



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

Wednesday, August 09, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for SHR 99H1
47-095-02438-00-00

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: SHR 99H1
Farm Name: EQT PRODUCTION COMPANY
U.S. WELL NUMBER: 47-095-02438-00-00
Horizontal 6A / New Drill
Date Issued: 8/9/2017

Promoting a healthy environment.

08/11/2017



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PERMIT CONDITIONS

4700800030

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.

API Number: _____

PERMIT CONDITIONS

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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

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Charleston, WV 25304
(304) 926-0450 fax (304) 926-0452

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

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

TO: Statoil USA Onshore Properties, Inc.
2107 City West Boulevard, Suite 800
Houston TX, 77042

DATE: September 25, 2015
ORDER NO.: 2015-W-11

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 Statoil USA Onshore Properties, Inc. (hereinafter "Statoil" 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. Statoil is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 2107 City West Boulevard, Suite 800, Houston, Texas.
3. On July 31, 2015, August 3, 2015 and August 5, 2015 Statoil submitted well work permit applications identified as API#s 47-095-02299, 47-095-02300, 47-095-02301, 47-095-02302 and 47-095-02303. The five proposed wells are to be located on the Yurigan Pad in Ellsworth District of Tyler County, West Virginia.
4. On July 31, 2015, Statoil requested a waiver for Wetland #1 as outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for well work permit applications identified as 47-095-02299, 47-095-02300, 47-095-02301, 47-095-02302 and 47-095-02303.

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 Wetland #1 from well location restriction requirements in W. Va. Code §22-6A-12(b) for well work permit applications identified as API#s 47-095-02299, 47-095-02300, 47-095-02301, 47-095-02302 and 47-095-02303. The Office of Oil and Gas hereby **ORDERS** that Statoil shall meet the following site construction and operational requirements for the Yurigan 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 eighteen inches (18”) in height;
- b. Filter/silt socks and shall be installed on all slopes and down gradient locations of the pad and topsoil pile areas as erosion and sediment controlling BMPs;
- c. Wetland #1 shall have a 32” compost filter sock backed by super silt fence installed adjacent to the wetland;
- 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 25th day of September, 2015.

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

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: See Section 4 Appendix

Well Operator: EQT Production Company 120 Professional Place, Building II - Bridgeport, WV 26330

Well Number: See Section 4 Appendix for complete well list Well Pad Name: Yurigan Pad

County, District, Quadrangle of Well Location: Tyler County, Ellsworth District; Shirley, West Virginia USGS 7.5' quadrangle

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.

08/11/2017

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: _____

Operator's Well Number: See Section 4 Appendix

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.**

See Section 1 of attachment and Section 1 appendix.

- 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

See Section 2 of attachment.

08/11/2017

11/3/14

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.**

See Section 3 of Attachment and Section 4 appendix.

- 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.

See Section 2-4 of attachment and Section 2 and 4 appendices.

08/11/2017

**West Virginia Department of Environmental Protection
Wetland and Perennial Stream Waiver Request**

**Yurigan Pad
Tyler County, West Virginia**

Prepared for:

**EQT Production Company
Attn: Cory Chalmers and Vicki Roark
120 Professional Place, Building II
Bridgeport, WV 26330
Direct: 304.848.0061**

Prepared by:

***Environment & Archaeology, LLC*
998 East Ridge Drive Suite M/P
Lebanon, Ohio 45036**

February 2017

08/11/2017

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Section 4 – Vicinity Map; Location Map; List of Wells; Engineering Drawings; Waterbody Figure; Impact Reduction Map; Well Location Map

EXECUTIVE SUMMARY

EQT Production Company (EQT) proposes to construct the Yurigan Pad located on EQT property within the Ellsworth District, Tyler County, West Virginia. The proposed Yurigan Pad is part of a large natural gas development area within Tyler County. The well pad will be used as a platform to extract natural gas from the Marcellus and Utica shale formations, consisting of the construction of a 6.53 acre well pad and approximately 1,200 feet of access road. The total impacted area is 15.9 acres. EQT will use cut and fill construction techniques to construct the well pad, and the entire site will be constructed with balanced earthwork. No fill material is expected to be imported during construction, with the exception of an aggregate to provide a durable surface.

The Wetland Waiver Request is being submitted because one (1) emergent wetland (Wetland 1) is located within 100 feet of the pad's limit of disturbance (LOD). One (1) additional emergent wetland (Wetland 2), is completely contained within the LOD and its full acreage will be impacted, therefore, a wetland waiver for Wetland 2 is not being submitted. A Pre-construction Notification for NWP 39 was submitted to the Huntington District USACE for the proposed impacts to Wetland 2; NWP 39 authorization was obtained April 21, 2015. The April 21, 2015 NWP 39 authorization was for Statoil's ownership and design of the Yurigan Pad. Due to the change in design plan and ownership, a new Pre-construction Notification for NWP 39 will be submitted the Huntington District USACE in February 2017 for the Yurigan Pad .

The well pad was shifted, downsized and rotated to avoid encroachment to the identified wetlands. Disturbance to Wetland 2 was still unavoidable, with the impact to Wetland 1 being avoided. However, a wetland waiver request is required due to its location within 100 feet of the well pad location. Additional details are provided in the following Alternatives Analysis and the exhibits of the Wetland Waiver Request.

SECTION 1 – PROJECT NARRATIVE

1.0 Introduction

Larson Design Group and *Environment & Archaeology, LLC* completed a wetland and stream investigation for the proposed Yurigan Pad in Tyler County, West Virginia to ensure that the construction activities of the project would not encroach upon any wetlands. A summary of their findings is below.

This report reflects the professional opinion of *Larson Design Group* and *Environment & Archaeology, LLC*. Formal determination of jurisdiction regarding Waters of the U.S can only be determined by the USACE and with the submittal of a jurisdictional determination request submitted by EQT. Please be advised that the West Virginia Department of Environmental Protection and the United States Army Corps of Engineers have regulatory authority over all wetlands. Authorization must be obtained from these agencies prior to any disturbance.

1.1 Methodology and Field Personnel

Larson Design Group and *Environment & Archaeology, LLC* utilized the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Eastern Mountains and Piedmont Regional Supplement (U.S. Army Corps of Engineers 2012) during the wetland and stream delineations for the proposed Yurigan Pad on April 16, 2014 and September 29, 2016. This methodology calls for a step-by-step approach to the delineation, which identifies the presence or absence of three factors: hydrophytic vegetation, hydric soils, and wetland hydrology. Each factor must be present if a location is to be considered a wetland. Prior to visiting the site, relevant resource information on the proposed project area was reviewed to determine the potential presence of wetlands, including: U.S. Geological Survey 7.5' topographic quadrangle maps, U.S. Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS) soil surveys, and National Wetlands Inventory Maps.

1.2 Location

The Yurigan Pad is located north of Kingsley Ridge Road/Gorrells Run Road (County Road 34), east of County Road 3/8 in Tyler County, West Virginia at the following coordinates: 39.49862 N, 80.77871 W. The well pad site will be accessed by one access road which will extend off of Kingsley Ridge Road/Gorrells Run Road (County Road 34). The access road will proceed north and tie into the southeast corner of the proposed pad.

1.3 Site Description

The proposed disturbance area of the Well Pad encompasses 15.9 acres. In addition to the proposed disturbance area, habitats were assessed within a 100-foot buffer which surrounded the proposed well pad Limits of Disturbance (LOD) and within a 50-foot survey buffer surrounding the access road LOD.

Habitat encountered along the proposed access road consists primarily of mixed hardwood forest. The forested habitat in this area contains an understory that is comprised mainly of shrubs with only sparse herbaceous ground cover. The majority of the proposed well pad has been situated within a large open herbaceous field. Portions of the pad will extend into forested habitats which lie along the sides of the ridge top. Forested areas found along the border of the pad contain a dense understory due to previous logging, while those areas beyond the proposed limit of disturbance are fairly open.

1.4 Natural Resource Conservation Service (NRCS) Soil Survey

Based on NRCS mapping, there were four (4) soils identified within the project area, which include: Gilpin-Upshur complex (GpC), Gilpin-Upshur complex (GpD), Gilpin-Upshur complex (GpE), and Gilpin-Upshur complex (GpF). GpC, GpD, GpE and GpF are considered non-hydric. Dominant soil Munsell colors observed across upland habitats ranged from 10YR-4/3 to 10YR-4/4. Soils within and surrounding the investigative areas consisted primarily of clay loam texture.

2.0 Findings

2.1 Identified Wetlands

Wetland 1 and 2 are both emergent wetland systems that have formed due to the construction and use of an existing two-track forest trail. These two wetlands are located within the trail and have formed where the road was cut into the sloping hillside. Soils within both of the wetlands have been previously disturbed and highly compacted through the use and installation of the trail. These wetlands are summarized in Table 1.

Table 1. Summary of wetland features identified within the Yurigan Pad Project in Tyler County, West Virginia.

Waterbody #	HGM Code	USGS/NWI Identified ¹	Provisional Hydrological Status	Soil Color/Type	Vegetation Present	Acreage in LOD	Acreage in 100' Buffer
Wetlands							
No PSS or PFO Wetlands Identified							
W-1	Palustrine	No	Jurisdictional	Matrix: 10YR4/2 to 10YR5/3 Redox: 10YR5/6 and 10YR5/8	Path Rush, Soft Rush, Woolgrass, Sedge species, Aster species	--	0.014
W-2		No				0.011	--
Wetlands Total					PEM	0.011 acres	0.014 acres
					PSS	N/A	N/A
					PFO	N/A	N/A

1. Those waterbodies that possess a hydrologic connection to a TNW would be jurisdictional to the USACE. Final jurisdiction to be determined by USACE.

2.2 Identified Streams

The proposed Project LOD and its defined 100-foot well pad buffer and 50-foot access road buffer did not contain perennial streams. One stream was identified within the area of investigation, which originated just east of the southern portion of the access road LOD. This stream is summarized in Table 2.

Table 2. Summary of stream features identified within the Yurigan Pad Project in Tyler County, West Virginia.

Waterbody #	HGM Code	USGS/NWI Identified ¹	Provisional Hydrological Status	Dimensions (ft) OHWM		Substrate ² Present	Linear Footage within Limits of Disturbance
				Width	Depth		
Streams							
No Perennial Streams Identified							
S-3	Riverine	Unmapped <u>Intermittent</u> Tributary to Elk Fork via Laura Run	Jurisdictional	0.5 to 1.5	0.2 to 0.5	C, S, G, LL	28 feet (culvert replacement)
Streams Total						Ephemeral	N/A
						Intermittent	21 feet
						Perennial	N/A

1. Those waterbodies that possess a hydrologic connection to a TNW would be jurisdictional to the USACE. Final jurisdiction to be determined by USACE.
2. Substrate types: B=Boulder Slabs, Bo=Boulder, Be=Bedrock, Co=Cobble, G=Gravel, Sa=Sand, S=Silt, V=Vegetation, C=Clay, M=Muck, A=Artificial, LL = Leaf Litter

SECTION 2 – ALTERNATIVE ANALYSIS

1.0 Desktop Review & Analysis

Prior to the selection of the proposed pad site, a desktop review was completed to evaluate potential site constraints which could prohibit development of the parcel as a potential well site. During the desktop review process, the following factors were evaluated in determining if the proposed Well Pad would be a viable location:

- **Site Accessibility** – During this process, aerial and street mapping were reviewed to determine whether the site could be accessible and what routes would need to be taken. Based on initial desktop review, it was determined that adequate access was available to the proposed Well Pad location and that minimal modifications to existing county/state roads would be required.
- **Property Information** – A GIS review was completed to obtain parcel data to allow for property owners to be contacted.
- **Public Constraints** – A desktop review of aerial and street mapping was completed to determine if the project site was found in close proximity to any known cemeteries, schools, churches, or other public amenities. Based on this review, none of these resources were found in close proximity to the project site.
- **Existing Utility Corridors** – During the desktop review, an assessment of the site was completed to identify any known public utilities which would need to be avoided during construction. Based on initial review, no visible public utilities were observed within the project area.
- **Constructability** – Existing topographic data was reviewed to determine the feasibility of pad site construction.
- **Environmental Concerns** – Prior to the selection of this pad site, a cursory review was completed to identify if any known potential environmental concerns were present on the project site. Existing mapping, WVDNR database records, state and federal stream listings, and National Wetlands Inventory Mapping was reviewed to determine if any known potential concerns were present. Based on review of this mapping, no apparent environmental concerns were identified.
- **Safety Concerns** – A review of aerial and street mapping was completed to identify the presence of residential dwellings or other public amenities which could pose localized safety

concerns. Additional review of topographic mapping was completed to determine if pad construction could be completed under safe working conditions. Based on the initial cursory review, it was determined that the location of this pad site may be a viable option.

2.0 Environmental Scouting

After reviewing all of the factors presented above, the pad site was determined to be a potentially viable location. Once the preferred pad location was determined by the property owner, an environmental review of the project site was completed by Larson Design Group Biologists and *Environment & Archaeology, LLC*. During the environmental review, all wetlands and streams were identified and located within the designated review area of the potential pad site.

In addition to wetlands, the project site was examined for constructability concerns. Constructability factors considered were: existing slopes, presence of existing slips or other features that may present pad stability concerns, soils, tree cover, equipment access, and safety. Safety was a major focus in the selection of the proposed pad site and access road. Other documentation collected during pad scouting and environmental review consisted of site topography, existing utilities, private or public water supplies, existing access roads, fence lines, and other notable features.

3.0 Alternatives Considered

Several other alternative options were considered during pad site selection. These options were as follows:

- **No Action Alternative**

This alternative was considered to show the future without the project, but is ruled out as not viable. EQT has obtained leaseholds with the property owner for the area of Well Pad development. This area is considered quite favorable for natural gas development.

- **Pad Alternative # 1**

Original location of pad site was to occur in the far eastern field as shown on the attached map exhibit dated 1-10-14, located in Section 2 Attachments; this design option was considered when the Yurigan Pad location was under ownership of Statoil USA Onshore Properties. The pad was irregularly shaped and occupied an area of 109,500 square feet. At this point in the design for the project, a separate facilities pad was included which was located to the west of the well pad along the ridge. The facilities pad was 150 x 200 feet in size. This

option was not considered a viable option based on several factors: (1) the pad design was small and would require considerably more earthwork than what would be desired; (2) construction of the pad would result in larger, less safe fill embankments; (3) smaller pad size could compromise safety for on-site personnel during drilling and/or completions; (4) pad site was located away from desired optimal development locations.

- Pad Alternative # 2

A second location for the pad site was chosen within the vicinity of its current location, in an open field to the west. The project was combined into a single well pad of irregular shape and occupied an area of approximately 158,000 square feet. The location of this site is shown on the attached map exhibit dated 2-6-14, located in Section 2 Attachments, and is also an alternative design when the Yurigan Pad location was under ownership of Statoil USA Onshore Properties. This design was abandoned as proposed pad grading would have resulted in impacts to an emergent wetland.

- Pad Alternative # 3

The current location of the pad site is found in the same area as Pad Alternative # 2. However, in an effort to avoid wetland impacts, the pad site was rotated and downsized. The total area occupied by the proposed pad location is approximately 155,800 square feet. This proposed alternative is depicted on the attached map titled Impact Reduction Exhibit, located in Section 4 Attachments.

