



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

August 17, 2015

WELL WORK PERMIT

Horizontal 6A Well

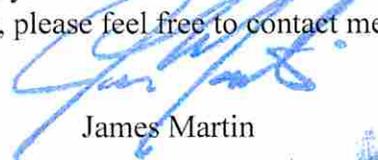
This permit, API Well Number: 47-8510222, issued to EQT PRODUCTION COMPANY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, 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: 514474
Farm Name: MORTON, JERRY
API Well Number: 47-8510222
Permit Type: Horizontal 6A Well
Date Issued: 08/17/2015

Promoting a healthy environment.

PERMIT CONDITIONS

4708510222

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

CONDITIONS

1. Operator shall take additional measures with this permitted activity to avoid communication with offset wells. Such additional measures are described in the attached addendum. This addendum is part of the terms of the well work permit, and includes a description of depth and completed formations of offset wells. Also included is a description of monitoring activities that will take place during fracturing operations of the permitted well work.
1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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.

API Number: _____

PERMIT CONDITIONS 4708510222

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.

4708510222

API NO. 47 - 085
OPERATOR WELL NO. 514474
Well Pad Name: PEN54

Received
Permit
06/12/15

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

1) Well Operator: EQT Production Company
Operator ID: 306686 County: 085 District: 1 Quadrangle: 539

2) Operator's Well Number: 514474 Well Pad Name: PEN54

3) Farm Name/Surface Owner: Jerry Morton et al Public Road Access: Rt 50

4) Elevation, current ground: 1,016.0 Elevation, proposed post-construction: 1,016.0

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

(b) If Gas: Shallow Deep
Horizontal

6) Existing Pad? Yes or No: no

7) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation is Marcellus at a depth of 6297 with the anticipated thickness to be 49 feet and anticipated target pressure of 2190 PSI

8) Proposed Total Vertical Depth: 6424

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 10115

11) Proposed Horizontal Leg Length: 3,460

12) Approximate Fresh Water Strata Depths: 99, 105, 302, 627, 729, 745, 770

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

14) Approximate Saltwater Depths: 1,350

15) Approximate Coal Seam Depths: 326, 789, 867, 1078, 1182

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: _____

6-16-15

Received
Office of Oil & Gas
JUL 06 2015

4708510222

WW - 6B
(4/15)

API NO. 47 - 85 - 10222
 OPERATOR WELL NO. 514474
 Well Pad Name: PEN54

CASING AND TUBING PROGRAM

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18)

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: For Left in Well (WV Department of Environmental Protection)	CEMENT: Fill-up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	900	08 C.T.S.
Fresh Water	13 3/8	New	J-55	54.5	900	900	785 C.T.S.
Coal	-	-	-	-	-	-	-
Intermediate	9 5/8	New	A-500	40	5,176	5,176	2,036 C.T.S.
Production	5 1/2	New	P-110	20	10,115	10,115	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							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	24	0.375	-	18	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	3,730	2184	* See Note 2	1.21
Coal							
Intermediate	9 5/8	12 3/8	0.395	3,950	3160	* See Note 2	1.21
Production	5 1/2	8 1/2	0.361	12,640	10112	-	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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JUL 29 2015

WV Department of
Environmental Protection

WW - 6B
(10/14)

4708510222

API NO. 47 - 85 - 10222
OPERATOR WELL NO. 514474
Well Pad Name: PEN54

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. The vertical drill to go down to an approximate depth of 6424, tag the
Onondage not more than 100', run logs then plug back with a solid cement plug to approximately 5250 then kick off the horizontal
leg into the marcellus formation 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 internal casing pressure is 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):

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22) Area to be disturbed for well pad only, less access road (acres):

21.5

JUL 29 2017

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

WV Department of
Environmental Protection

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.

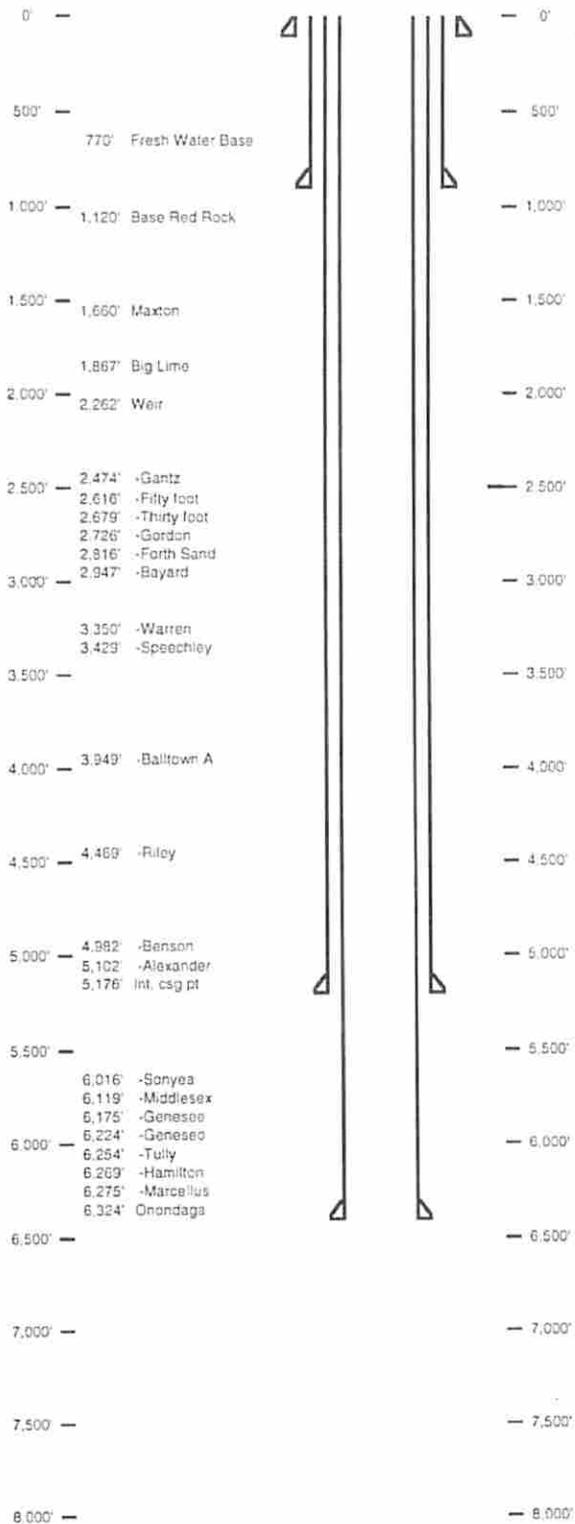
*Note: Attach additional sheets as needed.

4708510222

Well Schematic EQT Production

Well Name: 514474(PEN54H)
County: Putcha
State: West Virginia

Elevation KB: 1029
Target: Marcellus
Prospect: 342
Azimuth: 3022
Vertical Section:



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TOC @ Surface
13.3/8" MC 50. 54.54 @ 990' ft MD
Bit Size 12.075"

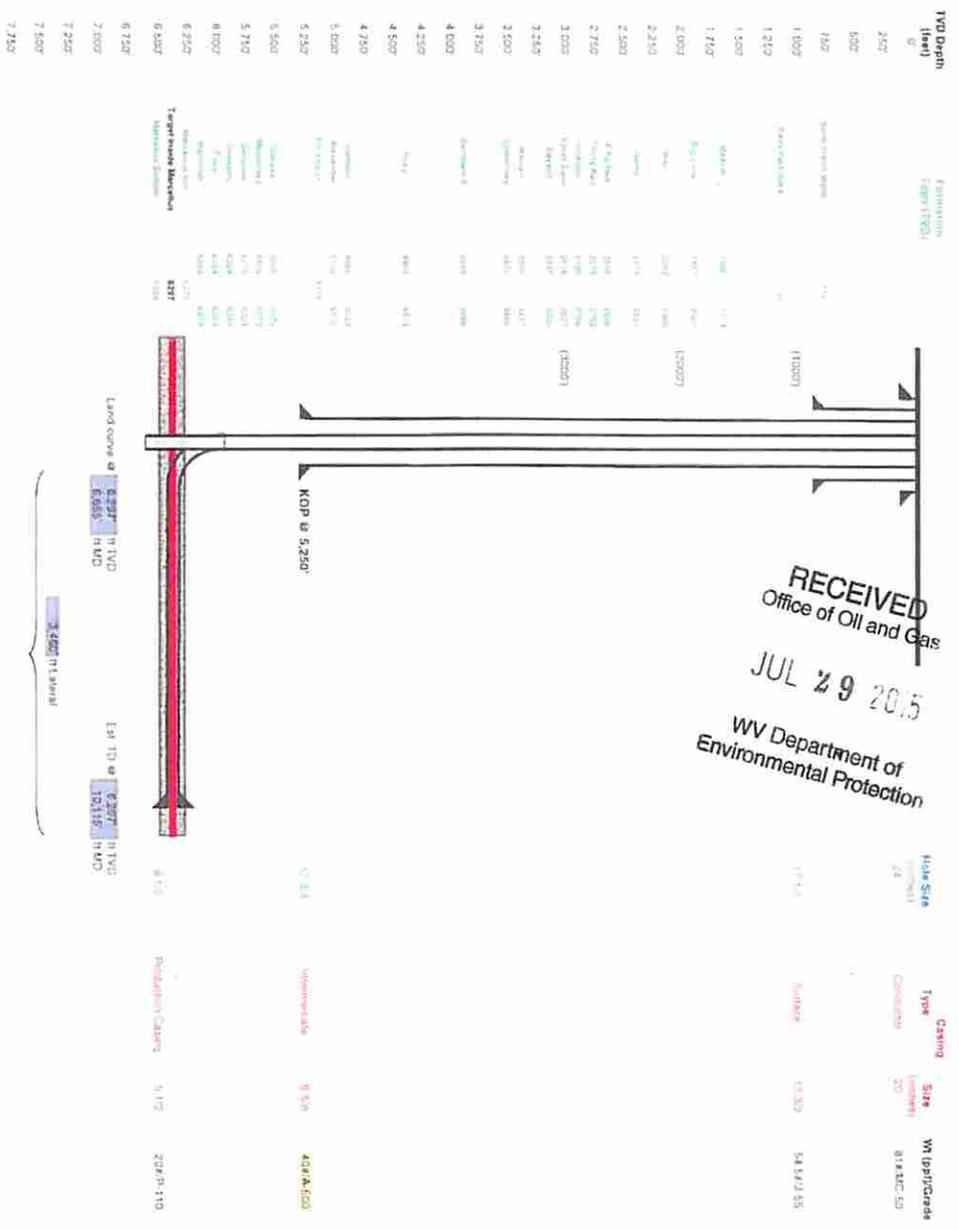
KOP @ 5,250' ft MD
10 Deg DLS

Land @ 6,655' ft MD
6,297' ft TVD
5 1/2" P-110. 204
10,119' ft MD
6,297' ft TVD

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Well 51474(PEN5411)
 EQ1 Production
 Pennsboro Quad
 Ritchie
 West Virginia

Apprentice 142
 Vertical Section 3012



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 JUL 29 2015
 WV Department of
 Environmental Protection

Proposed Well Work
 Drill and complete a new horizontal well in the Marcellus formation
 The vertical well to go down to an approximate depth of 5,250'
 To the 'Outcrop' from more than 100' turn left. Open plug back with a solid cement plug to approximately 5,250'
 Turn back off the horizontal to go into the Marcellus formation using a slick water frac



4708510222

July 28, 2015

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

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JUL 29

WV Department of
Environmental Protection

Re: Casing on Wells (PEN54)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 900' KB, 130' below the deepest fresh water and 33' below top of coal at 867' KB. We will set the 9-5/8" intermediate string at 5176' KB, 50' below the porosity zone in the Alexander formation.

