



west virginia department of environmental protection

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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Friday, August 11, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit approval for 515220
47-085-10308-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 515220
Farm Name: OWENS, JEREMY
U.S. WELL NUMBER: 47-085-10308-00-00
Horizontal 6A / New Drill
Date Issued: 8/11/2017

Promoting a healthy environment.

08/11/2017

PERMIT CONDITIONS

47 0 0 5 1 0 3 0 8

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

4700510308

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

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

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

**ORDER
ISSUED UNDER
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: EQT Production Company
115 Professional Place P.O. Box 280
Bridgeport WV, 26330

DATE: August 10, 2017
ORDER NO.: 2017-W-8

INTRODUCTION

This Order (hereinafter “Order”) is issued by the Office of Oil and Gas (hereinafter “OOG”), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to EQT Production Company (hereinafter “EQT” or “Operator”), collectively the “Parties.”

FINDINGS OF THE CHIEF

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. EQT is a “person” as defined by W. Va. Code §22-6-1(n), with a corporate address as 115 Professional Place, P.O. Box 280, Bridgeport, West Virginia.
3. On January 3, 2017, EQT submitted a well work permit application identified as API# 47-085-10308. The proposed well is to be located on the PUL 65 Pad in Union District of Ritchie County, West Virginia.
4. On January 4, 2017, Kleinfelder, Inc. (on behalf of EQT) requested a waiver for KLF-Wetland 10 outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-085-10308.

08/11/2017

CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “[i]n addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “[n]o 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 Office of Oil and Gas 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 Office of Oil and Gas 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.”

ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “[n]o 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. The Office of Oil and Gas grants the request for a waiver for KLF-Wetland10 from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-085-10308. The Office of Oil and Gas hereby **ORDERS** that EQT shall meet the following site construction and operational requirements for the PUL 65 well pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. KLF-Wetland 10 shall have double layers of twenty-four inch (24”) compost filter sock that will prevent any sediment from reaching the wetland from the well pad.
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

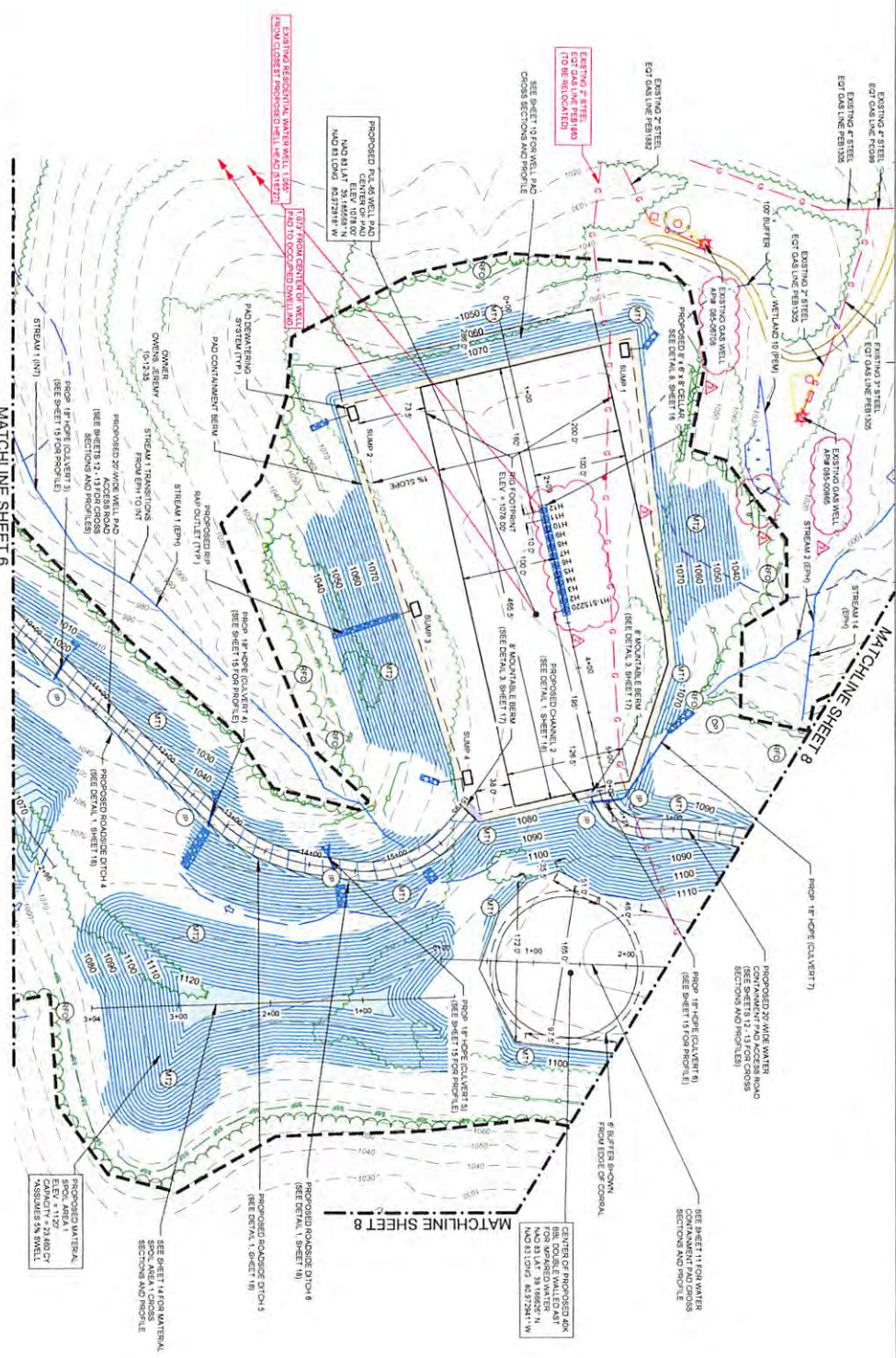
Thus ORDERED, the 10th day of August, 2017.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By: 
JAMES A. MARTIN, CHIEF

Attachment 1



- NOTES
1. THE GRADE SHOWN REPRESENTS FINISH GRADE ELEVATIONS
 2. PREP MATERIALS SHALL BE AS NOTED ON THE PLAN AND IN THE STORM DRAINAGE COMPUTATION ON SHEET 6
 3. CUT AND FILL SLOPES SHALL BE AT 2H:1V UNLESS NOTED OTHERWISE
 4. FILL SHALL BE PLACED IN 12" LIFTS AND BE COMPACTED TO 98% STANDARD PROCTOR DENSITY
 5. INTERMEDIATE BONDING BENCHES SHALL BE INSTALLED ON FILL SLOPES PER GEOTECHNICAL DETAIL 6 SHOWN ON SHEET 20
 6. ALL FILL SLOPES SHALL BE TOE ARMED PER DETAIL 6 ON SHEET 20
 7. PROPOSED AND MAINTAIN EXISTING FLOW FROM PAD TO ADJACENT STREAMS AND MATERIALS REMOVED FROM THE PAD SHALL BE PLACED TO MAINTAIN EXISTING CHANNELS AND SUBSEQUENTLY REMOVED FROM SITE BY AN APPROVED WASTE MANAGEMENT CONTRACTOR
 8. ALL STRUCTURES AND DETAILS HAVE BEEN DESIGNED TO ACCOMMODATE A DESIGN WIND SPEED OF 110 MPH

9. SEE DETAIL 2, SHEET 18 FOR RIP RAP OUTLET PROTECTION AND SIZING AND DESIGN
10. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROPOSED DITCHES. SEE DETAIL 10 FOR CONSTRUCTION AND EROSION CONTROL MEASURES AND REMAIN IN PLACE PERMANENT CHECK DAMS AFTER CONSTRUCTION IS COMPLETE
11. FILTER SOCK AND RIP RAP SIZES AND THICKNESS SHALL BE SHOWN IN DETAILS 1 - 3 ON SHEET 20
12. IN TOPSOIL PLACEMENT AREAS, CONSTRUCTION TO INSTALL PROPER BARS TO ENSURE NO OFFSITE EROSION & SEDIMENTATION RISK
13. INSTALL ROCK FILTER OUTLET ALONG SEDIMENT BARRIERS AS SHOWN AND AT LOW POINTS AS INDICATED IN THE FIELD
14. REFER TO DETAIL 1, SHEET 18 FOR DITCH DETAILS
15. SURFACE TERRACING SHALL BE INSTALLED ON FILL SLOPES AT INTERVALS OF 42 VERTICAL FEET (19' TERRACE WIDTH) UNLESS SOILS CONDITIONS WARRANT A SHORTER INTERVAL
16. TOP OF ROCK ARMED FILL SLOPES TO BE GRADED AT A MINIMUM OF 3% FROM CENTER TO INSIDE OF DITCH CHANNEL

APPROVED
WV DEP OOG
7/18/2017

ISSUED FOR PERMITTING

SCALE VERIFICATION:
1" = 100'
AS SHOWN ON THIS PLAN
NOT TO SCALE
EXCEPT WHERE NOTED OTHERWISE

SITE PLAN
PUL-65 WELL PAD
RITCHIE COUNTY, UNION DISTRICT
WEST VIRGINIA

PROJECT NO: 184691
ISSUED DATE: 12-28-2016
CURRENT REVISION: 02H
DESIGNED BY: GSH
DRAWN BY: GSH
CHECKED BY: NCH
APPROVED BY: TEO
SHEET: 7 OF 25

KLEINFELDER
Bright People. Right Solutions.

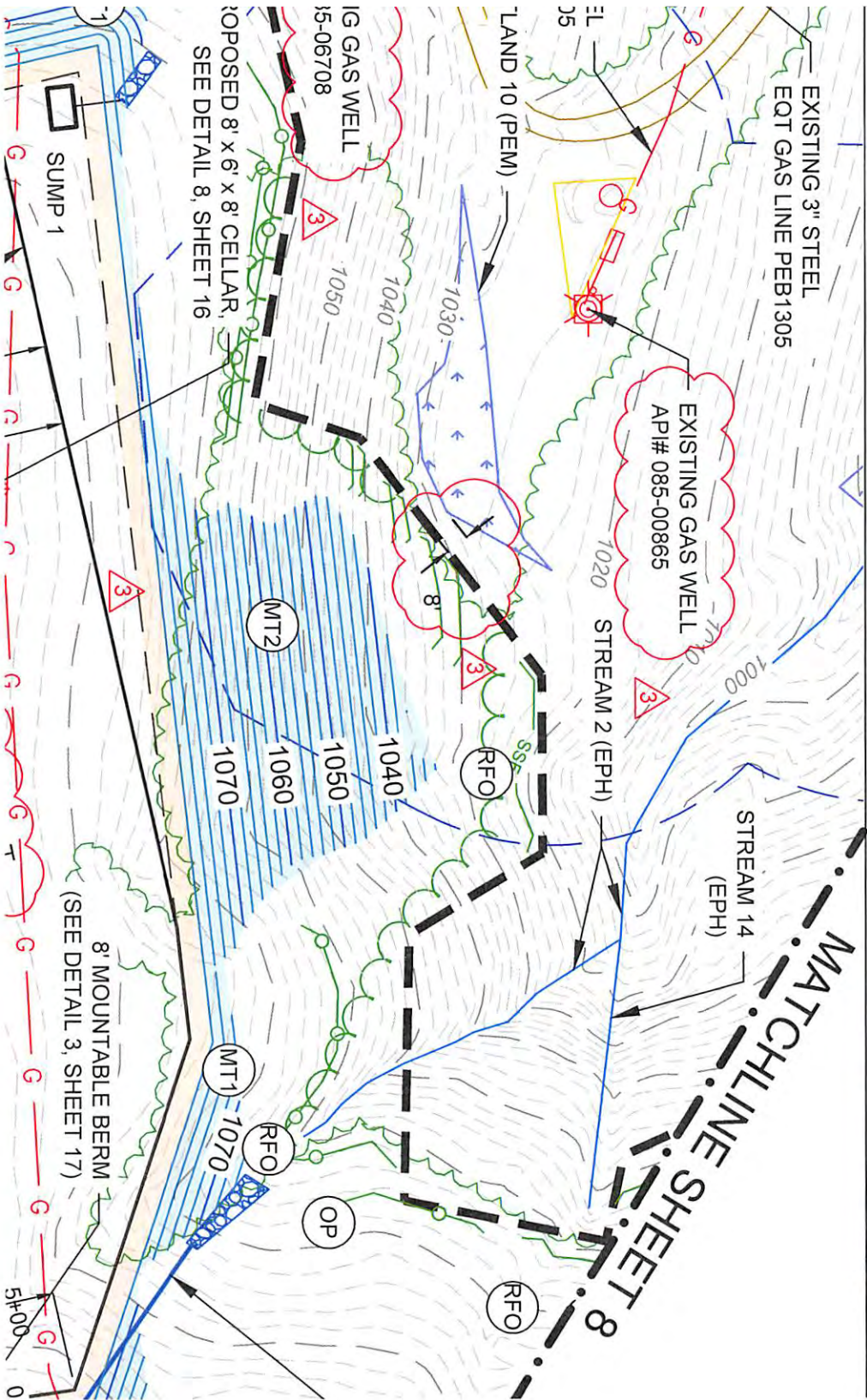
REGISTERED PROFESSIONAL ENGINEER
STATE OF WEST VIRGINIA
NO. 10434
DATE: 06/20/04

DESIGNED BY: THOR B. DANIEL, PE # 20043

REV	DESCRIPTION	DATE
1	DOA REQUIREMENTS	09/11/2016
2	WELL HEADS/VALVES	09/11/2016
3	WV DEP COMMENTS	09/11/2016

08/11/2017

Attachment 1





January 3, 2017

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

Re: PUL65 Wetland Waiver (515220)

Dear Mr. Smith,

Enclosed is the wetland waiver request for the PUL65. This was left out in error. Please add this to the permit application that was recently sent.

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

Sincerely,

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

Vicki Roark
Permitting Supervisor-WV

Enc.

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Environmental Protection



December 22, 2016

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

**Re: Wetland Waiver Request
EQT Production Company
PUL-65 Well Pad Project
Ritchie County, West Virginia**

Dear Mr. Martin:

On behalf of EQT Production Company (EQT), Kleinfelder, Inc. (Kleinfelder) is submitting a Wetland Waiver Request pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code. EQT is requesting a waiver for one palustrine emergent (PEM) wetland which is located within 100-feet of the limit of disturbance (LOD) of the proposed PUL-65 Well Pad Project (Project) located in Ritchie County, West Virginia.

EQT is proposing to construct a natural gas well pad with associated access roads and facilities. The total LOD for the Project is 34.34 acres and will support up to 12 horizontal wells. The waiver request form is included as Attachment A and the following information has been provided as required by the waiver.

WETLAND WAIVER REQUEST

Question 1: Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.

The proposed Project is located in Ritchie County near the town of Pullman, West Virginia as shown on the Site Location Map (Attachment B). The proposed Project's LOD is within 100-feet of one PEM wetland, KLF-WETLAND10. KLF-WETLAND10 is located approximately 8 linear feet to the west of the well pad LOD. No perennial streams are located within 100-feet of the proposed well pad LOD. EQT performed a water source survey and identified no water wells or developed springs used for human or domestic animal consumption within 250 feet, and no surface or ground water intakes of a public water supply within 1,000 feet of the proposed well pad LOD. The Water Topo Map illustrating water sources within a 2,500 feet radius of the central gas most well location on the pad is provided as Attachment D.

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Question 2: Justify the proposed activity by describing alternatives to this project that were considered

a. Include a No-Action Alternative as to show “the future without the project”.

The Project site is situated in a location that will enable EQT to access a pocket of natural gas that lies within subsurface strata within their development area. This location has been chosen due to its strategic location for the purpose of natural gas extraction. The no-build alternative was not considered as a viable option, as it would not fulfill the Project's purpose and need and would not allow EQT to develop a platform for natural gas extraction. This alternative would result in financial loss due to the loss of natural gas, and also the need to find an alternate location and acquire additional properties and leases. Based on these factors, the “No-Action Alternative” is not considered as a viable alternative.

b. Location alternatives must be shown.

Prior to the currently proposed location of the PUL-65 Well Pad, EQT considered off-site alternatives for the development of the Project. However, due to access, land owner constraints, and safety considerations, these alternate locations were not utilized. The current location and design represents the best location for the proposed Project.

Once EQT finalized the site selection, Kleinfelder engineers began extensive studies to determine the most practicable facility layout. A desktop review process including an analysis of site accessibility, public constraints, existing utility corridors, constructability, environmental concerns, and safety concerns was completed. This process included a review of existing aerial and topographic mapping, National Resources Conservation Service (NRCS) soil types and mapping, and National Wetlands Inventory (NWI) mapping. The proposed PUL-65 Well Pad went through multiple conceptual designs prior to the proposed design. The PUL-65 Well Pad Overall Conceptual Plan (Attachment E) represented the most efficient facility layout prior to obtaining detailed information regarding the location and types of on-site aquatic resources. Kleinfelder biologists then performed detailed wetland and stream delineations to characterize all potentially jurisdictional areas on the site. The resulting data was incorporated into the design of the facility to arrive at the proposed design. The wetland and stream delineation map is included as Attachment F.

Design changes addressed multiple issues related to site layout, safety, and the protection of the surrounding environment. The conceptual plan utilized impoundments for impaired water; whereas, the proposed design includes Aboveground Storage Tanks (ASTs) which are safer when appropriate containment is utilized, and are more environmentally friendly. The conceptual plan would have permanently impacted KLF-WETLAND10, instead of only encroaching upon the 100-ft buffer. In the conceptual plans and the preliminary design plans (Attachment G), the access road entrance was located off of Head Indian Creek Road (CR 9/4) which would have required EQT to make road improvements and upgrades. Indian Creek is located approximately 300 feet downslope from CR 9/4 and is a known mussel stream. By changing the access road location, the potential for sedimentation from road improvements or construction traffic to this high quality stream has been avoided. In addition, a main water line for the Town of Harrisville is located in the county road right-of-way which

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could not be avoided to achieve the necessary road width for construction activities. As such, EQT would have to relocate the main water line to pursue an access road entrance off of CR 9/4, which could negatively affect local residents. EQT attempted to purchase a route around the water line from the North, but was unable to reach agreements with the necessary landowners. In an effort to minimize impacts and costs associated with road improvements, the preliminary design was amended. The proposed design represents the best alternative with the least environmental impacts that still meets the Project's purpose and need. The proposed Final Site Plans are included as Attachment H.

c. Must demonstrate why a one hundred foot buffer cannot be maintained.

Maintaining a 100-foot buffer from all on-site wetlands was not feasible due to topographic constraints, location of existing features, landowner constraints, and safety and stability requirements. To maintain a 100-foot buffer from KLF-WETLAND10 the pad would need to be shifted to the east, which would have resulted in greater impacts to KLF-STREAM01 and new permanent impacts to KLF-WETLAND08 and KLF-WETLAND09 within the Project area. Furthermore, shifting the layout could have resulted in excess spoil that would require a larger LOD for additional or larger material stockpiles. Decreasing the size of the Project LOD would have created steeper well pad grading slopes, which could lead to slope instability and unsafe working conditions. A reduction in the size of the pad would also affect the ability to use the ASTs for water containment. The proposed design represents the minimum footprint required to meet the Project's purpose and need, and ensure safe working conditions and pad stability.

d. Describe how the proposed project is the least environmentally damaging practicable alternative.

