



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Friday, June 14, 2019
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 RIVERRUN-4UH
47-051-02178-00-00

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

A blue ink signature of James A. Martin, written in a cursive style, is placed over the text of his name and title.

Operator's Well Number: RIVERRUN-4UH
Farm Name: APP MINERALS
U.S. WELL NUMBER: 47-051-02178-00-00
Horizontal 6A New Drill
Date Issued: 6/14/2019

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.

06/14/2019



west virginia department of environmental protection

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

Barry K. Lay, Chairman
dep.wv.gov

May 1, 2019

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

RE: Application for Deep Well Permit – API #47-051-02178

COMPANY: American Petroleum Partners Operating, LLC

FARM: APP Minerals, LLC RiverRun-4UH

COUNTY: Marshall DISTRICT: Webster QUAD: Moundsville

The deep well review of the application for the above company is Approved to drill to the Point Pleasant formation for completion. Pooling Docket No. 275-267

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? yes
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: 47-051-02090, 47-051-02091, 47-051-02137, 47-051-02136, 47-051-02179, 47-051-02180, 47-051-02134, 47-051-02106, 47-051-02118
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,

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 Webster Moundsville
Operator ID County District Quadrangle

2) Operator's Well Number: RiverRun-4UH Well Pad Name: Dire Wolf-River Run

3) Farm Name/Surface Owner: App Minerals, LLC Public Road Access: McCreary's Ridge Road (CR 7)

4) Elevation, current ground: 1247.9' Elevation, proposed post-construction: 1249.00'

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant Formation 11,395' / 130' thick 10,141 or .89 psi per foot / Utica Formation 11,042 150' thick / 10,000 psi or .89 psi per foot.

8) Proposed Total Vertical Depth: 11,395' ✓

9) Formation at Total Vertical Depth: Point Pleasant

10) Proposed Total Measured Depth: 23,314' ✓

11) Proposed Horizontal Leg Length: 11,020' ✓

12) Approximate Fresh Water Strata Depths: 162', 845'

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

14) Approximate Saltwater Depths: Na ✓

15) Approximate Coal Seam Depths: 455', 655'

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

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

(a) If Yes, provide Mine Info: Name: The Ohio County Mine-Murray American Energy and Consolidation Coal Company
Depth: 455', 655' ✓
Seam: Pittsburgh #8
Owner: Murray American Energy & Consolidation Coal Company ✓

WW-6B
(04/15)

API NO. 47-051
OPERATOR WELL NO. River Run 4 UH
Well Pad Name: Dire Wolf-River Run

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	54.5#	905'	905'	15.8ppg to sur 521 ex w/30% OH excess
Coal	13 3/8"	New	J-55	54.5#	1941'	1941'	15.2ppg to sur 556 ex w/30% OH Excess
Intermediate	9 5/8"	New	HCP-110	40#	9542'	9542'	15.2ppg to sur 606 ex w/30% OH excess
Production	5 1/2"	New	HCP-110	23#	23,314'	23,314'	15.4 gppg TOC >=200 above 9 525 shod
Tubing	2 7/8"	New	J-55	6.5#			
Liners							

JW 11/13/18

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 Tail 521 ex Yield 1.18
Fresh Water	20"	24"	.388	2,730	688	Class A	Lead yield 2.38 Tail 556 ex Yield 1.27
Coal	13 3/8"	17.5"	.380	2,730	688	Class A	Lead Yield 2.38 Tail 556 ex Yield 1.27
Intermediate	9 5/8"	12.375"-12.25"	.395	7,870	3,166	Class A	Lead Yield 1.28 Tail 606 ex Yield 1.28
Production	5 1/2"	8.75"	.361	14,360	11,000	Class H	Lead Yield 1.27 Tail 4714 ex Yield 1.27
Tubing	2 7/8"	5.14"	.217	10,570	8,000		
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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WW-6B
(10/14)

API NO. 47-051 - _____
OPERATOR WELL NO. River Run 4 UH
Well Pad Name: Dire Wolf-River Run

JN 11/13/18

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

Drill the vertical depth to the Point Pleasant at an estimated total vertical depth of approximately 11,395'. Drill the horizontal leg- stimulate and produce the Utica/Point Pleasant. 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): 14.7 acres

22) Area to be disturbed for well pad only, less access road (acres): 12.11 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 - 15.6 Class A +2% CaCl, 30% OH Excess Yield =1.18. 1st Intermediate - 15.6 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 (antisetling, antifoam, fluid loss retarder, salt, viscosifier) & 15.4 Class A tail with additives (antisetling, 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, antisetling, extender, dispersant) 15%excess TOC>=200' above 9.625' shoe.

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.

*Note: Attach additional sheets as needed.

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06/20/2019

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

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DRILLING WELL PLAN
 RiverRun-4UH
 Utica Horizontal
 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 Protect fresh groundwater
24"	Top-Hole	20" 94# J-55 BTC	Conductor Sewickley Coal Pittsburgh Coal	60 305 505	60	AIR	15.6ppg to surface 521sx w/ 30% OH excess	20" Air Hammer Totco at TD	N/A	Carbon Hammer 800psi	
17.5"	Top-Hole	13-3/8" 54.5# J-55 BTC	Surf. Casing Big Lime Greenbrier Group Big Injun	905 1925 1592 1641	905	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 @ 800psi	
12.375" 12.25"	Horizontal Rig	9-5/8" 43.5# P-110IC BTC	Int. Casing Tully LS Hamilton Cherry Valley Marcellus Shale Onondaga Ls Oriskany Sandstone Salina Group Vernon Shale Lockport Dolomite Clinton Group Medina Group Queenston Shale	1941 6216 6245 6354 6356 6390 6619 7203 7958 8175 8890 8962 9142	1941	AIR	15.4ppg to surface 936sx w/ 30% OH excess	12" Air Hammer Totco every 400ft	MWD surveys Mud Logger - 90 ft samples	Tricone	PU cleanout assembly, dress plug, displace to 12.0ppg SOBM, PU Curve BHA, time drill / KO cement plug. Expect Seepage in curve
8.5" Curve/Lateral	Horizontal Rig	5-1/2" 23# P110ICY TSH Wedge 563	Int. Casing Utica Shale Point Pleasant Formation Curve LP TARGET Production Casing	9542 11212 11395	9542	AIR	14.8ppg TOC >= 200' Above 9,525 shoe 4472sx 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

