical drill to go down to an approximate depth of 5930 then kick off the horizontal leg into the Middlesex using a slick water frac.

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated treating pressures are expected to average approximately 8500 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): no additional disturbance

22) Area to be disturbed for well pad only, less access road (acres): no additional disturbance

23) Describe centralizer placement for each casing string.

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One cent at the shoe and one spaced every 500'.
- Production: One spaced every 1000' from KOP to Int csg shoe

24) Describe all cement additives associated with each cement type. Surface (Type 1 Cement): 0-3% Calcium Chloride

Used to speed the setting of cement slurries.

0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.

Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.4% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.

Production:

Lead (Type 1 Cement): 0.2-0.7% Lignosulfonate (Retarder). Lengthens thickening time.

0.3% CFR (dispersant). Makes cement easier to mix.

Tail (Type H Cement): 0.25-0.40% Lignosulfonate (Retarder). Lengthens thickening time.

0.2-0.3% CFR (dispersant). This is to make the cement easier to mix.

60 % Calcium Carbonate. Acid solubility.

0.4-0.6% Halad (fluid loss). Reduces amount of water lost to formation.

25) Proposed borehole conditioning procedures. Surface: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating

one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5

minutes. To ensure that there is no fill, short trip two stands with no circulation. If there is fill, bring compressors back on

and circulate hole clean. A constant rate of higher than expected cuttings volume likely indicates washouts that will not clean up.

Intermediate: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at

surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. If foam drilling, to enhance

hole cleaning use a soap sweep or increase injection rate & foam concentration.

Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume.

Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across

the shakers every 15 minutes.

\*Note: Attach additional sheets as needed.

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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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Received

Office of Oil and Gas  
WV Dept. of Environmental Protection

12/19/2014



west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0450  
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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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WV Dept. of Environmental Protection  
12/19/2014



