



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

Monday, August 07, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

BRC OPERATING COMPANY, LLC
200 CRESCENT COURT, SUITE 1900

DALLAS, TX 75201

Re: Permit approval for WR INFANTRY 1-1H
47-067-00948-00-00

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: WR INFANTRY 1-1H
Farm Name: PLUM CREEK TIMBERLANDS LP
U.S. WELL NUMBER: 47-067-00948-00-00
Horizontal 6A / New Drill
Date Issued: 8/7/2017

Promoting a healthy environment.

08/11/2017

PERMIT CONDITIONS

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

CONDITIONS

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.

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

1) Well Operator: BRC Operating Co., LLC 494489323 Nicholas Wilderne Mount Nebo, WV
Operator ID County District Quadrangle

2) Operator's Well Number: WR Infantry 1-1H Well Pad Name: WR Pad 7

3) Farm Name/Surface Owner: WestRock/Weyerhaeuser Co. Public Road Access: WV DOT Infantry Rd.

4) Elevation, current ground: 2420 Elevation, proposed post-construction: 2420

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 Middle Devonian / 7262'-7302' / 40' / 2800#

8) Proposed Total Vertical Depth: ~~7406'~~ 7297' *225-17*

9) Formation at Total Vertical Depth: Marcellus 7282'

10) Proposed Total Measured Depth: 14950'

11) Proposed Horizontal Leg Length: 7500'

12) Approximate Fresh Water Strata Depths: 2400'

13) Method to Determine Fresh Water Depths: WVGES

14) Approximate Saltwater Depths: 2578'

15) Approximate Coal Seam Depths: 224', 400', 631' to base at 780'

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

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	22	N	H-40	94.0	113	113	CTS, 120 cf
Fresh Water	18-5/8	N	K-55	87.5	2500 1400	2500 1400	CTS, 3138 cf
Intermed#1	13-3/8	N	K-55	54.5	5700	5700	CTS, 4082 cf
Intermed#2	9-5/8	N	L-80	47.0	6700	6700	CTS, 2380 cf
Intermed#3*	7-5/8	N	L-80	26.4	7269	869	72 cf
Production	5-1/2	N	P-110	23	14950	14950	CTS, 3537 cf
Liners	2-3/8	N	N-80	4.7		14950	

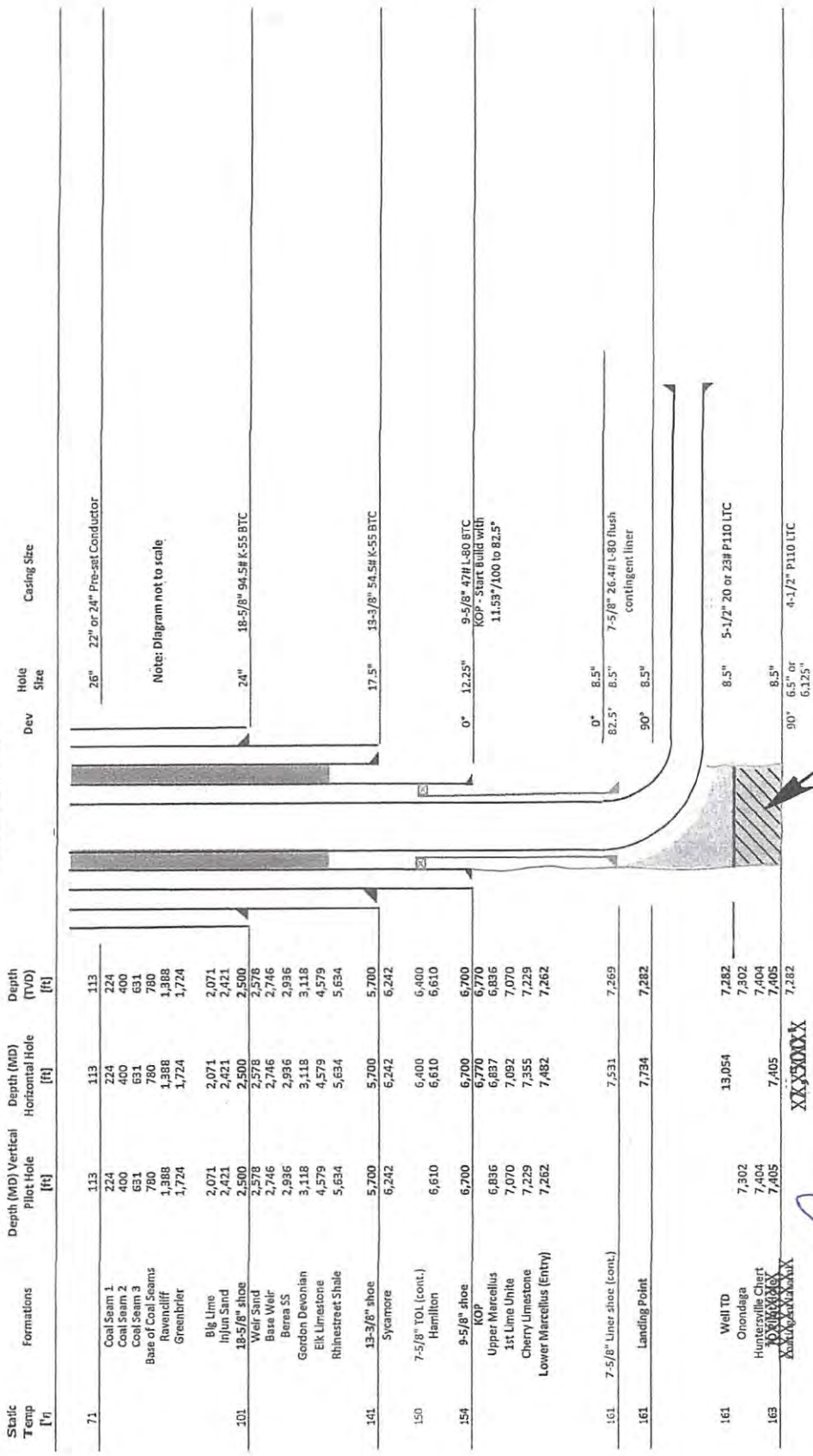
* Contingent

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	22	26	.438			Class A	1.18
Fresh Water	18-5/8	24	.460	2250	50	HalCem	1.21
Intermed#1	13-3/8	17-1/2	.380	2730	1000	HalCem	1.21
Intermed#2	9-5/8	12.25	.472	6870	1500	VariCem/HalCem	1.61 Lead/1.07 Tail
Intermed#3	7-5/8	8-1/2	.328	6020		VariCem/HalCem	1.06 Tail
Production	5-1/2	8-1/2	.415	13580	2800	HalCem	1.29 Tail
Liners	2-3/8	4.67	.19	11200			

PACKERS

Kind:				
Sizes:				
Depths Set:				

WV Infantry 1-1H



TVD Limited to 7,297

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11-25-17
7:28 AM

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11-25-17
7:28 AM

67-00948

BRC Operating Company, LLC

Dallas, Texas

Site Safety Plan

(Prepared in Accordance with W. Va. Code R. 35-8-5.7)

WR INFANTRY 1-1H

Shallow Unconventional Gas Well

API# 47-67-00948

Nicholas County, Wilderness District, West Virginia

Location Coordinates: NAD 27, WV South State Plane, US Feet

Northing- 433705

Easting- 2062505

NAD 27, Geographic- 38.19088, 80.78252

NAD 83, UTM, Zone 17, Meters- 4223238.196, 540205.878



May 22, 2017

Prepared by:

New Tech Global

6000 Town Center Blvd., Suite 220

Canonsburg, Pa. 15317

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Office of Oil and Gas

MAY 31 2017

WV Department of
Environmental Protection

67-00948

BRC OPERATING CO., LLC
WR INFANTRY 1-1H
AREA OF INTEREST

Legend

BRC OPERATING CO. WR INFANTRY 1-1H
API#47-067-00948
DOMINION TRANSMISSION, INC. API#47-067-00313
DOMINION TRANSMISSION, INC. API#47-067-00394



2 mi

Google earth

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8/15/2017

as
of
ction

HORIZONTAL GENERAL COMPLETION PLAN: This well will be completed as a multi-stage horizontal well with multi-stage slickwater fracture stimulation.

1. Install frac valve and control equipment/casing pressure testing equipment.
2. MIRU work over unit
3. Pick-up BHA with bit, scraper and motor.
4. Run TCP gun to bottom of formation, positioned at TMD of 14,950'.
5. Position and fire gun into formation, 4 SPF and 90 degree phasing at 2' length.
6. RD.
7. Run to bottom of hole to check for residual cement and clean 5-1/2" casing out to float collar or within 10' of the float collar.
8. POOH and RU wire-line / electric line unit.
9. Run CBL with 1,000 to 2,500 psi to ensure accurate reading of the cement bond formation and pipe.
10. POOH with CBL.
11. Bleed down pressure.
12. POOH and RD work over unit.
13. RU coiled tubing unit.
14. TIH clean out casing and circulate with biocide treated water.
15. RU test pump and test casing to 20% above anticipated stimulation pressure. Hold for 15 minutes and chart pressure.
16. RU stimulation equipment and associated equipment necessary for stimulation operations.
17. Breakdown formation by individual stages.
18. Pull coiled tubing unit from well.
19. RD coiled tubing unit.
20. RD frac equipment.
21. RU wireline unit.
22. Run Gr and CBL from LP to top of cement.
23. Run GR to surface.
24. Go in hole with production packer.
25. Set packer.
26. Rd equipment.
27. RU 10,000 psi BOP.
28. RU work over unit.
29. GIH with 2-3/8" production tubing.
30. NU wellhead and pump out plug.
31. Initiate flowback.
32. Record flowback volumes and rates.
33. Maintain haul-off to disposal.

API#	OPERATOR	TYPE / STATUS	LATITUDE	LONGITUDE	SHL DISTANCE FROM PROPOSED WR INFANTRY 1-1H	SHL DISTANCE FROM LATERAL TO SHL	FORMATION
47-067-00313	Dominion Transmission, Inc.	Vertical / Plugged	38.185419	80.796211	0.833 miles		Not listed
47-067-00394	Dominion Transmission, Inc.	Vertical / Plugged	38.183571	80.757188	1.465 miles	0.80 miles+	Not listed

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Office of Oil and Gas

JUN 08 2017

WV Department of
Environmental Protection

08/11/2017

WW-9
(4/16)

API Number 47 - 67 - 00948
Operator's Well No. WR Infantry 1-1H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name BRC Operating Company, LLC OP Code 494489323

Watershed (HUC 10) Hominy Creek, HUC 12 050500050502 Quadrangle Mount Nebo, WV

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 See attached listing)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes

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

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

Additives to be used in drilling medium? Vertical drilling-filtration control, weighing material, KCl, emulsifier, corrosion inhibitor

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)

-Landfill or offsite name/permit number? See attached listing

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 *Chad A. Touchet*

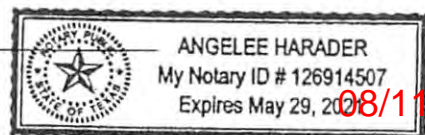
Company Official (Typed Name) Chad A. Touchet

Company Official Title Vice President

Subscribed and sworn before me this 19th day of May, 2017

Angelee Harader Notary Public

My commission expires 5-29-2021



08/11/2017

67-00948

Form WW-9

Operator's Well No. WR Infantry 1-1H

BRC Operating Company, LLC

Proposed Revegetation Treatment: Acres Disturbed _____ Prevegetation pH 6.1

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 400 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Annual ryegrass	40

Seed Type	lbs/acre
Perennial ryegrass	20
Lathco flatpea	30

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: Jeremy James 

Comments: _____

Title: inspector OOG Date: 5-26-17

Field Reviewed? Yes No

Form WW-9 Disposal Method**Attachment****Underground Injection (UIC Permit Number)****Fountain Quail Disposal, LLC, Marietta, Ohio**

- API # 34-105-23619-00-00 Mills Roscoe (SWIW#19) Status: Active/Well Company Name: Roscoe Mills Jr. Trust
- API # 34-105-23652-00-00 Mills Roscoe (SWIW#21) Status: Active/Well Company Name: Roscoe Mills Jr. Trust
- API # 34-105-23637-00-00 Harris C & W (SWIW#22) Status: Active/Well Company Name: Roscoe Mills Jr. Trust
- API # 34-105-23651-00-00 McKelvey (SWIW#23) Status: Active /Well Company Name: Murphy Oil Co.

Buckeye Brine, LLC, Coshocton, Ohio

- API # 34-031-27177-00-00 Adams (SWIW#10) Status: Active
- API # 34-031-27178-00-00 Adams (SWIW#11) Status: Active
- API #34-031-27241-00-00 Adams (SWIW#12) Status: Active

Drill cuttings disposal method? –Landfill or offsite name/permit number?**Buckeye Brine, LLC, Uhrichsville, Ohio**

- Chief's Order No. 2014-04

Enviro Tank Clean, Inc., Belpre, Ohio

- Chief's Order No. 2014-10

Shale Mountain Resources, East Palestine, Ohio

- Chief's Order No. 2016-117

Austin Master Services, LLC, Martins Ferry, Ohio

- Chief's Order No. 2014-541

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ATTACHMENTS

Attachment 1	Topographic Map of Well-Site Location
Attachment 2	Directions to Well-site
Attachment 3	1-Mile Radius Map
Attachment 4	Site Plan
Attachment 5	Drilling Layout, Flare Lines & Prevailing Winds
Attachment 6	Emergency Notification Contact Telephone List
Attachment 7	Daily Personnel & Visitor Log
Attachment 8	Safety Meeting Log
Attachment 9	WV DEP, OOG Form WW-6B Well Work Permit Application, Survey Plat Included
Attachment 10	Wellbore Diagram
Attachment 11	Choke Manifold Schematic
Attachment 12	Anticipated List of Hazardous Chemicals
Attachment 13	Site Safety Plan Review and Evaluation Log
Attachment 14	Evacuation Route
Attachment 15	Certifications

<u>ANNEX 1</u>	Material Safety Data Sheets
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INTRODUCTION / DESCRIPTION OF FACILITY

The purpose of this Site Safety Plan is to provide BRC Operating Company, LLC and its affiliate service groups with guidance in prevention and control of accidents. Safety is always a first reference in gas well development. A person who possesses superficial knowledge and understanding of equipment and tools; he or she should not be recommended for field work related to gas well development.

The WR Infantry 1-1H shallow horizontal gas well site is located by the following coordinates:

NAD 27, WV South State Plane, US Feet

 Northing- 433705

 Easting- 2062505

NAD 27, Geographic- 38.19088, 80.78252

NAD 83, UTM Zone 17, Meters- 4223238.196, 540205.878

General description of travel to pad-site:

The pad-site is located off forest road owned by Plum Creek Timberlands, LP; with primary route of travel to the pad-site as follows-

- Starting at U.S. Route 19 (Summersville, WV) south to intersection of WV County Route 129, turn left
- Starting at the intersection of U.S. Route 19 travel a distance of .6 miles to intersection with WV County Route 41, cross over WV County Route 41 onto WV 13 (old Nicholas Road).
- Travel south a distance of 1.0 miles to right turn, then continuing on Old Nicholas Road for 6.5 miles to the intersection of WV 26 (Bruce Road), turn left.
- Travel north on Bruce Road distance of 1.5 miles to well pad entrance on right onto Infantry Highway WVDOT.

BRC Operating Company, LLC activities on pad-site include or will include drilling, completion, production, servicing, plugging or other activities associated with gas well/s.

Section No. 1 Contacts, Schedules, and Meetings

A. **Emergency point of contact** (*W.Va. Code R. 35-8-5.7.b.4*)

An emergency contacts list is maintained on location at all times. **Refer to Attachment 6: Emergency Notification Contact Telephone List.** Copies are posted in the Drilling Supervisor's office. Contact is made with local ambulance and air medi-vac services and GPS coordinates of the location is shared. GPS coordinates are posted at the rig and communicated to emergency personnel.

Of routine protocol, seven days prior to moving the rig on location a survey is made of all residencies within a 1 mile radius of the well location and a notification / evacuation program is created. Muster points are shown on Attachment 14.

For purpose of assembly in the case of an emergency, signage with reflective material will be posted to indicate the exact location/s of the muster point/s.

Drilling Engineer – Responsibilities are to include implementing the drilling procedure and providing daily surveillance that procedures are being followed. The Drilling Engineer is on site during all drilling operations and is available for safety support on fracking and completion operations. The Drilling Engineer also makes occasional safety audits with service companies and files written reports on all accidents and high potential incidence. Additional responsibilities include insuring that all documentation is maintained within well files and / or software, and that drilling budget costs are being controlled.

Drilling Supervisor – Responsibilities are to include insuring that all operations are executed as per the approved scope, procedures, in a safe and timely manner. Additional responsibilities include verifying that all field tickets have been properly stamped and coded prior to processing, and keeping drilling reports and information current and properly recorded.

3rd. Party Vendors – Responsible charge for providing contracted services to BRC Operating Company, LLC.

Gate Guard – A Gate Guard is on duty 24 hours / day and all personnel are logged in and out of the pad site at the guard house. Additionally, when personnel arrive on location they must check- in and upon departure check-out. An evergreen rooster is maintained at all times. The number of personnel on location is reported daily. A Daily Personnel & Visitor Log is maintained by the Gate Guard. A copy of log sheet listing all personnel is provided on Attachment 7.

B. List of telephone numbers (W.Va. Code R. 35-8-5.6.4)

Emergency telephone numbers for key personnel, governmental entities, and emergency assistance personnel are provided on the Emergency Notification Contact Telephone List, provided on Attachment 6.

Note regarding public water system intakes – Runoff from the pad-site discharges to the immediate north to the Baber Branch, which then continues to flow the Little Laurel Creek, which then flows to its confluence with the Cherry River to the west of the City of Richwood. Within the localized area of the pad-site are two public water systems:

- 1) The nearest public water system is located in Mount Nebo, West Virginia, which is owned and operated by the Wilderness PSD (Telephone Number: 304-872-1598). The Wilderness PSD’s main office is located at 589 Riviera Road, Mount Nebo, West Virginia 26679-8277. The water intake to the purification plant is located on the Meadow River and Anglin’s Creek cannot be impacted by any possible spills which may occur at the pad-site. The treatment facility is located at 6382 Wilderness Highway, Nallen, West Virginia 26680. Runoff from the pad-site does not impact the water intake location.
- 2) Additionally, the Nettie – Leivasy PSD, located to the northwest of the pad-site obtains its water supply from Panther Creek for purification and public distribution. Runoff from the pad-site does not impact the water intake location.

Note regarding public schools – The nearest public school is located at a distance of approximately 4 miles from the pad-site. In the event of an emergency, local responders will assume the responsibility in determining whether the emergency may warrant notifying the school/s. Those schools located in the generalized area of the pad-site are –

- 1) Crichton Elementary, 113 School Street, Quinwood, WV Telephone No. 304-438-6958
Location of school to pad-site – Approx. 10 miles to the southwest
- 2) NicholasWest High School, Main Street, Charmco, WV Telephone No. 304-438-6191
Location of school to pad-site – Approx. 15 miles to the southwest
- 3) Richwood High School, 1 Valley Ave., Richwood, WV Telephone No. 304-846-2591
Location of school to pad-site – Approx. 4-1/2 miles to the north
- 4) Richwood Middle School, 2 Valley Ave., Richwood, WV Telephone No. 304-846-2638
Location of school to pad-site – Approx. 4-1/2 miles to the north
- 5) Cherry River Elementary School, 190 Riverside Drive, Richwood, WV
Telephone No. 304-846-6897
Location of school to pad-site – Approx. 4 miles to the north

Note regarding Nicholas County Health Department- BRC Operating Company, LLC shall file

Application for a Permit to Operate a “Labor Camp”. Other ancillary permits relative to sewage disposal will also be obtained.

C. Method of notification of H2S gas presence and control of access (W.Va. Code R. 35-8-5.7.f.1)

Company Personnel

BRC Operating Company, LLC has designated the Drilling Engineer and/or Drilling Supervisor over its field operations in West Virginia. The Toolpusher should be the first person called in the event of any emergency or incident with regard to hydrogen sulfide.

The Drilling Engineer has authority under delegation from BRC Operating Company, LLC executive management to order the killing of any H2S well. The Drilling Engineer will consult with the Drilling Supervisor if available, and if not he will consult with the Toolpusher prior to ordering killing procedures. However, if neither the Drilling Engineer nor the Drilling Supervisor are available, and the situation at the H2S well does not permit time delay for such consultation; in the opinion of Toolpusher, has the authority to order kill procedures on behalf of BRC Operating Company, LLC without such consultation.

Procedural Measures and Notifications are as Follows:

Emergency circumstances that cause the plan to be put into operation are:

- 1) Actual uncontrolled release of H2S, or
- 2) Immediate potential uncontrolled release of H2S.

Initial procedures if the plan is activated:

- Activate emergency alarm
- Make sure all personnel at the site are safe, muster for headcount
- Phone 911 – Nicholas County Office of Emergency Services
- Telephone BRC Operating Company, LLC, Dallas, Texas office (214) 855-2260
- Evaluate the extent of the gas cloud or plume relative to wind direction

Action to be taken to ensure company personnel on location are accounted for:

A primary “briefing area” will be established at the muster point location at the pad-site access road entrance from the Plum Creek Timberlands, LP forest road. All company personnel and all service company personnel at the location will report to this muster point. All personnel, both company and service company personnel, will be advised of the muster area/s and reporting procedure prior to starting work at the well site.

Action to be taken to remove nonessential personnel from location:

The Drilling Engineer, Gate Guard and 3rd. Party Vendors will make a determination as to whether all personnel are present and accounted for at the muster area. If all personnel are not present, company personnel will gather and direct all such

remaining personnel to the muster area. Direction will be made that all nonessential persons evacuate the area.

Actions to restrict access of nonessential personnel to location:

Vehicle access on the Plum Creek Timberlands, LP forest road to the pad-site will be restricted during an emergency to authorized vehicles only. This will be accomplished by reinforcing roadblocks at the guard house.

Procedure to notify general public in event of emergency:

If it is determined by the onsite public safety official(s) or such public safety official is not on location and company personnel determines that the general public needs to be notified, such decision will be made by the Drilling Engineer or Drilling Supervisor that the general public must be notified. Then company personnel and/or public safety officials can use the Emergency Telephone Contact List to telephone the general public. Company personnel and/or public safety officials may be used to go to all occupied structures, where danger may be considered eminent to notify the general public.