The proposed Project design represents the preferred alternative which reduces permanent impacts and still achieves the Project's purpose. The conceptual design would have resulted in a smaller Project LOD but would have resulted in greater direct permanent impacts to on-site features and would have involved road improvements upslope of a high quality, known mussel stream.

Question 3: Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.

As part of the design and permitting process, EQT has prepared an Erosion and Sediment Control Plan (ESCP) which includes the application of specific seed mixes for post-construction stabilization. The implementation of E&S controls in the plan will reduce soil erosion, soil compaction, and the sedimentation of nearby aquatic resources. The ESCP will ensure that water quality impacts are prevented to the maximum extent practicable throughout the Project area. Above ground storage tanks will be utilized instead of impoundments to minimize the potential for infiltration and possible contamination of soil and groundwater. All contaminants on site will be strictly controlled to prevent the potential for accidental release. In addition, culverts and associated roadside ditches will be installed along the proposed access road to prevent off-site sedimentation.

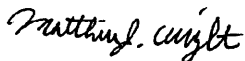
Question 4: Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect wetlands and/or perennial streams for which the waiver is sought.*

West Virginia Department of Environmental Protection approved erosion and sediment controls will be maintained throughout the construction of the proposed Project. Super Silt Fence will be installed parallel to the contours, along the portion of the LOD closest to KLF-WETLAND10. There will be a rock filter outlet constructed to the north of KLF-WETLAND10 in the topographic low point. In addition, the slope above and adjacent to the wetland will be hydroseeded with seed mix as specified on the attached Proposed Final Site Plans provided in Attachment G. Temporary sediment control will remain in place until 70% vegetative cover has been established. Erosion and sediment control best management practices will be utilized to prevent sediment from leaving the Project and potentially impacting KLF-WETLAND10.

Proposed Project impacts meet the requirements for a non-reporting Nationwide Permit 14, however a preconstruction notification will be submitted to the United States Army Corps of Engineers (USACE) due to General Condition 18c. In addition, this waiver application is being submitted for the encroachment of the well pad LOD to the 100-ft buffer for emergent KLF-WETLAND10. We appreciate your review of this Wetland Waiver Request. Please contact Lacoa Corder of EQT at (304) 848-0066 with any questions.

Respectfully submitted,



Matthew J. Albright
Project Manager

Enclosures (7)

- Attachment A: Wetland Waiver Request Form
- Attachment B: Site Location Map
- Attachment C: Pre-construction Notification
- Attachment D: Water Topo Map
- Attachment E: Conceptual Site Plans
- Attachment F: Delineation Map
- Attachment G: Preliminary Design Plans
- Attachment H: Proposed Final Site Plans

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**ATTACHMENT A
WETLAND WAIVER REQUEST FORM**

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Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

Well Operator: EQT Production Company

Well Number: 515220, 515219, 515218, 515217, 515216, 515215, 515214, 515213, 516724, 516725, 516726, 515727

Well Pad Name: PUL-65 Well Pad

County, District, Quadrangle of Well Location: Ritchie County, Union District, Pullman Quad

Answer the questions below to request a waiver from West Virginia Department of Environmental Protection for any wetlands or perennial streams which lie within one hundred feet of proposed project Limit of Disturbance (LOD), which includes any erosion and sediment control devices to be used.

This waiver shall be requested pursuant to Chapter 22 Article 6A Section 12 of West Virginia Code, which states:

§22-6A-12(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.

§22-6A-12(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.

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Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

Answer in the space provided, or use additional pages as necessary to fully answer the questions below:

- 1. Describe the proposed project location, including unique identifying names of all wetlands, and the names of perennial streams for which the waiver is sought.**

Please refer to Wetland Waiver Request, Question 1 of the letter.

- 2. Justify the proposed activity by describing alternatives to this project that were considered.**

- a. Include a No-Action Alternative as to show "the future without the project"
- b. Location Alternatives must be shown
- c. Must demonstrate why a one hundred foot buffer cannot be maintained
- d. Describe how the proposed project is the least environmentally damaging practicable alternative

Please refer to Wetland Waiver Request, Question 2 of the letter.

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Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: _____

3. **Identify sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. This description should include all additional erosion and sediment control measures and devices that will be used.**

Please refer to Wetland Waiver Request, Question 3 of the letter.

4. **Provide mapping, plans, specifications and design analysis for the preferred alternative to the project.**

- a. Specify in writing what additional controls, measures, devices, monitoring, etc. will be used to protect these wetlands and/or perennial streams for which the waiver is sought.

Please refer to Wetland Waiver Request, Question 4 of the letter.

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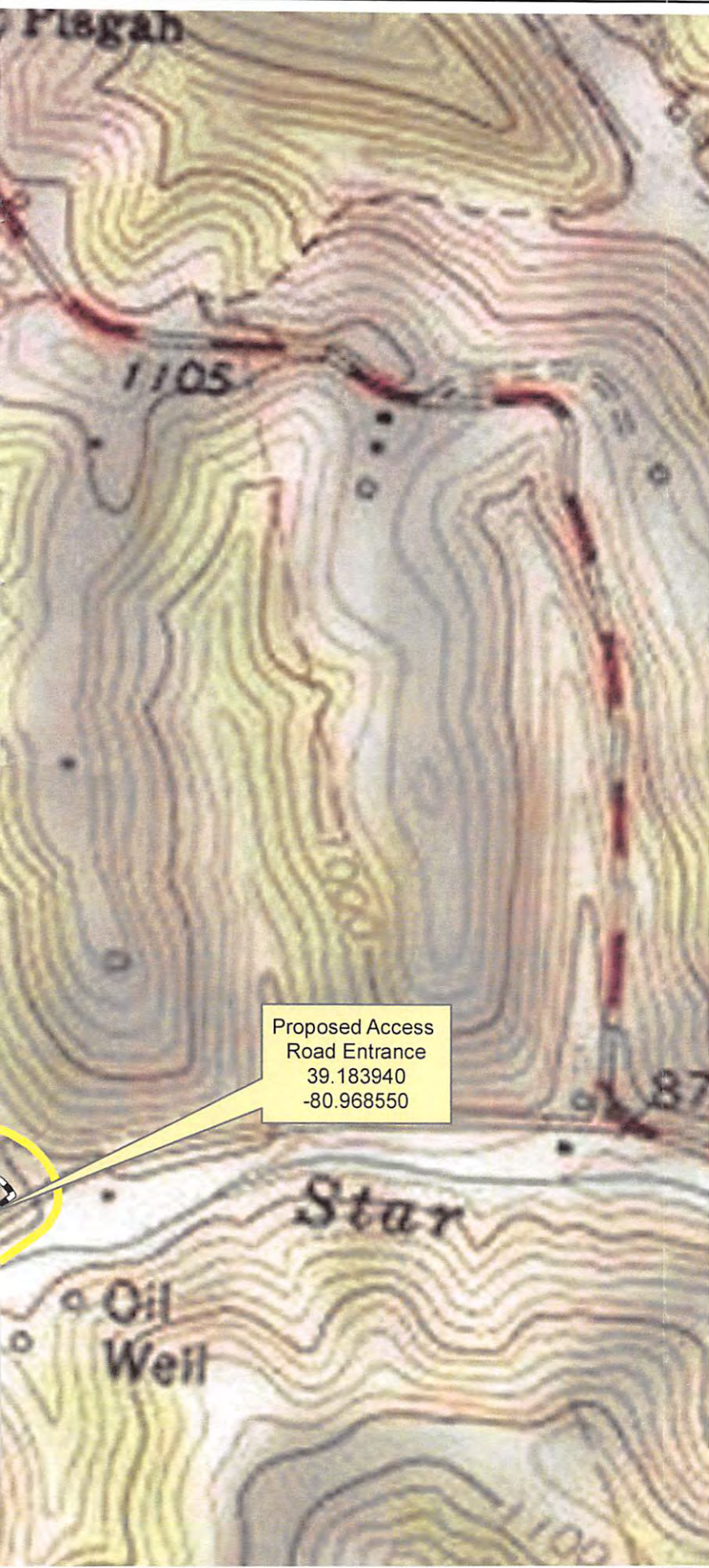
**ATTACHMENT B
SITE LOCATION MAP**

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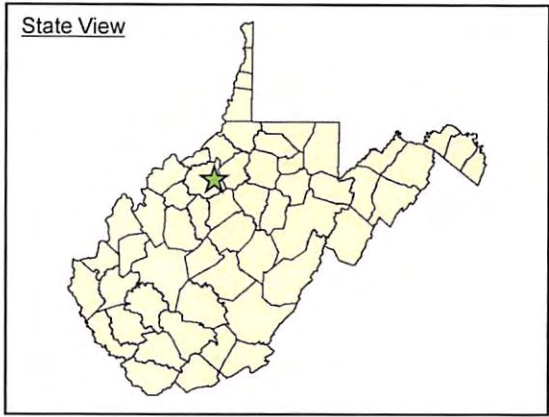
WV Department of
Environmental Protection
08/11/2017







SITE LOCATION MAP

**PUL-65 Well Pad
EQT Production Company
Ritchie County, WV**

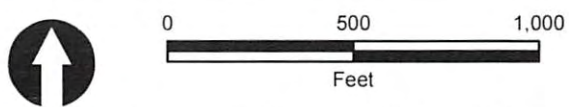


Legend

-  Area of Interest (73.0 ac)
-  LOD (34.3 ac)

Proposed Access
Road Entrance
39.183940
-80.968550

PROJECT #: 00138957.000A	
DRAWN: 12/8/2016	PRINTED: 12/9/2016
DRAWN BY: SMW	
CHECKED BY: MA	
FILE NAME: Document Name: PUL65_RTE_Fig1_ProjectLocation	



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**ATTACHMENT C
PRE-CONSTRUCTION NOTIFICATION**

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WV Department of
Environmental Protection

08/11/2017

PRE-CONSTRUCTION NOTIFICATION

A pre-construction notification (PCN) is not required, as the proposed Project qualifies for a non-reporting Nationwide Permit (NWP) 14. However, a PCN will be submitted to the USACE due to General Condition 18c, which states, "Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project." Due to the proximity of threatened and endangered bat habitat, a PCN will be submitted for this Project.

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Environmental Protection
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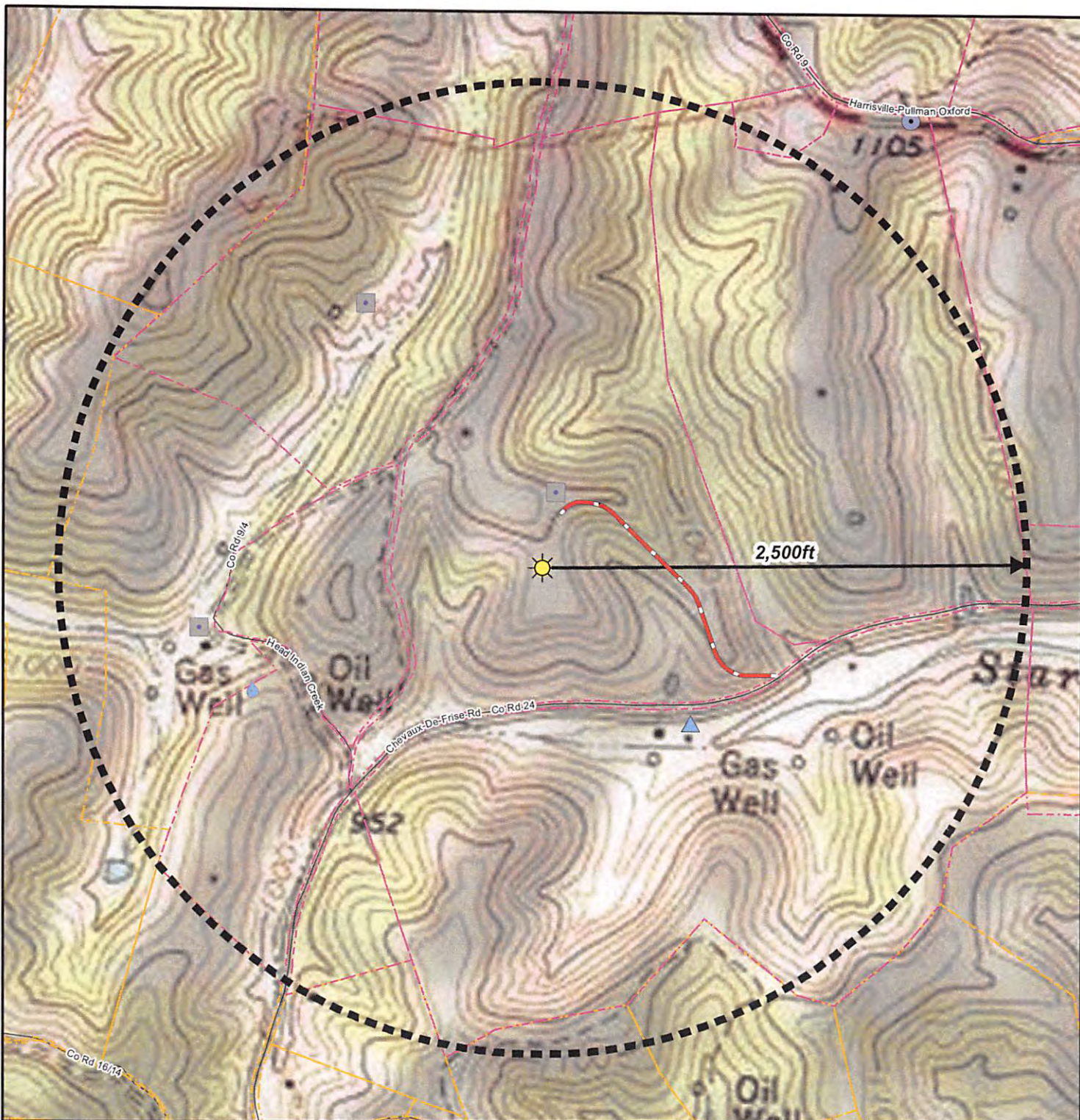
**ATTACHMENT D
WATER TOPO MAP**

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WV Department of
Environmental Protection

08/11/2017



Water Topo Map for Jeremy Owens Lease

PUL-65 Well Pad
EQT Production Company
Ritchie County, WV



- Proposed Gas Well
- Public Water (Unable to Confirm if Additional Sources Exist)
- Spring (Unable to Confirm if Additional Sources Exist)
- Unknown
- Well Water
- Proposed Access Road
- Surveyed Parcel Boundary
- GIS Parcel Boundary
- Existing Road

PROJECT #:	20143916.001A
DRAWN:	12/9/2016
DRAWN BY:	SMW
CHECKED BY:	MA
FILE NAME:	PUL65_WaterSource_Waiver

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700
WV Department of Environment
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08/11/2017

**ATTACHMENT E
CONCEPTUAL SITE PLANS**

08/11/2017

**WELL PAD
CONCEPTUAL PLAN
PRODUCTION COMPANY**



NO.	REVISION	BY	DATE
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2			
3			
4			
5			

ACAD FILE:
PUL-65_Conceptual Site Plan.dwg

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PROJ. NO. 138657

**PUL-65 WELL PAD
OVERALL CONCEPTUAL PLAN**

EQT PRODUCTION COMPANY
PUL-65 WELL PAD

WEST VIRGINIA
RITCHIE COUNTY

DATA OBTAINED FROM WVU GIS CLEARINGHOUSE SITE. NO EXISTING SURVEY OR DELINEATION HAS BEEN PERFORMED. THIS DRAWING HAS BEEN DEVELOPED WITHOUT SITE SPECIFIC GEOTECHNICAL DATA. THE SITE SPECIFIC GEOTECHNICAL CONDITIONS REQUIRE THESE GEOTECHNICAL CONDITIONS MAY REQUIRE DESIGN REVISIONS TO THE CONTOUR GRADING PLAN. DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS, CERTIFICATION OF THE COMPLETION & FLOW BACK PIT CONSTRUCTION REQUIRES MONITORING OF CONSTRUCTION TECHNIQUES DURING CONSTRUCTION.

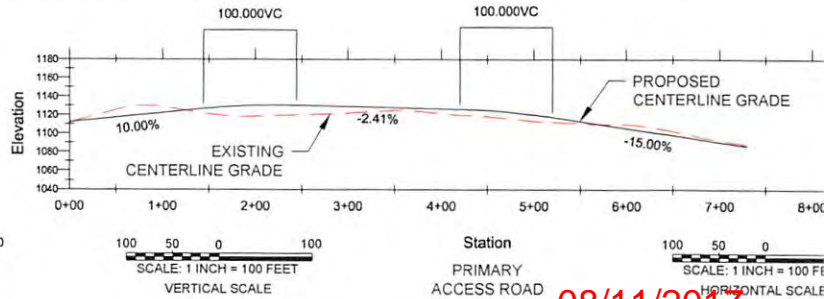
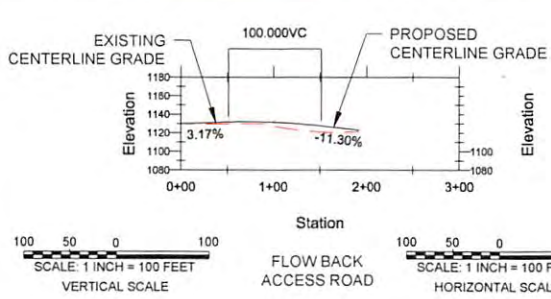
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S OIL AND GAS DATABASE. WELL LOCATIONS HAVE NOT BEEN VERIFIED

DESIGNED FROM AUTOCAD CIVIL 3D FROM A COMPARISON OF THE EXISTING CONTOURS AND THE PROPOSED GRADING. BASED ON THE ASSUMPTIONS OF REMOVING 6" OF TOPSOIL IN ALL DISTURBED AREAS AND INCLUDE PRELIMINARY 10" OF STONE ON THE PAD, AND 10" OF STONE ON THE ACCESS ROADS. 2:1 FILL SLOPES OF 2H:1V. COMPLETION & FLOW BACK PIT INTERIOR SLOPES OF 3H:1V, COMPLETION & FLOW BACK PIT EXTERIOR SLOPES OF 2H:1V, TOPSOIL SPOIL PILE FILL SLOPES OF 3H:1V. NO STONE SHOULD NOT BE USED FOR BIDDING PURPOSES.