4710303039

**CONCLUSIONS OF LAW**

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

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

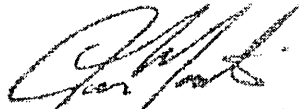
**ORDER**

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief  
Office of Oil and Gas

Received

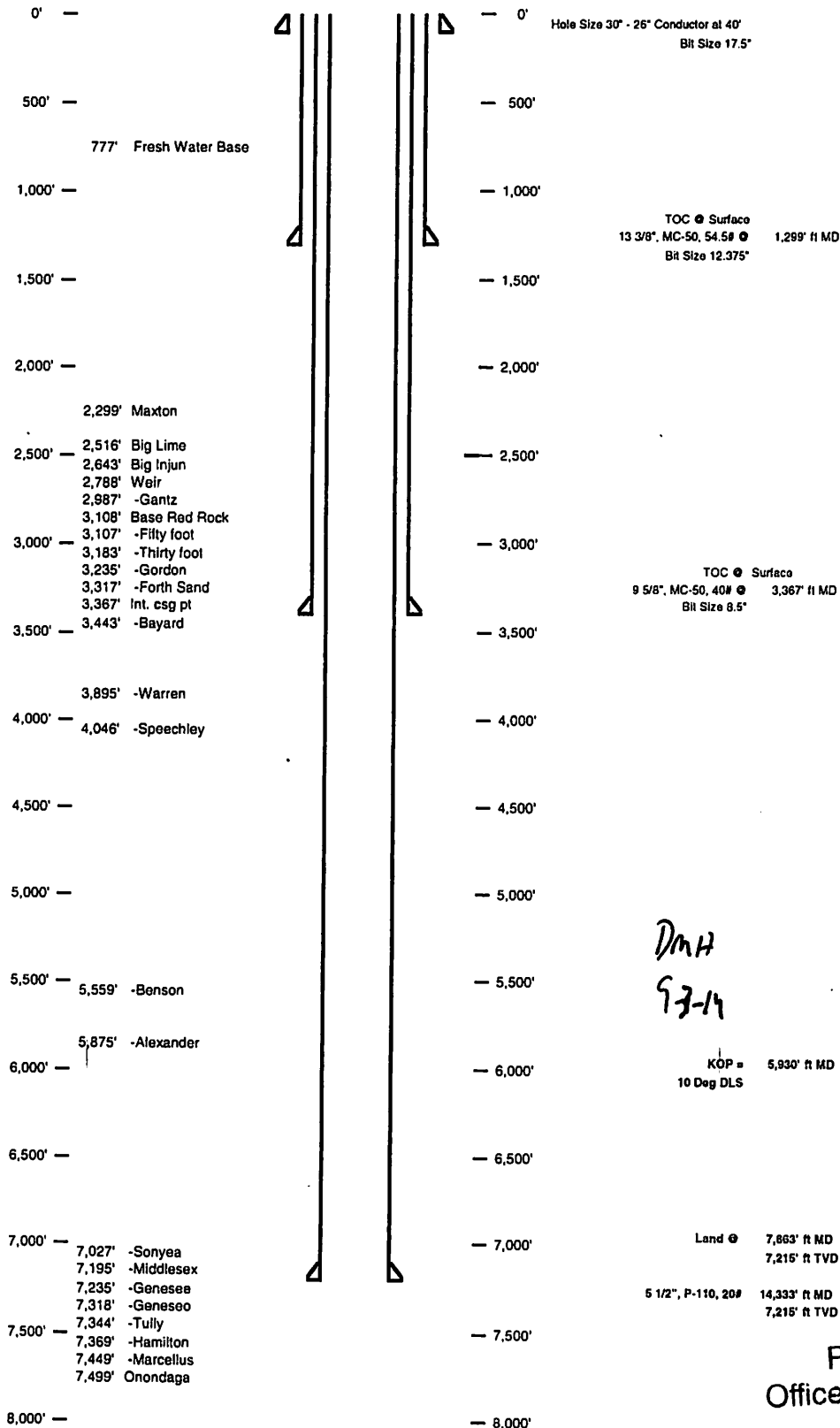
Office of Oil and Gas  
WV Dept. of Environmental Protection  
12/19/2014

Well Schematic  
EQT Production

Well Name 513984(PNG103H15)  
County Wetzel  
State West Virginia

Elevation KB:  
Target  
Prospect  
Azimuth  
Vertical Section

|           |
|-----------|
| 1468      |
| Middlesex |
| 168.5     |
| 6972      |