Procedure for conducting the evacuation of general public:

Any decision to evacuate the general public will be made by the onsite public safety official(s). Company personnel and/or public safety officials can use the Emergency Notification Contact Telephone List to alert the general public. Company personnel and/or public safety officials may be used to make personal, face to face notifications to the public.

Procedure for treatment of the influx of H₂S:

If it has been determined by company personnel that the H₂S well requires treatment, then after notifying the public safety official(s) on site, company personnel will activate procedures to prevent further intrusion of H₂S.

D. Pre-spud meeting (W.Va. Code R. 35-8-5.7.h)

Prior to initial rig up of a drilling rig or frac fleet with a new contractor, a Pre-Spud meeting is attended by as many of the actual working participants as possible, to review the detailed step by step operations of the well work in order to improve efficiency and safety operations. Input from the work force is solicited and operation targets are defined.

Notice will be made 48 hours in advance of the scheduled meeting date, time and location. An attendance log is made of all participants.

The WV DEP, Office of Oil and Gas inspector will also be notified of the scheduled meeting.

E. **Schedule for conducting regular well site safety meetings** (*W.Va. Code R. 35-8-5.7.h*)

Safety Meetings

The business practice of BRC Operating Company, LLC is to conduct safety meetings before each crew begins its work shift; typically every 12 hours. In general, meetings will be conducted as follows-

- Pre-job/Pre-tour
- Pre-drilling
- Pre-completion
- Pre-workover
- Post-accident or near miss accident
- As required

Typically, work shifts commence at 5:30 AM and 5:30 PM daily from spudding of the well through rig release. Prior to any non-routine operation (including rigging up to run casing, running casing, rigging up for cementing operations, cementing, rigging up of wire line tools, wire logging), a pre-observation safety meeting is conducted and a written job safety analysis is created with the service company personnel and rig crew. An attendance log is maintained of participants. For purpose of record of attendance, a copy of the Safety Meeting Log sheet is provided as Attachment 8. The sheets are to be maintained in a separate file.

Rig Move Safety Plan

An organization / safe operations meeting is held with the rig move contractor 2 days prior to all pad and pad rig moves. Prior to any rig move, the actual route is driven to validate a safe route by the drilling supervisor, tool pusher and supervisor of the rig moving company. All hazards are eliminated or flagged as a minimum. An attendance log is maintained of participants.

Safety Orientation

Annually, an eight (8) hour safety orientation is held with all rig crew members and as many service company personnel as practical.

Section No. 2 Maps and Diagrams

A. Plan view map (*W.Va. Code R. 35-8-5.7.b.1*)

Attachment 4 provides a plan view of pad-site including the access road. There will not be any pits associated with the drilling or completion operations. The prevailing wind direction to the west is shown on the plan view. Attachment 5 provides a layout of the drilling equipment and flare lines.

B. Topographic map (*W.Va. Code R. 35-8-5.7.b.2*)

Attachment 1 is provided to show the well-site location referenced by USGS mapping.

C. Evacuation plan (*W.Va. Code R. 35-8-5.7.b.3*)

BRC Operating Company, LLC will have at least one Drilling Supervisor or Toolpusher either on-site or on-call with the responsibility of coordinating all emergency response measures. The Drilling Engineer / Drilling Supervisor are familiar with all aspects of the Site Safety Plan, operations and activities at the site, the location and characteristics of waste materials, the location of project records and the project site layout. In addition, these personnel have the authority to commit the resources needed to carry out the Site Safety Plan. In general;

1. Establish a muster point/s at which all persons on the pad-site will assemble for personnel safety and verification of personnel. The ranking employee will conduct a roll call of personnel. Depending upon the severity of the emergency, personnel may be moved further from the location, should it be determined that the location of the muster point is not at a safe distance from the location of the incident.
2. Establish audible and/or visual alarm system
3. Determine the severity of the incident for the purpose of planning the necessary response procedures as outlined in the evacuation plan. Consideration shall be given to the severity of personal injuries, wind direction, ect.
4. Initiate or delegate an appropriate person to initiate the appropriate contacts, announcements or evacuation in accordance with the evacuation plan.
5. Verify that employees and visitors on-site report to the designated muster area. Secure the Daily Personnel and Visitor Log before evacuating the pad-site in order to perform a headcount at the muster point/s.
6. Utilize trained response personnel to enter and properly secure the affected area, provided it can be done safely. This will include public travel on the adjacent forest roads.
7. Have the designated BRC Operating Company, LLC personnel notify regulatory agencies.
8. Coordinate clean-up efforts including the recovery of contaminated material and the decontamination of affected structures and/or equipment.
9. Determine when the incident is under control and when personnel can re-enter the site while preserving the incident site.
10. Complete incident report as required by regulatory agencies and the evacuation plan.

11. Review the incident report with appropriate personnel to assess the effectiveness of the Site Safety Plan and evacuation plan and to reduce the potential for occurrence of a similar incident.
12. If necessary, recommend changes be made to the Site Safety Plan and evacuation plan based on the findings of the incident review.

When notifying appropriate emergency response agencies and local authorities the Drilling Engineer or Drilling Supervisor should be prepared to report the following information:

1. Name of the person reporting the incident.
2. Extent of personal injuries.
3. Name and location of installation.
4. Telephone number where the person making the report can be reached.
5. Date, time and location of incident.
6. Brief description of the incident, nature of the materials or waste involved; and the extent of any injuries and possible hazards of human health or the environment.
7. Estimated quantity of the materials or waste spilled.
8. Extent of contamination to land, water, air; if known.
9. Description of corrective actions to be taken.
10. Telephone and designated contact for further information.

INTERNAL AND EXTERNAL COMMUNICATIONS AND ALARM SYSTEMS

Internal communications among personnel will be made by cellular phone. An air horn will be sounded to signal personnel of an emergency that requires a meeting at the muster point or evacuation.

Internal communications to off-site BRC Operating Company, LLC personnel, contractor personnel, and emergency officials will generally be made by cellular phone. Once emergency personnel arrive at the scene, additional communications may be made by radio communication among emergency responders.

Section No. 3 Well Work

A. Written description of well work (*W.Va. Code R. 35-8-5.7.a*)

BRC Operating Company, LLC plans to horizontally drill, perforate and hydraulically fracture the Marcellus formation of a shallow well; horizontal perforating and hydraulic fracturing will be completed within shallow well formation zone. Additional details of the proposed drilling program are shown with the Well Work Permit Application, WVDEP Form WW-6B provided in Attachment 9. A wellbore diagram of the proposed shallow horizontal gas well development is attached as Attachment 10.

B. Statement of Plan distribution (*W.Va. Code R. 35-8-5.7.a*)

The Well Site Safety Plan as approved by the WV DEP, Office of Oil and Gas will be maintained and available at the drilling rig at all times. Copies will be distributed seven (7) days in advance of well work to local emergency-medical-police-fire services and select state and county agencies as necessary prior to commencement of gas well development activities.

Section No. 4 Chemical Inventory & MSDS

A. Material Safety Data Sheets (*W.Va. Code R. 35-8-5.7.a*)

The Drilling Supervisor or Contractor of the Operator will maintain Material Safety Data Sheets (MSDS) for all materials and chemicals used during drilling and completion operations. Refer to the Emergency Contact List and Telephone Numbers summary for contact information.

MSDS sheets will also be retained by CD format, on-site in the Supervisors office.

Attachment 12 is provided which serves to list those hazardous chemicals anticipated for use during the drilling and completion operations, as developed at the time of this Site Safety Plan preparation. Additional MSDS sheets, resulting from the expansion of the list of hazardous chemicals will be modified through amendment to this Plan.

Provided as Annex 1 are assembled MSDS anticipated for use in the development of this gas well. Should modifications be necessary, as the drilling and completions activities are made, revised or additional MSDS will be included.

B. Statement of MSDS availability (*W.Va. Code R. 35-8-5.7.g*)

A file copy of all Material Safety Data Sheets is on file in the Drilling Supervisor's office or in the Completion Supervisor's office in the case of fracking operations/completion work.

Provided as Annex 1 are assembled MSDS anticipated for use in the development of this gas well. Should modifications be necessary, as the drilling and completions activities are made, revised or additional MSDS will be included.

C. Inventory of materials for mixing of drilling fluids, cements and fracturing/stimulating materials (*W.Va. Code R. 35-8-5.7.d.1 & 5.7.d.2*)

Provided in Annex 1 are three (3) separate individual sheets which recapitulate those products to be used for:

- Drilling Fluids / Mud
- Cementing Products
- Fracturing / Stimulating Products

Prior to pre-spud, an inventory list will be generated for the purpose of summarizing the drilling fluids / mud products that will be stored at the Site Safety Plan will be amended to provide for a complete list of inventory at the time of pre-spud meeting.

Section No. 5 BOPS and Well Control

A. BOP equipment (W.Va. Code R. 35-8-5.7.c.1 & 5.7.c.8)

Casing Size (in.)	Wellhead Flange		BOP Stack			Pressure Test (psi)			
	Size (in.)	Pressure (psi)	Type (*)	Size (in.)	Pressure (psi)	Initial		Subsequent	
						Rams	Ann	Rams	Ann
13-3/8	13-5/8	10,000	R,S,R,R,A,G	13-5/8	10,000	250/5000	250/3500	250/5000	250/3500
9 5/8	13-5/8	10,000	R,S,R,R,A,G	13-5/8	10,000	250/7000	250/3500	250/7000	250/3500

(*) G=Rotating Head, A=Annular, R=Ram Preventer, S=Drilling Spool

B. BOP testing (W.Va. Code R. 35-8-5.7.c.2)

The BOP equipment should be tested upon installation, weekly, unless unsafe to trip at that time and after each bit trip. Testing shall be completed by an independent service company. Annular preventers should be tested to 70% of the rated working pressure. The pressure shall be maintained for a period of 5 minutes. Bleed-off of pressure is not acceptable.

Should the BOP stack be broken, retesting of the BOP will be required. The test shall be run on a 10,000 psi circular chart. All tests shall be documented on an IADC report

Testing Frequency-

- Pipe Rams – Function Tests Every 24 hours
- BOP Drills Every 24 hours
- Annular Preventer – Function Test Every 7 days and every trip
- Blind Rams – Function Test Every trip

C. BOP equipment assembly installation schedule (W.Va. Code R. 35-8-5.7.c.3)

The BOP will be installed after running surface casing as well as after running intermediate casing. BOP equipment shall be installed on the innermost string of casing after the surface casing.

D. Listing of trained personnel with well control (W.Va. Code R. 35-8-5.7.c.4)

Drilling Supervisors and Toolpushers used on this well will be IADC trained and certified (International Association of Drilling Contractors). A trained person will be present during drilling operations. Training certificates will be available for review at the pad-site. Personnel with well control training will be listed at the time of pre-spud; summarized on Attachment 15.

E. Description of system for maintaining records (*W.Va. Code R. 35-8-5.7.c.5*)

Detailed records are to be maintained and for immediate notification to the WV Office of Oil and Gas inspector for all significant drilling issues, including but not limited to-

1. Lost circulation
2. H2S
3. Fluid entry
4. Kicks and abnormal pressures

The records are to be also maintained electronically at the Dallas, Texas office of BRC Operating Company, LLC.

F. Notification provided to WV DEP OOG inspector/s (*W.Va. Code R. 35-8-5.7.c.5*)

Notification will be made to the oil and gas inspector, or designated representative as soon as possible of any unusual drilling events, including but not limited to H2S* or significant kicks that occur during drilling operations. Such notification will be the responsibility of the Drilling Supervisor.

*Mandatory immediate notification to the Office of Oil and Gas is required of any encounter of hydrogen sulfide gas greater than 10 ppm.

G. Wellhead schematic and detail written description (*W.Va. Code R. 35-8-5.7.c.6*)

Schematic and description of the well head assembly to be placed on the well upon completion will be provided through amendment to the Site Safety Plan.

H. Kill procedure method (*W.Va. Code R. 35-8-5.7.d.3*)

Sufficient mud material will be kept on location to increase the density of the mud system weight, or as needed to maintain control of the formation.

Inventory of all materials that will be on-site for the mixing of mud will be provided at the time of pre-spud meeting. The Site Safety Plan will be amended to include a complete inventory list of products.

Mixed mud weight The mixed mud weight will vary depending on the bottom hole pressures and will be calculated and adjusted as we gather more information; BRC Operating

Company, LLC intends to use 12.8 lb – 13.0 lb mud, but will adjust the mud weight as necessary to control the formation.

Weighing Material BRC Operating Company, LLC will have the necessary materials available to mix up enough mud to weigh the mud up 1 lb more than the mud used for drilling.

Volume of Water Used for Mixing The rig has a minimum 740 bbl rig water tank.

Mud Pumps and Mud System There will be two mud pumps with a rated power of 1600 hp each; and a motor rating of 1500 hp each. The drill rig is equipped with 2 mix tank. A mud-gas separator will be employed as shown on manifold diagram in Attachment 11.

Kill Procedures

The following paragraph describes the methodology and type of kill procedures that will be used if needed. These procedures are recognized by the International Association of Drilling Contractors (IADC).

Once a kick is detected a prompt shut in of the well is essential. The exact shut in method will be dictated by the operation being performed at the time of the kick, available equipment, plus other extenuating circumstance. The following types of kill operations may be performed to bring the well back under control. The different methods listed below to be used will be determined by the operation being performed at the time of the kick.

Kill Procedures -

- 1) Drillers Method
- 2) Wait and Weight Method
- 3) Circulate and Weight Method
- 4) Concurrent Method
- 5) Reverse Circulation Method
- 6) Dynamic Kill Method
- 7) Bullheading Method
- 8) Volumetric Method

Section No. 6 Hydrogen Sulfide

A. Detection, monitoring, warning equipment (W.Va. Code R. 35-8-5.7.e.1)

The equipment and method used for the monitoring, detection and warning of the presence of hydrogen sulfide gas during drilling, completions and work-over operations will be installed per manufacturer's recommendations. Additionally, personal protective detectors such as BW gas detectors or equivalent will be provided to personnel on the rig floor. Installed detectors will be typically located near the well bore on the drilling rig, outside the data van or the drillers stand. Monitors will be positioned in accordance with positions shown on Attachment 5.

A two man mud logging unit will be rigged up prior to drill below the surface casing. The mud logging unit will be equipped to detect H₂S.

The emergency alarm will be audible to all personnel on location. If dangerous levels of H₂S are detected, the evacuation plan will be implemented which will provide for site control and evacuation if needed. Generally, the site will be secured such that access is allowed only for trained emergency personnel. Site security will be accomplished by trained workers stationed at safe points on the perimeter and access road to the site. Windsocks will be mounted high enough to be visible from briefing areas. Signage shall be provided at the site access road entrance, stating that the location is an expected hydrogen sulfide field.

B. Statement of personnel trained in H₂S (W.Va. Code R. 35-8-5.7.e.2)

All personnel that will be involved in the drilling operations will be trained in H₂S in drilling operations to a minimum of the awareness level. Additional training will be given to the Drilling Engineer, Drilling Supervisor and Toolpusher both in H₂S and emergency response duties related specifically to air toxins. All the aforementioned training will be completed prior to spudding the well. These records may be kept separate from this Site Safety Plan. Further information in regard to personnel certifications is provided in Attachment 15. While working under H₂S masks, chalkboards and hand signals will be used for communication.

C. Notification to OOG (W.Va. Code R. 35-8-5.7.e.4)

The West Virginia Department of Environmental Protection's Office of Oil & Gas Inspector will be notified in the event that H₂S is encountered.

D. Protection Zones description (W.Va. Code R. 35-8-5.7.f.2)

All company personnel and all service company personnel at the location will report to this muster point. All personnel, both company and service company personnel, will be advised of the muster area/s and reporting procedure prior to starting work at the well site. Personnel must be made cognizant of wind direction, and proceed to nearest or relocate up-wind from drill site.

E. List of personal protective equipment (W.Va. Code R. 35-8-5.7.e.3)

The following personal protection equipment (PPE) will be available and in use as needed on location-

- Fire Retardant Clothing (FRC)
- Hardhats
- Safety shoes
- Safety glasses and/or safety goggles / face shields
- Hearing protection earplugs
- Cotton and chemical resistant work gloves
- Dust mask respirators
- BW Technology H2S Gas Elert Clip, or manufacturer's equal – Each operator; maintain extra units
- Absorbent material – Maintain supply of 5 bags @ 50#/each
- Escape packs – Maintain a minimum of 2 units
- Portable fire extinguishers – Maintain throughout site
- Self-contained breathing apparatus (SCBA) – Maintain a minimum of 2 units
- Cellular telephones – Each operator

In the event that other hazards are identified or presented during the drilling operation, attempt to eliminate the hazard will be made, and if not practical, additional PPE will be provided to mitigate the risk to the worker. In the event that H2S is detected, a hazard assessment will be performed for this exposure along with risk mitigation.

Section No. 7 Flaring

A. Written description of plan including schematic (W.Va. Code R. 35-8-5.7.f.1)

Note-Flaring may not be employed provided an attempt to route the flow to a vacuum degasser (gas buster) and work the gas kick from there is successful.

Size, construction and length of flare line –

The flare line will be a 4-inch diameter, steel line that extends from the well as shown on Attachment 5. The line will be anchored to the surface of the ground by cross pinning it in place using metal staking at multiple points along the line.

All choke lines shall be straight lines unless turns use tee blocks or are targeted with running tees, and shall be anchored to prevent whip and reduce vibration. The choke manifold equipment configuration shall be functionally equivalent to the appropriate example diagram shown on Attachment 5. Final configuration after installation of the chokes may vary.

Flare Lighting System –

The system for lighting the flare will be an automatic flare igniter using a solar collector panel and battery charger system. A secondary igniter will be installed as a backup. The Drilling Supervisor will provide notification to the local emergency departments (fire departments) prior to lighting the flare.

Flare Safe Distances –

The flare line(s) discharge shall be located not less than that footage from the wellhead shown in Attachment 5, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of the rig and trailers. The flare system shall have an effective method for ignition. All flammable material beyond the end of the flare line will be cleared to a minimum distance of 50-feet.

Flare Duration –

The flare duration shall not exceed the maximum time requirements needed to complete the operation.

The West Virginia Department of Environmental Protection, Division of Air Quality, in accordance with Section 6.1 of 45CSR6 (Rule 6) establishes that temporary well flaring cannot exceed the maximum number of cumulative days of operation allowed within a twelve (12) consecutive month period. The Time Period in which the gas is flared and why flaring is necessary will be stated through the submittal of Form WW-80: Plan of Operation for the Flaring of Natural Gas Under WV Code 22-6-31 to

Section No. 8 Collision Avoidance Safeguards, Practices and Standard Plans

Remark - With regard to concern over the relative, between the bottom hole location of the previously drilled horizontal well, MWV Rupert 7-H (Pad 2) and the proposed horizontal, surface hole location of WR Infantry 1-1H is a separated distance of 10+ 3333miles. Therefore, as the well described within this Site Safety Plan is a horizontal drilling and completion; a collision is not possible with another wellbore. As such, Collision Avoidance Safeguards, Practices and Standard Plans are taken under advisement only.

Therefore the associated separation factor is considered to be Level 4: Low to no collision risk.

A. Established definitions

1. Proposed Wellbore – Involves sections of the horizontal top-hole, the KOP, the lateral landing, and the lateral drilling to the total measured depth TMD.
2. Nudge – Technique generally used in the horizontal top-hole section. The well path is nudged from horizontal to pass areas of possible magnetic interferences and to reduce the risk of collision by maintaining separation with other wellbores.
3. KOP – Kick off Point. Diverting a well path from one trajectory to another.
4. MWD – Measured While Drilling
5. LWD – Logging While Drilling
6. SF – Separation Factor or Clearance Factor
 $SF = CC + [UR_{ref} = UR_{off}]$
CC – well separation distance
UR_{ref} – radius ellipse of uncertainty on reference well
UR_{off} – radius ellipse of uncertainty on offset well
Note: ellipses are half-axes or radii
7. TMD – Total Measured Depth
8. Gyro – High accuracy well bore survey instrument unaffected by magnetic interference
9. QC / QA – Quality Control / Quality Assurance
10. HSE – Health Safety and the Environment
- 11.

B. Established description of risks

- | | | |
|---------------------------------|---------|--------------------------|
| 1. SF less than or equal to 1.0 | Level 1 | Extreme collision risk |
| 2. SF = 1.0 to 1.5 | Level 2 | High collision risk |
| 3. SF = 1.5 to 2.0 | Level 3 | Moderate collision risk |
| 4. SF is greater than 2.0 | Level 4 | Low to no collision risk |

C. Plan components

1. Describe scope of work and type of survey technique by use of gyros, MWD, LWD or others
2. Wellbore
 - a. Describe the horizontal top-hole section beginning at the surface and to the lateral landing.
 - b. Lateral section beginning at the LP and to the TMD
3. Provide pad-site surface diagram
4. Describe the gyro survey
5. Provide descriptive actions if a collision should occur
6. Provide method to notify OOG inspector if a collision occurs

Section No. 9 Shallow Well Additional Requirements

A. List of anticipated zones and depths

Formation Name	Ft. TVD - RKB	Potential Problems
	224' – 779'	Coal seams
Ravencliff Sandstone	1,388'	
Greenbrier Group	1,724'	
Big Lime Limestone	2,071'	
Injun Sandstone	2,421'	
Weir Sandstone	2,578'	
Berea Sandstone	2,936'	
Gordon	3,118'	
Elk Lick Limestone	4,579'	
Rhinestreet Shale	5,634'	
Sycamore Limestone	6,242'	
Hamilton Group	6,610'	
Upper Marcellus	6,836'	
Cherry Limestone	7,229'	
Marcellus	7,262'	
Base Marcellus	7,302'	

B. Detailed casing and cementing program

The casing and cementing proposed for gas well development is provided in Attachment 9.

C. Flaring activities

With possible extended flaring operations; that may become necessary due to the evaluation of the Marcellus formation, which cumulative days of flaring may extend beyond the total allowable by WV DEP regulations, BRC Operating will procure the necessary permit from the West Virginia Department of Environmental Protection, Division of Air Quality.