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

Sincerely,

Vicki Roark
Permitting Supervisor

Enc.



west virginia department of environmental protection

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

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

March 18, 2014

4708510222

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

Re: Cement Variance Request

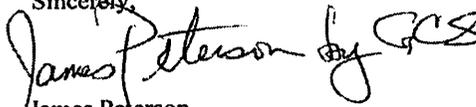
Dear Sir or Madam,

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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JUN 12 2015
WV Department of
Environmental Protection



west virginia department of environmental protection

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

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

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

**IN THE MATTER OF A VARIANCE FROM)
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)**

**ORDER NO. 2014 - 17
4708510222**

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.

4708510222

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

WW-9
(2/15)

Page 1 of 2
API No. 47 - 085 - 10222
Operator's Well No. 514474

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
Fluids/Cuttings Disposal & Reclamation Plan

Operator Name EQT Production Company OP Code 306686

Watershed (HUC10) North Fork Hughes River Quadrangle Pennsboro 7.5

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

Will a pit be used? Yes: X No:

If so please describe anticipated pit waste: flowback water & residual solids

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

Proposed Disposal Method For Treated Pit Wastes:

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

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 (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.

- If oil based, what type? Synthetic, petroleum, etc Synthetic mud

Additives to be used in drilling medium? Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud - Barite, viscosifier, alkalinity control, lime, filtration control, deflocclulates. biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates.

Oil based mud - synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocclulates.
biodegradable oil lubricant, defoaming, carbonates.

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.

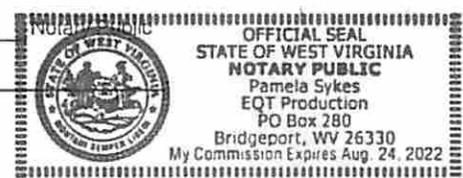
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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 *Victoria J. Roark*
Company Official (Typed Name) Victoria J. Roark
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 29 day of July, 20 15

Pamela Sykes

My commission expires 8-24-22



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Operator's Well No. 514474

Proposed Revegetation Treatment: Acres Disturbed 52.03 Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilize type Granular 10-20-20

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

Mulch 2 Tons/acre

Seed Mixtures

4708510222

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: Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *David W. Cowan*

Comments: *pressed & mulch all cut area no less than 2 ton per acre maintain all P&S during operation cant rol any excessive runoff*

Title: *oil/gas impactor* Date: *6-16-15*

Field Reviewed? () Yes () No

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

4708510222

4708510222

NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.



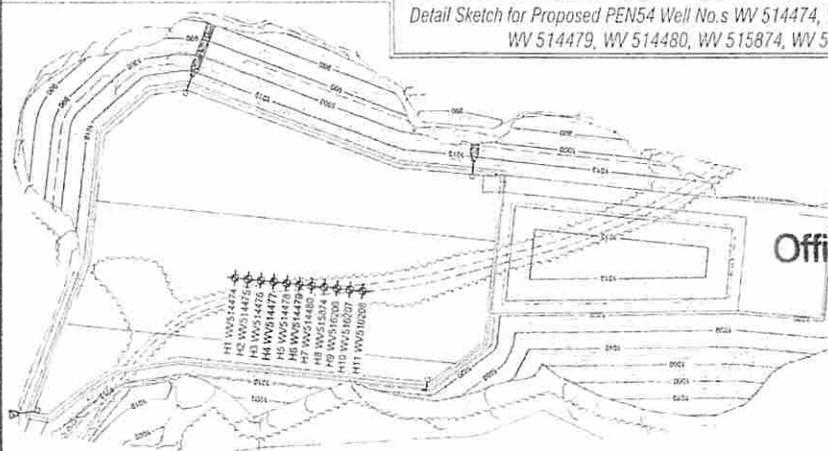
**FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208**

**SHEET 2 OF 2
SCALE: 1"=500'**



MATCH LINE

Detail Sketch for Proposed PEN54 Well No.s WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208



**Received
Office of Oil & Gas
JUL 06 2015**

NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

Professional Energy Consultants
A DIVISION OF BATHURST SURVEYING, INC.

SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.

Handwritten signature

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

DRAWN BY K.D.W.	FILE NO. 8083	DATE 06-01-15	CADD FILE: 8083PEN54REC.dwg
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Not To Scale

NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

**FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208**

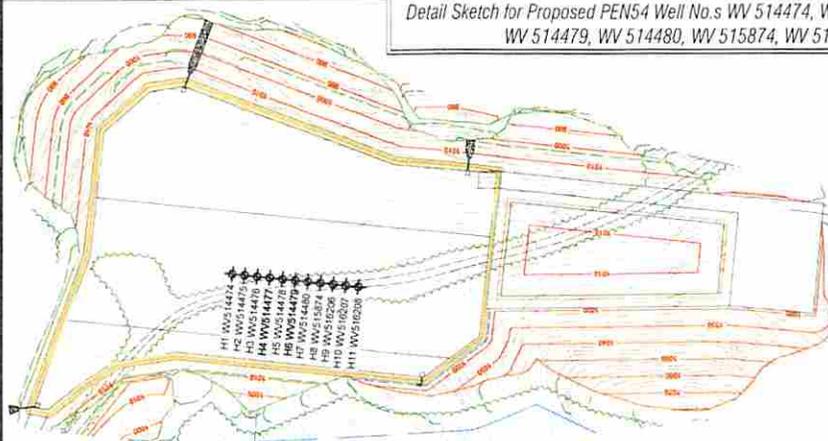
**SHEET 2 OF 2
SCALE: 1"=500'**



MATCH LINE

4708510222

Detail Sketch for Proposed PEN54 Well No.s WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208



NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.



TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

DRAWN BY: K.D.W. FILE NO: 8083 DATE: 06-01-15 CADD FILE: 0083PEN54REC.dwg

Not To Scale



4708510222

Where energy meets innovation.™

Site Specific Safety Plan

EQT PEN 54 Pad

4708510222

Toll Gate
Ritchie County, WV

For Wells:

514474

Date Prepared:

November 17, 2014

EQT Production

Title

Date

[Signature]
Permitting Supervisor
6-8-15

WV Oil and Gas Inspector

Title

Date

[Signature]
oil and gas inspector
6-16

Received

Office of Oil & Gas

JUL 06 2015

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JUL 29 2015

WV Department of
Environmental Protection

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: PEN54
Ritchie County, WV

6/17/15

4708510222

JUL 29 2015

WV Department of
Environmental Protection

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Ritchie County, WV prior to hydraulic fracturing at the following EQT wells on the PEN54 pad: 514474, 514475, 514476, 514477, 514478, 514479, 514480, 515874, 516206, 516207, 516208, 516209, and 516210.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,400' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,200' TVD).

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 pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional 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 Conventional Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known conventional wells and well operators within 1,500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

Upon approval of this plan, EQT will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in **Attachment B**.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

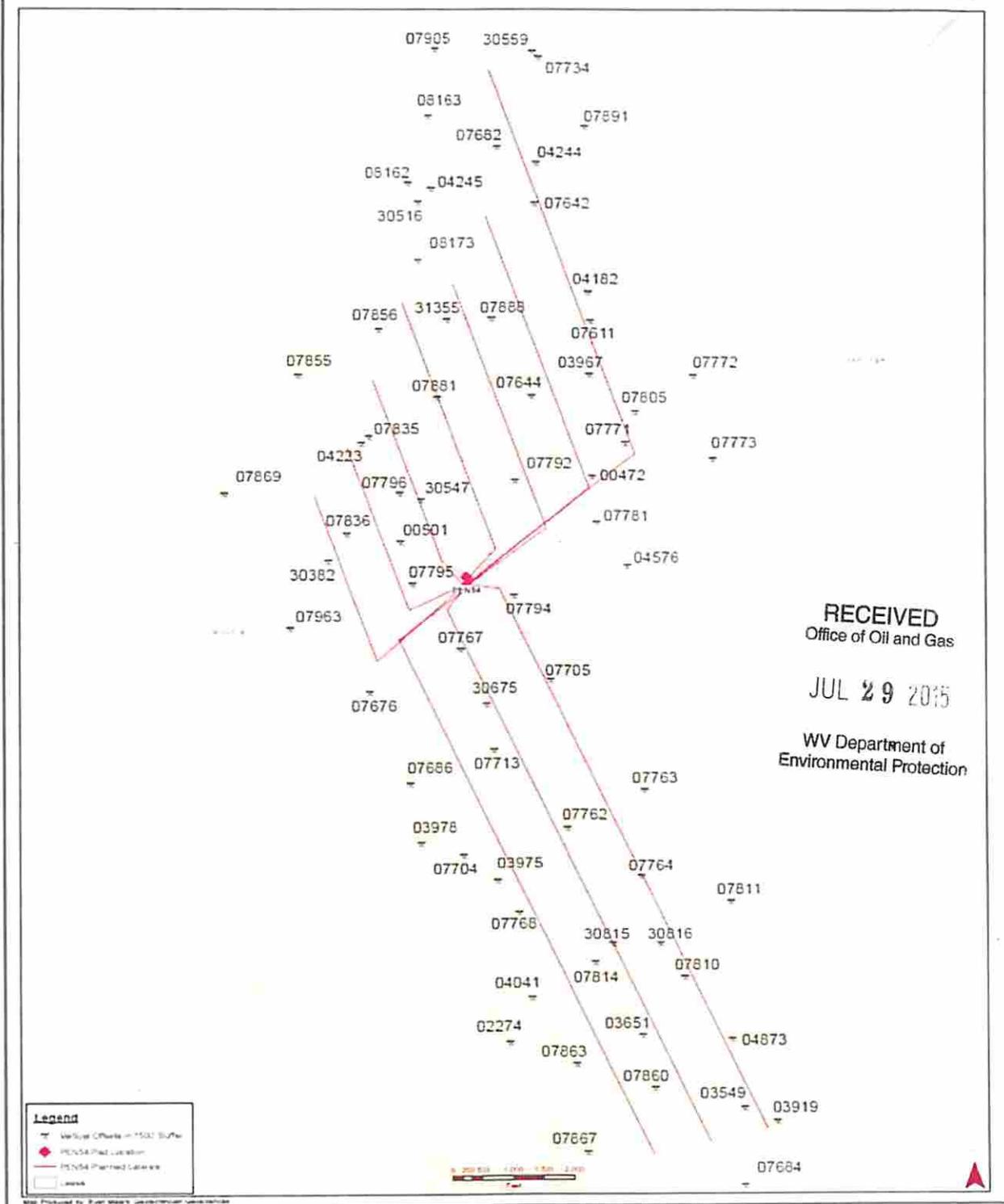
Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

