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: 47-8510228, 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: 514478
Farm Name: MORTON, JERRY
API Well Number: 47-8510228
Permit Type: Horizontal 6A Well
Date Issued: 08/17/2015

Promoting a healthy environment.

API Number: _____

PERMIT CONDITIONS

4708510228

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 4708510228

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.

WW - 6B
(4/15)

API NO. 47 - 085 -
OPERATOR WELL NO. 514478
Well Pad Name: PEN54

4708510228

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

1) Well Operator: EQT Production Company

306686	085	1	539
Operator ID	County	District	Quadrangle

2) Operator's Well Number: 514478 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: 6297
9) Formation at Total Vertical Depth: Marcellus
10) Proposed Total Measured Depth: 10,118
11) Proposed Horizontal Leg Length 3,130
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: _____

7-15-15

RECEIVED
Office of Oil and Gas
JUL 17 2015
WV Department of
Environmental Protection

WW - 6B
(4/15)

4708510228

API NO. 47 - 0 -
OPERATOR WELL NO. 514478
Well Pad Name: PEN54

CASING AND TUBING PROGRAM

18)

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill- up (Cu.Ft.)
Conductor	20	New	MC-50	81	40	40	38 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	2,037 C.T.S.
Production	5 1/2	New	P-110	20	10,118	10,118	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	2,730	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)

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

API NO. 47 - 0 -
OPERATOR WELL NO. 514478
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 3847 then kick off the horizontal leg into the Marcellus 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): 52.03

22) Area to be disturbed for well pad only, less access road (acres): 21.5

23) Describe centralizer placement for each casing string.

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

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

Production:

Lead (Type 1 Cement): 0.2-0.7% Lignosulfonate (Retarder). Lengthens thickening time. 0.3% CFR (dispersant). Makes cement easier to mix.

Tail (Type H Cement): 0.25-0.40% Lignosulfonate (Retarder). Lengthens thickening time. 0.2-0.3% CFR (dispersant). This is to make the cement easier to mix. 60 % Calcium Carbonate. Acid solubility. 0.4-0.6% Halad (fluid loss). Reduces amount of water lost to formation.

25) Proposed borehole conditioning procedures. **Surface:** Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. To ensure that there is no fill, short trip two stands with no circulation. If there is fill, bring compressors back on and circulate hole clean. A constant rate of higher than expected cuttings volume likely indicates washouts that will not clean up. **Intermediate:** Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full joint until cuttings diminish at surface. When cuttings returning to surface diminish, continue to circulate an additional 5 minutes. If foam drilling, to enhance hole cleaning use a soap sweep or increase injection rate & foam concentration. **Production:** Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

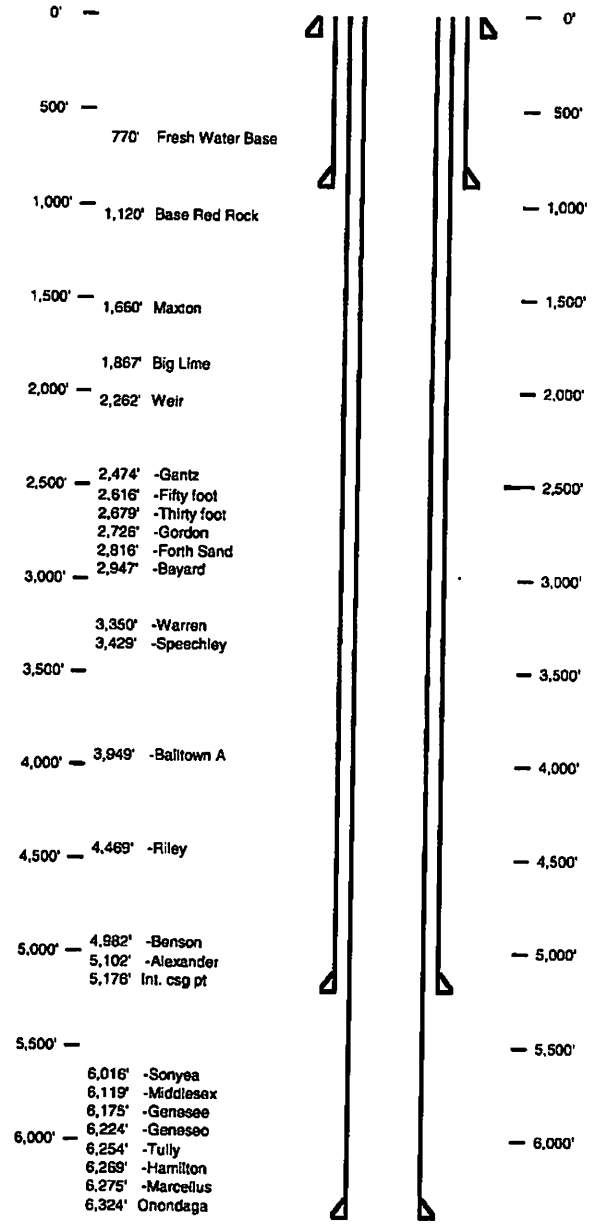
*Note: Attach additional sheets as needed.

Well Schematic
EQT Production

4708510228

Well Name [redacted]
County
State West Virginia

Elevation KB: [redacted]
Target
Prospect
Azimuth [redacted]
Vertical Section



Hole Size 24" - 20" Conductor at 40'
Bit Size 17.5"

TOC @ Surface
13 3/8", MC-50, 54.5# @ [redacted] ft MD
Bit Size 12.375"

KOP = [redacted] ft MD
10 Deg DLS

TOC @ [redacted]
9 5/8", MC-50, 40# @ [redacted] ft MD
Bit Size 8.5"

Land @ [redacted] ft MD
[redacted] ft TVD

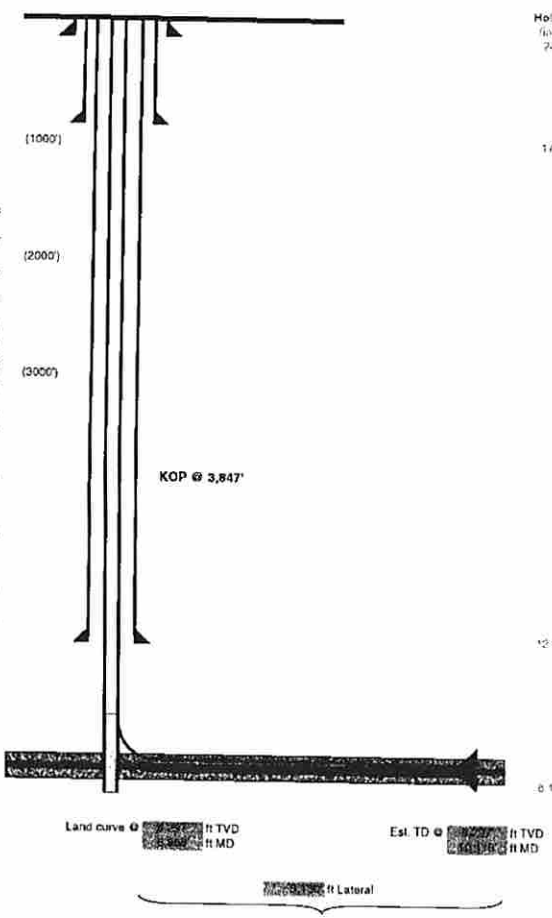
5 1/2", P-110, 20# [redacted] ft MD
[redacted] ft TVD

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

[redacted](PEN54H5)
EQT Production
[redacted] West Virginia

Azimuth [redacted]
Vertical Section [redacted]



Hole Size (inches)	Casing Type	Size (inches)	Wt (ppf)/Grade
24	Conductor	20	81#/MC-50
17 1/2	Surface	13 3/8	54.5#/J-55
12 1/4	Intermediate	9 5/8	40#/A-500
8 1/2	Production Casing	5 1/2	20#/P-110

Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
The vertical drill to go down to an approximate depth of 3847'.
Then kick off the horizontal leg into the Marcellus using a slick water frac.

4708510228

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

EQT

4708510228

April 8, 2015

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

Re: Casing on Wells (PEN54)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 870' KB, 100' below the deepest fresh water. This will cover up red rock formations that have given EQT drilling issues in the past. We will set the 9-5/8" intermediate string at 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.

RECEIVED
Office of Oil and Gas
JUL 17 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

March 18, 2014

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

4708510229

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

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

Received
Office of Oil & Gas
JUL 08 2015

west virginia department of environmental protection

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

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

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

IN THE MATTER OF A VARIANCE FROM	)	**ORDER NO. 2014 - 17** 4708510226
REGULATION 35 CSR § 4-11.4/11.5/14.1	)	
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE	)	
THE OPERATIONAL	)	
REGULATIONS OF CEMENTING OIL	)	
AND GAS WELLS	)	

REPORT OF THE OFFICE

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

FINDINGS OF FACT

1.) Nabors Completion & Production Services Co. proposes the following cement blend:

- 2% Calcium Chloride (Accelerator)
- 0.25 % Super Flake (Lost Circulation)
- 94% Type "1" Cement
- 5.20 % Water

2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Received
Office of Oil & Gas
JUL 08 2015

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.

4708510223

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

ORDER

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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

James Martin, Chief
Office of Oil and Gas

Received
Office of Oil & Gas
JUL 08 2015

WW-9
(2/15)

4708510228

API No. 47 - 085 - 10228
Operator's Well No. 514478

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, deflocculates, biodegradable oil lubricant , defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifier, alkalinity control, filtration control, deflocculates, 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.

RECEIVED
Office of Oil and Gas
AUG 11 2015
WV Department of
Environmental Protection

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

Subscribed and sworn before me this 11 day of August, 20 15

Rebecca L Heater Notary Public

My commission expires 4-7-20

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
REBECCA L. HEATER
EQT PRODUCTION COMPANY
PO BOX 280
BRIDGEPORT, WV 26330
My commission expires April 07, 2020

Form WW-9

4708510228

Operator's Well No. 514478

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

4708510228

Seed Mixtures

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

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: David Wilson

Comments: pressed & Mulch all cut area no less than 2 ton per acre maintain all E&S During operations

Title: oil/gas inspector Date: 7-15-15

Field Reviewed? (✓) Yes ( ) No

RECEIVED
Office of Oil and Gas
JUL 17 2015
WV Department of
Environmental Protection

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

4708510228

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

Received
Office of Oil & Gas
JUL 08 2015

Form WW-9

page of

.7085102 28

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

N

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'

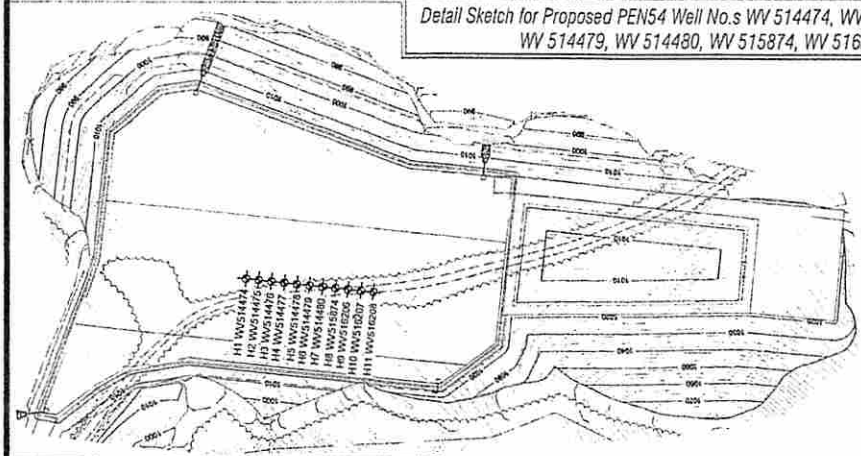
0' 500' 1000'

MATCH LINE

1100

0900

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 and Gas
JUL 2015
WV Department of
Environmental Protection

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

Not To Scale

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS
SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	8083	06-25-15	8083PEN54REC.dwg

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

7085102 28

Form WW-9

page of

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

N

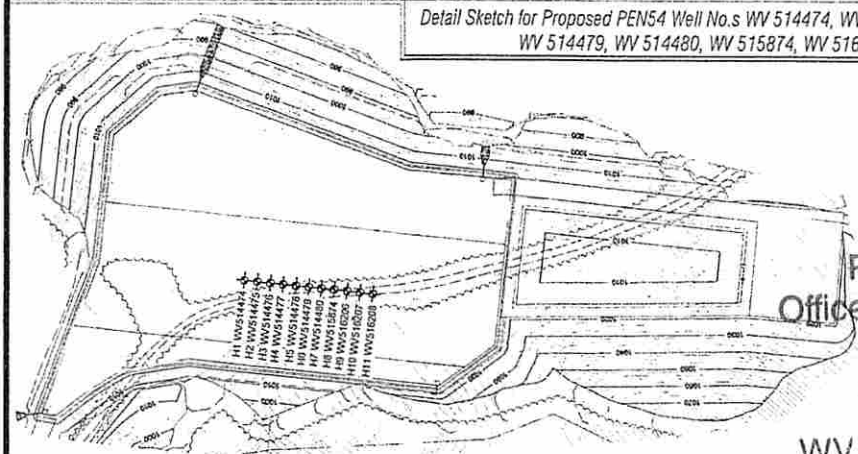
FLANAGAN LEASE
PEN54 WELL NO.S WV 514474, WV 514475, WV 514476, WV 514477, WV 514478, WV 514479, WV 514480, WV 515874, WV 516206, WV 516207 & WV 516208

SHEET 2 OF 2
SCALE: 1"=500'

0' 500' 1000'

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 and Gas
JUL 17 2015
WV Department of
Environmental Protection