Form WW-80: Plan of Operation for the Flaring of Natural Gas Under WV Code 22-6-31 will also be submitted to the Office of Oil and Gas.

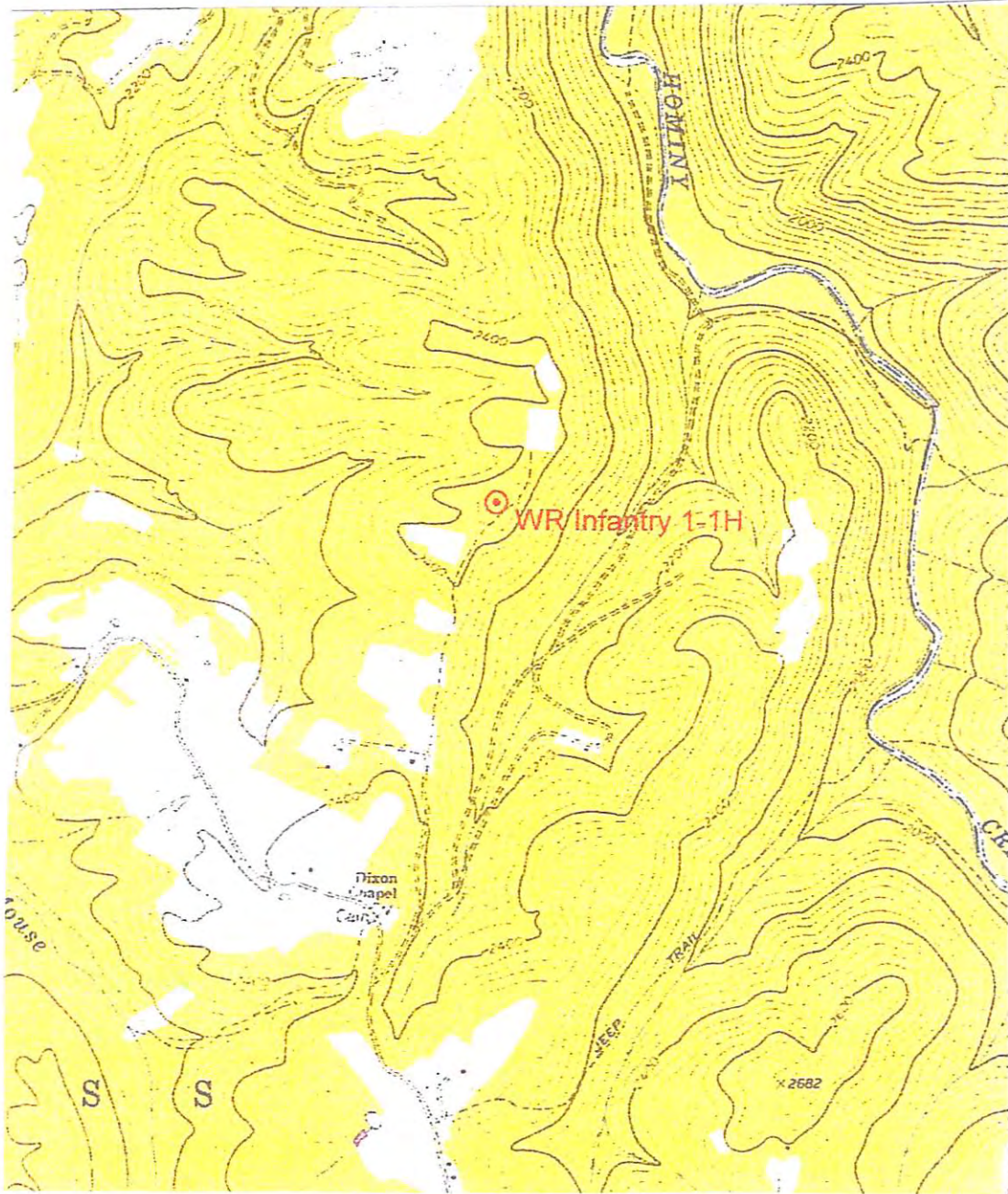
D. Listing of business, residents, church, schools, ect within 1 mile radius (W.Va. Code R. 35-8-5.7.b.5)

There are not any businesses, located within a 1-mile radius of the surface hole. Reference to the 1-mile radius is provided on the mapping as Attachment 3. However, there is one church and 8 homes located within a 1-mile radius of the drill pad location.

Section No. 10 Site Safety Plan Review and Evaluation Log

In order to provide accountability for the review/s, approval/s and modifications to the Site Safety Plan, a review and evaluation log record is provided as Attachment 14.

ATTACHMENTS

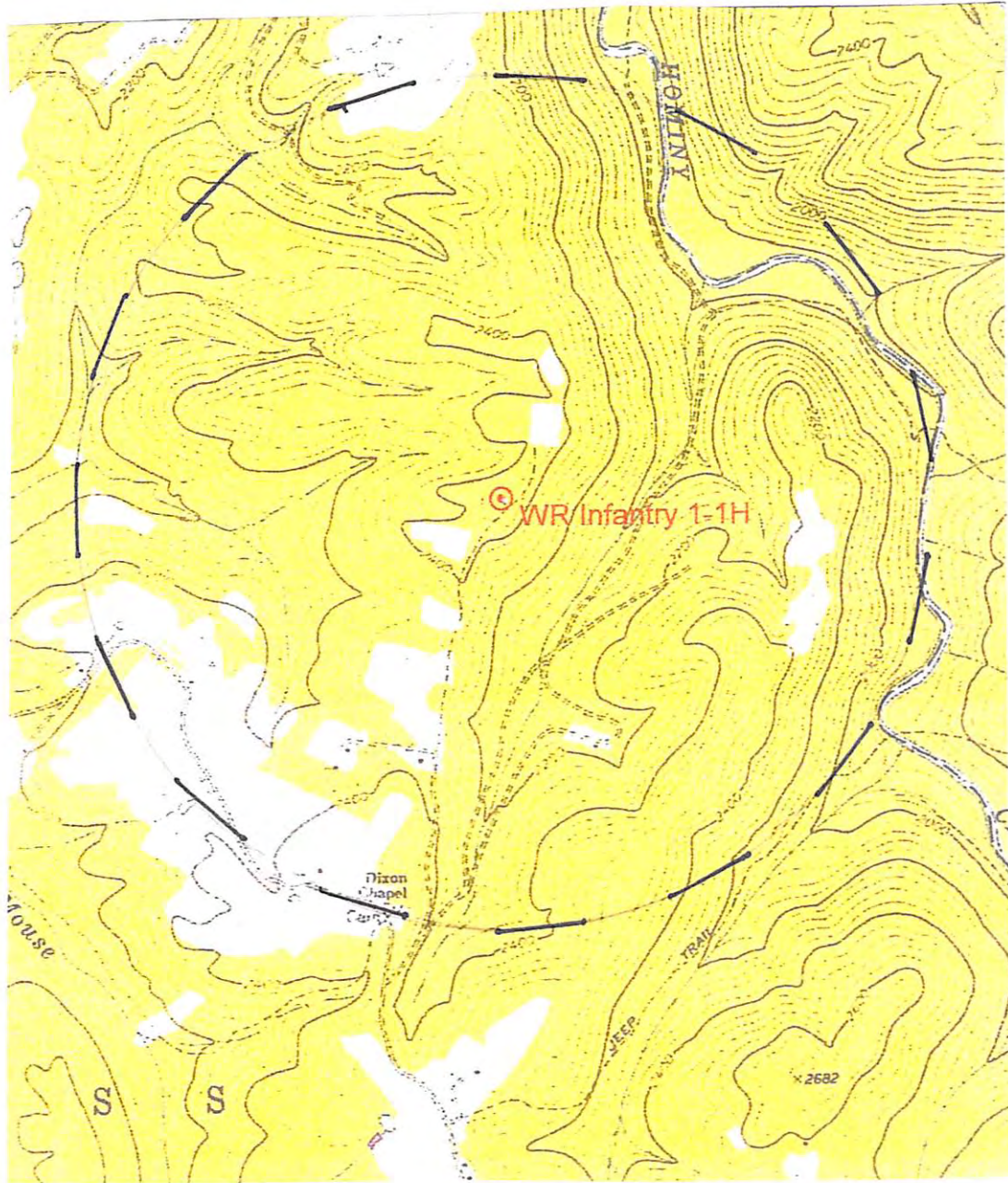


BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 1

TOPOGRAPHIC MAP OF PAD-SITE LOCATION

08/11/2017

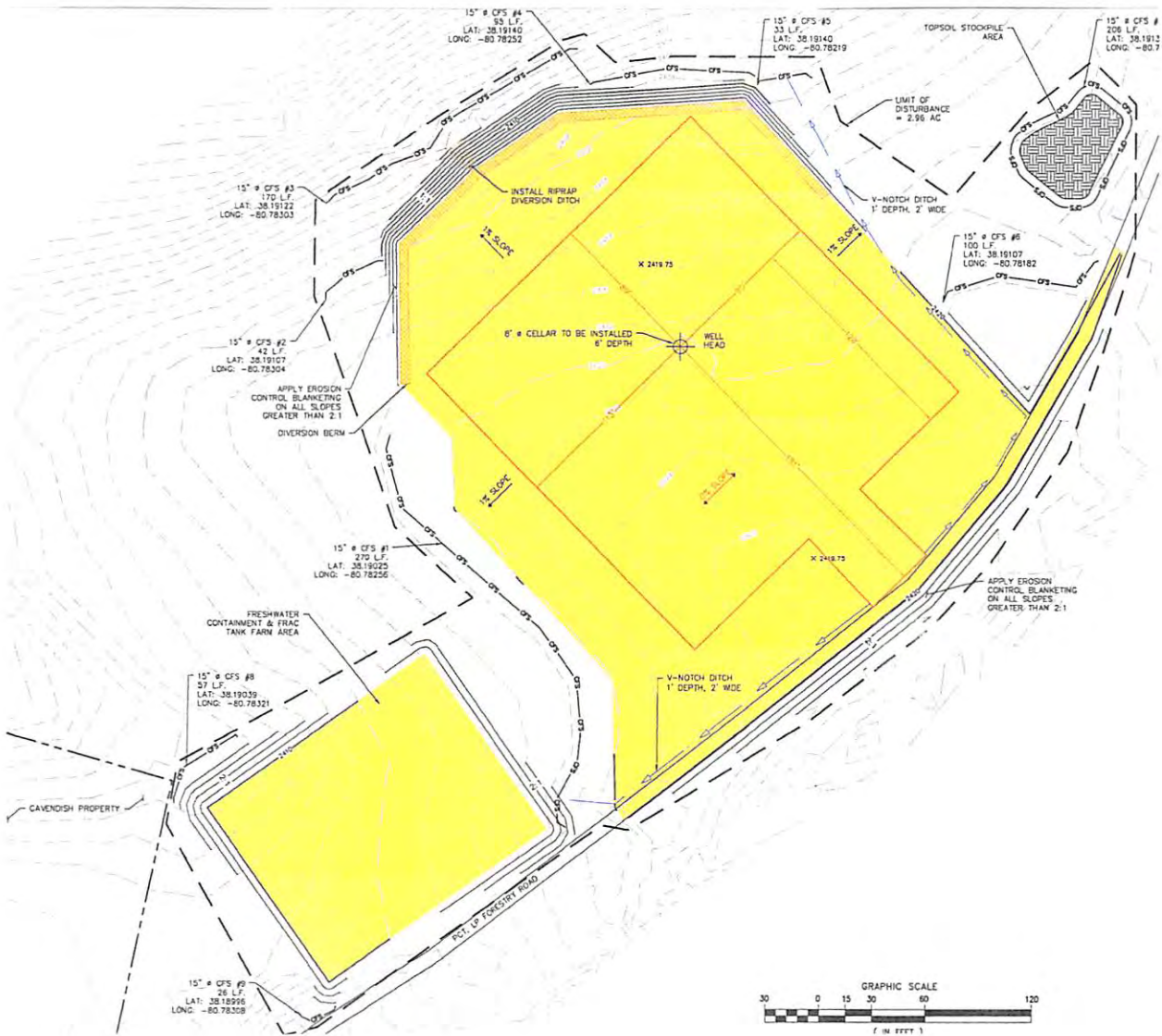
<u>County</u>	<u>Route Number</u>	<u>Location Description</u>
Nicholas County	WV County Rt. 19	Starting at U.S. No. 19 (Summersville, WV) south to intersection of WV County Route 129, turn left
Nicholas County (Riviera Road)	WV County Rt. 129	Starting at the intersection of US. No. 19 travel a distance of .6 miles to intersection with WV County Route 41, cross over WV County Route 41 onto WV No. 13 Old Nicholas Rd.
Nicholas County	WV No. 13 (Old Nicholas Rd.)	Travel south a distance of 1.0 miles to right turn, then continuing on Old Nicholas Road for 6.5 miles to the intersection of WV No. 26 (Bruce Rd.), turn left
Nicholas County	WV No. 26 (Bruce Rd.)	Travel north on Bruce Rd. distance of 1.5 miles to wellpad entrance on right



BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 3

1 - MILE RADIUS MAP

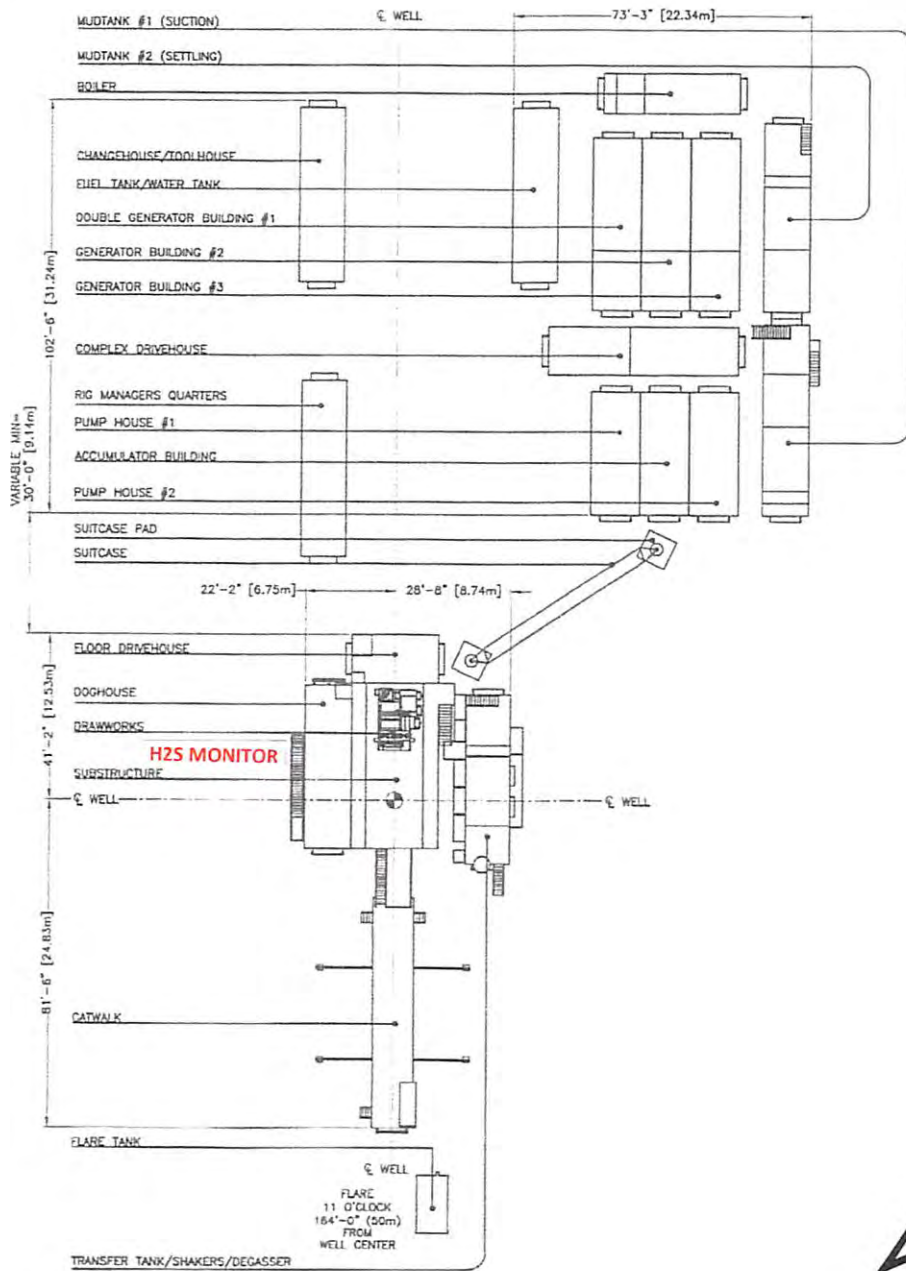
08/11/2017



BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 4

SITE PLAN

08/11/2017



PREVAILING WIND DIRECTION
ERECT WINDSOCK FOR VERIFICATION

BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 5

DRILLING LAYOUT, FLARE LINES & PREVAILING WIND

08/11/2017

BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 6

EMERGENCY NOTIFICATION CONTACT PHONE LIST

08/11/2017

BRC OPERATING COMPANY, LLC
 WR INFANTRY 1-1H
 SHALLOW WELL - UNCONVENTIONAL GAS WELL
 NICHOLAS COUNTY, WV

CONTACT LIST AND TELEPHONE NUMBERS / EMAIL

Date prepared: April 20, 2017

CONTACT	TELEPHONE NUMBER	EMAIL
Designated Person and Company:		
BRC Operating Company, LLC (24 Hour) Contact		
Chad Touchet, Vice President	214-855-2260 (O) 817-739-4410 (C)	catouchet@bluscapegroup.com
Designated Backup Person Incident Commander/ Response Coordinator:		
Regulatory Manager:		
Walter W. Jenko - New Tech Global	724-470-8664 (C)	wienko@ntglobal.com
Safety Manager:		
Appalachian Security Group, Hico, WV - Chuck Brightman	304-880-8121 (C)	
Cudd Well Control, The Woodlands, Texas	713-849-2769	
Wild Well Control	281-784-4700	
Federal and State Agencies:		
US EPA, National Response Center (NRC)	800-424-8802	
West Virginia Office of Water Resources Emergency Notification Number, Pollution and Emergency Spills	800-642-3074	
West Virginia Office of Oil and Gas Charleston, WV Office	304-926-0499	
Jeremy Jones, Oil and Gas Inspector, Nicholas County, WV	304-951-2596 (C)	
Environmental Protection Agency (EPA), Region 3	215-814-5000	
US Department of the Interior, Fish and Wildlife Service Elkins, WV Field Office	304-636-6586	
US OSHA, Occupational Safety & Health Administration Region 3, Charleston, WV Area Office	304-347-5937	
West Virginia Fire Commission, State Fire Marshall Office	304-558-2191	
WV Dept. of Transportation, Division of Highways, Regional Maint. Engineer	304-842-1556	
WV Department of Health & Human Resources	304-558-0684	
WV Poison Control Center	800-222-1222	

FBI, Beckley Office	304-253-6874
U.S. Drug Enforcement Administration, Charleston, WV	304-347-5209
Bureau of Alcohol & Tobacco Firearms, Charleston, WV	304-340-7820
West Virginia Division of Natural Resources, Beckley	304-256-6947
U.S. Marshals Service, Charleston, WV	304-347-5136
WV Division of Forestry, State Headquarters-Charleston	304-558-2788
Plum Creek Timberlands, LP-Lewisburg	304-645-1542
USDA Forest Service, Monongahela National Forest-Elkins, WV	304-636-1800
WV Department of Natural Resources, District IV-Law Enforcement-Beckley	304-256-6945
WV Department of Natural Resources, District IV-Wildlife Resources-Beckley	304-256-6947
WV Dept. of Environmental Protection Spill Response	800-642-3074
Local Agencies and Responders:	
Emergency-Medical-Police - Agencies/Fire Department Nicholas County Emergency Communications Center	911
Nicholas County Sherriff's Department	304-872-7880
Summersville Regional Medical Center - Emergency Department Address: 400 Fairview Heights Road, Summersville, WV 26651	304-872-8448
West Virginia State Police	
Charleston Headquarters	304-746-2100
Troop 6 Beckley, WV	304-256-6982
Lewisburg Detachment, District 3	304-647-7600
Richwood Detachment, District 2	304-846-6510
Rainelle Detachment, District 3	304-438-3000
Nicholas County Div. of Homeland Security and Emergency Management	304-558-5380 (O)
Nicholas County Office of Emergency Services	304-872-4911
Nicholas County Health Department, Environmental	304-872-5329
Richwood, WV Police Department	304-846-2597
Richwood, WV Public Safety Department	304-846-6510
Joe Safety - Personnel Rescue	412-600-4641
Waste Removal:	
Lone Wolf NRS Inc.	304-651-8980
Vacuum System at Rig - KWS Oilfield Rental, Waynesburg, Pa.	724-627-4939
Vacuum Trucks, Water Disposal - Whitco Transport LLC-Oak Hill, WV	304-465-9448
Vacumn Trucks - Reliable Environmental Transport Inc.	877-842-5412
The Muck Truck Septic Services	304-846-4600
Contractors:	
Hupp Surveyors - Danny Bunch or Doyle Hupp	304-991-7035
HB Rentals - Private fire-fighting equipment	724-916-4215
Clean-up Crews:	
Ryan Environmental, Bridgeport, WV	304-842-9115
Secondary Containments / Matting - Extreme Plastics Plus, Morgantown	405-248-2170
Waste Management - HAZWOPPER Clean-up Contractor	304-629-5100

(O) Denotes office telephone number

(C) Denotes mobile telephone number

DAILY PERSONNEL & VISITOR LOG

WELL NAME: _____

DATE: _____

Name	Organization	Time In	Time Out
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			

SAFETY MEETING LOG

WELL NAME: _____

DATE: _____

LOCATION: _____

Name	Job Title	Organization
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