Further options were considered at the current pad location in an effort avoid/minimize environmental impacts. Options considered are listed below:

1.) Shifting the pad location to the south was not a viable option due to the proximity of an adjacent landowner's house. The pad site location was chosen to maintain an appropriate distance away from this house. Additional limiting factors to the south were steep slopes.

2.) Moving the pad to the southwest and west is not a viable option due to steep slopes which would require a considerable amount of fill and would present some concerns over pad stability. In addition to terrain, pad fills would encroach upon an intermittent stream.

3.) Shifting the pad location northwest was not an option due to steep terrain. Several slips were observed within this area which would have presented pad stability concerns. Moving the pad would also result in a portion of the pad being placed on a different property owner's land.

- 4.) Shifting the pad location to the north would place the pad on a different property owner's land.
- 5.) Possible pad shifts to the east and southeast were not considered due to steep terrain and areas of slope instability. Shifting the pad location in this direction would also result in impacts to an emergent wetland habitat which is currently avoided by pad design.

4.0 Conclusions

The final well pad location was chosen after all the above factors were taken into consideration; it will avoid impacts to an emergent wetland (Wetland #1), but the 100-foot buffer cannot be maintained. The proposed location of the well pad will result in the encroachment of one emergent wetland habitat (Wetland #2), but will avoid impacts to other aquatic resources which were identified within the vicinity of the project area. The final site design which has been selected has gone through an intensive process where several other alternative locations were evaluated. Several re-designs of the pad have occurred to provide the least amount of impacts to aquatic resources while still maintaining a safe, viable pad site.

Due to existing terrain and other site constraints, no other alternatives were present which would have allowed for avoidance of all aquatic resources while still maintaining the desired goals and objectives of the project.

SECTION 3 – SUMMARY OF EROSION & SEDIMENTATION MEASURES

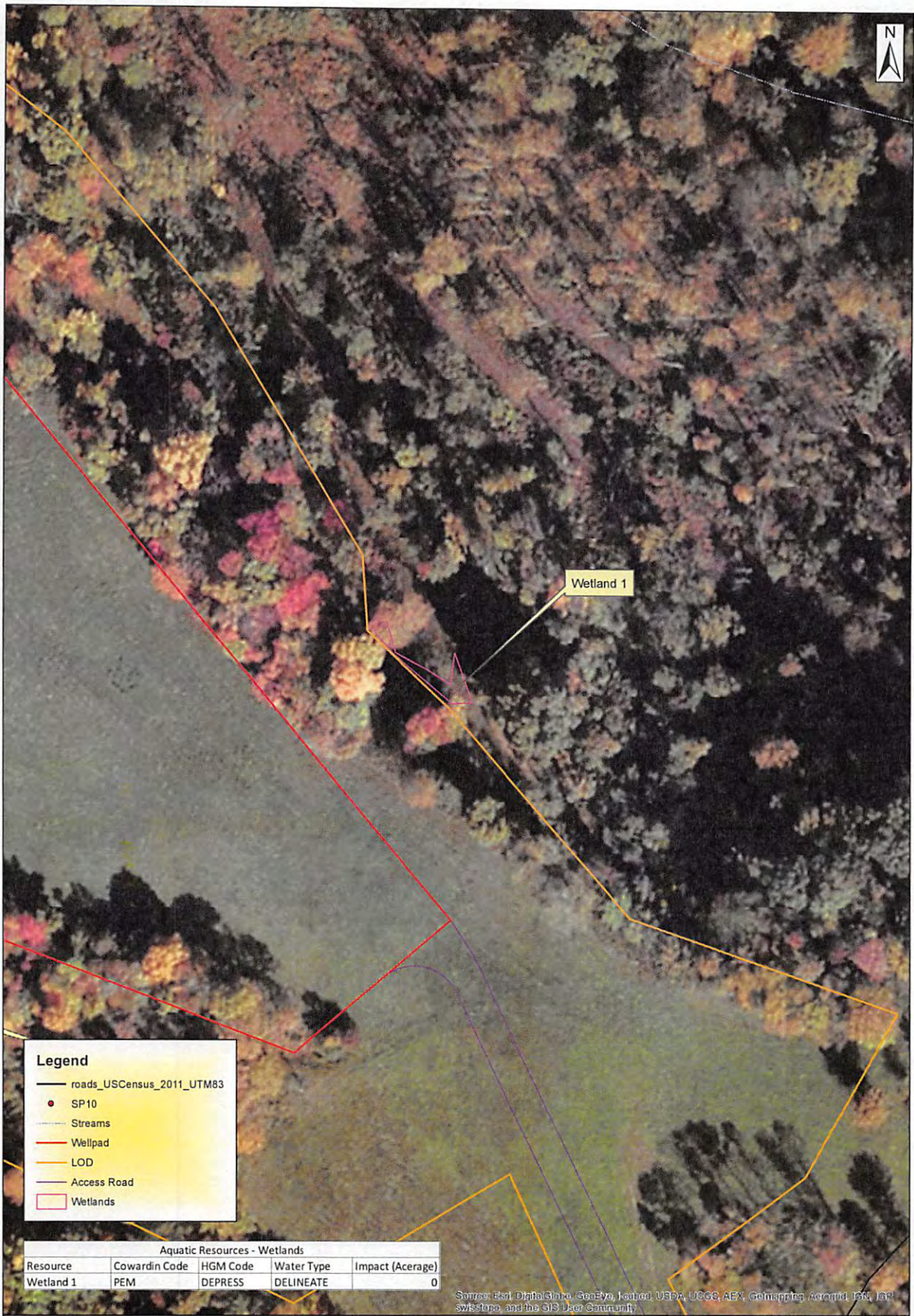
The construction sequence for wetland protection for the Yurigan Pad has been listed below.

- Install orange construction fencing;
- Install triple stacked compost sock;
- Commence construction activities associated with the Yurigan Pad;
- Monitor Wetland and E&S BMP's daily during construction to confirm proper operation and maintenance;
 - Repair/replace BMP's immediately as necessary;
- Upon reaching final grade, immediately provide seed, mulch, and/or erosion control matting on disturbed areas;
- Monitor and maintain E&S BMP's until site is stabilized with permanent vegetative cover; and
- Maintain orange construction fencing until well site reclamation activities are complete.

SECTION 4 – SITE SPECIFIC DESIGN PLAN SUMMARY

All mapping, including the ACAD drawing for the proposed Project (prepared and stamped by Larson Design Group on January 24, 2017), relating to the Yurigan Pad can be found within the Section 4 Attachments.

**Appendix – Section 1
Waterbody Figures;
Routine Wetland Delineation Forms;
Site Photolog
Wetland Function-Value Evaluation Form**



Legend

- roads_USCensus_2011_UTM83
- SP10
- Streams
- Wellpad
- LOD
- Access Road
- Wetlands

Aquatic Resources - Wetlands				
Resource	Cowardin Code	HGM Code	Water Type	Impact (Acreage)
Wetland 1	PEM	DEPRESS	DELINEATE	0

Source: Esri DigitalGlobe, GeoEye, IGN, GeoEye, Intermap, USDA, USGS, AEX, Geomatics, AeroGRID, IGN, IGP, Swisstopo, and the GIS User Community.



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Yurigan (WV-6) Well Site

Wetland Exhibit

Tyler County, PA

Date	6/2/2014
Designer	JPY
Project No.	8790-003-6
Scale	1 inch = 75 feet

08/11/2017



Legend

- roads_USCensus_2011_UTM83
- SP10
- Streams
- Wellpad
- LOD
- Access Road
- Wetlands

Aquatic Resources - Wetlands				
Resource	Cowardin Code	HGM Code	Water Type	Impact (Acage)
Wetland 2	PEM	DEPRESS	DELINEATE	0.0109

Source: Esri, DigitalGlobe, GeoEye, Earthstar (USA), USGS, AeroGRID, IGN, JPL, Swire, and the GIS User Community



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Yurigan (WV-6) Well Site

Wetland Exhibit

Tyler County, PA

Date	5/29/2014
Designer	JPY
Project No.	8790-003-6
Scale	1 inch = 75 feet

08/11/2017

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Yurigan (WV-6) Well Pad City/County: Tyler County Sampling Date: 4/16/2014
 Applicant/Owner: Statoil State: WV Sampling Point: SP5
 Investigator(s): James P. Young Section, Township, Range: Middlebourne
 Landform (hillslope, terrace, etc.): Road cut in hillside. Local relief (concave, convex, none): _____ Slope (%): 0-2%
 Subregion (LRR or MLRA): LRR N Lat: 39.498544 Long: -80.777601 Datum: NAD83
 Soil Map Unit Name: Gilpin-Upshur complex (GpD) NWI classification: PEM1
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil , or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: This data sheet refers to a sample taken from within Wetland 1. This area is positioned within an access road that was cut in along the upper portions of the hillside. By cutting into the hillside seepage of shallow groundwater and runoff discharges at this point and forms the wetland. This then drains off the hillside.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) ___ Aquatic Fauna (B13) Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>3"</u> (includes capillary fringe)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology indicators observed within and surrounding this sample location consisted of Saturation (A3), Water-stained Leaves (B7), Oxidized Rhizospheres on Living Plants (C3), Geomorphic Position (D2), and Shallow Aquitard (D3) consisting of rock.	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: SP5

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30 Feet</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
1.					
2.					
3.					
4.					
5.					
6.					
_____ = Total Cover					
Sapling Stratum (Plot size: <u>15 Feet</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = FACW species _____ x 2 = FAC species _____ x 3 = FACU species _____ x 4 = UPL species _____ x 5 = Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
1.					
2.					
3.					
4.					
5.					
6.					
_____ = Total Cover					
Shrub Stratum (Plot size: <u>10 Feet</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
1.					
2.					
3.					
4.					
5.					
6.					
_____ = Total Cover					
Herb Stratum (Plot size: <u>3 Feet</u>)				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.	
1.	<u>Juncus effusus</u>	<u>40%</u>	<u>YES</u>		<u>FACW</u>
2.	<u>Juncus tenuis</u>	<u>8%</u>	<u>NO</u>		<u>FAC</u>
3.	<u>Carex species</u>	<u>12%</u>	<u>YES</u>		<u>FAC-Gr</u>
4.	<u>Aster species</u>	<u>1%</u>	<u>NO</u>		<u>N/A</u>
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
_____ = Total Cover					
Woody Vine Stratum (Plot size: <u>10 Feet</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
1.					
2.					
3.					
4.					
_____ = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation within and surrounding this sample location met the criteria to be considered hydric. There were areas throughout this wetland that had minimal vegetation and covered in water-stained leaves.					

SOIL

Sampling Point: **SP5**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (molst)	%	Color (molst)	%	Type ¹	Loc ²		
0-4"	10YR-4/2	82%	10YR-5/6	8%	C	M, PL	clay loam	
			10YR-5/8	10%	C	M, PL	clay loam	
5-12"	5YR-4/6	100%	N/A	N/A	N/A	N/A	clay	Rock below

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

- Hydric Soil Indicators:**
- | | | |
|--|---|---|
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> Indicators for Problematic Hydric Soils ³ : |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input checked="" type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input checked="" type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | |
| | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | |

Restrictive Layer (if observed): Shallow rock was observed below the soil at approximately 12 inches.
 Type: _____
 Depth (Inches): _____

Hydric Soil Present? Yes No

Remarks: Soils observed within and surrounding this immediate area of the sample location met the criteria to be considered hydric. This is considered a wetland area.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Yurigan (WV-6) Well Pad City/County: Tyler County Sampling Date: 4/16/2014
 Applicant/Owner: Statoil State: WV Sampling Point: SP10
 Investigator(s): James P. Young Section, Township, Range: Middlebourne
 Landform (hillslope, terrace, etc.): old trail along hillside Local relief (concave, convex, none): Concave Slope (%): 0-3%
 Subregion (LRR or MLRA): LRR N Lat: 39.497918 Long: -80.778449 Datum: NAD83
 Soil Map Unit Name: Gilpin-Upshur complex (GpD) NWI classification: PEM1
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: This data sheet refers to a sample point taken within Wetland 2. This wetland is positioned within and along an old access trail that travels was cut into the sloping hillside.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4"</u> (Includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology indicators observed within and surrounding this sample location consisted of saturation (A3), water-stained leaves (B9), oxidized rhizospheres on living roots (C3), thin muck surface (C7), and observed drainage patterns (B10). This area is considered to be a wetland.	

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: SP10

<u>Tree Stratum</u> (Plot size: <u>30 Feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = FACW species _____ x 2 = FAC species _____ x 3 = FACU species _____ x 4 = UPL species _____ x 5 = Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
<u>Sapling Stratum</u> (Plot size: <u>15 Feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
<u>Shrub Stratum</u> (Plot size: <u>10 Feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.	
<u>Herb Stratum</u> (Plot size: <u>3 Feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Juncus effusus</u>	<u>25%</u>	<u>YES</u>	<u>FACW</u>		
2. <u>Juncus tenuis</u>	<u>12%</u>	<u>NO</u>	<u>FAC</u>		
3. <u>Scirpus atrovirens</u>	<u>7%</u>	<u>NO</u>	<u>OBL</u>		
4. <u>Carex species</u>	<u>35%</u>	<u>YES</u>	<u>FAC-G5</u>		
5. <u>Andropogon virginicus</u>	<u>3%</u>	<u>NO</u>	<u>FACU</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
<u>82%</u> = Total Cover					
<u>Woody Vine Stratum</u> (Plot size: <u>10 Feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status		
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation observed within this sample location met the requirements to be considered hydric. This is a wetland sample.					

SOIL

Sampling Point: SP10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1"	N/A	N/A	N/A	N/A	N/A	N/A	muck layer	
2-12"	10YR-4/2	30%	N/A	N/A	C	M	clay loam	
	10YR-5/3	40%	N/A	N/A	C	M	clay loam	
	10YR-5/8	30%	N/A	N/A	C	M, PL	clay loam	Rock Below

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input checked="" type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input checked="" type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Rock was observed below 12 Inches

Type: _____


Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: Soils observed within and surrounding the immediate area of this sample location met the criteria to be considered hydric. Soils within this area have been previously disturbed.

PHOTOGRAPHIC LOG

	PROJECT NAME: Yurigan (WV-6) Well Site	
	PROJECT NUMBER: 8790-003-6	PHASE:
PHOTO #: 1		
DATE: 6/25/2014		
DIRECTION: Northeast		
PHOTO DESCRIPTION: Looking northeast along access road. Stream 3 originates from culvert located near the edge of the road.		

PHOTO #: 2	
DATE: 6/25/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast along access road which leads to the well site. Expansion and modifications to this access road will be required to allow for large truck traffic. Modifications to this road will result in impacts to Stream 3.	

PHOTOGRAPHIC LOG



PHOTO #: 3	
DATE: 6/25/2014	
DIRECTION: West	
PHOTO DESCRIPTION: Looking west at headwaters of Stream 3.	

PHOTO #: 4	
DATE: 04/16/2014	
DIRECTION: West	
PHOTO DESCRIPTION: Looking west along a portion of Stream 3 which occurs east of the project limit of disturbance.	

PHOTOGRAPHIC LOG



PHOTO #: 5	
DATE: 04/16/2014	
DIRECTION: Northwest	
PHOTO DESCRIPTION: Looking northwest across the ridge in which the Yurigan Well Site is proposed to be placed along. This is taken from within the access road as it traverses to the pad.	