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 rated to 3,000 psi or other necessary equipment for wellhead integrity
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 conventional operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

4708510222



Well ID	Prior Operator on Record	Operator-DEP*	Status	Latitude	Longitude	Vertical TD	Closest Distance From Well to Lateral	PENSA Horizontal TVD minus Offset Vertical ID	Hypotenuse Distance	Producing Formation	Gas Show/Pay Zone Depths
4708500472	M&Burey, Glen F	OPERATOR UNKNOWN	Abandoned Well	39 263	-80 9199	1796	113	7106	7106 898409 Big Injun		1752
4708500501		OPERATOR UNKNOWN	Abandoned Well	39 2598	-80 9311	1777	265	7087	7091 952764 Big Injun		1705
4708502274	Hedco, T.F.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39 2349	-80 9289	2404	1319	7714	7825 954063 Big Lime, Big Injun, Berea, U Dev		1842-2367
4708503549	Mulvin Oil Corp	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39 2316	-80 9113	2534	184	7844	7846 157786 Berea		2450
4708503651	Mulvin Oil Corp	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39 2352	-80 9172	1980	231	7290	7293 658958 Big Injun		1880
4708503919	Carnegie Natural Gas Co		Plugged	39 23089	-80 9094	2079	202	7389	7391 760616		
4708503967		EPC	Plugged	39 268067	-80 920055	1764	239	7074	7078 006239		
4708503975		EPC	Abandoned Well	39 24291	-80 92554	1974	303	7234	7240 342879 Big Injun		1668-1849
4708503978		EPC	Plugged	39 24479	-80 92999	1845	299	7155	7251 162252 Big Injun		1553-1790
4708504041	Mulvin Oil Corp	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39 2271	-80 9236	2506	658	7816	7843 648386 Big Injun, Weir		2006-2284
4708504182	Haught, Glen L and Sons	KEY OIL COMPANY	GAS - Active	39 2272	-80 9201	2410	235	7720	7723 575921 Big Injun, Weir		1876-2141
4708504223	Haught, Glen L and Sons	KEY OIL COMPANY	Never Drilled	39 26472	-80 93333	1051	249	10636	10638 91428		
4708504244	Carnegie Natural Gas Co		Abandoned Well	39 27859	-80 92312	2017	180	7327	7329 210667		
4708504245	Carnegie Natural Gas Co		Plugged	39 27228	-80 928227	1732	1020	7042	7115 487615		1672-1757
4708504576	Perkins Oil and Gas	PERKINS OIL & GAS INC	GAS - Active	39 2586	-80 9179	2535	1499	7845	7979 517905 Big Injun		4222-5040
4708504873	Haddad & Brooks, Inc	KEY OIL COMPANY	GAS - Active	39 2335	-80 9112	5990	135	11300	11300 806639 Bradford, Riley, Benson, Alexander		4300-4984
4708507611	Haddad & Brooks, Inc	KEY OIL COMPANY	GAS - Active	39 2208	-80 92	5213	97	10523	10523 44706 Riley, Benson, Alexander		4429-5094
4708507642	Haddad & Brooks, Inc	KEY OIL COMPANY	GAS - Active	39 2766	-80 9232	5300	75	10610	10610 26508 Riley, Benson, Alexander		4500-5186
4708507644	Haddad & Brooks, Inc	KEY OIL COMPANY	GAS - Active	39 267	-80 9234	5375	351	10685	10680 76358 Riley, Benson, Alexander		1688-4346
4708507676	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2523	-80 9329	4506	822	9816	9850 357354 Maxton, Big Injun, Warren, Riley		4215-4891
4708507682	KC Energy, A Partnership	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2794	-80 9254	5133	333	10433	10438 31299 Riley, Benson, Alexander		3427-4802
4708507684	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2277	-80 9113	5389	967	10699	10742 61095 Warren, Riley		3307-4797
4708507686	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2477	-80 9306	4942	906	10252	10291 95511 Warren, Riley		3335-4475
4708507704	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2529	-80 9275	4953	84	10263	10263 34375 Big Injun, Warren, Speechley, Riley		1909-4447
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2442	-80 9274	4988	620	10398	10316 64694 Warren, Bradford		3381-4528
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2494	-80 9257	4678	336	9988	9993 649984 Warren, Speechley, Riley		4322-5013
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2839	-80 923	5220	839	10083	10084 50123 Maxton, Keener, Warren, Riley		1932-4587
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2455	-80 9215	4521	174	10323	10344 71986 Maxton, Keener, Warren, Bradford		1900-4525
4708507762	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2474	-80 917	5013	670	9831	9831 011443 Big Injun, Warren, Bradford		1792-4310
4708507763	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2544	-80 9276	4678	15	9988	9988 405478 Warren, Riley		3349-4691
4708507764	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2431	-80 9172	4521	90	9914	9916 418557 Maxton, Big Injun, Warren, Speechley, Riley		1858-4222
4708507767	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2544	-80 9243	4604	219	10556	10596 34899 Warren, Riley, Benson		3265-5058
4708507768	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2647	-80 918	5286	86	10575	10563 76891 Warren, Riley, Benson, Alexander		3255-5061
4708507771	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2639	-80 914	5265	1373	10575	10563 34899 Warren, Riley, Benson		3255-5061
4708507772	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2639	-80 9129	5265	1288	10575	10563 14831 Warren, Speechley, Riley, Benson		3064-4866
4708507773	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2607	-80 9197	5046	205	10356	10370 4361 Warren, Riley, Alexander		3176-4978
4708507792	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2638	-80 9244	5148	205	10470	10470 00903 Warren, Riley, Alexander		1640-4969
4708507794	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39 2571	-80 9245	5160	160	10470	10471 22247 Maxton, Keener, Big Injun, Warren, Riley, Benson		1838-5033
4708507795	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2577	-80 9204	5221	205	10531	10532 99511 Big Injun, Warren, Riley, Benson		1590-4662
4708507796	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2619	-80 9299	5027	251	10337	10340 04691 Keener, Big Injun, Warren, Riley, Benson		1876
4708507805		GAS - Active	GAS - Active	39 2662	-80 9174	2275	250	7585	7589 118855 Big Injun		1876

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4708507810	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2381	-80 9147	5456	106	10766	10766 S2182	Warren, Riley	3172-4821
4708507811	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2418	-80 9192	4811	138	10127	10190 73957	Marton, Keener, Warren, Balltown, Riley	2004-4664
4708507814	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2388	-80 9199	445	399	9762	9770-150715	Marton, Warren, Riley	1642-4321
4708507835	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 265	-80 9329	535	399	10641	10648 47792	Warren, Riley, Alexander	3334-5124
4708507836	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2602	-80 9342	507	282	10385	10388 82809	Warren, Riley, Benson	3322-5106
4708507855	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2681	-80 937	536	1335	10675	10746 20165	Warren, Riley, Alexander	3280-5068
4708507856	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2704	-80 9373	5314	514	10624	10536 42866	Warren, Riley, Alexander	3133-4274
4708507860	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	ORG - Active	39 2326	-80 9165	4446	433	9756	9765 64857	Warren, Riley	3212-4354
4708507863	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	ORG - Active	39 2328	-80 9211	4534	472	9844	9855-309229	Warren, Riley	3193-4981
4708507867	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2294	-80 9204	5196	966	10566	10560 31715	Warren, Riley, Benson	3445-5221
4708507869	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2622	-80 9413	5380	1477	10690	10791-5536	Warren, Riley, Alexander	3315-5112
4708507881	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 267	-80 9289	5272	5	10582	10582 00118	Warren, Riley, Alexander	3315-5121
4708507888	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2703	-80 9257	5280	402	10590	10597 62728	Warren, Riley, Alexander	3350-5193
4708507891	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2804	-80 9203	5371	1149	10681	10742 62361	Warren, Riley, Benson, Alexander	4326-4994
4708507905	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2843	-80 929	5146	942	10456	10545 95297	Riley, Benson, Alexander	4276-4933
4708507963	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39 2955	-80 9375	5172	1156	10482	10546 55167	Riley	4331-5015
4708508162	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39 2776	-80 9306	5140	1412	10456	10545 95297	Riley, Benson, Alexander	4326-4994
4708508163	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39 281	-80 9294	5090	1216	10400	10470 84791	Riley, Benson, Alexander	4276-4933
4708508173	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39 2738	-80 93	4991	712	10301	10325 57722	Riley, Benson, Alexander	4239-4891
4708530382	Eastern American Energy Corp	KEY OIL COMPANY	GAS - Active	39 25899	-80 93528	1860	181	7170	7171 807373	Big Injun	1709-1714
4708530516	Eastern American Energy Corp	H BEREN	GAS - Active	39 27667	-80 93	1733	1143	7043	7135 145268	Marton, Big Injun	1550-1694
4708530547	Eastern American Energy Corp	HOPE NAT GAS	GAS - Active	39 26222	-80 93111	1823	35	7133	7133 085868	Big Injun, Squaw	1708-1800
4708530559	Eastern American Energy Corp	PGH & WV GAS	GAS - Active	39 28412	-80 92333	1837	784	7147	7189 87291	Marton	1577-1595
4708530875	Eastern American Energy Corp	PGH & WV GAS	GAS - Active	39 25167	-80 92611	2041	107	7351	7351 778696	Marton, Big Injun	1750-1994
4708530815	Eastern American Energy Corp	F S DEEM	Unknown	39 23972	-80 91889	1693	2	7003	7003 000286	Unknown	Unknown
4708530816	Eastern American Energy Corp	F S DEEM	Unknown	39 23972	-80 91611	1087	232	10618	10620 53426	Unknown	Unknown
4708531355	Eastern American Energy Corp	EPC	Unknown	39 27083	-80 92833	1999	310	7369	7315 571133	Marton, Big Injun	1767-1994

Office of Oil and Gas

JUL 29 2015

U.S. Department of Environmental Protection

4708510222

625 Liberty Ave, Suite 1700
Pittsburgh PA 15222
www.eqt.com



TEL: (412) 395-3305
FAX: (412) 395-2156

John Centofanti
Corporate Director,
Environmental Affairs

(date)

[Conventional Well Operator]
[address]
[state]

RE: Ritchie County Hydraulic Fracturing Notice

Dear Sir/Madam,

EQT has developed a Marcellus pad (Pennsboro 54 pad) located in Ritchie County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,400' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,200' TVD).