8.5 Hole - Cemented Long String 5-1/2" 23# P110ICY TSH Wedge 563

Landing Point 11395 TVD 12294 MD	90.5 degrees	11020 ft Lateral Length	89.5 Inc 145 Az	Total Depth 11395 TVD 23314 TD
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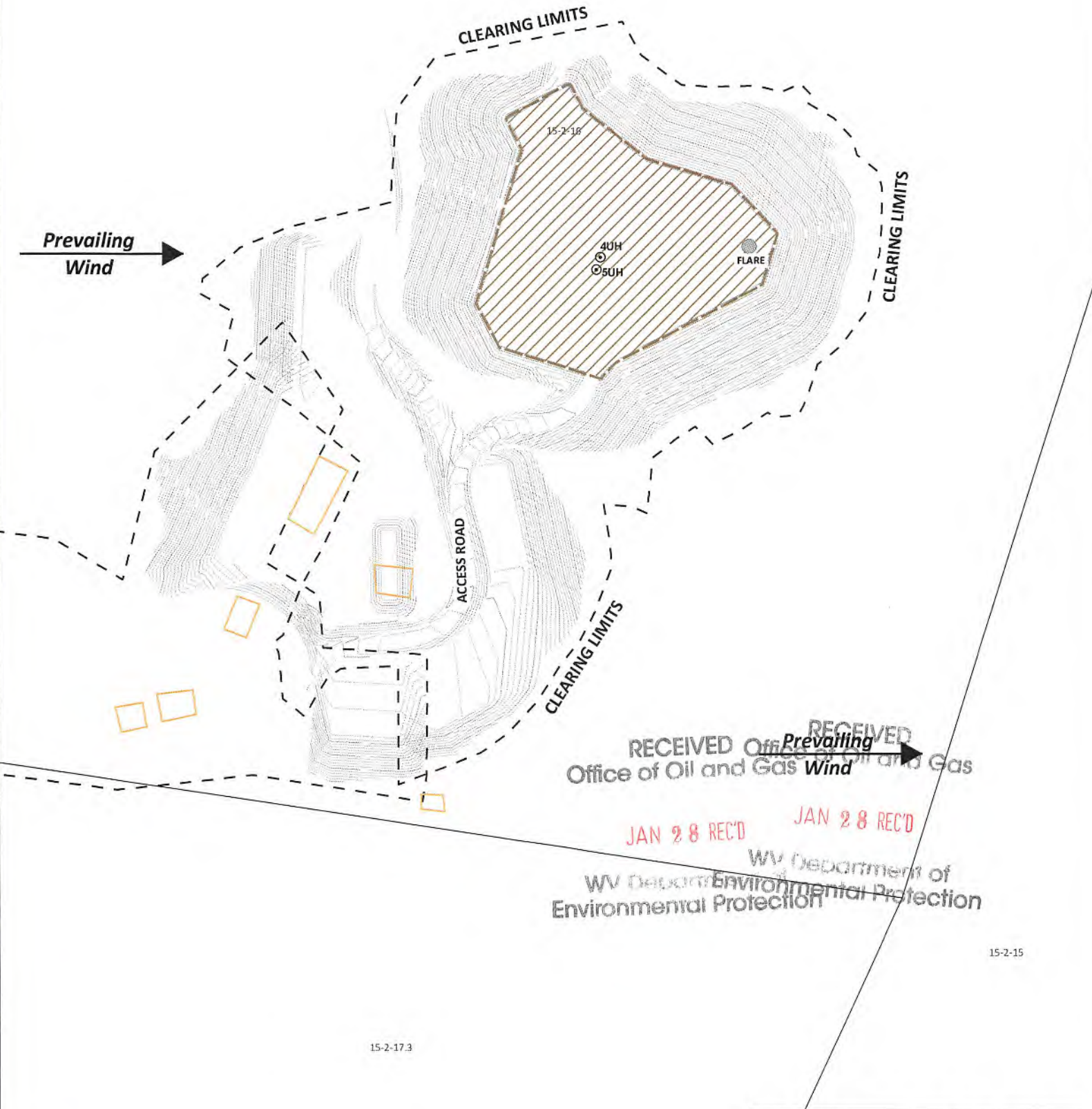
[Handwritten signature]
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06/14/2019
 Prevailing Wind →

Prevailing Wind →



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Prevailing Wind →

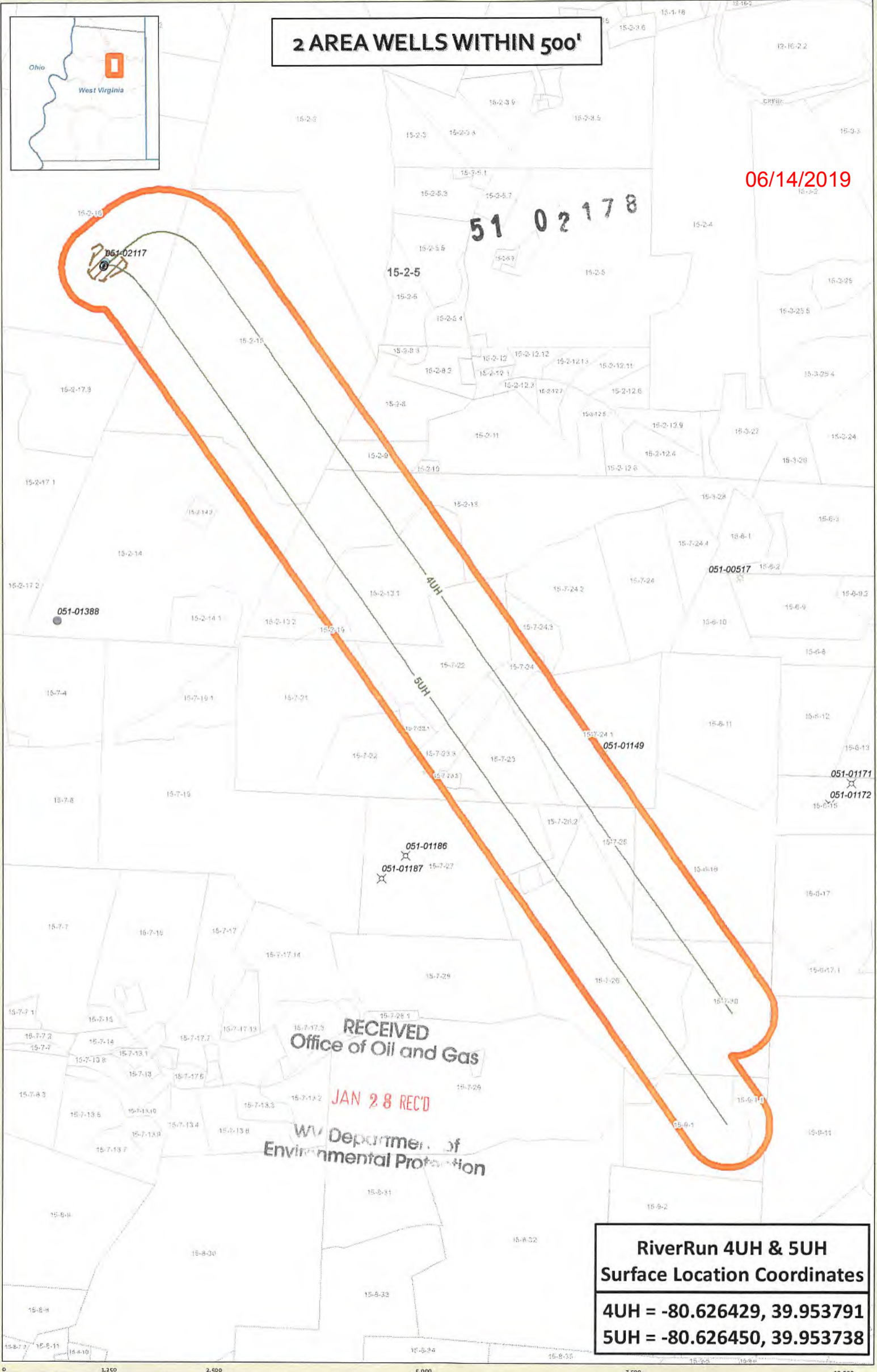
RiverRun 4UH & 5UH Surface Location Coordinates	
4UH =	-80.626429, 39.953791
5UH =	-80.626450, 39.953738