PHOTO #: 6	
DATE: 04/16/2014	
DIRECTION: South	
PHOTO DESCRIPTION: Looking south across a section of the proposed access road.	

PHOTOGRAPHIC LOG




PHOTO #: 7	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast along an existing trail that runs along the surrounding hillside of the proposed pad location. This image is from the northern edge of the area of investigation to the east of Wetland 1.	

PHOTO #: 8	
DATE: 04/16/2014	
DIRECTION: Northwest	
PHOTO DESCRIPTION: Looking northwest along the existing trail that travels along the northern extent of the proposed well site.	

PHOTOGRAPHIC LOG

PHOTO #: 9	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast across a portion of Wetland 1. This wetland is located in the existing trail that runs along the northern extent of the proposed well site.	

PHOTO #: 10	
DATE: 04/16/2014	
DIRECTION: South	
PHOTO DESCRIPTION: Looking south across the proposed well site from the northern most corner of the well pad.	

PHOTOGRAPHIC LOG



PHOTO #: 11	
DATE: 04/16/2014	
DIRECTION: Southwest	
PHOTO DESCRIPTION: Looking southwest from the northern most corner of the proposed well pad. This image is looking along the existing tree/field line along the northwest portion of the area of investigation.	

PHOTO #: 12	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast along the southwest edge of the proposed well pad along the field/forest boundary.	

PHOTOGRAPHIC LOG



PHOTO #: 13	
DATE: 04/16/2014	
DIRECTION: North	
PHOTO DESCRIPTION: Looking north along the northwest most extent of the field in which the proposed well pad is to be located.	

PHOTO #: 14	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast along an existing trail that traverses the surrounding area along the hillside that surrounds the proposed well pad.	

PHOTOGRAPHIC LOG



PHOTO #: 15	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast along the hillside of the southwest edge of the proposed well pad.	

PHOTO #: 16	
DATE: 04/16/2014	
DIRECTION: East	
PHOTO DESCRIPTION: Looking east along the existing trail that runs along the southern edge of the proposed well pad. Wetland 2 is located in the distance of this image.	

PHOTOGRAPHIC LOG



PHOTO #: 17	
DATE: 04/16/2014	
DIRECTION: South	
PHOTO DESCRIPTION: Looking south along a portion of the western most extent of Wetland 2 and where it drains and directs flow down the sloping hillside.	

PHOTO #: 18	
DATE: 04/16/2014	
DIRECTION: East	
PHOTO DESCRIPTION: Looking east along the existing trail and across a portion of Wetland 2.	

PHOTOGRAPHIC LOG



PHOTO #: 19	
DATE: 04/16/2014	
DIRECTION: Southeast	
PHOTO DESCRIPTION: Looking southeast across a portion the proposed well pad and to the point where the access road ties into the well pad.	

PHOTO #: 20	
DATE: 04/16/2014	
DIRECTION: Northwest	
PHOTO DESCRIPTION: Looking northwest across the proposed well pad and its approximate central point along the top of the hill in this image.	

PHOTOGRAPHIC LOG



PHOTO #: 21	
DATE: 04/16/2014	
DIRECTION: South	
PHOTO DESCRIPTION: Looking south from within the southern portion of the proposed well pad towards the hillside and Wetland 2 below.	

PHOTO #: 22	
DATE: 04/16/2014	
DIRECTION: South	
PHOTO DESCRIPTION: Looking south along the proposed access road near where it exits the proposed well pad.	

Wetland Function -Value Evaluation Form

Total area of wetland 0.0109 Acres Human made? YES Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Access Trail / Forested Area Distance to nearest roadway or other development >100 Feet

Dominant wetland systems present Palustrine Emergent(PEM1) Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Upper Hillslope
Unnamed Tributary to Elk Creek













How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 2
 Latitude _____
 Longitude _____
 Prepared by: James Young
 Date 16-Apr-2014

Wetland Impact:
 Type Permanent Area 0.0109 Acres
 Evaluation based on:
 Office X Field X

Corps manual wetland delineation completed? Yes

Deer

Function/Value	Suitability		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
 Groundwater Recharge/Discharge		X	10, 13	X	Wetland receives a large amount of runoff and sheet flow, with input of seepage from toe slope of road cut into hillside
 Floodflow Alteration		X	2, 3, 9	X	Wetland is disturbed and small in size.
 Fish and Shellfish Habitat		X	N/A		No open water sources present in wetland that would support fish or shellfish
 Sediment/Toxicant Retention	X		4		Ability to provide sediment retention is limited by vegetative density.
 Nutrient Removal		X	10		Limited by minimal vegetative cover, small size, and attenuation rate
 Production Export		X	10		The wetland is small and has limited export, but does drain to lower sloping hillside
 Sediment/Shoreline Stabilization		X	N/A		
 Wildlife Habitat	X		8, 16		This is a low diversity wetland, but has deer prints throughout it. Minimal wildlife habitat is present, limited by size and structure.
 Recreation		X	N/A		No recreational opportunities are present within this wetland
 Educational/Scientific Value		X	N/A		Wetland is located on private property
 Uniqueness/Heritage		X	N/A		The wetland has a low level diversity
 Visual Quality/Aesthetics		X	N/A		Wetland has minimal density, small size, and impacted
ES ES Endangered Species Habitat		X	N/A		Threatened and endangered species were not observed.
Other					

Notes:

Wetland 1 is a small low diverse wetland that has minimal functions and values. This wetland has been created by the installation of the access trail and is similar to Wetland 1 in all aspects.

*Refer to backup list of numbered considerations.

Wetland Function -Value Evaluation Form

Total area of wetland	<u>10,113 sq. ft.</u>	Human made? <u>YES</u>	Is wetland part of a wildlife corridor? <u>No</u>	or a "habitat island"? <u>No</u>	Wetland I.D. <u>Wetland 1</u> Latitude _____ Longitude _____ Prepared by: <u>James Young</u> Date <u>16-Apr-2014</u>
Adjacent land use	<u>Access Trail / Forest</u>	Distance to nearest roadway or other development	<u>>100 Feet</u>		Wetland Impact: Type <u>None</u> Area <u>10,113ft.</u>
Dominant wetland systems present	<u>Palustrine Emergent (PEM1)</u>	Contiguous undeveloped buffer zone present	<u>No</u>		Evaluation based on: Office <u>X</u> Field <u>X</u>
Is the wetland a separate hydraulic system?	<u>No</u>	If not, where does the wetland lie in the drainage basin?	<u>Upper Hillslope</u>		Corps manual wetland delineation completed? <u>Yes</u>
How many tributaries contribute to the wetland?	<u>0</u>	Wildlife & vegetation diversity/abundance (see attached list)	<u>Deer</u>		

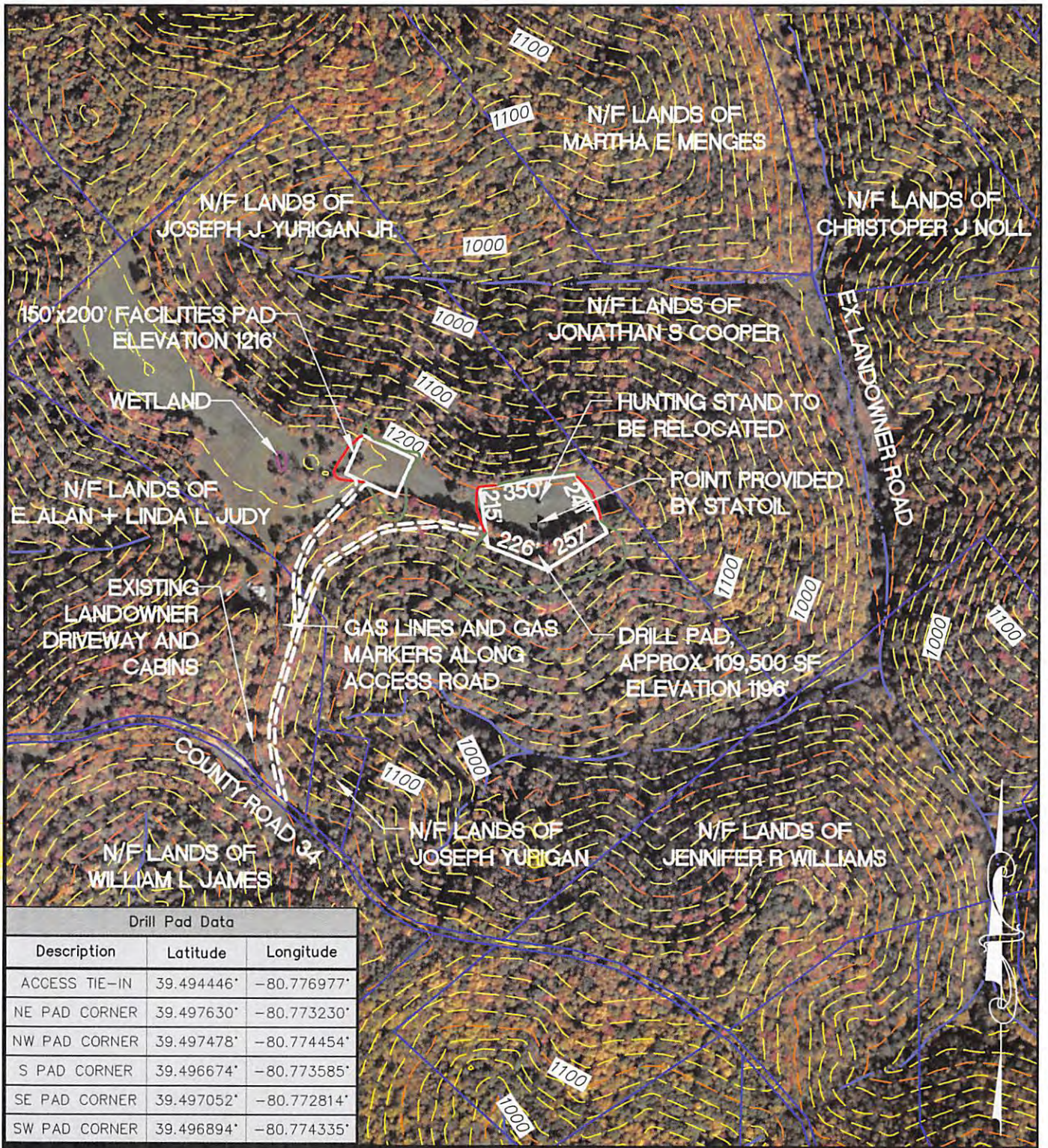
Function/Value	Suitability		Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	10, 13	X	Wetland receives runoff and sheet flow from surrounding hillslope, with input of seepage from toe slope of road cut into hillside. Ground infiltration is limited due to soil compaction.
Floodflow Alteration		X	2, 3, 9	X	Wetland collects runoff and surface flow and can retain some flood water, but very limited due to small size and level of disturbance.
Fish and Shellfish Habitat		X	N/A		No open water sources present in wetland that would support fish or shellfish.
Sediment/Toxicant Retention		X	4		The small wetland size and minimal vegetation in area allows minimal sediment retention.
Nutrient Removal		X	10		Limited by minimal vegetative cover, small size, and attenuation rate.
Production Export		X	10		The wetland is small and has limited export, but does drain to lower sloping hillside.
Sediment/Shoreline Stabilization		X	N/A		
Wildlife Habitat	X		8, 16	X	This is a low diversity wetland, but has deer prints throughout it. Minimal wildlife habitat is present, limited by size and structure.
Recreation		X	N/A		No recreational opportunities are present within this wetland.
Educational/Scientific Value		X	N/A		Wetland is located on private property.
Uniqueness/Heritage		X	N/A		The wetland has a low level diversity.
Visual Quality/Aesthetics		X	N/A		Wetland has minimal density, small size, and impacted.
ES Endangered Species Habitat		X	N/A		Threatened and endangered species were not observed.
Other					

Notes: *Refer to backup list of numbered considerations.
 Wetland 1 is a small man-made wetland system that was created by the installation of an access trail along the sloping hillside. There is limited function and values in this wetland due to its small size, structure, and level of disturbance.

10-113-100

**Appendix - Section 2 –
Prior Design Concept Drawing dated January 10, 2014;
Prior Design Concept Drawing dated February 6, 2014**

08/11/2017



Drill Pad Data

Description	Latitude	Longitude
ACCESS TIE-IN	39.494446°	-80.776977°
NE PAD CORNER	39.497630°	-80.773230°
NW PAD CORNER	39.497478°	-80.774454°
S PAD CORNER	39.496674°	-80.773585°
SE PAD CORNER	39.497052°	-80.772814°
SW PAD CORNER	39.496894°	-80.774335°

NOTE: ALL COORDINATES IN NAD 83. CONTOURS ARE AT 20' INTERVALS AND ARE DERIVED FROM USGS DATA.

RED = CUT
GREEN = FILL

THIS PLAN IS FOR CIVIL CONSTRUCTION PURPOSES ONLY. PROPERTY INFORMATION CONTAINED HEREIN HAS BEEN OBTAINED FROM THE TAX MAPS AND/OR GIS INFORMATION. THE REPRESENTED PARCEL LINES AND/OR LISTED OWNERSHIP HAS NOT BEEN REVIEWED FOR ACCURACY, AND IT MAY NOT BE CURRENT.

