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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, May 30, 2018  
WELL WORK PERMIT  
Horizontal 6A / New Drill

AMERICAN PETROLEUM PARTNERS OPERATING, LLC  
4600 J. BARRY COURT SUITE 310

CANONSBURG, PA 15317

Re: Permit approval for CASTERLY ROCK-2UH  
47-051-02018-00-00

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: CASTERLY ROCK-2UH  
Farm Name: LESLIE B. & LORI D. SCHABE  
U.S. WELL NUMBER: 47-051-02018-00-00  
Horizontal 6A: New Drill  
Date Issued: 5/30/2018

## 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

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

## PERMIT CONDITIONS

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



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west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
dep.wv.gov

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

TO: American Petroleum Partners Operating, LLC  
4600 J. Barry Court Suite 310  
Canonsburg, Pa 15317

DATE: May 21, 2018  
ORDER NO.: 2018-W-2

**INTRODUCTION**

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to American Petroleum Partners Operating, LLC (hereinafter "APP" or "Operator"), collectively the "Parties."

**FINDINGS OF THE CHIEF**

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

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. APP is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 4600 J. Barry Court Suite 310, Canonsburg, Pa 15317.
3. On February 26, 2018 APP submitted a well work permit application identified as API# 47-051-02018. The proposed well is to be located on the Casterly Rock Pad in Union District of Marshall County, West Virginia.
4. On February 26, 2018 APP requested a waiver for Wetlands 1, 2 and 3 outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-051-02018. Wetland 1 will be excluded from this waiver since it is situated inside of the limits of disturbance and will be impacted then restored under an ACOE nationwide permit 39.

06/01/2018

## CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to... (3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”
2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”
3. West Virginia Code §22-6A-12(b) requires, in part, that “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 Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

## ORDER

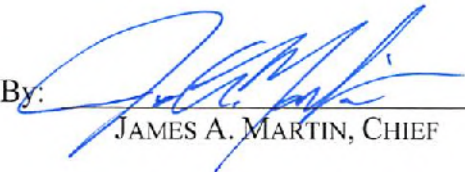
West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands 2 and 3 from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit application identified as API# 47-051-02018. The Office of Oil and Gas hereby **ORDERS** that APP shall meet the following site construction and operational requirements for the Casterly Rock Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetland 2 and 3 shall have a layer of super silt fence and a layer of thirty-two inch (23”) compost filter sock to prevent sediment from reaching the wetlands.
- d. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- e. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- f. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- g. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- h. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- i. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- j. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- k. All records from inspections shall be maintained on site for the life of the project and be available upon request.

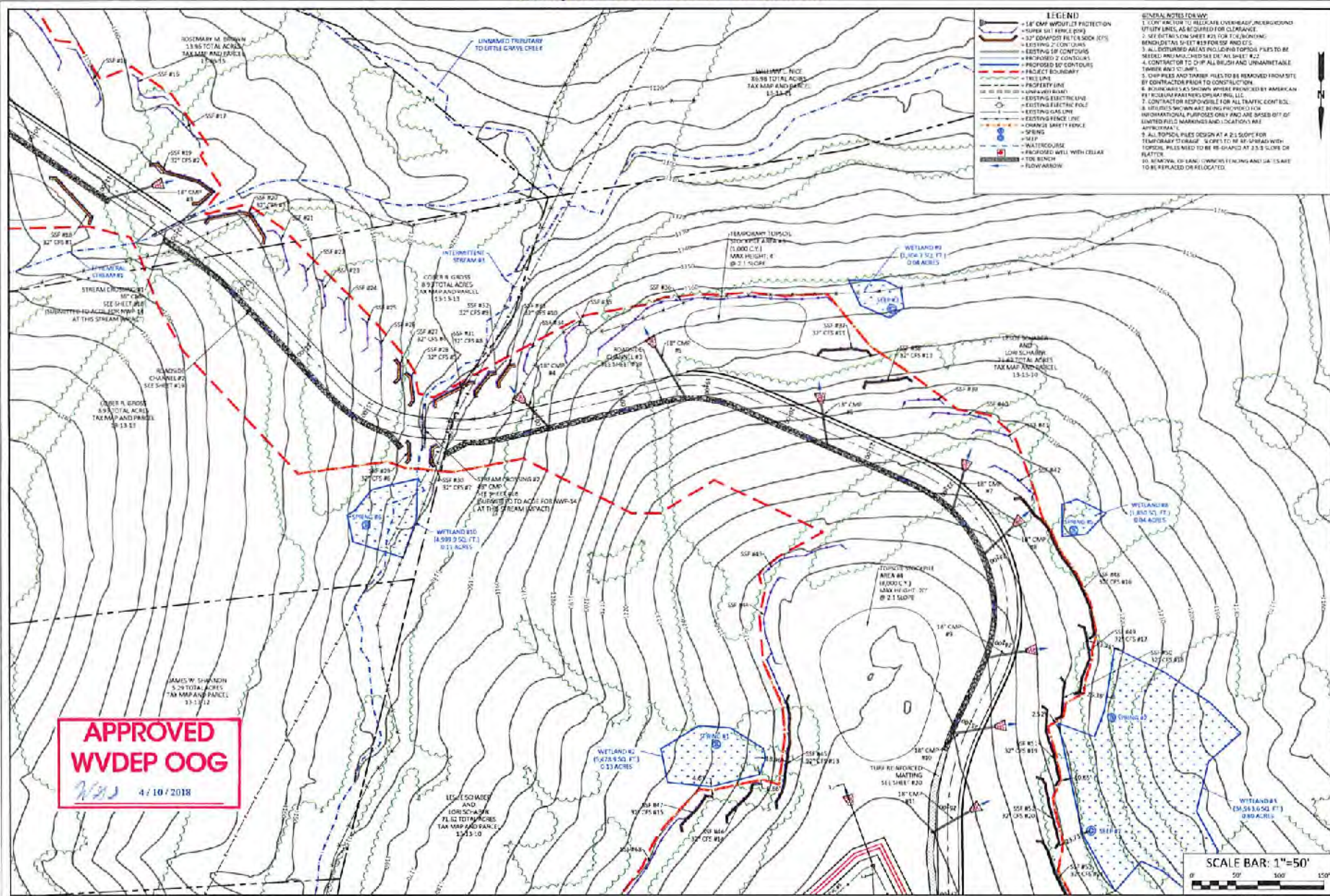
Thus ORDERED, the 21th day of May, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By:   
JAMES A. MARTIN, CHIEF

Casterly Rock Wetland Waiver - Attachment 1



- LEGEND**
- 18" CMP W/SPILT PROTECTION
  - 32" EQUIPOT RITE-LOCK (EPS)
  - EXISTING 2" CONDUITS
  - EXISTING 12" CONDUITS
  - PROPOSED 2" CONDUITS
  - PROPOSED 12" CONDUITS
  - PROJECT BOUNDARY
  - 18" CUP
  - PROPERTY LINE
  - UNPAVED ROAD
  - EXISTING ELECTRIC LINE
  - EXISTING ELECTRIC POLE
  - EXISTING GAS LINE
  - EXISTING FENCE LINE
  - CHAIN SURVEY FENCE
  - SPRING
  - WATER COURSE
  - PROPOSED WELL WITH CELLAR
  - TOL BENCH
  - FLOW ARROW

- GENERAL NOTES TO WAIVER OVERHEAD/UNDERGROUND UTILITY LINES, AS REQUIRED FOR CLARIFICATION:**
1. SEE DETAIL CON-SHEET #22 FOR TYPICAL BEND RATIOS IN 1/2" EBT FOR EPS AND CTS.
  2. ALL EXISTING AREAS INCLUDING TOPSOIL PILES TO BE RE-SEED: RE-PAVED: OR AS DETAIL SHEET #22.
  3. CONTRACTOR TO C/P ALL HIGH AND UNMAINTAINABLE TANKS AND TANKS.
  4. C/P PILES AND TANKS PILES TO BE REMOVED FROM SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
  5. BURNING AS SHOWN WHERE PROHIBITED BY AMERICAN FIRE INSURANCE POLICY COMPANY POLICIES.
  6. CONTRACTOR RESPONSIBLE FOR ALL TRAFFIC CONTROL.
  7. UTILITIES SHOWN ARE BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED ON EXISTING FIELD MARKINGS AND INDICATORS ARE APPROXIMATE.
  8. ALL TOPSOIL PILES DESIGN AT A 2:1 SLOPE FOR TEMPORARY STORAGE. SOILS TO BE SPREAD WITH TOPSOIL PILES MUST TO BE RE-DAMPED AT 2:1 SLOPE OR FLATTER.
  9. REMOVAL OF SAND COLUMNS (EASING AND) SHALL BE TO BE REPLACED OR RELOCATED.

**BOORD, BENCHEK and ASSOC., INC.**  
Engineering, Surveying, Construction,  
and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055

**E&S CONTROL LAYOUT**

THIS DOCUMENT WAS PREPARED BY:  
**BOORD, BENCHEK AND ASSOC., INC.**  
FOR: AMERICAN PETROLEUM PARTNERS OPERATING, L.L.C.

DATE:  
MARCH 2018  
CASTERLY ROCK  
WELL PAD  
UNION DISTRICT,  
MARSHALL COUNTY,  
WV

REVISIONS

NO.	DATE	DESCRIPTION

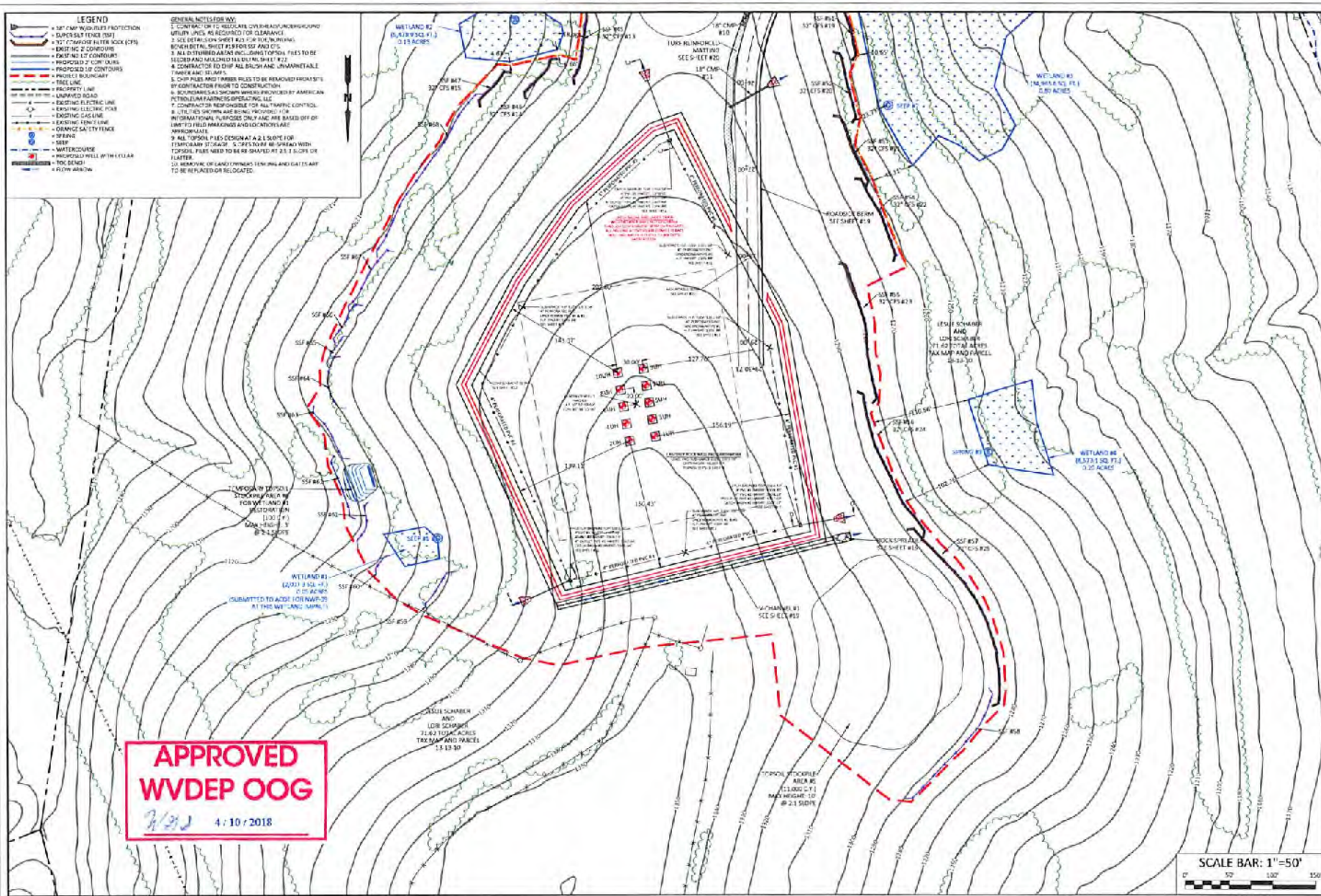
SCALE BAR: 1"=50'

15414  
STATE OF  
WEST VIRGINIA  
PROFESSIONAL ENGINEER

**APPROVED WVDEP OOG**  
4/10/2018



Casterly Rock Wetland Waiver - Attachment 1



**LEGEND**

- 18" CMP WOOD PILE PROTECTION
- SURFACE FENCE (SF)
- 7" TYPED FILTER ROCK (FR)
- EXISTING 2" CONTOURS
- EXISTING 1" CONTOURS
- PROPOSED 2" CONTOURS
- PROPOSED 1" CONTOURS
- PROJECT BOUNDARY
- TRAIL LINE
- PROPERTY LINE
- LANDFILL ROAD
- EXISTING ELECTRIC LINE
- EXISTING ELECTRIC POLE
- EXISTING GAS LINE
- EXISTING FENCE LINE
- ORANGE SAFETY FENCE
- SPRING
- WATER COURSE
- PROPOSED WELL WITH CLEAN
- TOC BENCH
- FLYCH AREA

**GENERAL NOTES:**

- CONTRACTOR TO RELOCATE OR RE-UNDERGROUND UTILITIES PRIOR TO CLEARANCE.
- SEE DETAIL SHEET #103 FOR TOP MARKING BETWEEN SHEET #103 AND #104.
- ALL DISTURBED AREAS INCLUDING TOPSOIL FILLS TO BE RESEED AND MULCHED PER DETAIL SHEET #102.
- CONTRACTOR TO CHIP ALL BUSH AND UNWANTED TREES AND STUMPS.
- CHIP PILES AND LIMBS PILES TO BE REMOVED FROM SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
- BOUNDARIES AS SHOWN WERE PROVIDED BY AMERICAN PETROLEUM PARTNERS OPERATING, LLC.
- CONTRACTOR RESPONSIBLE FOR ALL TRAFFIC CONTROL.
- ALL CHIPS AND LIMBS TO BE PROPOSED TO BE REMOVED FOR INFORMATIONAL PURPOSES ONLY AND ARE BASED OFF OF LIMITED FIELD MARKINGS AND LOCATIONS ARE APPROXIMATE.
- ALL TOPSOIL PILES DESIGN AT A 1:1 SLOPE FOR TEMPORARY STORAGE. SLOPES TO BE SHOWN WITH TOPSOIL FILLS NEED TO BE SHAVED AT 2:1 SLOPE OR FLATTER.
- REMOVAL OF LAND OWNERS TENDERS AND GATEWAY TO BE REPLACED OR RELOCATED.

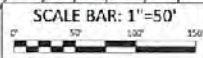
**APPROVED WVDEP OOG**  
 4/10/2018

**BOORD, BENCHEK and ASSOC., INC.**  
 Engineering, Surveying, Construction, and Mining Services  
 Southpointe PA 15317 Phone: 724-746-1055

**E&S CONTROL LAYOUT**  
 THIS DOCUMENT WAS PREPARED BY:  
 BOORD, BENCHEK AND ASSOC., INC.  
 FOR: AMERICAN PETROLEUM PARTNERS OPERATING, LLC.

DATE: MARCH 2018  
 CASTERLY ROCK WELL PAD  
 UNION DISTRICT, MARSHALL COUNTY, WV

NO.	DATE	DESCRIPTION
1	3/1/18	ISSUED FOR PERMIT REVIEW



11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Casterly Rock-2UH  
(CRN-2UH)

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

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

This project is located in Union District, Marshall County off of Fairmont Pike Road. There are three wetlands identified in the vicinity of the project which require a waiver.

Wetland #2: Is located immediately south of the well pad.

Wetland #3: Is located immediately southwest of the well pad.

No Perennial streams will require a waiver.

NOTE: Wetland #1 is impacted during construction. A Nationwide Permit 39 is being obtained from the ACOE.

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

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

a. A no-action alternative would result in the in-ability to extract any gas from this unit. The only available area for pad construction would be in the proposed location as shown in the attached drawings. Within this unit boundary there are no other viable pad locations, due to limitations of coal blocks, steepness of slope, impacts to waters of the U.S., additional wetland impacts, and/or violating dwelling setbacks. In short, the land surface and gas below would be unable to be developed in the Unit Boundary shown.

b. Refer to Exhibit "B" for the following elimination of alternatives that would move the well pad greater than 100 feet away from the wetlands in question while keeping the same project location.

West: Moving the pad further west would result to impacts to wetland <sup>3</sup> and either an additional wetland waiver or potential impacts to wetland 4.

South: Moving the pad further south would result in impacts to wetland 2 and would potential move the pad outside the unit boundary.

East: Moving the pad east would result in additional impacts to wetland 1. These impacts would end up being permanent. (Currently, they are temporary and any impacts to wetland 1 will be restored).

North: Moving the pad north would result the center of wells to be less than 625' from a dwelling. Well heads would also be less than 200' from a dwelling.