2 AREA WELLS WITHIN 500'

06/14/2019

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**RiverRun 4UH & 5UH
Surface Location Coordinates**
 4UH = -80.626429, 39.953791
 5UH = -80.626450, 39.953738

RiverRun 4UH & 5UH - All Area Wells

Marshall County West Virginia
 Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 Linear Units: Meter
 Map Scale Units: 1:15,000
 1 inch = 1,250 feet
 Map Author: JKS
 Map Date: 12/15/2018

- Well SHL
- Well Pad
- Other
- Marcellus Well
- ShutIn
- Laterals
- Parcels
- Abandoned Well
- Permit / Future Use
- Active Well
- Plugged
- Marcellus Permit
- Utica Permit
- Utica Well



WW-9
(4/16)

API Number 47 - 051 -

Operator's Well No. River Run 4 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 494521257

Watershed (HUC 10) 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 SOBMM

-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 [Signature]
Company Official (Typed Name) Braulio Silva
Company Official Title Vice President - Drilling

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Subscribed and sworn before me this 12th day of November, 2018

[Signature]
My commission expires 1/23/2020

Notary Public
COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
Earline Bugay, Notary Public
New Sewickley Twp., Beaver County
My Commission Expires Jan. 23, 2020
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

American Petroleum Partners Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 14.7 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: *John Nicholas*

Comments: _____

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Environmental Protection


Title: WV DEP Oil and Gas Inspector

Date: 11/13/18

Field Reviewed? () Yes () No

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

Closed Loop: 

In our case, we will be running mud returns thru both, the barite recovery centrifuge or "Stripper" and the low gravity centrifuge or "Polisher" to be able to clean our mud and be put back into the mud tanks where it will be conditioned again and put back into the loop.

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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

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06/14/2019

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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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

06/14/2019

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

Hydraulic Fracturing Fluid Product Component Information Disclosure

Hydraulic Fracturing Fluid Composition:

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	25322-68-3	50.00000
			Water	7732-18-5	30.00000
			2,2-Dibromo-3-nitripropionamide	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	64743-02-8	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

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WV Department of
Environmental Protection

51 02170

Hydraulic Fracturing Fluid Product Component Information Disclosure

Hydraulic Fracturing Fluid Composition:

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	25322-68-3	50.00000
			Water	7732-18-5	30.00000
			2,2-Dibromo-3-nitrilopropionamide	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	64743-02-8	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-36 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

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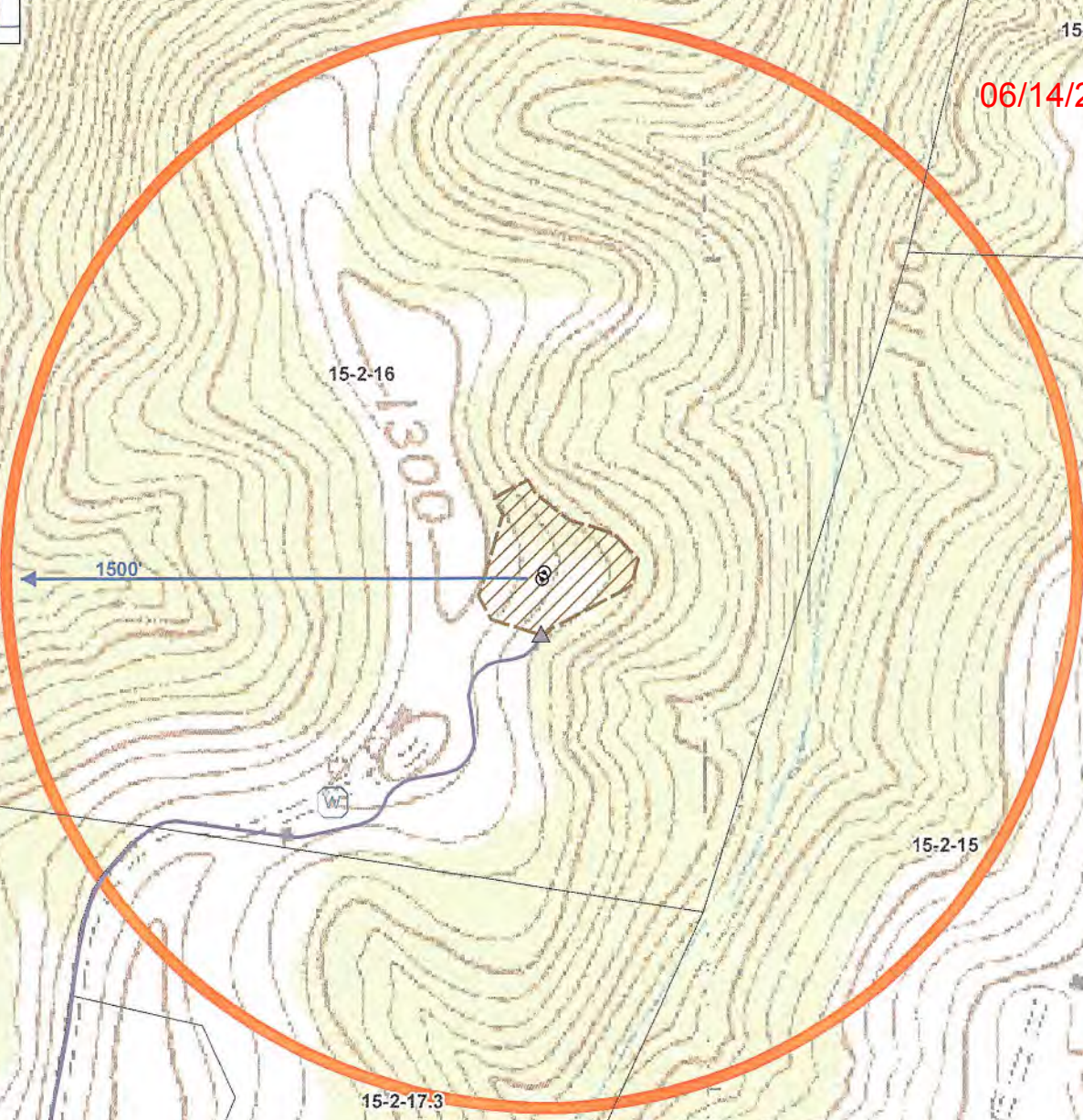
JAN 28 REC'D