INSERT FOLLOWING ISSUANCE OF PERMIT

BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 9

WV DEP, OOG FORM WW-6B WELL WORK PERMIT APPLICATION

08/11/2017

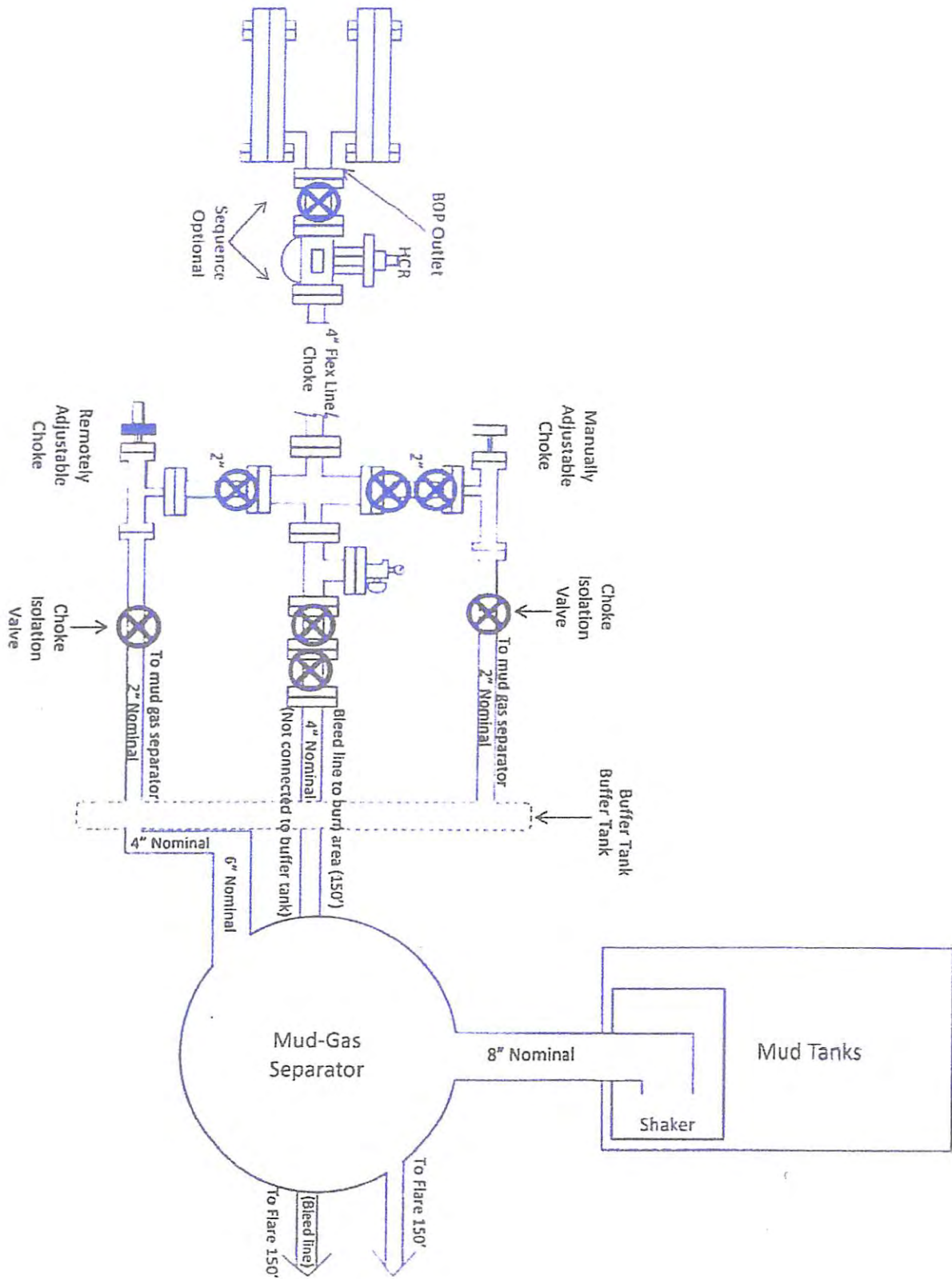
WV Infantry 1-1H



Static Temp [°F]	Formations	Depth (MD) Vertical Pilot Hole [ft]	Depth (MD) Horizontal Hole [ft]	Depth (TVD) [ft]	Dev	Hole Size	Casing Size
71		113	113	113		26"	22" or 24" Pre-set Conductor
	Coal Seam 1	224	224	224			
	Coal Seam 2	400	400	400			
	Coal Seam 3	631	631	631			
	Base of Coal Seams	780	780	780			
	Ravencliff	1,388	1,388	1,388			
	Greenbrier	1,724	1,724	1,724			
	Big Lime	2,071	2,071	2,071			
	Injun Sand	2,421	2,421	2,421			
101	18-5/8" shoe	2,500	2,500	2,500		24"	18-5/8" 94.5# K-55 BTC
	Weir Sand	2,578	2,578	2,578			
	Base Weir	2,746	2,746	2,746			
	Berea SS	2,936	2,936	2,936			
	Gordon Devonian	3,118	3,118	3,118			
	Elk Limestone	4,579	4,579	4,579			
	Rhinestreet Shale	5,634	5,634	5,634			
141	13-3/8" shoe	5,700	5,700	5,700		17.5"	13-3/8" 54.5# K-55 BTC
	Sycamore	6,242	6,242	6,242			
150	7-5/8" TOL (cont.)		6,400	6,400			
	Hamilton	6,610	6,610	6,610			
154	9-5/8" shoe	6,700	6,700	6,700		0"	12.25"
	KOP		6,770	6,770			9-5/8" 47# L-80 BTC
	Upper Marcellus	6,836	6,837	6,836			KOP - Start Build with 11.53"/100 to 82.5"
	1st Lime Unite	7,070	7,092	7,070			
	Cherry Limestone	7,229	7,355	7,229			
	Lower Marcellus (Entry)	7,262	7,482	7,262			
161	7-5/8" Liner shoe (cont.)		7,531	7,269		0"	8.5"
						82.5"	8.5"
							7-5/8" 26.4# L-80 flush contingent liner
161	Landing Point		7,734	7,282		90"	8.5"
161	Well TD		13,054	7,282		8.5"	5-1/2" 20 or 23# P110 LTC
	Onondaga	7,302		7,302			
	Huntersville Chert	7,404		7,404			
163	TD Pilot Hole	7,405	7,405	7,405		8.5"	
	Contingent lateral		13,054	7,282		90"	6.5" or 6.125"
							4-1/2" P110 LTC

CHOKE MANIFOLD SCHEMATIC

BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 11



ADDITIVES:

FRACKING / STIMULATION

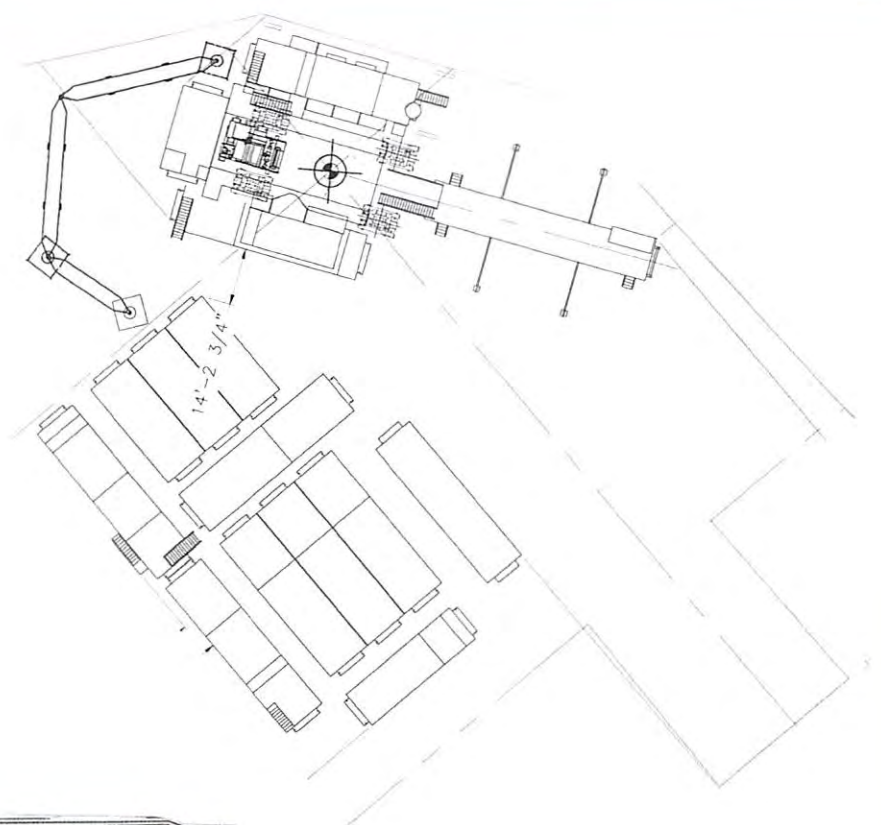
SUPPLIER / MANUFACTURER	PRODUCT TRADE NAME	APPLICATION	COMPOSITION / INGREDIENTS	CAS NUMBER
FTS International Services, LLC	FRW-600	Friction Reducer	Hydrotreated light distillate Ammonium acetate	64742-47-8 631-61-8
Frac Tech Services, LLC	APB - 1	Gel Breaker	Ammonium Persulfate	7727-54-0
Frac Tech Services, LLC	B - 9	pH Adjusting Agent	Potassium hydroxide	1310-58-3
Frac Tech Services LLC	B - 10	High pH Buffer	Potassium carbonate Potassium hydroxide	584-08-7 1310-58-3
Frac Tech Services LLC	BXL - 2	Borate crosslinker	Sodium metaborate Boric acid Potassium hydroxide	10555-76-7 10043-35-3 1310-58-3
Frac Tech Services, LLC	CI - 150	Acid Corrosion Inhibitor	Isopropanol Dimethylformamide Organic amine resin salt Quaternary ammonium compound Aromatic aldehyde	67-63-0 See note 68-12-2 See note Proprietary Proprietary Proprietary
Frac Tech Services LLC	CS - 500 SI	Scale Inhibitor	Ethylene glycol	107-21-1 See note
Frac Tech Services LLC	FE - 100L	Iron control	Citric acid	77-92-9
Frac Tech Services, LLC	HVG - 1	Water Gelling Agent	Guar Gum Petroleum Distillate Surfactant Clay	9000-30-0 64742-47-8 68439-51-0 14808-60-7
Frac Tech Services, LLC	Hydrochloric Acid (HCl)	Acid	Hydrogen Chloride	7647-01-0
Frac Tech Services, LLC	ICI - 3240	Biocide	Dazomet Sodium Hydroxide	533-74-4 See note 1310-73-2
Frac Tech Services LLC	NE - 100	Non-emulsifier	2-Butoxyethanol 2-Propanol Dodecylbenzenesulfonic acid	111-76-2 67-63-0 See note 27176-87-0
Frac Tech Services LLC	SHALE SURF 1000	Surfactant	Ethoxylated alcohol 2-Butoxyethanol 2-Propanol Methanol Cyclohexene	Proprietary 111-76-2 67-63-0 See note 67-56-1 See note 5989-27-5
Frac Tech Services LLC	WELLCLAY 100	Clay stabilizer	Manufacturer lists no ingredients as hazardous. OSHA 29 CFR 1910.1200	Mixture

Note: Referenced by U.S. EPA Table II.b. Individually Listed Toxic Chemicals Arranged by CAS Numbers

BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 12

ANTICIPATED LIST OF HAZARDOUS CHEMICALS

08/11/2017



BRC OPERATING COMPANY, LLC WR INFANTRY 1-1H UNCONVENTIONAL GAS WELL ATTACHMENT 14

EVACUATION ROUTE

08/11/2017

CERTIFICATE OF COMPLETION

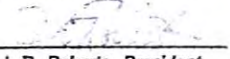
Petroleum Educational Services, Inc., hereby certifies that the Participant has successfully demonstrated the ability to recognize a kick, shut in the well, circulate out the influx, and properly use the formulas associated with Blowout Prevention.

Participant Name: Jaron Simon

PESI Student ID No: **150624-05**

Course Name: **Blowout Prevention for Well Site Supervisors**

Course Level: **Supervisor** Stack: **Surface**


J. D. Roberts, President

Completion Date: **06.24.2015**

Expiration Date: **06.24.2017**



JARON SIMON
has attended the
H₂S/SCBA TRAINING
with
CAVIN CRABTREE
Instructor

ID No. 2017/11/15
Exp. Date 11/15

ALMANSOORI SAFETY SERVICES

ANNEX 1
MATERIAL SAFETY DATA SHEETS

DRILLING FLUIDS / MUD

CEMENTING PRODUCTS

FRACTURING / STIMULATING PRODUCTS

DATE: February 15, 2016

MWV RUPERT 3-1H

SUPPLIER / MANUFACTURER	PRODUCT TRADE NAME	APPLICATION	COMPOSITION / INGREDIENTS	CAS NUMBER
Excalibar Minerals	<i>Salt Water Polymer Fluid System</i> Barium Sulfate		Barium Sulfate	7727-43-7
Tarak Chemicals Limited	<i>Salt Water Polymer Fluid System</i> Aluminum Sterarate			
United Salt Corporation	<i>Salt Water Polymer Fluid System</i> Salt, Sodium Chloride (NaCl)		Salt, Sodium Chloride	7647-14-5
Natural Soda LLC	<i>Salt Water Polymer Fluid System</i> Sodium Bicarbonate		Sodium Bicarbonate	144-55-8
Newpark Drilling Fluids LLC	<i>Salt Water Polymer Fluid System</i> NewArmor	Corrosion Inhibitor	Alkylamines Cyclic amine derivatives, acetate Heterocyclic ether Methyl alcohol	Proprietary Proprietary Proprietary 67-56-1
Newpark Drilling Fluids LLC	<i>Salt Water Polymer Fluid System</i> NewPac LV	Filtration Control Agent	Sodium carboxymethyl cellulose Sodium chloride	9004-32-4 7647-14-5
Grinding & Sizing Company, Inc.	<i>Salt Water Polymer Fluid System</i> NEW ZAN D		Xanthan gum	11138-66-2
Bri-Chem Supply Corp.	<i>Salt Water Polymer Fluid System</i> Lime	Lime	Calcium Hydroxide Magnesium Oxide Silicon Dioxide	1305-62-0 1309-48-4 7631-86-9
Grinding & Sizing Company, Inc.	<i>Salt Water Polymer Fluid System</i> Carboxymethyl Starch	Modified Polysacchride	Carboxymethyl starch	9057-06-1
Elementis Specialties, Inc.	<i>Synthetic Based Oil Mud</i> BENTONE 910	Rheological additive	Crystalline silica	14808-60-7
Elementis Specialties, Inc.	<i>Synthetic Based Oil Mud</i> BENTONE SD-1	Rheological additive	Crystalline silica	14808-60-7
Shrieve Chemical Products	<i>Synthetic Based Oil Mud</i> BIO-BASE 365	Oilfield Applications	Aliphatic hydrocarbons Dodecane Tridecane Tetradecane Undecane	90622-53-0 112-40-3 629-50-5 629-59-4 1120-21-4
Sigma-Aldrich	<i>Synthetic Based Oil Mud</i> Calcium chloride	Calcium chloride	Calcium chloride	10043-52-4
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> CEDAR FIER		Wood shaving	
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> CyberDrill Mud	Synthetic - base invert Emulsion	Internal Olefin Blend	93762-80-2
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> CyberMul		Fatty Acid	70321-73-2
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> CyberPlus	Emulsifier	Butanol Petroleum Solvent	71-36-3
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> EXWATE	Barium Sulfate	Barium Sulfate Clay Quartz Calcite	7727-43-7 1332-58-7 14803-60-7 471-34-1
Carmeuse Lime & Stone	<i>Synthetic Based Oil Mud</i> Hydrated Lime	Calcium Hydroxide	Calcium Hydroxide	1305-62-0
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i>	Calcium Carbonate	Limestone	1317-65-3

08/11/2017

	NewCarb			
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> NewPlug	Ground Pecan or Walnut Shells		Not applicable
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> Oil Dry	Hydrous Magnesium Aluminum Silicate	Magnesium Aluminum Silicate Crystalline, Silica Magnesium Oxide	12174-11-7 14808-60-7 01309-48-4
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> OptiG			12002-43-6
Newpark Drilling Fluids, LLC	<i>Synthetic Based Oil Mud</i> OptiWet	Modified Fatty Acid Amide	1H-Imidazole-1-ethanamine, 4,5-dihydro-2-nortall-ol alkyl derivatives 1,2-Ethanediamine, N-(aminoethyl)- Petroleum Distillate	68442-97-7 111-40-0

MATERIAL SAFETY DATA SHEETS

CEMENTS

DATE: February 5, 2016

MWV RUPERT 3-1H

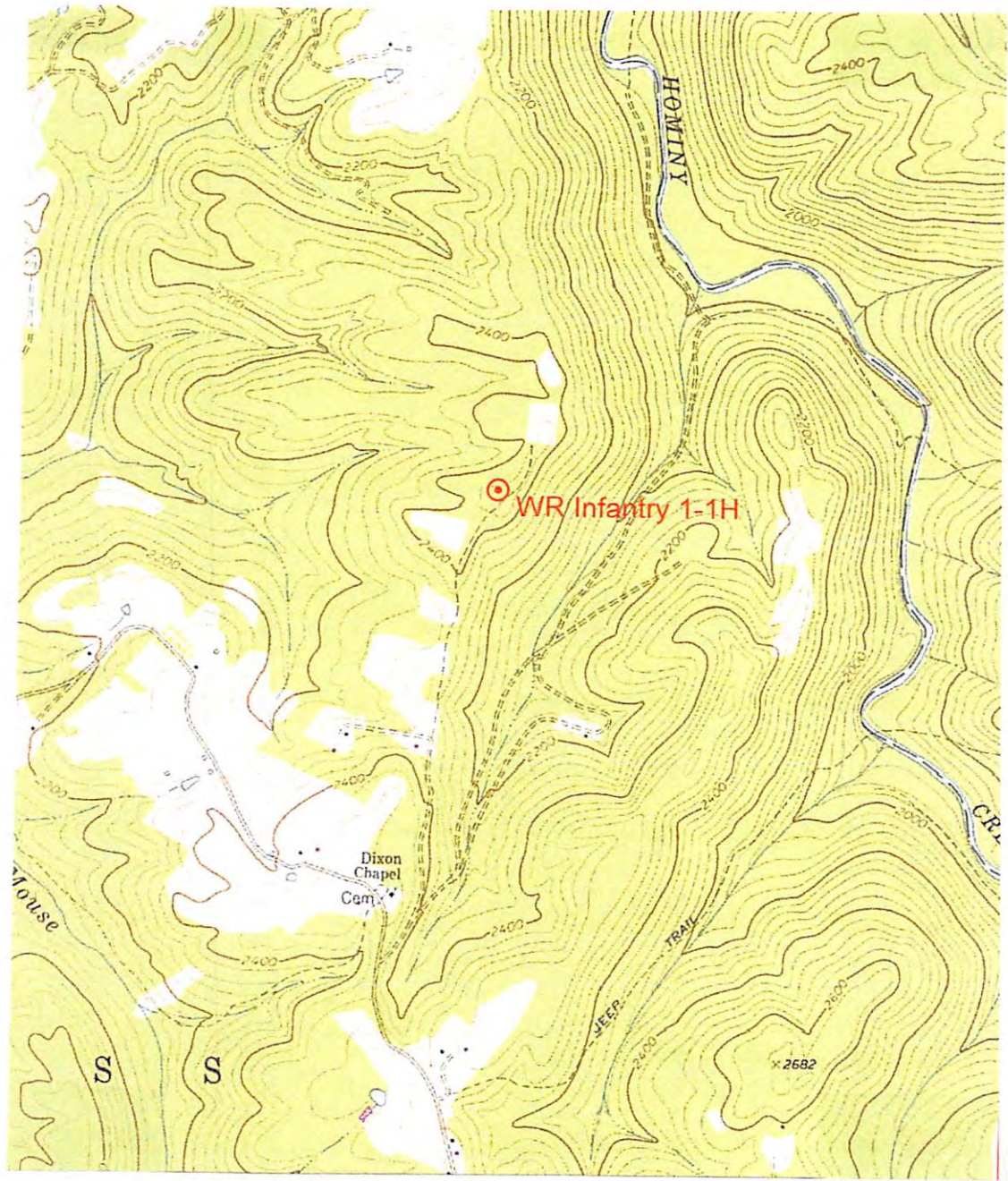
SUPPLIER / MANUFACTURER	PRODUCT TRADE NAME	APPLICATION	COMPOSITION / INGREDIENTS
Baroid Fluid Services	BARITE	Weight Additive	Crystalline silica, quartz
Baroid Fluid Services	CALCIUM CHLORIDE, DIHYDRATE FLAKE	Additive	Calcium chloride, dihydrate
Halliburton Energy Services, Inc.	D-AIR 5000	Defoamer	Gypsum / Calcium sulfate / Calcium carbonate / Crystalline silica, quartz
Halliburton Energy Services, Inc.	FWCA CEMENT ADDITIVE	Free Water Control Additive	Sodium carbonate
Halliburton Energy Services	HALAD 322 CEMENT ADDITIVE	Cement Additive	Cellulose derivative / Sodium formate
Halliburton Energy Services	POZMIX A	Cement Additive	Fly ash / Crystalline silica, quartz / Crystalline silica, cristobalite / Calcium oxide
Halliburton Energy Services	SILICALITE - COMPACTED	Additive	Silica, amorphous
Halliburton Energy Services Inc.	CEMENT - STANDARD - CLASS A	Cement	Portland cement / Crystalline silica, quartz
Halliburton Energy Services	TUNED SPACER III	Cement Spacer	Crystalline silica, quartz / Crystalline silica, cristobalite