Refer to Exhibit "A" for the following elimination of alternatives that would move the well pad in a completely new location away from its current proposed location.

West: The site is unable to move west as the the slopes are too steep and there would be direct impacts to an UNT of Little Grave Creek. Moving further west of these impacts would result in the pad being outside the unit boundary.

South: Moving the site south would result in the pad being outside the unit boundary. It would also be outside the coal block and be located inside the area being mined/to be mind by Murray Ohio County Mine.

East: The site is unable to move east as the slopes are too steep and there would be direct stream impacts. The site would also be outside the unit boundary and would violate the dwelling setbacks.

Northwest: Moving the site any significant distance northwest from its current location would result in the pad being out of a coal block and being located over the old Hitchman Mine.

c: To maintain the 100 foot buffer would be to encroach on other wetlands that currently meet the 100 foot buffer. In addition, shrinking the pad size is not an option as a drill rig would be unable to fit.

d. This proposed project is the least environmentally damaging practicable alternative as it minimizes aquatic resource impacts. Any other viable alternative would result in additional direct impacts and elimination of aquatic resources. Currently, all impacts are temporary.

06/01/2018

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: \_\_\_\_\_

Operator's Well Number: Casterly Rock-2UH  
(CRN-2UH)

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

There are two wetlands located within 100 foot of the pad's limit of disturbance.

Wetland 2 covers an area of 5,478.9 SF (0.13 acres) and is located south the of the proposed well pad. Prior to construction the Limit of disturbance will be lined with orange fencing near wetland 2 to ensure contractors are aware of its location. In addition, Super silt fence with 32" compost filter sock placed in front of it will be used as the primary erosion and sediment control BMP near wetland 2.

Wetland 3 covers an area of 34,963.6 SF (0.80 acres) and is located southwest the of the proposed well pad and west of the proposed access road. Prior to construction the Limit of disturbance will be lined with orange fencing near wetland 2 to ensure contractors are aware of its location. In addition, Super silt fence with 32" compost filter sock placed in front of it will be used as the primary erosion and sediment control BMP near wetland 3.

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

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

An Erosion and Sediment Control and site Plan has been provided. In addition, blow ups of the areas in question are also provided in this waiver.

The well pad will have a proposed containment berm located around its entire perimeter. This berm is 3 foot in height and has a base of 16 feet. A detail of this berm is provided on the Erosion and Sediment Control Plan. This provides more than adequate containment during and after drilling activities.

Wetland 2 is only 5 feet from the proposed limit of disturbance It is 35 feet away from the well pads toe of slope.

Wetland 3 is only 3 feet from the limit of disturbance (however this distance is from the access road limit of disturbance). Wetland 3 and the well pad are split by the proposed access road. The proposed access road is designed so that no spills from the well pad will be able to flow onto it. Therefore, the access road location provides additional protection to wetland 3. Wetland 3 is 93 feet from the toe of slope for the access road. Due to the access roads location it is hard to distinguish between well pad and access road limit of disturbance.

RECEIVED  
Office of Oil and Gas  
FEB 26 2018  
WV Department of  
Environmental Protection

06/01/2018

11/3/14

Wetland and Perennial Stream Waiver Request

API Number: TBDOperator's Well Number: Casterly Rock-2UH  
(CRN-2UH)Well Operator: American Petroleum Partners Operating, LLCWell Number: Casterly Rock-2UH (CRN-2UH) Well Pad Name: Casterly Rock Well PadCounty, District, Quadrangle of Well Location: Marshall County, Union District, Moundsville, WV Quadrangle

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

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

**§22-6A-12(b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows:**

- (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir.
- (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake.
- (3) For a groundwater source, the distance shall be measured from the wellhead or spring.

The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.

**§22-6A-12(c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section.**

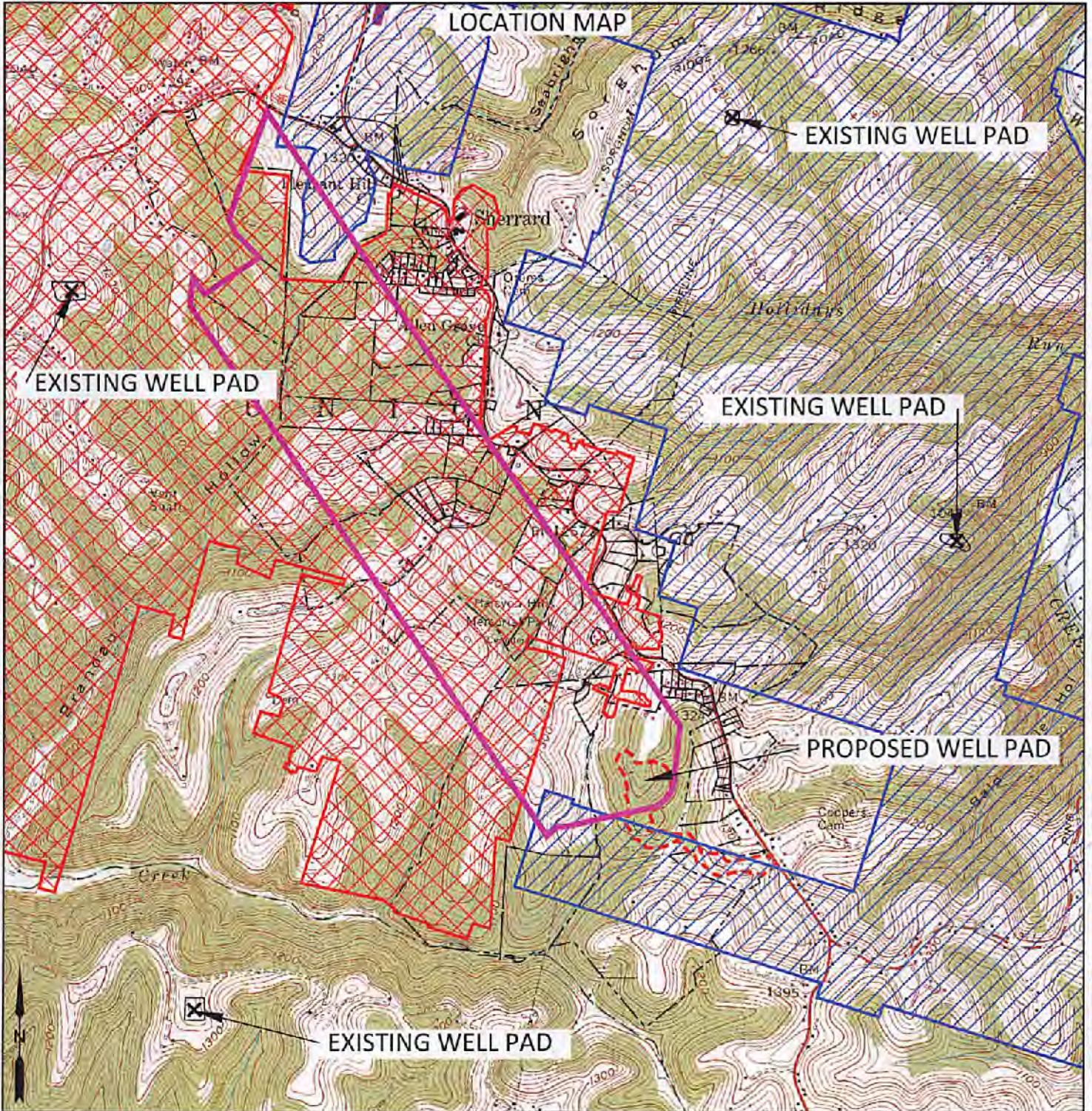
RECEIVED  
Office of Oil and Gas

FEB 26 2018

WV Department of  
Environmental Protection

06/01/2018

LOCATION MAP



LEGEND

- - - = PROJECT BOUNDARY
- = PROPERTY LINES
- = PRELIMINARY UNIT BOUNDARY
- = AREA MINED BY HITCHMAN MINE
- = AREA CURRENTLY OR TO BE MINED BY MURRAY OHIO COUNTY MINE

EXHIBIT "A"  
SCALE BAR: 1" = 2000'

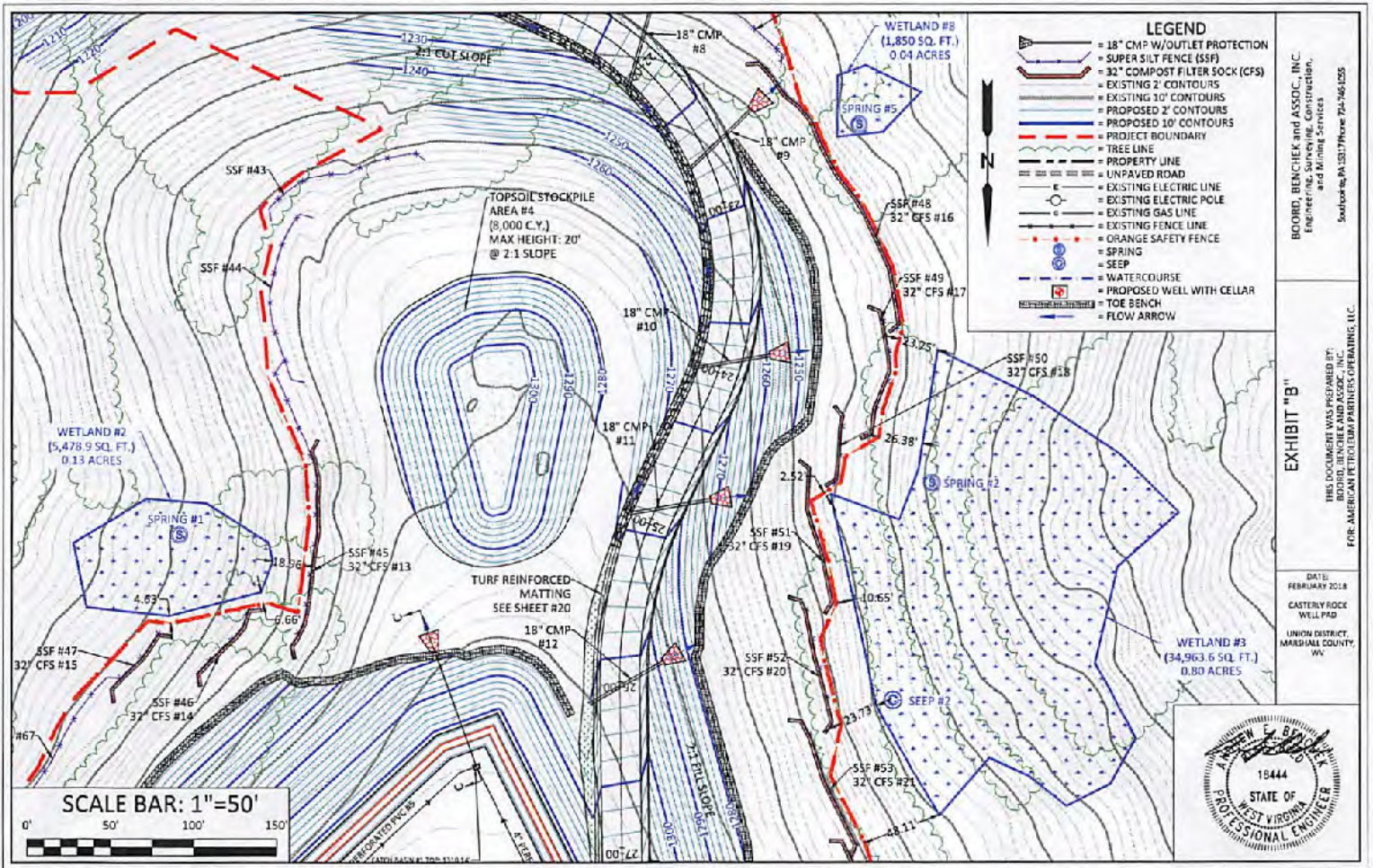


CENTER OF WELL PAD  
LAT: 39° 57' 58.69"  
LON: 80° 39' 55.03"

DEPARTMENT OF Environmental Protection  
 FEB 26 2018

Applicant / Well Operator Name  
 AMERICAN PETROLEUM PARTNERS OPERATING, LLC.  
 Address:  
 1600 J. BARRY COURT, SUITE 310, CANONSBURG, PA 15317  
 Well(Farm) Name  
 CASTERLY ROCK WELL PAD

Municipality - County - Code  
 UNION DISTRICT - MARSHALL - 51  
 USGS 7 1/2 Quadrangle Map Name - Map Section  
 MOUNDVILLE, WV - 23



**LEGEND**

- = 18" CMP W/OUTLET PROTECTION
- = SUPER SILT FENCE (SSF)
- = 32" COMPOST FILTER SOCK (CFS)
- = EXISTING 2' CONTOURS
- = PROPOSED 2' CONTOURS
- = EXISTING 10' CONTOURS
- = PROPOSED 10' CONTOURS
- = PROJECT BOUNDARY
- = TREE LINE
- = PROPERTY LINE
- = UNPAVED ROAD
- = EXISTING ELECTRIC LINE
- = EXISTING ELECTRIC POLE
- = EXISTING GAS LINE
- = EXISTING FENCE LINE
- = ORANGE SAFETY FENCE
- = SPRING
- = SEEP
- = WATERCOURSE
- = PROPOSED WELL WITH CELLAR
- = TOE BENCH
- = FLOW ARROW

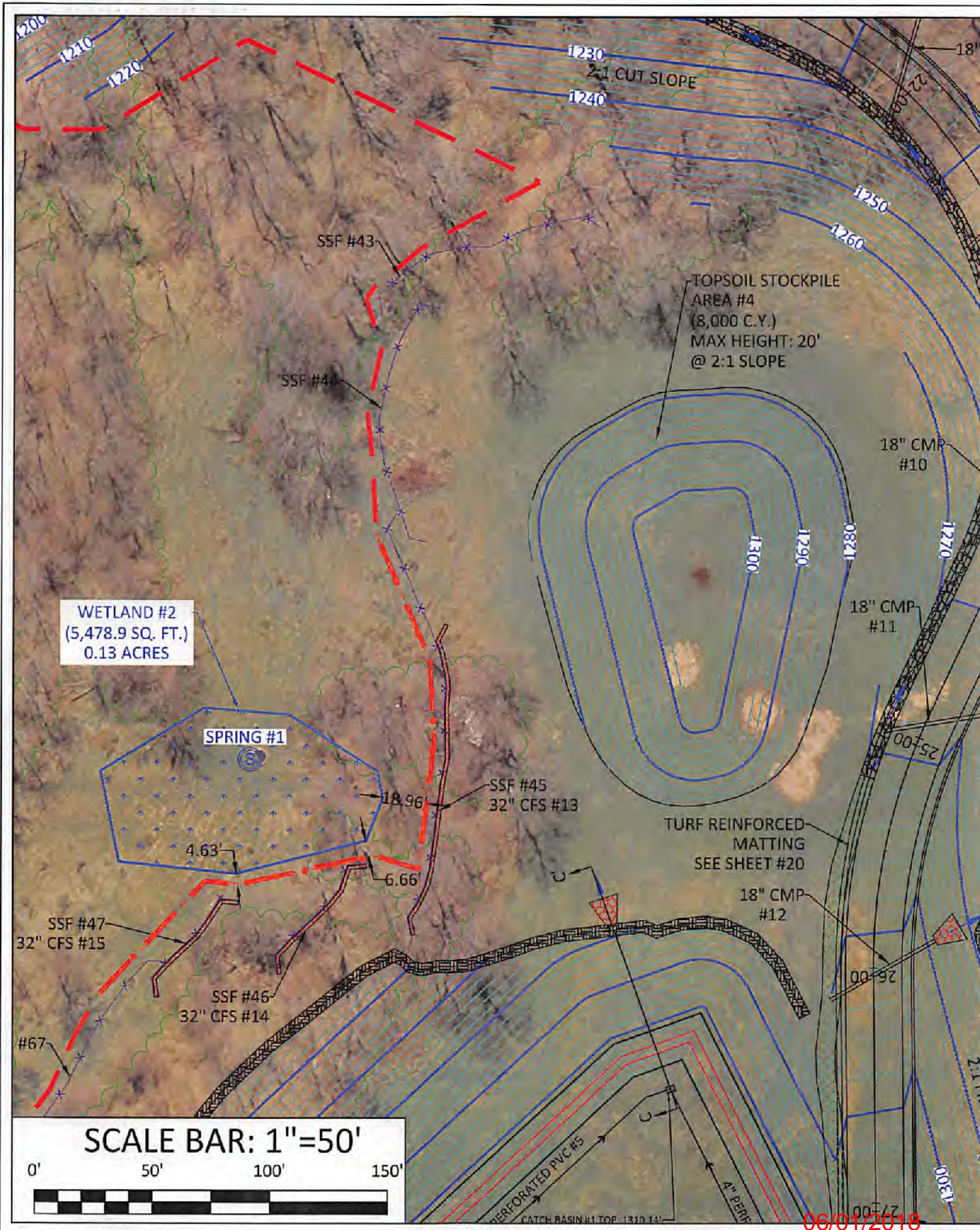
BOORD, BENCHER and ASSOC., INC.  
 Engineers, Surveyors, Geologists,  
 and Mining Services  
 Southcoast, PA 15177 Phone 724-766-1225

EXHIBIT "B"  
 THIS DOCUMENT WAS PREPARED BY:  
 BOORD, BENCHER AND ASSOCIATES, INC.  
 FOR: AMERICAN FERTILIZER BUSINESS OPERATIONS, LLC