EQT anticipates conducting hydraulic fracturing at the Pennsboro 54 pad during the second quarter of 2015. We have identified conventional natural gas wells operated by your company within 1,500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during, and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish 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 rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified.

Please feel free to contact me at 412-395-3305 with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0440.

Sincerely,
EQT Production

John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

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WV Department of
Environmental Protection



June 8, 2015

4708510222

Mark Collins
WV Dept. of Environmental Protection
Division of Oil and Gas
601 57th St East
Charleston, WV 25304

RE: Increased pump rate for EQT water withdrawal site

Dear Mr. Collins

EQT has reevaluated the pump rate numbers on a one of our WV water withdrawal sites in an effort to maximize our water withdrawal effectiveness. As a result, we have chosen to increase the rate on the Westbrook site on the Ohio River to 2500 gpm going forward.

If you have any questions, please contact me at 304.848.0076

Sincerely,

A handwritten signature in black ink, appearing to read 'Vicki Roark'.

Vicki Roark
Permitting Supervisor - WV

Enc.

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JUN 12 2015
WV Department of
Environmental Protection

WELL INFORMATION AND FINAL WATER WELL SAMPLE DATA SHEET

OPERATOR: EQT Production Company
LEASE NAME AND NUMBER: PEN 54 Well Pad

COMMENTS

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

INDIVIDUAL CONTACTED OR NOTIFIED

Site: 1 Spacing 2890' Owner/Occupant: Donald and Barbara Deem
 Address: 1109 Stoney hollow Rd. Pennsboro, WV 26415 Ph: _____
 Field Contact Date: 10/30/2014 Sampled: Yes Date Sampled: 10/30/2014 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 10/15/2014 2nd 10/30/2014 Certified (3rd) 12/23/2014
 Comments: Tax Map 31, Parcel 10
Lat: 39.254166
Long: 80.936186

Site: 2 Spacing 3260' Owner/Occupant: Randy Collins
 Address: 5368 Muscovy Rd. Middleburg, FL 32068 Ph: (904)-219-0130
 Field Contact Date: 10/30/2014 Sampled: Yes Date Sampled: 10/30/2014 Source: Water Well
 If No, declined by who _____ Letter/Notice Date: 1st 10/15/2014 2nd 10/30/2014 Certified (3rd) 12/23/2014
 Comments: Tax Map 31, Parcel 5
Lat: 39.265036
Long: 80.920182

Site: 3 Spacing _____ Owner/Occupant: Hearwood Forestland Fund II' Limited Partnership
 Address: 3001 Emerson Ave. Parkersburg, WV 26104 Ph: _____
 Field Contact Date: N/A Sampled: No Date Sampled: N/A Source: Unknown
 If No, declined by who Jamez D. Wibel Letter/Notice Date: 1st 10/15/2014 2nd 10/30/2014 Certified (3rd) 12/23/2014
 Comments: Tax Map 13, Parcels 11 and 14
Letter of refusal signed 10/21/2014

Site: 4 Spacing _____ Owner/Occupant: Judith and Jo Ann Robinson
 Address: Rt. 1 Box 1015, Pennsboro, WV 26415 Ph: _____
 Field Contact Date: N/A Sampled: No Date Sampled: N/A Source: Unknown
 If No, declined by who _____ Letter/Notice Date: 1st 10/15/2014 2nd 10/30/2014 Certified (3rd) 12/23/2014
 Comments: Tax Map 31, Parcel 22
No response to certified letter as of 01/23/2015

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SMITH LAND SURVEYING, INC.

P.O. BOX 150, GLENVILLE, WV 26351

(304) 462-5634 • FAX 462-5656

To Whom It May Concern:

Smith Land Surveying, Inc. of Glenville, WV has been contracted by:

EQT

To do some preliminary work for a proposed oil and gas well permit application.

Due to 1994 regulations set by the State of West Virginia Division of Environmental Protection, Department of Oil and Gas, operators are required to offer water testing for water wells or other non-public water sources that fall within 1500 feet of the proposed well. The operator is testing within 2500 feet of the well, if they are requested to do so by the resident or owner. This test will only help ensure the water quality control, which in turn benefits you as the resident or landowner.

Since your residence falls within the 2500 foot radius, you are entitled to have your potable water source(s) sampled and analyzed at an independent lab. Your lab analysis results would then be mailed to your home. This is done at no expense to you.

Please notify Smith Land Surveying immediately if you are interested in having your potable water tested. Please have this letter with you at the time of contact so that the client and well number may be referenced.

4708510222

Thank you for your cooperation in this matter. I look forward to hearing from you at your earliest convenience. If you have any questions, please feel free to contact me at:

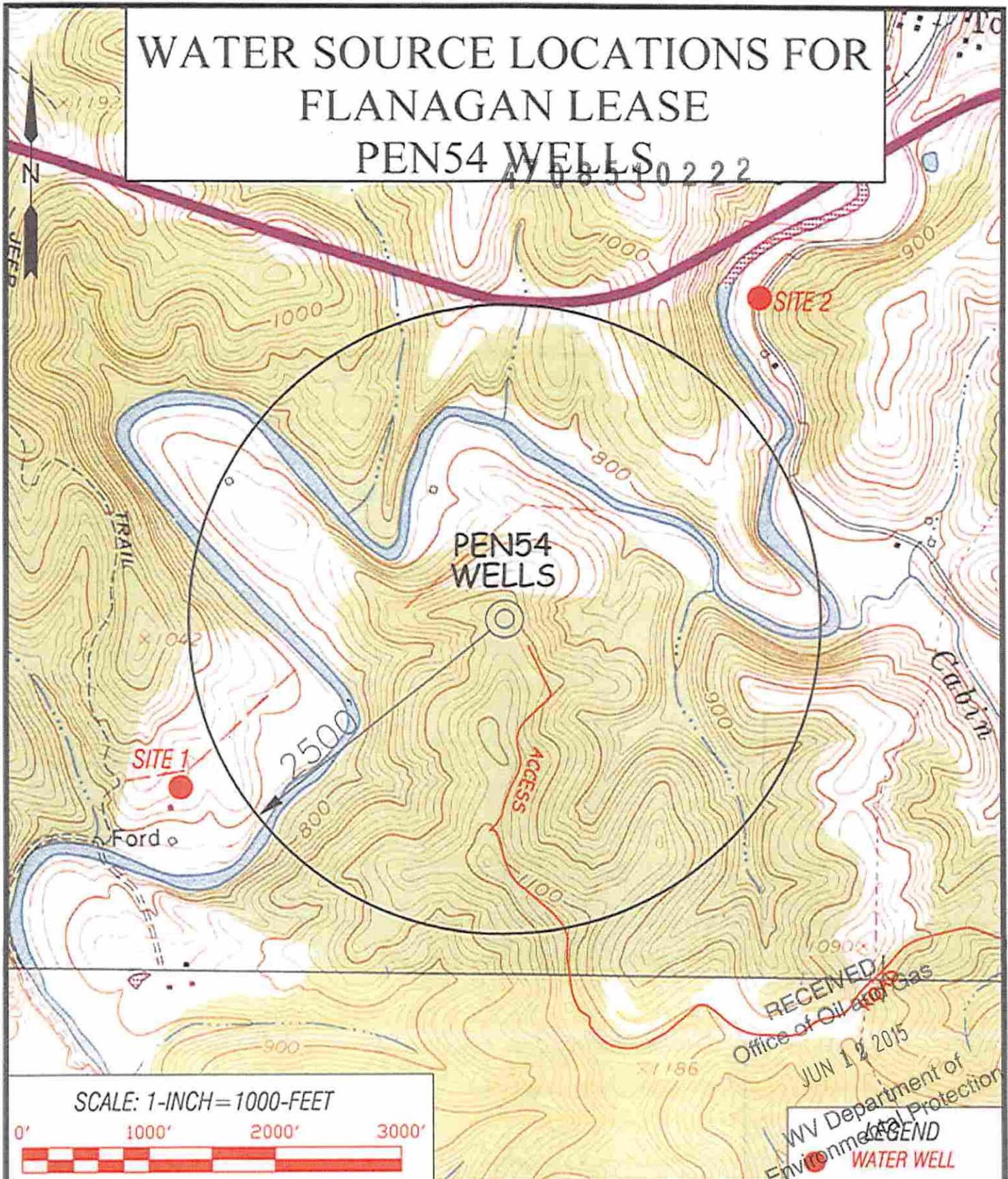
Smith Land Surveying, Inc.	Date: <u>10/14/2014</u>
PO Box 150	
Glenville, WV 26351	Left/sent by: <u>Daniel McKee</u>
(304) 462-5634 (voice)	
(304) 462-5656 (fax)	Well Number: <u>PEN-54</u>
E-Mail DMcKee@slssurveys.com	Tax Map / Parcel: <u>31-11, 31-14</u>
	<u>Ritchie County, WV Clay District</u>

*If you do not have a water well or other non-public water source, please make note of it and include your name and address when you return this sheet.

If you do not feel the need to have your Water well/spring/or other non-public water source sampled, please sign on the line below and return to the above address. This will signify that a sample has been offered to the surface owner and has been declined. Please include printed name along with signature.

Signature: James D. Wilhel Date: 10-21-14

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



SCALE: 1-INCH=1000-FEET



Professional Energy Consultants
A DIVISION OF SMITHLAND SURFACIAL, INC.

SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.