DETAILS:
DRILL PAD: IRREGULAR
FACILITIES: 150'x200'
27,800 CY CUT DRILL PAD
5,300 CY CUT FACILITIES
2,080 LF ROAD

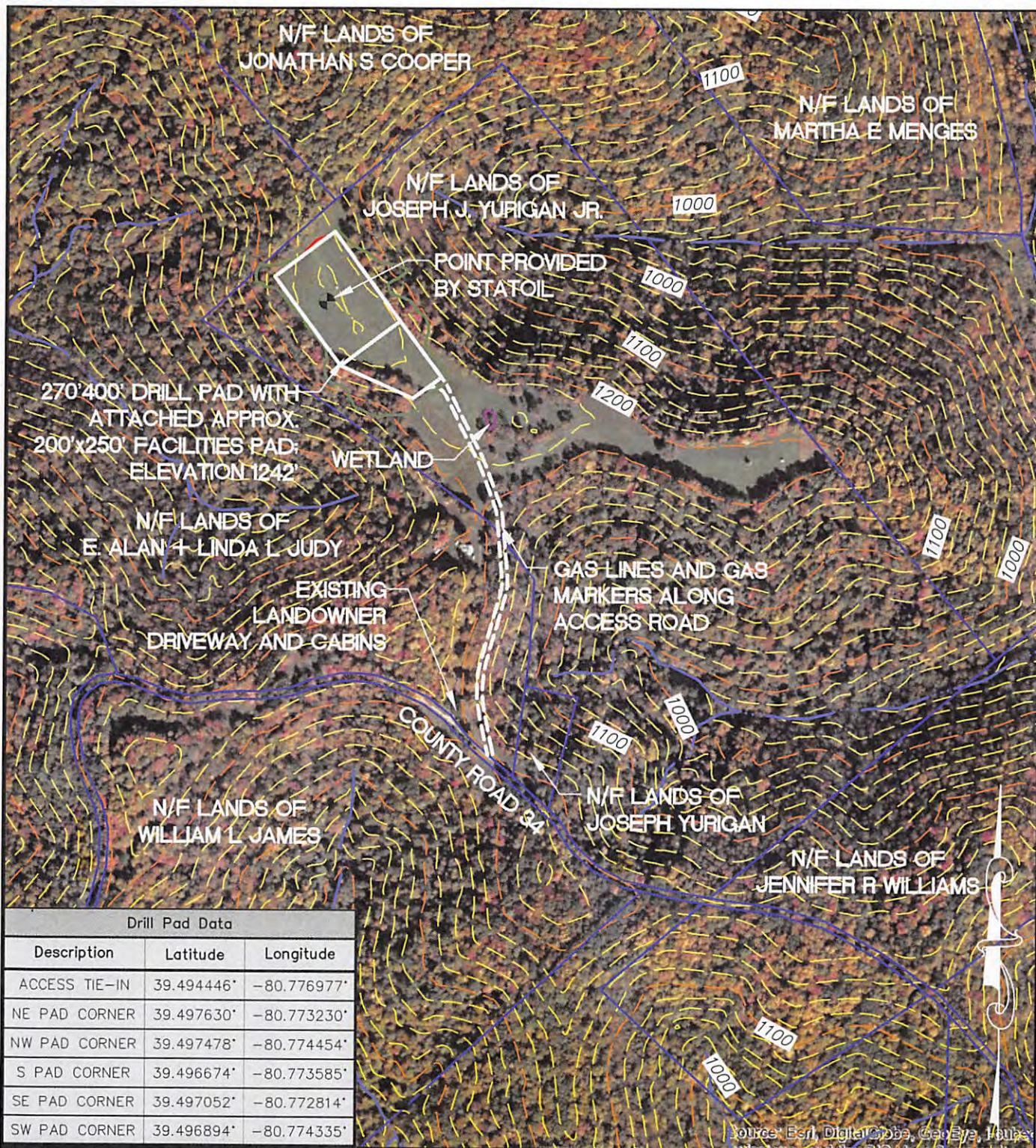
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YURIGAN (WV-6) WELL SITE
ALTERNATE 2 PAD LOCATION
TYLER COUNTY, WEST VIRGINIA



DATE: 1/10/14
SHEET NO.: FC
PROJECT NO.: 8790-003
SCALE: 1" = 500'

08/11/2017



Drill Pad Data		
Description	Latitude	Longitude
ACCESS TIE-IN	39.494446°	-80.776977°
NE PAD CORNER	39.497630°	-80.773230°
NW PAD CORNER	39.497478°	-80.774454°
S PAD CORNER	39.496674°	-80.773585°
SE PAD CORNER	39.497052°	-80.772814°
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DETAILS:
 DRILL PAD: 270'x400'
 FACILITIES: IRREGULAR
 30,000 CY CUT
 1,420 LF ROAD

LDG Architects Engineers Surveyors
 1000 Commerce Park Drive • Suite 201
 Williamsport, PA 17701
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 TOLL FREE 877.323.6603
 FAX 570.323.9902
 www.larsondesigngroup.com

YURIGAN (WV-6) WELL SITE
 FOUR CORNERS MAP
 TYLER COUNTY, WEST VIRGINIA
 FOR


DATE:	2/6/14
SHEET NO.:	FC
PROJECT NO.:	8790-003
SCALE:	1" = 500'

08/11/2017

**Appendix - Section 4 –
Vicinity Map;
Location Map;
List of Wells;
Engineering Drawings;
Waterbody Figure;
Impact Reduction Map;
Well Location Map**

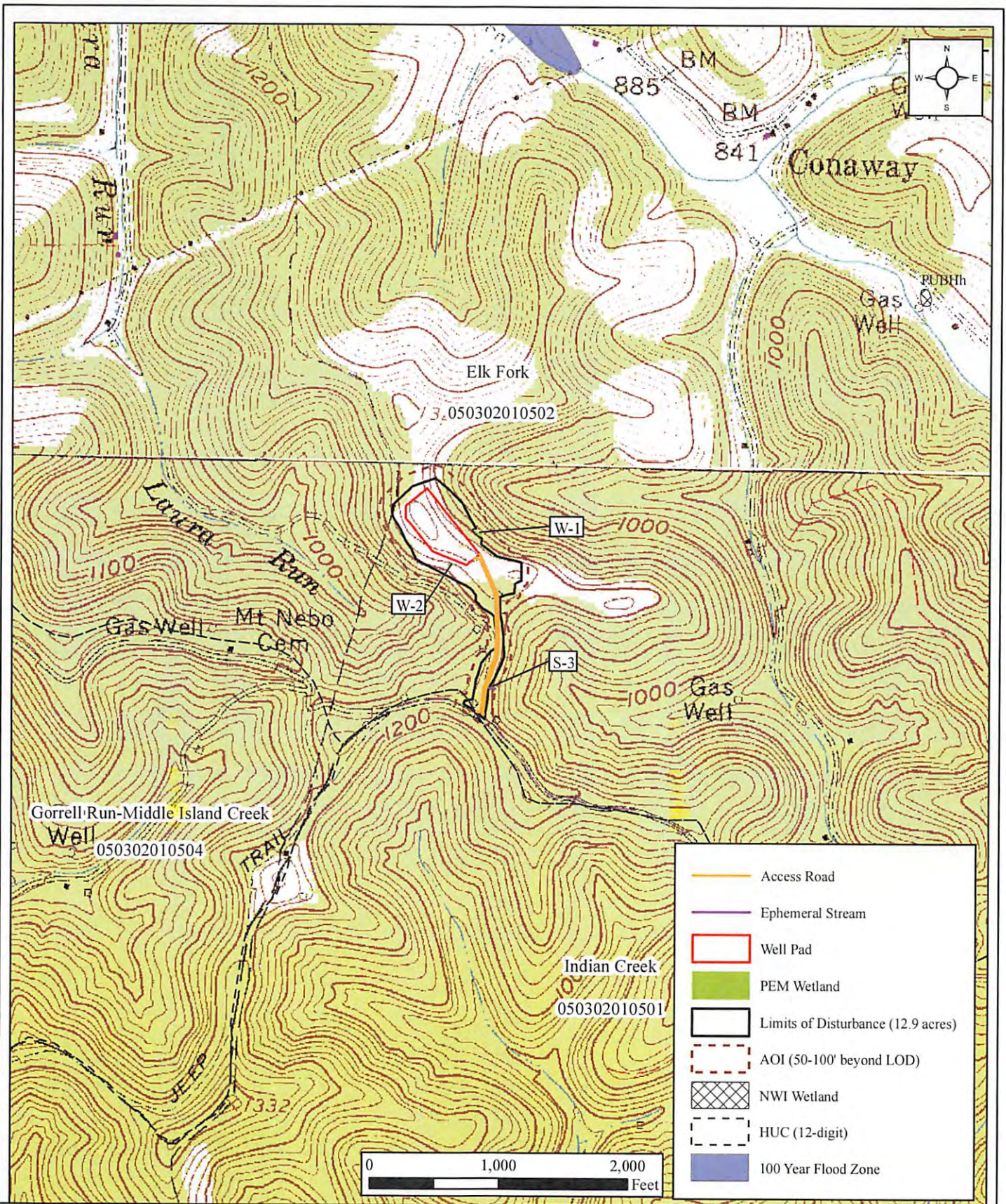
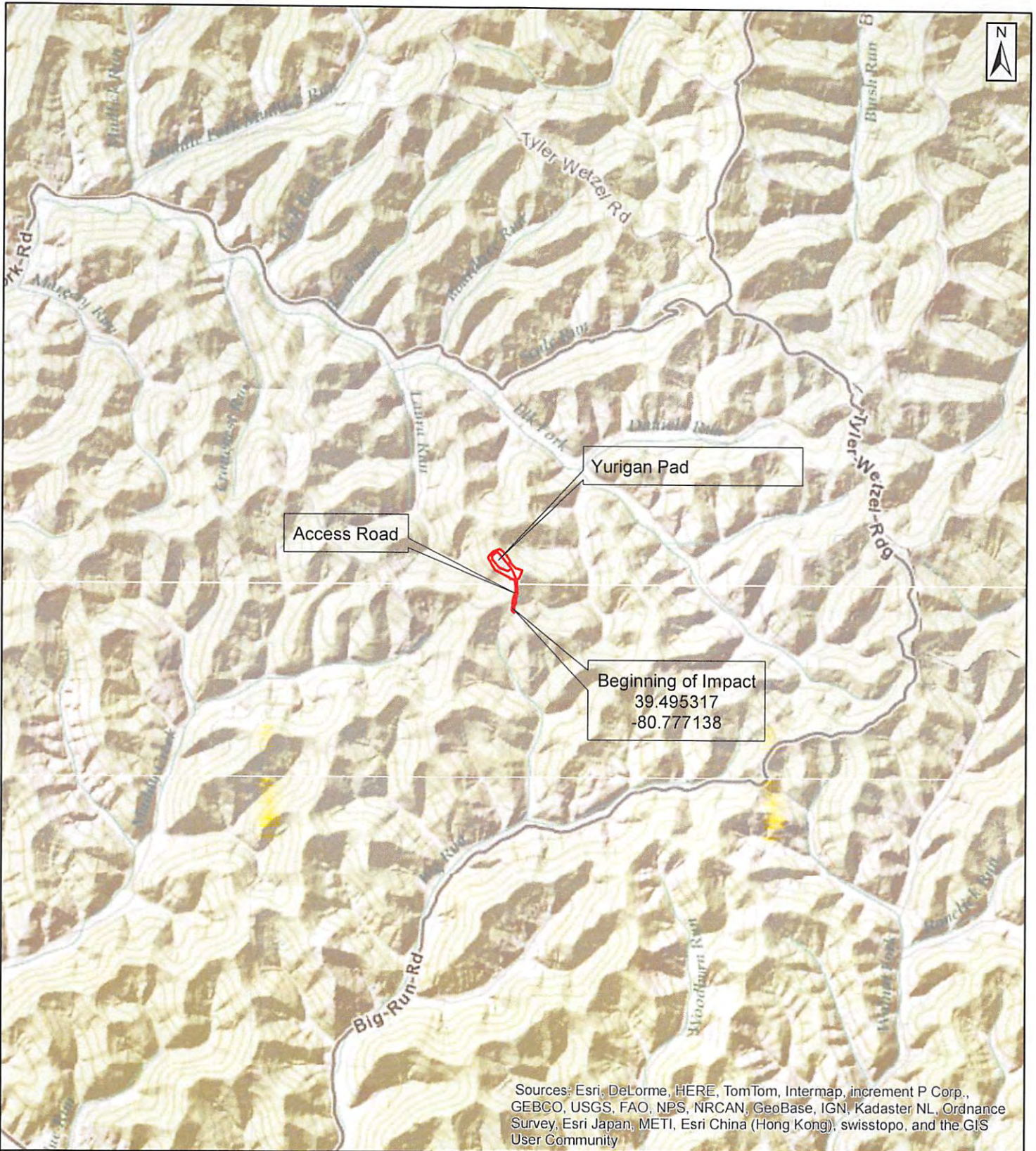


Figure 1

EQT Production Company
 Yurigan Pad
 Tyler County, West
 Virginia

USGS 7.5' Topographic Map with
 NWI, HUC, and FEMA Overlay
 Shirley, WV Quadrangle
Environment & Archaeology
 LLC



Sources: Esri, DeLorme, HERE, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community



Larson Design Group

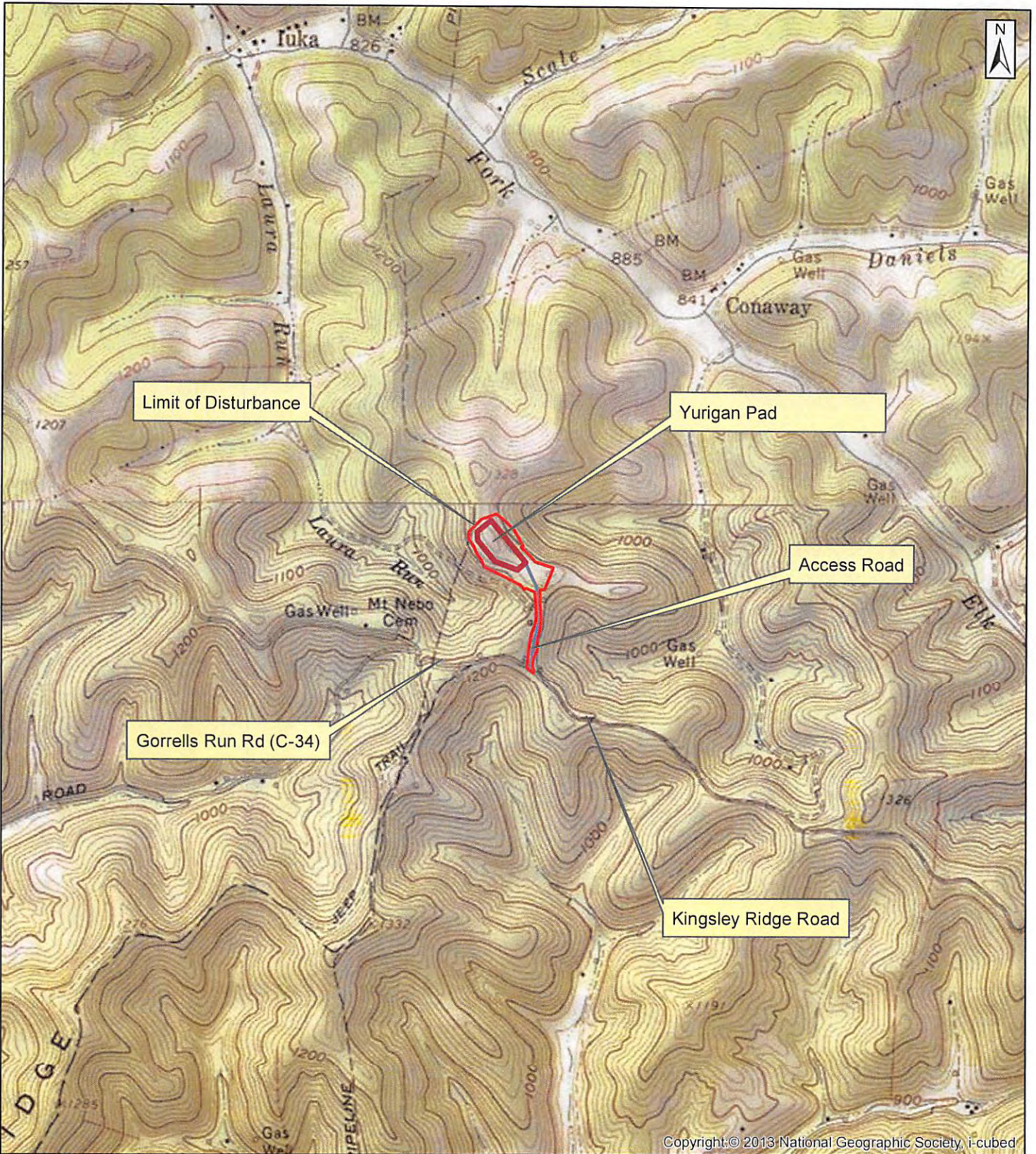
Yurigan Pad

Vicinity Map

Tyler County, West Virginia

Date	7/8/2014
Designer	JPY
Project No.	8790-003-6
Scale	1 inch = 5,000 feet

08/11/2017



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Larson Design Group

Yurigan Pad

Tyler County, WV

Location Map

Shirley Quad

Date	7/8/2014
Designer	JPY
Project No.	8790-003-6
Scale	1 inch = 2,000 feet

08/11/2017

Well Numbers for the EQT Yurigan Pad

- Yurigan 1H 47-095-02299
 - Yurigan 2H 47-095-02302
 - Yurigan 3H 47-095-02303
 - Yurigan 4H 47-095-02300
 - Yurigan 5H 47-095-02301
-
- Yurigan SHR99H6
 - Yurigan SHR99H7
 - Yurigan SHR99H8
 - Yurigan SHR99H9
 - Yurigan SHR99H10
 - Yurigan SHR99H11
 - Yurigan SHR99H12
 - Yurigan SHR99H13
 - Yurigan SHR99H14
 - Yurigan SHR99H15
 - Yurigan SHR99H16
 - Yurigan SHR99H17
 - Yurigan SHR99H18
 - Yurigan SHR99H19
 - Yurigan SHR99H20

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

1) Well Operator: EQT Production Company 306686 Tyler Ellsworth Shirley
Operator ID County District Quadrangle

2) Operator's Well Number: SHR99H1 Well Pad Name: Yurigan

3) Farm Name/Surface Owner: EQT Production Co. Public Road Access: Co. Rt. 34

4) Elevation, current ground: 1260.0 Elevation, proposed post-construction: 1241.0

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6967', 49', 2747 PSI

DmH
3-30-17

8) Proposed Total Vertical Depth: 6967

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12039

11) Proposed Horizontal Leg Length: 4244

12) Approximate Fresh Water Strata Depths: 155, 875

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

14) Approximate Saltwater Depths: 1580, 1713, 1917

15) Approximate Coal Seam Depths: 432, 610, 868, 1065

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

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

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

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	1119	1119	976 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	3269	3269	1274 ft ³ / CTS
Production	5 1/2	New	P-110	20	12039	12039	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 30° inclination	
Liners							

DH
3-30-17

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	3950	3160	See Variance 2014-17	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 4829'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

Dm W
3-30-17

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): 8.59 ac.