WV Department of
Environmental Protection

1 WATER PURVEYOR WITHIN 1,500'



06/14/2019



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Office of Oil and Gas

WV Department of
Environmental Protection

**RiverRun 4UH & 5UH
Surface Location Coordinates**
4UH = -80.626429, 39.953791
5UH = -80.626450, 39.953738

RiverRun 4UH & 5UH - Water Source

Marshall County
West Virginia

Coordinate System:
Coordinate System: NAD 1983 UTM Zone 21H
Projection: Transverse Mercator
Datum: North American 1983

Map Scale Units:
1:8,000
1 inch = 660 feet

Map Author: JKS
Map Date: 11/20/2018

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

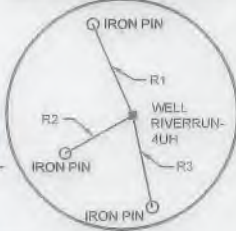
Well is located on topo map 1,655 feet south of Latitude: 39° 57' 30"
 BHL is located on topo map 10,572 feet south of Latitude: 39° 57' 30"

Sheffler & Company, Inc.
 ENGINEERING • SURVEYING
 1712 Mount Nebo Road Phone 412-219-4509
 Sewickley, PA 15143 Email: info@shefflerCo.com



TOTAL UNIT
 498.90 ACRES
 06/14/2019

REFERENCE DETAIL



- Well is located on topo map 401
 BHL is located on topo map 4,653 feet west of Longitude: 80° 37' 30"
 feet west of Longitude: 80° 35' 00"
- NOTES
- There are no water wells or developed springs within 250' of proposed well
 - There are existing building within 625' of proposed well, see Detail 1
 - 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
 - Mineral and Surface parcel lines are the same

MONUMENT REFERENCE TABLE

LINE NO.	BEARING	DISTANCE
R1	S23°38'31"E	522.57'
R2	N80°26'53"E	406.03'
R3	N11°54'09"W	490.84'
R4	N74°50'04"E	2159.33'
R5	N35°49'36"E	974.41'

LEGEND

- TOPO MAP POINT
- PROPOSED WELL
- PRIVATE WATER WELL
- SPRING LOCATION
- LEASED NUMBER BASED ON ATTACHED WW6A1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- UNIT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/POND/WATERWAY
- ROAD

SURFACE HOLE LOCATION (SHL)
 UTM 17 - NAD83
 N: 4422695.350(m)
 E: 531909.397(m)
 NAD27, W W NORTH
 N: 531463.770(ft)
 E: 1684160.662(ft)
 LAT/LON - NAD83
 LAT: N39.9537915(d)
 LON: W80.6264294(d)

APPROXIMATE LANDING POINT
 UTM 17 - NAD83
 N: 4422738.566(m)
 E: 532259.596(m)
 NAD27, W W NORTH
 N: 531586.347(ft)
 E: 1685312.175(ft)
 LAT/LON - NAD83
 LAT: N39.9541676(d)
 LON: W80.6223275(d)

BOTTOM HOLE LOCATION (BHL)
 UTM 17 - NAD83
 N: 4419988.189(m)
 E: 534185.431(m)
 NAD27, W W NORTH
 N: 522455.123(ft)
 E: 1691480.817(ft)
 LAT/LON - NAD83
 LAT: N39.9293119(d)
 LON: W80.5999260(d)

FILE #: RIVERRUN-4UH
 DRAWING #: RIVERRUN-4UH-R8.DWG
 SCALE: 1"=2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX0742: 1343.3'

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: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'
 COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MOUNDSVILLE, WV
 SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31
 OIL & GAS ROYALTY OWNER: APP MINERALS LLC

DATE: February 7, 2019 - REV - April 30, 2019
 OPERATOR'S WELL #: RIVERRUN-4UH
 API WELL # 47 051 02178H6A
 STATE COUNTY PERMIT