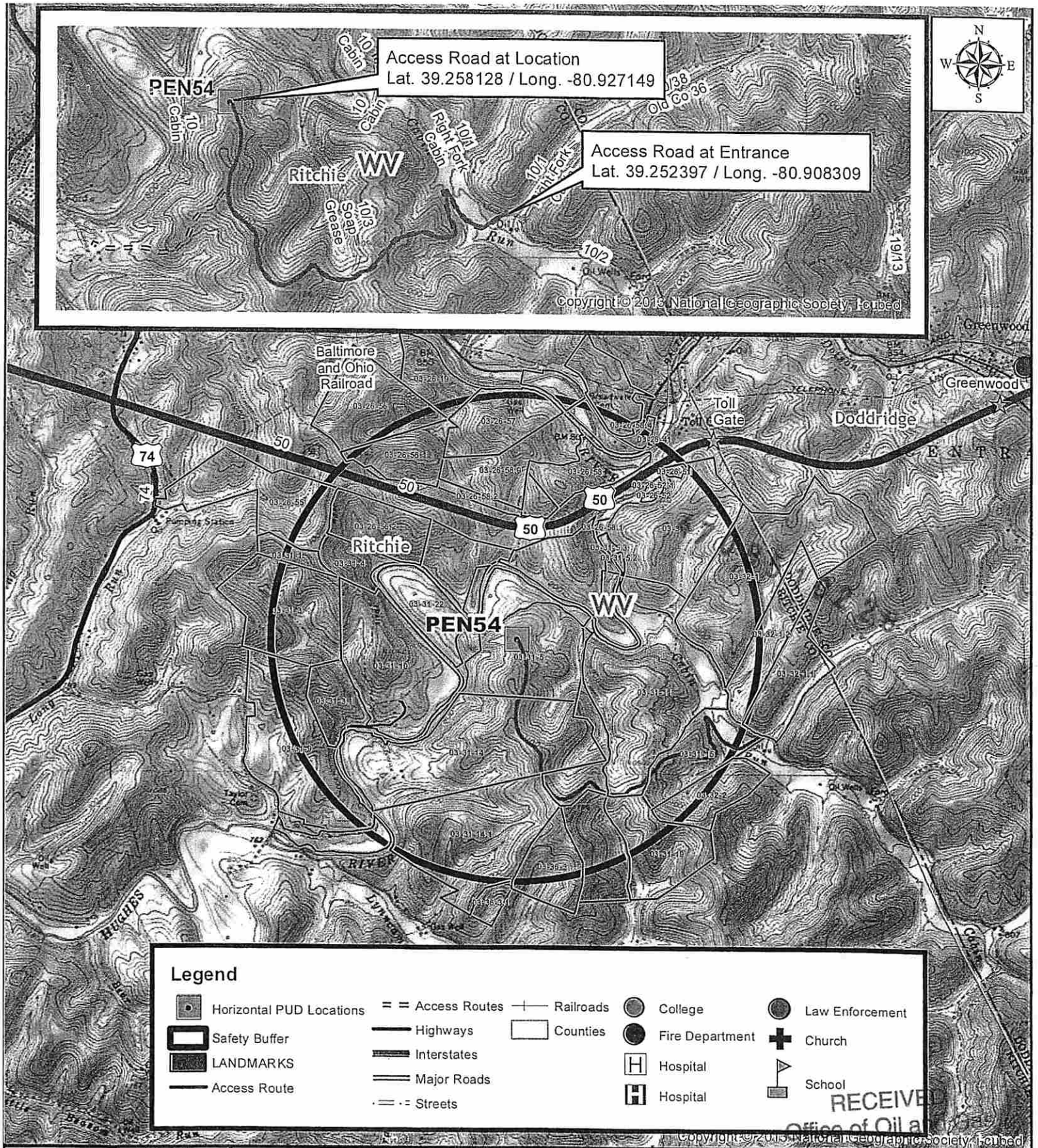
NOTE: SEE SITE PLAN PEN54 FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	8083	06-25-15	8083PEN54REC.dwg

TOPO SECTIONS OF PENNSBORO 7.5' TOPO QUADRANGLE

Not To Scale



RECEIVED
Office of Oil and Gas

JUL 17 2015

WV Department of Environmental Protection

EQT

EQT Production
White Oaks Office
120 Professional Place
Bridgeport, WV 26330

Site Safety Plan

PEN54
One Mile Safety Buffer
Ritchie County, WV

Created By: SSimms
Printed By: ssimms on 3/17/2015
Map Date:
Dept: Land GIS - White Oak Office

4708510228

DISCLAIMER:
ALL INFORMATION DEPICTED ON THIS MAP PROVIDED BY EQT (SAID TERM SHALL MEAN EQT PRODUCTION OR EQT MIDSTREAM, DEPENDING ON WHICH EQT ENTITY PROVIDED THE MAP) IS FOR INFORMATION PURPOSES ONLY AND SHALL BE TREATED AS CONFIDENTIAL INFORMATION AND SHALL ONLY BE USED FOR THE SOLE PURPOSE FOR WHICH IT WAS PROVIDED. ANY OTHER USE OF THIS MAP, OR THE INFORMATION INCLUDED THEREON, IS STRICTLY PROHIBITED. THE EXACT LOCATION OF THE FACILITIES (INCLUDING BUT NOT LIMITED TO WELLS, PIPELINES, STRUCTURES, FACILITIES, LEASE BOUNDARIES OR ANY OTHER INFORMATION SHOWN ON THIS MAP SHALL NOT BE RELIED UPON FOR THE SPECIFIC LOCATION OF THE FACILITIES, AND THE PARTIES AGREE THAT THE INFORMATION SHOWN ON THE MAP MAY NOT HAVE BEEN PLACED ON THE MAP USING SURVEY LINES OR GPS COORDINATES. EQT MAKES NO EXPRESS OR IMPLIED REPRESENTATION OR WARRANTY AS TO THE ACCURACY OF THE MAP OR THE INFORMATION SHOWN THEREON. THE SPECIFIC LOCATION OF ANY OF THE INFORMATION, INCLUDING ANY WELL, PIPELINE, STRUCTURE, FACILITY OR LEASE BOUNDARY, SHOULD BE DETERMINED BY A FIELD SURVEY PERFORMED BY A LICENSED SURVEYOR UPON CONSULTATION WITH EQT. THIS MAP MAY NOT BE COPIED OR OTHERWISE MADE AVAILABLE TO ANY OTHER PARTY IN PAPER OR ELECTRONIC FORMAT WITHOUT WRITTEN CONSENT FROM EQT. RECIPIENT EXPRESSLY AGREES THAT ITS USE AND/OR RETAINER OF THIS MAP SHALL BE DEEMED ITS AGREEMENT TO THE TERMS SET FORTH ABOVE.

Path: \\MDCFCS2\gisdept\GIS_ Department\Projects\Production\WV\PERMITTING\MXD\Site_Safety_Plans\PEN54\SITE_SAFETY_BASE_MAP_PEN54.mxd

4708510228

Where energy meets innovation.™

Site Specific Safety Plan

EQT PEN 54 Pad

Toll Gate
Ritchie County, WV

For Wells:

514478

Date Prepared: November 17, 2014

EQT Production

Permitting Supervisor
Title

7-2-15
Date

WV Oil and Gas Inspector

oil+gas inspector
Title

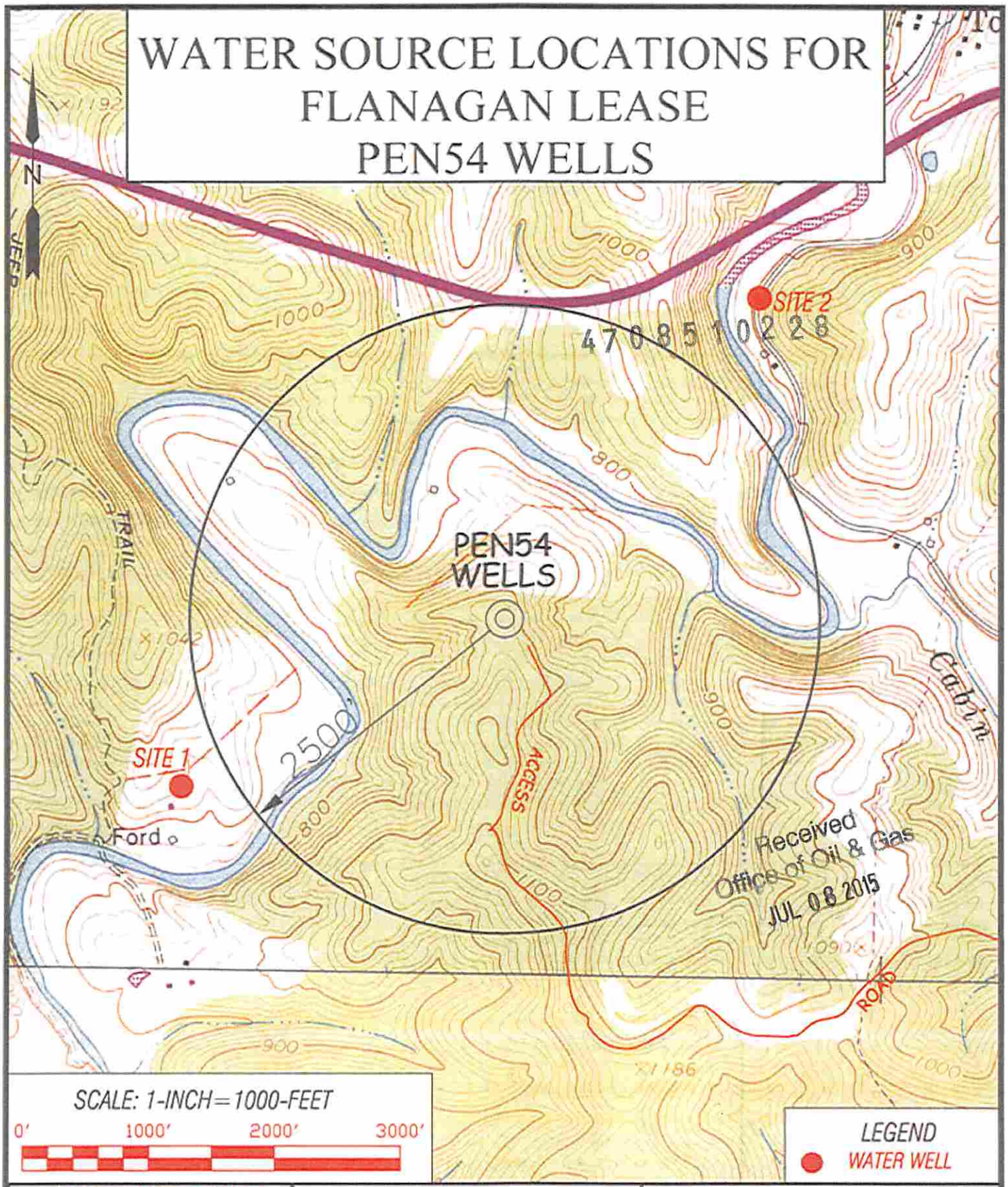
7-15-15
Date

RECEIVED
Office of Oil and Gas

JUL 17 2015

WV Department of
Environmental Protection

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS Surveyors Engineers Environmental Project Mgmt.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	8083	06/02/15	8083WSPEN54.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

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

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

SMITH LAND SURVEYING, INC. P.O. BOX 150, GLENVILLE, WV 26351
(304) 462-5634 • FAX 462-5656

WELL INFORMATION AND FINAL WATER WELL SAMPLE DATA SHEET

OPERATOR: *EQT Production Company*
LEASE NAME AND NUMBER: *PEN 54 Well Pad* 4708510228

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: *Heartwood Forestland Fund IV 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 [illegible] 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

Received
Office of Oil & Gas
JUL 08 2015

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 01/22/2015

4708510228

EQT Production

Hydraulic Fracturing Monitoring Plan

Pad ID: PEN54

Ritchie County, WV

6/17/15

Received
Office of Oil & Gas
JUL 08 2015

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 PUL96 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**.

4708570228

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.