22) Area to be disturbed for well pad only, less access road (acres): 5.73 ac.

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.

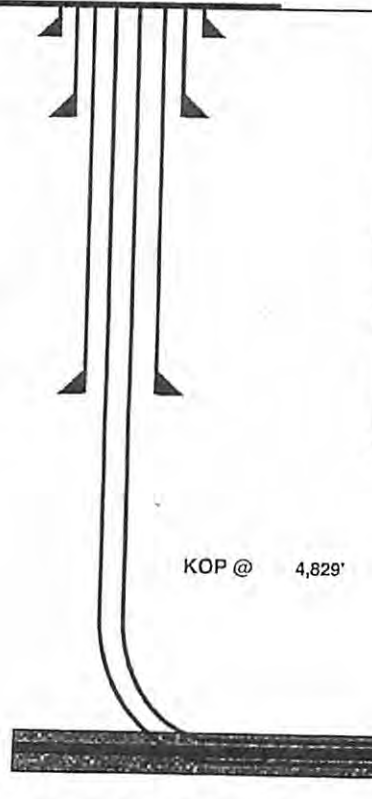
4709502438

Well **SHR99H1**
 EQT Production
 Shirley Quad
 Tyler County, WV

Azimuth 160
 Vertical Section 4147

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	875	
Surface Casing	1119	
Base Red Rock	1307	
Maxton	1987 - 2023	
Big Lime	2071 - 2289	
Big Injun	2289 - 2341	
Weir	2353 - 2451	
Gantz	2728 - 2800	
Fifty foot	2876 - 2932	
Gordon	2954 - 3032	
Fifth Sand	3108 - 3169	
Intermediate Casing	3269	
Bayard	3180 - 3375	
Warren	3659 - 3819	
Speechley	3850 - 4036	
Balltown A	4125 - 4345	
Riley	4860 - 4905	
Benson	5315 - 5372	
Alexander	5559 - 5610	
Sonyea	6606 - 6742	
Middlesex	6742 - 6774	
Genesee	6774 - 6844	
Geneseo	6844 - 6875	
Tully	6875 - 6893	
Hamilton	6893 - 6941	
Marcellus	6941 - 6990	
Production Casing	12039 MD	
Onondaga	6990	



Casing and Cementing				Deepest Fresh Water: 875'
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'	1,119'	3,269'	12,039'
Weight	78.6#	54.5#	40#	20#
Grade	A-500	J-55	A-500	P-110
New or Used	New	New	New	New
Burst (psi)	1378	2,700	3,950	12,640
Cement Class	A	A / Type 1	A / Type 1	A / H
Cement Yield	1.18	1.19	1.19	1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface	500' above top Producing Zone
Method	Displacement	Displacement	Displacement	Displacement
Est. Volume (cu ft)	60	976	1,274	2,234
Possible Additives	N/A	Calcium Chloride	Calcium Chloride	Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

Land curve @ 6,967' TVD
 7,795' MD

Est. TD @ 6,967' TVD
 12,039' MD

4,244' Lateral

Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 4829'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

4709502438

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: Yurigan
Tyler County, WV

1/18/17

Received
Office of Oil & Gas
MAR 01 2017

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Tyler County, WV prior to hydraulic fracturing at the following EQT wells on Yurigan pad: Yurigan 5H, SHR99H1

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

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

1. Communications with Well Operators

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

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

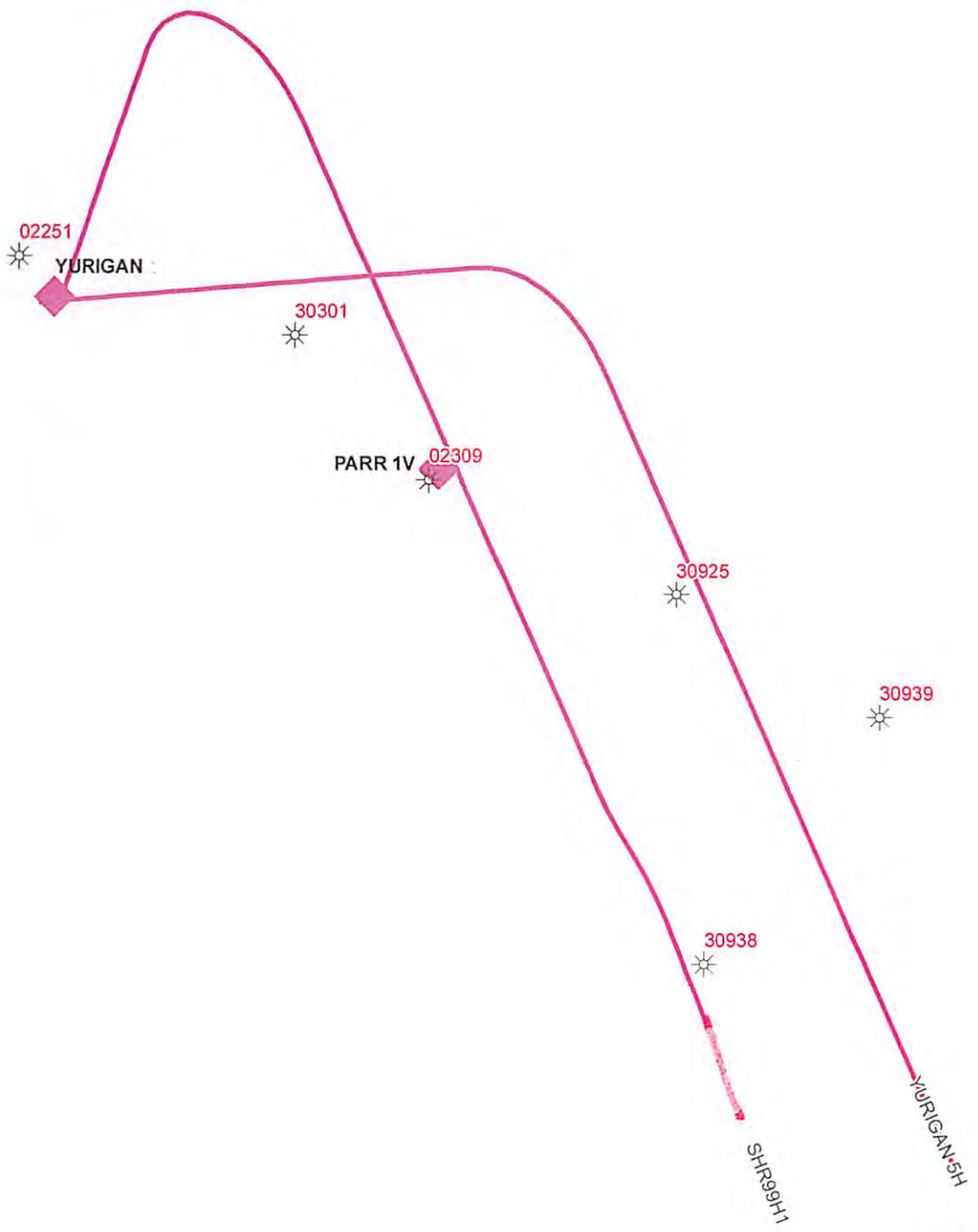
EQT will recommend to these operators at a minimum to:

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

2. Reporting

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

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Office of Oil & Gas
MAR 01 2017



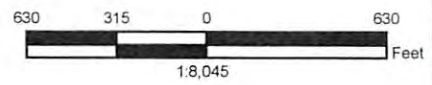
Received
Office of Oil & Gas
MAR 01 2017

EQT
EQT Corporation
625 Liberty Avenue
Pittsburgh, PA 15222

Yurigan Pad

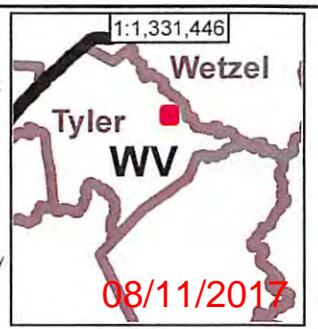
Vertical Offsets and
Foreign Laterals
within 500'

- Legend
- Yurigan Vertical Offsets
 - 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.



WELL ID	COMP DATE	CURRENT OPERATOR	ELEVATION	DATUM TYPE	STATUS	LATITUDE	LONGITUDE	OPERATOR	PERMIT DATE	PROJECTED FM	PROJECTED TD	SPUD DATE	TD FORMATION	TD	PERMIT
47095309250000		MANUFACTURERS LIGHT & HEAT	0	GR	PSEUDO	39.4956	-80.7704	MANUFACTURERS LIGHT & HEAT							0 30925
47095309390000	2/16/1904	MANUFACTURERS LIGHT & HEAT	966	GR	ABD-GW	39.4943	-80.7676	MANUFACTURERS LIGHT & HEAT	1/2/1904			0	1/17/1904 HURON LOWER	2733	30939
47095303010000		MANUFACTURERS LIGHT & HEAT	1105	GR	ABD-GW	39.4984	-80.7756	MANUFACTURERS LIGHT & HEAT				0	BIG INJUN /SD/	1943	30301
47095309380000		MANUFACTURERS LIGHT & HEAT	1000	GR	ABD-GW	39.4917	-80.7700	MANUFACTURERS LIGHT & HEAT				0	HURON LOWER	2816	30938
47095022510000		ALLIANCE PETROLEUM CORPORATION	1251	GR	AT-TD	39.4993	-80.7794	ALLIANCE PETROLEUM CORPORATION	4/7/2015	SPEECHLEY		3950	4/28/2015	4050	02251
47095023090000	12/14/2015	ALLIANCE PETROLEUM CORPORATION	1210	KB	GAS	39.4969	-80.7738	ALLIANCE PETROLEUM CORPORATION	9/16/2015	RHINESTREET		6000	9/28/2015 RHINESTREET	6000	02309

157-110000
 Office of Oil & Gas
 MAR 01 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

March 18, 2014

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

Re: Cement Variance Request

Dear Sir or Madam,

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

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

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

Sincerely,

James Peterson
Environmental Resources Specialist / Permitting

Received
Office of Oil & Gas
MAR 01 2017

Promoting a healthy environment.

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

REPORT OF THE OFFICE

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

FINDINGS OF FACT

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

Promoting a healthy environment.

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MAR 01 2017

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CONCLUSIONS OF LAW

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

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

ORDER

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

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

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief
Office of Oil and Gas

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017



January 10, 2017

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

Re: Casing on Yurigan (SHR99)

Dear Mr. Smith,

EQT is requesting the 13-3/8" casing be set at 1119' KB, 50' below the deepest workable coal.

For the 9 5/8" casing string, EQT is requesting that the first well set the 9 5/8" casing at 3269' KB, 100' below the 5th Sand formation. Prior to cementing the 9 5/8" casing, a test will be performed to determine if the 9 5/8" casing string may be shortened. If the test is successful, the remaining wells on the pad will have 9 5/8" casing set at a shallower depth of 2501' KB, 50' below the Weir formation. If the test is unsuccessful, the remaining wells on the pad will have 9 5/8" casing set at the original set depth of 3269' KB. Upon completion of the test, the WV DEP inspector will be notified of the test results and the casing depth for the remaining wells on the pad will be discussed.

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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Office of Oil & Gas
MAR 01 2017

WW-9
(4/16)

4709502438

API Number 47 - 095 - _____
Operator's Well No. SHR99H1

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) Elk Fork Quadrangle Shirley

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

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

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

*DMH
3-30-17*

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.

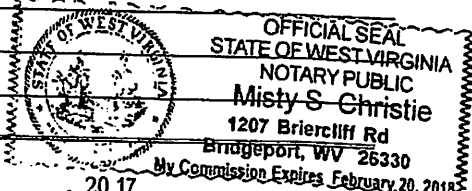
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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



Subscribed and sworn before me this 22nd day of February, 20 17

Misty S. Christie Notary Public

My commission expires 2/20/18

08/11/2017

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 8.59 Prevegetation pH 7.4

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

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

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Title: Oil + Gas Inspector Date: 3-30-17

Field Reviewed? 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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MAR 01 2017

08/11/2017

EQT Production Water plan

Offsite disposals for Marcellus wells

CWS TRUCKING INC.

P.O. Box 391
Williamstown, WV 26187
740-516-3586
Noble County/Noble Township
Permit # 3390

BROAD STREET ENERGY LLC

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

LAD LIQUID ASSETS DISPOSAL INC.

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

TRIAD ENERGY

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

TRI COUNTY WASTE WATER MANAGEMENT, INC.

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

KING EXCAVATING CO.