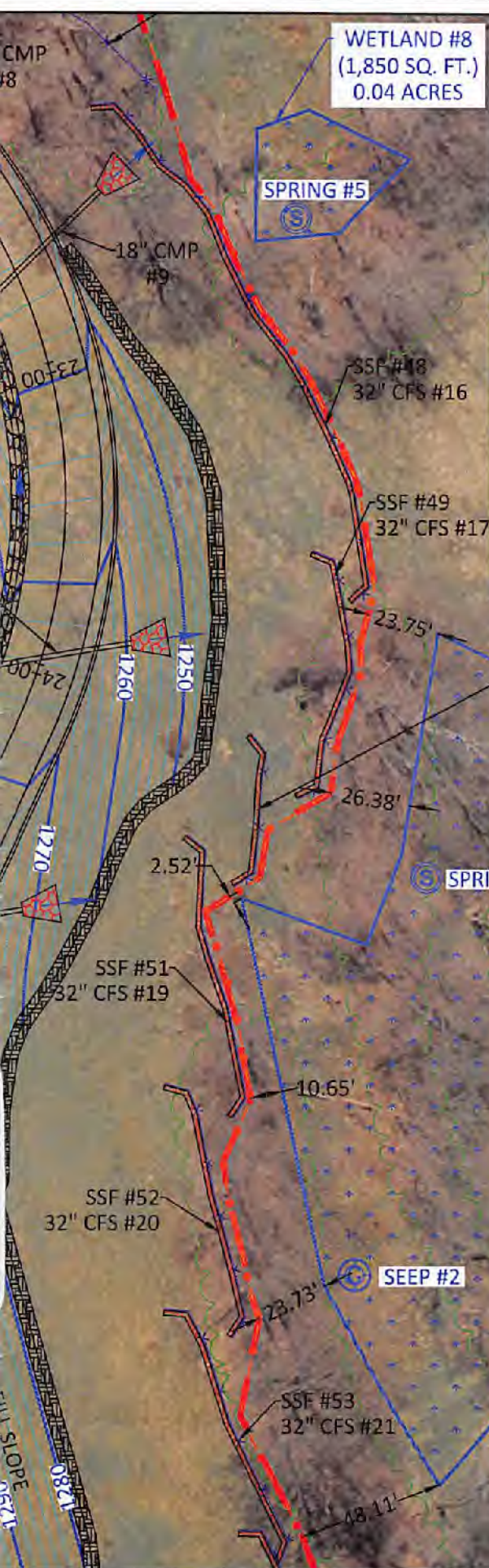
DATE: FEBRUARY 2018  
 CASTLE ROCK WELL PAD  
 UNION DISTRICT, MARSHALL COUNTY, WV



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 Office of Oil and Gas  
 FEB 26 2018  
 WV Department of  
 Environmental Protection



06/01/2018



### LEGEND

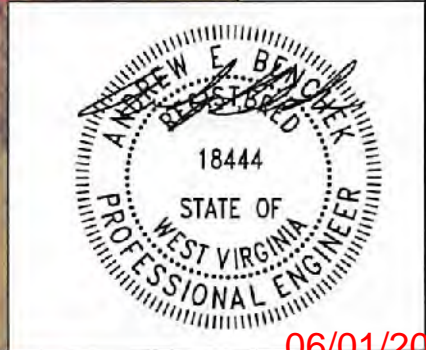
- = 18" CMP W/OUTLET PROTECTION
- = SUPER SILT FENCE (SSF)
- = 32" COMPOST FILTER SOCK (CFS)
- = EXISTING 2' CONTOURS
- = EXISTING 10' CONTOURS
- = PROPOSED 2' CONTOURS
- = PROPOSED 10' CONTOURS
- = PROJECT BOUNDARY
- = TREE LINE
- = PROPERTY LINE
- = UNPAVED ROAD
- = EXISTING ELECTRIC LINE
- = EXISTING ELECTRIC POLE
- = EXISTING GAS LINE
- = EXISTING FENCE LINE
- = ORANGE SAFETY FENCE
- = SPRING
- = SEEP
- = WATERCOURSE
- = PROPOSED WELL WITH CELLAR
- = TOE BENCH
- = FLOW ARROW

**BOARD, BENCHEK and ASSOC., INC.**  
 Engineering, Surveying, Construction,  
 and Mining Services  
 Southpointe, PA 15317 Phone: 724-746-1055

**EXHIBIT "C"**

THIS DOCUMENT WAS PREPARED BY:  
 BOARD, BENCHEK AND ASSOC., INC.  
 FOR: AMERICAN PETROLEUM PARTNERS OPERATING, LLC.

DATE:  
 FEBRUARY 2018  
 CASTERLY ROCK  
 WELL PAD  
 UNION DISTRICT,  
 MARSHALL COUNTY,  
 WV







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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-926-0499 Ext 1274

Barry K. Lay, Chairman  
dep.wv.gov

May 14, 2018

Department of Environmental Protection  
Office of Oil and Gas  
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02018

COMPANY: American Petroleum Partners, LLC

FARM: American Petroleum Partners, LLC Casterly Rock-2UH

COUNTY: Marshall DISTRICT: Union QUAD: Moundsville

The deep well review of the application for the above company is Approved to drill to Point Pleasant for completion.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: none
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

A handwritten signature in blue ink that reads "Susan Rose".

Susan Rose  
Administrator

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

1) Well Operator: American Petroleum Partners 494521257 Marshall Union Moundsville  
Operator ID County District Quadrangle

2) Operator's Well Number: Casterly Rock-2UH (CRN2-UH) Well Pad Name: Casterly Rock

3) Farm Name/Surface Owner: Leslie B. & Lori D. Schaber Public Road Access: State Route 88

4) Elevation, current ground: 1,337.89' Elevation, proposed post-construction: 1311.38

5) Well Type (a) Gas x Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_

Other \_\_\_\_\_

(b) If Gas Shallow \_\_\_\_\_ Deep x

Horizontal x

6) Existing Pad: Yes or No No

*JW*  
*2/21/18*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant Formation 11,395' / 130' thick / 10,141 or .89 psi per foot / Utica Formation 11,212 150' thick / 10,000 psi or .89 psi per foot

8) Proposed Total Vertical Depth: 11,595' pilot hole - Plug back to the Point Pleasant formation at approx. 11,395'

9) Formation at Total Vertical Depth: Point Pleasant

10) Proposed Total Measured Depth: 12,463.44'

11) Proposed Horizontal Leg Length: 523.44

12) Approximate Fresh Water Strata Depths: 130', 1125'

13) Method to Determine Fresh Water Depths: Nearest offset well

14) Approximate Saltwater Depths: Na

15) Approximate Coal Seam Depths: 625', 825'

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

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

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(a) If Yes, provide Mine Info: Name: The Ohio County Mine  
Depth: 625' - 825'  
Seam: Sewickley and Pittsburgh  
Owner: Murray American Energy & Consolidation Coal Company

WW-6B  
(04/15)

API NO. 47-051 - 02018  
 OPERATOR WELL NO. Casterly Rock-2041 (CRW2-114)  
 Well Pad Name: Casterly Rock

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	30"	New	LS	81.3#	60'	60'	CTS
Fresh Water	20"	New	J-55	94#	900'	900'	15 bpg to sur 521 ex w/30% OH excess
Coal	13 3/8"	New	J-55	54.5#	2111"	2111'	15 bpg to sur 556 ex w/30% OH Excess
Intermediate	9 5/8"	New	HCP-110	40#	9712'	9712'	15 bpg to sur 938 ex w/30% OH excess
Production	5 1/2"	New	HCP-110	23#	12,463'	12,463'	14 bpg TOC > +200' above 9,025 show
Tubing	2 7/8"	New	J-55	6.5#	11,400	11,400'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"		300		Type 1	Lead yield 2.38 bar 521 ex Yield 1.18
Fresh Water	20"	24"	.438	2110	400	Class A	Lead yield 2.38 Tail 556 ex Yield 1.27
Coal	13 3/8"	17.5"	.380	2730	688	Class A	Lead Yield 2.38 Tail 556 ex Yield 1.27
Intermediate	9 5/8"	12.38"	.395	7870	3166	Class A	Lead Yield 1.28 Tail 938 ex Yield 1.28
Production	5 1/2"	8.75"	.415	16,510	13000	Class H	Lead Yield 1.27 Tail 4714 ex Yield 1.27
Tubing	2 7/8"	5.14"	.217	10570	8000		
Liners							

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

WW-6B  
(10/14)

API NO. 47- 051  
OPERATOR WELL NO. Casterly Rock-2UH (C20218)  
Well Pad Name: Casterly Rock

*Ju*  
2/21/18

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

Drill the vertical depth (Pilot hole) to the Point Pleasant at an estimated total vertical depth of approximately 11,595', (plug back to 11,395') place two 800' balanced plugs to KOP. Drill the horizontal leg- stimulate and produce the Utica formation. Should we encounter a unanticipated void we will install a minimum of 20' of casing below the void but not more than 100' below the void, set a basket and grout to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

The stimulation will be in multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. Our maximum pressure is not to exceed 10,000 lbs.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.5 acres

22) Area to be disturbed for well pad only, less access road (acres): 9.9 acres

23) Describe centralizer placement for each casing string:

Conductor- No centralizers used. Freshwater/Surface- Bow Spring centralizers every 3 joints to 100' from surface. 1st Intermediate - Bow Spring centralizers every 3 joints to 100' from surface. 2nd Intermediate - Bow Spring centralizers every 3 joints to 100' from surface. Production - Rigid bow springs every third joint from KOP to TOC. Rigid every joint to KOP.

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

Type 1 to Surface. Surface/Freshwater - 15.8 Class A +2% CaCl, 30% OH Excess Yield =1.18. 1st Intermediate - 15.8 ppg Class A +2% CaCl, 0.25 Lost Circ. 30% Yield =1.27. 2nd Intermediate- 2 Stage cement job with 15.4 ppg Class A lead + additives (antisetting, antifoam, fluid loss retarder, salt, dispersant) & 15.4 Class A tail with additives (antisetting, antifoam, fluid loss retarder, salt, dispersant or 12.0 Class A lead + additives (+/-5% dispersant, 10% light weight additive, 75% fluid loss additive, and 1.15% fluid loss additive, Yield=1.28) 15.4 ppg Class A Tail + additives (+/- fluid loss additive, & .5% light weight additive, Yield 1.28), 0.125#/SK lost circ 30% excess to Surface. Production- 12.5ppg Class H Lead +additives and 14.8 ppg Class H Tail + additives (antifoam, antisetting, extender,dispersant) 15%excess TOC>=200' above 9.625" shoe.

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25) Proposed borehole conditioning procedures:

Conductor - The hole is drilled w/ air and casing is run on air. Apart from insuring hole is clean via air circulation at TD, there are no other conditioning procedures. Freshwater/Surface- The hole is drilled w/air or Freshwater based mud and casing is run on air. Once casing is at setting depth, fill with KCl water circulate a minimum of one hole volume prior to pumping cement. First Intermediate- Drilled on Air. Once casing is at a setting depth, circulate a minimum of one hole volume prior to pumping cement. Second Intermediate - Drilled on air. Fill with salt saturated water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement. Production- drilled on +/- 14.8ppg SOBMs. Once at TD, circulate at max allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate minimum of one hole volume prior to pumping cement.

WV Department of Environmental Protection

\*Note: Attach additional sheets as needed.

Fresh Water Protection String:		Cement Additives	
Allied Material Name	Additive (Material) Type	Additive (Material) Description	CAS #
CCAC (Class A Common)	Base Cement	Grey powder	65997-15-1
CA-100	Accelerator	White, flake	10043-52-4 7447-40-7 7732-18-5 7647-14-5

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51-02018



**DRILLING WELL PLAN**

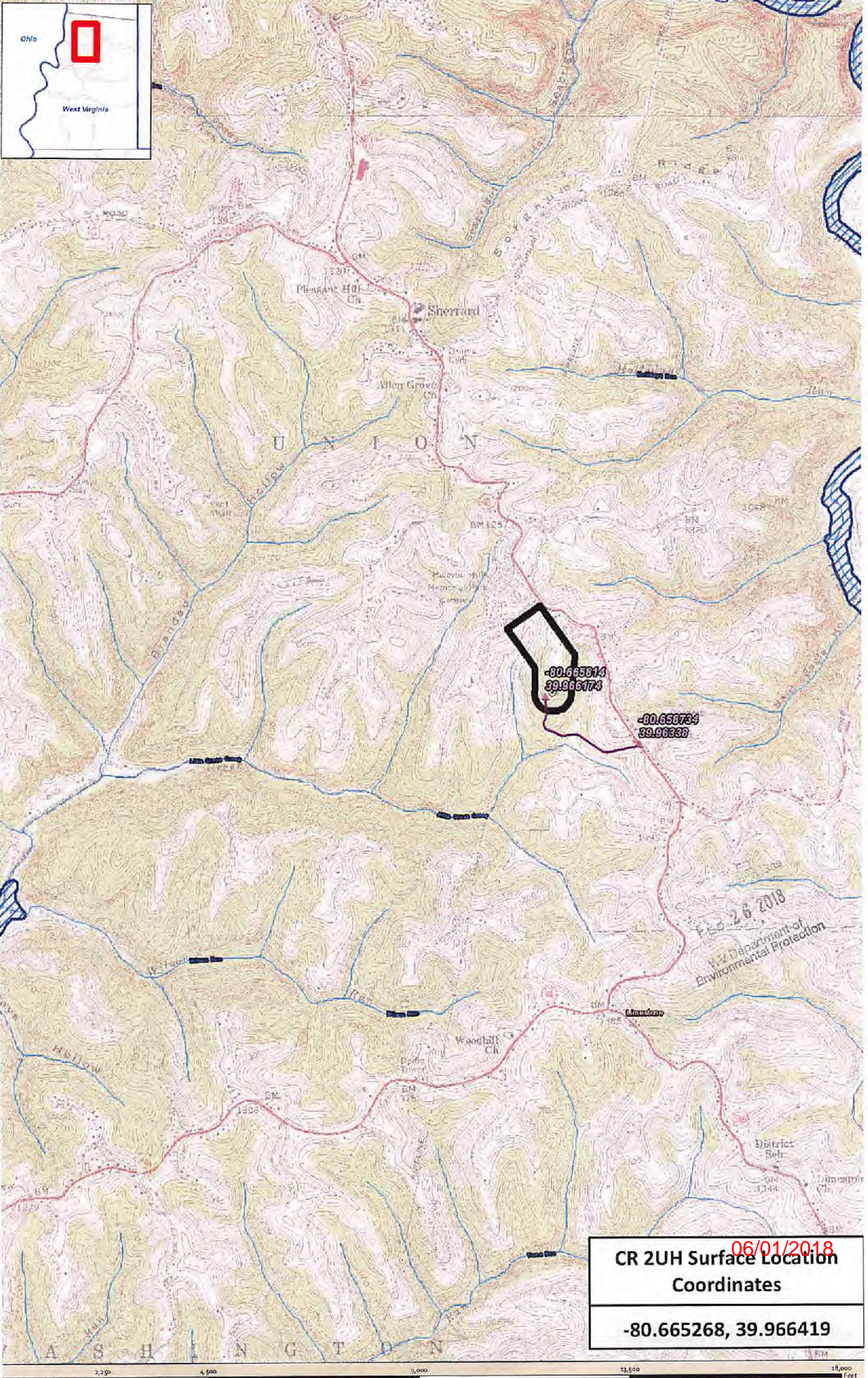
**Casterly Rock-2UH  
Vertical Pilot, Utica HZ  
Marshall Co, WV**

**Horizontal Well Plan with Cemented Long String Completion**

HOLE	RIG	CASING	GEOLOGY	Top TVD	MD	MUD	CEMENT	DIRECTIONAL	LOGS	BITS	COMMENTS
36"	Conductor Rig	30" 81.3# LS				AIR	To Surface	N/A	N/A		Stabilize surface fill/soil
			<b>Conductor</b>	80	80						
24"	Top-Hole	20" 84# J-55 BTC	Sewickley Coal	625		AIR	15.0ppg to surface 521sx w/ 30% OH excess	20" Air Hammer Totco at TD	CBL Log Cased hole NPHI, GR at Pilot TD in Pilot Well only	Carbide hammer bit	Protect fresh groundwater
			Pittsburgh Coal	825							
			Surf. Casing	900	900						
17.5"	Top-Hole	13-3/8" 54.5# J-55 BTC	Big Lime	1695	1811	AIR	15.2ppg to surface 556sx w/ 30% OH excess	Center Rock 15" Air Hammer Gyro above Coal, (Mine Approval) Totco at TD		Hammer bit w/ diamond gage Test casing to 800psi	
			Greenbrier Group	1762							
			Big Injun	1811							
			<b>Int. Casing</b>	2111	2111						
12.375" 12.25"	Horizontal Rig	6-5/8" 40# HCP 110 BTC	Tully LS	6386		AIR	15.4ppg to surface 936sx w/ 30% OH excess	12" Air Hammer Totco every 400ft	MWD surveys Mud Logger - 90 ft samples	Hammer bit w/ full face diamond Test casing to 1000psi	PU cleanout assembly, dress plug, displace to 12.0ppg SOBM, PU Curve BHA, time drill / KO cement plug. Expect Seepage in curve
			Hamilton	6415							
			Cherry Valley	6524							
			Marcellus Shale	6526							
			Onondaga Ls	6560							
			Oriskany Sandstone	6789							
			Salina Group	7373							
			Vernon Shale	8128							
			Lockport Dolomite	8345							
			Clinton Group	9060							
			Medina Group	9132							
Queenston Shale	9312	10112									
8.5" Curve/Lateral	Horizontal Rig	5-1/2" 23# HCP-110 BPN	<b>Int. Casing</b>	9712		+/- 14.5 ppg SOB	14.8ppg TOC >= 200' Above 9.625 shoe 2221sx w/ 15% OH excess	6.75" PDM & MWD 2.38" ADJ Bend (10" Build DLS)	MWD Surveys Mud Logger - 30 ft samples (Curve) 90 ft samples (Lateral)	PDC 5 - 25 WOB 100 - 120 RPM 450 - 500 GPM	Geosteering
			Utica Shale	11212							
			Point Pleasant Formation	11395							
			Curve LP								
			<b>TARGET</b>								
Production Casing											
<b>8.5 Hole - Cemented Long String 5-1/2" 23# HCP-110 BPN</b>											
8.5" Pilot	HZT Rig	Isolation/ Sidetrack Cement Plugs	Trenton Limestone			+/- 14.5 ppg SOB	17.5ppg Class H from TD to 200' above KOP (2) 800' balanced plugs w/ 2.375" tubing	8" Air Hammer Totco every 400ft	OH logs, as directed by APP Operations Dir. Surveys TD to shoe	Hammer bit w/ full face diamond	
			Pilot Hole TD	11595							
Lateral Targets	Landing Point 11395 TVD 11936 MD			90.5 degrees		523 ft Lateral Length		90.5 Inc 325 Az		Total Depth 11395 TVD 12463 TD	