DATE: February 5, 2016

MWV RUPERT 3-1H

SUPPLIER / MANUFACTURER	PRODUCT TRADE NAME	APPLICATION	COMPOSITION / INGREDIENTS
FTS International Services, LLC	FRW-600	Friction Reducer	Hydrotreated light distillate / Ammonium
Frac Tech Services, LLC	APB - 1	Gel Breaker	Ammonium Persulfate
Frac Tech Services, LLC	B- 9	pH Adjusting Agent	Potassium hydroxide
Frac Tech Services LLC	B - 10	High pH Buffer	Potassium carbonate / Potassium hydroxide
Frac Tech Services LLC	BXL - 2	Borate crosslinker	Sodium metaborate / Boric acid / Potassium hydroxide
Frac Tech Services, LLC	CI - 150	Acid Corrosion Inhibitor	Isopropanol / Dimethylformamide / Organic amine resin salt / Quaternary ammonium compound / Aromatic aldehyde
Frac Tech Services LLC	CS - 500 SI	Scale Inhibitor	Ethylene glycol
Frac Tech Services LLC	FE - 100L	Iron control	Citric acid
Frac Tech Services, LLC	HVG - 1	Water Gelling Agent	Guar Gum / Petroleum Distillate / Clay / Surfactant
Frac Tech Services, LLC	Hydrochloric Acid (HCl)	Acid	Hydrogen Chloride
Frac Tech Services, LLC	ICI - 3240	Biocide	Dazomet / Sodium Hydroxide
Frac Tech Services LLC	NE - 100	Non-emulsifier	2-Butoxyethanol / 2-Propanol / Dodecylbenzenesulfonic acid
Frac Tech Services LLC	SHALE SURF 1000	Surfactant	Ethoxylated alcohol / 2-Butoxyethanol / 2-Propanol / Cyclohexene / Methanol
Frac Tech Services LLC	WELLCLAY 100	Clay stabilizer	

08/11/2017



LOCATION MAP
USGS
QUADRANGLE-MOUNT NEBO

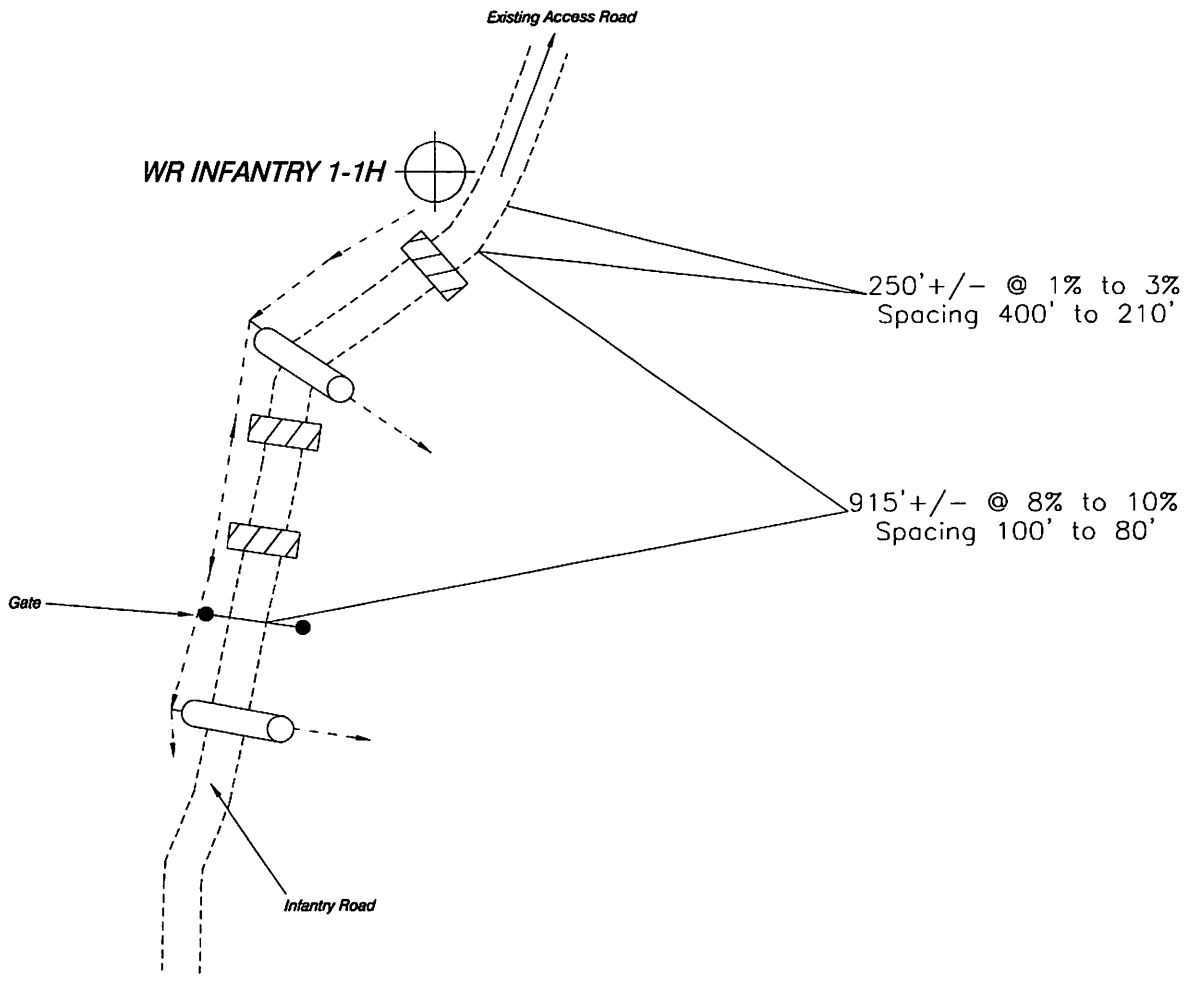
Project: BRC OPERATING COMPANY, LLC
Well Name: WR INFANTRY 1-1H
UNCONVENTIONAL GAS WELL
Location: WILDERNESS DISTRICT
NICHOLAS COUNTY, WV

RECEIVED
Office of Oil and Gas
MAY 31 2017
WV Department of
Environmental Protection
08/11/2017

BRC OPERATING CO., LLC. WR INFANTRY 1-1H

Form W-9

Page 1 of 1



Drawing Not To Scale NORTH

Road Is Existing.
Upgrade Drainage Devices
Where Needed.

Install Minimum 12" Culvert

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH D.E.P. OIL AND GAS BMP MANUAL. ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BASINS, TRAPS AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED.

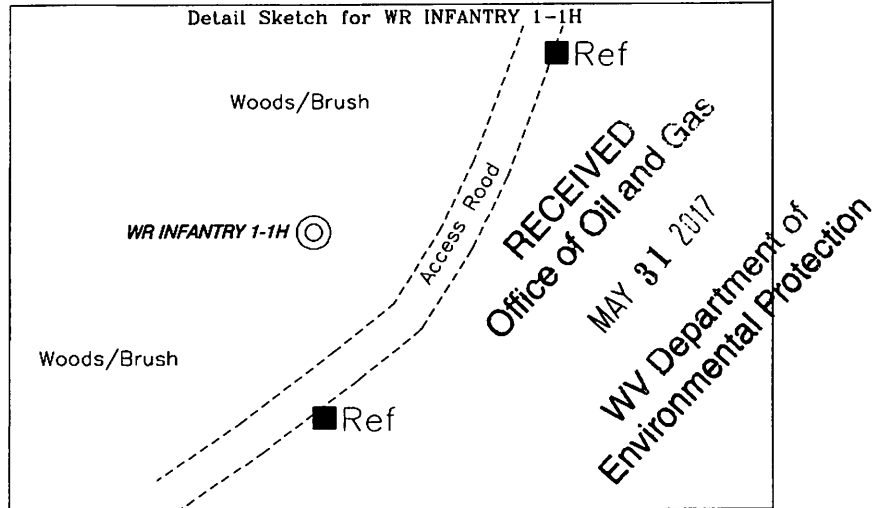
EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFYING TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN.

CONTRACTORS/COMPANY ARE RESPONSIBLE FOR LOCATING UTILITIES WHETHER SHOWN ON THIS PLAN OR NOT.

TEMPORARILY SEED AND MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

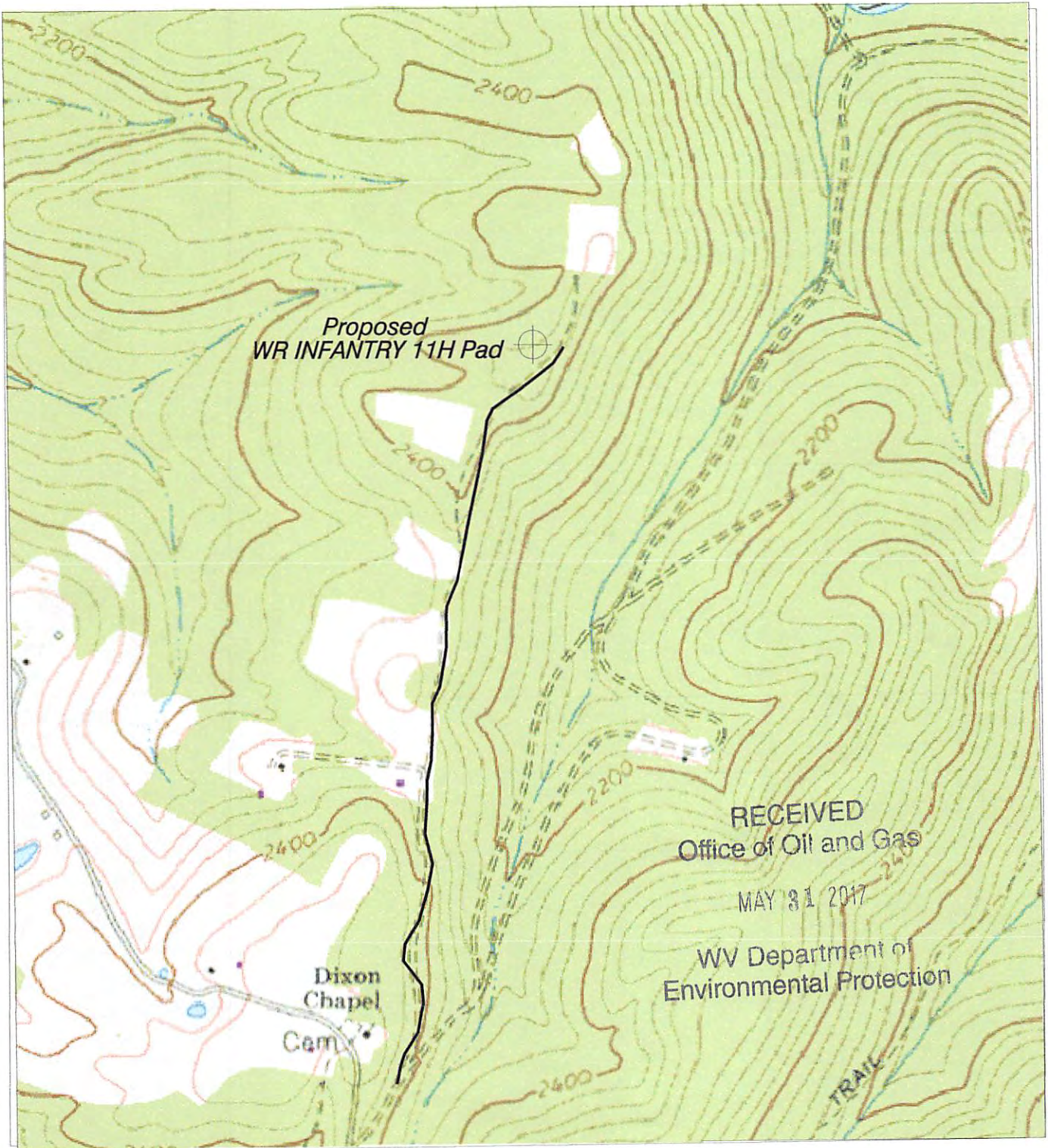
CUT AND STACK ALL TIMBER ABOVE 6-INCHES IN DIAMETER AND THICKER.

STACK BRUSH BELOW LOCATION FOR SEDIMENT CONTROL.



HUPP Surveying & Mapping P.O. BOX 647 GRANTSVILLE, WV 26147 PH: (304)354-7035 E-MAIL: hupp@frontiernet.net	Drafted BY:	Date Drafted:	Job Number:
	DB	05/22/17	W20081834

BRC OPERATING CO., LLC. WR INFANTRY 1-1H



NORTH

HUPP Surveying & Mapping

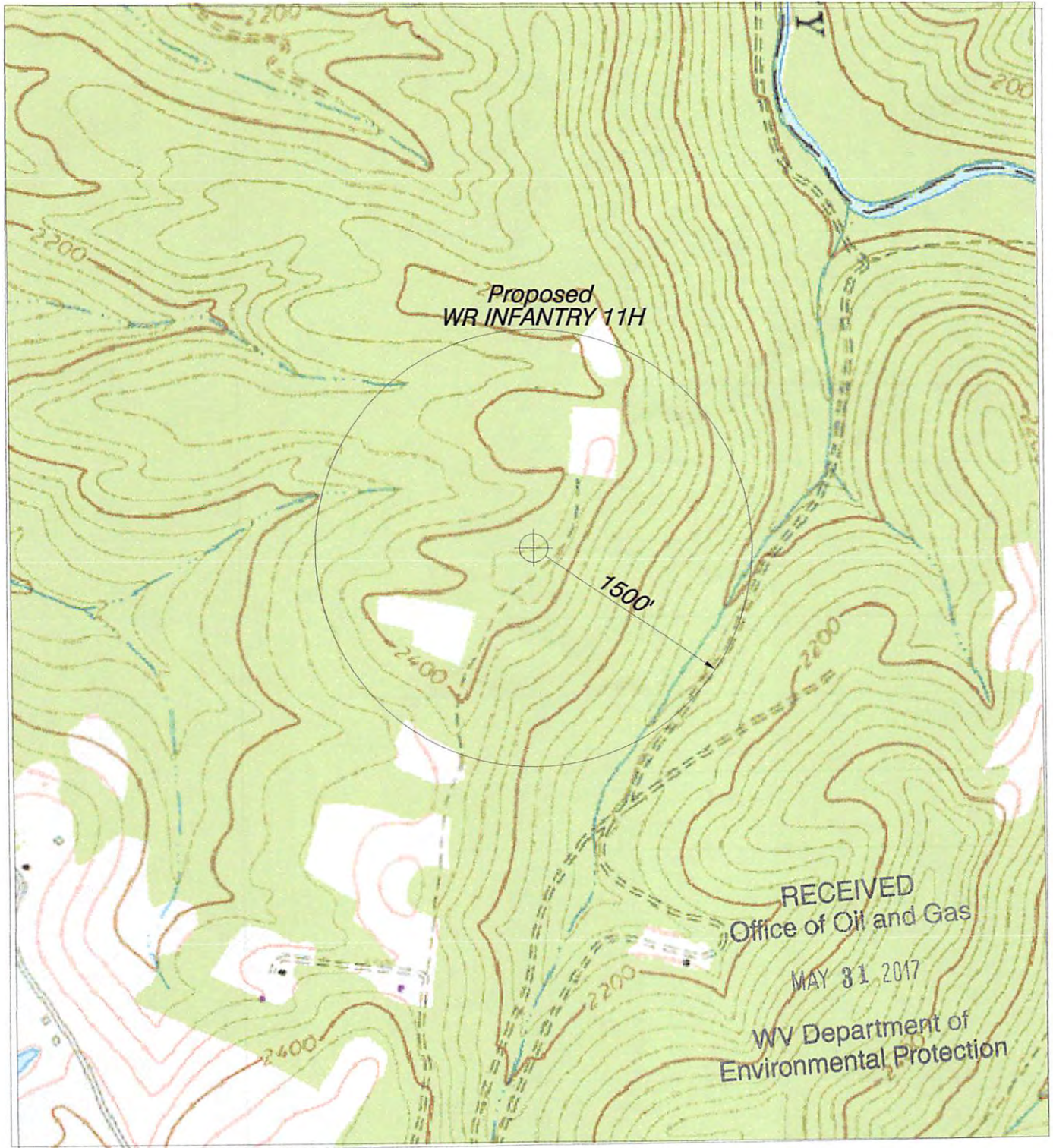
P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

1" = 1000'
Mt Nebo

BRC OPERATING CO. LLC.
200 Crescent Court, Suite 200
Dallas, TX 75201

08/11/2017

BRC OPERATING CO., LLC. WR INFANTRY 1-1H WATER



NORTH

HUPP Surveying & Mapping

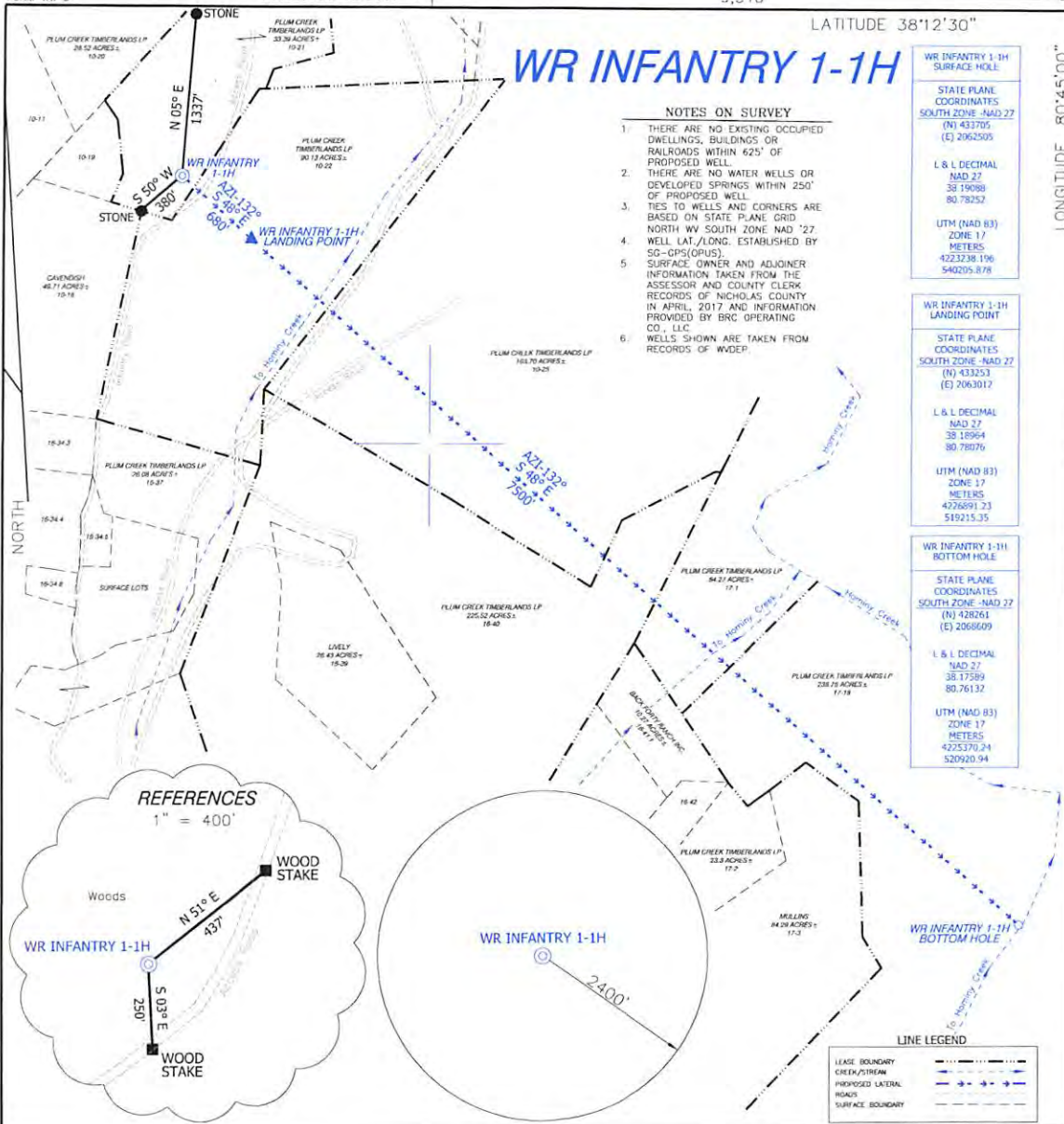
P.O. BOX 647 GRANTSVILLE, WV 26147
PH: (304) 354-7035 E-MAIL: hupp@frontiernet.net

1" = 1000'
Mt Nebo

BRC OPERATING CO. LLC.
200 Crescent Court, Suite 200
Dallas, TX 75201

08/11/2017

WR INFANTRY 1-1H



- NOTES ON SURVEY**
1. THERE ARE NO EXISTING OCCUPIED DWELLINGS, BUILDINGS OR RAILROADS WITHIN 625' OF PROPOSED WELL.
 2. THERE ARE NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
 3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH W/ SOUTH ZONE NAD '27.
 4. WELL LAT./LONG. ESTABLISHED BY SG-GPS (OPUS).
 5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF NICHOLAS COUNTY IN APRIL, 2017 AND INFORMATION PROVIDED BY BRC OPERATING CO., LLC.
 6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

WR INFANTRY 1-1H SURFACE HOLE

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 433705
(E) 2062505

L & L DECIMAL NAD 27
38 19088
80.78252

UTM (NAD 83) ZONE 17 METERS
4223238.196
540205.878

WR INFANTRY 1-1H LANDING POINT

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 433253
(E) 2063012

L & L DECIMAL NAD 27
38 18964
80.78076

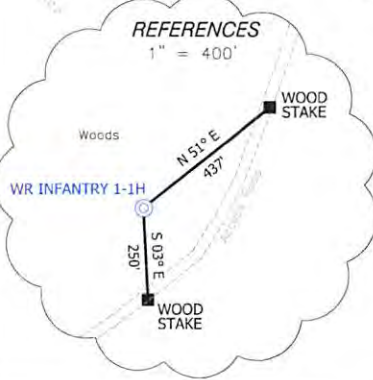
UTM (NAD 83) ZONE 17 METERS
4226891.23
539215.35

WR INFANTRY 1-1H BOTTOM HOLE

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 428261
(E) 2068609

L & L DECIMAL NAD 27
38 17589
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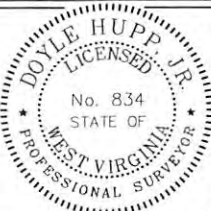
UTM (NAD 83) ZONE 17 METERS
4225370.24
520920.94



LINE LEGEND

LEASE BOUNDARY	---
CREEK/STREAM	~ ~ ~
PROPOSED LATERAL	---+---+---+---
ROAD	---
SURFACE BOUNDARY	---

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

DATE MAY 22, 2017

OPERATORS WELL NO. WR INFANTRY 1-1H

API WELL NO. 47-067-0009

STATE WV COUNTY HWOA PERM. NO. 0009

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W1834 (BK83-78)