Received
Office of Oil & Gas
JUL 08 2015

Well ID	Prior Operator on Record	Operator-DEP*	Status	Latitude	Longitude	Vertical TD	Closest Distance from PEN54 Lateral Map View	PEN54 Horizontal TVD minus Offset Vertical TD	Hypotenuse Distance	Producing Formation	Gas Show/Pay Zone Depth	Notes
4708500472	McBurney, Glen F	OPERATOR UNKNOWN	Abandoned Well	39.263	-80.9199	1796	113	7106	7106.898409	Big Unjin	1752	
4708500501		OPERATOR UNKNOWN	Abandoned Well	39.2598	-80.9311	1777	265	7087	7091.952764	Big Unjin	1705	
4708502274	Hodge, T.F.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2349	-80.9249	2404	1319	7714	7825.954063	Big Lime, Big Injun, Berea, U. Dev	1842-2467	
4708503549	Mulvin Oil Corp.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2316	-80.9113	2534	184	7844	7846.157786	Berea	245[illegible]	
4708503651	Mulvin Oil Corp.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2352	-80.9172	1980	231	7290	7293.658958	Big Injun	188[illegible]	
4708503919	Carnegie Natural Gas Co	EPC	Plugged	39.23089	-80.9094	2079	202	7389	7391.760616			
4708503967		EPC	Plugged	39.268067	-80.920055	176[illegible]	239	7074	7078.036239			
4708503975		EPC	Abandoned Well	39.24291	-80.92554	1924	303	7234	7240.342879	Big Injun	1668-1849	
4708503978		EPC	GAS - Active	39.24479	-80.92999	1845	1177	7155	7251.162252	Big Injun	1653-1790	
4708504041	Mulvin Oil Corp.	MOUNTAIN STATE OIL COMPANY LLC	GAS - Active	39.2371	-80.9236	2506	658	7816	7843.648386	Big Injun, Weir	2006-2284	
4708504182	Haught, Glen L and Sons	KEY OIL COMPANY	GAS - Active	39.2722	-80.9201	241[illegible]	235	7720	7723.575921	Big Injun, Weir	1876-2141	
4708504223	Haught, Glen L and Sons	G HAUGHT & SONS	Never Drilled	39.26472	-80.93333	1051	249	10636	10638.91428			
4708504244	Carnegie Natural Gas Co	EPC	Abandoned Well	39.27859	-80.92312	2017	180	7327	7329.210667			
4708504245	Carnegie Natural Gas Co	EPC	Plugged	39.277328	-80.929227	1732	1020	7042	7115.487615			
4708504576	Perkins Oil and Gas	PERKINS OIL & GAS INC	GAS - Active	39.2586	-80.9179	2535	1459	7845	7979.517905	Big Injun	1672-1757	
4708504873	Carnegie Natural Gas Co	EPC	O&G - Active	39.235	-80.912	5990	135	11300	11300.80639	Bradford, Riley, Benson, Alexander	4222-5040	
4708507611	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.2708	-80.92	5215	97	10523	10523.44706	Riley, Benson, Alexander	4300-4984	
4708507642	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.2766	-80.9232	5300	75	10610	10610.26508	Riley, Benson, Alexander	4429-5094	
4708507644	Haddad & Brooks, Inc.	KEY OIL COMPANY	GAS - Active	39.267	-80.9234	5375	351	10685	10690.76358	Riley, Benson, Alexander	4500-5186	
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	1688-4346	
4708507682	KC Energy, A Partnership	KEY OIL COMPANY	GAS - Active	39.2794	-80.9254	512[illegible]	333	10433	10438.31299	Riley, Benson, Alexander	4215-4891	
4708507684	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2277	-80.9113	5389	967	10699	10742.61095	Warren, Riley	3427-4602	
4708507686	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2477	-80.9306	4947	906	10252	10291.95511	Warren, Riley	3307-4797	
4708507704	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2442	-80.9275	4988	620	10298	10316.64694	Warren, Bradford	3335-4475	
4708507705	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2529	-80.9224	4953	84	10263	10263.34375	Big Injun, Warren, Speechley, Riley	1909-4447	
4708507713	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2494	-80.9257	4678	336	9988	9993.649984	Warren, Speechley, Riley	3381-4528	
4708507734		KEY OIL COMPANY	O&G - Active	39.2839	-80.923	5220	839	10530	10563.37167	Riley, Benson, Alexander	4322-5013	
4708507762	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2455	-80.9215	4773	174	10083	10084.50123	Maxton, Keener, Warren, Riley	1932-4587	
4708507763	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2474	-80.917	5013	670	10323	10344.71986	Maxton, Keener, Warren, Riley	1900-4525	
4708507764	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2431	-80.9172	4521	15	9831	9831.011443	Big Injun, Warren, Bradford	1792-4310	
4708507767	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2544	-80.9276	4678	90	9988	9988.405478	Warren, Riley	3349-4491	
4708507768	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2413	-80.9243	4604	219	9914	9916.418557	Maxton, Big Injun, Warren, Speachley, Riley	1858-4522	
4708507771	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2647	-80.918	5286	86	10596	10596.34899	Warren, Riley, Benson	3265-5058	
4708507772	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.268	-80.914	5265	1373	10575	10663.75891	Warren, Riley, Benson, Alexander	3255-5061	
4708507773	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2639	-80.9129	5265	1288	10575	10653.14831	Warren, Speechley, Riley, Benson	3252-5082	
4708507781	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2607	-80.9197	5046	547	10356	10370.4361	Warren, Riley, Alexander	3064-4866	
4708507792	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2628	-80.9244	5148	205	10458	10460.00903	Warren, Riley, Alexander	3176-4978	
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	1640-4969	
4708507795	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2577	-80.9304	5221	205	10531	10532.99511	Big Injun, Warren, Riley, Benson	1838-5033	
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	1590-4862	
4708507805		PERKINS OIL & GAS INC	GAS - Active	39.2662	-80.9174	2275	250	7585	7589.118855	Big Injun	1876	
4708507810	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2381	-80.9147	5456	106	10766	10766.52182	Warren, Riley	3472-4621	
4708507811	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2418	-80.912	4817	1138	10127	10190.73957	Maxton, Keener, Warren, Balltown, Riley	2004-4664	
4708507814	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2388	-80.9199	4452	399	9762	9770.150715	Maxton, Warren, Riley	1642-4321	
4708507835	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.265	-80.9329	5331	399	10641	10648.47792	Warren, Riley, Alexander	3334-5124	
4708507836	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2602	-80.9342	5075	282	10385	10388.82809	Warren, Riley, Benson	3133-4639	
4708507855	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2681	-80.937	5365	1235	10675	10746.20165	Warren, Riley, Alexander	3322-5106	
4708507856	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2704	-80.9323	5314	514	10624	10636.47666	Warren, Riley, Alexander	3280-5068	
4708507860	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2326	-80.9165	4446	434	9756	9765.64857	Warren, Riley	3133-4274	
4708507863	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	O&G - Active	39.2338	-80.921	4534	472	9844	9855.309229	Warren, Riley	3212-4354	
4708507867	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2294	-80.9204	5196	966	10506	10550.31715	Warren, Riley, Benson	3193-4981	
4708507869	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2622	-80.9413	5380	1477	10690	10791.5536	Warren, Riley, Alexander	3445-5221	
4708507881	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.267	-80.9289	5272	5	10582	10582.00118	Warren, Riley, Alexander	3315-5112	
4708507888	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2709	-80.9257	5280	402	10590	10597.62728	Warren, Riley, Alexander	3315-5121	
4708507891	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2804	-80.9203	5371	1149	10681	10742.62361	Warren, Riley, Benson, Alexander	3390-5193	
4708507905	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2843	-80.929	5146	942	10456	10498.34749	Riley, Alexander	4331-5015	
4708507963	Eastern American Energy Corp	ENERGY CORPORATION OF AMERICA	GAS - Active	39.2555	-80.9375	5172	1156	10482	10545.55167	Riley	4338-4712	
4708508162		KEY OIL COMPANY	GAS - Active	39.2776	-80.9306	5140	1412	10450	10544.96297	Riley, Benson, Alexander	4326-4994	
4708508163		KEY OIL COMPANY	GAS - Active	39.281	-80.9294	5090	1216	10400	10470.84791	Riley, Benson, Alexander	4276-4933	
4708508173		KEY OIL COMPANY	GAS - Active	39.2738	-80.93	4991	712	10301	10325.57722	Riley, Benson, Alexander	4239-4891	
4708530382		I H BEREN	GAS - Active	39.25889	-80.93528	1860	161	7170	7171.807373	Big Injun	1709-1714	
4708530516		HOPE NAT GAS	GAS - Active	39.27667	-80.93	1733	1143	7043	7135.145268	Maxton, Big Injun	1550-1694	
4708530547		PGH & WV GAS	GAS - Active	39.26222	-80.93111	1823	35	7133	7133.085868	Big Injun, Squaw	1708-1800	

4708510228

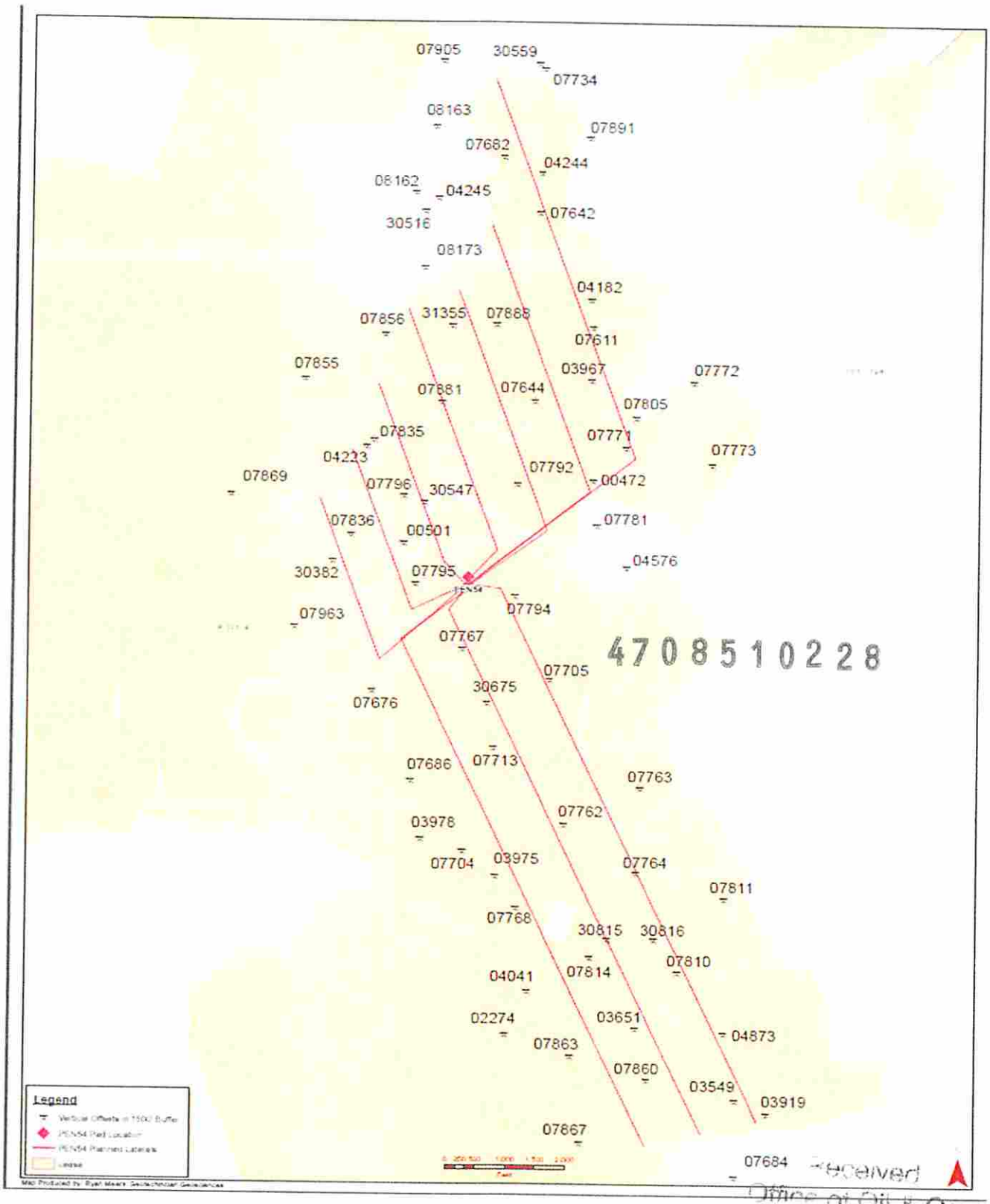
Received
Office of Oil & Gas
JUL 08 2015

4708530559	PGH & WV GAS	GAS - Active	39.28417	-80.92333	1837	784	7147	7189.872391	Maxton	1577-1595							
4708530675	PGH & WV GAS	GAS - Active	39.25167	-80.92611	2041	107	7351	7351.778696	Maxton, Big injun	1750-1994							
4708530815	F S DEEM	Unknown	39.23972	-80.91889	1693	2	7003	7003.000286	Unknown	Unknown							
4708530816	F S DEEM	Unknown	39.23972	-80.91611	1087	232	10618	10620.53426	Unknown	Unknown							
4708531355	EPC	Unknown	39.27083	-80.92833	1999	310	7309	7315.571133	Maxton, Big injun	1767-1994							

4708510228

Received
Office of Oil & Gas
JUL 08 2015

All Intact A-7



Received
Office of Oil & Gas
JUL 08 2015

Attachment A-3

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).

47085102 28

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

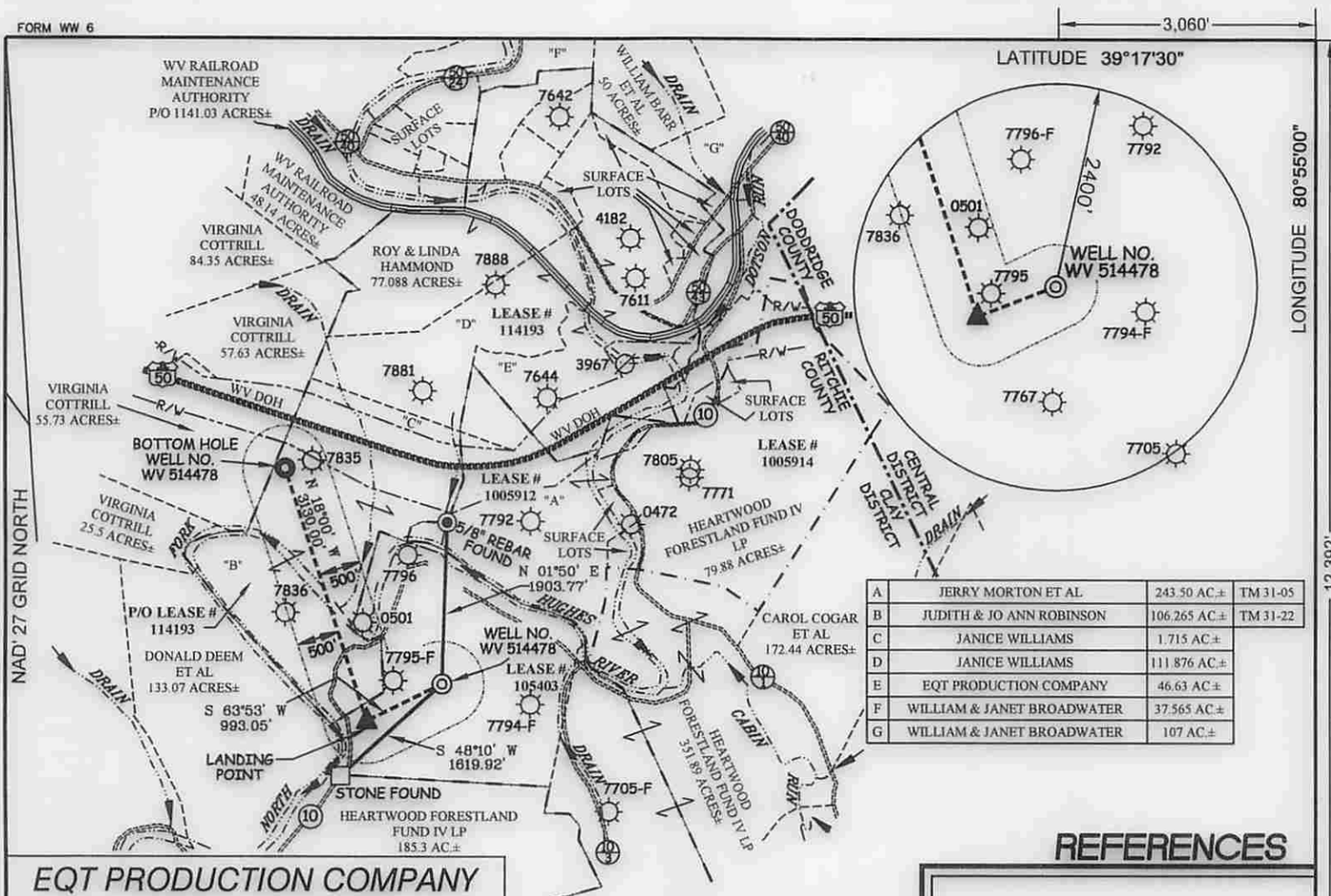
Received
Office of Oil & Gas
JUL 08 2015

John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

Attachment B

FORM WW 6



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.±	
D	JANICE WILLIAMS	111.876 AC.±	
E	EQT PRODUCTION COMPANY	46.63 AC.±	
F	WILLIAM & JANET BROADWATER	37.565 AC.±	
G	WILLIAM & JANET BROADWATER	107 AC.±	

EQT PRODUCTION COMPANY
FLANAGAN LEASE
268 ACRES±
WELL NO. WV 514478

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

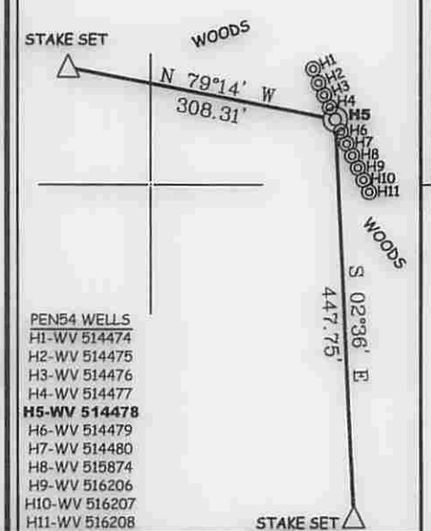
NAD'27 S.P.C.(FT)	N. 279,160.90	E. 1,595,800.41
NAD'27 GEO.	LAT-(N) 39.257645	LONG-(W) 80.927472
NAD'83 UTM (M)	N. 4,345,379.86	E. 506,272.12
	LANDING POINT	
NAD'27 S.P.C.(FT)	N. 278,723.68	E. 1,594,908.79
NAD'27 GEO.	LAT-(N) 39.256406	LONG-(W) 80.930596
NAD'83 UTM (M)	N. 4,345,242.12	E. 506,002.71
	BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 281,700.48	E. 1,593,941.56
NAD'27 GEO.	LAT-(N) 39.264535	LONG-(W) 80.934179
NAD'83 UTM (M)	N. 4,346,144.07	E. 505,692.91

LEGEND

LEASE LINE	
SURFACE LINE	
WELL LATERAL	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
RAIL ROAD	
COUNTY ROUTE	
STATE ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
TAX MAP–PARCEL	TM 00–00

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

REFERENCES



PEN54 WELLS
H1-WV 514474
H2-WV 514475
H3-WV 514476
H4-WV 514477
H5-WV 514478
H6-WV 514479
H7-WV 514480
H8-WV 515874
H9-WV 516206
H10-WV 516207
H11-WV 516208

NOTES ON SURVEY

1. 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.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS
SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.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

GREGORY A. SMITH LICENSED No. 677 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE JUNE 25 , 20 15

REVISED _____ , 20 _____

OPERATORS WELL NO. WV 514478

API WELL NO. 47 — 085 — 10228
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200

FILE NO. 8083P514478

SCALE 1" = 2000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

COUNTY NAME

PERMIT

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

LOCATION: ELEVATION GROUND 1,016' PROPOSED 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 X CONVERT ____ DRILL DEEPER ____ REDRILL ____ FRACTURE OR STIMULATE X 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

SLS

134568

WW-6A1
(5/13)

Operator's Well No. 514478

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:

4708510228

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page	
105403			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
114193			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.	Equitable Production Company		CB557/56	
	Equitable Production Company	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.