CONCEPTUAL PLANS
DO NOT USE FOR CONSTRUCTION

DESIGNED BY: JTS
MODIFIED BY:
CHECKED BY: CAL
DATE: 02-24-2014
SCALE: 1" = 100'
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 0.5 1.0 1.5 2.0
CONCEPTUAL SITE PLAN
1
108/13/2014

PRINTED: 24 Feb 2014, 3:00pm - JStellen



ATTACHED IMAGES: images Pulman NWlad images Pulman SWlad
 ATTACHED XREFS: XREF EOT 11x17 TITLE BLOCK XREF PUL-65_Cov XREF PUL-65_Propriety Lines XREF PUL-65_Aerial
 CAD FILE: D:\Users\EGT\Working\EGT\Projects\PUL-65\Design\Conceptual Plans - Conceptual - LAYOUT - 2 CONCEPTUAL SITE PLAN

08/11/2017

WELL PAD AL SITE PLAN TION COMPANY



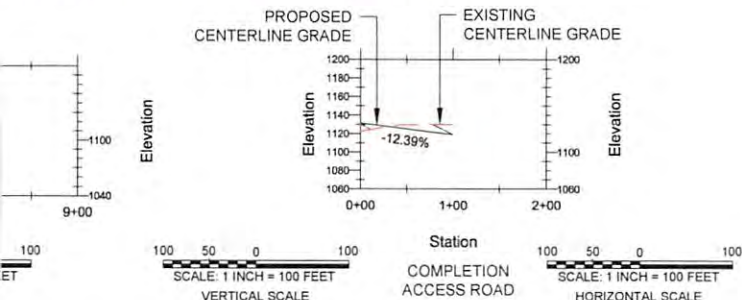
PUL-65 Quantities							
Description	Cut (CY)	Fill (CY)	Base (CY)	Spoil (CY)	Borrow (CY)	Max. Slope	Length of Slope
Access Road	2749	5135	477	N/A	1909	15.00%	210'
Completion Access Road	927	155	95	867	N/A	12.39%	100'
Flow Back Access Road	2	953	136	N/A	815	11.30%	40'
Drill Pad	11624	33179	4137	N/A	17418	N/A	N/A
Flow Back Pit	9281	3	0	9278	N/A	N/A	N/A
Flow Back Pit Queue	1119	103	228	1244	N/A	N/A	N/A
Completion Pit	21926	234	0	21692	N/A	N/A	N/A
Completion Pit Queue	2138	411	228	1955	N/A	N/A	N/A
Topsoil Pile 1	0	7651	0	N/A	7651	N/A	N/A
Spoil Pile 1	0	7127	0	N/A	7127	N/A	N/A
Totals	49766	54951	5300	35036	34921	N/A	N/A
Total Cut (CY)				115			

PUL-65 Flow Back Pit Volumes			
Elevation	Barrels	Gallons	Acre-Ft
1109 (Bottom)	0	0	0.000
1110	2,018	63,562	0.195
1111	4,388	138,229	0.424
1112	7,128	224,543	0.689
1113	10,255	323,039	0.991
1114	13,786	434,255	1.333
1115	17,738	558,731	1.715
1116	22,127	697,005	2.139
1117 (Pit Capacity)	26,972	849,615	2.607
1118 (Top Berm)	32,289	1,017,089	3.121

PUL-65 Completion Pit Volumes			
Elevation	Barrels	Gallons	Acre-Ft
1108 (Bottom)	0	0	0.000
1109	5,240	165,061	0.507
1110	10,974	345,686	1.061
1111	17,217	542,341	1.664
1112	23,984	755,491	2.319
1113	31,289	985,603	3.025
1114	39,147	1,233,145	3.784
1115 (Pit Capacity)	47,574	1,498,584	4.599
1116 (Top Berm)	56,584	1,782,387	5.470

LEGEND

- EXISTING INDEX CONTOUR (10')
- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING ROAD
- EXISTING STORM DRAINAGE
- EXISTING GAS LINE
- EXISTING OVERHEAD ELECTRIC SERVICE
- EXISTING UTILITY POLE
- EXISTING STREAM
- APPROX. BOUNDARY OF EXISTING WETLAND
- PROPOSED MAJOR CONTOUR (10')
- PROPOSED MINOR CONTOUR (2')
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED DELINEATION AND TOPOGRAPHIC AREA OF INTEREST
- STREAM/WETLAND BUFFER



CONCEPTUAL PLANS
DO NOT USE FOR CONSTRUCTION

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1			
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ACAD. FILE: PUL-65 Conceptual Site Plan.dwg

**PUL-65 WELL PAD
CONCEPTUAL SITE PLAN**

EQT PRODUCTION COMPANY
PUL-65 WELL PAD

RITCHIE COUNTY
WEST VIRGINIA

DESIGNED BY: JTS
MODIFIED BY:
CHECKED BY: CAL
DATE: 02-24-2014
SCALE:
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 0.5 1.0 1.5 2.0
CONCEPTUAL SITE PLAN

08/11/2017

WELL PAD
FEATURES
TION COMPANY



NO.	REVISION	BY	DATE
1			
2			
3			
4			
5			

ACAD FILE:
PUL-65_Conceptual Site Plan.dwg

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PROJ. NO.
138957

**PUL-65 WELL PAD
NHD & NWI FEATURES**

EQT PRODUCTION COMPANY
PUL-65 WELL PAD

RITCHIE COUNTY WEST VIRGINIA

DESIGNED BY: JTS
MODIFIED BY:
CHECKED BY: CAL
DATE: 02-24-2014
SCALE:
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 0.5 1.0 1.5 2.0

CONCEPTUAL SITE PLAN

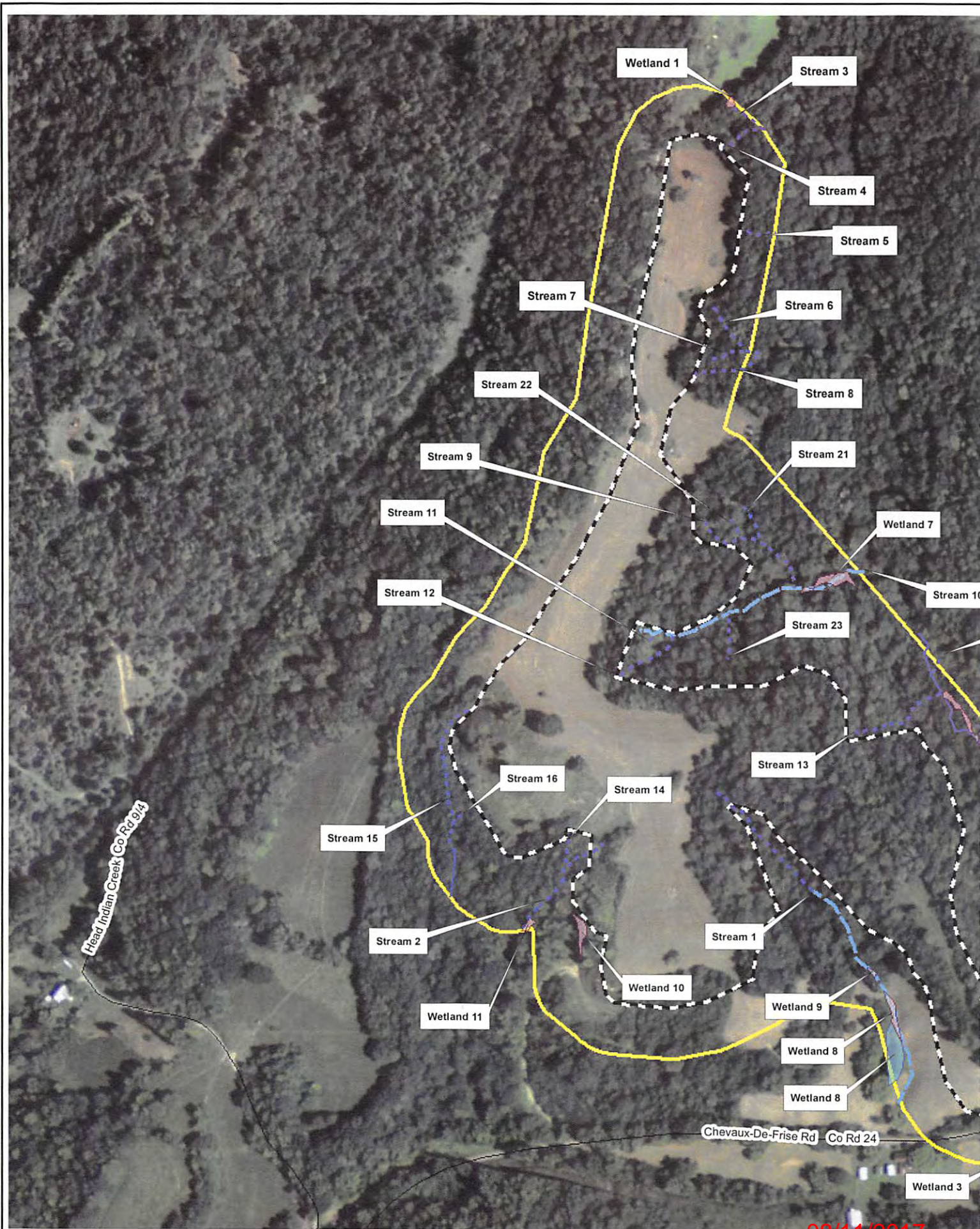
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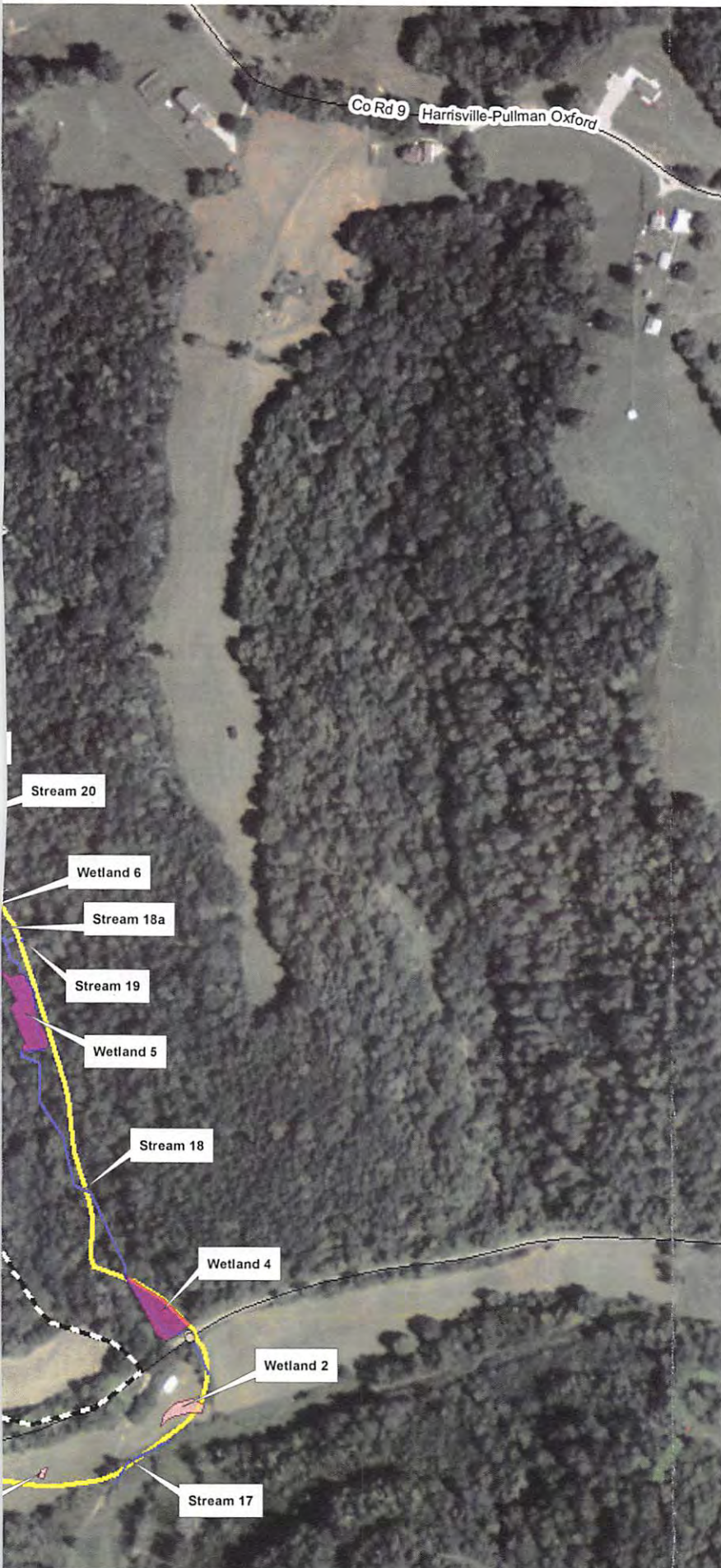
08/11/2017

CONCEPTUAL PLANS
DO NOT USE FOR CONSTRUCTION

PLOTTED: 24 Feb 2014, 3:00pm. jStellen

**ATTACHMENT F
DELINEATION MAP**





DELINEATION MAP

**PUL-65 Well Pad
EQT Production Company
Ritchie County, WV**



Legend

- Project AOI (73.1 acres)
- LOD (34.3 ac)
- Delineated Ephemeral Stream
- Delineated Intermittent Stream
- Delineated Perennial Stream
- Delineated PEM Wetland
- Delineated PFO Wetland
- Delineated POW Pond
- USFWS Aquatic Buffer (N/A)
- Existing Road
- Existing Culverts

PROJECT #: 00137355.000A

DRAWN: 84/19/2016

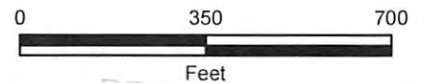
PRINTED: 12/9/2016

DRAWN BY: SMW

CHECKED BY: MA

FILE NAME:

PUL65_Fig2_Delineation_2016_1



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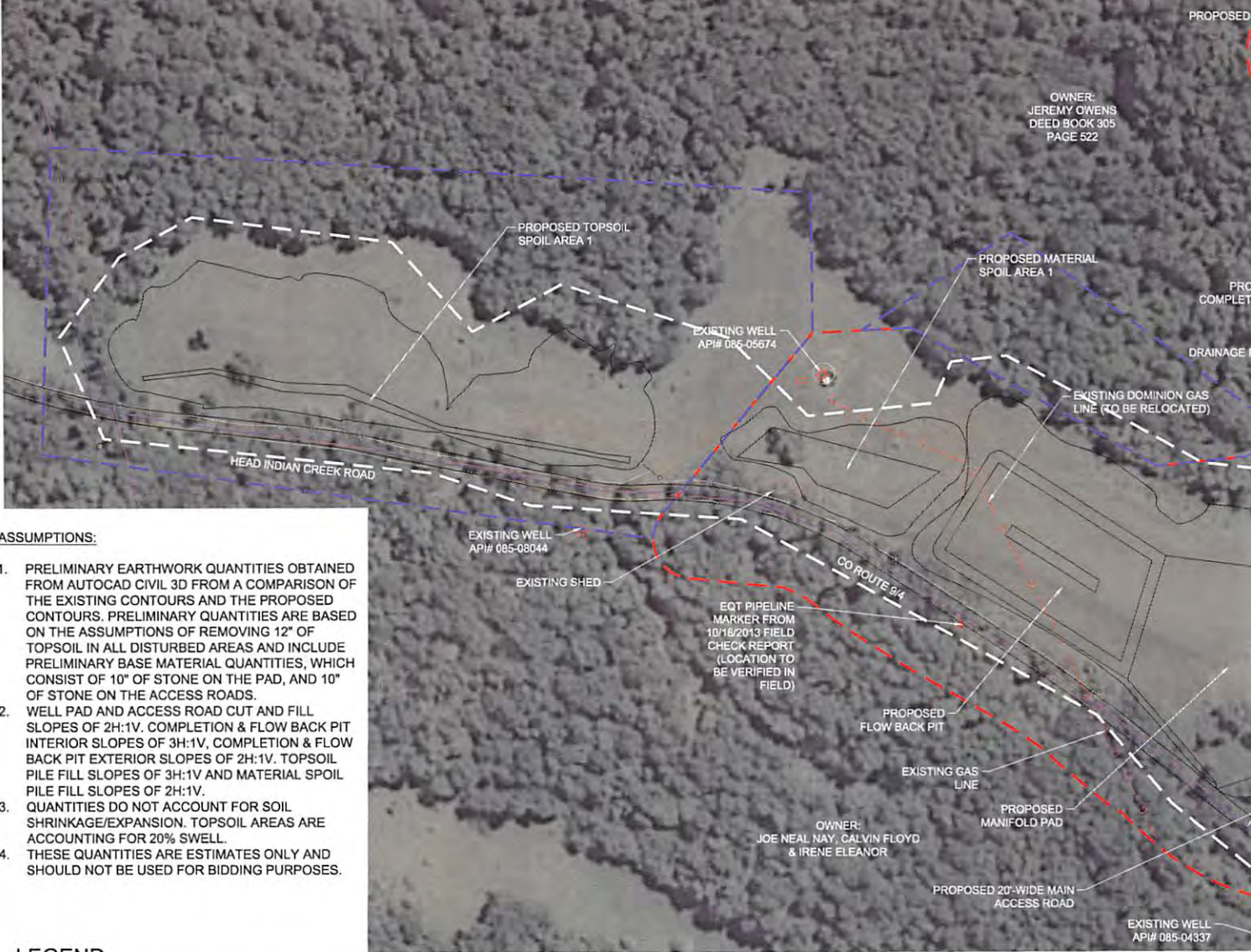
EQT JAN 04 2017
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**ATTACHMENT G
PRELIMINARY DESIGN PLANS**

08/11/2017

Utility Code	Utility Owner	Utility Contact/Responder Information			Utility Response	Utility Type	Utility Specifications (diameter, pole number(s), etc.)	Notes
		Name	Number	E-Mail				
CV	Consumers Gas Utility Company	-	-	-	No Response	Gas	-	
MPP	Firstenergy Corp	-	-	-	No Response	Electric	-	
AC	Frontier Communications (Formerly Verizon)	-	-	-	No Response	Phone	-	
AOG	Abarta Oil & Gas Company Inc.	K. Hanlon	-	khanlon@abartaenergy.com	Clear	Gas	-	
GRV	Dominion Transmission Corporation	Trent Rose	304-354-2104 or 304-517-4148	trent.j.rose@dom.com	Clear	Gas	-	
AMT	Armstrong Telephone Company - North Division	-	-	-	No Response	-	-	
EA	Energy Corporation of America	-	-	-	No Response	-	-	
EQWS62	EQT Gathering LLC	-	-	maximo@eqt.com	Marked	Gas	-	
HAEN	Hayden Harper Energy KA LLC	-	-	-	No Response	-	-	
HRV	Town of Harrisville	-	-	-	No Response	-	-	



ASSUMPTIONS:

- PRELIMINARY EARTHWORK QUANTITIES OBTAINED FROM AUTOCAD CIVIL 3D FROM A COMPARISON OF THE EXISTING CONTOURS AND THE PROPOSED CONTOURS. PRELIMINARY QUANTITIES ARE BASED ON THE ASSUMPTIONS OF REMOVING 12" OF TOPSOIL IN ALL DISTURBED AREAS AND INCLUDE PRELIMINARY BASE MATERIAL QUANTITIES, WHICH CONSIST OF 10" OF STONE ON THE PAD, AND 10" OF STONE ON THE ACCESS ROADS.
- WELL PAD AND ACCESS ROAD CUT AND FILL SLOPES OF 2H:1V. COMPLETION & FLOW BACK PIT INTERIOR SLOPES OF 3H:1V, COMPLETION & FLOW BACK PIT EXTERIOR SLOPES OF 2H:1V. TOPSOIL PILE FILL SLOPES OF 3H:1V AND MATERIAL SPOIL PILE FILL SLOPES OF 2H:1V.
- QUANTITIES DO NOT ACCOUNT FOR SOIL SHRINKAGE/EXPANSION. TOPSOIL AREAS ARE ACCOUNTING FOR 20% SWELL.
- THESE QUANTITIES ARE ESTIMATES ONLY AND SHOULD NOT BE USED FOR BIDDING PURPOSES.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING ROAD
- EXISTING DRAINAGE FEATURE
- EXISTING GAS LINE
- EXISTING STREAM
- PROPOSED LIMIT OF DISTURBANCE
- BIOLOGICAL DELINEATION AREA OF INTEREST
- ADDITIONAL BIOLOGICAL DELINEATION AREA OF INTEREST NEEDED
- EXISTING PIPELINE CROSSING - ACTUAL LOCATION TO BE FIELD VERIFIED
- EXISTING WELL HEAD

NOTES:

- EXISTING TOPOGRAPHY BASED ON CONTOURS OBTAINED FROM BLUE MOUNTAIN AERIAL MAPPING. SURVEY PERFORMED BY ENCOMPASS ENERGY SERVICES. BIOLOGICAL DELINEATION PERFORMED BY KLEINFELDER IN MARCH, 2014.
- THE CONTOUR GRADING PLAN SHOWN ON THIS DRAWING HAS BEEN DEVELOPED WITHOUT SITE SPECIFIC GEOTECHNICAL DATA. THE SITE SPECIFIC GEOTECHNICAL CONDITIONS REQUIRE VERIFICATION PRIOR TO CONSTRUCTION. THESE GEOTECHNICAL CONDITIONS MAY REQUIRE DESIGN REVISIONS TO THE CONTOUR GRADING PLAN.
- IN ACCORDANCE WITH WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REGULATIONS, CERTIFICATION OF THE COMPLETION & FLOW BACK PIT CONSTRUCTION REQUIRES FIELD VERIFICATION OF SOIL CONDITIONS AND MONITORING OF CONSTRUCTION TECHNIQUES DURING CONSTRUCTION.
- EXISTING PARCEL DATA OBTAINED FROM ENCOMPASS ENERGY SERVICES AND INCLUDE FIELD SURVEY AND DEED REFERENCE.
- EXISTING WELL LOCATIONS PROVIDED BY WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S OIL AND GAS DATABASE. WELL LOCATIONS HAVE NOT BEEN VERIFIED.