PROVEN SOURCE OF ELEVATION SG-GPS (OPUS) SCALE 1" = 2000'

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

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

LOCATION : ELEVATION 2,420' WATERSHED MOUSE FORK OF HOMINY CREEK

DISTRICT WILDERNESS COUNTY NICHOLAS QUADRANGLE MT. NEBO

SURFACE OWNER PLUM CREEK TIMBERLANDS LP ACREAGE 3.39±

ROYALTY OWNER MEADWESTVACO CORP., et al LEASE ACREAGE 816.26±

PROPOSED WORK : LEASE NO. _____

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS

ESTIMATED DEPTH TVD- 7,405' MD- 14,950'

WELL OPERATOR BRC OPERATING CO., LLC DESIGNATED AGENT CHUCK BRIGHTMAN

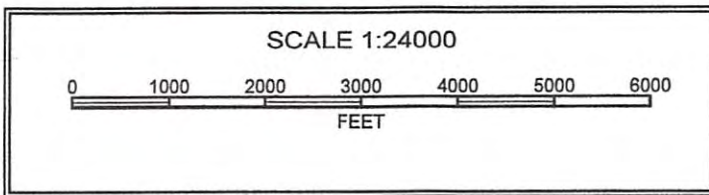
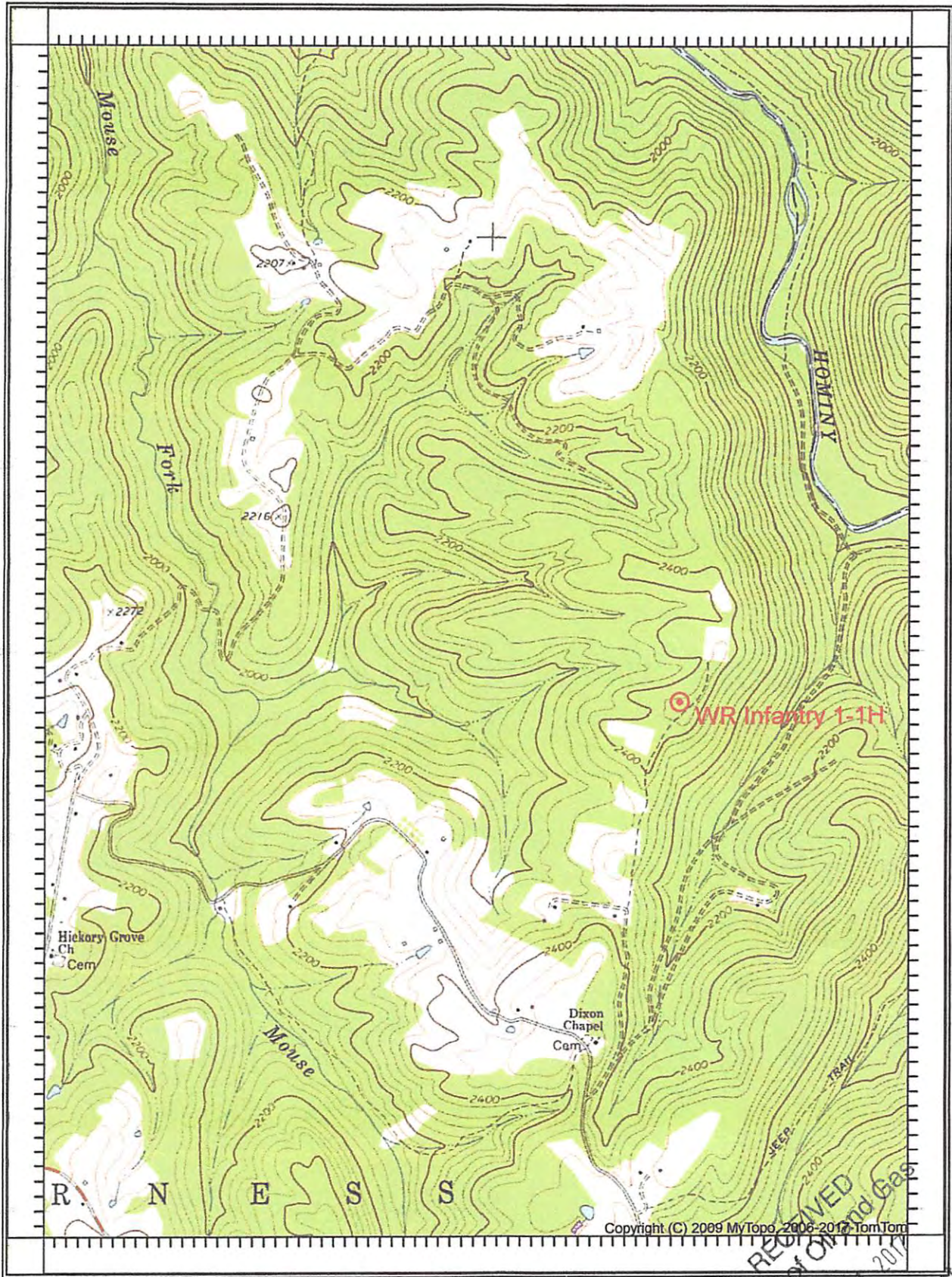
ADDRESS 200 CRESCENT COURT, SUITE 1900 DALLAS, TX 75201 ADDRESS 44 SUNDAY RD. HICO, WV 25884

COUNTY NAME _____ PERMIT _____

MAY 31 2017

Office of Oil and Gas
WV Department of Environmental Protection

08/11/2017



RECEIVED
 Office of Oil and Gas
 MAY 31 2017
 WV Department of
 Environmental Protection

WR INFANTRY 1-1H

NOTES ON SURVEY

1. THERE ARE NO EXISTING OCCUPIED DWELLINGS, BUILDINGS OR RAILROADS WITHIN 625' OF PROPOSED WELL.
2. THERE ARE NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF PROPOSED WELL.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
4. WELL LAT./LONG. ESTABLISHED BY SG-GPS(OPUS).
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF NICHOLAS COUNTY IN APRIL, 2017 AND INFORMATION PROVIDED BY BRC OPERATING CO., LLC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.

WR INFANTRY 1-1H SURFACE HOLE

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 433705
(E) 2062505

L & L DECIMAL NAD 27
38.19088
80.78252

UTM (NAD 83) ZONE 17 METERS
4227029.03
519060.82

WR INFANTRY 1-1H LANDING POINT

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 433253
(E) 2063012

L & L DECIMAL NAD 27
38.18964
80.78076

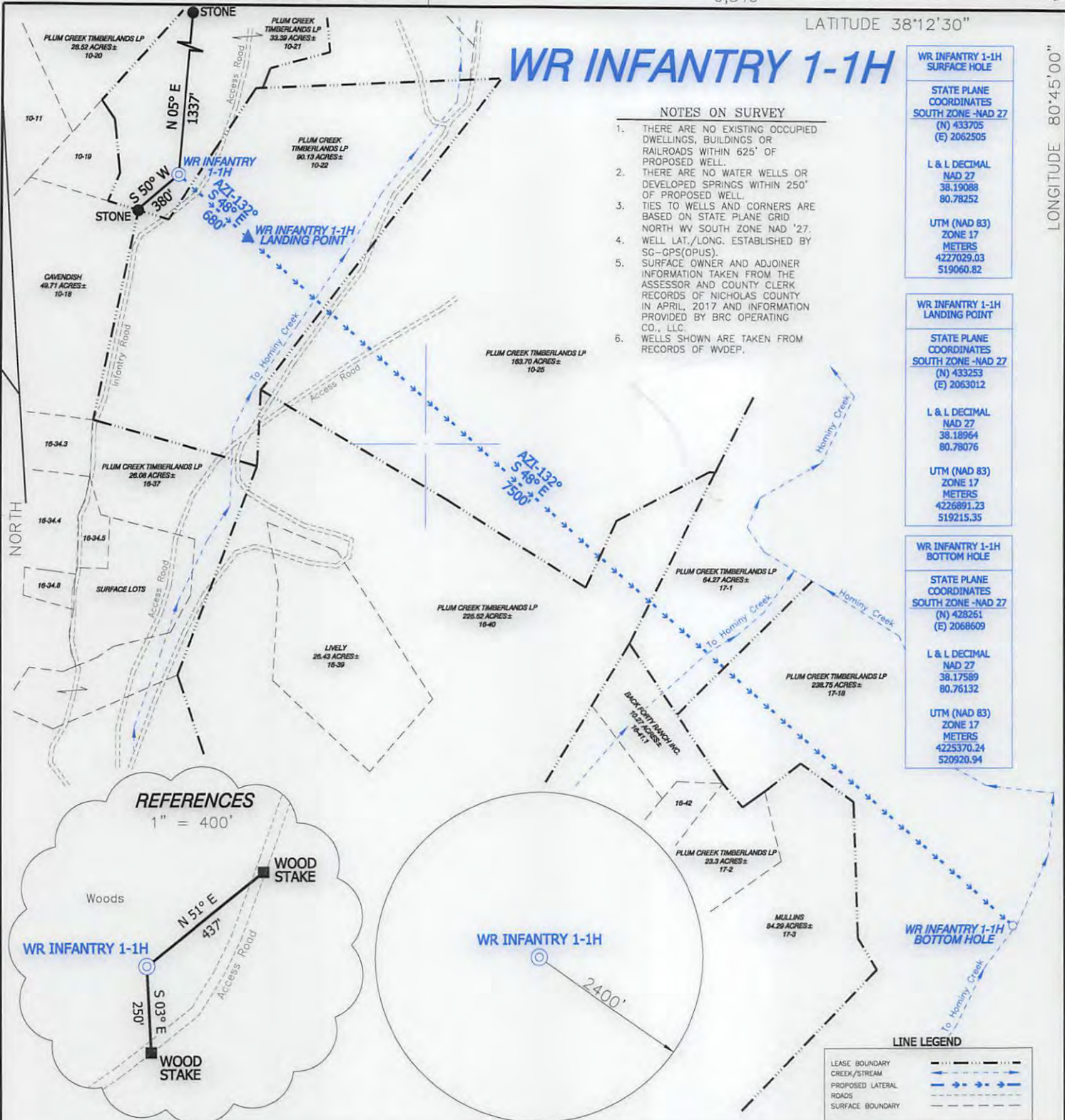
UTM (NAD 83) ZONE 17 METERS
4226891.23
519215.35

WR INFANTRY 1-1H BOTTOM HOLE

STATE PLANE COORDINATES SOUTH ZONE -NAD 27
(N) 428261
(E) 2068609

L & L DECIMAL NAD 27
38.17589
80.76132

UTM (NAD 83) ZONE 17 METERS
4225370.24
520920.94



REFERENCES

1" = 400'



LINE LEGEND

LEASE BOUNDARY	---
CREEK/STREAM	~ ~ ~
PROPOSED LATERAL ROADS	--->>>---
SURFACE BOUNDARY	---

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MAY 22, 20 17
 OPERATORS WELL NO. WR INFANTRY 1-1H
 API WELL NO. 47-067-00948
 STATE COUNTY PERMIT H6A

P.S. 834

HUPP Surveying & Mapping
 P.O. Box 647 Grantsville, WV 26147
 (304) 354-7035 EMAIL: hupp@frontiernet.net

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W1834 (BK83-78)
 PROVEN SOURCE OF ELEVATION SG-GPS (OPUS) SCALE 1" = 1000'

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

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

LOCATION :
 ELEVATION 2,420' WATERSHED MOUSE FORK OF HOMINY CREEK
 DISTRICT WILDERNESS COUNTY NICHOLAS QUADRANGLE MT. NEBO

SURFACE OWNER PLUM CREEK TIMBERLANDS LP ACREAGE 33.39±
 ROYALTY OWNER MEADWESTVACO CORP., et al LEASE ACREAGE 816.26± **08/11/2017**

PROPOSED WORK :
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH TVD- 7,405' MD- 14,950'

WELL OPERATOR BRC OPERATING CO., LLC DESIGNATED AGENT CHUCK BRIGHTMAN
 ADDRESS 200 CRESCENT COURT, SUITE 1900 DALLAS, TX 75201 ADDRESS 44 SUNDAY RD. HICO, WV 25884

COUNTY NAME PERMIT

WW-6A1
(5/13)

Operator's Well No. WR Infantry 1-1H

**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
Mead Westvaco	MWV Community Development and Land Management, LLC	BRC Operating Company, LLC	1/8	485 / 219

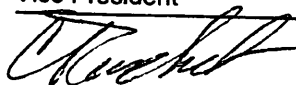
**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

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

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

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

Well Operator: BRC Operating Company, LLC
 By: Chad A. Touchet
 Its: Vice President





67-00948

DIVISION OF NATURAL RESOURCES

**Wildlife Resources Section
Operations Center
P.O. Box 67
Elkins, West Virginia 26241-3235
Telephone (304) 637-0245
Fax (304) 637-0250**

**Jim Justice
Governor**

**Stephen S. McDaniel
Director**

April 20, 2017

Mr. Walter W. Jenko
NTG Environmental
6000 Town Center Boulevard, Suite 220
Canonsburg, PA 15317

Dear Mr. Jenko:

We have reviewed Natural Heritage Program files for information on rare, threatened and endangered (RTE) species and sensitive habitats for the area of the proposed WR Infantry 1-1H Gas Well project in Nicholas County, WV.

We have no known records of any RTE species or sensitive habitats within the project area. The Wildlife Resources Section knows of no surveys that have been conducted in the area for rare species or rare species habitat. This project is within the Hominy Creek watershed; Hominy Creek is a potential freshwater mussel stream.

The West Virginia Department of Environmental Protection (WVDEP) has drafted guidance and a web-based tool for water withdrawal limits related to natural gas production and other development activities; however, the tool has not yet been validated as adequately protective of freshwater mussels or other aquatic species under all weather and precipitation conditions. The tool should be checked daily before withdrawing significant quantities of water from any watershed known to contain freshwater mussels. Whether using the guidance tool or following an approved water management plan, users should exercise caution and use common sense, particularly during drought or extended dry conditions, or in cases where multiple users may be withdrawing water from the same source. If a stream is low and withdrawing additional water could expose portions of the stream bottom or banks that are normally submerged, including riffle areas downstream from pools from which water is typically withdrawn, users should find a different location or water source that does not contain mussels or feed a mussel stream. Water users should not block, dam, or divert flows, or excavate pools or otherwise create unnatural deep spots in mussel streams or in their direct tributaries.

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Use of the WVDEP tool or following an approved water management plan does not absolve users of liability for the loss of aquatic life, including potential violation of the Endangered Species Act if take of federally listed species occurs. If in doubt, users should contact Janet Clayton of the WV Department of Environmental Protection at (304) 637-0245, or janet.l.clayton@wv.gov.

This response is based on information currently available and should not be considered a comprehensive survey of the area under review. It is valid for two years.

08/11/2017

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The information provided above is the product of a database search and retrieval. This information does not satisfy other consultation or permitting requirements for disturbances to the natural resources of the state, and further consultation may be required. Additionally, any concurrence requirements for federally listed species must come from the US Fish and Wildlife Service.

Thank you for your inquiry, and should you have any questions please feel free to contact me at the above number, or barbara.d.sargent@wv.gov. Enclosed please find an invoice.

Sincerely,



Barbara Sargent
Environmental Resources Specialist
Environmental Coordination
Operations Unit

enclosure

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Environmental Protection

S:\MonthlyBSargent\Invoices\NTG.doc

08/11/2017



67-00948

6000 Town Center Blvd.
Suite 220
Canonsburg, PA 15317
Tel. 724.745.5929
www.ntglobal.com

April 4, 2017

Ms. Barbara Sargent
West Virginia Division of Natural Resources
Wildlife Resources Section
Operations Center
P.O. Box 67
Elkins, WV
26241 – 3235

RE: BRC Operating Company, LLC (Bluescape Resources)
Proposed Unconventional Gas Well Development
Operators Well Number – WR Infantry 1-1H
Nicholas County, WV

Dear Ms. Sargent :

The purpose of this communication is to advise the Division of Natural Resources of BRC Operating Company, LLC intent to make application to the West Virginia Department of Environmental Protection for the development of an unconventional gas well at the following surface location. The coordinates are as follows:

State Plane Coordinates, NAD 27, WV South Zone

(N) 433705

(E) 2062505

UTM (NAD 83, Zone 17) Meters

4227029

519061

L & L DECIMAL , NAD 83

38.19088

80.78252

A USGS map of the location is attached.

This correspondence is provided as a requirement of the West Virginia Department of Environmental Protection, Office of Oil and Gas, Form WW-6A1; regard to "Acknowledgement of Possible Permitting/Approval in Addition to the Office of Oil and Gas".

The Division's acknowledgement of this advisory letter is requested, as it may relate to the gas operator's need for ancillary permits and/or approvals.

Should you have any questions, please do not hesitate to contact me at 724-470-8664, or via email at wjenko@ntglobal.com.

Respectfully,

Walter W. Jenko, P.E.

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WV Department of
Environmental Protection
08/11/2017

6700948



United States Department of the Interior



FISH AND WILDLIFE SERVICE

West Virginia Field Office
694 Beverly Pike
Elkins, West Virginia 26241

Contact Name: Walter Jenko

Email Address or Fax Number: WJenko@ntglobal.com

FWS File # 2017-I-0488 **All future correspondence should clearly reference this FWS File #.**

Project Name & Location: BRC Operating, Unconventional Gas Well, Nicholas County, WV

Date of Letter Request: April 4, 2017

This is in response to your letter requesting threatened and endangered species information in regard to the proposed project listed above. These comments are provided pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U. S. C. 1531 *et seq.*).

Two federally listed species could occur in the project area, the endangered Indiana bat (*Myotis sodalis*), and the threatened northern long-eared bat (NLEB) (*M. septentrionalis*).

The Indiana bat may use the project area for foraging and roosting between April 1 and November 15. Indiana bat summer foraging habitats are generally defined as riparian, bottomland, or upland forest, and old fields or pastures with scattered trees. Roosting/maternity habitat consists primarily of live or dead hardwood tree species which have exfoliating bark that provides space for bats to roost between the bark and the bole of the tree. Tree cavities, crevices, splits, or hollow portions of tree boles and limbs also provide roost sites. In West Virginia, the U.S. Fish and Wildlife Service (Service) considers all forested habitat containing trees greater than or equal to 5 inches in diameter at breast height (DBH) to be potentially suitable as summer roosting and foraging habitat for the Indiana bat. Similar to the Indiana bat, NLEB foraging habitat includes forested hillsides and ridges, and small ponds or streams. NLEB are typically associated with large tracts of mature, upland forests with more canopy cover than is preferred by Indiana bats. NLEB seem to be flexible in selecting roosts, choosing roost trees based on suitability to retain bark or provide cavities or crevices, and this species is known to use a wider variety of roost types than the Indiana bat. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat has also occasionally been found roosting in structures like barns and sheds.

Indiana bats and NLEB use caves or mine portals for winter hibernation between November 15 and March 31. These species also use the hibernacula and the areas around them for fall-swarming and spring-staging activity (August 15 to November 14 and April 1 to May 14 respectively). Some males have been known to stay close to the hibernacula during the summer.

Updated February 1, 2016

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08/06/2017

and may use the hibernacula as a summer roosts. There may be other landscape features being used by NLEB during the winter that have yet to be documented.

The Service has reviewed the number of acres of potentially suitable foraging and roosting habitat on the West Virginia landscape available to each Indiana bat, versus the total acreage of forest. On that basis, we have determined that small projects, more than 10 miles from a known priority 1 or 2 Indiana bat hibernaculum, more than 5 miles from a known priority 3 or 4 Indiana bat hibernaculum, or more than 2.5 miles from any known maternity roost, or more than 5 miles from summer detection sites where no roosts were identified, that affect less than 17 acres of forested habitat, and will not affect any potential hibernacula, will have a very small chance of resulting in direct or indirect effects to the Indiana bat, and therefore these effects are considered discountable. **Please note that the Service may review and update this assessment at any time as new information becomes available.**

The Service does not anticipate that this project is likely to adversely affect the Indiana bat because your project: 1) will affect less than 17 acres of potential Indiana bat foraging or roosting habitat; 2) is not within any of the Indiana bat hibernacula or summer use buffers described above; and 3) will not affect any potential caves or mines that could be used as hibernacula for this species.

The NLEB may occur within the range of the proposed project, and may be affected by the proposed construction and operation of this project. Any take of NLEB occurring in conjunction with these activities that complies with the conservation measures (as outlined in the 4(d) rule), as necessary, is exempted from section 9 prohibitions by the 4(d) rule and does not require site specific incidental take authorization. Note that the 4(d) rule does not exempt take that may occur as a result of adverse effects to hibernacula and that no conservation measures are required as part of the 4(d) rule unless the proposed project: 1) involves tree removal within 0.25 miles of known NLEB hibernacula; or 2) cuts or destroys known, occupied maternity roost trees or any other trees within a 150-foot radius around known, occupied maternity tree during the pup season (June 1 to July 31). This proposed project is not located within any of these radii around known hibernacula or roost trees and will not affect any known NLEB hibernacula, therefore any take of NLEB associated with this project is exempted under the 4(d) rule and no conservation measures are required.

This letter provides technical assistance only and does not serve as a completed section 7 consultation document. If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing or any project construction activities on any portion of the parcel should occur until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. Section 7 consultation is not complete until the federal action agency submits a determination of effects to this office, the Service concurs with the federal action agency's determination, and the federal action agency agrees to limit tree clearing to under 17 acres as a mandatory condition for any permit decision rendered for this project. All measures must be implemented as proposed. If there is no federal nexus associated with this project, then no further coordination with this office is required.

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Should project plans change or amendments be proposed that we have not considered in your proposed action, or if additional information on listed and proposed species becomes available, or if new species become listed or critical habitat is designated, this assessment may be reconsidered.

If you have any questions regarding these comments, please contact the biologist listed below at (304) 636-6586 or at the letterhead address.