810-00-15

SI-03-018



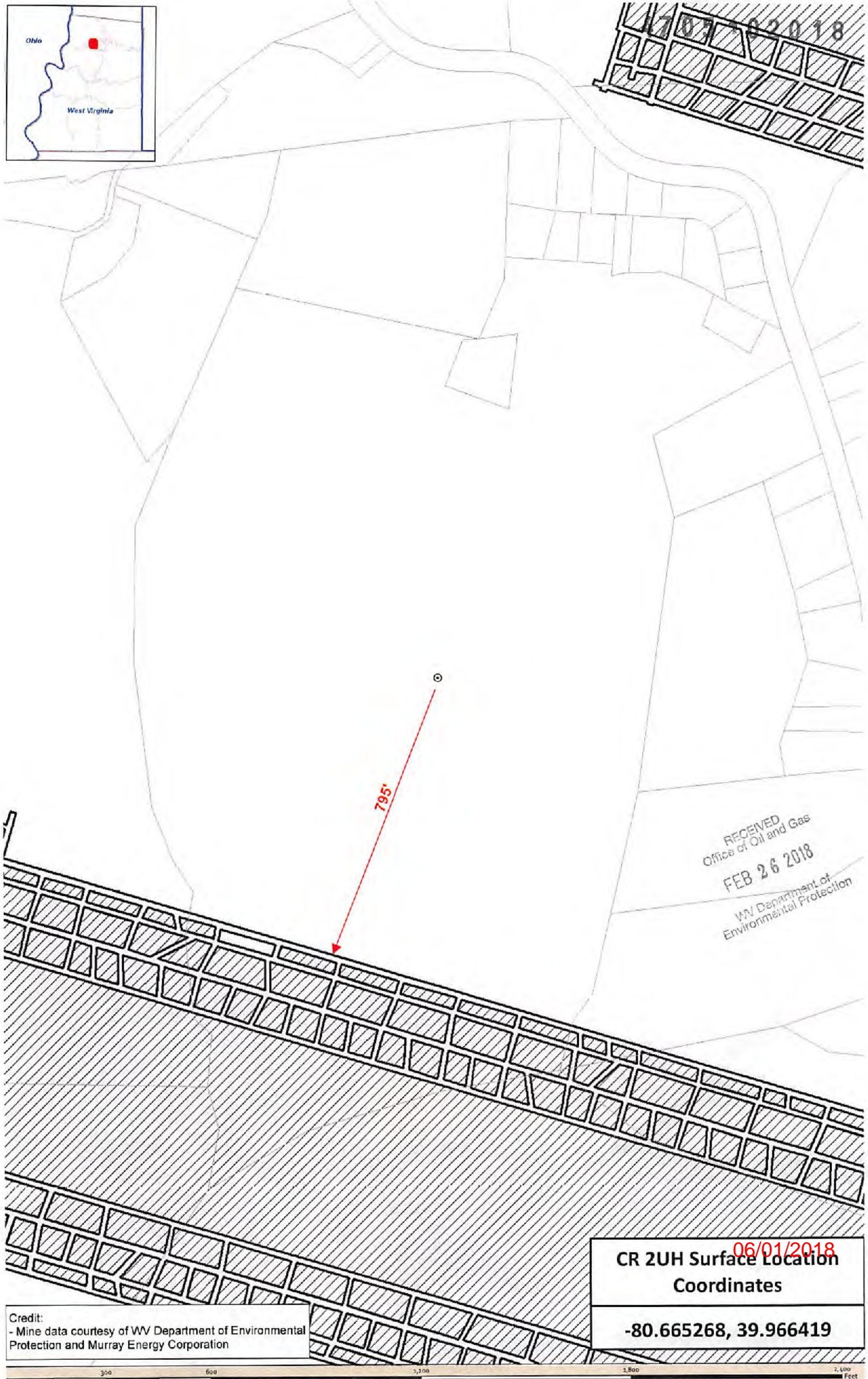
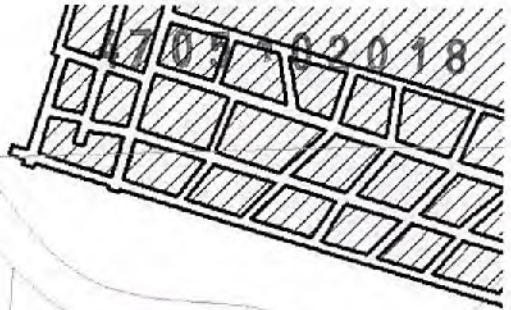
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WV Department of  
Environmental Protection

06/01/2018  
**CR 2UH Surface Location  
Coordinates**  
**-80.665268, 39.966419**

### CR 2UH - Floodplain

Marshall County  
West Virginia  
Coordinate System: NAD 1983 UTM Zone 18N  
Map Scale Units: 1:27,000  
Map Author: JKS  
Map Date: 06/01/2018

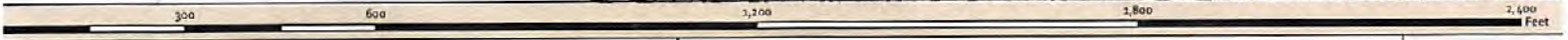
- Well SHL
- Access Rd Intersection
- Streams
- Unit
- Access Road
- Floodplain



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06/01/2018  
**CR 2UH Surface Location  
Coordinates**  
**-80.665268, 39.966419**

Credit:  
- Mine data courtesy of WV Department of Environmental  
Protection and Murray Energy Corporation



### CR 2UH - Coal Areas

Marshall County  
West Virginia

Coordinate System: NAD 83 UTM Zone 18N  
Projection: Transverse Mercator  
Datum: North American 1983

Map Scale Units:  
1:12,500  
1 inch = 100 feet

Map Author: JKS  
Map Date: 4/20/2018

- Well SHL
- Approximate Well to Coal length
- Coal Pillars





WW-9  
(4/16)

API Number 47 - 051 - 02018  
Operator's Well No. Casterly Rock-2UH (CRN2-UH)

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name American Petroleum Partners Operating, LLC OP Code 4945 21257

Watershed (HUC 10) Short Creek-Ohio River, Upper Ohio South Quadrangle Moundsville

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 sheet )
- Reuse (at API Number at next anticipated well )
- 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. Air/water based mud through intermediate then SCBM

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

Additives to be used in drilling medium? See attached sheet with list.

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill - See attached sheet

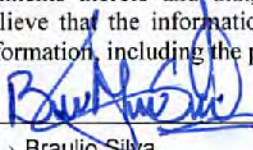
-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

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

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 

Company Official (Typed Name) Braulio Silva

Company Official Title Vice President - Drilling

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Subscribed and sworn before me this 20th day of FEBRUARY, 2018

My commission expires 10/27/2021

Notary Public  
Commonwealth of Pennsylvania - Notary Seal  
Dustin D. Emenhiser, Notary Public  
Allegheny County  
My commission expires October 27, 2021  
Commission number 06/0422018  
Member, Pennsylvania Association of Notaries

American Petroleum Partners Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 22.5 Prevegetation pH 6.0

Lime 2-3 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-20-20 or Equal

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw at 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye Grass	40	Crownvetch	10-15
Filed Bromegrass	40	Tall Fescue	30
Spring Oats	96	Perennial Ryegrass	20

\*Refer to attached Reclamation Plan for further detail.

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: *Jan T. Wilson*

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Title: WV DEP Oil and Gas Inspector

Date: 2/21/18

Field Reviewed?  Yes  No

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Additives for Drilling Medium

CALCIUM CHLORIDE POWDER

CARBO TEC

CARBO-GEL 2

CARBO-TEC S

ECCO-BLOK

LIME

MIL-CARB TM

MIL-CLEAN

MIL-SEAL

NEXT BASE eC

NEXT DRILL

NEXT-HOLD

NEXT-MUL

OMNI-COTE

MIL-BAR

NEXT-MUL HT

SODA ASH

POTASSIUM CHLORIDE

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Environmental Protection

06/01/2018

51-02018

## Cuttings Disposal/Site Water

### Cuttings –Haul off Company:

Eap Industries, Inc. DOT # 0876278  
1575 Smith Two State Rd. Atlasburg, PA 15004  
1-888-294-5227

Waste Management  
200 Rangos Lane  
Washington, PA 15301  
724-222-3272

Environmental Coordination Services & Recycling (ECS&R)  
3237 US Highway 19  
Cochranon, PA 16314  
814-425-7773

### Disposal Locations:

Apex Environnemental, LLC Permit # 06-08438  
11 County Road 78  
Amsterdam, OH 43903  
740-543-4389

Westmoreland Waste, LLC Permit # 100277  
111 Conner Lane  
Belle Vernon, PA 15012  
724-929-7694

Sycamore Landfill Inc. Permit #R30-079001 05-2010  
4301 Sycamore Ridge Road  
Hurricane, WV 25526  
304-562-2611

Max Environnemental Technologies, Inc. Facility Permit # PAD004835146 / 301071  
233 Max Lane  
Yukon, PA 25968  
724-722-3500

Max Environnemental Technologies, Inc. Facility Permit # PAD05087072 / 301359  
200 Max Drive  
Bulger, PA 15019  
724-796-1571

Waste Management Kelly Run Permit # 100663  
1901 Park Side Drive  
Elizabeth, PA 15037  
412-384-7569

Waste Management South Hills (Arnoni) Permit # 100592  
3100 Hill Road  
Library, PA 15129  
724-348-7013  
412-384-7569

Waste Management Arden Permit # 100172  
200 Rangos Lane  
Washington, PA 15301  
724-222-3272

Waste Management Meadowfill Permit # 1032  
1488 Dawson Drive  
Bridgeport, WV 26330

Brooke County Landfill Permit # SWF-103-97 / WV 0109029  
Rd 2 Box 410  
Colliers, WV 26035  
304-748-0014

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Wetzel County Landfill Permit # SWF-1021-97 / WV 0109185  
Rt 1 Box 156A  
New Martinsville, WV 26035  
304-455-3800

Energy Solutions, LLC Permit # UT 2300249  
423 West 300 South  
Suite 200  
Salt Lake City, UT 84101

Energy Solutions Services, Inc. Permit # R-73006-L24  
1560 Bear Creek Road  
Oak Ridge, TN 37830

Northern A-1 Environmental Services Permit ID MID020906814  
3947 US 131 North, PO Box 1030  
Kalkaska, MI 49646  
231-258-9961

**Water Haul off Companies:**

Dynamic Structures, Clear Creek DOT # 720485  
3790 State Route 7  
New Waterford, OH 44445  
330-892-0164

Nabors Completion & Production Services Co.  
PO Box 975682  
Dallas, TX 75397-5682

Select Energy Services, LLC  
PO Box 203997  
Dallas, TX 75320-3997

Nuverra Environmental Solutions  
11942 Veterans Memorial Highway  
Masontown, WV 26542

Mustang Oilfield Services LLC  
PO Box 739  
St. Clairsville, OH 43950

Wilson's Outdoor Services, LLC  
456 Cracraft Road  
Washington, PA 15301

**Disposal Locations:**

Solidification  
Waste Management, Arden Landfill Permit # 100172  
200 Rangos Lane  
Washington, PA 15301  
724-225-1589

Solidification/Incineration  
Soil Remediation, Inc. Permit # 02-20753  
6065 Arrel-Smith Road  
Lowelville, OH 44436  
330-536-6825

Adams #1 (Buckeye Brine, LLC)  
Permit # 34-031-2-7177  
23986 Airport Road  
Coshocton, OH 43812  
740-575-4484  
512-478-6545

CMS of Delaware Inc. DBA CMS Oilfield Serv  
301 Commerce Drive  
Moorestown, NJ 08057

Force, Inc.  
1380 Rte. 286 Hwy. E, Suite 303  
Indiana, PA 15701

Solo Construction  
P.O. Box 544  
St. Mary's, WV 26170

Equipment Transport  
1 Tyler Court  
Carlisle, PA 17015

Myers Well Service, Inc.  
2001 Ballpark Court  
Export, PA 15632

Burns Drilling & Excavating  
618 Crabapple Road P.O. Box 41  
Wind Ridge, PA 15380

Nichlos 1-A (SWIW #13)  
Permit # 3862  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

Groselle (SWIW #34)  
Permit # 4096  
Rt. 88  
Garrettsville, OH  
713-275-4816

Kemble 1-D Well  
Permit # 8780  
7675 East Pike  
Norwich, Oh 43767  
614-648-8898  
740-796-6495

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Environmental Protection

06/01/2018

51-02018

Adams #2 (Buckeye Brine, LLC)  
2205 Westover Road  
Austin Tx 78703  
Permit # 34-031-2-7178  
740-575-4484  
512-478-6545

Adams #3 (Buckeye Brine, LLC)  
Permit #34-031-2-7241-00-00  
2630 Exposition, Suite 117  
Austin, TX 78703  
512-478-6545

Mozena #1 Well (SWIW # 13)  
Permit # 34-157-2-5511-00-00  
5367 E. State Street  
Newcomerstown, OH 43832  
740-763-3966

Goff SWD #1 (SWIW # 27)  
Permit # 34-119-2-8776-000  
300 Cherrington Pkwy, Suite 200  
Coraopolis, PA 15108  
412-329-7275

SOS D#1 (SWIW #12)  
Permit # 34-059-2-4202-00-00  
Silcor Oilfield Services, Inc.  
2939 Hubbard Road  
Youngstown, PH 44505

Dudley #1 UIC (SWIW #1)  
Permit # 34-121-2-2459-00-00  
Select Energy Services, LLC  
7994 S. Pleasants Hwy  
St. Marys, WV 26170  
304-665-2652

OH UIC #1 Buckeye UIC Barnesville 1 & 2  
CNX Gas Company, LLC  
1000 Consol Energy Drive  
Permit # 34-013-2-0609-00-00  
Permit # 34-013-2-0614-00-00  
304-323-6568

US Steele 11385  
Permit # 47-001-00561  
200 Evergreen Drive  
Waynesburg, PA 15730  
304-323-6568

Chapin #7 UIC (SWIW #7)  
Permit # 34-083-2-4137-00-00  
Elkhead Gas & Oil Company  
12163 Marne Rd. NE  
Newark, OH 43055  
740-763-3966

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Environmental Protection

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51-02018



# Site Safety Plan

American Petroleum Partners Operating, LLC  
 Casterly Rock Well Pad CRN-244

November 2017: Version 1

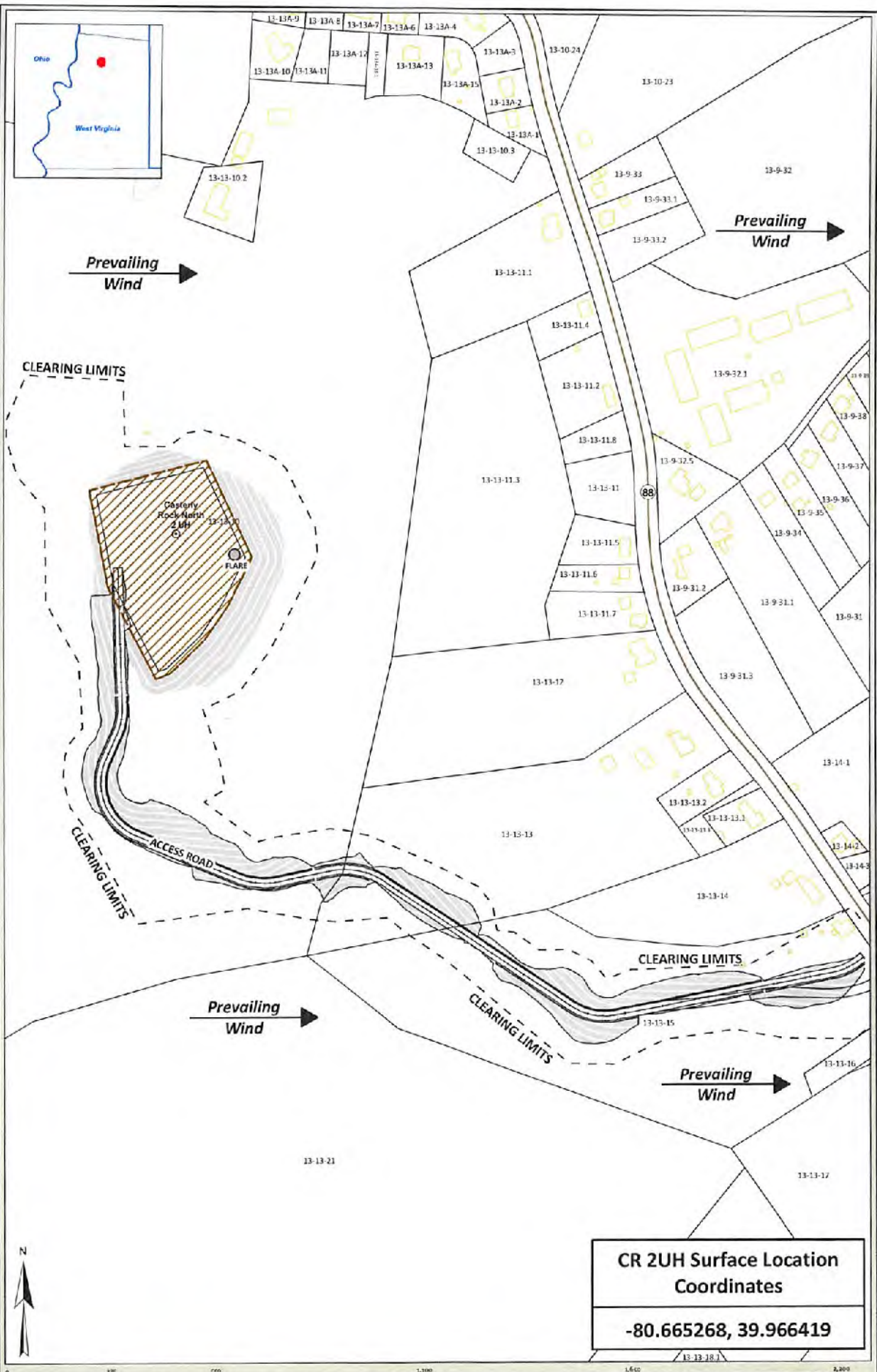
*Joe*  
2/21/18

For Submission to  
 West Virginia Department of Environmental Protection,  
 Office of Oil and Gas