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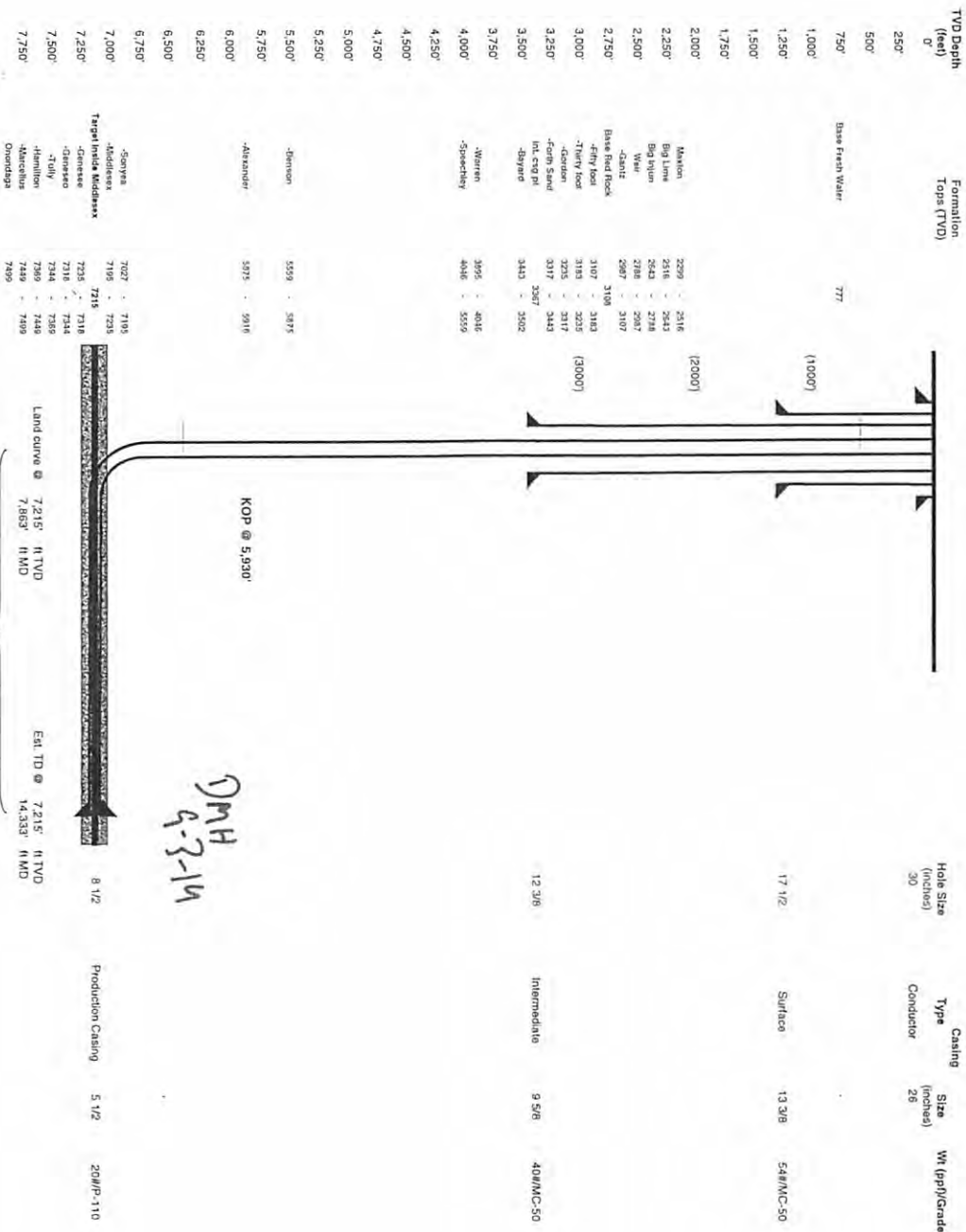
12/19/2014

47 10303039

Well 513984(PNG103H15)  
 EOT Production  
 Pine Grove  
 Wetzel

Aspen 166.5  
 Vertical Section 6372

West Virginia



Proposed Well Work:  
 Drill and complete a new horizontal well in the Middlesex formation.  
 This well will go down to an approximate depth of 5030'.  
 Then kick off the horizontal leg into the Middlesex using a slick water frac.

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WW-9  
(5/13)

Page \_\_\_\_\_ of \_\_\_\_\_  
API No. 47 - 103 - 0  
Operator's Well No. 513984

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

Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Co. OP Code \_\_\_\_\_

Watershed (HUC10) Upper Run Quadrangle Pine Grove

Elevation 1458.0 County Wetzel District Grant

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.? 60

Proposed Disposal Method For Treated Pit Wastes:

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

Will closed loop system be used? 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? Air, freshwater, oil based, etc. Air is used to drill the top-hole sections of the wellbore, Surface, Intermediate, and Pilot hole sections, water based mud is used to drill the curve and lateral.