Amanda Selmer 4/17/2017
Biologist Date

John E. Schmitt 4/25/2017
John Schmidt, Field Supervisor Date

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

Date of Notice Certification: 5-24-17

API No. 47- 67 - 00948
 Operator's Well No. WR Infantry 1-1H
 Well Pad Name: WR Pad 7

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>West Virginia</u>	UTM NAD 83	Easting: <u>519061</u>
County: <u>Nichols</u>		Northing: <u>4227029</u>
District: <u>Wilderness</u>	Public Road Access: <u>Bruce Rd. (WV County Route 28)</u>	
Quadrangle: <u>Mount Nebo</u>	Generally used farm name: <u>Mead Westvaco</u>	
Watershed: <u>Hominy Creek</u>		

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <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 <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
RECEIVED Office of Oil and Gas MAY 31 2017 WV Department of Environmental Protection		

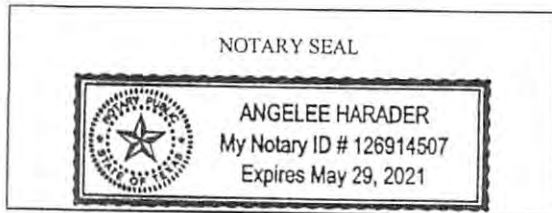
Required Attachments:

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.

Certification of Notice is hereby given:

THEREFORE, I Chad A. Touchet, 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:	<u>BRC Operating Company, LLC</u>	Address:	<u>200 Crescent Court, Suite 1900</u>
By:	<u>Chad A. Touchet</u>		<u>Dallas, Texas 75201</u>
Its:	<u>Vice President</u>	Facsimile:	<u>682-626-3153</u>
Telephone:	<u>817-739-4410 (C) 469-398-2232 (O)</u>	Email:	<u>catouchet@bluescapedgroup.com</u>



Subscribed and sworn before me this 19th day of May, 2017
Angelee Harader Notary Public
 My Commission Expires 5-29-2021

Oil and Gas Privacy Notice:

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

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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: May 4, 2017 Date Permit Application Filed: May 24, 2017

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: Weyerhaeuser Company
Address: 14410 Seneca Trail North
Lewisburg, WV 24901

Name: Weyerhaeuser Company
Address: 33663 Weyerhaeuser Way S
Federal Way, Washington 98001

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

Name: Weyerhaeuser Company
Address: 14410 Seneca Trail North
Lewisburg, WV 24901

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Highland Mineral Resources, LLC / Legal Dept.
Address: Five Concourse Parkway, Suite 1650
Atlanta, Georgia 30328

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 MAY 31 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 water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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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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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Notice is hereby given by:

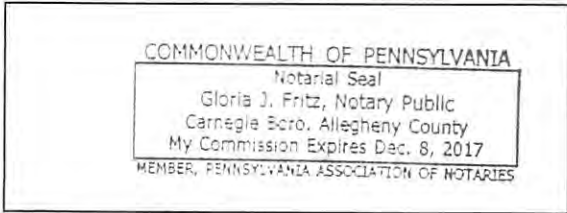
Well Operator: BRC Operating Company, LLC
Telephone: 817-739-4410 (C) 469-398-2232 (O)
Email: catouchet@bluescapedgroup.com

Address: 200 Crescent Court, Suite 1900
Dallas, Texas 75201
Facsimile: 682-626-3153

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.

25 Oct 25. [Signature]



Subscribed and sworn before me this 15th day of May 2017.

Gloria J. Fritz Notary Public

My Commission Expires 12-8-2017

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

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

Date of Notice: March 27, 2017 **Date of Planned Entry:** April 3, 2017

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

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

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

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Weyerhaeuser Company ✓

Address: 14410 Seneca Trail North
Lewisburg, WV 24901

Name: Weyerhaeuser Company-Energy and Natural Resources ✓

Address: 33663 Weyerhaeuser Way S, CH 1L34
Federal Way, Washington 98003-9777 98001

Name: Plum Creek Timberlands, LP ✓

Address: Legal Dept., Five Concourse Parkway NE, Suite 1650
Atlanta, Georgia 30328

COAL OWNER OR LESSEE

Name: Highland Mineral Resources, LLC ✓

Address: Legal Dept., Five Concourse Parkway, Suite 1650
Atlanta, Georgia 30328

MINERAL OWNER(s)

Name: Highland Mineral Resources, LLC (Less O&G) ✓

Address: Minerals Dept., Five Concourse Parkway, Suite 1650
Atlanta, Georgia 30328

*please attach additional forms if necessary

Notice is hereby given:

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

State:	<u>West Virginia</u>	Approx. Latitude & Longitude:	<u>38.19075 N, 80.78260 W (300' Radius)</u>
County:	<u>Nicholas</u>	Public Road Access:	<u>Bruce Road (WV County Route 26)</u>
District:	<u>Wilderness</u>	Watershed:	<u>Horniny Creek</u>
Quadrangle:	<u>Mount Nebo</u>	Generally used farm name:	<u>MeadWestvaco</u>

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

Notice is hereby given by:

Well Operator: BRC Operating Company, LLC

Telephone: 817-739-4410 (C) 469-398-2232 (O)

Email: catouchet@bluescapegroup.com

Address: 200 Crescent Court, Suite 1900
Dallas, Texas 75201

Facsimile: 682-626-3153

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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.

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

Notice is hereby provided to:

SURFACE OWNER(s)

Name: _____
Address: _____

Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: _____
Address: _____

MINERAL OWNER(s)

Name: WestRock (O&G)
Address: 201 Sigma Drive, Suite 400
Summerville, SC 29486

*please attach additional forms if necessary

Notice is hereby given:

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

State: West Virginia
 County: Nicholas
 District: Wilderness
 Quadrangle: Mount Nebo

Approx. Latitude & Longitude: 38.19075 N, 80.78260 W (300' Radius)
 Public Road Access: Bruce Road (WV County Route 26)
 Watershed: Horniy Creek
 Generally used farm name: MeadWestvaco

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

Notice is hereby given by:

Well Operator: BRC Operating Company, LLC
 Telephone: 817-739-4410 (C) 469-398-2232 (O)
 Email: catouchet@bluescapedgroup.com

Address: 200 Crescent Court, Suite 1900
Dallas, Texas 75201
 Facsimile: 682-626-3153

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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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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: 05/03/2017 **Date Permit Application Filed:** _____

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: Weyerhaeuser Company
Address: 14410 Seneca Trail North
Lewisburg, WV 24901

Name: Weyerhaeuser Company-Energy and Natural Resources
Address: 33663 Weyerhaeuser Way S, CH 1L34
Federal Way, Washington 98001

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>West Virginia</u>	UTM NAD 83	Easting:	<u>519061</u>
County:	<u>Nicholas</u>		Northing:	<u>4227029</u>
District:	<u>Wilderness</u>	Public Road Access:	<u>Bruce Rd. (WV County Rt. 26)</u>	
Quadrangle:	<u>Mount Nebo</u>	Generally used farm name:	<u>Mead Westvaco</u>	
Watershed:	<u>Hominy Creek</u>			

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: BRC Operating Company, LLC
Address: 200 Crescent Court, Suite 1900
Dallas, Texas 75201
Telephone: 817-739-4410 (C) 469-398-2232 (O)
Email: catouchet@bluescapedgroup.com
Facsimile: _____

Authorized Representative: Chuck Brightman
Address: 44 Sunday Rd.
Hico, WV 25854
Telephone: 304-880-8121
Email: cdbrightman@live.com
Facsimile: N/A

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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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: 05/03/2017 **Date Permit Application Filed:** _____

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: Weyerhaeuser Company Name: Weyerhaeuser Company-Energy and Natural Resources
Address: 14410 Seneca Trail North Address: 33663 Weyerhaeuser Way S, CH 1L34
Lewisburg, WV 24901 Federal Way, Washington 98001

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>West Virginia</u>	UTM NAD 83	Easting: <u>519061</u>
County: <u>Nicholas</u>		Northing: <u>4227029</u>
District: <u>Wilderness</u>	Public Road Access: <u>Bruce Rd. (WV County Rt. 26)</u>	
Quadrangle: <u>Mount Nebo</u>	Generally used farm name: <u>Mead Westvaco</u>	
Watershed: <u>Hominy Creek</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>BRC Operating Company, LLC</u>	Address: <u>200 Crescent Court, Suite 1900</u>
Telephone: <u>817-739-4410 (C) 469-398-2232 (O)</u>	<u>Dallas, Texas 75201</u>
Email: <u>catouchet@bluescapedgroup.com</u>	Facsimile: <u>682-626-3153</u>

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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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

June 22, 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 WR Infantry 1 Pad, Nicholas County

WR Infantry 1-1H Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has issued permit #09-2017-0265 to BRC Operating Company for access to the State Road for the well site located off of Nicholas County Route 26/4.

The operator has signed a DISTRICT WIDE 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
 Regional Maintenance Engineer
 Central Office Oil & Gas Coordinator

Cc: Walter W. Jenko
 BRC Operating Company
 CH, OM, D-9
 File

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JUN 22 2017

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ADDITIVES: FRACKING / STIMULATION

DATE: February 5, 2016

MWV RUPERT 3-1H

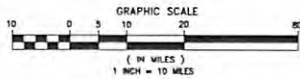
SUPPLIER / MANUFACTURER	PRODUCT TRADE NAME	APPLICATION	COMPOSITION / INGREDIENTS	CAS NUMBER
FTS International Services, LLC	FRW-600	Friction Reducer	Hydrotreated light distillate / Ammonium acetate	64742-47-8 631-61-8
Frac Tech Services, LLC	APB - 1	Gel Breaker	Ammonium Persulfate	7727-54-0
Frac Tech Services, LLC	B- 9	pH Adjusting Agent	Potassium hydroxide	1310-58-3
Frac Tech Services LLC	B - 10	High pH Buffer	Potassium carbonate / Potassium hydroxide	584-08-7 1310-58-3
Frac Tech Services LLC	BXL - 2	Borate crosslinker	Sodium metaborate / Boric acid / Potassium hydroxide	10555-76-7 10043-35-3 1310-58-3
Frac Tech Services, LLC	CI - 150	Acid Corrosion Inhibitor	Isopropanol / Dimethylformamide / Organic amine resin salt / Quaternary ammonium compound / Aromatic aldehyde	67-63-0 68-12-2 Proprietary Proprietary Proprietary
Frac Tech Services LLC	CS - 500 SI	Scale Inhibitor	Ethylene glycol	107-21-1
Frac Tech Services LLC	FE - 100L	Iron control	Citric acid	77-92-9
Frac Tecxh Services, LLC	HVG - 1	Water Gelling Agent	Guar Gum / Petroleum Distillate / Surfactant / Clay	9000-30-0 64742-47-8 68439-51-0 14808-60-7
Frac Tech Services, LLC	Hydrochloric Acid (HCl)	Acid	Hydrogen Chloride	7647-01-0
Frac Tech Services, LLC	ICI - 3240	Biocide	Dazomet / Sodium Hydroxide	533-74-4 1310-73-2
Frac Tech Services LLC	NE - 100	Non-emulsifier	2-Butoxyethanol / 2-Propanol / Dodecylbenzenesulfonic acid	111-76-2 67-63-0 27176-87-0
Frac Tech Services LLC	SHALE SURF 1000	Surfactant	Ethoxylated alcohol / 2-Butoxyethanol / 2-Propanol / Methanol / Cyclohexene	Proprietary 111-76-2 67-63-0 67-56-1 5989-27-5
Frac Tech Services LLC	WELLCLAY 100	Clay stabilizer	Manufacturer lists no ingredients as hazardous, OSHA 29 CFR 1910.1200	Mixture

08/11/2017

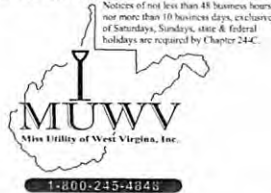
PROJECT
LOCATION



WV DOT OFFICIAL STATE HIGHWAY MAP



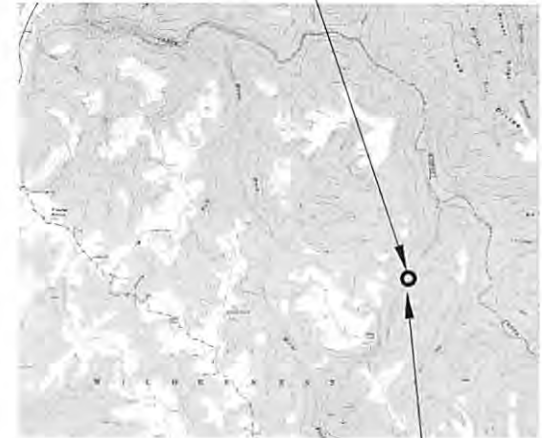
WV LAW SAYS:
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WR INFANTRY 1-1H PAD SITE NICHOLAS COUNTY, WEST VIRGINIA

DRAWING NO.	TITLE
PI 000	TITLE SHEET
PI 100	EXISTING CONDITIONS
PI 200	PROPOSED PAD SITE IMPROVEMENTS & EROSION AND SEDIMENT CONTROL SITE PLAN
PI 300	SITE CROSS SECTIONS
PI 400	CONSTRUCTION DETAILS
PI 401	CONSTRUCTION DETAILS
PI 500	RECLAMATION PLAN
PI 600	INFANTRY ROAD PLAN & PROFILE

PROJECT
LOCATION



VICINITY MAP

APPROXIMATE CENTER OF WELL PAD
STATE PLANE COORDINATES SOUTH ZONE-NAD 27
(N) 433674.4962
(E) 2062510.1366
L&L DECIMAL-NAD 83
LAT: 38.19091
LONG: -80.78231

DISTURBED ACREAGE
ACCESS ROAD DISTURBED AREA = 0.084 ACRES
WELL PAD SITE DISTURBED AREA = 3.81 ACRES
TOTAL DISTURBED AREA = 3.89 ACRES*
*ALL DISTURBANCE OCCURS ON PCT. L.P. PROPERTY

PREPARED FOR:
BRC OPERATING COMPANY, LLC
DALLAS TEXAS

LEGEND	ENGINEER	MATERIALS (THIS SHEET)	GENERAL NOTES	REVISIONS				DRAWING STATUS				SCALE:	NTG	BRC OPERATING COMPANY, LLC DALLAS, TEXAS			
				NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION	ISSUED FOR	DATE				BY	DRAWN	ECG
				1	05/22/17	SUBMITTED FOR WVDEP-OOG REVIEW	1		ISSUED FOR BID	BID	04/24/2017	WVJ					
				2	06/12/17	CORRECTIONS REQUIRED BY WVDEP	2										
				3	07/12/17	CORRECTIONS REQUIRED BY WVDEP	3			CONSTR.							
				4			4										
				5			5		AS-BUILT								
				6			6										
				7			7										



333 Technology Drive, Suite 107
Carnotung PA 15317
Office: 724.745.5879

WR INFANTRY 1-1H PAD SITE
TITLE SHEET

DRAWING NO. PI 000

**APPROVED
WVDEP OOG**

8/1/2017

----- ACCESS ROAD DISTURBED AREA = 0.048 ACRES
 ----- WELL PAD SITE DISTURBED AREA = 4.10 ACRES
 TOTAL DISTURBED AREA = 4.148 ACRES
 *ALL DISTURBANCE OCCURS ON P.L.P. PROPERTY.

PADSITE WORKING AREA

MAINTENANCE PROGRAM

- A. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES DURING STAGING OF THE PAD SITE, DURING AND FOLLOWING DRILLING AND WELL COMPLETION WORK. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MAINTAINED IN GOOD WORKING ORDER (CLEANED, REPAIRED, ETC.) UNTIL ALL DESIGNATED TRIBUTARY AREAS ARE ESTABLISHED. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL REMAIN IN PLACE UNTIL A UNIFORM PERMANENT VEGETATIVE COVER IS ESTABLISHED.
- B. ALL EROSION AND SEDIMENTATION CONTROLS SHALL BE MONITORED AND INSPECTED BY A REGISTERED PROFESSIONAL ENGINEER AND NECESSARILY, AN INSPECTOR WILL BE CONDUCTED FOLLOWING A SUBSTANTIAL RAINFALL EVENT FOR POSSIBLE DAMAGES OR FAILURES. THE CONTRACTOR SHALL MAINTAIN RECORDS OF ALL INSPECTIONS. ANY REQUIRED REPAIRS WILL BE MADE BY THE END OF THE WORKING DAY.
- C. ANY UNDESIRABLE REMOVALS MUST BE REMOVED FROM THE CONTROL DEVICES AND DEPOSITED OR SPREAD BY SPREADING ON SITE, WITHIN THE PREVIOUSLY DISTURBED AREA, OR DEPOSITED WITHIN A DESIGNATED STOCKPILE AREA.
- D. DISTURBED AREAS SHALL BE CHECKED REGULARLY TO INSURE THAT A GOOD STAND IS MAINTAINED. IF NECESSARY, AREAS SHALL BE REVEGETATED, MULCHED AND RESEED.
- E. A COMPACTED EMPANCHED BERM IS SPECIFIED FOR INSTALLATION AROUND SELECT PERIMETER AREAS OF THE PAD SITE. THE PURPOSE OF THIS BERM IS TO CONTAIN ANY LEAKS OR OTHER UNWANTED RELEASES TO THE DRAINAGE AND COMPLETION OPERATIONS FROM MANHOLES RELEASE TO THE SURROUNDING ENVIRONMENT.
- F. ALL WASH AND OTHER DEBRIS WILL BE DEPOSITED OF PROPERLY TO A LANDFILL APPROVED BY THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

EROSION/SEDIMENTATION CONTROL

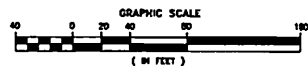
1. THE CONSTRUCTION SEQUENCE FOR PAD SITE DEVELOPMENT SHALL BE AS FOLLOWS:
 THE CONTRACTOR SHALL CONTACT THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OR A GAS INSPECTOR, SURFACE OWNER AND OTHER NECESSARY PARTIES TO ATTEND A PRE-CONSTRUCTION MEETING.
2. THE CONTRACTOR WILL HAVE SOIL EROSION AND SEDIMENT CONTROL MATERIALS NECESSARY TO COMPLETE STAGING FOR THE PAD SITE DEVELOPMENT ON LOCATION PRIOR TO THE START OF INSTALLATION OF CONTROL MEASURES. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE POSITIONED IN ACCORDANCE WITH THE DRAWING.
3. VEGETATED AREAS ADJACENT TO THE OUTSIDE PERIMETER OF THE PROJECT BEYOND A DISTANCE OF 100'-FT. HAVE NOT BEEN DESIGNATED. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VEGETATING THESE AREAS WITHIN THE WELL STAGING SITE, AND ARE TO BE PROVIDED. THESE AREAS SHALL BE AVOIDED BY PLACEMENT OF FLAGGING IN THE BOUNDARY OF DISTURBED AREAS, AS DESIGNATED BY PERSONNEL WHO ARE QUALIFIED IN THE IDENTIFICATION OF VEGETATED AREAS. THE CONTRACTOR IS TO AVOID TRAVELING THE IDENTIFIED VEGETATED AREAS WITH EQUIPMENT.
4. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE ENTRANCE LOCATIONS SPECIFIED, WHICH USING ANY ROCK FILL TO CONSTRUCT A WELL PAD OR ACCESS ROAD, THE ROCK FILL THICKNESS SHALL BE NO GREATER THAN 3".
5. THE EROSION CONTROL MEASURES SHALL BE INSTALLED AFTER ALL SOIL AND EROSION CONTROL MEASURES HAVE BEEN PROPERLY INSTALLED. DISTURBED AREAS SHALL NOT EXCEED 12-INCHES. THE DISTURBED FILL SHALL ACHIEVE AT LEAST A 5% OF STANDARD PRODUCTION (10% TO 15% AS PER DATA) IN COLLATORS TO AVOID PLACING FILL MATERIAL ON FRESH OR WET SOILS, OR NATURAL GRADES GREATER THAN 2:1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR ALL DISTURBANCE AREAS.
6. TOPSOIL REMOVAL SHALL BE POSITIONED WITHIN A DESIGNATED STOCKPILE AREA AS SHOWN ON THE DRAWING FOR INTENDED REPLACEMENT UPON DRILLING OPERATIONS COMPLETION, AND STAGING SITE AND ACCESS ROAD RECONSTRUCTION.
7. COMPOST FILTER BEDS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAIL AT THOSE LOCATIONS SHOWN ON THE ORIGINAL SITE PLAN. FILTER BEDS SHALL BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AT SPECIFIED INTERVALS.
8. EARTHWORK OPERATIONS FOR FINAL WELL SITE STAGING PREPARATION WILL THEN COMMENCE. THE WELL PAD AREA WILL BE PREPARED BY DRILLING STONE BARS SUPPORT TO A DEPTH TO SUPPORT THE DRILLING EQUIPMENT.
9. IF DETERMINED THAT FILL MATERIAL MAY BECOME NECESSARY TO DEVELOP THE WELL SITE, SUCH SOIL BORROW SITES WILL ADHERE TO ALL APPLICABLE REGULATORY REQUIREMENTS AND REQUIREMENTS. IF IT IS DETERMINED THAT EXCESS SOIL IS IDENTIFIED AND REQUIRED MATERIAL FROM THE WELL STAGING SITE, IT MAY ONLY BE EXPORTED AT APPROVED DISPOSAL SITES. APPLICABLE EROSION AND SEDIMENTATION CONTROL MEASURES WILL ALSO APPLY TO SUCH BORROW PIT/ DISPOSAL SITES.
10. IN THOSE LOCATIONS WHERE THE EXISTING WELL STAGING SITE WORK ACTIVITY IS NOT COMPLETED WITHIN A 30-DAY PERIOD, THEN TEMPORARY SEEDING OF THE EXISTING AREAS SHALL BE PROVIDED IN ACCORDANCE WITH THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. SEEDING SHALL BE PROVIDED IN ORDER TO PROTECT EXPOSED CRITICAL AREAS UNTIL SUCH THAT PERMANENT STABILIZATION OF THE SITE CAN BE ESTABLISHED.
11. THE FOLLOWING TEMPORARY SEEDING CONTROL MEASURES ARE TO BE COMPLETED WITHIN 21 DAYS OF THE SURFACE ARE BARE EXPOSED:
 a. SEEDING SHALL BE PLACED ON THE ACCESS ROAD UPON COMPLETION OF THE SUB-GRADE. IF DETERMINED BY THE OPERATING COMPANY, LTD TO BE NECESSARY, SOIL-RETENTIVE FABRIC SHALL BE INSTALLED OVER BARE-GRADE WELL PAD AREA AND IN CONJUNCTION WITH SEEDING.
 b. GRAZE EXIST FORMULA FOR TEMPORARY COVER SHALL BE APPLIED. REFER TO WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, TABLE 3 FOR SPECIFICATIONS REGARDING THE FORMULA. SEEDING SHALL BE APPLIED AT A UNIFORM RATE OF 40 POUNDS PER ACRE.
 c. MAY OR STRAW MULCH SHALL BE APPLIED FOLLOWING SEEDING. THE MULCH SHALL BE APPLIED WITHIN 48 HOURS OF SEEDING. THE APPLICATION RATE SHALL BE 100 BALES PER ACRE.
 d. DISPOSE OF ALL SOIL CUTTINGS, DRILLING MUD, DRILLING FLUIDS, STABILIZATION MATERIAL, AND WASHES IN ACCORDANCE WITH WEST VIRGINIA CODES.
12. PERMANENT STABILIZATION OF THE WELL STAGING SITE SHALL BE ACCOMPLISHED BY APPLYING A UNIFORM 50% PERMANENT VEGETATIVE COVER TO EXISTING EROSION, WHICH IS DEFINED AS A SATISFACTORY CATCH OF GRAINS EXCEEDING OVER THE OUTSIDE SITE.
 THE FOLLOWING PERMANENT CONTROL MEASURES ARE TO BE COMPLETED:
 a. STOCKPILED TOPSOIL SHALL BE SPREAD OVER THE ENTIRE WELL SITE STAGING AREAS THAT HAVE BEEN DISTURBED TO A MINIMUM DEPTH OF 6-INCHES. TOPSOIL SHALL NOT CONSIST OF ROCKS, CLAY, BRUSH, ROOTS, WEEDS, OR OTHER OBJECTIONABLE ORGANIC MATERIALS.
 b. FERTILIZERS, GRAZE EXIST AND MULCH SHALL BE STORED WITHIN A BURNING ENCLOSURE, IN THEIR ORIGINAL UNOPENED CONTAINERS, KEPT IN A SECURED, DRY LOCATION AND REARER SEALED UNTIL USED.
 c. PERMANENT SEEDING MULCH SHALL CONSIST OF PERMANENT VEGETABLE AND LAWNED PLANTS. REFER TO WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL FOR THE SPECIFICATIONS REGARDING BROWN FORMULA, TABLE 4. SEEDING SHALL BE APPLIED AT A RATE OF 30 POUNDS/ACRE FOR PERMANENT VEGETATION AND 20 POUNDS PER ACRE FOR LAWNED PLANTS.
 d. MAY OR STRAW MULCH SHALL BE APPLIED FOLLOWING SEEDING. THE MULCH SHALL BE APPLIED WITHIN 48 HOURS AFTER SEEDING. THE APPLICATION RATE SHALL BE 100 BALES PER ACRE.
 e. IF IT MAY BE DETERMINED THAT A FERTILIZER IS NECESSARY FOR PURPOSE OF ACCOMMODATING NUTRIENT GROUPS, THEN THE CONTRACTOR WILL PROVIDE SUCH APPLICATION. THE APPLICATION RATE WILL BE BASED UPON THE MANUFACTURER'S RECOMMENDATIONS, BUT SHALL BE 10-20-20.
 f. WHERE IT MAY BE REQUIRED THAT THE SOIL REQUIRED LIKE TO STABILIZE THE FILL, IT SHALL BE APPLIED BY THE CONTRACTOR. IT WILL BE THE CONTRACTOR'S OBLIGATION TO OBTAIN THE SERVICES OF A LABORATORY OR QUALIFIED AGENCY TO DETERMINE THE ACTIVITY OF THE SOIL, AS IT RELATES TO PHOSPHORUS, NITROGEN AND POTENTIAL TOXICITY. REFER TO WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL.
13. AS A FINAL MEASURE FOR PURPOSES OF SPILL CONTAINMENT, THE CONTRACTOR SHALL INSTALL AN IMPERMEABLE LINING WITHIN THE AREA AS DESIGNATED ON THE DRAWING. CONTAINMENT SYSTEMS SHALL ALSO BE EXPLOITED TO CONTAIN POTENTIAL LEAKAGES OF DRILLING MUDS, HYDRAULIC FLUIDS, OIL, GREASE, FUEL, DRILLING MUD ADDITIVES, HYDRAULIC FRACTURING ADDITIVES / FLUIDS, CAPACITY OF SUCH CONTAINMENT SYSTEMS SHALL BE SIZED TO HOLD THE LARGEST CONTAINER BROKEN WITHIN THE AREA PLUS 10%.