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

Waste Management - Meadowfill Landfill

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

Waste Management - Northwestern Landfill

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

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Office of Oil & Gas
MAR 01 2017

08/11/2017

0' 500' 1000'



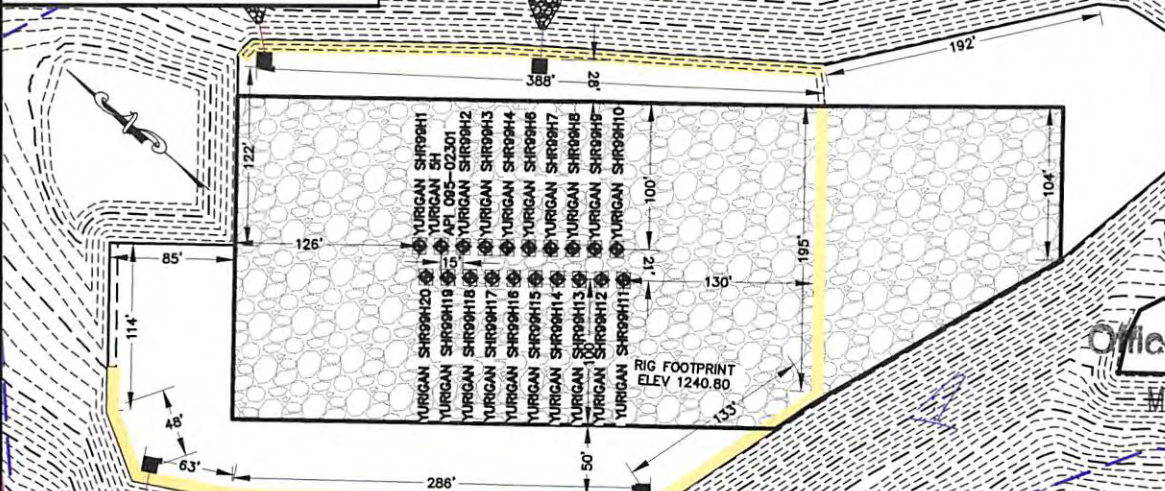
SCALE

NOTE: SEE YURIGAN SITE PLAN FOR COMPLETE CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DETAILS.



NOTE: SOIL pH VALUES WERE COLLECTED ON JANUARY 19, 2017 BY LARSON DESIGN GROUP. SAMPLES COLLECTED RANGED FROM A pH OF 5.5 TO 7.8.

DETAIL SKETCH FOR PROPOSED SHR99 WELLS



NOTE: SEE YURIGAN SITE PLAN FOR COMPLETE CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DETAILS.

0' 100' 200'

SCALE

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Office of Oil & Gas
MAR 01 2017



Architects Engineers Surveyors
2502 Cranberry Square
Morgantown, WV 26508
PHONE 304.777.2940
TOLL FREE 877.323.6603
FAX 570.323.9902
Larson Design Group®www.larsondesigngroup.com

RECLAMATION PLAN

YURIGAN WELL SITE
ELLSWORTH DISTRICT - TYLER COUNTY, WV

FOR
EOT

DATE: 1-24-2017

SHEET NO.:

EXH

PROJECT NO.:

7936-006

DRAWN BY:

JWD

08/11/2017



4709502438

Where energy meets innovation.™

Site Specific Safety Plan

EQT
Yurigan Unit Pad

Middlebourne
Tyler County, WV

For Wells:

[Signature]
 EQT Production
Permitting Supervisor
 Title
 Date 2/21/17

Date Prepared: **November 17, 2016**

[Signature]
 WV Oil and Gas Inspector
Oil + Gas Inspector
 Title
3-30-17
 Date

08/11/2017

EQT PRODUCTION COMPANY WELL # SHR99H1 PAD: YURIGAN PAGE 1 OF 2

LATITUDE 39°30'00" TH 8,197'
LATITUDE 39°30'00" BH 5561'

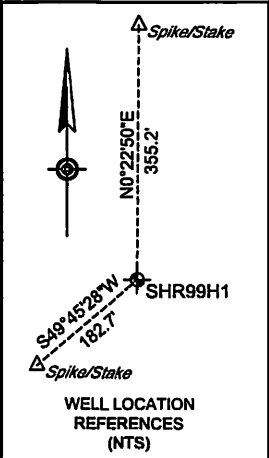
LONGITUDE 80°45'00" BH 3650'
LONGITUDE 80°45'00" TH 468'

NOTES

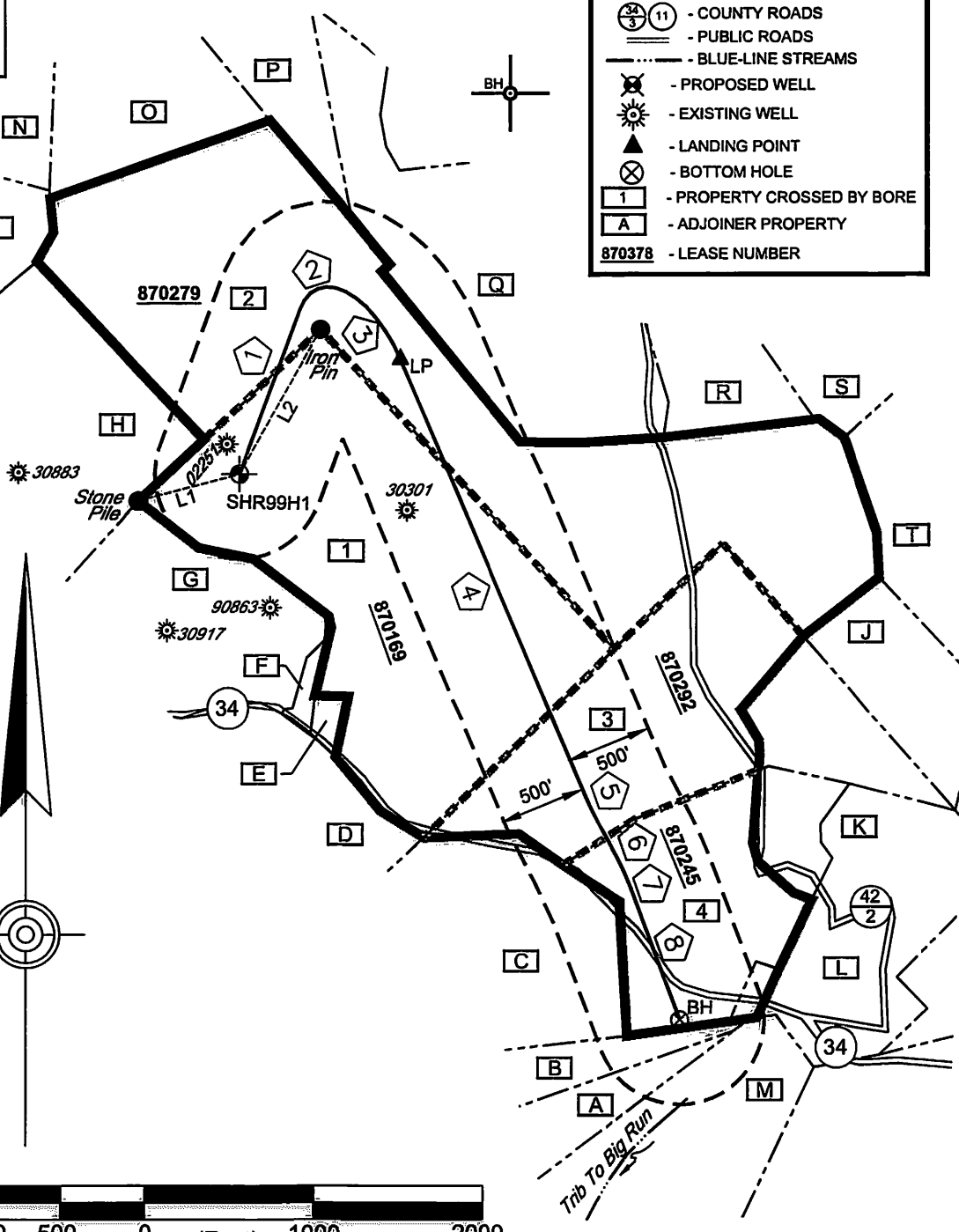
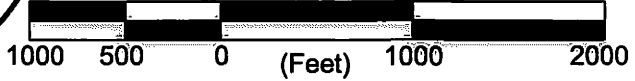
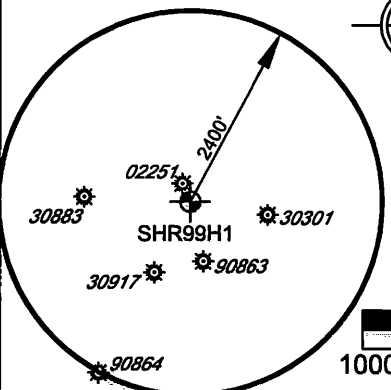
- IT IS NOT THE INTENTION OF THIS PLAT TO REPRESENT A COMPLETE BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON. BOUNDARIES AS SHOWN TAKEN FROM RECORD DEED DESCRIPTIONS, TAX MAPS, AND SUPPLEMENTAL FIELD SURVEY.
- OWNERSHIP DATA GATHERED FROM COUNTY PUBLIC TAX AND DEED RECORDS.
- LATERAL GEOMETRY BASED ON WEST VIRGINIA SPC NORTH, NAD 27 DATUM

LEGEND

- OUTER LEASE BOUNDARY
- LEASE BOUNDARY
- SURFACE TRACT LINES
- WELL REFERENCE LINES
- (34/11) - COUNTY ROADS
- PUBLIC ROADS
- BLUE-LINE STREAMS
- ☉ - PROPOSED WELL
- ☀ - EXISTING WELL
- ▲ - LANDING POINT
- ⊗ - BOTTOM HOLE
- 1 - PROPERTY CROSSED BY BORE
- A - ADJOINER PROPERTY
- 870378 - LEASE NUMBER



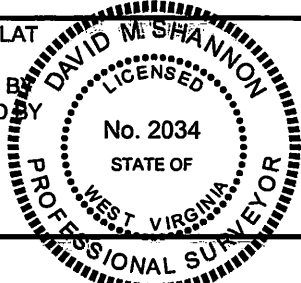
PROPERTY TIES
 L1 - S75°06'04"W 618.9'
 L2 - N29°17'32"E 981.2'



FILE NO. 7936-006
 DRAWN BY DMS
 SCALE 1 INCH = 1000 FEET
 MIN DEGREE OF ACCURACY 1 IN 2500
 PROVEN SOURCE OF ELEVATION SURVEY GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION

David M. Shannon PS #2034



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

W.V.D.E.P.
 OFFICE OF OIL AND GAS
 601 57TH STREET
 CHARLESTON, WV 25304

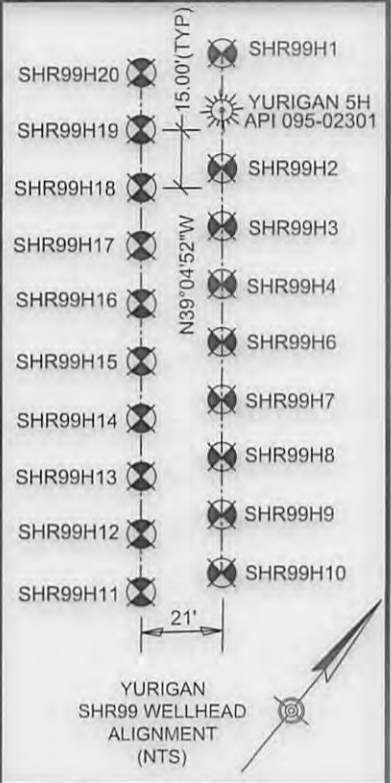
DATE 1-16-2017
 OPERATORS WELL NO. SHR99H1
 API WELL NO. 47 095 02438
 STATE COUNTY PERMIT
 WASTE DISPOSAL
 SHALLOW
 ELEVATION (EXIST) 1260 (PROP) 1241
 QUADRANGLE SHIRLEY - SEC3
 ACREAGE 84.07± 08/11/2017
 ACREAGE 84.07 LEASE# 870169

WELL TYPE: OIL GAS LIQUID INJECTION
 IF "GAS", PRODUCTION STORAGE DEEP
 LOCATION: WATERSHED ELK FORK
 COUNTY/DISTRICT TYLER / ELLSWORTH
 SURFACE OWNER EQT PRODUCTION COMPANY
 OIL & GAS ROYALTY OWNER DENVER E. HAUGHT, ET AL
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH 6941
 WELL OPERATOR: EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
 ADDRESS 115 PROFESSIONAL PLACE, PO BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE, PO BOX 280 BRIDGEPORT, WV 26330

EQT PRODUCTION COMPANY
WELL # SHR99H1
PAD: YURIGAN
PAGE 2 OF 2

Table with UTM coordinates and well locations (TOPHOLE, LANDING PT, BOT HOLE) for various zones (NAD83, NAD27 SPC FEET NORTH ZONE, NAD27 GEO LAT(N) LONG(W)).



SURFACE PROPERTIES CROSSED BY BORE table with columns: TAB, OWNER, DISTRICT, TAX MAP, PARCEL #, AREA.

SURFACE PROPERTIES ADJOINING THOSE CROSSED BY BORE (ABOVE) table with columns: TAB, OWNER, DISTRICT, TAX MAP, PARCEL #, AREA.

LEASE# MINERAL OWNERS AREA table listing lease numbers and owners.

HORIZONTAL BORE GEOMETRY

Table with columns: LENGTH, RADIUS/AZIMUTH, listing bore geometry data.

FILE NO. 7936-006
DRAWN BY DMS
SCALE 1 INCH = 1000 FEET
MIN DEGREE OF ACCURACY 1 IN 2500
PROVEN SOURCE OF ELEVATION SURVEY GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION



David M. Shannon PS #2034

W.V.D.E.P. OFFICE OF OIL AND GAS
601 57TH STREET CHARLESTON, WV 25304
DATE 1-16-2017
OPERATORS WELL NO. SHR99H1
API WELL NO. 47 095 02438
STATE COUNTY PERMIT
WELL TYPE: OIL [] GAS [X] LIQUID INJECTION []
IF "GAS", PRODUCTION [X] STORAGE [] DEEP [] SHALLOW [X]
LOCATION: WATERSHED ELK FORK
COUNTY/DISTRICT TYLER / ELLSWORTH
SURFACE OWNER EQT PRODUCTION COMPANY
OIL & GAS ROYALTY OWNER DENVER E. HAUGHT, ET AL
PROPOSED WORK: DRILL [X] CONVERT [] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [X]
PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION [] PLUG & ABANDON []
CLEAN OUT & REPLUG [] OTHER CHANGE [] (SPECIFY) _____
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH 6941
WELL OPERATOR: EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
ADDRESS 115 PROFESSIONAL PLACE, PO BOX 280 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT

08/11/2017

**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				

**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

**Received
Office of Oil & Gas
MAR 01 2017**

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 J Roark
 Its: Permitting Supervisor

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
<u>870169</u>	<u>Denver E. Haught, et al (current royalty owner)</u>		***	
	Holly Hill Campbell (original lessor)	Petroedge Energy LLC		411/586
	Petroedge Energy LLC	Statoil USA Onshore Properties Inc.		436/1
	Statoil USA Onshore Properties Inc.	EQT Production Company		539/239
<u>870292</u>	<u>Charles Robert Fuchs, et al (current royalty owner)</u>		***	
	Charles Robert Fuchs (original lessor)	Petroedge Energy LLC		410/821
	Petroedge Energy LLC	Statoil USA Onshore Properties Inc.		436/1
	Statoil USA Onshore Properties Inc.	EQT Production Company		539/239
<u>870245</u>	<u>Tina Louise Zediker, et al (current royalty owner)</u>		***	
	Rockford Energy LLC, et al	Petroedge Energy LLC		390/5
	Petroedge Energy LLC	Statoil USA Onshore Properties Inc.		406/147
	Statoil USA Onshore Properties Inc.	EQT Production Company		539/239

***We certify that 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.

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017



January 12, 2017

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

Re: Yurigan well pad, well SHR99H1
Ellsworth District, Tyler County

Dear Mr. Martin,

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

Sincerely,

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

Vicki Roark
Permitting Supervisor-WV

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MAR 01 2017

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

Date of Notice Certification: _____

API No. 47- 095 - _____
Operator's Well No. SHR99H1 _____
Well Pad Name: Yurigan _____

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> </u>	WW	UTM NAD 83	Easting: <u> </u>	519004.89
County: <u> </u>	Tyler		Northing: <u> </u>	4372159.64
District: <u> </u>	Ellsworth	Public Road Access: <u> </u>	WW RT 7	
Quadrangle: <u> </u>	Shirley	Generally used farm name: <u> </u>	EQT Production Company	
Watershed: <u> </u>	Elk Fork			

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>OOO OFFICE USE ONLY</p> <p><input checked="" 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 checked="" type="checkbox"/> RECEIVED</p>
--	---

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.