If oil based, what type? Synthetic, petroleum, etc \_\_\_\_\_

Additives to be used in drilling medium? MILBAR, Viscosifer, Alkalinity Control, Lime, Chloride Salts, Rate Filtration Control, Deflocculant, Lubricant, Detergent, Defoaming, Walnut Shell, X-Cide, SOLTEX Terra. Of the listed chemicals the following are generally used when drilling on air: lubricant, detergent, defoaming. Water based fluids use the following chemicals: MILBAR, viscosifer, alkalinity control, lime, chloride salts, rate filtration control, deflocculant, lubricant, detergent, defoaming, walnut shell, x-cide, SOLTEX terra

*DMH  
9-3-19*

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

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.

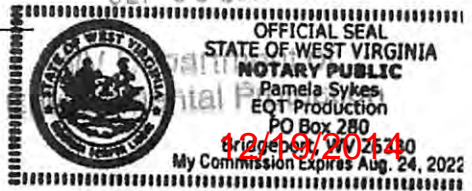
Company Official Signature *Victoria J Roark*  
Company Official (Typed Name) Victoria J Roark  
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 26 day of August, 2019

*[Signature]*

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NOTARY PUBLIC

My commission expires 8-24-22



Proposed Revegetation Treatment: Acres Disturbed no additional disturbance Prevegetation pH 6.5