WV LAW SAYS:
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Notices of not less than 48 business hours nor more than 10 business days, exclusive of Saturdays, Sundays, state & federal holidays are required by Chapter 24-C.



1-800-745-4242



LEGEND	ENGINEER	MATERIALS (THIS SHEET)	GENERAL NOTES	REVISIONS		DRAWING STATUS		SCALE:		BRC OPERATING COMPANY, LLC DALLAS, TEXAS
				NO.	DATE	DESCRIPTION	ISSUED FOR	DATE	BY	
				1	04/25/17	ADDED TO	NO	04/24/2017	WVJ	
				2	05/23/17	SUBMITTED FOR WVDEP OOG REVIEW				
				3	06/12/17	CORRECTIONS REQUIRED BY WVDEP				
				4	07/12/17	CORRECTIONS REQUIRED BY WVDEP				
				5						
				6			AS-BUILT			
				7						



323 Technology Drive, Suite 101
 Coppansburg, PA 15317
 Office 724.745.8029

WV INFANTRY 1-1H PAD SITE
 PROPOSED IMPROVEMENTS & EROSION
 AND SEDIMENT CONTROL PLAN

DRAWING NO. P1 210

WR INFANTRY 1-1H SURFACE HOLE
 STATE PLANE COORDINATES
 SOUTH ZONE-NAD 23
 (N) 43705
 (E) 2062505
 L&L DECIMAL-NAD 83
 38.19081
 80.78252
 UTM (NAD 83) ZONE 17 - METERS
 4227020
 519061

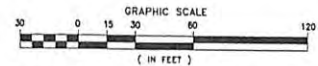


MAINTENANCE PROGRAM:

1. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES DURING STAGING OF THE PAD SITE DURING AND FOLLOWING DRILLING AND WELL COMPLETION WORK. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED IN GOOD WORKING ORDER (CLEANED, REPAIRED, ETC.) UNTIL ALL DISTURBED FOREBAY AREAS ARE STABILIZED. ALL TEMPORARY EROSION AND SEDIMENT CONTROLS WILL REMAIN IN PLACE UNTIL A UNIFORM, PERENNIAL VEGETATIVE COVER IS ESTABLISHED.
2. ALL EROSION AND SEDIMENT CONTROLS SHALL BE MONITORED AND INSPECTED ON A ROUTINE BASIS FOR PROPER ANCHORING AND INTEGRITY. ADDITIONALLY, AN INSPECTION WILL BE CONDUCTED FOLLOWING A SUBSTANTIAL RAINFALL EVENT FOR POSSIBLE DAMAGES OR FAILURES. THE CONTRACTOR SHALL MAINTAIN RECORDS OF ALL INSPECTIONS. ANY REQUIRED REPAIRS WILL BE MADE BY THE END OF THE WORKING DAY.
3. ANY ACCUMULATED SEDIMENTS MUST BE REMOVED FROM THE CONTROL DEVICES AND DISPOSED OF BY SPREADING ON SITE WITHIN THE PREVIOUSLY DISTURBED AREA OR DISPOSED OF WITHIN A DESIGNATED STOCKPILE AREA.
4. WEATHERED AREAS SHALL BE CHECKED REGULARLY TO INSURE THAT A GOOD STAND IS MAINTAINED. NECESSARY AREAS SHALL BE FERTILIZED, MULCHED AND RESEED.
5. IF COMPACTED EARTHWORK IS SPECIFIED FOR INSTALLATION AROUND SELECTED PERIMETER AREAS OF THE PAD SITE THE PURPOSE OF THIS BERM IS TO CONTAIN ANY LEAKS OR OTHER WASTES RELATED TO THE DRILLING AND COMPLETION OPERATIONS FROM HANDOVERS BELONG TO THE SURROUNDING ENVIRONMENT.
6. ALL TRASH AND OTHER DEBRIS WILL BE DISPOSED OF PROPERLY TO A LANDFILL APPROVED BY THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION.

PAD SITE CONSTRUCTION SEQUENCE:

- THE CONSTRUCTION SEQUENCE FOR PAD SITE DEVELOPMENT SHALL BE AS FOLLOWS:
1. THE CONTRACTOR SHALL CONTACT THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OIL & GAS INSPECTOR, SURFACE OWNER AND OTHER NECESSARY PARTIES TO ATTEND A PRE-CONSTRUCTION MEETING.
 2. THE CONTRACTOR WILL HAVE SOIL EROSION AND SEDIMENT CONTROL MATERIALS NECESSARY TO COMPLETE STAGING FOR THE PAD SITE DEVELOPMENT ON LOCATION PRIOR TO THE START OF INSTALLATION OF CONTROL MEASURES. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE POSITIONED IN ACCORDANCE WITH THE DRAWING.
 3. WETLAND AREAS ADJACENT TO THE OUTSIDE PERIMETER OF THE PROJECT BEYOND A DISTANCE OF 100-FT. HAVE NOT BEEN DELINEATED; HOWEVER, THE CONTRACTOR WILL BE CONSCIOUS THAT WETLAND AREAS MAY EXIST OUTSIDE THE WELL STAGING SITE AND ARE TO BE AVOIDED. WETLAND AREAS SHALL BE AVOIDED BY PLACEMENT OF FLAGGING IN THE BOUNDARY OF IDENTIFIED WETLANDS AS DETERMINED BY PERSONNEL WHO ARE QUALIFIED IN THE IDENTIFICATION OF WETLANDS. THE CONTRACTOR IS TO AVOID TRANSVERSING THE IDENTIFIED WETLAND AREAS WITH EQUIPMENT.
 4. THE ENVIRONMENTAL ACTIVITY MAY COMMENCE ONLY AFTER ALL SOIL AND EROSION CONTROL MEASURES HAVE BEEN PROPERLY INSTALLED. ENHANCEMENT LISTS SHALL NOT EXCEED 12-INCHES. THE ENGINEERED FILL SHALL ACHIEVE AT LEAST A 90% STANDARD PROCTOR DENSITY (REFER TO ASTM D998). CONTRACTOR TO MOIST PLACING FILL MATERIAL ON TRENCH OR HOLE SURFACES.
 5. TOPSOIL REMOVAL SHALL BE POSITIONED WITHIN A DESIGNATED STOCKPILE AREA AS SHOWN ON THE DRAWING FOR INTENDED REPLACEMENT UPON DRILLING OPERATIONS COMPLETION, AND STAGING SITE AND ACCESS ROAD RECLAMATION.
 6. COMPOST FILTER SOCKS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD CONSTRUCTION DETAILS AT THOSE LOCATIONS SHOWN ON THE DRAWING. SUPPORT STAKES WILL BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AT SPECIFIED INTERVALS.
 7. ENVIRONMENTAL OPERATORS FOR FINAL WELL SITE STAGING PREPARATION WILL THEN COMMENCE. THE WELL PAD AREA WILL BE PREPARED BY INSTALLING STONE BASE SUPPORT TO A DEPTH TO SUPPORT THE DRILLING EQUIPMENT.
 8. IF DETERMINED THAT ALL MATERIAL MAY BECOME NECESSARY TO DEVELOP THE WELL SITE, THEN SUCH BORROW SITES WILL ADHERE TO ALL APPLICABLE GOVERNMENTAL REGULATIONS AND REQUIREMENTS. CONVERSELY, IF IT IS DETERMINED THAT EXCESS SOIL IS EXCAVATED AND REQUIRES REMOVAL FROM THE WELL STAGING SITE, IT MAY ONLY BE DISPOSED AT APPROVED DISPOSAL SITES. APPLICABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO APPLY TO SUCH BORROW PIT/DISPOSAL SITES.
 9. IN THOSE LOCATIONS WHERE THE ENTIRE WELL STAGING SITE WORK ACTIVITY IS NOT COMPLETED WITHIN A 14-DAY PERIOD, THEN TEMPORARY SEEDING OF THE STAGING SITE MUST BE MADE. TEMPORARY STABILIZATION OF THE DISTURBED AREAS OF THE SITE SHALL BE ACCOMPLISHED TO ACHIEVE VEGETATIVE COVER IN ORDER TO PROTECT EROSION CRITICAL AREAS UNTIL SUCH TIME THAT PERMANENT STABILIZATION OF THE SITE CAN BE ESTABLISHED.
- THE FOLLOWING TEMPORARY SEEDING CONTROL MEASURES ARE TO BE COMPLETED WITHIN 21 DAYS OF THE SURFACE ARE BEING EXPOSED:
- AGGREGATE SHALL BE PLACED ON THE ACCESS ROAD UPON GRADING COMPLETION OF THE SUB-GRADE. IF DETERMINED BY BRC OPERATING COMPANY, LLC TO BE NECESSARY, GEO-TEXTILE FABRIC SHALL BE INSTALLED ON THE SUB-GRADE HELL PAD AREA AND IN ADVANCE OF AGGREGATE PLACEMENT.
 - GRASS SEED FORMULA FOR TEMPORARY COVER SHALL BE ANNUAL HYBRIDS. REFER TO WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL, TABLE 3 FOR SPECIFICATIONS REGARDING THE FORMULA. SEEDS SHALL BE APPLIED AT A UNIFORM RATE OF 40 POUNDS PER ACRE.
 - HAY OR STRAW MULCH SHALL BE APPLIED FOLLOWING SEEDING. THE MULCH SHALL BE APPLIED WITHIN 48 HOURS OF SEEDING. THE APPLICATION RATE SHALL BE 100 BALES PER ACRE.
10. DISPOSAL OF ALL DRILL CUTTINGS, DRILLING MUD, DRILLING FLUIDS, STABILIZATION MATERIALS AND BRINES IN ACCORDANCE WITH WEST VIRGINIA CODES.
 11. PERMANENT STABILIZATION OF THE WELL STAGING SITE SHALL BE ACCOMPLISHED TO ACHIEVE A UNIFORM PERMANENT VEGETATIVE COVER TO RESIST EROSION, WHICH IS DEFINED AS A SATISFACTORY CATCH-OF GRASS EXISTING OVER THE ENTIRE SITE.
- THE FOLLOWING PERMANENT CONTROL MEASURES ARE TO BE COMPLETED:
- STOCKPILED TOPSOIL SHALL BE SPREAD OVER THE ENTIRE WELL SITE STAGING AREAS THAT HAVE BEEN DISTURBED TO A MINIMUM DEPTH OF 8-INCHES. TOPSOIL SHALL NOT CONSIST OF ROCKS, CLAY, BRUSH, ROOTS, OR OTHER OBJECTIONABLE ORGANIC MATERIALS.
 - FERTILIZERS, GRASS SEED AND MULCH WILL BE STORED WITHIN A BUILDING ENCLOSURE, IN NEW ORIGINAL UNOPENED CONTAINERS, KEPT IN A SECURED DRY LOCATION AND REMAIN SEALED UNTIL USED.
 - PERMANENT SEEDING MIXTURE SHALL CONSIST OF PERENNIAL HYBRIDS AND LATHOS FLORA. REFER TO WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL FOR THE SPECIFICATIONS REGARDING SPECIFIC FORMULAS. TABLE 4B. SEEDING SHALL BE APPLIED AT A RATE OF 20 POUNDS/ACRE FOR PERENNIAL HYBRIDS AND 20 POUNDS PER ACRE FOR LATHOS FLORA.
 - HAY OR STRAW MULCH SHALL BE APPLIED FOLLOWING SEEDING. THE MULCH SHALL BE APPLIED WITHIN 48 HOURS AFTER SEEDING. THE APPLICATION RATE SHALL BE 100 BALES PER ACRE.
 - IF IT MAY BE DETERMINED THAT A FERTILIZER IS NECESSARY FOR PURPOSE OF ACCELERATING VEGETATIVE GROWTH, THEN THE CONTRACTOR WILL PROVIDE SUCH APPLICATION. THE APPLICATION RATE WILL BE BASED UPON THE MANUFACTURER'S RECOMMENDATIONS. MIX SHALL BE 16-20-20.
 - WHERE IT MAY BE REQUIRED THAT THE SOIL REQUIRES LIMING TO STABILIZE THE PH, IT SHALL BE SUPPLIED BY THE CONTRACTOR. IT WILL BE THE CONTRACTOR'S OBLIGATION TO EMPLOY THE SERVICES OF A LABORATORY OR QUALIFIED AGRICULTURIST TO DETERMINE THE ACIDITY OF THE SOIL, AS IT RELATES TABLE 3 PROVIDED IN THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL.
 - 12. AS A FINAL MEASURE FOR PURPOSES OF SPILL CONTAINMENT, THE CONTRACTOR SHALL INSTALL AN IMPERMEABLE LINING WITHIN THE AREAS AS DESIGNATED ON THE DRAWING. CONTAINMENT SYSTEMS SHALL ALSO BE EMPLOYED TO CONTAIN POTENTIAL LEAKAGES OF DRILLING MUDS, HYDRAULIC OIL, DIESEL FUEL, FRESH WATER, AND OTHER LIQUIDS. HYDRAULIC FRACTURING ADDITIVES / FLOWBACK CAPACITY OF SUCH CONTAINMENT SYSTEMS SHALL BE SIZED TO HOLD THE LARGEST CONTAINER STORED WITHIN THE AREA PLUS 10%.



RECEIVED
 Office of Oil and Gas
 MAY 31 2017
 WV Department of
 Environmental Protection

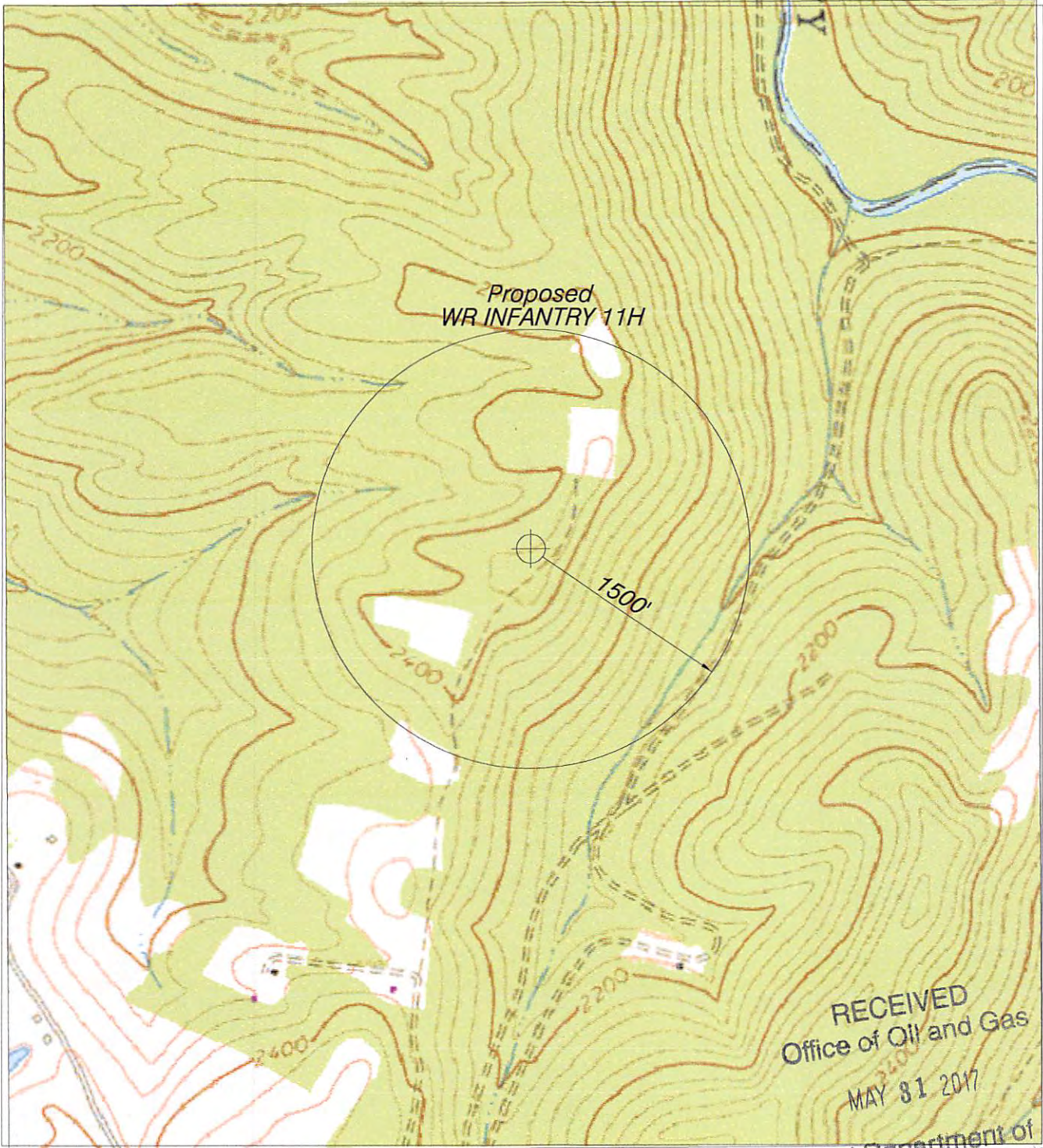
LEGEND	ENGINEER	MATERIALS (THIS SHEET)	GENERAL NOTES	REVISIONS		DRAWING STATUS		SCALE	DATE	BY	DATE	DATE	DATE
				NO.	DATE	DESCRIPTION	ISSUED FOR						
				1									
				2		ISSUED FOR BID	BID	04/24/2017	WVJ				
				3									
				4		CONSTR.							
				5			AS-BUILT						
				6									
				7									

BRC OPERATING COMPANY, LLC
 DALLAS, TEXAS

WR INFANTRY 1-1H PAD SITE
PROPOSED IMPROVEMENTS
PAD SITE WORKING AREA
 DRAWING NO. P1 201

17-00948

BRC OPERATING CO., LLC. WR INFANTRY 1-1H WATER



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HUPP Surveying & Mapping

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1" = 1000'
Mt Nebo

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