DESCRIPTION	QUANTITY
WELL PAD	
FLOWBACK PIT	
COMPLETION & FLOWBACK PIT	
MANIFOLD	
ACCESS ROAD	
MATERIAL SPOIL	
MATERIAL SPOIL	
MATERIAL SPOIL	
TOTAL	
TOTAL WOODED ACRES	
TOTAL LINEAR FOOTAGE	

08/11/2017

PLOTTED: 8/30/2014 11:49 AM BY: nathan.krawczyk
 CAD FILE: G:\clients\EQT Gathering LLC - Wells & Facilities\PUL_06_PrelimEQT_PUL_06_Preliminary Site Plan.dwg LAYOUT: 1 OVERALL PLAN

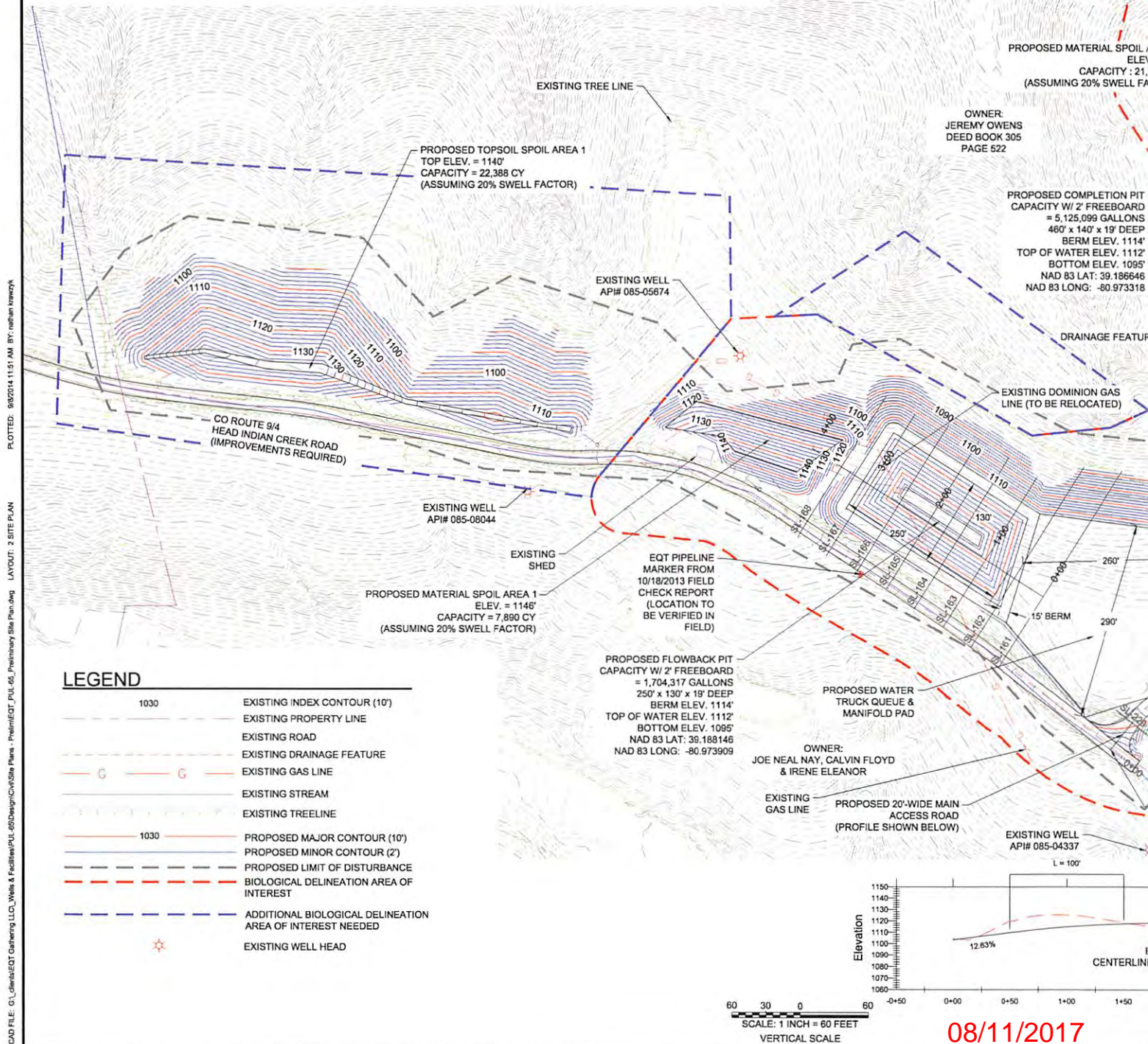
PUL-65 Completion Pit Volumes			
Elevation	Barrels*	Gallons	Acre-Ft
1095 (Bottom)	0	0	0.000
1096	2,751	115,548	0.355
1097	5,994	251,768	0.773
1098	9,747	409,394	1.256
1099	14,024	588,994	1.808
1100	18,834	791,031	2.428
1101	24,189	1,015,952	3.118
1102	30,100	1,264,193	3.880
1103 (Incised Vol)	36,576	1,536,188	4.714
1104	43,628	1,832,380	5.623
1105	51,267	2,153,200	6.608
1106	59,502	2,499,085	7.669
1107	68,345	2,870,470	8.809
1108	77,805	3,267,790	10.028
1109	87,892	3,691,480	11.329
1110	98,618	4,141,971	12.711
1111	109,993	4,619,700	14.177
1112 (Pit Capacity)	122,026	5,125,099	15.728
1113	134,729	5,658,602	17.366
1114 (Top Berm)	148,114	6,220,785	19.091

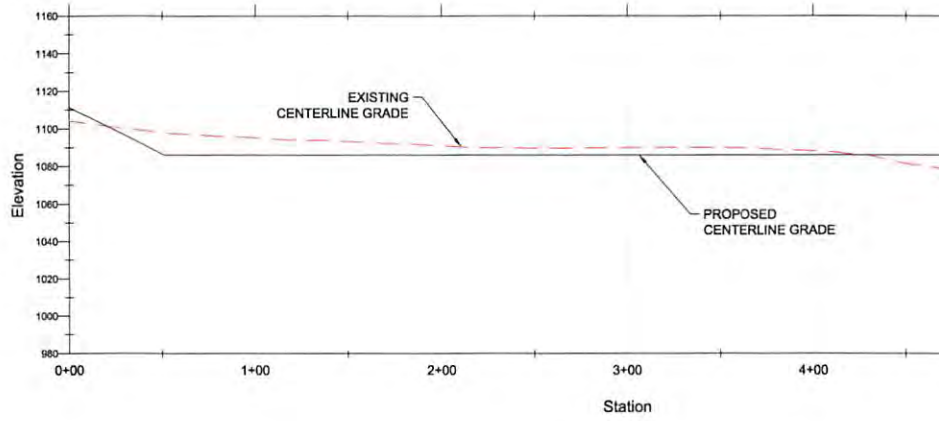
* 1 Barrel = 42 Gallons

PUL-65 Flowback Pit Volumes			
Elevation	Barrels*	Gallons	Acre-Ft
1095 (Bottom)	0	0	0.000
1096	472	19,823	0.061
1097	1,119	47,008	0.144
1098	1,955	82,091	0.252
1099	2,991	125,613	0.385
1100	4,241	178,111	0.547
1101	5,717	240,125	0.737
1102	7,433	312,192	0.958
1103	9,401	394,852	1.212
1104	11,634	488,643	1.500
1105	14,145	594,103	1.823
1106	16,947	711,771	2.184
1107	20,052	842,187	2.585
1108 (Incised Vol)	23,474	985,888	3.026
1109	27,224	1,143,412	3.509
1110	31,317	1,315,300	4.037
1111	35,764	1,502,088	4.610
1112 (Pit Capacity)	40,679	1,704,317	5.230
1113	45,774	1,922,524	5.900
1114 (Top Berm)	51,363	2,157,247	6.620

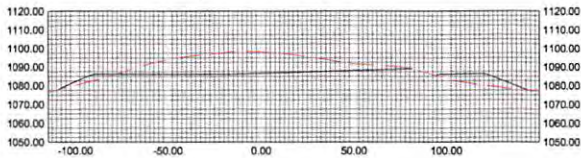
* 1 Barrel = 42 Gallons

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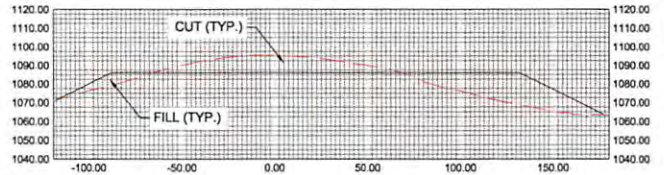




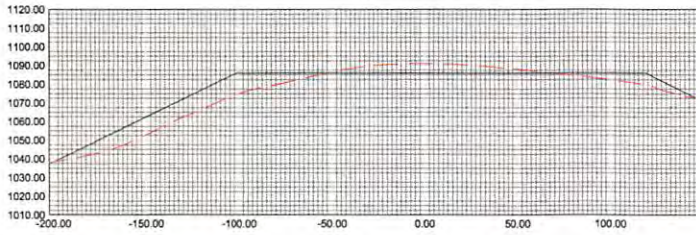
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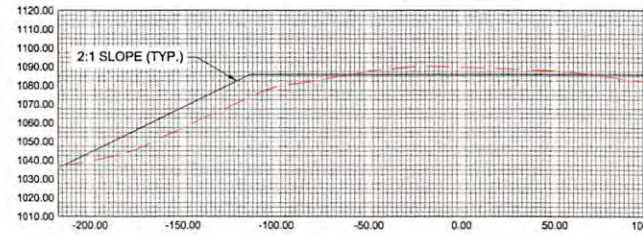
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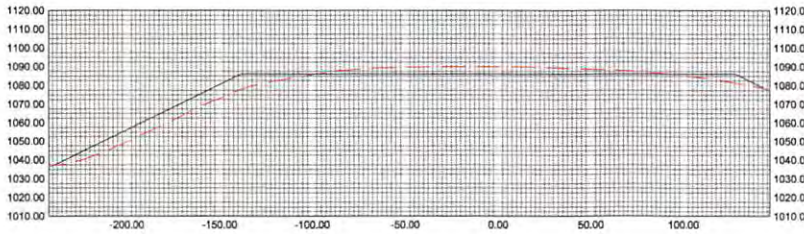
SL-173 - 2+00.00



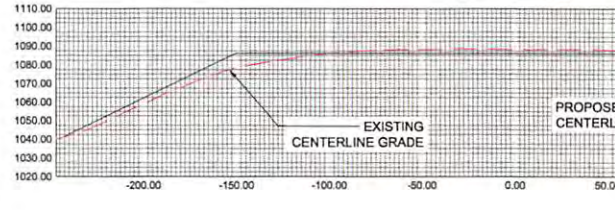
SL-174 - 2+50.00



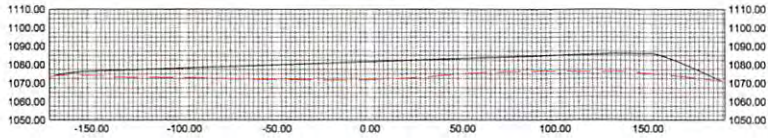
SL-176 - 3+50.00



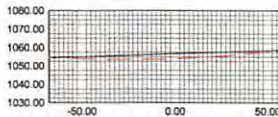
SL-177 - 4+00.00



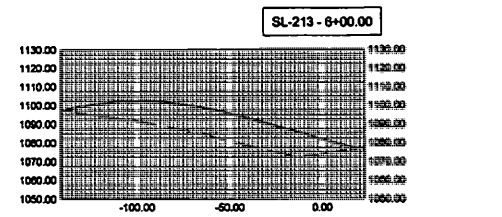
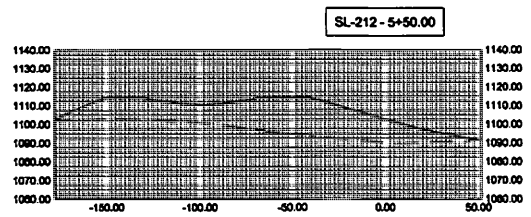
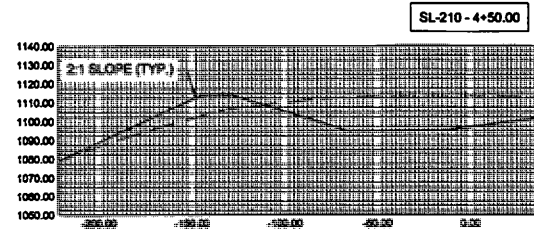
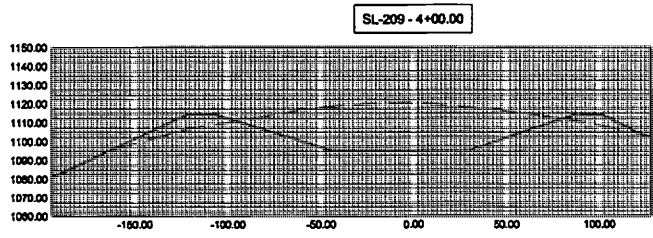
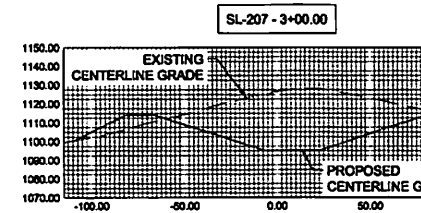
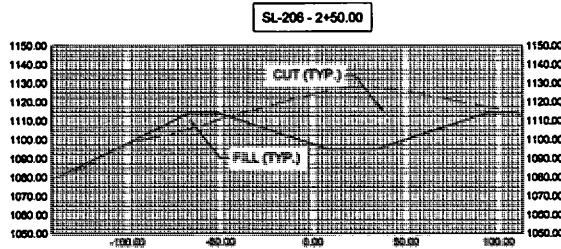
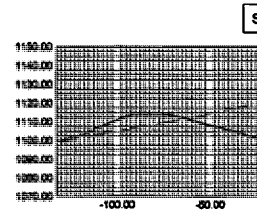
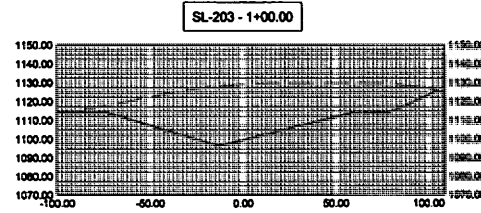
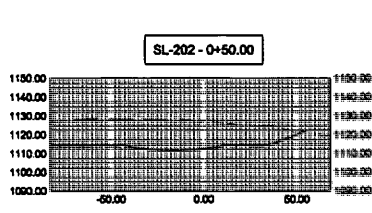
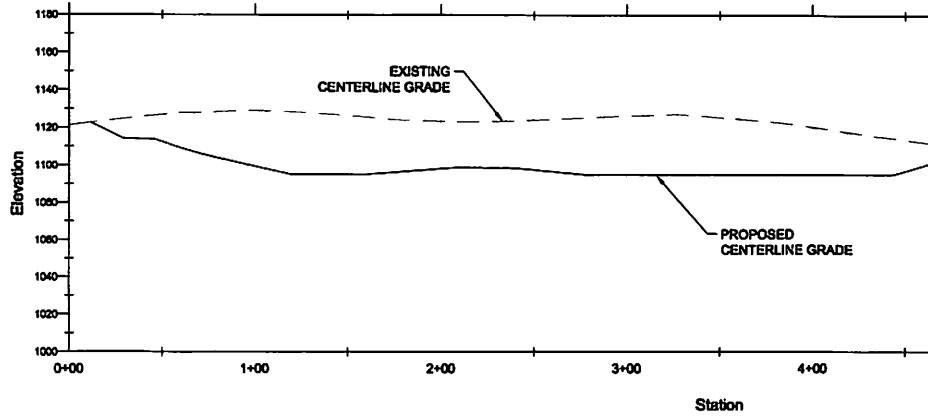
SL-180 - 5+00.00



SL-181 - 5+50.00



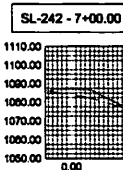
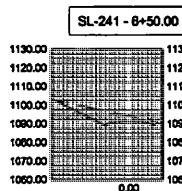
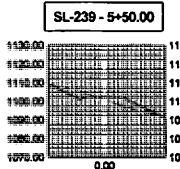
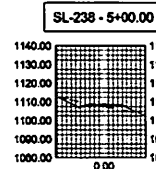
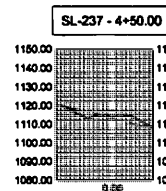
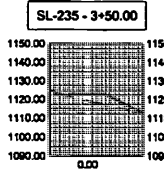
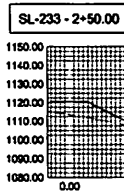
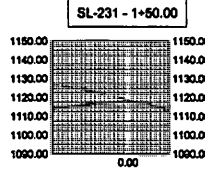
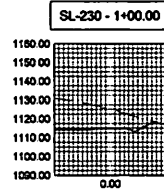
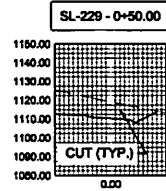
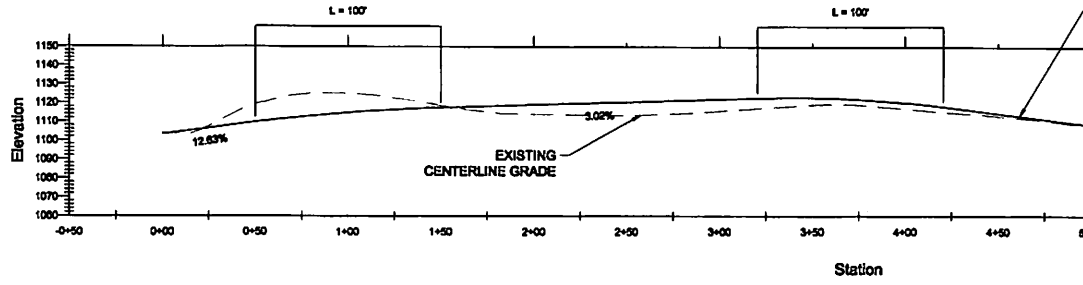
CAD FILE: 01_users\EGT_Gathering.LLC_Wells & Facilities\PLT_480\dwg\CV\Site Plans - Prelim\DOT_Plt_48_Prelim\Site Plan.dwg LAYOUT: 3 WELL PAD CROSS SECTIONS & PROFILE PLOTTED: 8/3/2014 11:52 AM BY: rishan.kranzky