American Petroleum Partners Operating, LLC  
 4600 J. Barry Ct  
 Suite 310  
 Canonsburg, PA 15317

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 WV Department of  
 Environmental Protection

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**CR 2UH Surface Location Coordinates**  
**-80.665268, 39.966419**

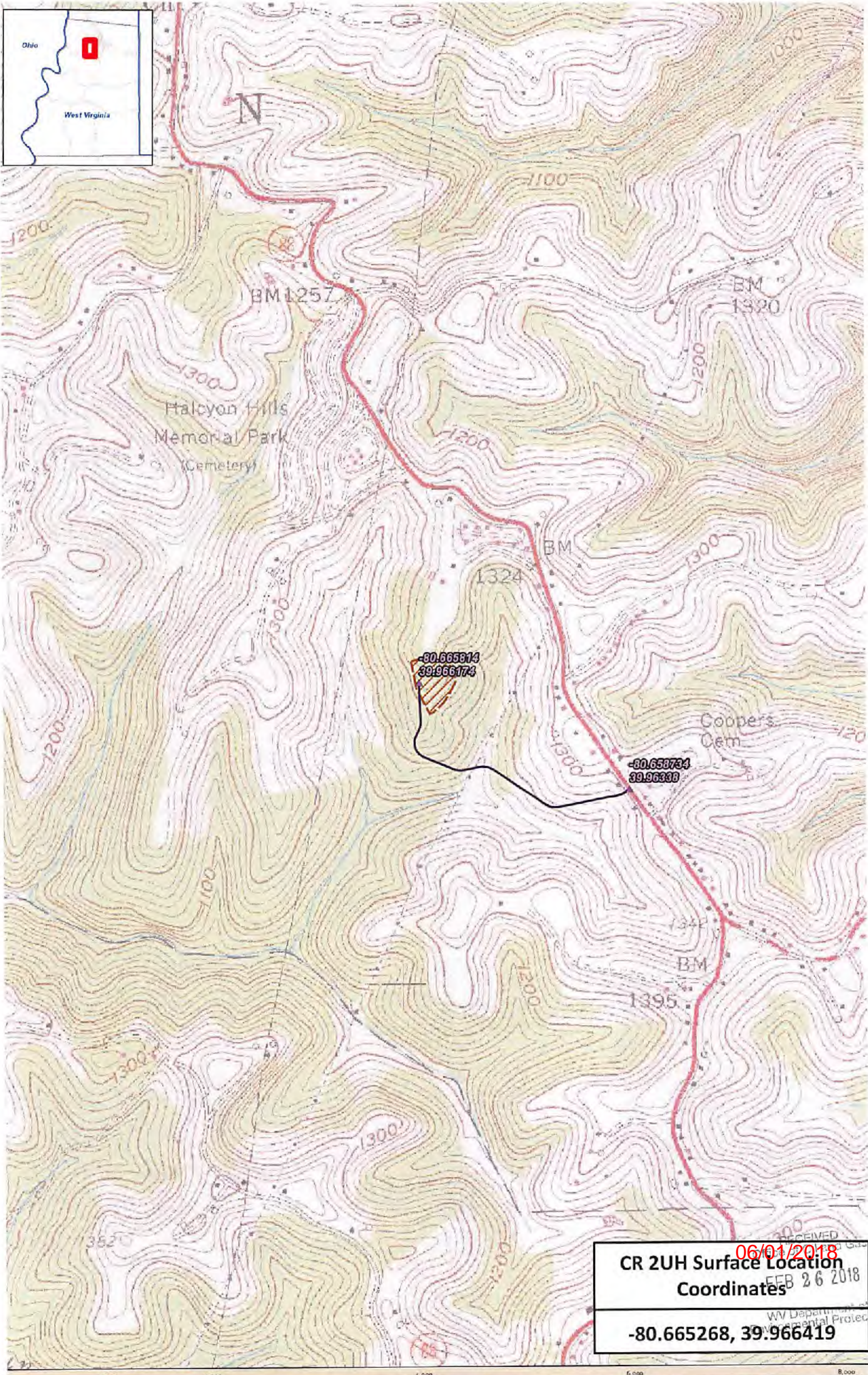
**CR 2UH - Plan View**

Marshall County West Virginia	Coordinate System: NAD 83 UTM Zone 17N Projection: Transverse Mercator Datum: North American 83 Units: Meter	Map Scale Units: 1:3,300 1 inch = 275 feet	Map Author: JES Map Date: 9/2018
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Well SHL	State Route
Well Pad	Building

09/01/2018





06/01/2018  
 FEB 26 2018  
 WV Department of Environmental Protection

**CR 2UH Surface Location Coordinates**

**-80.665268, 39.966419**

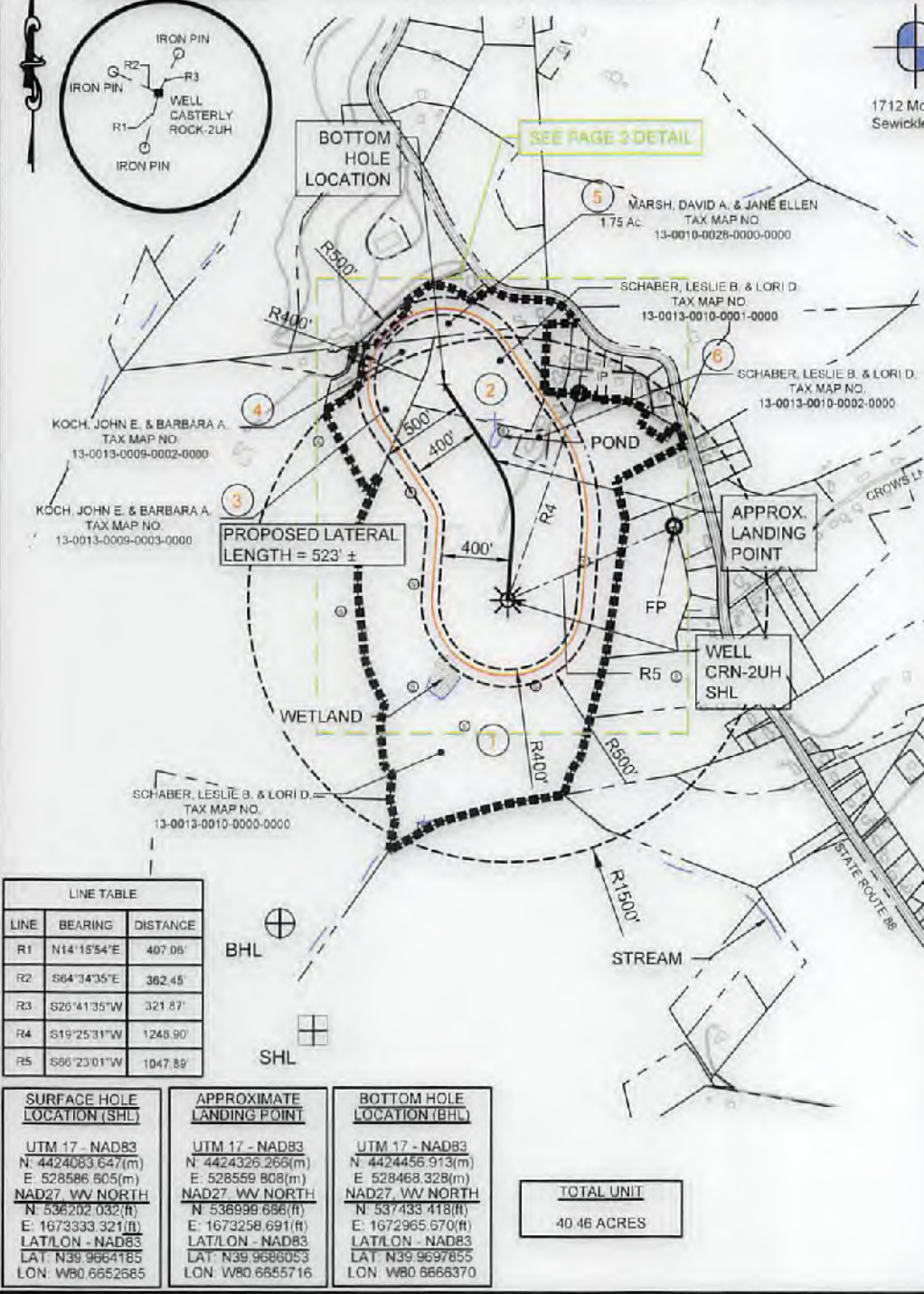
REFERENCE DETAIL

Well is located on topo map 12,233 feet south of Latitude: 40° 00' 00"

**Sheffler & Company, Inc.**  
ENGINEERING • SURVEYING

1712 Mount Nebo Road Phone: 412-219-4509  
Sewickley, PA 15143 Email: info@shefflerCo.com

Well is located on topo map 11,287 feet west of Longitude: 80° 37' 30"



**LEGEND**

- BHL - TOPO MAP POINT
- SHL - TOPO MAP POINT
- PROPOSED WELL
- PRIVATE WATER WELL
- SPRING LOCATION
- LEASED NUMBER BASED ON ATTACHED WMB#1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/POND/WATERWAY
- ROAD
- UNIT BOUNDARY

**WELLS WITHIN 3000'**

NO WELLS WITHIN 3000 FEET

**LINE TABLE**

LINE	BEARING	DISTANCE
R1	N14°15'54"E	407.06'
R2	S64°34'35"E	362.45'
R3	S26°41'35"W	321.87'
R4	S19°25'31"W	1248.90'
R5	S66°23'01"W	1047.89'

SURFACE HOLE LOCATION (SHL)	APPROXIMATE LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17 - NAD83 N: 4424083.647(m) E: 528586.805(m) NAD27 - WV NORTH N: 536202.032(ft) E: 1673333.321(ft) LAT/LON - NAD83 LAT: N39.9664185 LON: W80.6652585	UTM 17 - NAD83 N: 4424326.266(m) E: 528559.808(m) NAD27 - WV NORTH N: 536999.666(ft) E: 1673258.691(ft) LAT/LON - NAD83 LAT: N39.9686053 LON: W80.6655716	UTM 17 - NAD83 N: 4424456.913(m) E: 528468.328(m) NAD27 - WV NORTH N: 537433.418(ft) E: 1672965.670(ft) LAT/LON - NAD83 LAT: N39.9697855 LON: W80.6668370

**TOTAL UNIT**  
40.46 ACRES

- NOTES**
- There are no water wells or developed springs within 250' of proposed well
  - There are no existing buildings within 625' of proposed well
  - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake
  - There are no native trout streams within 300' of proposed well
  - Proposed well is greater than 1000' from surface/groundwater intake or public water supply
  - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

FILE # CASTERLY ROCK-2UH

DRAWING # CRN-2UH-SHORT-REV5.DWG

SCALE: 1"=1000'

MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX0767 - 1319.9'

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

SIGNED: [Signature]

R.P.E.: 21452 L.L.S.: P.S. NO.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,337.89'

COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV

SURFACE OWNER: LESLIE B. & LORI D. SCHABER ACREAGE: 71.75

OIL & GAS ROYALTY OWNER: CAROL A. WENSYEL A/K/A CAROL A. MILLER, ACTING AS TRUSTEE FOR THE CAROL A. WENSYEL IRREVOCABLE TRUST DATED OCTOBER 28, 2010 AND JOHN F. MILLER, SR. TRUSTEE OF THE JOHN F. MILLER, SR. IRREVOCABLE TRUST, DATED OCTOBER 28, 2010 TRUST ACREAGE: 73.74

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE

PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON

CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY)

TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 12,458.88' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN

Address: 4600 J BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000

City: CANONSBURG State: PA Zip Code: 15317 City: CHARLESTON State: WV Zip Code: 25301



DATE: January 18, 2018 - REV - May 21, 2018

OPERATOR'S WELL #: CASTERLY ROCK-2UH

API WELL # 47 051 02018H6A

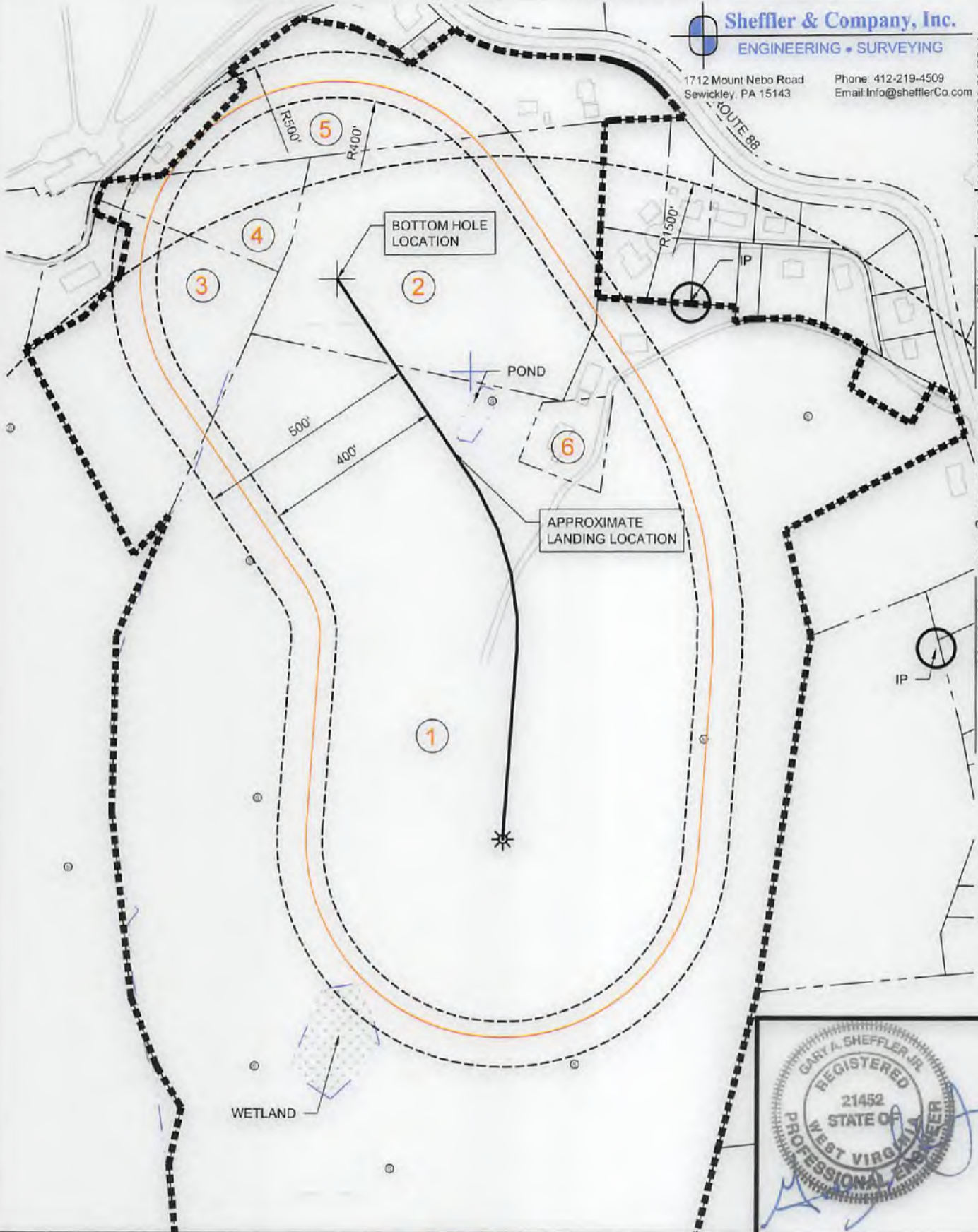
STATE COUNTY PERMIT

06/01/2018

Well is located on topo map 12,233 feet south of Latitude: 40° 00' 00"