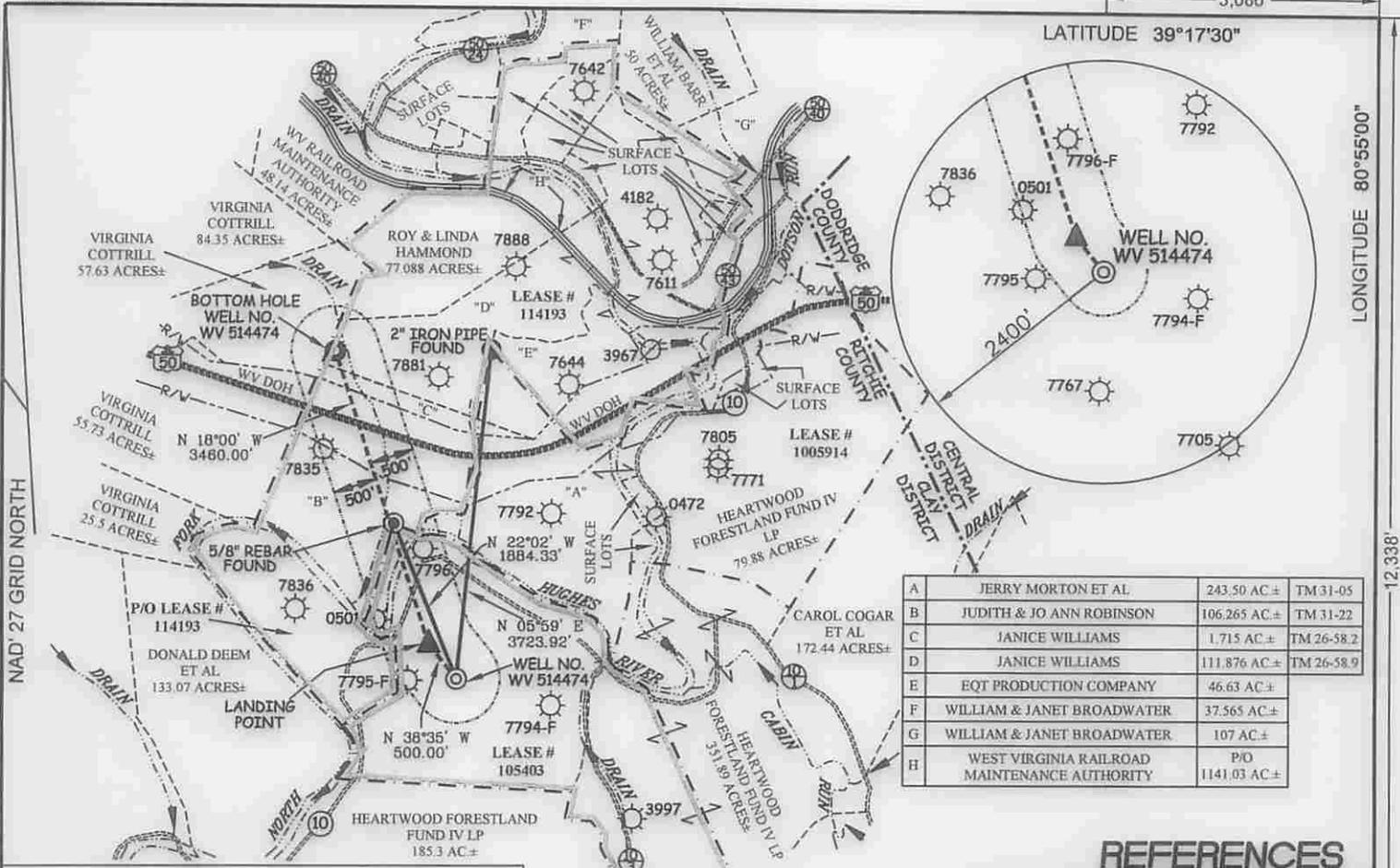
DRAWN BY: K.D.W. FILE NO. 8083 DATE 06/02/15 CADD FILE: 8083PEN54.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
CLAY	RITCHIE	31-09

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

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JUN 12 2015
WV Department of Environmental Protection
LEGEND
WATER WELL



A	JERRY MORTON ET AL	243.50 AC±	TM 31-05
B	JUDITH & JO ANN ROBINSON	106.265 AC±	TM 31-22
C	JANICE WILLIAMS	1.715 AC±	TM 26-58.2
D	JANICE WILLIAMS	111.876 AC±	TM 26-58.9
E	EQT PRODUCTION COMPANY	46.63 AC±	
F	WILLIAM & JANET BROADWATER	37.565 AC±	
G	WILLIAM & JANET BROADWATER	107 AC±	
H	WEST VIRGINIA RAILROAD MAINTENANCE AUTHORITY	P/O 1141.03 AC±	

**EQT PRODUCTION COMPANY
FLANAGAN LEASE**

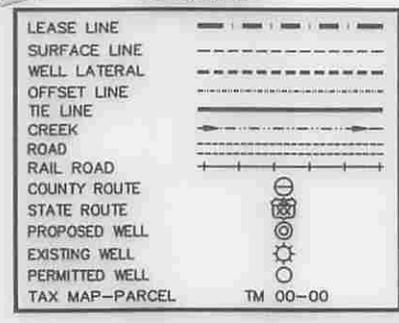
**268 ACRES±
WELL NO. WV 514474**

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 279,215.27 E. 1595775.03
 NAD'27 GEO. LAT-(N) 39.257793 LONG-(W) 80.927565
 NAD'83 UTM (M) N. 4,345,396.29 E. 506,264.11

LANDING POINT
 NAD'27 S.P.C.(FT) N. 279,606.13 E. 1,595,463.23
 NAD'27 GEO. LAT-(N) 39.258852 LONG-(W) 80.928688
 NAD'83 UTM (M) N. 4,345,513.78 E. 506,167.14

BOTTOM HOLE
 NAD'27 S.P.C.(FT) N. 282,896.79 E. 1,594,394.03
 NAD'27 GEO. LAT-(N) 39.267839 LONG-(W) 80.932648
 NAD'83 UTM (M) N. 4,346,510.83 E. 505,824.67

LEGEND

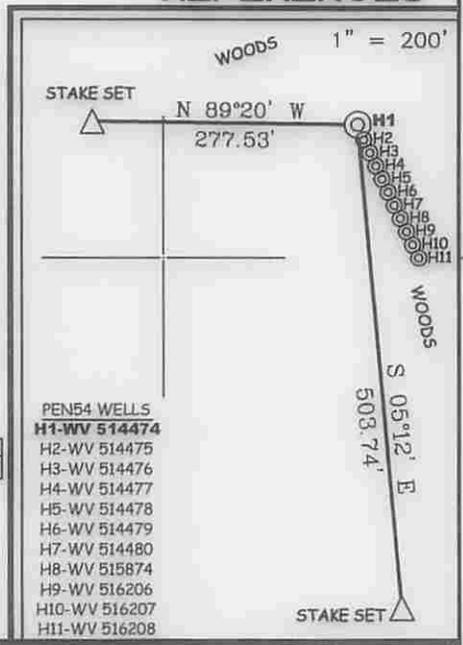


ROYALTY OWNERS		
MARY-LEE AZELVANDRE ET AL	500 AC±	LEASE NO. 114193

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.

REFERENCES



Professional Energy Consultants
 A DIVISION OF SMITH LAND SURVEYING, INC.

 SURVEYORS
 ENGINEERS
 ENVIRONMENTAL
 PROJECT MGMT.
 (204) 482-5634 WWW.SLSURVEYS.COM



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677
Gregory A. Smith

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE JUNE 1 , 20 15
 REVISED _____ , 20 _____
 OPERATORS WELL NO. WV 514474
 API WELL NO. 47 - 085 - 10222 H64
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 8083P514474
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)
 SCALE 1" = 2000'

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

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

LOCATION: GROUND PROPOSED
 ELEVATION 1,016' 1,016' WATERSHED NORTH FORK HUGHES RIVER
 DISTRICT CLAY COUNTY RITCHIE QUADRANGLE PENNSBORO 7.5'

SURFACE OWNER JERRY MORTON ET AL ACREAGE 243.50±
 ROYALTY OWNER ELLEN S. FRANCAVIGLIA ET AL ACREAGE 268±
 PROPOSED WORK: LEASE NO. 105403

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH TVD 6,275'

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

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page	
<u>105403</u>			Min 1/8 pd		
	W.A. Flanagan, et al	The Philadelphia Company of West Virginia		LB63/295	
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		DB55/362	
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		DB 126/473	
	Equitable Gas Company	Equitrans, Inc.		LB 201/253	
	Equitrans, Inc.	Equitrans, LP.		AB269/182	
	Equitrans, LP	Equitable Production/Eastern States, Inc.		DB234/830	
	Equitable Production/Eastern States, Inc.	Equitable Production Company		CB557/56	
	Equitable Production Company	EQT Production Co.		DB 281/346	Doddridge
 <u>114193</u>			Min 1/8 pd		
	Harry L. Broadwater and Sadie E. Broadwater, etal	W.J. Rowland		LB33/533	
	W.J. Rowland	The Philadelphia Company of West Virginia		DB126/418	
	The Philadelphia Company of West Virginia	Pittsburgh and West Virginia Gas Company		LB55/362	
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		DB126/473	
	Equitable Gas Company	Equitrans, Inc.		LB201/253	
	Equitrans, Inc.	Equitrans, LP.		AB269/182	
	Equitrans, LP	Equitable Production/Eastern States, Inc.		DB234/830	
	Equitable Production/Eastern States, Inc.	EQT Production Company		CB557/56	
	Equitable Production/Eastern States, Inc.	EQT Production Company		DB281/346	Doddridge

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.

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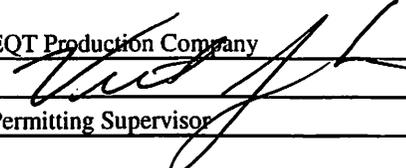
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**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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

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

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

Well Operator: EQT Production Company
By: 
Its: Permitting Supervisor

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

Date of Notice Certification: 6-11-15

API No. 47 - 085 - 0
Operator's Well No. 514474
Well Pad Name: PEN54

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>506,264.11</u>
County: <u>Ritchie</u>	UTM NAD 83 Northing: <u>4,345,396.29</u>
District: <u>Clay</u>	Public Road Access: <u>Rt 50</u>
Quadrangle: <u>Pennsboro 7.5</u>	Generally used farm name: <u>Jerry Morton et al</u>
Watershed: <u>North Fork Hughes River</u>	

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED OR</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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Required Attachments:

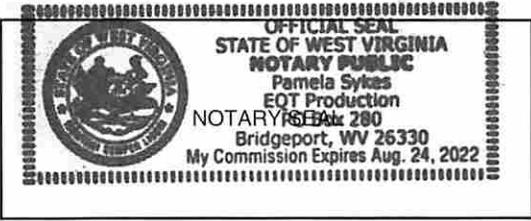
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

Certification of Notice is hereby given:

THEREFORE, I *Victoria J. Roark*, 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: EQT Production Company
By: Victoria J. Roark
Its: Permitting Supervisor
Telephone: 304-848-0076

Address: P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040
Email: vroark@eqt.com



Subscribed and sworn before me this 9 day of June, 2015
Pamela Sykes Notary Public

My Commission Expires 8.24.22

Oil and Gas Privacy Notice:

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

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WW-6A
(9-13)

API NO. 47 - 085 - 0
OPERATOR WELL NO. 514474
Well Pad Name: PEN54

**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: 6-11-15 Date Permit Application Filed: 6-11-15

Notice of:

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

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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 construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of 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; 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 disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The 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 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 construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field 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 in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be 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 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 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: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

COAL OWNER OR LESSEE

Name: Phyllis A Rymer
Address: 21166 State Rt 676
Marietta OH 45750

See attached for additional coal owners.

Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068

COAL OPERATOR

Name: _____
Address: _____

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

Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

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

Name: _____
Address: _____

Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068
See Attached

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SURFACE OWNER(s) (Impoundments/Pits)

Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415
See Attached

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

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*Please attach additional forms if necessary

WW6-A

Additional Surface Owners: Access Road

Heartwood Forestland Fund IV, LP
1212 East Franklin St ✓
Suite 104
Chapel Hill NC 27514

Coastal Forest Resources ✓
dba Coastal Timberlands Company
PO Box 709
Buckhannon WV 26201

Additional Surface Owners: Pits/Impoundments

Randy Collins, Natalie Collins, Kate Collins ✓
5368 Muscovy Rd
Middleburg FL 32068

Additional Coal Owners

Braden M Nida ✓
150 Seneca Dr
Marietta OH 45750

Anita W Gass ✓
14190 Green St
Grand Haven MI 49417

Byron Whealen ✓
678 N 38th Ave
Deerfield Beach FL 33442

Robert Singleton ✓
1561 Connell Rd
Charleston WV 25314

Mollie Harrington
Charles Morrison
Claire Leugers
Trustees of Joan N Morrison Residuary Trust ✓
102 NE Cypress Trail
Jensen Beach FL 34957

Carolyn W Wilson ✓
3731 Buffalo Lane
Montrose CO 81401

Marsha Spenst ✓
11133 N Eagle Crest Dr
Oro Valley AZ 85737

Rebecca Pearson ✓
1812 W Mountain
Ft Collins CO 80521

Gene C Singleton ✓
2504 22nd Ave
Parkersburg WV 26101

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Additional Coal Owners

Deborah K Latham ✓
Trustee of the Deborah K Latham Living Trust
1810 10th Pike
Vero Beach FL 32960

Patricia A Zinn ✓
315 South 4th St
Douglas WY 82633

Virginia R Terry ✓
8868 State Rt 555
Cutler OH 45724

Joyce L Wilson ✓
FKA Joyce L Fowler
150 County Rd 4603
Bogata TX 75417

Linda J Chambers ✓
47 Weber St
Richwood WV 26261

First National Bank of Oregon ✓
Trustee for Lathan Flanagan
31033 Foxridge Ln
Eugene OR 97405

Linda Sue Hill ✓
626 Thorn Grove Pike Rd
Starwberry Plains TX 37871

Nelva Jean Ford ✓
8805 Mid Haven Circle
Granbury TX 76048

Holmes & Vada J Lemon ✓
1295 South Spring St
Harrisville WV 26362

Dewey W Jones ✓
356 Cattle Run Rd
Pennsboro WV 26415

James A Rogers Jr ✓
356 Cattle Run Rd
Pennsboro WV 26415

Samuel C Rogers ✓
204 Elanor St
Pennsboro WV 26415

Wilma J Coffield ✓
1842 Tonawanda Ave
Akron OH 44305

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Additional Coal Owners

Stephen Ward ✓
2610 New York Ave
Parkersburg WV 26101

Appalachian Royalty Co ✓
3049 Robert C Byrd Dr
Beckley WV 25801

Warren R & Lena G Haught ✓
12864 Staunton Turnpike
Smithville WV 26178

Barry D Haught ✓
Ira Haught
Robin J Cook
Trustees for the Haught Family Trust
210 E Main St
Harrisville WV 26362

Karen Louise Plants ✓
PO box 7304
Glen Rose TX 76043

Betty Lou Frankhauser ✓
753 Cedarcrest Dr
Bound Brook NJ 08805

Philip Latham Sherror ✓
203 SW Bridge St #124
Grants Pass OR 97526

Ellen Sherror Francaviglia ✓
3117 Lakeview Dr
Salem OR 97304

Gregory Flanagan ✓
202 Willow St
Pennsboro WV 26415

Antero Resources Appalachian Corp ✓
1625 17th St
Denver CO 80202

Ann S Batta ✓
FKS Ann Sherror Killen
PO Box 27570
San Deigo CA 92198

Patricia L Moore ✓
Rt 1 Box 87B
Bridgeport WV 26330

Joseph Flanagan ✓
PO Box 2
Smithville WV 26178

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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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 401 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 well was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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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.

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

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

Written Comment:

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

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

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

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, ⁴⁷⁰⁸ article six ²²² 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.

RECEIVED
Office of Oil and Gas
JUN 12 2015
WV Department of
Environmental Protection

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0082
Email: Vroark@eqt.com

Address: 115 Professional Place P.O. Box 280
Bridgeport, WV 26330
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.

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, 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.

Victoria Roark

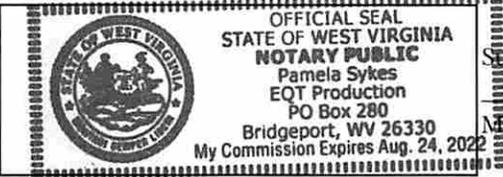
By: Victoria Roark

Its: Permitting Supervisor

Subscribed and sworn before on 9 day of June, 2015

Pamela Sykes Notary Public

My Commission Expires 8-24-22



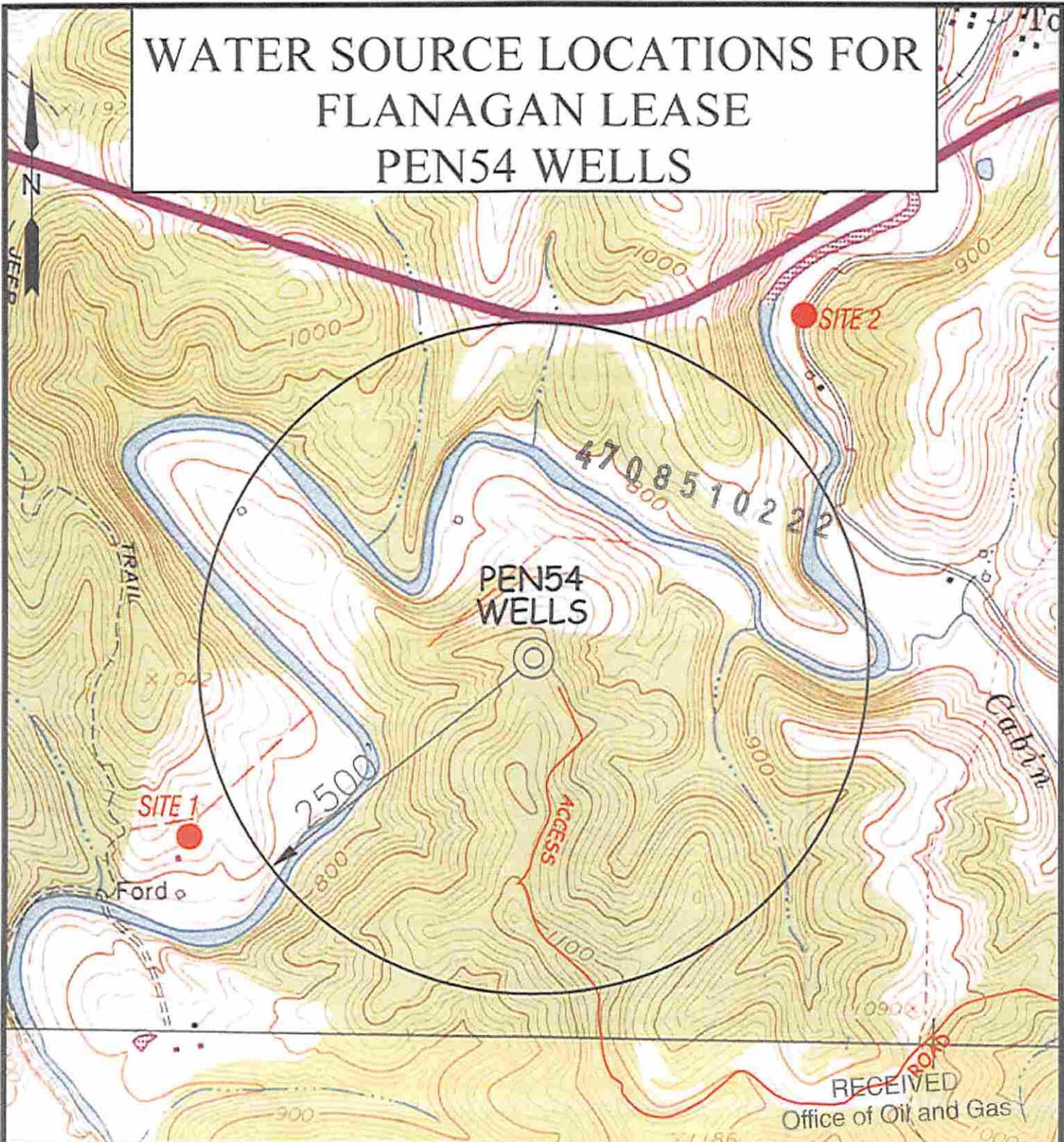
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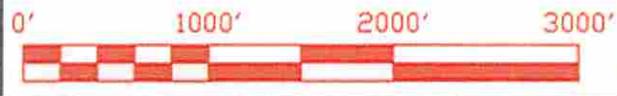
JUN 12 2015

WV Department of
Environmental Protection

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



SCALE: 1-INCH = 1000-FEET



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WV Department of Environmental Protection
LEGEND
WATER WELL

Professional Energy Consultants
A DIVISION OF SMITH CONSULTING, INC.
SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MANAGERS

DRAWN BY: K.D.W.
FILE NO.: 8083
DATE: 06/02/15
CADD FILE: 006302P004.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

DISTRICT	COUNTY	TAX MAP-PARCEL NO.
CLAY	RITCHIE	31-09

OPERATOR: JUN 12 2015
EQT PRODUCTION COMPANY
115 PROFESSIONAL PLACE
P.O. BOX 280
BRIDGEPORT, WV 26330
WV Department of Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry.