PLOTTED: 08/20/14 11:53 AM BY: nathan.kozick

CAD FILE: O:\denniscot\catering LLC\Wells & Foodbar\PL-03\dwg\chassis Plan - Final\SET_PLOT_03_Preliminary Sta Profile.dwg LAYOUT: 9 COMPLETION PRT CROSS SECTIONS & PROFILE

08/11/2017



CAD FILE: G:_client\ECOT\Garbano\1104\1104.dwg
 PLOTTED: 08/02/14 11:54 AM BY: netman brawley
 LAYOUT: 9 ACCESS ROAD CROSS SECTIONS & PROFILE
 PRINTED: 08/11/2017 10:58 AM BY: netman brawley

08/11/2017

**ATTACHMENT H
PROPOSED FINAL SITE PLANS**

RECEIVED
Office of Oil and Gas
JAN 04 2017
WV Department of
Environmental Protection

08/11/2017

4708510308

WW-6B
(04/15)

API NO. 47-085 -
OPERATOR WELL NO. 515220
Well Pad Name: PUL65

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

1) Well Operator: EQT Production Company

<u>306686</u>	<u>Ritchie</u>	<u>Union</u>	<u>Pullman</u>
---------------	----------------	--------------	----------------

Operator ID County District Quadrangle

2) Operator's Well Number: 515220 Well Pad Name: PUL65

3) Farm Name/Surface Owner: Jeremy Owens Public Road Access: CR 24

4) Elevation, current ground: 1069 Elevation, proposed post-construction: 1078

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 Thickness and Expected Pressure(s):
Marcellus, 6269', 52', 2190 PSI

8) Proposed Total Vertical Depth: 6269

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 8525

11) Proposed Horizontal Leg Length: 1629

12) Approximate Fresh Water Strata Depths: 209

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

14) Approximate Saltwater Depths: 1479

15) Approximate Coal Seam Depths: 699

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

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: _____

Michael Hoff
1/24/17

4708510308

WW-6B
(04/15)

API NO. 47- 085

OPERATOR WELL NO. 515220

Well Pad Name: PUL65

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20	New	A-500	78.6	40	40	60 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	359	359	342 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	P-110	40	5151	5151	2045 ft ³ / CTS
Production	5 1/2	New	P-110	20	8525	8525	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 80° inclination	
Liners							

MAG
1/4/17

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	26	.375	1378	1102	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	2014-17 1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	7900	6320	See Variance	2016-20 1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 5221'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 250,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 250,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 34.34

22) Area to be disturbed for well pad only, less access road (acres): 6.40

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One centralizer at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One centralizer at the shoe and one spaced every 500'.
- Production: One solid body centralizer spaced every joint from production casing shoe to KOP

24) Describe all cement additives associated with each cement type:

Conductor: Class A no additives

Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries

Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries

Production:

Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50:50 POZ (extender)

Tail (Class H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time. .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss) .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 60 % Calcium Carbonate. Acid solubility.

25) Proposed borehole conditioning procedures:

Surface: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.

Intermediate: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.

Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

*Note: Attach additional sheets as needed.

Well 515220(PUL65H1)
 EQT Production
 Pullman Quad
 Ritchie County, WV

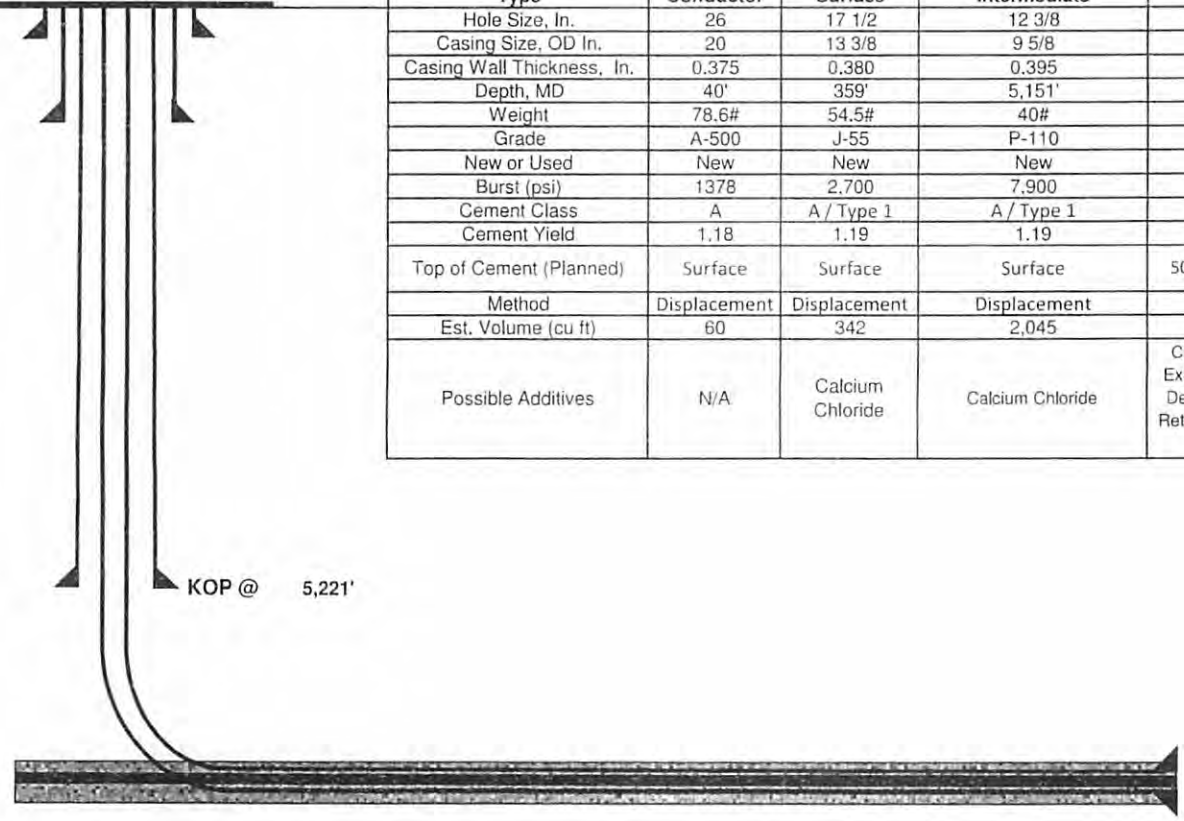
Azimuth 344
 Vertical Section 2144

Note: Diagram is not to scale

4708510308

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	209	
Surface Casing	359	
Maxton	1723 - 1763	
Big Lime	1943 - 2032	
Base Red Rock	2092	
Big Injun	2100 - 2208	
Weir	2449 - 2483	
Gantz	2591 - 2632	
Fifty foot	2681 - 2716	
Thirty foot	2746 - 2782	
Gordon	2806 - 2844	
Forth Sand	2844 - 2852	
Bayard	3061 - 3117	
Warren	3324 - 3390	
Speechley	3431 - 3513	
Balltown A	3767 - 3962	
Riley	4441 - 4482	
Benson	4793 - 4832	
Alexander	5049 - 5101	
Intermediate Casing	5151	
Sonyea	5982 - 6098	
Middlesex	6098 - 6147	
Genesee	6147 - 6204	
Geneseo	6204 - 6233	
Tully	6233 - 6243	
Hamilton	6243 - 6247	
Marcellus	6247 - 6299	
Production Casing	8525 MD	
Onondaga	6299	

Casing and Cementing			Deepest Fresh Water: 209'	
Type	Conductor	Surface	Intermediate	Production
Hole Size, In.	26	17 1/2	12 3/8	8 1/2
Casing Size, OD In.	20	13 3/8	9 5/8	5 1/2
Casing Wall Thickness, In.	0.375	0.380	0.395	0.361
Depth, MD	40'	359'	5,151'	8,525'
Weight	78.6#	54.5#	40#	20#
Grade	A-500	J-55	P-110	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	7,900	12,640
Cement Class	A	A / Type 1	A / Type 1	A / H
Cement Yield	1.18	1.19	1.19	1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	60	342	2,045	687
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent



Land curve @ 6,269' TVD
 6,896' MD

Est. TD @ 6,269' TVD
 8,525' MD

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 5221'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

1,629' Lateral

MPC
1/11/17

4708510308

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: PUL65
Ritchie County, WV

12/20/16

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 PUL65 pad: 515220.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation. A report is required to be submitted along with a well work permit application.

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 1,500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

EQT will recommend to these operators at a minimum to: 4703510308

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

EQT will provide information relating to the hydraulic fracturing schedule, communication with other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.



05016



01496



04368



04335



05675



515220

05674



4708510308

04337



00865



PUL65



3945



05330



06708



01868



01514



EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

Pul65-515220

Vertical Offsets and
Foreign Laterals
within 1500'

Legend



Pul65 515220 Vertical Offsets

GENESEE Spud

MARCELLUS Spud

MIDDLESEX Spud

Utica Spud

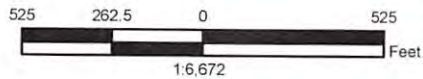
GENESEO

MARCELLUS

MIDDLESEX

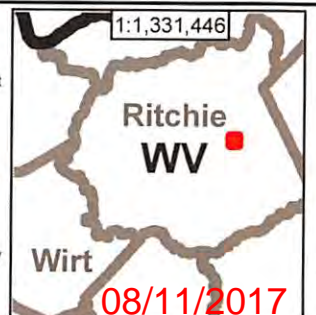
POINT PLEASANT

UTICA



Disclaimer:

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



UWI	Name	Depth Top	Base Depth
47085043680000	MAXTON	1815	1868
47085043680000	BLUE MONDAY /SD/	1868	1925
47085043680000	BIG LIME	1925	2040
47085043680000	BIG INJUN /SD/	2040	2095
47085043680000	WEIR /SD/	2328	2384
47085067080000	BIG LIME	1875	1940
47085067080000	BIG INJUN /SD/	1940	2006
47085067080000	WARREN /SD/	3082	3373
47085067080000	DEVONIAN /SH/	3373	
47085067080000	BENSON /SD/	4773	4783
47085067080000	ALEXANDER	5033	5071
47085067080000	DEVONIAN /SH/	5071	
47085056750000	BIG LIME	2352	2355
47085056750000	BIG INJUN /SD/	2355	
47085056750000	BALLTOWN /SD/	3850	3914
47085056750000	BRADFORD /SD/	4177	4438
47085056750000	RILEY /SD/	4497	4548
47085056750000	BENSON /SD/	4862	4980
47085056750000	ALEXANDER	5058	5168
47085056740000	BIG LIME	1937	2020
47085056740000	BIG INJUN /SD/	2020	2080
47085056740000	DEVONIAN /SD/	2405	
47085056740000	FOURTH SAND	2837	2841
47085056740000	WARREN /SD/	3381	3432
47085056740000	BRADFORD /SD/	4420	4490
47085043350000	BIG LIME	1940	2000
47085043350000	BIG INJUN /SD/	2000	2120
47085050160000	LITTLE LIME	1885	1900
47085050160000	BLUE MONDAY /SD/	1900	1916
47085050160000	BIG LIME	1916	2025
47085050160000	BIG INJUN /SD/	2025	2080
47085050160000	WEIR /SD/	2335	2390
47085043370000	LITTLE LIME	1900	1929
47085043370000	BIG LIME	1929	2020
47085043370000	BIG INJUN /SD/	2020	2062
47085053300000	BIG LIME	1806	1871
47085053300000	BIG INJUN /SD/	1871	1937
47085053300000	FOURTH SAND	2699	3296
47085053300000	BALLTOWN /SD/	3681	3785
47085053300000	RILEY /SD/	3815	
47085053300000	ALEXANDER	4975	5018

*Perforated Formations

08510308

WellID	WellStatus	Comp Date	FmatTD	Permit	Operator	Longitude	Latitude	TargetFm	DatumEleva	TotalDepth
4708500865	O&G	9/23/1925		00865	EPC	-80.9743	39.1857		1055	-1370
4708501496	DRY	1/1/1954		01496	P O BURG	-80.9757	39.1937		1131	-1005
4708501514	GAS	3/30/1954		01514	SCANDOLA OIL & GAS	-80.9684	39.1827		890	-1001
4708501868	GAS	5/30/1958		01868	ESTHER OIL & GAS	-80.9772	39.1837		1020	-968
4708503945	GAS	12/21/1920		3945	EPC	-80.9672	39.1856		0	-1942
4708504335	GAS	7/31/1979		04335	HAUGHT	-80.9769	39.1913		1152	-1048
4708504337	GAS	7/22/1979		04337	HAUGHT	-80.9757	39.1874		1049	-1126
4708504368	GAS	8/29/1979		04368	HAUGHT	-80.9728	39.1921		1119	-1331
4708505016	GAS	2/17/1981		05016	HAUGHT	-80.9727	39.1948		1100	-1350
4708505330	O&G	11/18/1981		05330	EPC	-80.9664	39.1857		1080	-4020
4708505674	O&G	11/4/1996		05674	EPC	-80.9731	39.1889		1105	-4139
4708505675	O&G	8/8/1982		05675	EPC	-80.9675	39.1908		1105	-4212
4708506708	O&G	3/9/1984		06708	EPC	-80.9739	39.1846		1020	-4248

4708510309



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

4708570308

Re: Cement Variance Request

Dear Sir or Madam,

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

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

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

Sincerely,

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

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Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection

08/11/2017



west virginia department of environmental protection

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

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

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

**IN THE MATTER OF A VARIANCE FROM)
REGULATION 35 CSR § 4-11.4/11.5/14.1)
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE)
THE OPERATIONAL)
REGULATIONS OF CEMENTING OIL)
AND GAS WELLS)**

ORDER NO. 2014 - 17

4708510308

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.

Promoting a healthy environment.

08/11/2017

CONCLUSIONS OF LAW

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

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

ORDER

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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

 4708510308

James Martin, Chief
Office of Oil and Gas

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Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection

08/11/2017



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.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)
LEGISLATIVE RULE 35CSR8,)
SECTION 9.2.H.2.)
RELATING TO THE CEMENTING)
OF OIL AND GAS WELLS)**

ORDER NO. 2016-20

REPORT OF THE OFFICE

In response to industry requests, the West Virginia Department of Environmental Protection, Office of Oil and Gas, has reviewed the proposed use of the Lafarge OneCem cement blend (OneCem) on the coal, intermediate and production casing strings.

108510308

FINDINGS OF FACT

1. On July 24, 2015, EQT Production Company (EQT) submitted a variance request for the use of OneCem, from Legislative Rule 35CSR8, Section 9.2.h.2.
2. Laboratory analysis submitted by EQT on July 24, 2015, indicate OneCem meets or exceeds all other specific requirements found in Legislative Rule 35CSR8, Section 9.2.h.
3. On May 13, 2016, the Office of Oil and Gas provided public notice of acceptance of public comments on the variance request. During the 30-day public comment period, no comments were received.

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CONCLUSIONS OF LAW

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

Pursuant to Legislative Rule 35CSR8, Section 14, the Chief of the Office of Oil and Gas may grant a variance from any requirement of this rule.

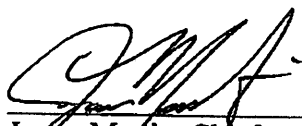
ORDER

It is ordered that the Lafarge OneCem cement blend, referenced in MSDS Version 1.0 issued on April 21, 2014, is approved for use on the coal, intermediate and production casing strings for well drilling subject to the provisions of Legislative Rule 35CSR8. This approval does not apply to cementing of freshwater casing strings.

Dated this, the 20th day of July, 2016.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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


James Martin, Chief
Office of Oil and Gas

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JAN 03 2017

WV Department of
Environmental Protection

WW-9
(2/15)

API Number 47 - 085 - _____
Operator's Well No. 515220

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EQT Production Company OP Code 306686

Watershed (HUC 10) Slab Creek Quadrangle Pullman

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

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

Additives to be used in drilling medium? See Attached

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

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

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

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

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

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

Company Official Signature *Victoria J. Roark*

Company Official (Typed Name) Victoria J. Roark

Company Official Title Permitting Supervisor

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Office of Oil and Gas

Subscribed and sworn before me this 27th day of December, 20 16

Jamie J. Barbour
My commission expires 2/24/2021

JAN 03 2017
WV Department of Environmental Protection
Notary Public
OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
JAMIE J. BARBOUR
CLARKSBURG, WV 26301
My commission expires February 24, 2021
08/11/2017

4708510308

Form WW-9

Operator's Well No. 515220

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 34.34 Prevegetation pH 6.2

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

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

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Doff

Comments: Preseed & Mulch any disturbed areas per WV DEP regs. Maintain or upgrade S-n-S as needed.