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OFFICE OF OIL & GAS  
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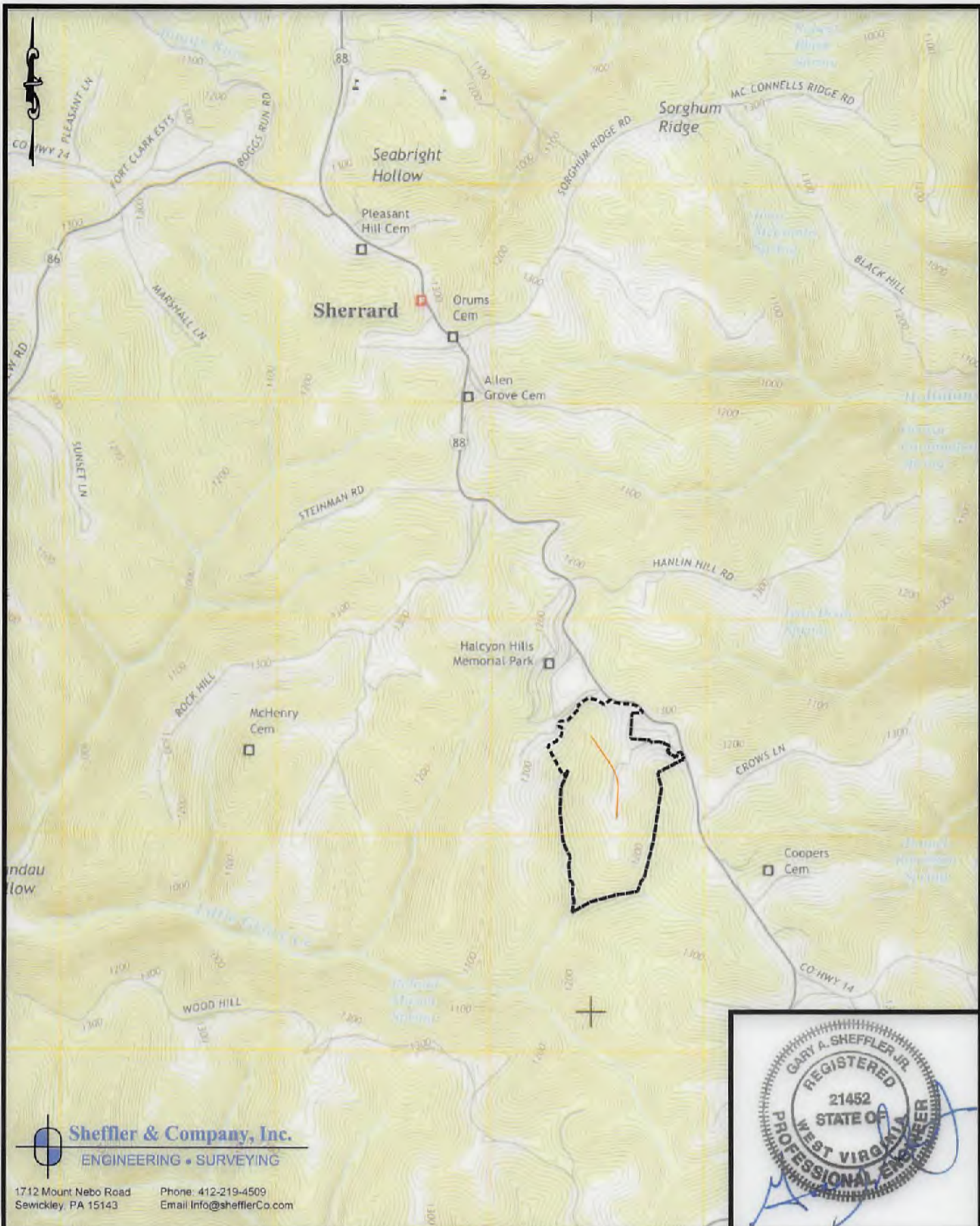
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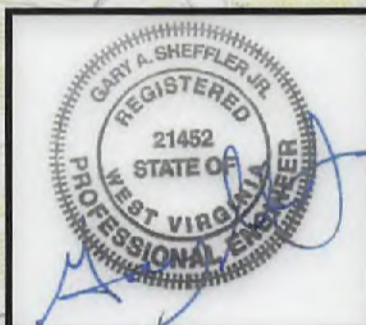
Address: 4800 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

06/01/2018



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ENGINEERING • SURVEYING  
1712 Mount Nebo Road Phone: 412-219-4509  
Sewickley, PA 15143 Email: info@shefflerco.com



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304



DATE: January 18, 2016 - REV - May 21, 2018  
OPERATOR'S WELL #: CASTERLY ROCK-2UH  
API WELL # 47 051 02018H6A  
STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow

WATERSHED: SHORT CREEK - OHIO RIVER ELEVATION: 1,337.89'  
COUNTY/DISTRICT: MARSHALL / UNION QUADRANGLE: MOUNDSVILLE, WV  
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06/01/2018

DRILL  CONVERT  DRILL DELPER  REDRILL  FRACTURE OR STIMULATE   
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Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000  
City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

① TAX MAP NO.  
13-0013-0010-0000-0000  
ASSESSED AREA = 73.79 AC.  
SURFACE OWNER:  
SCHABER, LESLIE B. & LORI D.  
MINERAL OWNER:  
CAROL A. WENSYEL AKA CAROL W. MILLER,  
ACTING AS TRUSTEE FOR THE CAROL A.  
WENSYEL IRREVOCABLE TRUST DATED  
OCTOBER 28, 2010 AND JOHN F. MILLER, SR.,  
TRUSTEE OF THE JOHN F. MILLER, SR.,  
IRREVOCABLE TRUST, DATED OCTOBER 28, 2010

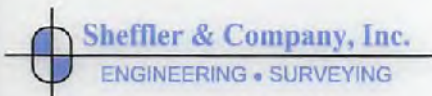
② TAX MAP NO.  
13-0013-0010-0001-0000  
ASSESSED AREA = 8.7 AC.  
SURFACE OWNER:  
SCHABER, LESLIE B. & LORI D.  
MINERAL OWNER:  
CAROL A. WENSYEL AKA CAROL W. MILLER,  
ACTING AS TRUSTEE FOR THE CAROL A.  
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OCTOBER 28, 2010 AND JOHN F. MILLER, SR.,  
TRUSTEE OF THE JOHN F. MILLER, SR.,  
IRREVOCABLE TRUST, DATED OCTOBER 28, 2010

③ TAX MAP NO.  
13-0013-0009-0003-0000  
ASSESSED AREA = 4.764 AC.  
SURFACE & MINERAL OWNER:  
KOCH, JOHN E. & BARBARA A.

④ TAX MAP NO.  
13-0013-0009-0002-0000  
ASSESSED AREA = 1.505 AC.  
SURFACE & MINERAL OWNER:  
KOCH, JOHN E. & BARBARA A.

⑤ TAX MAP NO.  
13-0010-0028-0000-0000  
ASSESSED AREA = 5.149 AC.  
SURFACE & MINERAL OWNER:  
MARSH, DAVID A. & JANE ELLEN

⑥ TAX MAP NO.  
13-0013-0010-0002-0000  
ASSESSED AREA = 0.687 AC.  
SURFACE OWNER:  
SCHABER, LESLIE B. & LORI D.  
MINERAL OWNER:  
CAROL A. WENSYEL AKA CAROL W. MILLER,  
ACTING AS TRUSTEE FOR THE CAROL A.  
WENSYEL IRREVOCABLE TRUST DATED  
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1712 Mount Nebo Road Phone: 412-219-4509  
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(+) DENOTES LOCATION OF  
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TOPOGRAPHIC MAPS  
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CHARLESTON, WV 25304



DATE: January 18, 2018 - REV - May 21, 2018

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API WELL # 47 051 02018 HGA  
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WELL OPERATOR: AMERICAN PETROLEUM PARTNERS, LLC DESIGNATED AGENT: STEVEN GREEN

Address: 4600 J. BARRY COURT, SUITE 310 Address: 300 SUMMERS ST, SUITE 1000

City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

WW-6A1  
(5/13)

Operator's Well No. Casterly Rock-2UH (CRN2-UH)

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

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

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

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

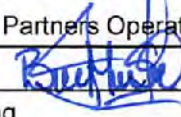
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Office of Oil and Gas  
FEB 26 2018  
WV Department of  
Environmental Protection

**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: American Petroleum Partners Operating, LLC  
 By: Brulio Silva   
 Its: Vice President-Drilling

81000-15

## CRN 2UH - 400' Buffer Tracts

	LEASE #	LESSOR	CURRENT LESSEE	ROYALTY	MOL RECORDING INFORMATION	TAX PARCEL
1	WV-MAR-0685	Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	773/596; 777/21	13-13-10
1	WV-MAR-0686	John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	777/30	13-13-10
2	WV-MAR-0685	Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	773/596; 777/21	13-13-10.1
2	WV-MAR-0686	John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	777/30	13-13-10.1
3	WV-MAR-0524	John E. Koch and Barbara A. Koch	American Petroleum Partners Operating, LLC	Not less than 1/8	835/232	13-13-9.3
4	WV-MAR-0524	John E. Koch and Barbara A. Koch	American Petroleum Partners Operating, LLC	Not less than 1/8	835/232	13-13-9.2
5	WV-MAR-0178	David A. Marsh and Jane Ellen Marsh	American Petroleum Partners Operating, LLC	Not less than 1/8	862/463	13-10-28
6	WV-MAR-0685	Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	773/596; 777/21	13-13-10.2
6	WV-MAR-0686	John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010	American Petroleum Partners Operating, LLC	Not less than 1/8	777/30	13-13-10.2

**AGREEMENT**  
**FOR**  
**COAL WAIVER AND CONDITIONAL DRILLING ACTIVITY**

This Agreement, effective this 9th day of February, 2018, by and between, CONSOLIDATION COAL COMPANY, a Delaware Corporation, and Murray American Energy, Inc., a Delaware Corporation, both of whose mailing address is 46226 National Road, St. Clairsville, OH 43905, hereinafter collectively referred to as "COMPANY,"

A N D

American Petroleum Partners Operating, LLC., a Delaware limited liability company, having a place of business at 4600 J. Barry Ct Suite 310, Canonsburg, PA 15317, hereinafter referred to as "APP."

**PREAMBLE**

WHEREAS, COMPANY intends to apply to the West Virginia Department of Environmental Protection for a permit to drill gas wells listed in Table 1 on the pad known as the CASTERLY ROCK wells at a location in Union District, Marshall County, West Virginia; and

WHEREAS, COMPANY through itself and/or any one or more of its affiliates, owns or controls the Pittsburgh #8 seam of coal at the proposed location of the proposed CASTERLY ROCK wells and said wells when drilled will penetrate the Pittsburgh #8 seam of coal; and

WHEREAS, APP has a regulatory obligation and responsibility to notify coal seam owners of its intent to drill and develop oil/gas wells through such coal seams; and

WHEREAS, APP has requested COMPANY to sign a WW-6AW Voluntary Statement of No Objection form, which COMPANY is willing to sign subject to the conditions set forth in this agreement.

NOW, THEREFORE, in consideration of the commitments set forth herein and intending to be legally bound hereby the parties do hereby agree as follows:

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WV Department of  
Environmental Protection

06/01/2018



1. The approved surface locations of the proposed CASTERLY ROCK wells are listed in Table 1 in WV State Plane North NAD 27 coordinate system. The CASTERLY ROCK wells shall only be drilled at these surface locations.

Table 1: Well Locations

Well Name	Northing	Easting
CASTERLY ROCK 1 UH	536196.967	1673303.753
CASTERLY ROCK 2 UH	536202.032	1673333.322
CASTERLY ROCK 3 UH	536177.254	1673307.13
CASTERLY ROCK 4 UH	536182.319	1673336.699
CASTERLY ROCK 5 UH	536157.541	1673310.507
CASTERLY ROCK 6 UH	536162.606	1673340.076
CASTERLY ROCK 7 UH	536137.828	1673313.885
CASTERLY ROCK 8 UH	536142.893	1673343.453
CASTERLY ROCK 9 UH	536118.115	1673317.262
CASTERLY ROCK 10 UH	536123.18	1673346.83

2. The proposed CASTERLY ROCK wells are located in an existing perimeter barrier of the active Ohio County Mine. Hence, the drilling of the proposed CASTERLY ROCK wells shall strictly follow the procedures set forth in the Agreement.
3. COMPANY shall develop procedures and submit well protection pillar permit applications to the applicable coal mining regulatory authorities to secure approval to drill the proposed CASTERLY ROCK near, around, or adjacent to existing mine workings. COMPANY will design the protection pillar to provide a minimum coal barrier of fifty feet (50') from its existing underground mining activities to the location of the active CASTERLY ROCK wells within the Pittsburgh #8 coal seam.
4. COMPANY shall provide APP with a copy of the procedures and well protection pillar permit applications for APP's review prior to submittal to the applicable coal mining regulatory agencies.

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5. Once all the required approvals are received to drill the proposed CASTERLY ROCK wells near, around, or adjacent to the existing mine workings, APP may proceed with the drilling of CASTERLY ROCK wells in accordance to the procedures and requirements of this Agreement, provided that APP shall also comply with any and all requirements applicable to APP imposed by the coal mining regulatory agencies within the approvals.
6. APP agrees that if a coal mining regulatory agency does not approve the proposed well protection pillar permit or the procedures and plans to drill the proposed CASTERLY ROCK wells near, around or adjacent to the existing mine workings, this Agreement is voided and is no longer in effect and COMPANY rescinds its consent to drill the CASTERLY ROCK wells.
7. APP shall provide COMPANY with written notification at least two (2) weeks prior to the commencement of well drilling activities to provide sufficient time for COMPANY to verify and approve the surveyed location of the proposed wells. APP and COMPANY shall maintain continued communication during the well drilling process.
8. Once the surveyed surface location is verified, APP may drill from the surface pad to a depth no closer than twenty feet (20') from the top of the Pittsburgh #8 coal seam.
9. APP shall then, at its expense, have a well deviation survey conducted in the well boring from the surface to the drilled depth approximately twenty feet (20') above the Pittsburgh #8 coal seam and shall promptly provide the certified results of the deviation survey to COMPANY. The well shall be limited to a total deviation not to exceed one percent (1%) to assure the well boring will penetrate through the Pittsburgh #8 coal seam within the area approved by the coal mining regulatory agencies.
10. APP shall use water, water sprays, drilling soap or other approved drilling fluids while drilling after the surface casing is installed through the Pittsburgh #8 coal seam and continue drilling with fluids until the steel coal protection casing is effectively installed and cemented in place below the Pittsburgh #8 coal seam in accordance with all rules, regulations, and approvals for the drilling operation.
11. If the drilled well boring is less than or equal to the required one percent (1%) maximum deviation, APP may proceed with its planned drilling activities in accordance to all applicable laws and regulations. APP and COMPANY shall continue to maintain communication through the completion of the well drilling and installation processes.
12. If the well boring deviation exceeds one percent (1%), APP may elect to take measures within the well boring above the coal seam to correct the well drilling deviation to assure the well boring will penetrate through the

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Pittsburgh #8 coal seam within the required one percent (1%) deviation area. If APP is unable to make the necessary corrections to limit the well deviation to one percent (1%), APP shall cease drilling activities and, at its expense, grout the well boring completely from the bottom of the well boring to the surface using approved procedures to assure a uniform and complete sealing of the drilled well boring.


13. APP shall immediately provide all records and certified results of the deviation surveys to COMPANY.
14. COMPANY plans to mine its coal reserve utilizing full extraction techniques to fully mine and remove the entire coal seam in those areas where such mining is planned and COMPANY has acquired the legal property rights and regulatory permits to conduct such mining activities. Full extraction mining causes surface subsidence that may affect surface structures. The mining subsidence may also create lateral stresses within the geologic overburden above the coal seam.
  - a. APP accepts all responsibility to monitor, maintain, mitigate, and repair all of its facilities including wells, pipelines, compressor stations, all surface facilities, and appurtenant facilities from the effects of subsidence from the underground mining activities of COMPANY.
  - b. APP shall be solely responsible for all costs and expenses to monitor, maintain, mitigate and repair any and all of its facilities that are constructed and installed after the effective date of this Agreement from the effects of subsidence from the underground mining activities of COMPANY.
  - c. COMPANY and APP agree to employ the principals of common law property rights (the party that does not have superior property rights is responsible) for all subsidence related costs and expenses relating to surface facilities that are in place and operational on the effective date of this Agreement.
15. COMPANY and APP agree to fully cooperate and support each other's permitting and regulatory approval activity. Each party agrees that it will not object to any permit submittal nor will it appeal any permit approval provided that the terms and conditions of this Agreement are followed.
16. This agreement shall extend to and be binding upon the heirs, successors, assigns, legal representatives, affiliates and joint venture partners of the parties hereto.

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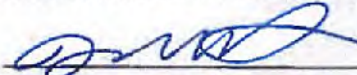
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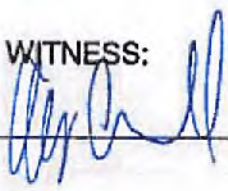
- 17. This Agreement represents the entire understanding of the parties with respect to the matters referred to herein and supersedes all other understandings, written or oral, between the parties with respect thereto.
- 18. No amendment, modification, or waiver of any provision of the Agreement shall be valid, unless in writing signed by both parties.

In WITNESS WHEREOF, each of CONSOLIDATION COAL COMPANY, MURRAY AMERICAN ENERGY, INC. and American Petroleum Partners Operating, LLC. has executed this Agreement intending to be legally bound hereby.

WITNESS:  
  
 \_\_\_\_\_

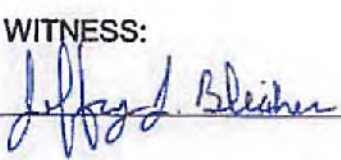
CONSOLIDATION COAL COMPANY

By:   
 Name: JASON O. WITT  
 Title: SECRETARY


WITNESS:  
  
 \_\_\_\_\_

MURRAY AMERICAN ENERGY, INC.