Received
Office of Oil & Gas
JUL 08 2015

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

4708510228

Received
Office of Oil & Gas
JUL 08 2015

WW-6AC
(1/12)

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

Date of Notice Certification: 7-6-15

API No. 47 - 085 - 0
Operator's Well No. 514478
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:	WV	UTM NAD 83 Easting:	506,272.12
County:	Ritchie	UTM NAD 83 Northing:	4,345,379.86
District:	Clay	Public Road Access:	Rt 50
Quadrangle:	Pennsboro 7.5	Generally used farm name:	Jerry Morton et al
Watershed:	North Fork Hughes River		

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.

4708510228

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:

*PLEASE CHECK ALL THAT APPLY

		OOG OFFICE USE ONLY
☐ NOTICE OF SEISMIC ACTIVITY or	☑ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/NOT REQUIRED
☑ NOTICE OF ENTRY FOR PLAT SURVEY or	☐ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☐ NOTICE OF INTENT TO DRILL or	☑ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED OR	☐ RECEIVED/NOT REQUIRED
	☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	
☑ NOTICE OF PLANNED OPERATION		☐ RECEIVED
☑ PUBLIC NOTICE		☐ RECEIVED
☑ NOTICE OF APPLICATION		☐ RECEIVED

Received
Office of Oil & Gas
JUL 08 2015

Required Attachments:

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

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I _____, 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.

4708510228

Well Operator:	EQT Production Company	Address:	P.O. Box 280
By:	Victoria J. Roark		Bridgeport, WV 26330
Its:	Permitting Supervisor	Facsimile:	304-848-0040
Telephone:	304-848-0076	Email:	vroark@eqt.com

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Pamela Sykes
EQT Production
PO Box 280
Bridgeport, WV 26330
My Commission Expires Aug. 24, 2022

NOTARY SEAL

Subscribed and sworn before me this 6 day of July ,2015

_____ 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.

Received
Office of Oil & Gas
JUL 08 2015

WW-6A
(9-13)

API NO. 47 - 085 - 0
OPERATOR WELL NO. 514478
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: 7-6-15 Date Permit Application Filed: 7-6-15

Notice of:

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

510228

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 for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any 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

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

☑ SURFACE OWNERS(s) (Road and/or Other Disturbance)
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
See Attached

☑ SURFACE OWNER(s) (Impoundments/Pits)
Name: Jerry Morton
Address: RR 1 Box 581
Pennsboro WV 26415
See Attached

☑ COAL OWNER OR LESSEE
Name: Phyllis A Rymer
Address: 21166 State Rt 676
Marietta OH 45750

See attached for additional coal owners.

☐ COAL OPERATOR
Name:
Address:

☐ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name:
Address:

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name:
Address:

*Please attach additional forms if necessary

Received
Office of Oil & Gas
JUL 08 2015

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

4708510228

Additional Coal Owners

Braden M Nida
150 Seneca Dr
Marietta OH 45750

Anita W Gass
2033 Butterfly Lane
Apt 222
Naperville IL 60563

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

Received
Office of Oil & Gas
JUL 08 2015

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 TN 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
PO Box 172
Griffithville WV 25521

James P Rogers Jr
4000 Pinal
Catalina AZ 85739

Samuel C Rogers
204 Elanor St
Pennsboro WV 26415

Wilma J Coffield
1842 Tonawanda Ave
Akron OH 44305

47085102 28

Received
Office of Oil & Gas
JUL 08 2015

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 Fankhauser
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
170 Birdhouse Lane
Bridgeport WV 26330

Joseph Flanagan
PO Box 2
Smithville WV 26178

47085102 28

Received
Office of Oil & Gas
JUL 08 2015

WW-6A
(8-13)

API NO. 47 - 085 - 0
OPERATOR WELL NO. 514478
Well Pad Name: PEN54

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.

4708510228

Well Location Restrictions

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

Received
Office of Oil & Gas
JUL 08 2015

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

4708510228

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 received by 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:

Received
Office of Oil & Gas
JUL 08 2015

Received
Office of Oil & Gas
JUL 08 2015

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.

WW-6A
(8-13)

API NO. 47 - 085 - 0
OPERATOR WELL NO. 514478
Well Pad Name: PEN54

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

4708510228

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 decisions of persons qualified to test water.

Received
Office of Oil & Gas
JUL 08 2015

Notice is hereby given by:

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:	304-848-0041

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.

By: Victoria Roark
Its: Permitting Supervisor

Subscribed and sworn before n 6 day of July, 2015

Notary Public

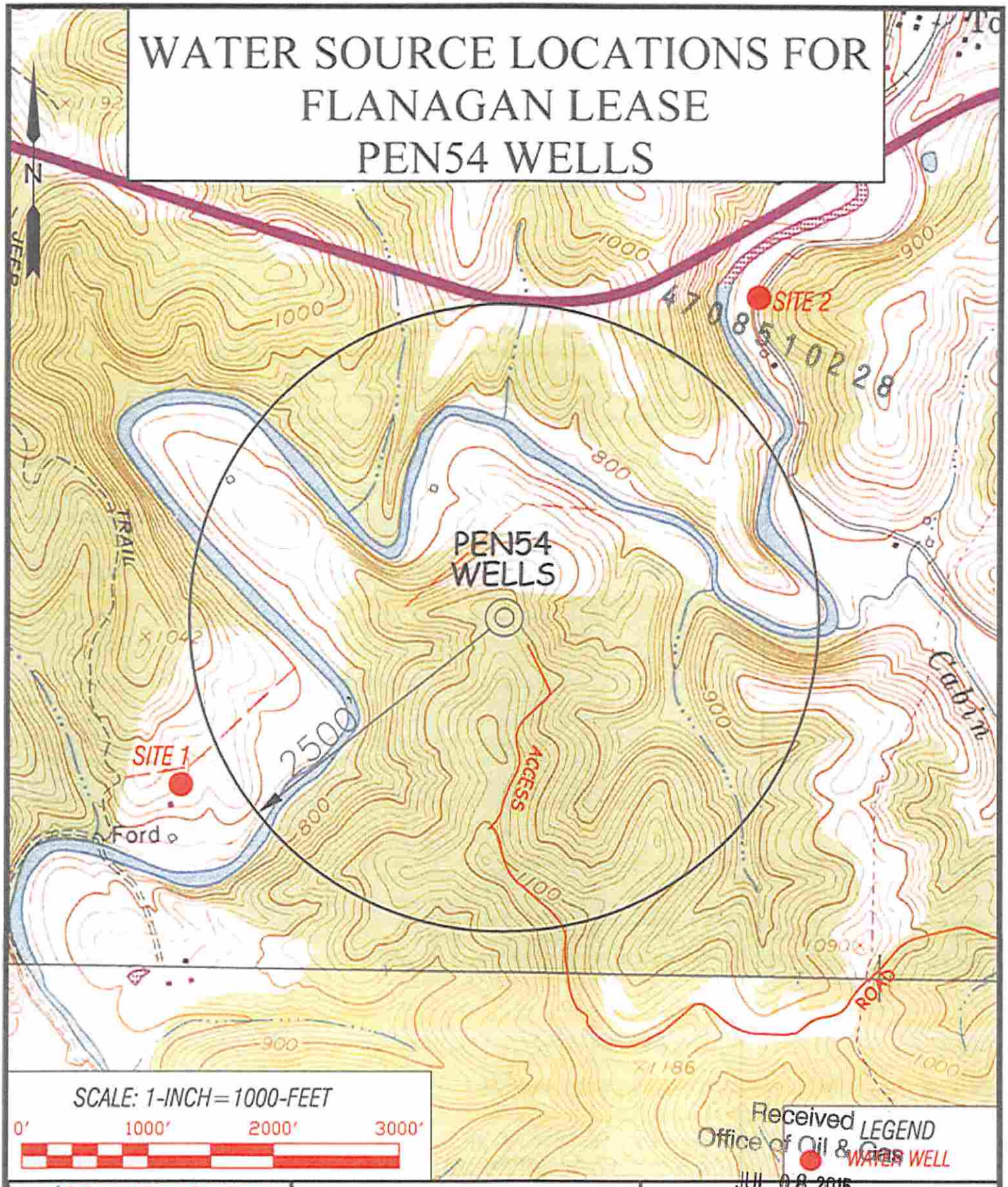
My Commission Expi 8-24-22

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Pamela Sykes
EQT Production
PO Box 280
Bridgeport, WV 26330
My Commission Expires Aug. 24, 2022

4708510228

Received
Office of Oil & Gas
JUL 08 2015

WATER SOURCE LOCATIONS FOR FLANAGAN LEASE PEN54 WELLS



Received
Office of Oil & Gas
JUL 08 2015

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.

DRAWN BY	FILE NO.	DATE	CADD FILE:
K.D.W.	8083	06/02/15	8083WSPEN54.dwg

TOPO SECTION OF:
PENNSBORO, WV 7.5' QUAD

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

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

WW-6A3
(1/12)

Operator Well No. #105403

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 [X] 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:

[X] **SURFACE OWNER(S)**

Name: Randy Collins, Natalie Collins & Kate Collins
Address: 5368 Muscovy Rd. Middlebourg, FL 32068-3531 ½ Interest

Name:
Address:

Name:
Address:

[X] **COAL OWNER OR LESSEE**

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

[ ] **MINERAL OWNER(S)**

Name:
Address:
Name:
Address:

*Please attach additional forms if necessary

4708510228

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:

Received
Office of Oil & Gas
JUL 08 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@WV.gov.

WW-6A3
(1/12)

Operator Well No. #105403

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 [X] 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:

[X] **SURFACE OWNER(S)**

Name: Jerry Morton ½ Interest
Address: RR1 Box 581
Pennsboro, WV 26415-9611

Name:
Address:

Name:
Address:

[X] **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:

*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:

Received
Office of Oil & Gas
JUL 08 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@WV.gov.

WW-6A5
(1/12)

Operator Well No. 514478

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: 7-6-15 **Date Permit Application Filed:** 7-6-15

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

☑ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

4708510228

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

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

Name: 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:	506,272.120000
County:	Ritchie		Northing:	4,345,379.860000
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.

Received
Office of Oil & Gas
JUL 08 2015

WW-6A5
(1/12)

Operator Well No. 514478

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: 7-6-15 **Date Permit Application Filed:** 7-6-15

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

☑ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

4708510228

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

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

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

Name: Coastal Forest Resources
Address: 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:	506,272.120000
County:	Ritchie		Northing:	4,345,379.860000
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

Received
Office of Oil & Gas
JUL 08 2015

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.

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

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		

4708510228

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

Received
Office of Oil & Gas
JUL 08 2015

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

Anticipated Frac Additives
Chemical Names and CAS numbers

Material	Ingredient	CAS Number
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

4708510228

Received
Office of Oil & Gas
JUL 08 2015

4708510222

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

Received
Office of Oil & Gas
JUL 06 2015

PROJECT INFORMATION

PROJECT NAME: EQT PEN 54

SURFACE OWNER:

1. RANDY, NATALIE & KATE COLLINS
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-05 (1/2 INTEREST)
   TOTAL PROPERTY AREA: 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA: 32.67 +/- ACRES
2. JERRY MORTON
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-05 (1/2 INTEREST)
   TOTAL PROPERTY AREA: 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA: 32.67 +/- ACRES
3. HEARTWOOD FORESTLAND FUND IV LLC
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-11, 31-14, 31-15
   TOTAL PROPERTY AREA: 590.19 +/- ACRES
   TOTAL DISTURBANCE AREA: 18.83 +/- ACRES
4. COASTAL FOREST RESOURCES DBA COASTALTIMBERLANDS.COM
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 32-07
   TOTAL PROPERTY AREA: 42.51 +/- ACRES
   TOTAL DISTURBANCE AREA: 0.73 +/- ACRES

OIL AND GAS ROYALTY OWNER
W. FLANAGAN HRS, ET AL (500 +/- ACRES)
CLAY DISTRICT
RITCHIE COUNTY, WV

SITE LOCATION
THE EQT PEN 54 WELL PAD IS LOCATED 1.9 MILES +/- SOUTHEAST OF THE JUNCTION OF US ROUTE 50 AND WV 74

LOCATION COORDINATES

EQT PEN 54 WELL PAD CENTER
LATITUDE: 39.257810 LONGITUDE: 80.927222 (NAD 83)
EQT PEN 54 FLOWBACK PIT CENTER
LATITUDE: 39.256871 LONGITUDE: 80.926494 (NAD 83)
EQT PEN 54 COMPLETION PIT CENTER
LATITUDE: 39.258129 LONGITUDE: 80.923194 (NAD 83)

GENERAL DESCRIPTION

THE WELL PAD, FLOWBACK PIT, ACCESS ROAD, AND COMPLETION PIT ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

WELL PAD/FLOWBACK PIT AREA = 13.66 +/- ACRES
ACCESS ROAD AREA = 30.53 +/- ACRES
COMPLETION PIT AREA = 8.84 +/- ACRES
TOTAL SITE DISTURBANCE AREA = 52.03 +/- ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-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. TICKET #1430782102. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