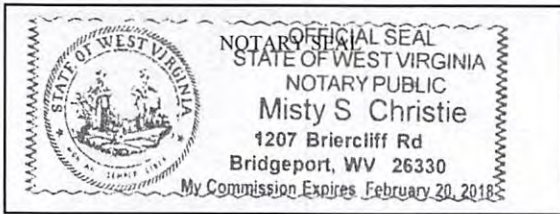
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MAR 01 2017
08/11/2017

Certification of Notice is hereby given:

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

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

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



Subscribed and sworn before me this 22nd day of _____ 2017.
Misty S. Christie Notary Public
My Commission Expires 2/20/18

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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MAR 01 2017

08/11/2017

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: 2/22/17 Date Permit Application Filed: 2/22/17

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: _____

Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____

Address: _____

*Please attach additional forms if necessary

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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 state

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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Office of Oil & Gas
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Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47- 095 -
OPERATOR WELL NO. SHR99H1
Well Pad Name: Yurigan

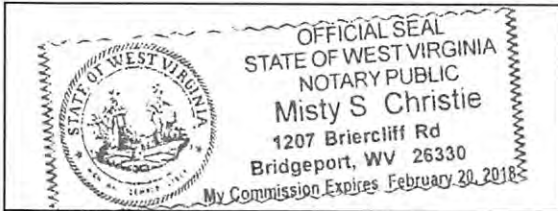
Notice is hereby given by:

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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



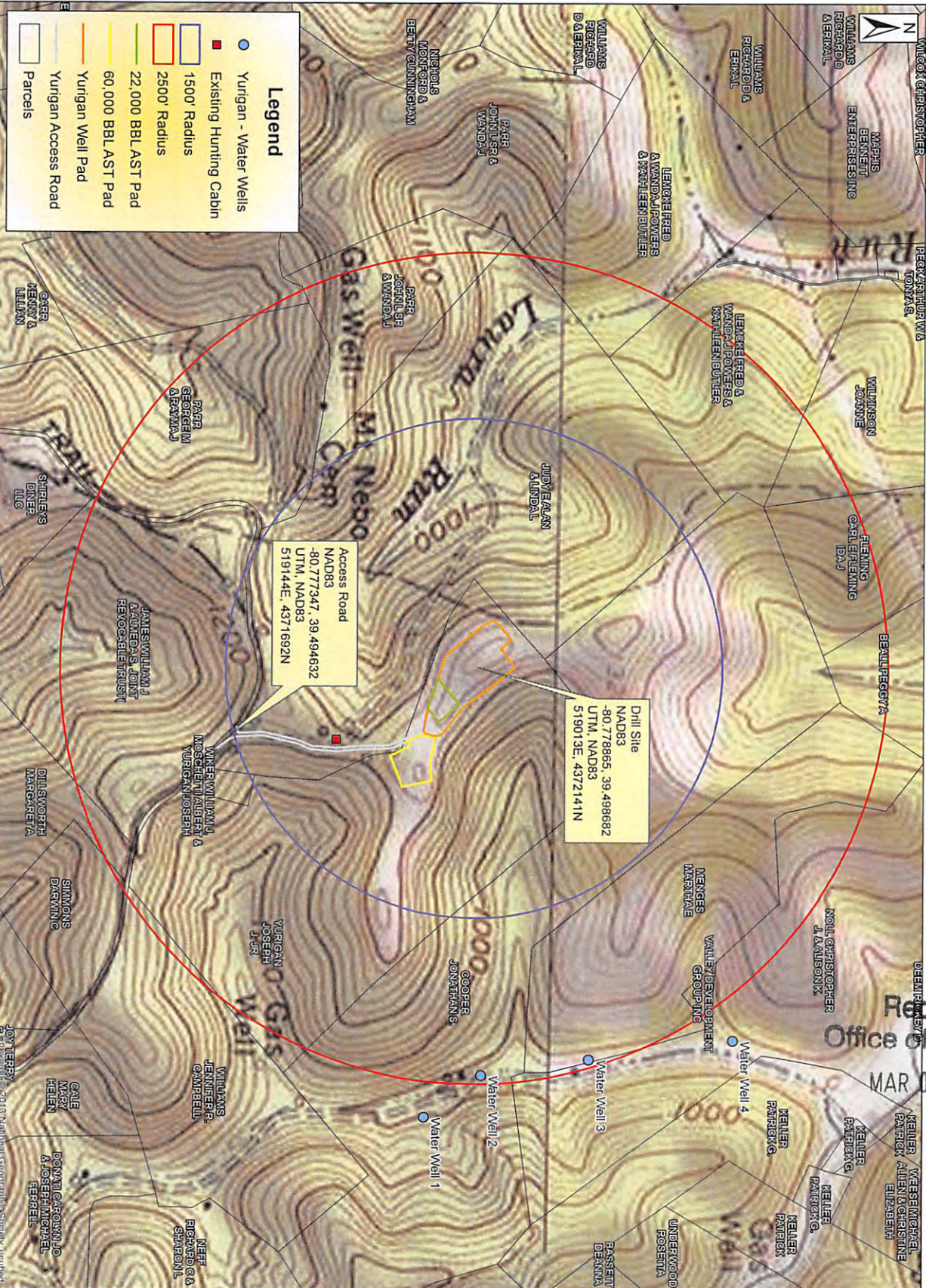
[Signature]
Subscribed and sworn before me this 22nd day of February, 2017.

[Signature] Notary Public

My Commission Expires 2/20/18

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Office of
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Path: P:\17936\17936-006 YURIGAN ISHR 99\DATA\WETLANDS\Mapping\EQT_SHR99 Preliminary Water Source Map.mxd

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	<h2>EQT Yurigan Well Pad Preliminary Water Source Identification Map</h2>		
	<p>Ellsworth District, Tyler County, WV</p>		
<p>Scale 1 inch = 550 feet</p>	<p>Project No. 7936-006</p>	<p>Date 2/22/2017</p>	<p>Designer MME</p>

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Surface Owners:

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

Waiver

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Surface Owners (road or other disturbance):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

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Surface Owners (Pits or impoundments):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, _____, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State: WV UTM NAD 83 Easting: 519004.89
County: Tyler Northing: 4372159.64
District: Ellsworth Public Road Access: WV RT 7
Quadrangle: Shirley Generally used farm name: EQT Production Company
Watershed: Elk Fork

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input checked="" type="checkbox"/> SURFACE OWNER</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p>
	<p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: <u>EQT Production Co.</u></p> <p>By: <u>John Damato</u></p> <p>Its: <u>Regional Land Director</u></p> <p>Signature: _____</p> <p>Date: <u>2-21-17</u></p>

Oil and Gas Privacy Notice:

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MAR 01 2017

08/11/2017

Coal Owners:

Brown Memorial Park Avenue
United Presbyterian Church /
1316 Park Avenue
Baltimore, MD 21217

Denver E. Haught /
112 Winters Drive
Ripley, WV 25271

Linda Kathryn Lee /
1292 Edgefield Road
York, SC 29745

Carolyn Williams /
342 Gorrels Run Road
Middlebourne, WV 26149

Jacqueline H. Posey /
44 Center Avenue
Wheeling, WV 26003

Duane Clark /
8859 Middle Island Road
Middlebourne, WV 26149

John Wayne Weekley /
1354 Paden Fork Road
New Martinsville, WV 26155

Patricia Carol Fonner /
520 Ashwood Drive
Newport News, VA 23602

Norma Louise Franks /
4 West Askren Street
Uniontown, PA 15401

Ernest E. Black /
2326 Cedar Elm Terrace
Westlake, TX 76262

Robert E. Weekley /
3842 Quaker Ridge Street
Zephyr Hills, FL 33542

Mark A. Schafer /
8793 Stonehenge Circle
Pickerington, OH 43147

Gail A. Mason /
41 Snowmass Court
O'Fallon, MO 63368

**Received
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08/11/2017

David C. Schafer
9393 Deer Ridge
Mentor, OH 44060

Sharon E. Fonest
1543 North Main Street
Niles, OH 44446

Michael C. Fletcher
344 Caines Boulevard
Winchester, KY 40391

Lewis Andrew Clark
7115 Merrimac Drive
McLean, VA 22101

Clyde B. Ross, Jr.
State Route 534, Box 132
Damascus, OH 44619

Cynthia M. Sax
12029 Rutherglen Place
Bristow, VA 20136

James F. Clark
111 Shasta Cove
Georgetown, TX 78628

Mark Fletcher
501 4th Street
Middlebourne, WV 26149

Matthew C. Fletcher
764 Virginia Road
Marion, NC 28752

Mary Elizabeth Clark
118 Rebrook Street
Clarksburg, WV 26301

Randy Lee Caplinger
6204 Larkhall Drive
Madison, OH 44057

Sandra K. Haught
19643 Arthur Street #205C
Meadville, PA 16335

Kevin R. Kiser
20790 Route 6
Warren, PA 16365

Kit A. Kiser
303 Wilderness Trailer Park
Clarendon, PA 16313

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08/11/2017

John Frederick Gaul
4721 Claremont Park Drive
Brandenton, FL 34211-9423

Karen Lynch
667 Raymond Drive
Lewiston, NY 14092

Mary Jane Buddenhagen
6824 Grauer Road
Niagara Falls, NY 14305

Nichole J. Tremblay
1820 Mohawk Avenue
Warren, PA 16365

John R. Kiser
96 Pleasant Drive
Warren, PA 16365

Jean Ann Gaul
4721 Claremont Park Drive
Bradenton, FL 34211-9423

Lisa Hare Cutchin
6104 Spring Meadow Lane
Frederick, MD 21701

Edward F. Lynch
4561 Townline Road
Ransonville, NY 14131

Thomas Lynch
667 Raymond Drive
Lewiston, NY 14092

Virginia Irene Patton
10850 Green Mountain Circle, Unit 411
Columbia, MD 21044-2478

Holly Hill Campbell
101 Tudor Drive
Williamsburg, VA 23188

John J. Lynch
602 78th Street
Niagara Falls, NY 14304

James Lynch
2930 Ontario Avenue
Niagara Falls, NY 14305

Rhonda F. Bruich
154 Owings Street
Weirton, WV 26062

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08/11/2017

Michael Lynch ✓
816 22nd Street
Niagara Falls, NY 14301

Deborah J. Mann ✓
4455 Taylor Drive
Niagara Falls, NY 14304

Helen Gaull Boyll ✓
50 Capron Street
Danielson, CT 06239

Douglas Morrison Padrutt ✓
4503 Sauxon Valley Court
Alexandria, VA 22312

Lura Padrutt Griffiths ✓
4515 S. E. 30th Avenue
Portland, OR 97202

Robert Alan Ross ✓
213 Louise Lane
Toano, VA 23168

Richard Harold Ross ✓
8810 Pocahontas Trail
Trailer 44
Williamsburg, VA 23185

Ronald Paul Ross ✓
16852 Polish Town Road
Lanexa, VA 23089

Norman R. Haught ✓
14769 S. Norrisville Road
Meadville, PA 16335

Louie W. Haught ✓
1045 Menis Road
Weimer, TX 78962

Joseph Vann Edwards ✓
75 Salem Drive
Pinehurst, NC 28374

Joanne Kimble Frances ✓
103 Field Court
Harbinger, NC 27941

Roger W. Ross ✓
364 Lynchburg Drive
Newport News, VA 23606

Carl F. Haught ✓
815 Mitchell Street
Calvert, TX 77837

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08/11/2017

Ricky D. Haught ✓
18337 Southwood Drive
Meadville, PA 16335

Christine Gay ✓
5010 Toucan Lane
Kernersville, NC 27284

Vincent Mitchell Edwards ✓
416 Charleston Drive
Clayton, NC 27527

Bernard Lee Haught Testamentary Trust ✓
17223 Kiowa River Lane
Houston, TX 77095

James Madison University ✓
605 Port Republic Road
Harrisburg, VA 22801

William J. James and Almeda Sue James Co-Trustees ✓
William J. and Almeda Sue James Joint
Revocable Trust Agreement
1009 North Breens Bay Road
Oconomowoc, WI 53066

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Office of Oil & Gas
MAR 01 2017

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: 01/12/2017 **Date Permit Application Filed:** 01/22/2017

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: EQT Production Company
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330

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>519004.89</u>
County: <u>Tyler</u>	Northing: <u>4372159.64</u>
District: <u>Ellsworth</u>	Public Road Access: <u>WV RT 7</u>
Quadrangle: <u>Shirley</u>	Generally used farm name: <u>EQT Production Company</u>
Watershed: <u>Elk Fork</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

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Received
Office of Oil & Gas
MAR 01 2017

Surface Owners:

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017

Surface Owners (road or other disturbance):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

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Office of Oil & Gas
MAR 01 2017

08/11/2017

Surface Owners (Pits or Impoundments):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

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Office of Oil & Gas
MAR 01 2017

08/11/2017

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

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.