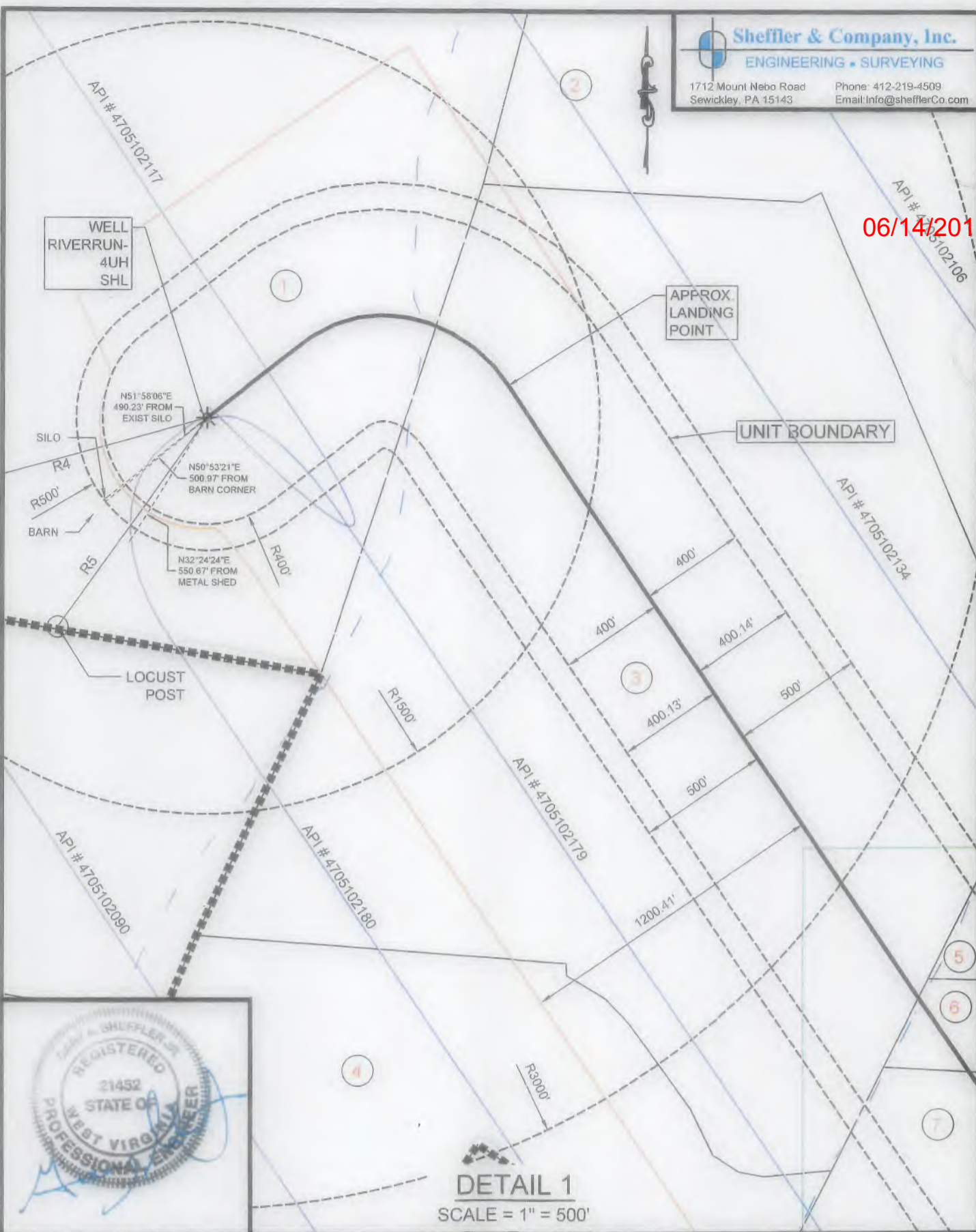


ACREAGE 183.31

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: 23,314' ±
 WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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

06/14/2019



DETAIL 1
 SCALE = 1" = 500'

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



DATE: February 7, 2019 - REV - April 30, 2019
 OPERATOR'S WELL #: RIVERRUN-4UH
 API WELL # 47 051 02178 H6A
 STATE COUNTY PERMIT

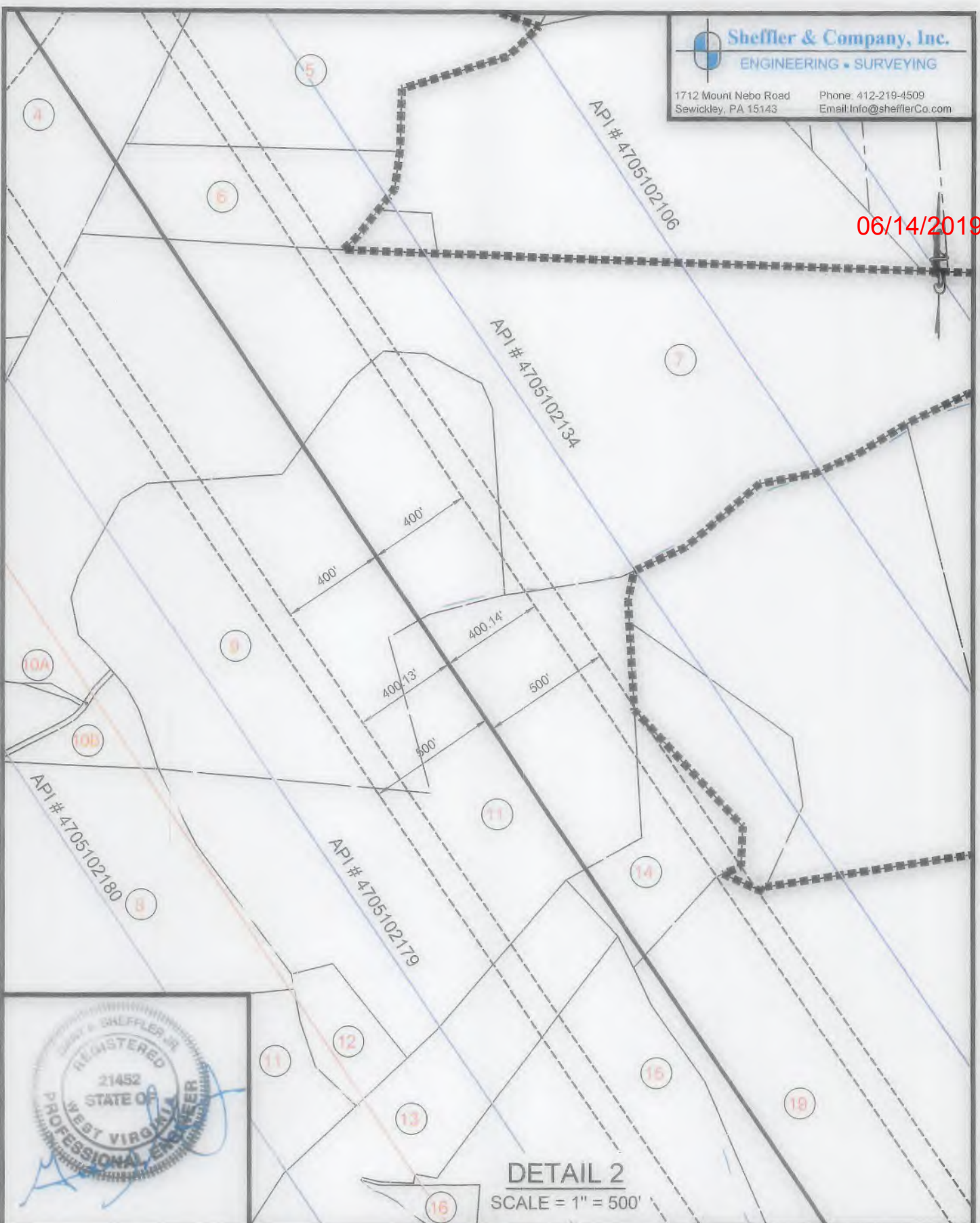
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'
 COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MOUNDVILLE, WV
 SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31
 OIL & GAS ROYALTY OWNER: APP MINERALS LLC ACREAGE: 183.31