By:   
 Name: JASON O. WITT  
 Title: SECRETARY

WITNESS:  
  
 \_\_\_\_\_

APP ENERGY, INC.

By:   
 Name: Braulto Silva  
 Title: VP. Drilling

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West Virginia Oil and Gas Conservation Commission  
Certificate of Consent and Easement

We, the undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being all of the owners of the surface of that certain lot, tract or parcel of land located in Union District, Marshall County, State of West Virginia, parcel #13-13-10, shown on the attached plat or survey, do hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Commission, to American Petroleum Partners Operating LLC, its successors or assigns, for the drilling and operation of a deep well(s) for the production of oil, gas and/or other associated hydrocarbons at the location shown on the attached plat or survey.

Executed this 9<sup>th</sup> day of JANUARY, 2018.

Leslie B. Schaber  
Leslie B. Schaber

Lori D. Schaber  
Lori D. Schaber

INDIVIDUAL ACKNOWLEDGMENT

COMMONWEALTH / STATE OF West Virginia §  
COUNTY OF Marshall §

*LBS  
LDS  
WTP*

On this 9<sup>th</sup> day of JANUARY, 2018, before me, the undersigned officer, personally appeared Leslie B. Schaber and Lori D. Schaber, personally known to me (or satisfactorily proven) to be the people whose names are subscribed to the within instrument, and acknowledged to me that Leslie B. Schaber and Lori D. Schaber, executed the same for the purposes therein contained.

In witness thereof, I hereunto set my hand and affixed my official seal.

MY COMMISSION EXPIRES: 24 May 2020

William T. Dorisch  
Notary Public



*we, the signatories of this Agreement, sign under the condition that A.P.P. complies with the terms of the Surface Use Agreement signed with A.P.P.*

*WTD  
LBS  
LDS  
1-9-2018*

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Plat Map



Leslie B. Schaber and Lori D. Schaber parcel #13-13-10

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4705102018

Office of Oil & Gas  
601 57<sup>th</sup> street, SE  
Charleston, WV 25304-2345

January 16, 2018

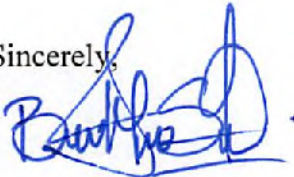
Re: Drilling Under Roads

To Whom It May Concern:

American Petroleum Partners Operating, LLC. has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire additional information, please do not hesitate to contact me at [regulatory@app-lp.com](mailto:regulatory@app-lp.com).

Sincerely,



Braulio Silva  
VP- Drilling

BS/djs

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

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Date of Notice Certification: 2/22/18

API No. 47- 051 -  
Operator's Well No. Casterly Rock-2UH (CRN2-UH)  
Well Pad Name: Casterly Rock

**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>528586.605</u>
County:	<u>Marshall</u>		Northing:	<u>4424083.647</u>
District:	<u>Union</u>	Public Road Access:	<u>State Route 88</u>	
Quadrangle:	<u>Moundsville</u>	Generally used farm name:	<u>Leslie B. &amp; Lori D. Schaber</u>	
Watershed:	<u>Short Creek-Ohio River, Upper Ohio South</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 type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" 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		<b>OOG OFFICE USE ONLY</b>  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input checked="" type="checkbox"/> RECEIVED  <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input checked="" type="checkbox"/> RECEIVED  <input type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED
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**Required Attachments:**

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

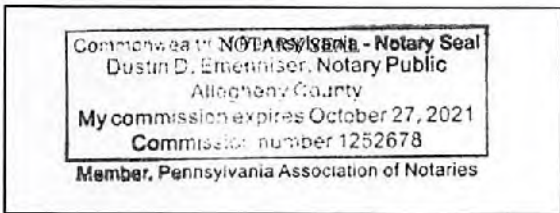


WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

THEREFORE, I Braulio Silva, 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>American Petroleum Partners Operating, LLC</u>	Address:	<u>4600 J. Barry Court Suite 310</u>
By:	<u>Braulio Silva - <i>[Signature]</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Vice President-Drilling</u>	Facsimile:	<u>na</u>
Telephone:	<u>1-844-835-5277</u>	Email:	<u>Regulatory@app-lp.com</u>



Subscribed and sworn before me this 20<sup>th</sup> day of FEBRUARY, 2018  
*[Signature]* Notary Public  
 My Commission Expires 10/27/2021

**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](mailto:depprivacyofficer@wv.gov).

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WW-6A  
(9-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Casterly Rock-2UH (CRN2-UH)  
Well Pad Name: Casterly Rock

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

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

Date of Notice: 2/22/18 Date Permit Application Filed: 2/23/18

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: Leslie B. & Lori D. Schaber  
Address: 46 Ken Mar Drive  
Wheeling, WV 26003  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: Rosemary M. Brown  
Address: 5743 Fairmont Pike Road  
Wheeling, WV 26003  
Name: Cober R. Gross and Beverly T. Stromatoes  
Address: 5609 Fairmont Pike Road  
Wheeling, WV 26003

SURFACE OWNER(s) (Impoundments or Pits)  
Name: None  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: Murray American Energy and Consolidation Coal Company  
Address: 46226 National Road  
St. Clairsville, OH 43950

COAL OPERATOR  
Name: ~~The Ohio County Mine~~ Murray American Energy and Consolidation Coal Company  
Address: 46226 National Road  
St. Clairsville, OH 43950

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: See attached sheet.  
Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: None  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**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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West Virginia Department of  
Environmental Protection

06/01/2018

WW-6A  
(8-13)

4705102018

API NO. 47-051 -  
OPERATOR WELL NO. Casterly Rock-2UH (CRN2-UH)  
Well Pad Name: Casterly Rock

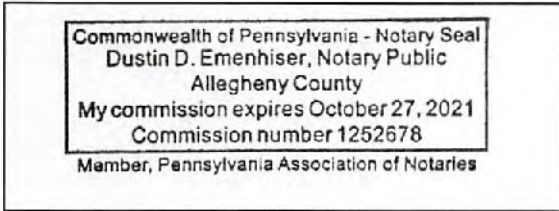
**Notice is hereby given by:**

Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-844-835-5277  
Email: Regulatory@APP-LP.com

Address: 4600 J. Barry Court, Suite 310  
Canonsburg, PA 15317  
Facsimile: na

**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](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 20<sup>th</sup> day of February, 2018  
Dustin Emenhiser Notary Public  
My Commission Expires 10/27/2021

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06/01/2018

Water Purveyors within 1500'

Leslie B. and Lori D. Schaber

46 Ken Mar Drive

Wheeling, WV 26003

James Shannon, Et Ux

5581 Fairmont Pike Road

Wheeling, WV 26003

Edgar Heller

301 Penny Lane

Wheeling, WV 26003

Cober R. Gross and Beverly T. Stromatoes

5609 Fairmont Pike Road

Wheeling, WV 26003

Jeffery T. Merinar

RR 3 Box 173

Wheeling, WV 26003

Thomas Lorence, Et Ux

6494 Big Wheeling Creek Road

Moundsville, WV 26041

Kenneth L. Merinar, Et Al

610 Schrader Ave.

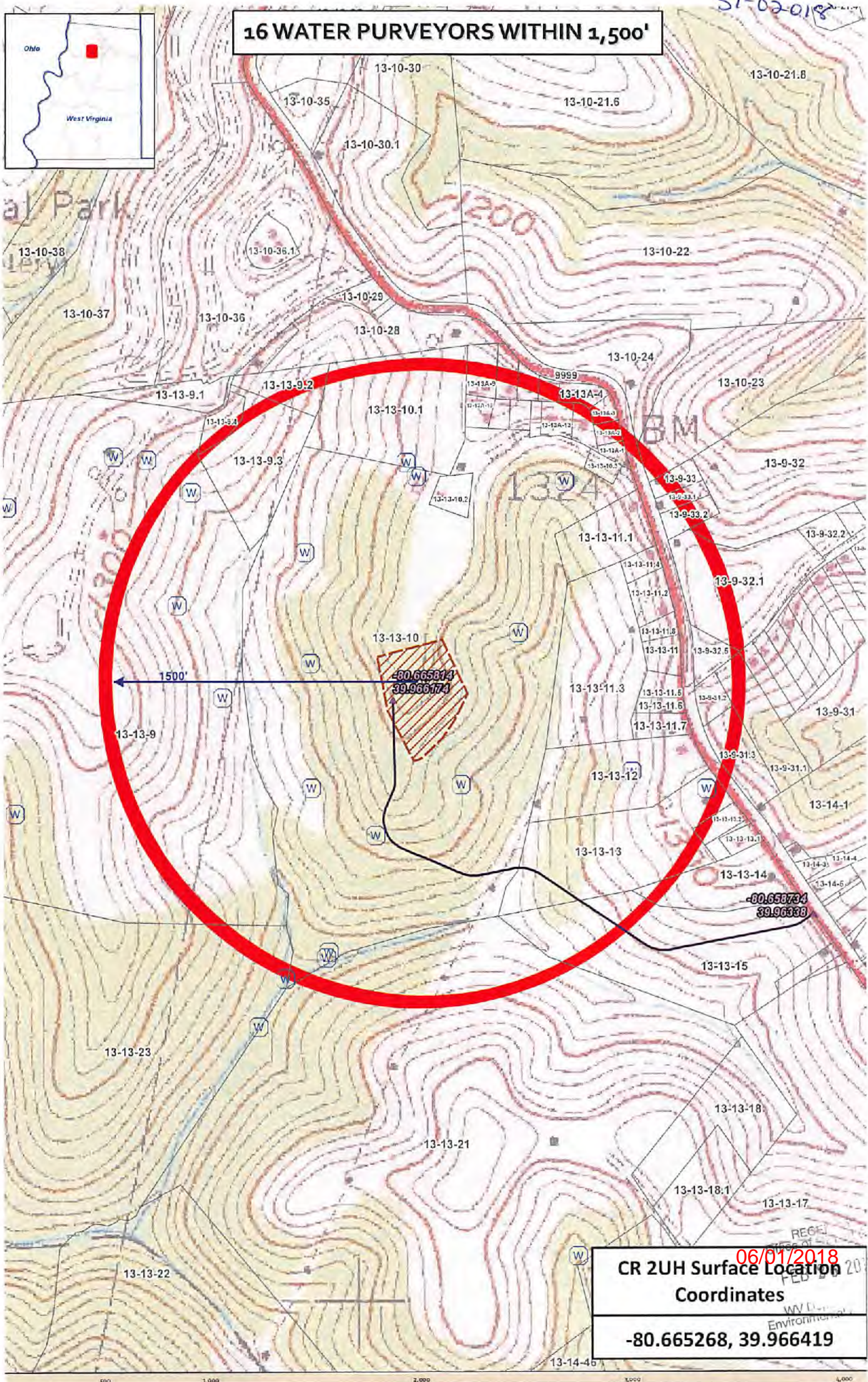
Wheeling, WV 26003

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06/01/2018

51-02-018

# 16 WATER PURVEYORS WITHIN 1,500'



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Environmental  
06/01/2018  
**CR 2UH Surface Location Coordinates**  
**-80.665268, 39.966419**

## CR 2UH - Water Source

Marshall County West Virginia  
Coordinate System: NAD 1983 UTM Zone 18N  
Projection: Transverse Mercator  
Datum: North American 1983  
Map Scale Units: 1:6,000  
Map Author: JES  
Map Date: sfj/roak

Well SHL	Access Rd Intersection	Water Well
Well Pad	Access Road	1,500' Buffer
Parcels		



**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:** 12/5/2017      **Date of Planned Entry:** 12/15/2017

**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: Rosemary M. Brown

Address: 5743 Fairmont Pike RD  
Wheeling, WV 26003

Name: Cober R. Gross and Beverly L. Stromatoes

Address: 5509 Fairmont Pike  
Wheeling, WV 26003

Name: Leslie B. Schaber and Lori D. Schaber

Address: 45 Ken Mar DR  
Wheeling, WV 26003

COAL OWNER OR LESSEE

Name: Murray Energy

Address: 46226 National Road  
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: Rosemary M. Brown

Address: 5743 Fairmont Pike RD  
Wheeling, WV 26003

\*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>39.966 -80.665</u>
County:	<u>051-Marshall</u>	Public Road Access:	<u>RT 88 Fairmont Pike Rd</u>
District:	<u>Union</u>	Watershed:	<u>Upper Ohio South</u>
Quadrangle:	<u>Mountsville, WV</u>	Generally used farm name:	<u>Schaber</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 57<sup>th</sup> 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](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: American Petroleum Partners Operating, LLC and APP Midstream LLC

Telephone: 1-844-835-5277

Email: mleehr@app-lp.com

Address: 4600 J. Berry CT., Suite 310  
Canonsburg, PA 15317

Facsimile: \_\_\_\_\_

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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](mailto:depprivacyofficer@wv.gov).

WW-6A3  
(1/12)

Operator Well No. Casterly Rock A-UH, B-UH, F-UH

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

**MINERAL OWNER(S)**

**Name:** Cober R. Gross and Beverly L. Stromatoes

**Address:** 5609 Fairmont Pike

Wheeling, WV 26003

**Name:** Carol A. Wensyel a/k/a Carol A. Miller, acting as Trustee for the Carol A. Wensyel Irrevocable Trust dated October 28, 2010

**Address:** 8669 Patterson RD

Hilliard, OH 43026

**Name:** John F. Miller, Sr. Trustee of the John F. Miller, Sr. Irrevocable Trust, dated October 28, 2010

**Address:** 8669 Patterson RD

Hilliard, OH 43026

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WW-6A5  
(1/12)

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

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

Date of Notice: 2/22/18 Date Permit Application Filed: 2/23/18

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

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED       HAND DELIVERY

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

**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: Leslie B. & Lori D. Schaber  
Address: 46 Ken Mar Drive  
Wheeling, WV 26003

Name: Rosemary M. Brown  
Address: 5743 Fairmont Pike Road  
Wheeling, WV 26003

**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>528586.905</u>
County: <u>Marshall</u>	Northing: <u>4424083.647</u>
District: <u>Union</u>	Public Road Access: <u>State Route 88</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>Leslie B. &amp; Lori D. Schaber</u>
Watershed: <u>Short Creek-Ohio River, Upper Ohio South</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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-844-835-5277  
Email: Regulatory@app-tp.com

Address: 4600 J. Barry Court Suite 310  
Canonsburg, PA 15317  
Facsimile: na

**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](mailto:depprivacyofficer@wv.gov).

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

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Date of Notice: 2/22/18 Date Permit Application Filed: 2/23/18

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CERTIFIED MAIL                               HAND  
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**Notice is hereby provided to the SURFACE OWNER(s)**

(at the address listed in the records of the sheriff at the time of notice):

Name: Cober R. Gross and Beverly T. Stromatoes  
Address: 5609 Fairmont Pike Road  
Wheeling, WV 26003

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

**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>528586.605</u>
County: <u>Marshall</u>	Northing: <u>4424083.647</u>
District: <u>Union</u>	Public Road Access: <u>State Route 88</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>Leslie B. &amp; Lori D. Schaber</u>
Watershed: <u>Short Creek, Ohio River</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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: American Petroleum Partners Operating, LLC  
Telephone: 1-844-835-5277  
Email: Regulatory@app-pp.com

Address: 4600 J. Barry Court Suite 310  
Canonsburg, PA 15317  
Facsimile: \_\_\_\_\_

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WV Department of  
Environmental Protection

WW-6RW  
(1-12)

API NO. 47- 051 -  
OPERATOR WELL NO. Casterly Rock-20H (CRN2-0H)  
Well Pad Name: Casterly Rock

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
**WELL LOCATION RESTRICTION WAIVER**

The well operator, American Petroleum Partners Operating, LLC is applying for a permit from the State of West Virginia to conduct oil or gas well work. Please be advised that well work permits are valid for twenty-four (24) months.

**Well Location Restrictions**

Pursuant to West Virginia Code § 22-6A-12(a), 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.

**WAIVER**

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

State: West Virginia UTM NAD 83 Easting: 528586.605  
County: Marshall UTM NAD 83 Northing: 4424083.647  
District: Union Public Road Access: State Route 88  
Quadrangle: Moundville Generally used farm name: Leslie B. & Lori D. Schaber  
Watershed: Short Creek-Ohio River, Upper Ohio South

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials and I therefore waive all well site restrictions listed under West Virginia Code § 22-6A-12(a).

<p><b>WELL SITE RESTRICTIONS BEING WAIVED</b></p> <p>*Please check all that apply</p> <p><input type="checkbox"/> EXISTING WATER WELLS</p> <p><input type="checkbox"/> DEVELOPED SPRINGS</p> <p><input type="checkbox"/> DWELLINGS</p> <p><input type="checkbox"/> AGRICULTURAL BUILDINGS</p>	<p><b>FOR EXECUTION BY A NATURAL PERSON</b></p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p> <p><b>FOR EXECUTION BY A CORPORATION, ETC.</b></p> <p>Company: _____</p> <p>By: _____</p> <p>Its: _____</p> <p>Signature: _____</p> <p>Date: _____</p>
---	--

Well Operator: American Petroleum Partners Operating, LLC  
By: Eraulio Silva  
Its: VP-Drilling

Signature: \_\_\_\_\_  
Telephone: 1-844-835-5277

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WV Department of  
Environmental Protection

NOTARY SEAL

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_  
\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_

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51-02018



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

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

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

April 13, 2018

Jill M. Newman  
Deputy Commissioner

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

Subject: DOH Permit for the Casterly Rock Pad, Marshall County  
Casterly Rock 2UH Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0221 which has been issued to American Petroleum Partners for access to the State Road for a well site located off of WV 88 in Marshall County.