Surface Owner Waiver:

I, John Damato, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>519004.89</u>
County:	<u>Tyler</u>		Northing:	<u>4372159.64</u>
District:	<u>Ellsworth</u>	Public Road Access:		<u>WV RT 7</u>
Quadrangle:	<u>Shirley</u>	Generally used farm name:		<u>EQT Production Company</u>
Watershed:	<u>Elk Fork</u>			

Name: John Damato
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330

Signature: 
Date: 2.21.17

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

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

Date of Notice: 2/22/17 **Date Permit Application Filed:** 2/22/17

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

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

Name: <u>EQT Corporation</u>	Name: _____
Address: <u>625 Liberty Ave. Suite 1700</u>	Address: _____
<u>Pittsburgh PA 15222</u>	_____

Notice is hereby given:

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

State: <u>WV</u>	UTM NAD 83	Easting: <u>519004.89</u>
County: <u>Tyler</u>		Northing: <u>4372159.64</u>
District: <u>Ellsworth</u>	Public Road Access: <u>WV RT 7</u>	
Quadrangle: <u>Shirley</u>	Generally used farm name: <u>EQT Production Company</u>	
Watershed: <u>Elk Fork</u>		

This Notice Shall Include:

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

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

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Office of Oil & Gas
MAR 01 2017

08/11/2017

Surface Owners:

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017

Surface Owners (road or other disturbance):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017

Surface Owners (Pits or impoundments):

EQT Production Company
625 Liberty Ave.
Suite 1700
Pittsburgh PA 15222

Received
Office of Oil & Gas
MAR 01 2017

08/11/2017

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS **VOLUNTARY STATEMENT OF NO OBJECTION**

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, _____, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83	Eastings:	<u>519004.89</u>
County:	<u>Tyler</u>		Northing:	<u>4372159.64</u>
District:	<u>Ellsworth</u>	Public Road Access:	<u>WV RT 7</u>	
Quadrangle:	<u>Shirley</u>	Generally used farm name:	<u>EQT Production Company</u>	
Watershed:	<u>Elk Fork</u>			

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input checked="" type="checkbox"/> SURFACE OWNER</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p> <p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: <u>EQT Production Co.</u></p> <p>By: <u>John Samat</u></p> <p>Its: <u>Regional Land Director</u></p> <p>Signature: <u>[Signature]</u></p> <p>Date: <u>2-21-17</u></p>
--	--

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MAR 01 2017

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Jim Justice
Governor

Thomas J. Smith, P. E.
Secretary of Transportation/
Commissioner of Highways

Revised February 18, 2017

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 YURIGAN Well Pad, Tyler County

95-07438

SHR 99 H1	SHR 99 H2	SHR 99 H3
SHR 99 H4	YURIGAN H5	SHR 99 H6
SHR 99 H7	SHR 99 H8	SHR 99 H9
SHR 99 H10	SHR 99 H11	SHR 99 H12
SHR 99 H13	SHR 99 H14	SHR 99 H15
SHR 99 H16	SHR 99 H17	SHR 99 H18
SHR 99 H19	SHR 99 H20	

Dear Mr. Martin,

This well site will be accessed from DOH Permit #06-2017-0011 issued to EQT Production Company for access to the State Road for a well site located off of Tyler County Route 34 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 Oil & Gas Coordinator

Cc: Nick Bumgardner
EQT Production Company
CH, OM, D-6
File

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Office of Oil & Gas
MAR 01 2017

Anticipated Frac Additives 4709502438
Chemical Names and CAS numbers

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

PH
3-30-n

PROJECT INFORMATION

PROJECT NAME: EQT YURIGAN
 TAX PARCEL:
 ELLSWORTH DISTRICT, TYLER COUNTY, WV
 DISTRICT 2: MAP 17: PARCEL 52
 DISTRICT 2: MAP 23: PARCEL 29
 SURFACE OWNERS:
 EQT PRODUCTION COMPANY
 PID 2-17-52
 TOTAL PROPERTY AREA: 83.46 ACRES
 EQT PRODUCTION COMPANY
 PID 2-23-29
 TOTAL PROPERTY AREA: 1.23 ACRES
 EQT PRODUCTION COMPANY
 PID UNKNOWN
 TOTAL PROPERTY AREA: 1.33 ACRES



OPERATOR

EQT PRODUCTION COMPANY
 OPERATOR ID: 306685
 P.O. BOX 280
 BRIDGEPORT, WV 26330
 PHONE: (304) 348-3870

ENGINEER

LARSON DESIGN GROUP
 2502 CRANBERRY SQUARE
 MORGANTOWN, WV 26508
 PHONE: (304) 777-2940

SHEET INDEX

1	COVER SHEET
2-3	GENERAL NOTES
4	OVERALL SITE LAYOUT AND SHEET INDEX
5-6	SITE LAYOUT
7	ACCESS ROAD PROFILE
8	CROSS SECTIONS
9-10	ACCESS ROAD CROSS SECTIONS
11-12	RECLAMATION PLANS
13-23	CONSTRUCTION DETAILS
24	CONSTRUCTION QUANTITIES

SURVEYOR

LARSON DESIGN GROUP
 2502 CRANBERRY SQUARE
 MORGANTOWN, WV 26508
 PHONE: (304) 777-2940

**WVDEP OOG
 ACCEPTED AS-BUILT**

WJL 8/9/2017

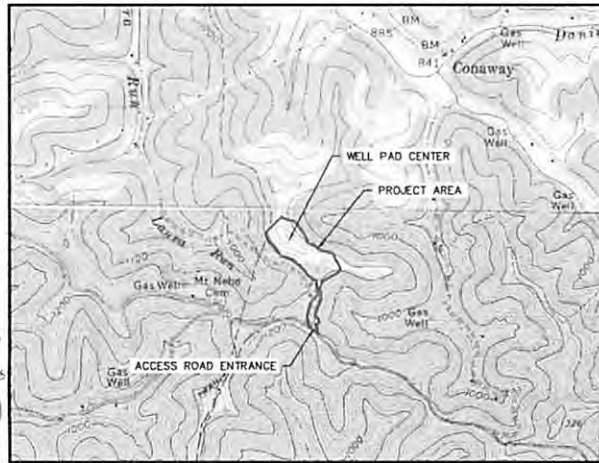
SURFACE OWNER	EQT PRODUCTION COMPANY	EQT PRODUCTION COMPANY	EQT PRODUCTION COMPANY
PID NUMBER	2-17-52	2-23-29	UNKNOWN
TOTAL PROPERTY AREA	83.46 ACRES	1.23 ACRES	1.33 ACRES
DISTURBED AREAS PER PROPERTY			
DISTURBED WELL PAD/22,000 BBL AST PAD AREA	8.59 AC	N/A	N/A
DISTURBED ACCESS ROAD AREA	0.86 AC	0.43 AC	1.16 AC
DISTURBED 60,000 BBL LAST PAD AREA	2.33 AC	N/A	N/A
DISTURBED WASTE/TOPSOIL STOCKPILE AREA	2.54 AC	N/A	N/A
TOTAL DISTURBED AREA	14.32 AC	0.43 AC	1.16 AC

RESTRICTIONS NOTES:

- THERE ARE TWO WETLANDS WITHIN 100 FEET OF THE WELL PAD LOD.
- THERE ARE NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE WELL PAD LOD.
- THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE WELL PAD AND LOD.
- THERE ARE NO APPARENT EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
- THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.
- THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE WELL PAD.

EQT YURIGAN SITE PLAN EQT PRODUCTION COMPANY

SITUATE ON THE WATERS OF ELK FORK IN ELLSWORTH DISTRICT,
 TYLER COUNTY, WEST VIRGINIA



SCALE: 1" = 2000'

SHIRLEY QUADRANGLE
 WEST VIRGINIA

LOCATION COORDINATES

WELL PAD ACCESS ROAD ENTRANCE
 LATITUDE: 39.494644 LONGITUDE: -80.777330 (NAD 83)
 N 364839.723 E 1608047.878 (WV NORTH NAD 83)

CENTER OF WELL PAD
 LATITUDE: 39.498675 LONGITUDE: -80.778827 (NAD 83)
 N 366313.641 E 1607646.252 (WV NORTH NAD 83)

CENTER OF 22,000 BBL TANK
 LATITUDE: 39.498163 LONGITUDE: -80.778122 (NAD 83)
 N 366124.215 E 1607842.682 (WV NORTH NAD 83)

CENTER OF 60,000 BBL TANK
 LATITUDE: 39.497587 LONGITUDE: -80.775722 (NAD 83)
 N 365945.527 E 1608235.259 (WV NORTH NAD 83)

EXISTING WELL HEAD API NUMBERS
 YURIGAN SH - API 095-02301

ENTRANCE PERMIT

EQT WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ENVIRONMENTAL NOTES

WETLAND DELINEATIONS WERE PERFORMED SEPTEMBER 29, 2016 BY ENVIRONMENT & ARCHAEOLOGICAL, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE NOVEMBER 4, 2016 JURISDICTIONAL STREAMS & WETLANDS MAPS WERE PREPARED BY ENVIRONMENT & ARCHAEOLOGICAL, LLC AND SUMMARIZE THE RESULTS OF THE FIELD DELINEATION.

THE MAPS DO NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFORESAID AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION SHOWN ON THIS EXHIBIT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

GEOTECHNICAL NOTE

A GEOTECHNICAL INVESTIGATION WAS COMPLETED FOR THE WELL PAD SITE AND ACCESS ROAD BY LARSON DESIGN GROUP BETWEEN JUNE 9-11, 2014. A REPORT HAS BEEN PREPARED AND REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS FROM THE REPORT WERE USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE DECEMBER 18, 2014 REPORT FOR MORE INFORMATION.

A GEOTECHNICAL INVESTIGATION HAS NOT BEEN PERFORMED FOR THE ABOVEGROUND STORAGE TANK PAD OR TOPSOIL/MATERIAL PILE LOCATIONS. CONSEQUENTLY, THE DESIGN OF THE SITE IMPROVEMENTS DEPICTED ON THESE DRAWINGS WAS PREPARED BY LDG WITHOUT DETAILED GEOTECHNICAL INFORMATION AND LDG DOES NOT GUARANTEE THE EFFICACY OF THIS DESIGN.

SOIL pH VALUES WERE COLLECTED ON JANUARY 19, 2017 BY LARSON DESIGN GROUP. SAMPLES COLLECTED RANGED FROM A pH OF 5.5 TO 7.8.

SOURCE OF MAPPING DATA

THE CONTOURS DEPICTED IN THE PLANS WERE COMPILED TO NATIONAL MAP ACCURACY STANDARDS BY KUCERA INTERNATIONAL INC., WILLOUGHBY, OHIO, USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY TAKEN ON APRIL 27, 2014. CONTOURS WHICH ARE IN WOODED OR DENSE VEGETATION ARE APPROXIMATIONS ONLY. THE PROPERTY BOUNDARIES SHOWN IN THE PLANS WERE LOCATED BY SMITH LAND SURVEYING.

FLOODPLAIN NOTE

NO PORTION OF THE PROJECT IS WITHIN THE FEMA 100-YEAR FLOODPLAIN BOUNDARY.

GENERAL DESCRIPTION

ALL PROPOSED SITE IMPROVEMENTS ARE BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL SHALE GAS WELLS.

MISS UTILITY STATEMENT

EQT WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATION OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET #143509524, #1435093538, AND #1435093569.

IN ADDITION, MISS UTILITY IS REQUIRED TO BE CONTACTED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

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



Larson Design Group

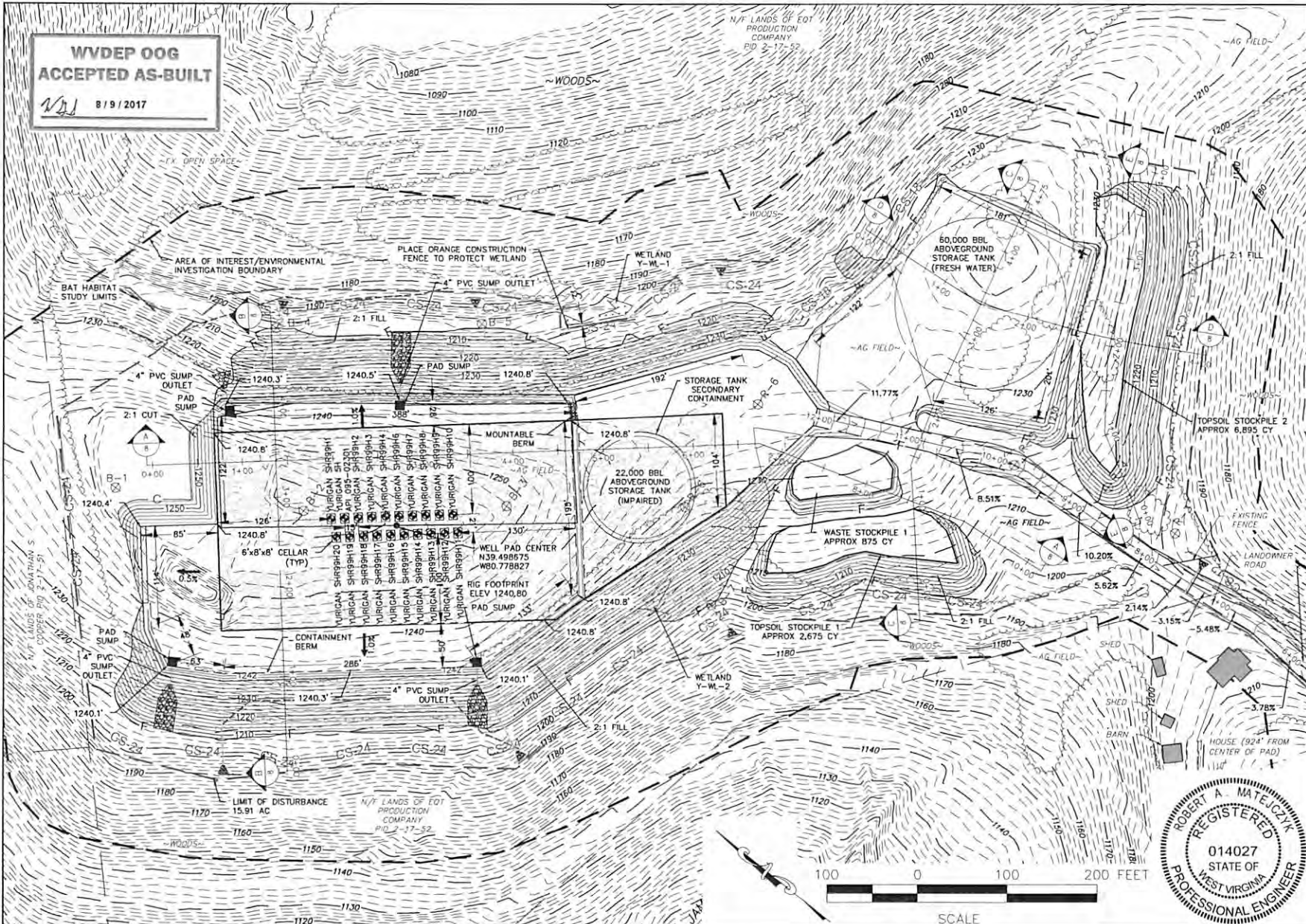
NO.	DATE	ISSUE / REVISIONS
1	03/22/17	WV DEP COMMENTS
2	07/24/17	FINAL DESIGN
3	07/19/17	SURFACE OWNER UPDATE
4	07/12/17	FINAL DESIGN
5	11/20/16	ENVIRONMENTAL UPDATES
6	11/20/16	FINAL SITE DESIGN
7	11/20/16	COMMENTS

COVER SHEET
EQT YURIGAN WELL SITE
 ELLSWORTH DISTRICT, TYLER COUNTY, WEST VIRGINIA
 Larson Design Group • Architects, Engineers, Surveyors
 2502 Cranberry Square
 Morgantown, WV 26508
 PHONE 304.777.2940 TOLL FREE 877.323.6603
 FAX 570.323.6603 • www.larsondesigngroup.com

EQT CORPORATION
 120 PROFESSIONAL PL
 BRIDGEPORT, WV 26330
 PHONE 304.848.0000

SHEET NO.
1 OF 24
 PROJECT NO:
 7936-006

WVDEP OOG
ACCEPTED AS-BUILT
12/1 8/9/2017



REV	DATE	BY	CHK	DESCRIPTION
1	03/27/17			WV DEP COMMENTS
2	03/27/17			FINAL DESIGN
3	07/24/17			AND RAIN
4	07/24/17			SURFACE OWNER UPDATE
5	07/24/17			AND RAIN
6	07/24/17			FINAL DESIGN
7	07/24/17			FINAL DESIGN
8	11/02/16			ENVIRONMENTAL UPDATES
9	11/02/16			FINAL SITE DESIGN
10	11/02/16			FINAL SITE DESIGN
11	11/02/16			FINAL SITE DESIGN
12	11/02/16			FINAL SITE DESIGN
13	11/02/16			FINAL SITE DESIGN
14	11/02/16			FINAL SITE DESIGN
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99	11/02/16			FINAL SITE DESIGN
100	11/02/16			FINAL SITE DESIGN

SITE LAYOUT
EOT YURIGAN WELL SITE
 ELLSWORTH DISTRICT, TYLER COUNTY, WEST VIRGINIA
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