ENVIRONMENTAL NOTES

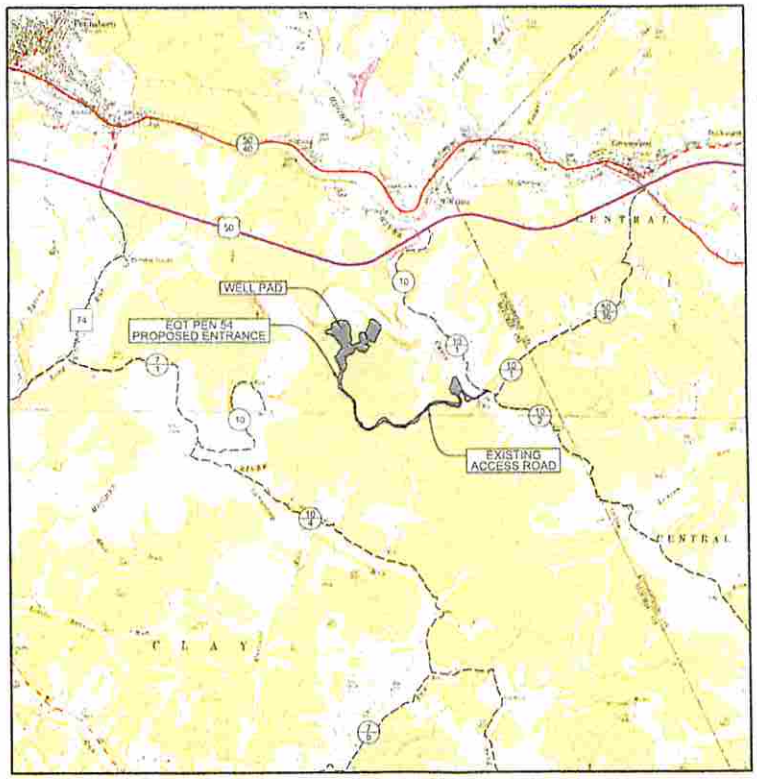
A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 9/6/2013, 9/12/2013, 9/13/2013, 10/14/2014, 10/15/2014, AND 1/15/2015 TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE 10/2/2013 AND 2/5/2015 REPORT FOR EQT PEN 54 PREPARED BY POTESTA & ASSOCIATES, INC., SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE REPORT DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFORMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION DESCRIBED BY THIS REPORT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION HAS NOT BEEN PERFORMED AS OF 02/17/2015. THE ENGINEER AND SURVEYOR ARE NOT RESPONSIBLE FOR UNFORSEEN SUBSURFACE IRREGULARITIES 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.

RESTRICTIONS NOTES

1. THERE ARE INTERMITTENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE LOD, AND A WAIVER FROM THE WVDEP WILL BE APPLIED FOR THROUGH THE ARMY CORPS OF ENGINEERS BY EQT PRODUCTION COMPANY.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD.
4. THERE ARE NO KNOWN EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED. STANTEC AND SMITH LAND SURVEYING ARE NOT RESPONSIBLE FOR ANY EXISTING WATER WELL OR DEVELOPED SPRING DISCOVERED DURING CONSTRUCTION.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD.



PENNSBORO QUADRANGLE
WEST VIRGINIA
7.5 MINUTE SERIES

2000' 0' 2000'

GRID NORTH AND ELEVATIONS SHOWN ON THIS DRAWING ESTABLISHED BY SURVEY GRADE GPS

LIST OF DRAWINGS

SHEET NO	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3-4	OVERALL PLAN (INDEX)
5-12	ACCESS ROAD AND WELL SITE LAYOUT
13-23	WELL PAD/FLOWBACK PIT/ COMPLETION PIT CROSS SECTIONS
24-29	ACCESS ROAD PROFILE
30-33	ACCESS ROAD CROSS SECTIONS
34-36	RECLAMATION PLAN
37-40	CONSTRUCTION DETAILS
41-42	CONSTRUCTION QUANTITIES

LEGEND

EX. INDEX CONTOUR	1550	PROP. INDEX CONTOUR	1550
EX. INTERMEDIATE CONTOUR		PROP. INTERMEDIATE CONTOUR	
EX. BOUNDARY LINE		PROP. CUT LINE	C
EX. EDGE OF ROAD PAVEMENT		PROP. FILL LINE	F
EX. GUARDRAIL		PROP. LIMITS OF DISTURBANCE	
EX. FENCELINE		ENVIRONMENTAL ASSESSMENT AREA OF DELINEATION	
EX. GATE		PROP. WELL HEAD	
EX. OVERHEAD UTILITY	E	PROP. CONTAINMENT BERM	
EX. OVERHEAD UTILITY R/W		PROP. ROAD CENTERLINE	
EX. UTILITY POLE		PROP. FLAT BOTTOM DITCH WITH CHECK DAMS	
EX. GUY WIRE		PROP. V-DITCH WITH CHECK DAMS	
EX. TELEPHONE LINE	T	PROP. CULVERT	
EX. GASLINE	G	PROP. RIP-RAP OUTLET PROTECTION	
EX. GASLINE R/W		PROP. RIP-RAP INLET PROTECTION	
EX. WATERLINE	W	PROP. COMPOST FILTERSOCK	CF
EX. WATER WELL		PROP. TREELINE	
EX. GAS WELL		PROP. ROCK CONSTRUCTION ENTRANCE	
EX. TREELINE		X-SECTION GRID INDEX	
EX. REFERENCE TREE		X-SECTION GRID INTERMEDIATE	
EX. DELINEATED STREAM		X-SECTION PROPOSED GRADE	
EX. DELINEATED WETLAND		X-SECTION EXISTING GRADE	
EX. BUILDING			

MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section XIV, Chapter 24-C)
Requires that you call two business days before you dig in the state of West Virginia
IT'S THE LAW!!

OPERATOR
EQT PRODUCTION COMPANY
OPERATOR ID: 306688
P.O. BOX 280
BRIDGEPORT, WV 26330
PHONE: (304) 348-3870

ENGINEER
STANTEC CONSULTING,INC
111 ELKINS STREET
FAIRMONT, WV 26554
PHONE: (304) 367-9401

SURVEYOR
SMITH LAND SURVEYING, INC
12 VANHORN DRIVE
PO BOX 150
GLENVILLE, WV 26351
PHONE: (304) 462-5634

Stantec

Professional Energy Consultants
SLS

THIS DOCUMENT WAS PREPARED BY STANTEC FOR EQT PRODUCTION COMPANY

TITLE SHEET
EQT PEN 54
CLAY DISTRICT
RITCHIE COUNTY, WV

DATE	02/24/2015
SCALE	AS SHOWN
DESIGNED BY	RJH
FILE NO.	SLS-4051
SHEET	1 OF 42
REV	

6-16-15

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

PROJECT INFORMATION

PROJECT NAME: EQT PEN 54

SURFACE OWNER:

1. RANDY, NATALIE & KATE COLLINS — API# 8510222
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-05 (1/2 INTEREST)
   TOTAL PROPERTY AREA: 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA: 32.67 +/- ACRES — API# 8510225
2. JERRY MORTON — API# 8510226
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-05 (1/2 INTEREST)
   TOTAL PROPERTY AREA: 243.50 +/- ACRES
   TOTAL DISTURBANCE AREA: 32.67 +/- ACRES — API# 8510227
3. HEARTWOOD FORESTLAND FUND IV LLC — API# 8510228
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 31-11, 31-14, 31-15
   TOTAL PROPERTY AREA: 590.19 +/- ACRES
   TOTAL DISTURBANCE AREA: 18.63 +/- ACRES — API# 8510229
4. COASTAL FOREST RESOURCES DBA COASTALTIMBERLANDS.COM — API# 8510230
   CLAY DISTRICT, RITCHIE COUNTY, WV
   TAX MAP 32-02
   TOTAL PROPERTY AREA: 42.51 +/- ACRES
   TOTAL DISTURBANCE AREA: 0.73 +/- ACRES — API# 8510231

OIL AND GAS ROYALTY OWNER: — API# 8510232
W. FLANAGAN HRS, ET AL (500 +/- ACRES)
CLAY DISTRICT
RITCHIE COUNTY, WV

SITE LOCATION:
THE EQT PEN 54 WELL PAD IS LOCATED 1.9 MILES +/- SOUTHEAST OF THE JUNCTION OF US ROUTE 50 AND WV 74.

LOCATION COORDINATES

EQT PEN 54 WELL PAD CENTER
LATITUDE: 39.257810 LONGITUDE: 80.927222 (NAD 83)
EQT PEN 54 FLOWBACK PIT CENTER
LATITUDE: 39.256871 LONGITUDE: 80.926494 (NAD 83)
EQT PEN 54 COMPLETION PIT CENTER
LATITUDE: 39.258129 LONGITUDE: 80.923194 (NAD 83)

GENERAL DESCRIPTION

THE WELL PAD, FLOWBACK PIT, ACCESS ROAD, AND COMPLETION PIT ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

WELL PAD/FLOWBACK PIT AREA = 14.66 +/- ACRES
ACCESS ROAD AREA = 30.53 +/- ACRES
COMPLETION PIT AREA = 6.84 +/- ACRES
TOTAL SITE DISTURBANCE AREA = 52.03 +/- ACRES

ENTRANCE PERMIT

EQT PRODUCTION COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-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: TICKET #1403282102. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

ENVIRONMENTAL NOTES

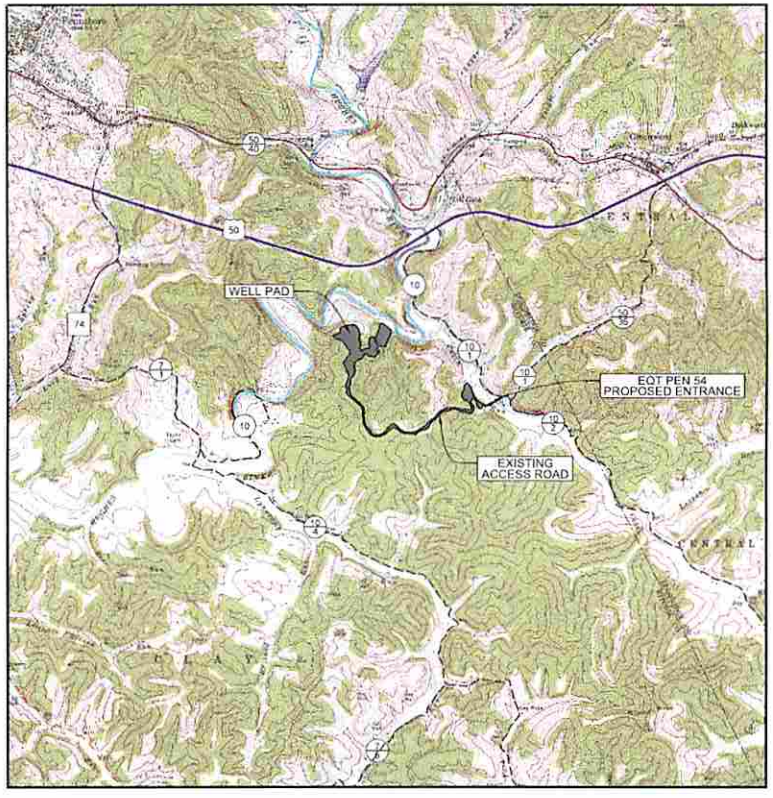
A WETLAND DELINEATION WAS PERFORMED BY POTESTA & ASSOCIATES ON 9/5/2013, 9/12/2013, 9/13/2013, 10/14/2014, 10/15/2014, AND 1/15/2015 TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE 10/2/2013 AND 2/5/2015 REPORT FOR EQT PEN 54 PREPARED BY POTESTA & ASSOCIATES, INC., SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE REPORT DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFORMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION DESCRIBED BY THIS REPORT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION HAS NOT BEEN PERFORMED AS OF 02/17/2015. THE ENGINEER AND SURVEYOR ARE NOT RESPONSIBLE FOR UNFORSEEN SUBSURFACE IRREGULARITIES 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.

RESTRICTIONS NOTES

1. THERE ARE INTERMITTENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE PROJECT LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE LOD, AND A WAIVER FROM THE WVDEP WILL BE APPLIED FOR THROUGH THE ARMY CORPS OF ENGINEERS BY EQT PRODUCTION COMPANY.
2. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD.
4. THERE ARE NO KNOWN EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED. STANTEC AND SMITH LAND SURVEYING ARE NOT RESPONSIBLE FOR ANY EXISTING WATER WELL OR DEVELOPED SPRING DISCOVERED DURING CONSTRUCTION.
5. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE PAD.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD.



PENNSBORO QUADRANGLE
WEST VIRGINIA
7.5 MINUTE SERIES

2000' 0' 2000'

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

MISS Utility of West Virginia
1-800-245-4848
West Virginia State Law
(Section XIV, Chapter 24-C)
Requires that you call two
business days before you dig in
the state of West Virginia.
IT'S THE LAW!!