Title: Oil & Gas Inspector Date: 1/4/17

Field Reviewed? (X) Yes () No

WW-9 Attachment

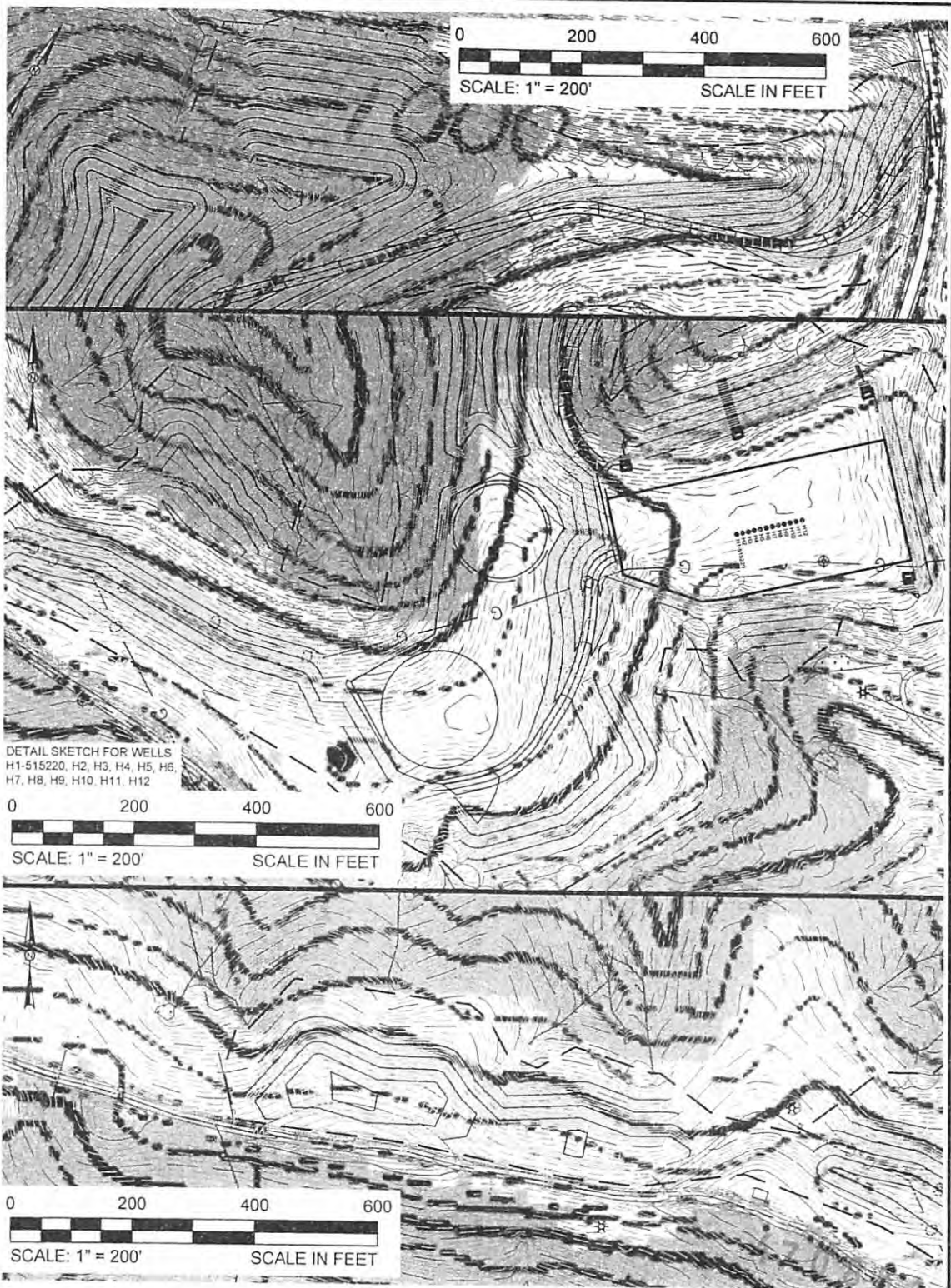
Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

- Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud.

Additives to be used in drilling medium?

- Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud – Barite, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant, defoaming, carbonates.

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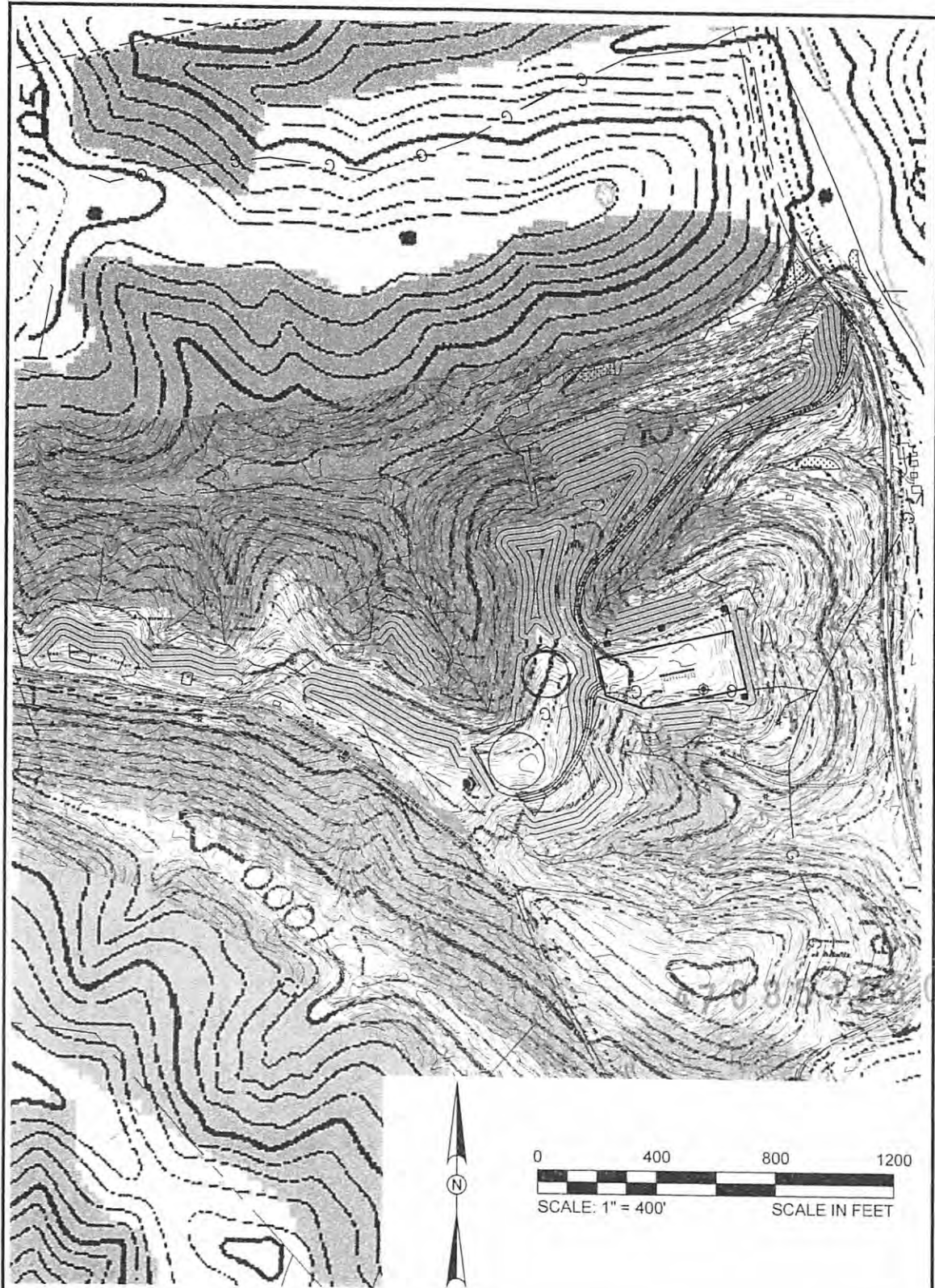
DETAIL SKETCH FOR WELLS
 H1-515220, H2, H3, H4, H5, H6,
 H7, HB, H9, H10, H11, H12

MSG
 1/4/12

308

Pullman 7.5' USGS Quadrangle		Proposed Disturbance Area		Note: SEE SITE PLAN OF PUL-65 WELL PAD FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.
Drawn By: C. Herryty	Date: 22-Dec-16	Project No. 138957	Drawing File No. REC PLAN	
		Kleinfelder, Inc. 230 Executive Drive Suite 122 Cranberry Township, PA 16066 Main: (724) 772-7072 Fax: (724) 772-7079		

08/11/2017



Pullman 7.5' USGS Quadrangle		Proposed Disturbance Area		Note: SEE SITE PLAN OF PUL-65 WELL PAD FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.
Drawn By: C. Herryty	Date: 22-Dec-16	Project No. 138957	Drawing File No. REC PLAN	
		Kleinfelder, Inc. 230 Executive Drive Suite 122 Cranberry Township, PA 16066 Main: (724) 772-7072 Fax: (724) 772-7079		

MAG
1/4/17
08/11/2017



Where energy meets innovation.™

Site Specific Safety Plan

EQT
PUL65 Unit Pad

Pullman
Ritchie County, WV

For Wells:

5/5220

4708510308

Date Prepared: November 1, 2016

Michael Hoff
WV Oil and Gas Inspector

Title

Date

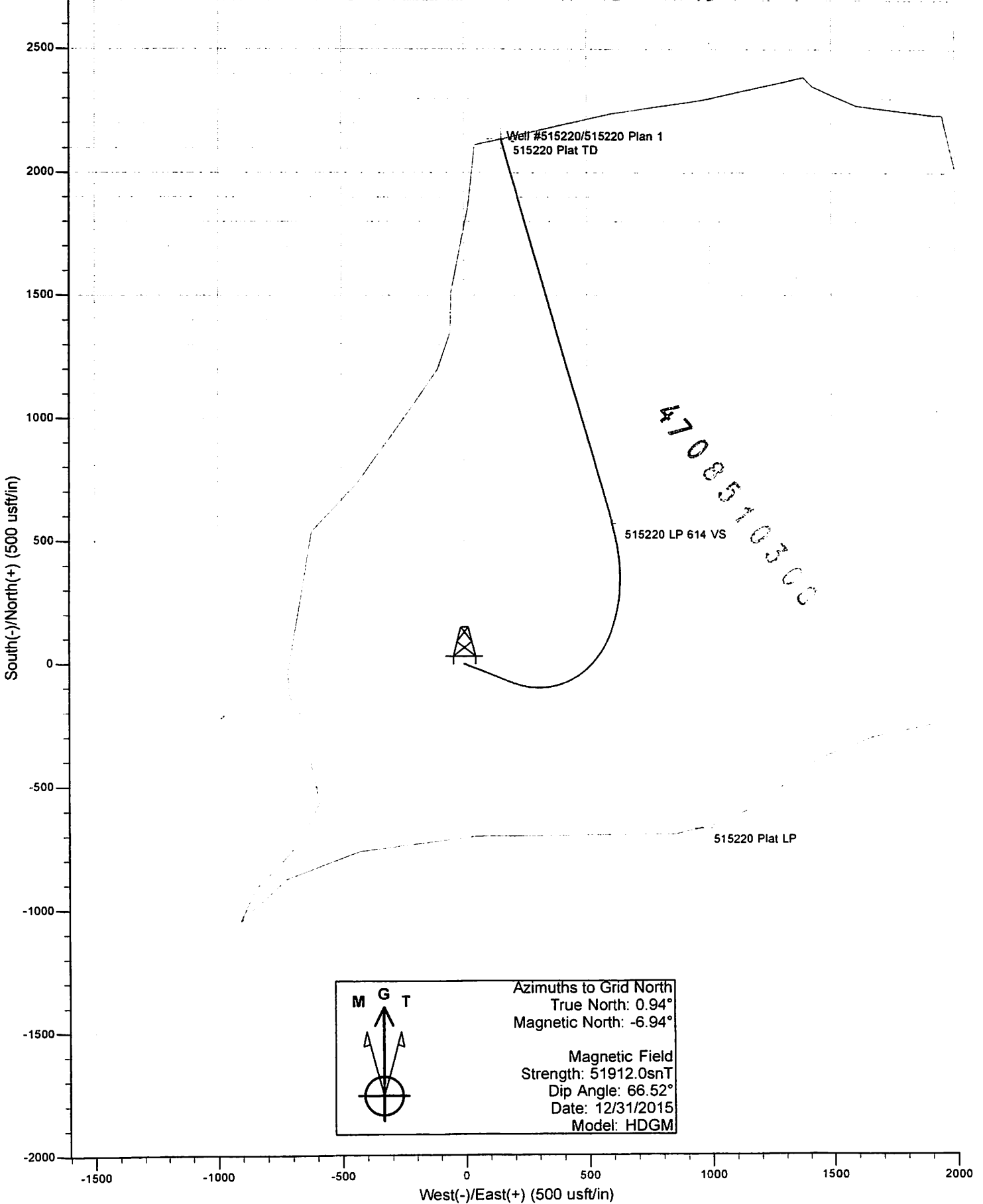
1/4/17


[Signature]
EQT Production

Title

Date

12-27-16



	Azimuths to Grid North
	True North: 0.94° Magnetic North: -6.94°
Magnetic Field	
Strength: 51912.0snT	
Dip Angle: 66.52°	
Date: 12/31/2015	
Model: HDGM	

LATITUDE: 39°12'30" TH 4,271'
 LATITUDE: 39°12'30" BH 4,117'

H1 - WV 515220
EQT Production Company
JEREMY OWENS
84.5 Acres

LEGEND

- ☆ EXISTING OIL/GAS WELL
- ⊙ WATER FEATURE
- ⊙ WELL HEAD TOP HOLE
- ⊙ WELL LANDING POINT
- WELL BOTTOM HOLE
- EXISTING WELL TIE
- WELL LATERAL LINE
- LEASE BOUNDARY
- PROPERTY LINE
- STREAM
- 500' LATERAL COLLECTION BUFFER

Lease No.	Acres	Owner
710257	84.5	JEREMY OWENS

NO.	ADJACENT OWNER	NO.	SURFACE OWNER
2	JEREMY OWENS	1	JEREMY OWENS
12	JOHN T. STANLEY		
13	PHYLLIS J. WATSON & ELEANOR CHILES		
4	JOE NEAL NAY, FLOYD CALVIN & IRENE ELEANOR		
5	SHANE C. & ELLEN S. KERNS		
6	ROBERT D RIDDLE TRUST		

H1 - WV 515220 Well Point Coordinates

Top Hole Coordinates

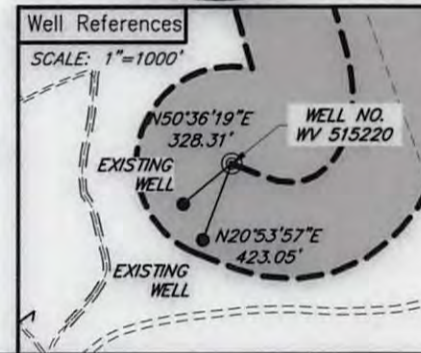
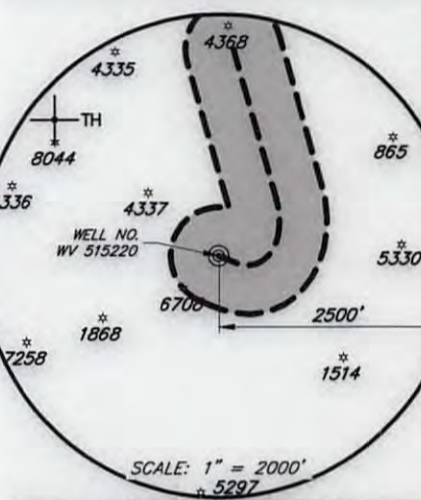
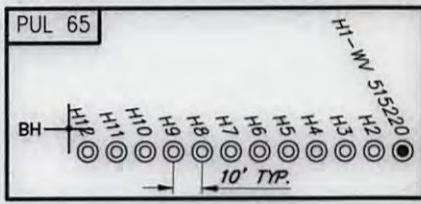
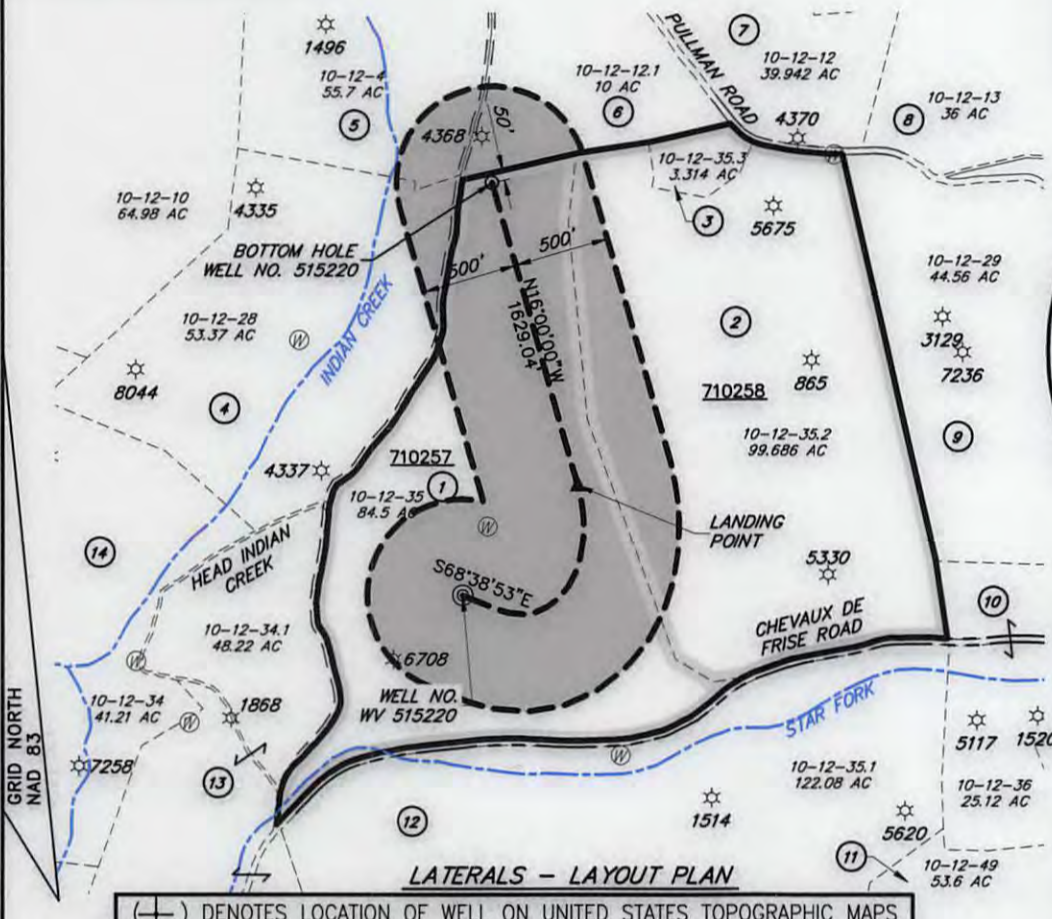
NAD 27 S.P.C. (Ft.)	N: 253,086.34	E: 1,582,451.26
NAD 27 GEO	LAT: 39,185,472	LONG: 80,973,098
NAD 83 UTM 17N (M)	N 4,337,368.35	E: 502,338.00
NAD 83 S.P.C. (Ft.)	N 253,120.26	E: 1,551,010.38

Landing Point Coordinates

NAD 27 S.P.C. (Ft.)	N: 253,658.52	E: 1,583,054.73
NAD 27 GEO	LAT: 39,187,070	LONG: 80,971,002
NAD 83 UTM 17N (M)	N 4,337,545.74	E: 502,518.93
NAD 83 S.P.C. (Ft.)	N 253,692.45	E: 1,551,613.84

Bottom Hole Coordinates

NAD 27 S.P.C. (Ft.)	N: 255,224.47	E: 1,582,605.71
NAD 27 GEO	LAT: 39,191,349	LONG: 80,972,677
NAD 83 UTM 17N (M)	N 4,338,020.51	E: 502,374.18
NAD 83 S.P.C. (Ft.)	N 255,258.39	E: 1,551,164.82



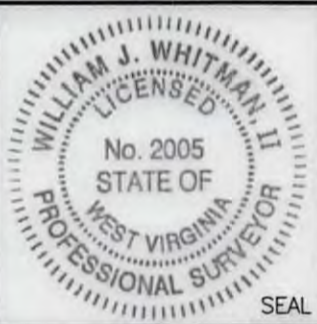
NOTES ON SURVEY

- TIES TO WELLS, CORNERS, AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '83.
- SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF RITCHIE COUNTY IN JANUARY, 2014.
- WELL LAT. ALONG (NAD'27) ESTABLISHED BY GPS.
- THE LOCATION OF BOUNDARY LINES SHOWN HEREIN ARE BASED ON RECORD DEED, PLATS, AND TAX MAPS BEST FIT TO FOUND FIELD EVIDENCE AND AERIAL PHOTOS, UNLESS OTHERWISE NOTED.
- THIS PLAT DOES NOT REPRESENT AN ACTUAL BOUNDARY SURVEY OF THE INDIVIDUAL PARCELS.
- THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
- CRITICAL POINTS (HARD LINES) WERE FIELD SURVEYED FEBRUARY AND MARCH 2014.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

encompass

[Signature]



FILE NO.: EES-60756
 DRAWING NO.: PUL65_Well Plat
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: ±3'
 PROVEN SOURCE OF ELEVATION: GPS

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

DATE DECEMBER 20, 20 16
 OPERATORS WELL NO. WV 515220
 API WELL NO. 47 085 10308 H6A
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION, ELEVATION: 1,089'(Ground) 1,078'(Prop.) WATERSHED: SLAB CREEK QUADRANGLE: PULLMAN
 DISTRICT: UNION COUNTY: RITCHIE
 SURFACE OWNER: JEREMY OWENS ACREAGE: 84.5± AC
 ROYALTY OWNER: HAZEL ELOISE STANLEY (aka ELOISE D. MIRACLE) LEASE NO.: 710257 ACREAGE: 84.5± AC
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,269'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex. C. Ray
 ADDRESS: 115 Professional Pl. P.O. Box 280 ADDRESS: 115 Professional Pl. P.O. Box 280
Bridgeport, WV 26330 Bridgeport, WV 26330

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Attached				

4708510308

**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

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Environmental Protection

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: Victoria Roark
 Its: Permitting Supervisor

<u>Lease No.</u>	<u>Grantor, Lessor, etc.</u>	<u>Grantee, Lessee, etc.</u>	<u>Royalty</u>	<u>Book/Page</u>
710257	<u>Hazel Eloise Stanley (aka Eloise D. Miracle) (current royalty owner)</u>		**	
	J. B. Ballah, et ux (original lessor)	Carnegie Natural Gas Company		LB41/121
	Carnegie Natural Gas Company	Carnegie Production Company		228/859
	Carnegie Production Company	Equitable Production - Eastern States, Inc		See attached
	Equitable Production - Eastern States, Inc	Equitable Production Company		See attached
	Equitable Production Company	EQT Production Company		DB6/443

** We will pay a minimum one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid to or set aside for the owner of the oil or gas in place, on all such oil or gas to be extracted, produced, or marketed from the well.