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type \_\_\_\_\_

Fertilizer Amount 1/3 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

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

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.  
Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

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

Title: Oil + Gas Inspector Date: 9-3-14

Field Reviewed? (    ) Yes (    ) No

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

47 10303039

**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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Where energy meets innovation.™

# Site Specific Safety Plan

EQT PNG103 Pad

Pine Grove

Wetzel County, WV

For Wells:

513983

513984

*[Signature]*

EQT Production

*Permitting Supervisor*

Title

Date

*8-20-14*

Date Prepared:

August 22, 2014

*[Signature]*

WV Oil and Gas Inspector

*Oil + Gas Inspector*

Title

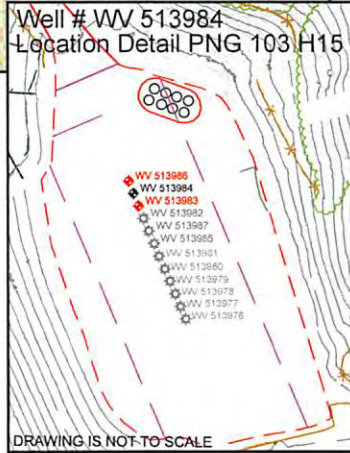
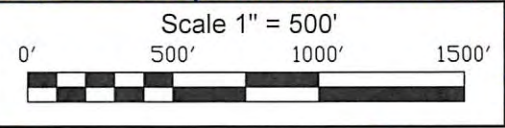
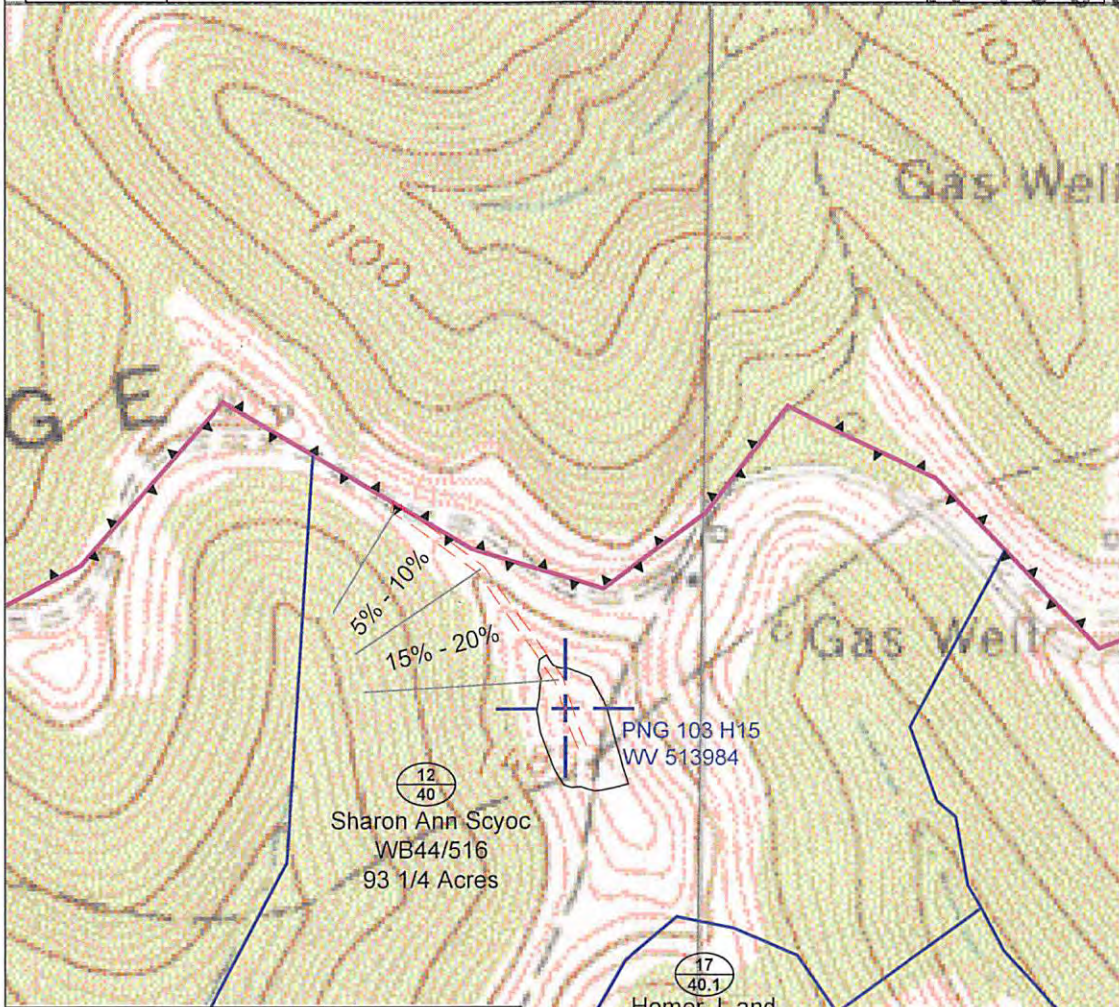
*9-3-14*