LIST OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES
3-4	OVERALL PLAN SHEET INDEX
5-12	ACCESS ROAD AND WELL SITE LAYOUT
13-23	WELL PAD/FLOWBACK PIT/ COMPLETION PIT 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

LEGEND

EX. INDEX CONTOUR 1550	PROP. INDEX CONTOUR 1550
EX. INTERMEDIATE CONTOUR	PROP. INTERMEDIATE CONTOUR
EX. BOUNDARY LINE	PROP. CUT LINE C
EX. EDGE OF ROAD PAVEMENT	PROP. FILL LINE F
EX. GUARDRAIL	PROP. LIMITS OF DISTURBANCE
EX. FENCELINE	ENVIRONMENTAL ASSESSMENT AREA OF DELINEATION
EX. GATE	PROP. WELL HEAD
EX. OVERHEAD UTILITY E	PROP. CONTAINMENT BERM
EX. OVERHEAD UTILITY R/W	PROP. ROAD CENTERLINE
EX. UTILITY POLE	PROP. FLAT BOTTOM DITCH WITH CHECK DAMS
EX. GUY WIRE	PROP. V-DITCH WITH CHECK DAMS
EX. TELEPHONE LINE T	PROP. CULVERT
EX. GASLINE G	PROP. RIP-RAP OUTLET PROTECTION
EX. GASLINE R/W	PROP. RIP-RAP INLET PROTECTION
EX. WATERLINE W	PROP. COMPOST FILTERSOCK CF
EX. WATER WELL	PROP. TREELINE
EX. GAS WELL	PROP. ROCK CONSTRUCTION ENTRANCE
EX. TREELINE	X-SECTION GRID INDEX
EX. REFERENCE TREE	X-SECTION GRID INTERMEDIATE
EX. DELINEATED STREAM	X-SECTION PROPOSED GRADE
EX. DELINEATED WETLAND	X-SECTION EXISTING GRADE
EX. BUILDING	

OPERATOR

EQT PRODUCTION COMPANY
OPERATOR ID: 306686
P.O. BOX 280
BRIDGEPORT, WV 26630
PHONE: (304) 348-3970

ENGINEER

STANTEC CONSULTING INC.
111 ELKINS STREET
FAIRMONT, WV 26554
PHONE: (304) 367-9401

SURVEYOR

SMITH LAND SURVEYING, INC.
12 VANHORN DRIVE
PO BOX 150
GLENVILLE, WV 26351
PHONE: (304) 462-5634

Stantec
111 ELKINS STREET
FAIRMONT, WV 26554
PHONE: (304) 367-9401

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING INC.
SURVEYING
PERMITTING
ENVIRONMENTAL
PROJECT MGMT.
SLS
(304) 462-5634
www.SLSLandSurvey.com

8-3-2015

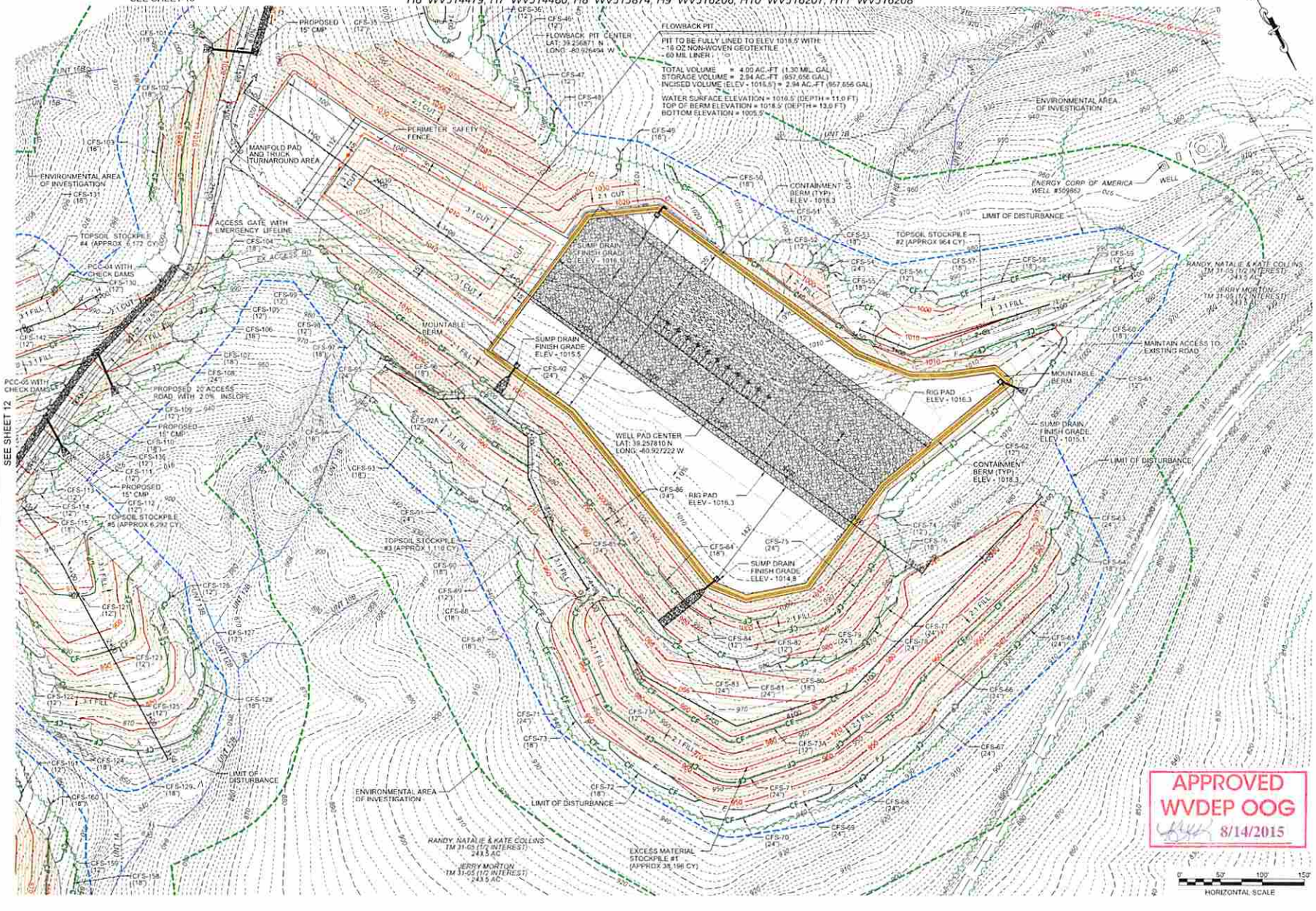
THIS DOCUMENT WAS PREPARED BY STANTEC FOR EQT PRODUCTION COMPANY

TITLE SHEET
EQT PEN 54
CLAY DISTRICT
RITCHIE COUNTY, WV

DATE: 02/04/2015
SCALE: AS SHOWN
DESIGNED BY: RJH
FILE NO.: SLS-8083
SHEET 1 OF 53
REV: 05/01/2015

EQT PEN 54 WELL PAD SITE PLAN

PROPOSED WELL NO. H1 WV514474, H2 WV514475, H3 WV514476, H4 WV514477, H5 WV514478, H6 WV514479, H7 WV514480, H8 WV515874, H9 WV516206, H10 WV516207, H11 WV516208