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,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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

Cc: Braulio Silva  
American Petroleum Partners  
CH, OM, D-6  
File

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APR 13 2018

WV Department of  
Environmental Protection

# Hydraulic Fracturing Fluid Product Component Information Disclosure

## Hydraulic Fracturing Fluid Composition:

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Department of  
Mental Protection

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**
Water	Operator	Carrier/Base Fluid	Water	7732-18-5	100.00000
Terraprop Plus 30/50	Baker Hughes	Proppant	Aluminum Oxide	1344-28-1	100.00000
			Amorphous Silica	7631-86-9	20.00000
			Titanium Dioxide	13463-67-7	5.00000
			Iron Oxide	1309-37-1	5.00000
Sand (Proppant)	Stingray	Proppant	Silica Substrate	14808-60-7	87.00000
ProLite 40/70	Imerys	Proppant	Mullite	1302-93-8	70.00000
			Cristobalite	14464-46-1	30.00000
			Amorphous Silica	7631-86-9	15.00000
Hydrochloric Acid (HCl)	FTSI	Acid	Hydrogen Chloride	7647-01-0	15.00000
SI-117	WST	Scale Inhibitor	Copolymer of Maleic and Acrylic Acid	52255-49-9	70.00000
			Ethylene glycol	107-21-1	40.00000
			DETA phosphonate	15827-60-8	20.00000
			Hexamethylene Triamine Penta (Methylene Phosphonic Acid)	34690-00-1	20.00000
			Phosphino carboxylic acid polymer	71050-62-9	20.00000
K-BAC 1020 DBNPA	WST	Bactericide	Polyethylene glycol	25322-69-3	50.00000
			Water	7732-18-5	30.00000
			2,2-Dibromo-3-nitropropionamide	10222-01-2	21.00000
NEFE-180	Stingray	Acid Inhibitor/Iron Control	Acetic Acid	64-19-7	60.00000
			Methanol	67-56-1	30.00000
			2-Ethylhexanol	104-76-7	7.50000
			Cocunut Oil Acid diethanolamine	68603-42-9	3.00000
			Alcohols, C15-15, ethoxylated	68951-67-7	3.00000
			Olefin	64743-02-6	3.00000
			Fatty Acids, tall oil	61790-12-3	3.00000
			2-Propyn-1-ol	107-19-7	3.00000
FRA-409	Stingray	Friction Reducer	Copolymer of 2-propenamide	Proprietary	30.00000
			Distillates (petroleum), Hydrotreated Light	64742-47-8	20.00000
			Alcohols, C12-16, Ethoxylated	68551-12-2	2.00000
			Alkanolamide	93-83-4	2.00000
			Ammonium Chloride	12125-02-9	1.00000
CSL-30	Stingray	pH Control	Sodium Hydroxide	1310-73-2	30.00000
WG-38 GELLING AGENT	Halliburton	Gelling Agent	Guar gum	9000-30-0	100.00000
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00000
LOSURF-300D	Halliburton	Non-ionic Surfactant	Ethanol	64-17-5	60.00000
			Heavy aromatic petroleum	64742-94-5	30.00000
			Naphthalene	91-20-3	5.00000
			Poly(oxy-1,2-ethanediyl), alpha-	127087-87-0	5.00000
			1,2,4 Trimethylbenzene	95-63-6	1.00000

06/01/2018

# CASTERLY ROCK WELL PAD UNION DISTRICT, MARSHALL COUNTY, WV MARCH 2018

**WEST VIRGINIA 811**

TWO WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR MUST CONTACT THE WV ONE CALL SYSTEM, INC., 1-800-245-4848 (WV ONE CALL TICKET#1701749131)

**OWNER**



AMERICAN PETROLEUM PARTNERS OPERATING, LLC  
4600 J. BARRY COURT, SUITE 310,  
CANONSBURG, PA 15317



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18. STREAM CROSSINGS #1 AND #2 CROSS-SECTIONS AND PROFILES
- 19-22. DETAILS
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- 22-26. RECLAMATION PLAN

**TOTAL DISTURBED AREA: 22.6 AC.**  
**ACCESS ROAD DISTURBED AREA: 12.7 AC.**  
**WELL PAD DISTURBED AREA: 9.9 AC.**

PLANS PREPARED BY:  
**BOORD BENCHEK & ASSOCIATES, INC.**  
ENGINEERING, SURVEYING, CONSTRUCTION AND MINING SERVICES  
SOUTHPOINTE, PA 15317 PHONE: 724-746-1055



*Andrew Benchek* 3-20-18  
**ANDREW BENCHEK**  
P.E.

**PROPERTY OWNER DISTURBANCE**  
ROSEMARY M BROWN (TAX MAP AND PARCEL 13-13-15): 6.0 AC.  
COBER R GROSS (13-13-13): 1.3 AC.  
LESLIE SCHABER AND LORI SCHABER (13-13-10): 15.3 AC.



**COORDINATES**

**CENTER OF WELLS (NAD 83)**  
LAT: 39° 57' 58.69"  
LONG: 80° 39' 55.06"  
**(NAD 27)**  
LAT: 39° 57' 58.42"  
LONG: 80° 39' 55.77"  
**SITE ENTRANCE (NAD 83)**  
LAT: 39° 57' 47.58"  
LONG: 80° 39' 30.64"  
**(NAD 27)**  
LAT: 39° 57' 47.31"  
LONG: 80° 39' 31.35"



IN ACCORDANCE WITH WV 35 CSR 8 THE FOLLOWING EROSION & SEDIMENT CONTROL PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES ESTABLISHED BY THE CHIEF AND PROVIDED IN THE OFFICE'S EROSION AND SEDIMENT CONTROL FIELD MANUAL, A GENERAL CONSTRUCTION SEQUENCE, DESCRIPTION OF STABILIZATION METHODS, AND DETAILS & SPECIFICATIONS FOR EROSION & SEDIMENT BEST MANAGEMENT PRACTICES HAVE BEEN INCLUDED IN THE PROVIDED DETAIL SHEETS.

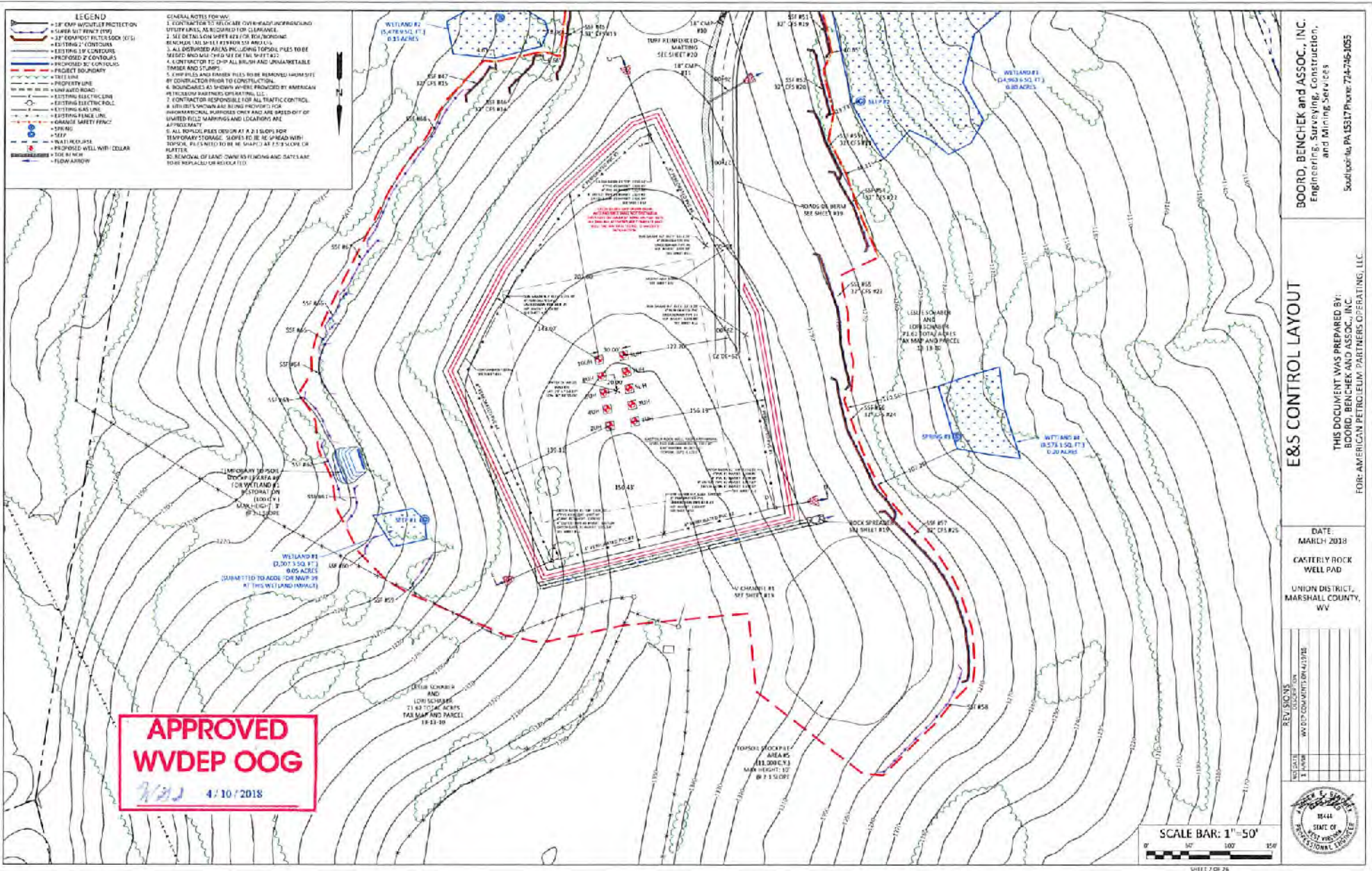
REVISIONS	
NO	DESCRIPTION

**TITLE SHEET**  
CASTERLY ROCK WELL PAD  
UNION DISTRICT, MARSHALL COUNTY, WV

**SHEET**  
1  
OF  
26







**BOARD, BENCHEK and ASSOC., INC.**  
Engineering, Surveying, Construction,  
and Mining Services  
Southport, PA 15317 Phone: 724-746-8055

**E&S CONTROL LAYOUT**

THIS DOCUMENT WAS PREPARED BY:  
**BOARD, BENCHEK AND ASSOC., INC.**  
FOR: AMERICAN PETROLEUM PARTNERS OPERATING, L.L.C.

**DATE:**  
MARCH 2018  
**CASTERY ROCK WELL PAD**  
**UNION DISTRICT, MARSHALL COUNTY, WV**

**REVISIONS**

NO.	DATE	DESCRIPTION
1	1/18/18	WV DEP DOCUMENTATION

**SCALE BAR: 1"=50'**

**DATE:**  
MARCH 2018  
**CASTERY ROCK WELL PAD**  
**UNION DISTRICT, MARSHALL COUNTY, WV**

**SCALE BAR: 1"=50'**

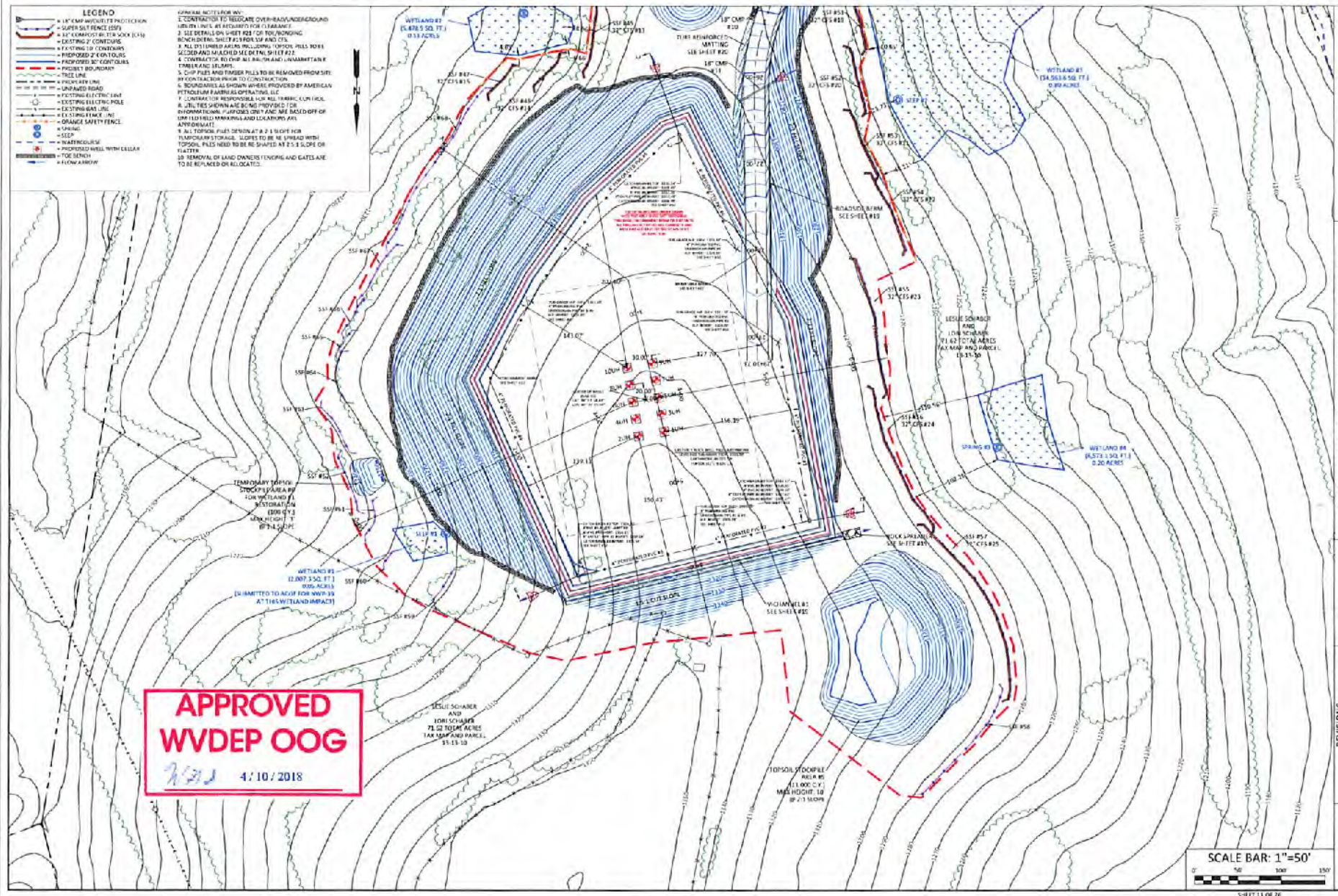
**DATE:**  
MARCH 2018  
**CASTERY ROCK WELL PAD**  
**UNION DISTRICT, MARSHALL COUNTY, WV**

**LEGEND**

- 1" CAP SQUARE NOTATION
- SUPER SALT FENCE (SSF)
- 12" COMPOST BERTER-SOCK (CBS)
- EXISTING 2" CONTOURS
- EXISTING 10" CONTOURS
- PROPOSED 2" CONTOURS
- PROPOSED 10" CONTOURS
- PROPERTY BOUNDARY
- TRAIL LINE
- POWER LINE
- UNPAVED ROAD
- EXISTING ELECTRIC LINE
- EXISTING ELECTRIC POLE
- EXISTING BAIT LINE
- EXISTING FENCE LINE
- ORANGE SAFETY FENCE
- WATERCOURSE
- PROPOSED WELL WITH CELLAR
- TOE BENCH
- LOW ARROW

**GENERAL NOTES AND SPECIFICATIONS:**

- CONTRACTOR TO RELOCATE OVERHEAD UNDERGROUND UTILITIES IN/IN AN AREA OF 100' BUFFER BOUNDARY SHEET #200-10 AND C14.
- ALL UTILITIES INCLUDING TOPSOIL PILES, POWER LINES AND WATERCOURSES TO BE MAINTAINED THROUGHOUT CONSTRUCTION.
- CONTRACTOR TO CHOP ALL BURNED AND UNBURNED TREES AND LIMBS.
- CHIP PILES AND TRIMMER PILES TO BE REMOVED FROM SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
- BOUNDARIES AS SHOWN WHERE PROVIDED BY AMERICAN PETROLEUM PARTNERS OPERATING, LLC.
- CONTRACTOR RESPONSIBLE FOR ALL TRIMMER CONTROL.
- ALL TREES SHOWN ARE BEING PROVIDED FOR RECONSTRUCTION PURPOSES AND ARE TO BE MAINTAINED OFF OF SITE FIELD MARKING AND LOCATIONS ARE APPROXIMATE.
- ALL TOPSOIL PILES DEMONSTRATED AT 2' TO 6" DEPTH FOR TEMPORARY STORAGE. SLOPES TO BE NEARLY VERTICAL. TOPSOIL PILES NEED TO BE SHAVED AT 2:1 TO 3:1 SLOPE OR FLATTER.
- REMOVAL OF LAND OWNER'S FENCING AND GATES ARE TO BE REPLACED OR RELOCATED.



**APPROVED WVDEP OOG**  
*[Signature]* 4/10/2018

**BOORD, BENCHEK and ASSOC., INC.**  
 Engineering, Surveying, Construction  
 and Mining Services  
 50. Southford, PA 15317 Phone: 724-745-1055

**E&S CONTROL AND SITE PLAN**  
 THIS DOCUMENT WAS PREPARED BY:  
 BOORD, BENCHEK AND ASSOC., INC.  
 FOR AMERICAN PETROLEUM PARTNERS OPERATING, LLC.

DATE: MARCH 2018  
 CASTERLY ROCK WELL PAD  
 UNION DISTRICT, MARSHALL COUNTY, WV

NO.	DATE	DESCRIPTION



SHEET 11 OF 26