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: 23,314' ±
 WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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

06/14/2019



DETAIL 2
SCALE = 1" = 500'

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



DATE: February 7, 2019 - REV - April 30, 2019

OPERATOR'S WELL #: RIVERRUN-4UH

API WELL # 47 051 02178 H6A
STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'

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

SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31

OIL & GAS ROYALTY OWNER: APP MINERALS LLC ACREAGE: 183.31

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)

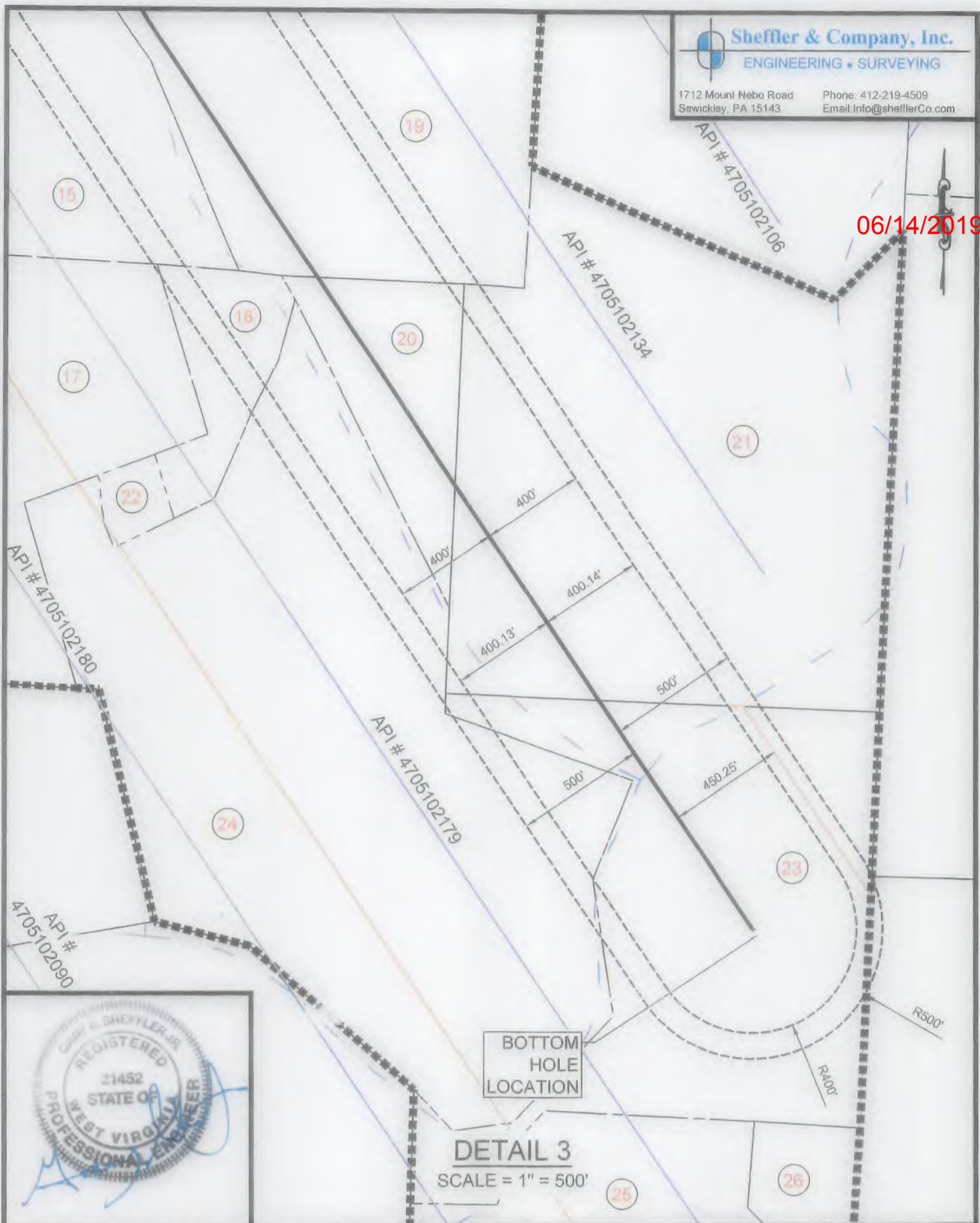
TARGET FORMATION: POINT PLEASANT ESTIMATED DEPTH: TVD: 11,395' ± TMD: 23,314' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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

06/14/2019



DETAIL 3
 SCALE = 1" = 500'

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



DATE: February 7, 2019 - REV - April 30, 2019
 OPERATOR'S WELL #: RIVERRUN-4UH
 API WELL # 47 051 02178 H6A
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'
 COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MOUNDVILLE, WV
 SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31
 OIL & GAS ROYALTY OWNER: APP MINERALS LLC