SEE SHEET 10
SEE SHEET 12
PROPOSED 15" CMP
FLOWBACK PIT
FLOWBACK PIT CENTER
LAT: 39.256871 N
LONG: -80.926494 W
PIT TO BE FULLY LINED TO ELEV 1018.5' WITH:
- 16 OZ NON-WOVEN GEOTEXTILE
- 60 MIL LINER
TOTAL VOLUME = 4.00 AC.-FT (1.30 MIL. GAL)
STORAGE VOLUME = 2.94 AC.-FT (957,656 GAL)
INCISED VOLUME (ELEV - 1015.5') = 2.94 AC.-FT (957,656 GAL)
WATER SURFACE ELEVATION = 1016.5' (DEPTH = 11.0 FT)
TOP OF BERM ELEVATION = 1018.5' (DEPTH = 13.0 FT)
BOTTOM ELEVATION = 1005.5'
PERIMETER SAFETY FENCE
MANIFOLD PAD AND TRUCK TURNAROUND AREA
ACCESS GATE WITH EMERGENCY LIFELINE
ENVIRONMENTAL AREA OF INVESTIGATION
TOPSOIL STOCKPILE #4 (APPROX 6,172 CY)
PCC-04 WITH CHECK DAMS
PCC-05 WITH CHECK DAMS
PROPOSED 20' ACCESS ROAD WITH 2.0% INSLOPE
TOPSOIL STOCKPILE #5 (APPROX 6,292 CY)
TOPSOIL STOCKPILE #3 (APPROX 1,110 CY)
MOUNTABLE BERM
SUMP DRAIN FINISH GRADE ELEV - 1015.5
SUMP DRAIN FINISH GRADE ELEV - 1016.1
SUMP DRAIN FINISH GRADE ELEV - 1014.8
WELL PAD CENTER
LAT: 39.257810 N
LONG: -80.927222 W
CONTAINMENT BERM (TYP) ELEV - 1018.3
RIG PAD ELEV - 1016.3
TOPSOIL STOCKPILE #2 (APPROX 964 CY)
LIMIT OF DISTURBANCE
ENERGY CORP OF AMERICA WELL #509852
MAINTAIN ACCESS TO EXISTING ROAD
RANDY, NATALIE & KATE COLLINS TM 31-55 (1/2 INTEREST) 243.5 AC
JERRY MORTON TM 31-55 (1/2 INTEREST) 243.5 AC
EXCESS MATERIAL STOCKPILE #1 (APPROX 38,196 CY)
UNIT 15B
UNIT 18
UNIT 18B
UNIT 19
UNIT 19B
UNIT 19C
UNIT 19D
UNIT 19E
UNIT 19F
UNIT 19G
UNIT 19H
UNIT 19I
UNIT 19J
UNIT 19K
UNIT 19L
UNIT 19M
UNIT 19N
UNIT 19O
UNIT 19P
UNIT 19Q
UNIT 19R
UNIT 19S
UNIT 19T
UNIT 19U
UNIT 19V
UNIT 19W
UNIT 19X
UNIT 19Y
UNIT 19Z
UNIT 19AA
UNIT 19AB
UNIT 19AC
UNIT 19AD
UNIT 19AE
UNIT 19AF
UNIT 19AG
UNIT 19AH
UNIT 19AI
UNIT 19AJ
UNIT 19AK
UNIT 19AL
UNIT 19AM
UNIT 19AN
UNIT 19AO
UNIT 19AP
UNIT 19AQ
UNIT 19AR
UNIT 19AS
UNIT 19AT
UNIT 19AU
UNIT 19AV
UNIT 19AW
UNIT 19AX
UNIT 19AY
UNIT 19AZ
UNIT 19BA
UNIT 19BB
UNIT 19BC
UNIT 19BD
UNIT 19BE
UNIT 19BF
UNIT 19BG
UNIT 19BH
UNIT 19BI
UNIT 19BJ
UNIT 19BK
UNIT 19BL
UNIT 19BM
UNIT 19BN
UNIT 19BO
UNIT 19BP
UNIT 19BQ
UNIT 19BR
UNIT 19BS
UNIT 19BT
UNIT 19BU
UNIT 19BV
UNIT 19BW
UNIT 19BX
UNIT 19BY
UNIT 19BZ
UNIT 19CA
UNIT 19CB
UNIT 19CC
UNIT 19CD
UNIT 19CE
UNIT 19CF
UNIT 19CG
UNIT 19CH
UNIT 19CI
UNIT 19CJ
UNIT 19CK
UNIT 19CL
UNIT 19CM
UNIT 19CN
UNIT 19CO
UNIT 19CP
UNIT 19CQ
UNIT 19CR
UNIT 19CS
UNIT 19CT
UNIT 19CU
UNIT 19CV
UNIT 19CW
UNIT 19CX
UNIT 19CY
UNIT 19CZ
UNIT 19DA
UNIT 19DB
UNIT 19DC
UNIT 19DD
UNIT 19DE
UNIT 19DF
UNIT 19DG
UNIT 19DH
UNIT 19DI
UNIT 19DJ
UNIT 19DK
UNIT 19DL
UNIT 19DM
UNIT 19DN
UNIT 19DO
UNIT 19DP
UNIT 19DQ
UNIT 19DR
UNIT 19DS
UNIT 19DT
UNIT 19DU
UNIT 19DV
UNIT 19DW
UNIT 19DX
UNIT 19DY
UNIT 19DZ
UNIT 19EA
UNIT 19EB
UNIT 19EC
UNIT 19ED
UNIT 19EE
UNIT 19EF
UNIT 19EG
UNIT 19EH
UNIT 19EI
UNIT 19EJ
UNIT 19EK
UNIT 19EL
UNIT 19EM
UNIT 19EN
UNIT 19EO
UNIT 19EP
UNIT 19EQ
UNIT 19ER
UNIT 19ES
UNIT 19ET
UNIT 19EU
UNIT 19EV
UNIT 19EW
UNIT 19EX
UNIT 19EY
UNIT 19EZ
UNIT 19FA
UNIT 19FB
UNIT 19FC
UNIT 19FD
UNIT 19FE
UNIT 19FF
UNIT 19FG
UNIT 19FH
UNIT 19FI
UNIT 19FJ
UNIT 19FK
UNIT 19FL
UNIT 19FM
UNIT 19FN
UNIT 19FO
UNIT 19FP
UNIT 19FQ
UNIT 19FR
UNIT 19FS
UNIT 19FT
UNIT 19FU
UNIT 19FV
UNIT 19FW
UNIT 19FX
UNIT 19FY
UNIT 19FZ
UNIT 19GA
UNIT 19GB
UNIT 19GC
UNIT 19GD
UNIT 19GE
UNIT 19GF
UNIT 19GG
UNIT 19GH
UNIT 19GI
UNIT 19GJ
UNIT 19GK
UNIT 19GL
UNIT 19GM
UNIT 19GN
UNIT 19GO
UNIT 19GP
UNIT 19GQ
UNIT 19GR
UNIT 19GS
UNIT 19GT
UNIT 19GU
UNIT 19GV
UNIT 19GW
UNIT 19GX
UNIT 19GY
UNIT 19GZ
UNIT 19HA
UNIT 19HB
UNIT 19HC
UNIT 19HD
UNIT 19HE
UNIT 19HF
UNIT 19HG
UNIT 19HH
UNIT 19HI
UNIT 19HJ
UNIT 19HK
UNIT 19HL
UNIT 19HM
UNIT 19HN
UNIT 19HO
UNIT 19HP
UNIT 19HQ
UNIT 19HR
UNIT 19HS
UNIT 19HT
UNIT 19HU
UNIT 19HV
UNIT 19HW
UNIT 19HX
UNIT 19HY
UNIT 19HZ
UNIT 19IA
UNIT 19IB
UNIT 19IC
UNIT 19ID
UNIT 19IE
UNIT 19IF
UNIT 19IG
UNIT 19IH
UNIT 19II
UNIT 19IJ
UNIT 19IK
UNIT 19IL
UNIT 19IM
UNIT 19IN
UNIT 19IO
UNIT 19IP
UNIT 19IQ
UNIT 19IR
UNIT 19IS
UNIT 19IT
UNIT 19IU
UNIT 19IV
UNIT 19IW
UNIT 19IX
UNIT 19IY
UNIT 19IZ
UNIT 19JA
UNIT 19JB
UNIT 19JC
UNIT 19JD
UNIT 19JE
UNIT 19JF
UNIT 19JG
UNIT 19JH
UNIT 19JI
UNIT 19JJ
UNIT 19JK
UNIT 19JL
UNIT 19JM
UNIT 19JN
UNIT 19JO
UNIT 19JP
UNIT 19JQ
UNIT 19JR
UNIT 19JS
UNIT 19JT
UNIT 19JU
UNIT 19JV
UNIT 19JW
UNIT 19JX
UNIT 19JY
UNIT 19JZ
UNIT 19KA
UNIT 19KB
UNIT 19KC
UNIT 19KD
UNIT 19KE
UNIT 19KF
UNIT 19KG
UNIT 19KH
UNIT 19KI
UNIT 19KJ
UNIT 19KK
UNIT 19KL
UNIT 19KM
UNIT 19KN
UNIT 19KO
UNIT 19KP
UNIT 19KQ
UNIT 19KR
UNIT 19KS
UNIT 19KT
UNIT 19KU
UNIT 19KV
UNIT 19KW
UNIT 19KX
UNIT 19KY
UNIT 19KZ
UNIT 19LA
UNIT 19LB
UNIT 19LC
UNIT 19LD
UNIT 19LE
UNIT 19LF
UNIT 19LG
UNIT 19LH
UNIT 19LI
UNIT 19LJ
UNIT 19LK
UNIT 19LL
UNIT 19LM
UNIT 19LN
UNIT 19LO
UNIT 19LP
UNIT 19LQ
UNIT 19LR
UNIT 19LS
UNIT 19LT
UNIT 19LU
UNIT 19LV
UNIT 19LW
UNIT 19LX
UNIT 19LY
UNIT 19LZ
UNIT 19MA
UNIT 19MB
UNIT 19MC
UNIT 19MD
UNIT 19ME
UNIT 19MF
UNIT 19MG
UNIT 19MH
UNIT 19MI
UNIT 19MJ
UNIT 19MK
UNIT 19ML
UNIT 19MM
UNIT 19MN
UNIT 19MO
UNIT 19MP
UNIT 19MQ
UNIT 19MR
UNIT 19MS
UNIT 19MT
UNIT 19MU
UNIT 19MV
UNIT 19MW
UNIT 19MX
UNIT 19MY
UNIT 19MZ
UNIT 19NA
UNIT 19NB
UNIT 19NC
UNIT 19ND
UNIT 19NE
UNIT 19NF
UNIT 19NG
UNIT 19NH
UNIT 19NI
UNIT 19NJ
UNIT 19NK
UNIT 19NL
UNIT 19NM
UNIT 19NN
UNIT 19NO
UNIT 19NP
UNIT 19NQ
UNIT 19NR
UNIT 19NS
UNIT 19NT
UNIT 19NU
UNIT 19NV
UNIT 19NW
UNIT 19NX
UNIT 19NY
UNIT 19NZ
UNIT 19OA
UNIT 19OB
UNIT 19OC
UNIT 19OD
UNIT 19OE
UNIT 19OF
UNIT 19OG
UNIT 19OH
UNIT 19OI
UNIT 19OJ
UNIT 19OK
UNIT 19OL
UNIT 19OM
UNIT 19ON
UNIT 19OO
UNIT 19OP
UNIT 19OQ
UNIT 19OR
UNIT 19OS
UNIT 19OT
UNIT 19OU
UNIT 19OV
UNIT 19OW
UNIT 19OX
UNIT 19OY
UNIT 19OZ
UNIT 19PA
UNIT 19PB
UNIT 19PC
UNIT 19PD
UNIT 19PE
UNIT 19PF
UNIT 19PG
UNIT 19PH
UNIT 19PI
UNIT 19PJ
UNIT 19PK
UNIT 19PL
UNIT 19PM
UNIT 19PN
UNIT 19PO
UNIT 19PP
UNIT 19PQ
UNIT 19PR
UNIT 19PS
UNIT 19PT
UNIT 19PU
UNIT 19PV
UNIT 19PW
UNIT 19PX
UNIT 19PY
UNIT 19PZ
UNIT 19QA
UNIT 19QB
UNIT 19QC
UNIT 19QD
UNIT 19QE
UNIT 19QF
UNIT 19QG
UNIT 19QH
UNIT 19QI
UNIT 19QJ
UNIT 19QK
UNIT 19QL
UNIT 19QM
UNIT 19QN
UNIT 19QO
UNIT 19QP
UNIT 19QQ
UNIT 19QR
UNIT 19QS
UNIT 19QT
UNIT 19QU
UNIT 19QV
UNIT 19QW
UNIT 19QX
UNIT 19QY
UNIT 19QZ
UNIT 19RA
UNIT 19RB
UNIT 19RC
UNIT 19RD
UNIT 19RE
UNIT 19RF
UNIT 19RG
UNIT 19RH
UNIT 19RI
UNIT 19RJ
UNIT 19RK
UNIT 19RL
UNIT 19RM
UNIT 19RN
UNIT 19RO
UNIT 19RP
UNIT 19RQ
UNIT 19RR
UNIT 19RS
UNIT 19RT
UNIT 19RU
UNIT 19RV
UNIT 19RW
UNIT 19RX
UNIT 19RY
UNIT 19RZ
UNIT 19SA
UNIT 19SB
UNIT 19SC
UNIT 19SD
UNIT 19SE
UNIT 19SF
UNIT 19SG
UNIT 19SH
UNIT 19SI
UNIT 19SJ
UNIT 19SK
UNIT 19SL
UNIT 19SM
UNIT 19SN
UNIT 19SO
UNIT 19SP
UNIT 19SQ
UNIT 19SR
UNIT 19SS
UNIT 19ST
UNIT 19SU
UNIT 19SV
UNIT 19SW
UNIT 19SX
UNIT 19SY
UNIT 19SZ
UNIT 19TA
UNIT 19TB
UNIT 19TC
UNIT 19TD
UNIT 19TE
UNIT 19TF
UNIT 19TG
UNIT 19TH
UNIT 19TI
UNIT 19TJ
UNIT 19TK
UNIT 19TL
UNIT 19TM
UNIT 19TN
UNIT 19TO
UNIT 19TP
UNIT 19TQ
UNIT 19TR
UNIT 19TS
UNIT 19TT
UNIT 19TU
UNIT 19TV
UNIT 19TW
UNIT 19TX
UNIT 19TY
UNIT 19TZ
UNIT 19UA
UNIT 19UB
UNIT 19UC
UNIT 19UD
UNIT 19UE
UNIT 19UF
UNIT 19UG
UNIT 19UH
UNIT 19UI
UNIT 19UJ
UNIT 19UK
UNIT 19UL
UNIT 19UM
UNIT 19UN
UNIT 19UO
UNIT 19UP
UNIT 19UQ
UNIT 19UR
UNIT 19US
UNIT 19UT
UNIT 19UU
UNIT 19UV
UNIT 19UW
UNIT 19UX
UNIT 19UY
UNIT 19UZ
UNIT 19VA
UNIT 19VB
UNIT 19VC
UNIT 19VD
UNIT 19VE
UNIT 19VF
UNIT 19VG
UNIT 19VH
UNIT 19VI
UNIT 19VJ
UNIT 19VK
UNIT 19VL
UNIT 19VM
UNIT 19VN
UNIT 19VO
UNIT 19VP
UNIT 19VQ
UNIT 19VR
UNIT 19VS
UNIT 19VT
UNIT 19VU
UNIT 19VV
UNIT 19VW
UNIT 19VX
UNIT 19VY
UNIT 19VZ
UNIT 19WA
UNIT 19WB
UNIT 19WC
UNIT 19WD
UNIT 19WE
UNIT 19WF
UNIT 19WG
UNIT 19WH
UNIT 19WI
UNIT 19WJ
UNIT 19WK
UNIT 19WL
UNIT 19WM
UNIT 19WN
UNIT 19WO
UNIT 19WP
UNIT 19WQ
UNIT 19WR
UNIT 19WS
UNIT 19WT
UNIT 19WU
UNIT 19WV
UNIT 19WW
UNIT 19WX
UNIT 19WY
UNIT 19WZ
UNIT 19XA
UNIT 19XB
UNIT 19XC
UNIT 19XD
UNIT 19XE
UNIT 19XF
UNIT 19XG
UNIT 19XH
UNIT 19XI
UNIT 19XJ
UNIT 19XK
UNIT 19XL
UNIT 19XM
UNIT 19XN
UNIT 19XO
UNIT 19XP
UNIT 19XQ
UNIT 19XR
UNIT 19XS
UNIT 19XT
UNIT 19XU
UNIT 19XV
UNIT 19XW
UNIT 19XX
UNIT 19XY
UNIT 19XZ
UNIT 19YA
UNIT 19YB
UNIT 19YC
UNIT 19YD
UNIT 19YE
UNIT 19YF
UNIT 19YG
UNIT 19YH
UNIT 19YI
UNIT 19YJ
UNIT 19YK
UNIT 19YL
UNIT 19YM
UNIT 19YN
UNIT 19YO
UNIT 19YP
UNIT 19YQ
UNIT 19YR
UNIT 19YS
UNIT 19YT
UNIT 19YU
UNIT 19YV
UNIT 19YW
UNIT 19YX
UNIT 19YY
UNIT 19YZ
UNIT 19ZA
UNIT 19ZB
UNIT 19ZC
UNIT 19ZD
UNIT 19ZE
UNIT 19ZF
UNIT 19ZG
UNIT 19ZH
UNIT 19ZI
UNIT 19ZJ
UNIT 19ZK
UNIT 19ZL
UNIT 19ZM
UNIT 19ZN
UNIT 19ZO
UNIT 19ZP
UNIT 19ZQ
UNIT 19ZR
UNIT 19ZS
UNIT 19ZT
UNIT 19ZU
UNIT 19ZV
UNIT 19ZW
UNIT 19ZX
UNIT 19ZY
UNIT 19ZZ
UNIT 19AAA
UNIT 19AAB
UNIT 19AAC
UNIT 19AAD
UNIT 19AAE
UNIT 19AAF
UNIT 19AAG
UNIT 19AAH
UNIT 19AAI
UNIT 19AAJ
UNIT 19AAK
UNIT 19AAL
UNIT 19AAM
UNIT 19AAN
UNIT 19AAO
UNIT 19AAP
UNIT 19AAQ
UNIT 19AAR
UNIT 19AAS
UNIT 19AAT
UNIT 19AAU
UNIT 19AAV
UNIT 19AAW
UNIT 19AAX
UNIT 19AAY
UNIT 19AAZ
UNIT 19ABA
UNIT 19ABB
UNIT 19ABC
UNIT 19ABD
UNIT 19ABE
UNIT 19ABF
UNIT 19ABG
UNIT 19ABH
UNIT 19ABI
UNIT 19ABJ
UNIT 19ABK
UNIT 19ABL