Date of Notice: April 9, 2014

Date of Planned Entry: April 16, 2014

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

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

Pursuant to West Virginia Code § 22-6A-10(a), prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(S)

Name: Randy Collins, Natalie Collins & Kate Collins
5368 Muscovy Rd.
Address: Middlebourg, FL 32068-3531 1/2 Interest

Name: _____
Address: _____
Name: _____
Address: _____

COAL OWNER OR LESSEE

Coal Declaration pursuant to §22-6A-10 and §22-6-36
Name: Not of Record

Address: _____

MINERAL OWNER(S)

Name: _____
Address: _____
Name: _____
Address: _____

4708510222

*Please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: West Virginia
County: Ritchie
District: Clay Map 31 Parcel 5 243.50 acres
Quadrangle: Pennsboro

Approx. Latitude & Longitude: 39.25555 / -80.92743
Public Road Access: Cabin Road
Watershed: North Fork Hughes River
Generally Used Farm Name: _____

Copies of the state Erosion and Sediment Control Manual and the statues and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0094
Facsimile: 304-848-0040
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330
EQT Representative: Jim Mencer
Signature: _____
Office of Oil and Gas
JUN 12 2015

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such a name, address and telephone number, as part of 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.

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WW-6A5
(1/12)

Operator Well No. 514474

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: 6-11-15 Date Permit Application Filed: 6-11-15

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED HAND 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.

4708510222

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: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415

Name: Randy Collins, Natalie Collins, Kate Collins
Address: 5368 Muscovy Road
Middleburg FL 32068

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: WV UTM NAD 83 Easting: 506,264.110000
County: Ritchie Northing: 4,345,396.290000
District: Clay Public Road Access: Rt 50
Quadrangle: Pennsboro 7.5 Generally used farm name: Jerry Morton et al
Watershed: North Fork Hughes River

This Notice Shall Include:

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

Well Operator: EQT Production Company
Telephone: 304-848-0082
Email: vroark@eqt.com

Address: 115 Professional Place, P.O. Box 280
Bridgeport, WV 26330
Facsimile: 304-848-0040

Oil and Gas Privacy Notice:

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

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JUN 12 2015
WV Department of
Environmental Protection

WW-6A5
(1/12)

Operator Well No. 514474

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: 6-11-15 Date Permit Application Filed: 6-11-15

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED HAND DELIVERY

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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: Heartwood Forestland Fund IV LP
Address: 1512 East Franklin St
Suite 104
Chapel Hill NC 27514

Name: Coastal Forest Resources
Address: 470851022 - dba Coastal Timberlands Co
PO Box 709
Buckhannon WV 26201

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: WV UTM NAD 83 Easting: 506,264.110000
County: Ritchie Northing: 4,345,396.290000
District: Clay Public Road Access: Rt 50
Quadrangle: Pennsboro 7.5 Generally used farm name: Jerry Morton et al
Watershed: North Fork Hughes River

This Notice Shall Include:

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

Well Operator: EQT Production Company Address: 115 Professional Place, P.O. Box 280
Telephone: 304-848-0082 Bridgeport, WV 26330
Email: vroark@eqt.com Facsimile: 304-848-0040

Oil and Gas Privacy Notice:

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

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WV Department of
Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

May 15, 2015

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

470851

Subject: DOH Permit for the PEN 54 Pad Site, Ritchie County

- | | | |
|-----------------|-----------------|-----------------|
| 514474 PEN54H1 | 514475 PEN54H2 | 514476 PEN54H3 |
| 514477 PEN54H4 | 514478 PEN54H5 | 514479 PEN54H6 |
| 514480 PEN54H7 | 515874 PEN54H8 | 516206 PEN54H9 |
| 516207 PEN54H10 | 516208 PEN54H11 | 516209 PEN54H12 |
| 516210 PEN54H13 | | |

Dear Mr. Martin,

This well site will be accessed from Permit #03-2015-0161 issued to EQT Production Company for access to the State Road. The well site is located off of Ritchie County Route 10/1 SLS. Approved permit must be received before the start of construction.

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

Very Truly Yours,

Gary K. Clayton

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G Coordinator

Cc: Nick Bumgardner
EQT Production Company
CH, OM, D-3, File

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Environmental Protection

Anticipated Frac Additives
Chemical Names and CAS numbers

4708510222

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



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 #:

4708510222

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	115 Professional Place P.O. Box 280		
City:	Bridgeport	State:	WV Zip: 26330
Contact Name:	Ron Furby	Contact Title:	Senior manager Water Operations
Contact Phone:	304-543-9849	Contact Email:	rfurby@eqt.com

Section 2 – Engineering / Design Contractor Information

Design will be contracted <input type="checkbox"/> Designed in-house <input checked="" type="checkbox"/>			
Company Name:	Smith Land Surveying, Inc. & Stantec		
Address: Street	12 Vanhorn Drive; P.O. Box 150		
City:	Glenville	State:	WV Zip: 26351
Contact Name:	Wes Wayne	Contact Title:	Design Coordinator
Contact Phone:	304-462-5634	Contact Email:	wwayne@slssurveys.com
Certifying Professional Engineer:	Richard Gaines		
Professional Engineer Registration Number:	WV PE No. 17220		

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Page 1 of 4



Office of Oil and Gas

Section 3 - Impoundment / Pit InformationType of Structure. Check one of two choices below: Freshwater Impoundment Waste Pit **4708510222**Note: Any waste in a pit will make it a waste pit.Name of Structure (Company Name :) PEN 54 Associated Flowback PitCounty: Ritchie District: ClayUSGS 7.5' Quad Map Name: Pennsboro

Farm Name: _____

Pad Name: PEN 54's SiteSurface Owner Name: Heartland Forestland Fun IV LLCPhysical Description of Location: The site is located 1.9 miles +/- southeast of the junction of US Rt 50 and WV 74

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

Watershed (nearest perennial): North Fork of Hughes RiverDistance (Drainage Distance) to nearest perennial stream: 0.30 miles

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

Latitude: 39.256871 Longitude (Use negative sign): -80.926494UTM Coordinates : 1661223.500 E 14256155.996 N

Access Road Coordinates (junction of state highway access)

Latitude: 39.25238 Longitude (Use negative sign): -80.90836UTM Coordinates : 1666358.221 E 14254525.532 N**Approximate Dimensions**Length: 250' Width: 100' Height: 13'

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

Total Capacity – Provide all units of measure below:

Barrels: 31,058 Gallons: 1,304,438 Acre-Feet: 4.00317

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

Barrels: 22,801 Gallons: 957,656 Acre-Feet: 2.93893

Incised volume:

Barrels: 22,801 Gallons: 957,656 Acre-Feet: 2.94

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

Barrels: 8,257 Gallons: 346,782 Acre-Feet: 1.06317Anticipated Construction Start Date (estimation, non-binding): To be determinedNote: 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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JUN 12 2015

WV Department of
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:
WV 514474 (H1)	
WV 514475 (H2)	
WV 514476 (H3)	
WV 514477 (H4)	
WV 514478 (H5)	
WV 514479 (H6)	
WV 514480 (H7) AND H8-H11	

4708510222

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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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: Victoria J. Roark
Title: Permitting Supervisor
Signature: [Handwritten Signature]

Taken, subscribed and sworn to before me this, 11 Day of June 20 15

Notary Public: [Handwritten Signature]

My commission expires: 8-24-22



Section 9. Submittal Instructions

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

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

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Office of Oil and Gas
JUN 12 2015
WV Department of
Environmental Protection



Office of Oil and Gas

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

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

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	115 Professional Place P.O. Box 280		
City:	Bridgeport	State:	WV Zip: 26330
Contact Name:	Ron Furby	Contact Title:	Senior manager Water Operations
Contact Phone:	304-543-9849	Contact Email:	rfurby@eqt.com

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Section 2 – Engineering / Design Contractor Information

Design will be contracted <input type="checkbox"/> Designed in-house <input checked="" type="checkbox"/>			
Company Name:	Smith Land Surveying, Inc. & Stantec		
Address: Street	12 Vanhorn Drive; P.O. Box 150		
City:	Glenville	State:	WV Zip: 26351
Contact Name:	Wes Wayne	Contact Title:	Design Coordinator
Contact Phone:	304-462-5634	Contact Email:	wwayne@slssurveys.com
Certifying Professional Engineer:	Richard Gaines		
Professional Engineer Registration Number:	WV PE No. 17220		

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Section 3 - Impoundment / Pit InformationType 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 :) PEN 54 Associated Completion PitCounty: Ritchie District: ClayUSGS 7.5' Quad Map Name: Pennsboro

Farm Name: _____

Pad Name: PEN 54's SiteSurface Owner Name: Randy, Natalie, and Kate CollinsPhysical Description of Location: The site is located 1.9 miles +/- southeast of the junction of US Rt 50 and WV 74

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

Watershed (nearest perennial): North Fork of Hughes RiverDistance (Drainage Distance) to nearest perennial stream: 0.14 miles

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

Latitude: 39.258129 Longitude (Use negative sign): -80.923194UTM Coordinates : 1662157.219 E 14256614.801 N

Access Road Coordinates (junction of state highway access)

Latitude: 39.25238 Longitude (Use negative sign): -80.90836UTM Coordinates : 1666358.221 E 14254525.532 N

Approximate Dimensions

Length: 400' Width: 180' Height: 16'

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

Total Capacity – Provide all units of measure below:

Barrels: 112,244 Gallons: 4,714,238 Acre-Feet: 14.46745

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

Barrels: 90,972 Gallons: 3,820,832 Acre-Feet: 11.72569

Incised volume:

Barrels: 22,139 Gallons: 929,866 Acre-Feet: 2.85

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

Barrels: 90,105 Gallons: 3,784,372 Acre-Feet: 11.61745Anticipated Construction Start Date (estimation, non-binding): To be determinedNote: No construction may begin on **Associated** impoundment until WVDEP issues the drilling permit. At least 7 calendar days prior to confirmed construction start date, notify the Office of Oil & Gas, and the local Oil and Gas inspector of construction start date. Use form IMP-2, "Notification of Impoundment / Pit Construction".