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 WV Department of
 Environmental Protection

**AGREEMENT AND PLAN OF MERGER
BETWEEN
EQUITABLE PRODUCTION - EASTERN STATES, INC.
AND
CARNEGIE PRODUCTION COMPANY**

AGREEMENT AND PLAN OF MERGER, dated this 29th day of December, 2000, pursuant to Section 252 of the General Corporation Law of the State of Delaware and Section 1926 of the Pennsylvania Business Corporation Law of 1988 between Equitable Production - Eastern States, Inc., a Delaware corporation and Carnegie Production Company, a Pennsylvania corporation.

WHEREAS, the constituent corporations desire to merge into a single corporation.

NOW, THEREFORE, the corporations, parties to this Agreement, in consideration of the mutual covenants, agreements and provisions hereinafter contained and intending to be legally bound, do hereby prescribe the terms and conditions of said merger and mode of carrying the same into effect as follows:

FIRST: Effective December 31, 2000, Carnegie Production Company hereby merges into Equitable Production - Eastern States, Inc. and Equitable Production - Eastern States, Inc. shall be the surviving corporation.

SECOND: The Certificate of Incorporation of Equitable Production - Eastern States, Inc. as heretofore amended and is in effect on the date of the merger provided in this Agreement, shall continue in full force and effect as the Certificate of Incorporation of the corporation surviving this merger.

THIRD: The manner of converting the outstanding shares of the common stock of each of the constituent corporations into shares or other securities of the surviving corporation shall be as follows: Each share of common stock of the surviving corporation, Equitable Production - Eastern States, Inc., which is issued and outstanding on the effective date of this Agreement, shall remain issued and outstanding. Each share of common stock of the merged corporation, Carnegie Production Company, shall be cancelled.

FOURTH: The terms and conditions of the merger are as follows:

- (a) The by-laws of the surviving corporation as they shall exist on the effective date of this Agreement shall be and remain the by-laws of the surviving corporation until the same shall be altered, amended and repealed as therein provided.

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- (b) The directors and officers of the surviving corporation shall continue in office until the next annual meeting of stockholders and until their successors shall have been elected and qualified.
- (c) Upon the merger becoming effective, all the property, rights, privileges, franchises, patents, trademarks, licenses, registrations and other assets of every kind and description of the merged corporation shall be transferred to, vested in and devolved upon the surviving corporation without further act or deed and all property, rights, and every other interest of the surviving corporation and the merged corporation shall be effectively the property of the surviving corporations as they were of the surviving corporation and the merged corporation respectively. The merged corporation hereby agrees from time to time, as and when requested by the surviving corporation or by its successors or assigns, to execute and deliver or cause to be executed and delivered all such deeds and instruments and to take or cause to be taken such further or other action as the surviving corporation and may deem to be necessary or desirable in order to vest in and confirm to the surviving corporation title to and possession of any property of the merged corporation acquired or to be acquired by reason of or as a result of the merger herein provided for and otherwise to carry out the intent and purposes hereof and the proper officers and directors of the merged corporation and the proper officers and directors of the surviving corporation are fully authorized in the name of the merged corporation or otherwise to take any and all such action.

IN WITNESS WHEREOF, the parties to this agreement, pursuant to the approval and authority duly given by resolutions adopted by their respective Board of Directors and stockholders have caused these presents to be executed by the officers of each party hereto as the respective act, deed and agreement of said corporations on this 29th day of December 2000.

EQUITABLE PRODUCTION -
EASTERN STATES, INC.

By: Johanna B O'Keefe
VP and Corporate Secretary

CARNEGIE PRODUCTION COMPANY

By: Henry C. Pugh
VP

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Environmental Protection

08/11/2017

State of Delaware
Office of the Secretary of State

PAGE 1

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"EQUITABLE PRODUCTION - EASTERN STATES, INC.", A DELAWARE CORPORATION,

WITH AND INTO "EQUITABLE PRODUCTION COMPANY" UNDER THE NAME OF "EQUITABLE PRODUCTION COMPANY", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF PENNSYLVANIA, AS RECEIVED AND FILED IN THIS OFFICE THE THIRTIETH DAY OF APRIL, A.D. 2001, AT 12 O'CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

4708510308

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Office of Oil and Gas

JAN 03 2017



Harriet Smith Windsor
Harriet Smith Windsor, Secretary of State
WV Department of Environmental Protection

3386289 8100M

AUTHENTICATION: 1109924

010206565

DATE: 05-01-01

08/11/2017

CERTIFICATE OF MERGER
OF
EQUITABLE PRODUCTION – EASTERN STATES, INC.
INTO
EQUITABLE PRODUCTION COMPANY

The undersigned corporation DOES HEREBY CERTIFY:

FIRST: That the names and states of incorporation of each of the constituent corporations of the merger are as follows:

<u>NAME</u>	<u>STATE OF INCORPORATION</u>
Equitable Production – Eastern States, Inc.	Delaware
Equitable Production Company	Pennsylvania

SECOND: That an Agreement of Merger between the parties to the merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations in accordance with the requirements of Section 252 of the General Corporation Law of Delaware.

THIRD: That the Articles of Incorporation of Equitable Production Company, a Pennsylvania corporation, which is the surviving corporation, shall continue in full force and effect as the Certificate of Incorporation of the surviving corporation.

FOURTH: That the executed Agreement of Merger is on file at an office of the surviving corporation, the address of which is 301 Grant Street, Suite 3300, Oxford Centre, Pittsburgh, Pennsylvania 15219.

FIFTH: That a copy of the Agreement of Merger will be furnished, on request and without cost, to any stockholder of any constituent corporation.

SIXTH: That Equitable Production Company survives the merger and may be served with process in the State of Delaware in any proceeding for enforcement of any obligation of any constituent Delaware corporation as well as for enforcement of any obligation of the surviving corporation arising from the merger, including any suit or other proceeding to enforce the right of any stockholder, as determined in appraisal proceedings pursuant to the provisions of Section 262 of the General Corporation Law of Delaware, and it does hereby irrevocably appoint the Secretary of State of Delaware as its agent to accept service of process in any such suit or other proceeding. The address to which a copy of such process shall be mailed by the Secretary of State of Delaware is 301 Grant Street, Suite 3300, Oxford Centre, Pittsburgh, PA 15219 until the surviving corporation shall have hereafter designated in writing to the said Secretary of State a different address for such purpose.

SEVENTH: That this Certificate of Merger shall be effective on April 30, 2001.

Dated: April 26, 2001

EQUITABLE PRODUCTION COMPANY

By: Henry E. Reich, Jr.
Henry E. Reich, Jr., Vice President

WV Department of
Environmental Protection

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 12:00 PM 04/30/2001
010206565 - 2075827



October 27, 2016

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

Re: PUL65 well pad, well number 515220
Union District, Ritchie County

Dear Mr. Martin,

EQT Production Company is submitting an application for a new well work permit for the above well number. Upon information and belief, Operator's lease and/ or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Sincerely,

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

Vicki Roark
Permitting Supervisor-WV

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Environmental Protection

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

Date of Notice Certification: 12-21-16

API No. 47- 085 -
Operator's Well No. 515220
Well Pad Name: PUL65

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>502,338.00</u>
County:	<u>Ritchie</u>		Northing:	<u>4,337,368.35</u>
District:	<u>Union</u>	Public Road Access:	<u>Co Rt 24</u>	
Quadrangle:	<u>Pullman</u>	Generally used farm name:	<u>Baliah</u>	
Watershed:	<u>Slab Creek</u>			

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p>JAN 03 2017</p>
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Required Attachments:

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

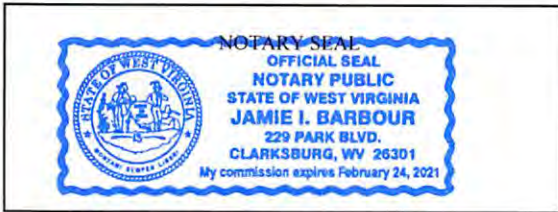
WV Department of
Environmental Protection

Certification of Notice is hereby given:

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

Well Operator: EQT Production Company
By: Victoria Roark
Its: Permitting Supervisor
Telephone: 304-848-0076

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041
Email: vroark@eqt.com



Subscribed and sworn before me this 27th day of December 2016.
[Signature] Notary Public
My Commission Expires 2/24/2021

Oil and Gas Privacy Notice:

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

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WV Department of
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**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION**

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

Date of Notice: 12/27/14 **Date Permit Application Filed:** 12/27/14

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: See Attached
Address: _____

Name: _____
Address: _____

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

Name: See Attached
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: See Attached
Address: _____

COAL OWNER OR LESSEE

Name: See Attached
Address: _____

COAL OPERATOR

Name: _____
Address: _____

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

Name: See Attached
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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WV Department of Environmental Protection

Surface Owner:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

Surface Owner Access Road:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

Surface Owner Pit/Impoundment:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

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JAN 03 2017

WV Department of
Environmental Protection

08/11/2017

Coal Owners:

Eloise D Miracle
Rt 2 Box 116D
Harrisville WV 26362

Jeremy Owens(remainder)
4936 Pullman Rd
Harrisville WV 26362

Catherine Diane Stanley(remainder)
AKA Catherine Diane Owens
5502 Chevaux De Frise Rd
Harrisville, WV 26362



Steven John Stanley(remainder)
1410 Lynn Camp Rd.
Pennsboro, WV 26415

Vicky Lynn Meisterhans(remainder)
287 Walker Lane
Washington, WV 26181

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JAN 03 2017

WV Department of
Environmental Protection

08/11/2017

Owners of Water Wells:

Jeremy Owens
4936 Pullman Rd
Harrisville WV 26362

Janet Stanley
Eloise Miracle
5502 Chevaux De Frise Rd
Harrisville WV 26362



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Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection

08/11/2017

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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Office of Oil and Gas
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Department of Environmental Protection

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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WV Department of
Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
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API NO. 47- 085 -
OPERATOR WELL NO. 515220
Well Pad Name: PUL65

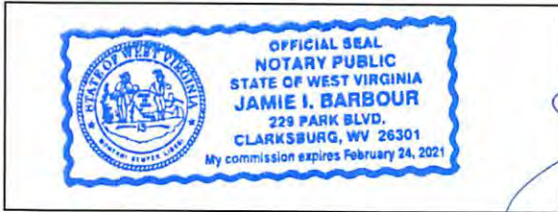
Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0076
Email: vroark@eqt.com

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041

Oil and Gas Privacy Notice:

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



[Handwritten signature]

Subscribed and sworn before me this 27th day of December, 2016.

[Handwritten signature] Notary Public

My Commission Expires 2/24/2021

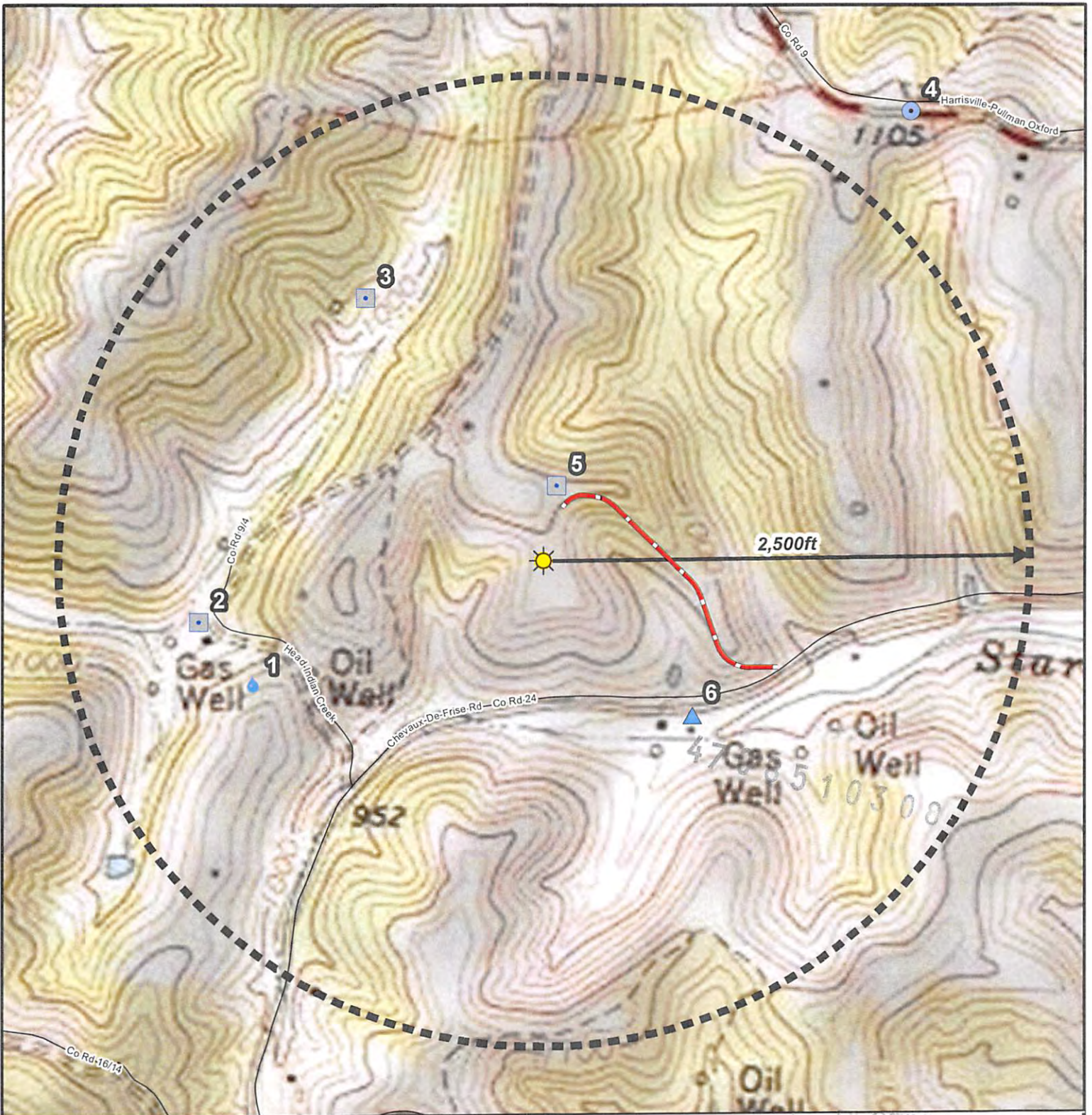
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08/11/2017



Water Source Locations for Jeremy Owens Lease

PUL-65 Well Pad
EQT Production Company
Ritchie County, WV



- Proposed Gas Well
- Public Water (Unable to Confirm if Additional Sources Exist)
- Spring (Unable to Confirm if Additional Sources Exist)
- Unknown
- Well Water
- Proposed Access Road
- Existing Road

PROJECT #:	20143916.001A
DRAWN:	8/29/2016
DRAWN BY:	SMW
CHECKED BY:	MA
FILE NAME:	PUL65_WaterSource
<small>The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or reliability of the information contained on this graphic representation. This document is for informational purposes only and is not designed or intended as a contract. The user of this information is responsible for verifying the information contained on this graphic representation with the party using or misusing the information.</small>	

08/11/2017

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

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

Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application.

Date of Notice: 11/09/2016 **Date Permit Application Filed:** 11/19/2016

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

- HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Jeremy Owens
 Address: 4936 Pullman Rd
Harrisville WV 26362

Name: _____
 Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>WV</u>	UTM NAD 83 Easting: <u>502,338.00</u>
County: <u>Ritchie</u>	Northing: <u>4,337,368.35</u>
District: <u>Union</u>	Public Road Access: <u>Co Rt 24</u>
Quadrangle: <u>Pullman</u>	Generally used farm name: <u>Baliah</u>
Watershed: <u>Slab Creek</u>	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: EQT Production Company
 Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
 Telephone: 304-848-0076
 Email: vroark@eqt.com
 Facsimile: 304-848-0041

Authorized Representative: Victoria Roark
 Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
 Telephone: 304-848-0076
 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.

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 WV Department of
 Environmental Protection

Surface Owner:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

Surface Owner Access Road:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

Surface Owner Pit/Impoundment:

Jeremy Owens
4936 Pullman Road
Harrisville WV 26362

4708510300

RECEIVED
Office of Oil and Gas

JAN 03 2017

WV Department of
Environmental Protection

08/11/2017



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

December 20, 2016

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 PUL 65 Pad Site, Ritchie County

515220 PUL 65

Dear Mr. Martin,

This well site will be accessed from Permit #03-2016-0420 issued to EQT Production Company for access to the State Road. The well site is located off of Ritchie County Route 24 SLS.