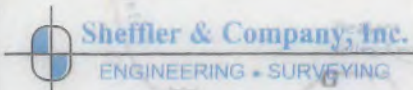
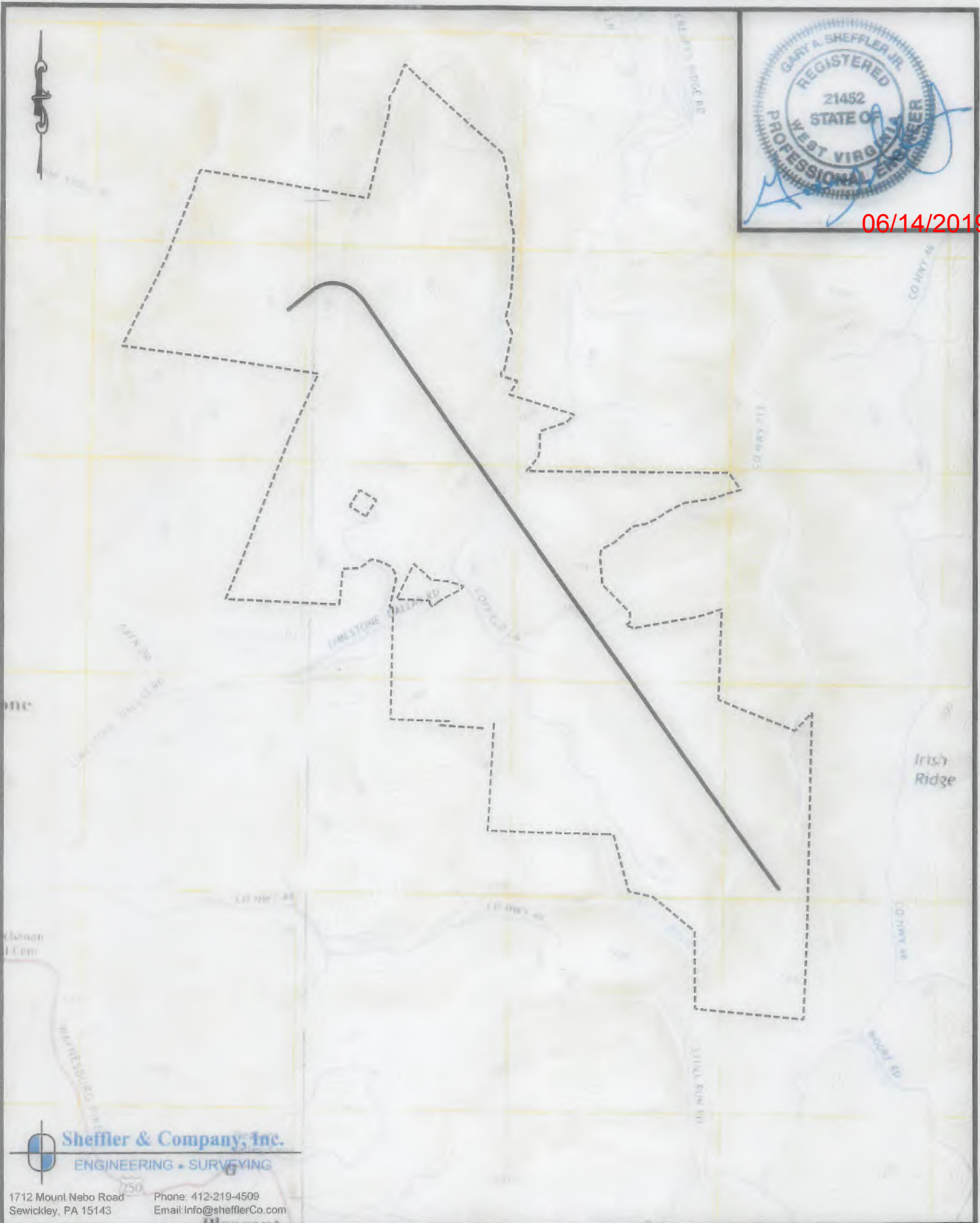
ACREAGE: 183.31

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: 23,314' ±
 WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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



06/14/2019



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: February 7, 2019 - REV - April 30, 2019

OPERATOR'S WELL #: RIVERRUN-4UH

API WELL # 47 051 02178 H6A
STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'

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

SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31

OIL & GAS ROYALTY OWNER: APP MINERALS LLC ACREAGE: 183.31

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: 23,314' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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



06/14/2019

TAX MAP NO.
15-0002-0016-0000-0000
ASSESSED ACREAGE: 183.31 ACRES

SURFACE OWNERS:
APP MINERAL, LLC

MINERAL OWNERS:
APP MINERALS, LLC

TAX MAP NO.
15-0002-0013-0000-0000
ASSESSED ACREAGE: 94.04 ACRES

SURFACE OWNERS:
BOCK, JEFFERY T.

MINERAL OWNERS:
JEFFREY T. BOCK,
SALLY A. HUNTER-BOCK

TAX MAP NO.
15-0007-0022-0001-0000
ASSESSED ACREAGE: 3.00 ACRES

SURFACE OWNERS:
BURKLE, GERALD E., ET AL.

MINERAL OWNERS:
DAVID SCOTT CAIN
BRENT EUGENE CAIN
THOMAS DEAN CAIN

TAX MAP NO.
15-0002-0002-0000-0000
ASSESSED ACREAGE: 132.77 ACRES

SURFACE OWNERS:
ISKCON NEW MATHURA VRINDABAN

MINERAL OWNERS:
AMP FUND III, LP

TAX MAP NO.
15-0007-0021-0000-0000
ASSESSED ACREAGE: 59.80 ACRES

SURFACE OWNERS:
RIEDMAN, THOMAS MERLIN, ET UX.

MINERAL OWNERS:
GARY W. STROPE AND RICKEE J. STROPE,
TRUSTEES OF THE STROPE FAMILY
TRUST DATED MARCH 29, 2017

TAX MAP NO.
15-0007-0023-0003-0000
ASSESSED ACREAGE: 17.02 ACRES

SURFACE OWNERS:
HASLAM, LORRAINE

MINERAL OWNERS:
LORRAINE HASLAM

TAX MAP NO.
15-0002-0015-0000-0000
ASSESSED ACREAGE: 171.32 ACRES

SURFACE OWNERS:
HARRY B. SNYDER AND
ELIZABETH JANE SNYDER,
TRUSTEES OF THE SNYDER FAMILY TRUST,
DATED DECEMBER 17, 2014

MINERAL OWNERS:
HARRY B. SNYDER AND
ELIZABETH JANE SNYDER,
TRUSTEES OF THE SNYDER FAMILY TRUST,
DATED DECEMBER 17, 2014

TAX MAP NO.
15-0002-0013-0001-0000
ASSESSED ACREAGE: 40.21 ACRES

SURFACE OWNERS:
PARSONS, THOMAS EVERETT, SR.