Date

RECEIVED  
Office of Oil and Gas

SEP 09 2014

WV Department of  
Environmental Protection  
*12/19/2014*



**(C)** Denotes to install 12" minimum culvert      **(X)** Denotes a proposed stream crossing (if applies) \*see table for culvert detail\*

Unless otherwise noted, all roads shown hereon are existing and shall be maintained in accordance with WV D.E.P., Office of Oil and Gas Erosion and Sediment Control Field Manual as revised 2/93

Entrances upon county/state roads shall be maintained in accordance with WV D.O.T. regulations, however, separate permits may be required by the WV D.O.T.

Sediment basins (traps) and appropriate erosion control barriers are to be constructed at all culverts and cross-drains as required in the aforementioned Erosion and Sediment Control Field Manual. Where field conditions dictate, alternative erosion control measures shall be enacted as required.

Earthwork contractors are responsible for notification to the operator and inspector prior to any deviation from this plan.

Temporary seed and mulch all slopes after construction of location.

Cut and stack all marketable timber.

Stacked brush may be used for sediment control.

Applications for separate Public Land Corporation Permits on the access roads stream crossings have been prepared ( if applies ).

Additional culverts and/or other drainage structures and sediment control devices may be required by the WV D.E.P. Oil & Gas Inspector.

Operator is responsible for the coordination with contractor and Allegheny Surveys regarding any changes or additions the state may require

|  |            |
|--|------------|
| SECTION OF THE<br>Pine Grove 7.5' USGS QUADRANGLE      |            |
| Projected culvert inventory<br>(for bid purposes only) |            |
| 12" minimum diameter culverts                          | 0 Culverts |
| 15" minimum diameter culverts                          | 0 Culverts |

DRAWN BY: Dale Tomlin PS      DATE: August 21, 2014      FILE NO: 212-34-G-10      DRAWING FILE NO: 212-10 PNG103 H15 Rec Plan



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

- LEASE BOUNDARY
- PROPERTY BOUNDARY
- BORE PATH
- ROAD
- DITCH
- SILT FENCE
- PROPOSED WELL LOCATION
- BROAD BASED DIP
- EXISTING GATE
- EXISTING CULVERT
- PROPOSED CULVERT
- CROSS DRAIN
- PIT-CUT WALLS
- PIT-COMPACTED WALLS
- AREA OF LAND APPLICATION OF PIT WASTE

Received  
 WV Dept of Environmental Protection  
 Office of Oil and Gas

12/19/2014



465'

WV 513984

EQT Production Company  
Shiben Estates, Inc.  
1104 acres

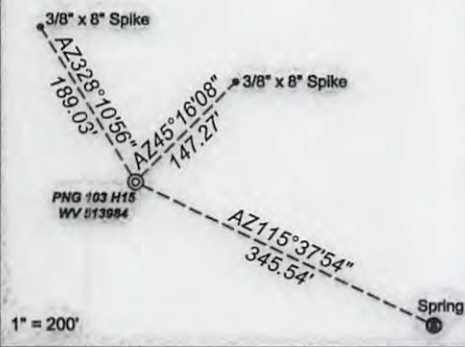
LATITUDE 39 - 35 - 00

ADJOINER TABLE

| TAX MAP PARCEL NO. | ADJOINER                        |
|--------------------|---------------------------------|
| 17<br>2.1          | Goldie Leak                     |
| 17<br>2.2          | Homer J. and Karen E. LeMasters |
| 17<br>9            | John A. Spencer                 |
| 17<br>40.1         | Homer J. and Karen E. LeMasters |

LONGITUDE 80 - 37 - 30  
6,532'

Well References



Notes:  
 WV 513984 coordinates are  
 NAD 27 N: 390,056 E: 1,682,370  
 NAD 27 Lat: 39.565546 Long: 80.626505  
 NAD 83 UTM N: 4,379,605 E: 532,083  
 WV 513984 Landing Point coordinates are  
 NAD 27 N: 389,835 E: 1,683,350  
 NAD 27 Lat: 39.564972 Long: 80.623021  
 NAD 83 UTM N: 4,379,543 E: 532,282  
 WV 513984 Bottom Hole coordinates are  
 NAD 27 N: 383,544 E: 1,684,860  
 NAD 27 Lat: 39.547754 Long: 80.617387  
 NAD 83 UTM N: 4,377,634 E: 532,874  
 West Virginia Coordinate system of 1927 (North Zone).  
 Geographic coordinates are NAD27.  
 UTM coordinates are NAD83, Zone 17, Meters.  
 Plat orientation, corner and well ties are based upon the grid north meridian.  
 Well location references are based upon the grid north meridian.

GRID NORTH



Scale 1" = 2000'

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



- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Lease Boundary



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

*Ben R. Singleton*  
 P.S. 2092



SEAL

FILE NO: 212-34-G-10  
 DRAWING NO: 212-10 PNG 103 H15.dwg  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

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

DATE: August 25 20 14  
 OPERATOR'S WELL NO. WV 513984  
 API WELL NO  
 47 - 103 - 03039 H6A  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: 1458' WATERSHED Upper Run QUADRANGLE: Pine Grove  
 DISTRICT: Grant COUNTY: Wetzel  
 SURFACE OWNER: Sharon Ann Scyoc ACREAGE: 93 1/4  
 ROYALTY OWNER: Shiben Estates, Inc. LEASE NO: 300615 ACREAGE: 1,104  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Middlesex ESTIMATED DEPTH: TVD 7,195 MD 15,770

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