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

Very Truly Yours,

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

Cc: Pam Sykes
EQT Production Company
CH, OM, D-3, File

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Anticipated Frac Additives
Chemical Names and CAS numbers

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

4703510500

RECEIVED
Office of Oil and Gas

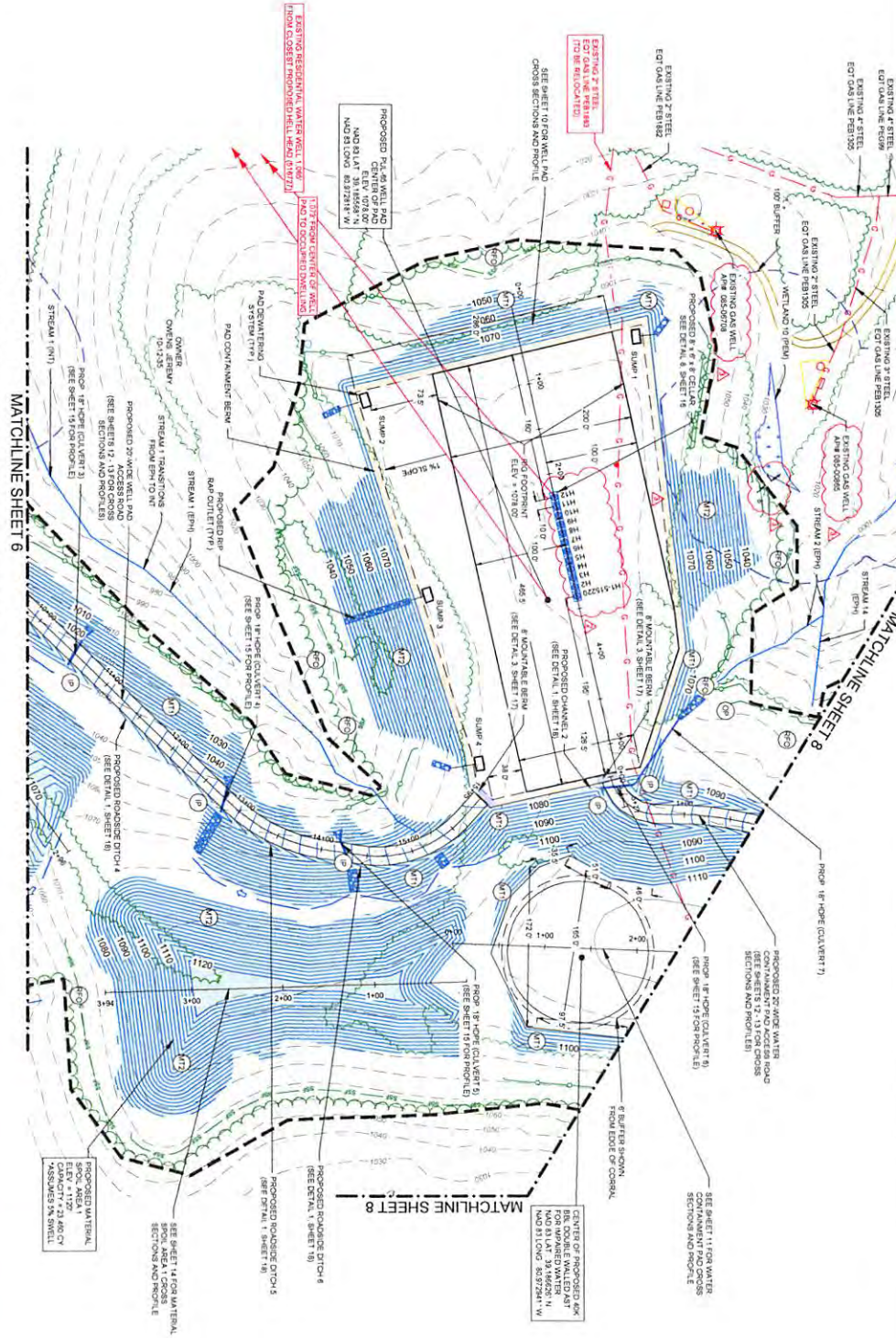
JAN 03 2017

WV Department of
Environmental Protection

08/11/2017

- NOTES**
1. THE GRADE SHOWN REPRESENTS FINISH GRADE ELEVATIONS
 2. PIPE MATERIALS SHALL BE AS NOTED ON THE PLAN AND IN THE BIDDING DOCUMENTATION ON SHEET 6
 3. CUT AND FILL SLOPES SHALL BE AT 2:1 UNLESS NOTED OTHERWISE
 4. FILL SHALL BE PLACED IN 12" LIFTS AND BE COMPACTED TO 95% STANDARD PROCTOR DENSITY
 5. INTERMEDIATE SLOPING BENCHES SHALL BE INSTALLED ON FILL SLOPES PER GEOTECHNICAL DETAIL 6 SHOWN ON SHEET 20
 6. ALL FILL SLOPES SHALL BE TOP KEPT PER DETAIL 6 ON SHEET 20
 7. BEFORE ANY MATERIAL IS PLACED ON OR FROM PAD TO SLOPES, STORMWATER AND MATERIALS REMOVED FROM THE PAD AND SLOPES SHALL BE PLACED TO QUALIFY APPROVED STORMWATER TREATMENT
 8. ALL STORMWATER CONDUITS ON THE SITE HAVE BEEN DESIGNED TO ACCOMMODATE FIVE (5) YEAR 24 HOUR FLOOD EVENT

9. SEE DETAIL 2 SHEET 13 FOR RIP RAP OUTLET PROTECTION AND SIZING AND DESIGN
10. CONTRACTOR TO INSTALL ROCK CHECK DAMS WITHIN ROADSIDE DITCHES. SEE DETAIL 2 SHEET 13 FOR SIZING AND DESIGN. CONTRACTOR TO MAINTAIN PERMANENT CHECK DAMS AFTER CONSTRUCTION IS COMPLETE
11. FILTER SOCK AND SERRATED FENCE SIZING TABLES ARE SHOWN IN DETAILS 1 - 13 ON SHEET 20
12. IN TOPSOIL PLACEMENT AREAS CONTRACTOR TO INSTALL PROPER BARS TO ENSURE NO OFF SITE EROSION & SEDIMENTATION RUNOFF
13. INSTALL ROCK FILTER OUTLETS ALONG SEDIMENT BARRIERS AS SHOWN AND AT LOW POINTS AS IDENTIFIED IN THE FIELD
14. REFER TO DETAIL 1 SHEET 19 FOR DITCH DETAILS
15. SURFACE TREATMENT SHALL BE INSTALLED ON HILL SLOPES AT INTERVALS OF 50' VERTICAL. KEEP TYPICAL WIDTH ON LESSER SLOPES AS NOTED ON SHEET 20 FOR PROTECTION
16. TOP OF SPILL AREA HILL SLOPES TO BE GRADED AT A MINIMUM OF 2% FROM CENTER TO PERIPHERY TO FACILITATE DRAINAGE



APPROVED
WVDEP OOG
 7.18.2017

Where energy meets innovation.

PERMITTING

PROJECT NO.	13497
ISSUED DATE	10-28-2016
CURRENT REVISION	7
DESIGNED BY	CSH
CHECKED BY	NOX
APPROVED BY	1 OF 25

ISSUED FOR PERMITTING

SCALE VERIFICATION

1" = 40'

ASAP SCALE FOR CONSTRUCTION

SCALE IN FEET

SCALE IN METERS

ORIGINAL DRAWING SIZE IS 32" X 24"

SITE PLAN

PUL-65 WELL PAD

BRITCHEL COUNTY UNION DISTRICT

WEST VIRGINIA

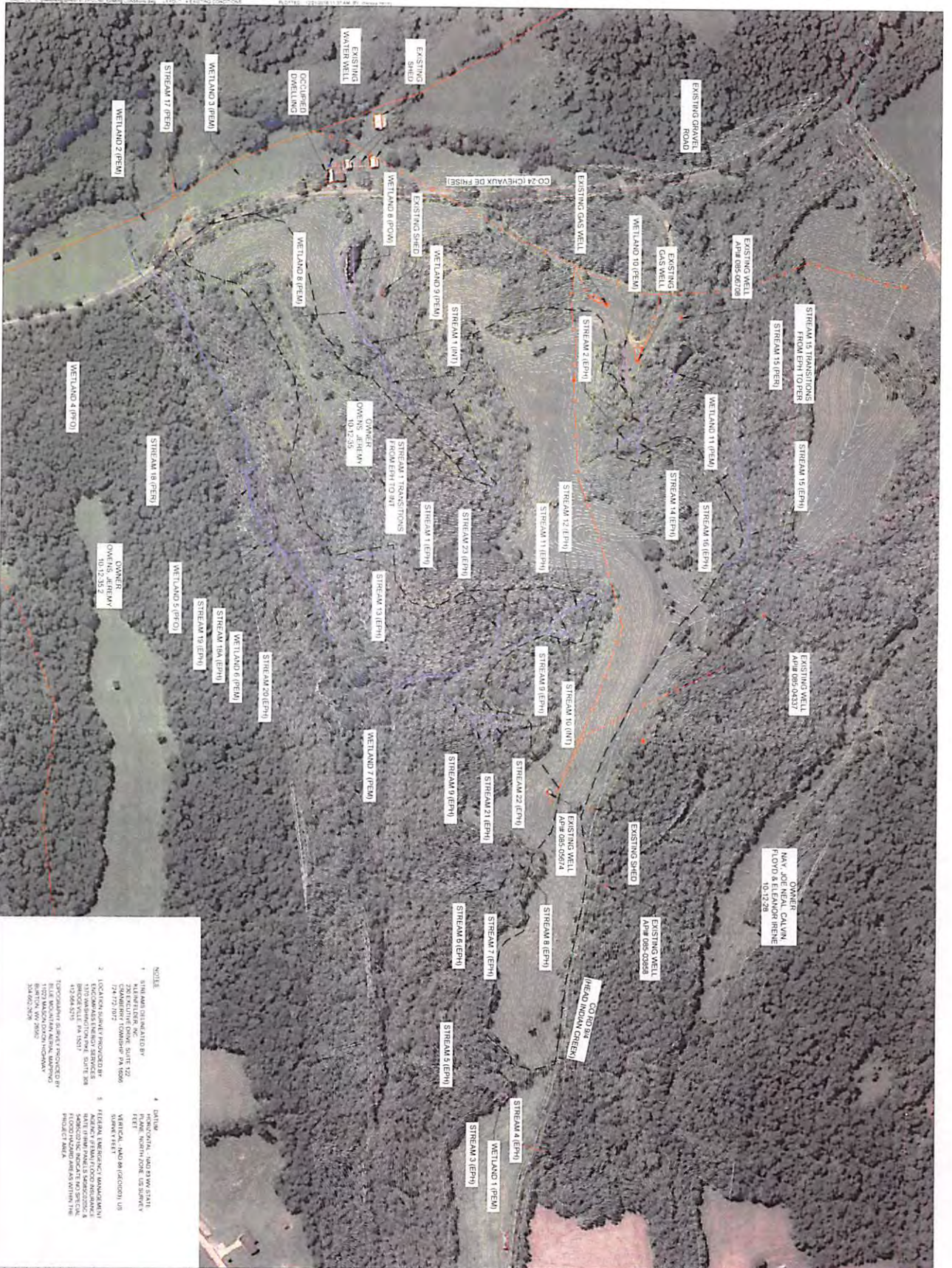
REV	DESCRIPTION	DATE
1	DOY REVISIONS	09/11/2016
2	WELL HEADWASERS	09/11/2016
3	WADP COMMENTS	09/11/2016

STANDARD TYP. B. SMOKE, PG. 2 2003A

KLEINFELDER
 Right People. Right Solutions.

2016 RECEIVING CONCRETE SPLIT BOX
 NUMBER: 2016-001
 WARRIOR ENERGY CORP.

08/11/2017



NOTE

1. SITE AND Delineation by KLEINFELDER, INC. - SHEET 202. CHANGEMENT TOMORROW 2A 10/06/12 12/17/2012
2. LOCAL NON-SALINE PROTECTED BY 1170 WASHINGTON PINE SCITE 308 410 COOK WELLS (A 10/21)
3. REGULATORY DISTRICT PROTECTED BY 1170 WASHINGTON PINE SCITE 308 PROJECT AREA
4. DATUM: HORIZONTAL - NAD 83 STATE PLANE - WEST VIRGINIA COORDINATE SYSTEM VERTICAL - NAD 83 (GEOID) US SURVEY FEET
5. FEDERAL AERIAL PHOTOGRAPHY (MAY 1964) DATE: 11/19/64. PHOTOGRAPHIC SCALE: 1:250,000. PHOTOGRAPHIC SOURCE: USGS. PROJECT AREA

EXISTING CONDITIONS

PUL-69 WELL PAD
RITCHIE COUNTY UNION DISTRICT
WEST VIRGINIA

ISSUED FOR PERMITTING

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMITTING	11/14/2014
2	WELL HEAD NAMES	11/14/2014

PERMITTING

PROJECT NO: 13897
ISSUED DATE: 10/28/2014
DESIGNED BY: CMH
CHECKED BY: CMH
APPROVED BY: TDD

4

SHEET 4 OF 25

SEAL NO. 10043
TRAVIS B. DANIEL
REGISTERED PROFESSIONAL ENGINEER
STATE OF WEST VIRGINIA

08/11/2014

320 EAST 10TH STREET, SUITE 1100
CHANDLER, TEXAS 75010
WWW.KLEINFELDER.COM

470 8510308

7 - SITE PLAN

PROPOSED WELL PAD

OWNER:
WATSON, PHYLLIS JEAN & CHILES, ELEANOR
10-12-34.1

PROPOSED WATER CONTAINMENT PAD

PROPOSED WATER CONTAINMENT PAD ACCESS ROAD

PROPOSED MATERIAL SPOIL AREA 2

8 - SITE PLAN

OWNER:
NAY, JOE NEAL, CALVIN, FLOYD & ELEANOR IRENE
10-12-28

PROPOSED MATERIAL SPOIL AREA 3

PROPOSED MATERIAL SPOIL AREA 4

OWNER:
ATKINSON, DANIEL G.
10-12-4.1

9 - SITE PLAN

OWNER:
OWENS, JEREMY
10-12-35

PROPOSED TOPSOIL SPOIL AREA 2

PROPOSED LIMIT OF DISTURBANCE

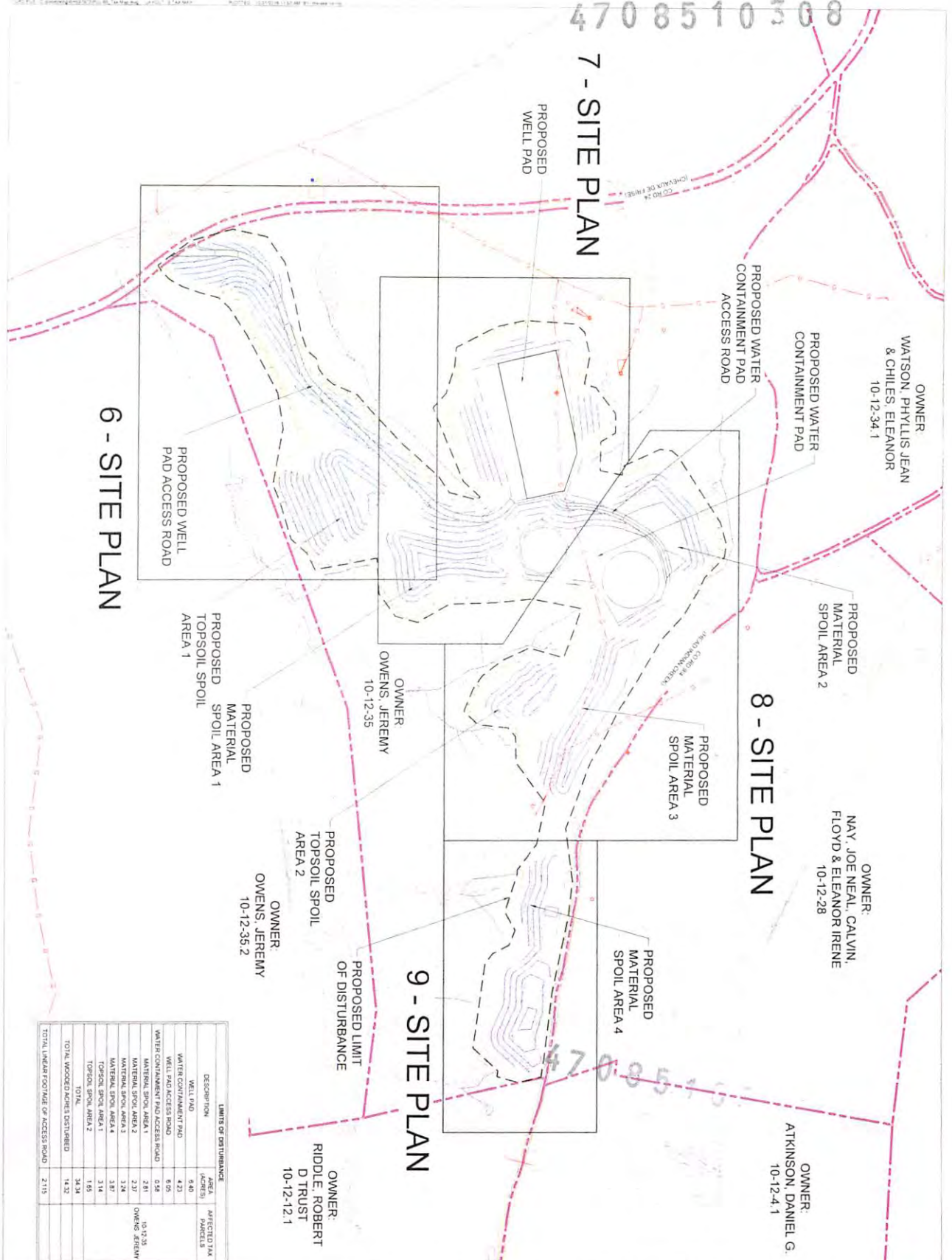
OWNER:
RIDDELE, ROBERT D TRUST
10-12-12.1

PROPOSED MATERIAL SPOIL AREA 1

OWNER:
OWENS, JEREMY
10-12-35.2

PROPOSED WELL PAD ACCESS ROAD

6 - SITE PLAN



LIMITS OF DISTURBANCE		AREA (ACRES)	AFFECTED TAX PARCELS
WELL PAD		8.40	
WATER CONTAINMENT PAD		4.21	
WELL PAD ACCESS ROAD		8.05	
WATER CONTAINMENT PAD ACCESS ROAD		5.28	
MATERIAL SPOIL AREA 1		2.81	10-12-35
MATERIAL SPOIL AREA 2		2.27	
MATERIAL SPOIL AREA 3		3.28	
MATERIAL SPOIL AREA 4		3.87	
TOPSOIL SPOIL AREA 1		3.14	OWENS, JEREMY
TOPSOIL SPOIL AREA 2		1.65	
TOTAL		34.34	
TOTAL WOODCROCK'S DISTURBED		14.32	
TOTAL LINEAR FOOTAGE OF ACCESS ROAD		2115	

KLEINFELDER
Bright People. Right Solutions.

REGISTERED PROFESSIONAL ENGINEER
2004
TROY B. DANIEL
10/12/2016

08/11/2017

ISSUED FOR PERMITTING

SCALE VERIFICATION
1 INCH = 40 FEET
SCALE IN FEET
0 100 200 300 400
SCALE 1" = 400'

TAX MAP
PUL 65 WELL PAD
RITCHIE COUNTY UNION DISTRICT
WEST VIRGINIA

ECOT
Where energy meets innovation.

PERMITTING

PROJECT NO. 15807
ISSUED DATE: 10-28-2016
CURRENT REVISION: 5
DRAWN BY: CMH
CHECKED BY: NCK
APPROVED BY: TBD SHEET 3 OF 25

MAG 1/11/17