UNIT 19ABM
UNIT 19ABN
UNIT 19ABO
UNIT 19ABP
UNIT 19ABQ
UNIT 19ABR
UNIT 19ABS
UNIT 19ABT
UNIT 19ABU
UNIT 19ABV
UNIT 19ABW
UNIT 19ABX
UNIT 19ABY
UNIT 19ABZ
UNIT 19ACA
UNIT 19ACB
UNIT 19ACC
UNIT 19ACD
UNIT 19ACE
UNIT 19ACF
UNIT 19ACG
UNIT 19ACH
UNIT 19ACI
UNIT 19ACJ
UNIT 19ACK
UNIT 19ACL
UNIT 19ACM
UNIT 19ACN
UNIT 19ACO
UNIT 19ACP
UNIT 19ACQ
UNIT 19ACR
UNIT 19ACS
UNIT 19ACT
UNIT 19ACU
UNIT 19ACV
UNIT 19ACW
UNIT 19ACX
UNIT 19ACY
UNIT 19ACZ
UNIT 19ADA
UNIT 19ADB
UNIT 19ADC
UNIT 19ADD
UNIT 19ADE
UNIT 19ADF
UNIT 19ADG
UNIT 19ADH
UNIT 19ADI
UNIT 19ADJ
UNIT 19ADK
UNIT 19ADL
UNIT 19ADM
UNIT 19ADN
UNIT 19ADO
UNIT 19ADP
UNIT 19ADQ
UNIT 19ADR
UNIT 19ADS
UNIT 19ADT
UNIT 19ADU
UNIT 19ADV
UNIT 19ADW
UNIT 19ADX
UNIT 19ADY
UNIT 19ADZ
UNIT 19AEA
UNIT 19AEB
UNIT 19AEC
UNIT 19AED
UNIT 19AEE
UNIT 19AEF
UNIT 19AEG
UNIT 19AEH
UNIT 19AEI
UNIT 19AEJ
UNIT 19AEK
UNIT 19AEL
UNIT 19AEM
UNIT 19AEN
UNIT 19AEO
UNIT 19AEP
UNIT 19AEQ
UNIT 19AER
UNIT 19AES
UNIT 19AET
UNIT 19AEU
UNIT 19AEV
UNIT 19AEW
UNIT 19AEX
UNIT 19AEY
UNIT 19AEZ
UNIT 19AFA
UNIT 19AFB
UNIT 19AFC
UNIT 19AFD
UNIT 19AFE
UNIT 19AFF
UNIT 19AFG
UNIT 19AFH
UNIT 19AFI
UNIT 19AFJ
UNIT 19AFK
UNIT 19AFL
UNIT 19AFM
UNIT 19AFN
UNIT 19AFO
UNIT 19AFP
UNIT 19AFQ
UNIT 19AFR
UNIT 19AFS
UNIT 19AFT
UNIT 19AFU
UNIT 19AFV
UNIT 19AFW
UNIT 19AFX
UNIT 19AFY
UNIT 19AFZ
UNIT 19AGA
UNIT 19AGB
UNIT 19AGC
UNIT 19AGD
UNIT 19AGE
UNIT 19AGF
UNIT 19AGG
UNIT 19AGH
UNIT 19AGI
UNIT 19AGJ
UNIT 19AGK
UNIT 19AGL
UNIT 19AGM
UNIT 19AGN
UNIT 19AGO
UNIT 19AGP
UNIT 19AGQ
UNIT 19AGR
UNIT 19AGS
UNIT 19AGT
UNIT 19AGU
UNIT 19AGV
UNIT 19AGW
UNIT 19AGX
UNIT 19AGY
UNIT 19AGZ
UNIT 19AHA
UNIT 19AHB
UNIT 19AHC
UNIT 19AHD
UNIT 19AHE
UNIT 19AHF
UNIT 19AHG
UNIT 19AHH
UNIT 19AHI
UNIT 19AHJ
UNIT 19AHK
UNIT 19AHL
UNIT 19AHM
UNIT 19AHN
UNIT 19AHO
UNIT 19AHP
UNIT 19AHQ
UNIT 19AHR
UNIT 19AHS
UNIT 19AHT
UNIT 19AHU
UNIT 19AHV
UNIT 19AHW
UNIT 19AHX
UNIT 19AHY
UNIT 19AHZ
UNIT 19AIA
UNIT 19AIB
UNIT 19AIC
UNIT 19AID
UNIT 19AIE
UNIT 19AIF
UNIT 19AIG
UNIT 19AIH
UNIT 19AII
UNIT 19AIJ
UNIT 19AIK
UNIT 19AIL
UNIT 19AIM
UNIT 19AIN
UNIT 19AIO
UNIT 19AIP
UNIT 19AIQ
UNIT 19AIR
UNIT 19AIS
UNIT 19AIT
UNIT 19AIU
UNIT 19AIV
UNIT 19AIW
UNIT 19AIX
UNIT 19AIY
UNIT 19AIZ
UNIT 19AJA
UNIT 19AJB
UNIT 19AJC
UNIT 19AJD
UNIT 19AJE
UNIT 19AJF
UNIT 19AJG
UNIT 19AJH
UNIT 19AJI
UNIT 19AJJ
UNIT 19AJK
UNIT 19AJL
UNIT 19AJM
UNIT 19AJN
UNIT 19AJO
UNIT 19AJP
UNIT 19AJQ
UNIT 19AJR
UNIT 19AJS
UNIT 19AJT
UNIT 19AJU
UNIT 19AJV
UNIT 19AJW
UNIT 19AJX
UNIT 19AJY
UNIT 19AJZ
UNIT 19AKA
UNIT 19AKB
UNIT 19AKC
UNIT 19AKD
UNIT 19AKE
UNIT 19AKF
UNIT 19AKG
UNIT 19AKH
UNIT 19AKI
UNIT 19AKJ
UNIT 19AKK
UNIT 19AKL
UNIT 19AKM
UNIT 19AKN
UNIT 19AKO
UNIT 19AKP
UNIT 19AKQ
UNIT 19AKR
UNIT 19AKS
UNIT 19AKT
UNIT 19AKU
UNIT 19AKV
UNIT 19AKW
UNIT 19AKX
UNIT 19AKY
UNIT 19AKZ
UNIT 19ALA
UNIT 19ALB
UNIT 19ALC
UNIT 19ALD
UNIT 19ALE
UNIT 19ALF
UNIT 19ALG
UNIT 19ALH
UNIT 19ALI
UNIT 19ALJ
UNIT 19ALK
UNIT 19ALL
UNIT 19ALM
UNIT 19ALN
UNIT 19ALO
UNIT 19ALP
UNIT 19ALQ
UNIT 19ALR
UNIT 19ALS
UNIT 19ALT
UNIT 19ALU
UNIT 19ALV
UNIT 19ALW
UNIT 19ALX
UNIT 19ALY
UNIT 19ALZ
UNIT 19AMA
UNIT 19AMB
UNIT 19AMC
UNIT 19AMD
UNIT 19AME
UNIT 19AMF
UNIT 19AMG
UNIT 19AMH
UNIT 19AMI
UNIT 19AMJ
UNIT 19AMK
UNIT 19AML
UNIT 19AMM
UNIT 19AMN
UNIT 19AMO
UNIT 19AMP
UNIT 19AMQ
UNIT 19AMR
UNIT 19AMS
UNIT 19AMT
UNIT 19AMU
UNIT 19AMV
UNIT 19AMW
UNIT 19AMX
UNIT 19AMY
UNIT 19AMZ
UNIT 19ANA
UNIT 19ANB
UNIT 19ANC
UNIT 19AND
UNIT 19ANE
UNIT 19ANF
UNIT 19ANG
UNIT 19ANH
UNIT 19ANI
UNIT 19ANJ
UNIT 19ANK
UNIT 19ANL
UNIT 19ANM
UNIT 19ANN
UNIT 19ANO
UNIT 19ANP
UNIT 19ANQ
UNIT 19ANR
UNIT 19ANS
UNIT 19ANT
UNIT 19ANU
UNIT 19ANV
UNIT 19ANW
UNIT 19ANX
UNIT 19ANY
UNIT 19ANZ
UNIT 19AOA
UNIT 19AOB
UNIT 19AOC
UNIT 19AOD
UNIT 19AOE
UNIT 19AOF
UNIT 19AOG
UNIT 19AOH
UNIT 19AOI
UNIT 19AOJ
UNIT 19AOK
UNIT 19AOL
UNIT 19AOM
UNIT 19AON
UNIT 19AOO
UNIT 19AOP
UNIT 19AOQ
UNIT 19AOR
UNIT 19AOS
UNIT 19AOT
UNIT 19AOU
UNIT 19AOV
UNIT 19AOW
UNIT 19AOX
UNIT 19AOY
UNIT 19AOZ
UNIT 19APA
UNIT 19APB
UNIT 19APC
UNIT 19APD
UNIT 19APE
UNIT 19APF
UNIT 19APG
UNIT 19APH
UNIT 19API
UNIT 19APJ
UNIT 19APK
UNIT 19APL
UNIT 19APM
UNIT 19APN
UNIT 19APO
UNIT 19APP
UNIT 19APQ
UNIT 19APR
UNIT 19APS
UNIT 19APT
UNIT 19APU
UNIT 19APV
UNIT 19APW
UNIT 19APX
UNIT 19APY
UNIT 19APZ
UNIT 19AQA
UNIT 19AQB
UNIT 19AQC
UNIT 19AQD
UNIT 19AQE
UNIT 19AQF
UNIT 19AQG
UNIT 19AQH
UNIT 19AQI
UNIT 19AQJ
UNIT 19AQK
UNIT 19AQL
UNIT 19AQM
UNIT 19AQN
UNIT 19AQO
UNIT 19AQP
UNIT 19AQQ
UNIT 19AQR
UNIT 19AQS
UNIT 19AQT
UNIT 19AQU
UNIT 19AQV
UNIT 19AQW
UNIT 19AQX
UNIT 19AQY
UNIT 19AQZ
UNIT 19ARA
UNIT 19ARB
UNIT 19ARC
UNIT 19ARD
UNIT 19ARE
UNIT 19ARF
UNIT 19ARG
UNIT 19ARH
UNIT 19ARI
UNIT 19ARJ
UNIT 19ARK
UNIT 19ARL
UNIT 19ARM
UNIT 19ARN
UNIT 19ARO
UNIT 19ARP
UNIT 19ARQ
UNIT 19ARR
UNIT 19ARS
UNIT 19ART
UNIT 19ARU
UNIT 19ARV
UNIT 19ARW
UNIT 19ARX
UNIT 19ARY
UNIT 19ARZ
UNIT 19ASA
UNIT 19ASB
UNIT 19ASC
UNIT 19ASD
UNIT 19ASE
UNIT 19ASF
UNIT 19ASG
UNIT 19ASH
UNIT 19ASI
UNIT 19ASJ
UNIT 19ASK
UNIT 19ASL
UNIT 19ASM
UNIT 19ASN
UNIT 19ASO
UNIT 19ASP
UNIT 19ASQ
UNIT 19ASR
UNIT 19ASS
UNIT 19AST
UNIT 19ASU
UNIT 19ASV
UNIT 19ASW
UNIT 19ASX
UNIT 19ASY
UNIT 19ASZ
UNIT 19ATA
UNIT 19ATB
UNIT 19ATC
UNIT 19ATD
UNIT 19ATE
UNIT 19ATF
UNIT 19ATG
UNIT 19ATH
UNIT 19ATI
UNIT 19ATJ
UNIT 19ATK
UNIT 19ATL
UNIT 19ATM
UNIT 19ATN
UNIT 19ATO
UNIT 19ATP
UNIT 19ATQ
UNIT 19ATR
UNIT 19ATS
UNIT 19ATT
UNIT 19ATU
UNIT 19ATV
UNIT 19ATW
UNIT 19ATX
UNIT 19ATY
UNIT 19ATZ
UNIT 19AUA
UNIT 19AUB
UNIT 19AUC
UNIT 19AUD
UNIT 19AUE
UNIT 19AUF
UNIT 19AUG
UNIT 19AUH
UNIT 19AUI
UNIT 19AUJ
UNIT 19AUK
UNIT 19AUL
UNIT 19AUM
UNIT 19AUN
UNIT 19AUO
UNIT 19AUP
UNIT 19AUQ
UNIT 19AUR
UNIT 19AUS
UNIT 19AUT
UNIT 19AUU
UNIT 19AUV
UNIT 19AUW
UNIT 19AUX
UNIT 19AUY
UNIT 19AUZ
UNIT 19AVA
UNIT 19AVB
UNIT 19AVC
UNIT 19AVD
UNIT 19AVE
UNIT 19AVF
UNIT 19AVG
UNIT 19AVH
UNIT 19AVI
UNIT 19AVJ
UNIT 19AVK
UNIT 19AVL
UNIT 19AVM
UNIT 19AVN
UNIT 19AVO
UNIT 19AVP
UNIT 19AVQ
UNIT 19AVR
UNIT 19AVS
UNIT 19AVT
UNIT 19AVU
UNIT 19AVV
UNIT 19AVW
UNIT 19AVX
UNIT 19AVY
UNIT 19AVZ
UNIT 19AWA
UNIT 19AWB
UNIT 19AWC
UNIT 19AWD
UNIT 19AWE
UNIT 19AWF
UNIT 19AWG
UNIT 19AWH
UNIT 19AWI
UNIT 19AWJ
UNIT 19AWK
UNIT 19AWL
UNIT 19AWM
UNIT 19AWN
UNIT 19AWO
UNIT 19AWP
UNIT 19AWQ
UNIT 19AWR
UNIT 19AWS
UNIT 19AWT
UNIT 19AWU
UNIT 19AWV
UNIT 19AWW
UNIT 19AWX
UNIT 19AWY
UNIT 19AWZ
UNIT 19AXA
UNIT 19AXB
UNIT 19AXC
UNIT 19AXD
UNIT 19AXE
UNIT 19AXF
UNIT 19AXG
UNIT 19AXH
UNIT 19AXI
UNIT 19AXJ
UNIT 19AXK
UNIT 19AXL
UNIT 19AXM
UNIT 19AXN
UNIT 19AXO
UNIT 19AXP
UNIT 19AXQ
UNIT 19AXR
UNIT 19AXS
UNIT 19AXT
UNIT 19AXU
UNIT 19AXV
UNIT 19AXW
UNIT 19AXX
UNIT 19AXY
UNIT 19AXZ
UNIT 19AYA
UNIT 19AYB
UNIT 19AYC
UNIT 19AYD
UNIT 19AYE
UNIT 19AYF
UNIT 19AYG
UNIT 19AYH
UNIT 19AYI
UNIT 19AYJ
UNIT 19AYK
UNIT 19AYL
UNIT 19AYM
UNIT 19AYN
UNIT 19AYO
UNIT 19AYP
UNIT 19AYQ
UNIT 19AYR
UNIT 19AYS
UNIT 19AYT
UNIT 19AYU
UNIT 19AYV
UNIT 19AYW
UNIT 19AYX
UNIT 19AYY
UNIT 19AYZ
UNIT 19AZA
UNIT 19AZB
UNIT 19AZC
UNIT 19AZD
UNIT 19AZE
UNIT 19AZF
UNIT 19AZG
UNIT 19AZH
UNIT 19AZI
UNIT 19AZJ
UNIT 19AZK
UNIT 19AZL
UNIT 19AZM
UNIT 19AZN
UNIT 19AZO
UNIT 19AZP
UNIT 19AZQ
UNIT 19AZR
UNIT 19AZS
UNIT 19AZT
UNIT 19AZU
UNIT 19AZV
UNIT 19AZW
UNIT 19AZX
UNIT 19AZY
UNIT 19AZZ
UNIT 19BAA
UNIT 19BAB
UNIT 19BAC
UNIT 19BAD
UNIT 19BAE
UNIT 19BAF
UNIT 19BAG
UNIT 19BAH
UNIT 19BAI
UNIT 19BAJ
UNIT 19BAK
UNIT 19BAL
UNIT 19BAM
UNIT 19BAN
UNIT 19BAO
UNIT 19BAP
UNIT 19BAQ
UNIT 19BAR
UNIT 19BAS
UNIT 19BAT
UNIT 19BAU
UNIT 19BAV
UNIT 19BAW
UNIT 19BAX
UNIT 19BAY
UNIT 19BAZ
UNIT 19BBA
UNIT 19BBB
UNIT 19BBC
UNIT 19BBD
UNIT 19BBE
UNIT 19BBF
UNIT 19BBG
UNIT 19BBH
UNIT 19BBI
UNIT 19BBJ
UNIT 19BBK
UNIT 19BBL
UNIT 19BBM
UNIT 19BBN
UNIT 19BBO
UNIT 19BBP
UNIT 19BBQ
UNIT 19BBR
UNIT 19BBS
UNIT 19BBT
UNIT 19BBU
UNIT 19BBV
UNIT 19BBW
UNIT 19BBX
UNIT 19BBY
UNIT 19BBZ
UNIT 19BCA
UNIT 19BCB
UNIT 19BCC
UNIT 19BCD
UNIT 19BCE
UNIT 19BCF
UNIT 19BCG
UNIT 19BCH
UNIT 19BCI
UNIT 19BCJ
UNIT 19BCK
UNIT 19BCL
UNIT 19BCM
UNIT 19BCN
UNIT 19BCO
UNIT 19BCP
UNIT 19BCQ
UNIT 19BCR
UNIT 19BCS
UNIT 19BCT
UNIT 19BCU
UNIT 19BCV
UNIT 19BCW
UNIT 19BCX
UNIT 19BCY
UNIT 19BCZ
UNIT 19BDA
UNIT 19BDB
UNIT 19BDC
UNIT 19BDD
UNIT 19BDE
UNIT 19BDF
UNIT 19BDG
UNIT 19BDH
UNIT 19BDI
UNIT 19BDJ
UNIT 19BDK
UNIT 19BDL
UNIT 19BDM
UNIT 19BDN
UNIT 19BDO
UNIT 19BDP
UNIT 19BDQ
UNIT 19BDR
UNIT 19BDS
UNIT 19BDT
UNIT 19BDU
UNIT 19BDV
UNIT 19BDW
UNIT 19BDX
UNIT 19BDY
UNIT 19BDZ
UNIT 19BEA
UNIT 19BEB
UNIT 19BEC
UNIT 19BED
UNIT 19BEE
UNIT 19BEF
UNIT 19BEG
UNIT 19BEH
UNIT 19BEI
UNIT 19BEJ
UNIT 19BEK
UNIT 19BEL
UNIT 19BEM
UNIT 19BEN
UNIT 19BEO
UNIT 19BEP
UNIT 19BEQ
UNIT 19BER
UNIT 19BES
UNIT 19BET
UNIT 19BEU
UNIT 19BEV
UNIT 19BEW
UNIT 19BEX
UNIT 19BEY
UNIT 19BEZ
UNIT 19BFA
UNIT 19BFB
UNIT 19BFC
UNIT 19BFD
UNIT 19BFE
UNIT 19BFF
UNIT 19BFG
UNIT 19BFH
UNIT 19BFI
UNIT 19BFJ
UNIT 19BFK
UNIT 19BFL
UNIT 19BFM
UNIT 19BFN
UNIT 19BFO
UNIT 19BFP
UNIT 19BFQ
UNIT 19BFR
UNIT 19BFS
UNIT 19BFT
UNIT 19BFU
UNIT 19BFV
UNIT 19BFW
UNIT 19BFX
UNIT 19BFY
UNIT 19BFZ
UNIT 19BGA
UNIT 19BGB
UNIT 19BGC
UNIT 19