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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:
WV 514474 (H1)	
WV 514475 (H2)	
WV 514476 (H3)	
WV 514477 (H4)	
WV 514478 (H5)	
WV 514479 (H6)	
WV 514480 (H7) AND H8-H11	

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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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Section 8 - Application Certification

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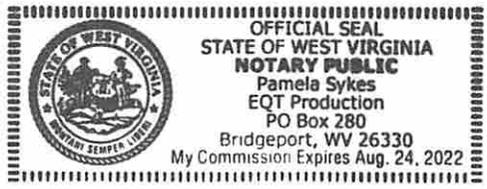
Name: Victoria J. Rank
Title: Permitting Supervisor
Signature: [Signature]

Taken, subscribed and sworn to before me this, 11 Day of June 20 15

Notary Public: [Signature]

My commission expires: 8-24-22

Notary Seal:



Section 9. Submittal Instructions

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PROJECT INFORMATION
 PROJECT NAME: EQT PEN 54
 SURFACE OWNER: RANDY, NATALIE & KATE COLLINS
 CLAY DISTRICT, RITCHIE COUNTY, WV
 TOTAL PROPERTY AREA: 243.50 ± ACRES
 TOTAL DISTURBANCE AREA: 32.87 ± ACRES
 JERRY MERTON
 CLAY DISTRICT, RITCHIE COUNTY, WV
 TOTAL PROPERTY AREA: 243.50 ± ACRES
 TOTAL DISTURBANCE AREA: 32.87 ± ACRES
 HEARTWOOD FORESTLAND FUND IV, LLC
 CLAY DISTRICT, RITCHIE COUNTY, WV
 TOTAL PROPERTY AREA: 243.50 ± ACRES
 TOTAL DISTURBANCE AREA: 32.87 ± ACRES
 TAX MAP 33-22
 COASTAL FOREST RESOURCES (RMA COASTAL TIMBERLANDS.COM)
 TAX MAP 33-22
 TOTAL PROPERTY AREA: 42.31 ± ACRES
 TOTAL DISTURBANCE AREA: 3.71 ± ACRES
 DILL AND ROYALTY OWNER: S.B. ETAL (860 ± ACRES)
 CLAY DISTRICT, RITCHIE COUNTY, WV

APR 8510222
APR 8510225
APR 8510226
APR 8510227
APR 8510228
APR 8510229
APR 8510230
APR 8510231
APR 8510232

EQT PEN 54 SITE PLAN

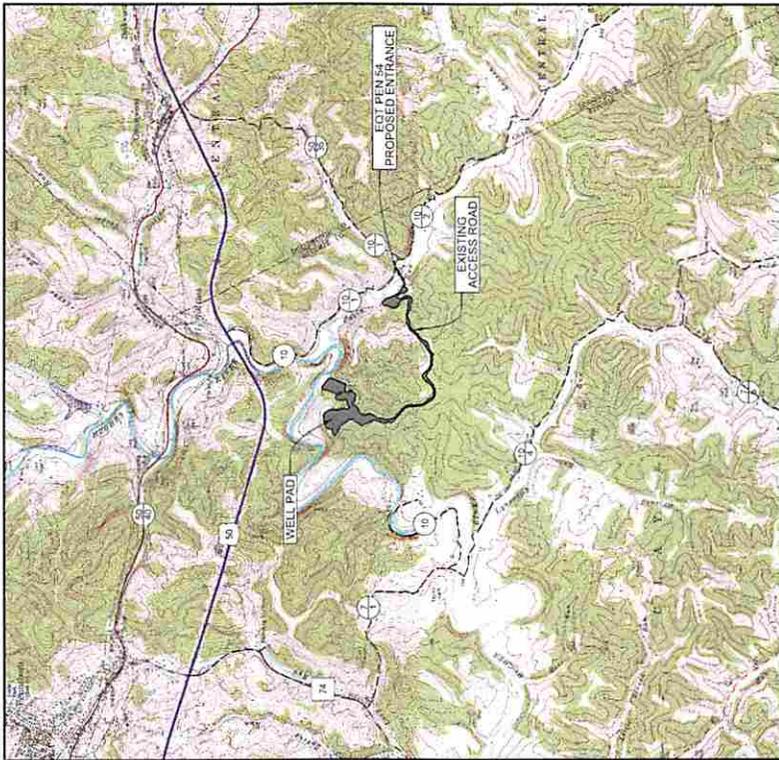
EQT PRODUCTION COMPANY

PROPOSED WELL NO. H1 WV514474, H2 WV514475, H3 WV 514476, H4 WV514477, H5 WV514478, H6 WV514479, H7 WV514480, H8 WV515874, H9 WV516206, H10 WV516207, H11 WV516208
 SITUATE ON THE WATERS OF NORTH FORK HUGHES RIVER IN CLAY DISTRICT, RITCHIE COUNTY, WV

APPROVED
WVDEP OOG
 8/14/2015

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3-4	OVERALL PLANS SHEET INDEX
5-12	ACCESS ROAD AND WELL SITE LAYOUT
13-23	WELL PAD (LOWBACK PFT) COMPLETION FIT CROSS SECTIONS
24-29	ACCESS ROAD PROFILE
30-33	ACCESS ROAD CROSS SECTIONS
34	EXCESS MATERIAL STOCKPILE PROFILES
35-37	EXCESS MATERIAL STOCKPILE CROSS SECTIONS
38	TOPSOIL STOCKPILE PROFILES
39-44	TOPSOIL STOCKPILE CROSS SECTIONS
45-47	RECLAMATION PLAN
48-51	CONSTRUCTION DETAILS
52-53	CONSTRUCTION QUANTITIES

DATE NORTH AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY SURVEY GRADE GPS



MISS LINE OF WELL SIGNAGE
 MISS LINE OF WELL SIGNAGE
 (Include a V.E.T. or State # if C) (Include a V.E.T. or State # if C)
 Please note that you call the
 number on the sign to report the
 the state at West Virginia
 IT'S THE LAW!



LEGEND	
EX. INDEX CONTOUR	PROF. INDEX CONTOUR
EX. INTERMEDIATE CONTOUR	PROF. INTERMEDIATE CONTOUR
EX. BOUNDARY LINE	PROF. CUT LINE
EX. EDGE OF ROAD PAVEMENT	PROF. FILL LINE
EX. GUARDRAIL	PROF. LIMITS OF DISTURBANCE
EX. FENCELINE	ENVIRONMENTAL ASSESSMENT AREA OF WELL HEAD
EX. GATE	PROF. CONTAINMENT TERM
EX. OVERHEAD UTILITY	PROF. ROAD CENTERLINE
EX. OVERHEAD UTILITY RW	PROF. FLAT BOTTOM DITCH WITH CHECK DAMS
EX. UTILITY POLE	PROF. CHECK DAMS WITH CHECK DAMS
EX. TELEPHONE LINE	PROF. CULVERT
EX. GASLINE RW	PROF. RIP-RAP OUTLET PROTECTION
EX. WATERLINE	PROF. RIP-RAP INLET PROTECTION
EX. WATER WELL	PROF. COMPOST FILTERS
EX. GAS WELL	PROF. TREE LINE
EX. TREE LINE	PROF. REFERENCE TREE
EX. DEGRADED STREAM	PROF. DEGRADED WETLAND
EX. DEGRADED WETLAND	EX. BUILDING

OPERATOR
 EQT PRODUCTION COMPANY
 OPERATOR ID: 307666
 P.O. BOX 210
 FARMINGTON, WV 26031
 PHONE: (304) 445-3870

ENGINEER
 STANTEC CONSULTING INC.
 111 ELANS STREET
 FARMINGTON, WV 26031
 PHONE: (304) 397-0451

SURVEYOR
 SMITH LAND SURVEYING, INC.
 12 VANHORN DRIVE
 PO BOX 150
 WHEELING, WV 26061
 PHONE: (204) 462-5224

RESTRICTIONS NOTES

- THERE ARE INTERMITTENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THESE ARE WITHIN 100 FEET OF THE LOD, AND A WALKER FROM THE WDEP WILL BE APPLIED FOR THROUGH- THE WALKER PERMIT.
- THERE ARE NO NATURALLY OCCURRING TROUT STREAMS WITHIN 500 FEET OF THE PAD AND LOD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD.
- THERE ARE NO KNOWN EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 200 FEET OF THE WELLS, BEING DEVELOPED SPRINGS DURING CONSTRUCTION, IF POSSIBLE, FOR ANY EXISTING WATER WELL ON THE PAD.
- THERE ARE NO OCCUPIED Dwellings OR STRUCTURES WITHIN 525 FEET OF THE CENTER OF THE PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 12,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD.

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 8/20/13, 8/22/13, 9/17/13, 10/14/13, 10/14/13, AND 11/27/13 TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE SUBJECT TO THE REGULATORY JURISDICTION OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), THE 10/20/13 AND 2/22/15 REPORT FOR LOT P11 SA PREPARED BY POTESTA & ASSOCIATES, INC. SUMMARIZES THE RESULTS OF THE FIELD DELINEATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE US OR THE WDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONSENT FROM THE APPROPRIATE AGENCIES BE FORWARDED TO THE FEDERAL AND/OR STATE REGULATORY AGENCIES FOR THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES AND STATE CROSSINGS.

GENERAL DESCRIPTION

THE WELL PAD, LOWBACK PFT, ACCESS ROAD, AND COMPLETION FIT ARE BEING CONSTRUCTED TO AD IN THE DEVELOPMENT OF INDIVIDUAL BARCELOS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

WELL PAD/LOWBACK PFT AREA = 14.68 ± ACRES
 ACCESS ROAD AREA = 30.53 ± ACRES
 COMPLETION FIT AREA = 8.84 ± ACRES
 TOTAL SITE DISTURBANCE AREA = 54.05 ± ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT FROM MW-109 FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MISS UTILITY STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TRIPET #43282412. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 8/20/13, 8/22/13, 9/17/13, 10/14/13, 10/14/13, AND 11/27/13 TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE SUBJECT TO THE REGULATORY JURISDICTION OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), THE 10/20/13 AND 2/22/15 REPORT FOR LOT P11 SA PREPARED BY POTESTA & ASSOCIATES, INC. SUMMARIZES THE RESULTS OF THE FIELD DELINEATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE US OR THE WDEP. IT IS STRONGLY RECOMMENDED THAT THE APPLICANT BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONSENT FROM THE APPROPRIATE AGENCIES BE FORWARDED TO THE FEDERAL AND/OR STATE REGULATORY AGENCIES FOR THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES AND STATE CROSSINGS.

GEOTECHNICAL NOTES

A SURFACE INVESTIGATION HAS NOT BEEN PERFORMED AS OF 02/17/2015. THE INVESTIGATION SHOULD BE CONDUCTED TO DETERMINE THE SOILS AND TO IDENTIFY ANY REGULATIONS CAUSING ADDITIONAL WORK OR ADDITIONAL CONSTRUCTION MEASURES REQUIRED BEYOND THOSE STANDARD PRACTICES SHOWN ON THIS PLAN AS A RESULT OF ANY OTHER GEOTECHNICAL COMPLICATIONS ENCOUNTERED DURING CONSTRUCTION.



TITLE SHEET
 EQT PEN 54
 CLAY DISTRICT
 RITCHIE COUNTY, WV

DATE: 08/20/15
 SCALE AS SHOWN
 DESIGNED BY: RJA
 FILE NO.: 15-0131
 SHEET 1 OF 53
 REV: 08/20/15