MINERAL OWNERS:
RESOURCE MINERALS HEADWATER I, LP

TAX MAP NO.
15-0007-0023-0003-0000
ASSESSED ACREAGE: 17.02 ACRES

SURFACE OWNERS:
HASLAM, LORRAINE

MINERAL OWNERS:
LORRAINE HASLAM

TAX MAP NO.
15-0007-0024-0000-0000
ASSESSED ACREAGE: 57.64 ACRES

SURFACE OWNERS:
ISKCON NEW MATHURA VRINDABAN, INC.

MINERAL OWNERS:
ISKCON NEW VRINDABAN, INC.

TAX MAP NO.
15-0002-0014-0000-0000
ASSESSED ACREAGE: 126.12 ACRES

SURFACE OWNERS:
HARRY B. SNYDER AND
ELIZABETH JANE SNYDER,
TRUSTEES OF THE SNYDER FAMILY TRUST,
DATED DECEMBER 17, 2014

MINERAL OWNERS:
HARRY B. SNYDER AND
ELIZABETH JANE SNYDER,
TRUSTEES OF THE SNYDER FAMILY TRUST,
DATED DECEMBER 17, 2014

TAX MAP NO.
15-0002-0019-0000-0000
ASSESSED ACREAGE: 1.73 ACRES

SURFACE OWNERS:
RIEDMAN, THOMAS MERLIN, ET UX.

MINERAL OWNERS:
GARY W. STROPE AND RICKEE J. STROPE,
TRUSTEES OF THE STROPE FAMILY TRUST
DATED MARCH 29, 2017

TAX MAP NO.
15-0007-0023-0000-0000
ASSESSED ACREAGE: 19.61 ACRES

SURFACE OWNERS:
HASLAM, LORRAINE, ET AL.,
AS JOINT TENANTS WITH RIGHT OF SURVIVORSHIP

MINERAL OWNERS:
LORRAINE & SRI HASLAM

TAX MAP NO.
15-0002-0019-0000-0000
ASSESSED ACREAGE: 0.27 ACRES

SURFACE OWNERS:
WEST VIRGINIA DEPARTMENT OF
TRANSPORTATION, DIVISION OF HIGHWAYS

MINERAL OWNERS:
WEST VIRGINIA DEPARTMENT OF
TRANSPORTATION, DIVISION OF HIGHWAYS

TAX MAP NO.
15-0007-0023-0002-0000
ASSESSED ACREAGE: 1.18 ACRES

SURFACE OWNERS:
HASLAM, LORRAINE, ET AL.,

MINERAL OWNERS:
LORRAINE & SRI HASLAM

TAX MAP NO.
15-0002-0008-0000-0000
ASSESSED ACREAGE: 19.22 ACRES

SURFACE OWNERS:
ONE WORLD ONE FAMILY NOW, INC.

MINERAL OWNERS:
ONE WORLD ONE FAMILY NOW, INC.

TAX MAP NO.
15-0007-0022-0000-0000
ASSESSED ACREAGE: 48.77 ACRES

SURFACE OWNERS:
BOCK, THOMAS A., ET UX.,
AS JOINT TENANTS WITH RIGHT OF SURVIVORSHIP

MINERAL OWNERS:
BRENT E. CAIN,
DAVID S. CAIN,
HERMAN D. LANTZ,
THOMAS A. & PAMELA L. BOCK,
THOMAS D. CAIN

TAX MAP NO.
15-0007-0027-0000-0000
ASSESSED ACREAGE: 76.34 ACRES

SURFACE OWNERS:
COFFIELD, WILLIAM E., ET UX.,
AS JOINT TENANTS WITH RIGHT OF SURVIVORSHIP

MINERAL OWNERS:
WILLIAM E. COFFIELD AND BRENDA K. COFFIELD

TAX MAP NO.
15-0002-0009-0000-0000
ASSESSED ACREAGE: 8.74 ACRES

SURFACE OWNERS:
MAHATME, HIRA
(A/K/A HIRA MAHATME-HARRIS)

MINERAL OWNERS:
MAHATME, HIRA

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



DATE: February 7, 2019 - REV - April 30, 2019

OPERATOR'S WELL #: RIVERRUN-4UH

API WELL # 47 051 02178HgA
STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK - UPPER OHIO RIVER

ELEVATION: 1,264.94'

COUNTY/DISTRICT: MARSHALL / WEBSTER

QUADRANGLE: MOUNDVILLE, WV

SURFACE OWNER: APP MINERALS LLC

ACREAGE: 183.31

OIL & GAS ROYALTY OWNER: APP MINERALS LLC

ACREAGE: 183.31

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: 23,314' ±

WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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

06/14/2019

TAX MAP NO.
 15-0007-0026-0002-000
 ASSESSED ACREAGE: 6.75 ACRES
SURFACE OWNERS:
 RICE, STEVEN T, ET UX.
MINERAL OWNERS:
 STEVEN T. & TAMMIE R. RICE

TAX MAP NO.
 15-0007-0026-0000-0000
 ASSESSED ACREAGE: 81.67 ACRES
SURFACE OWNERS:
 COFFIELD, BETTY GENEVA
MINERAL OWNERS:
 BETTY GENEVA COFFIELD,
 DEBRA & PAUL HOLDREN,
 JUDITH LAWHEAD,
 KIMBER LEE LAWHEAD

TAX MAP NO.
 15-0007-0024-0001-0000
 ASSESSED ACREAGE: 56.78 ACRES
SURFACE OWNERS:
 ECO-VRINDABAN, INC., D/B/A
 GORAKSHYA-SEVA AND ENVIRONMENTAL
 EDUCATION TRUST OF AMERICA, INC.
MINERAL OWNERS:
 ECO-VRINDABAN, INC., D/B/A
 GORAKSHYA-SEVA AND ENVIRONMENTAL
 EDUCATION TRUST OF AMERICA, INC..

TAX MAP NO.
 15-0009-0001-0000-0000
 ASSESSED ACREAGE: 44.00 ACRES
SURFACE OWNERS:
 SCHRACK, TROY D. & SHERRY L.
MINERAL OWNERS:
 GARNET RUBY BUSH AND KENNETH R. BUSH,
 CO-TRUSTEES OF THE GARNETT BUSH FAMILY
 TRUST, DATED APRIL 16, 2018
 BRENT M. BUSH,
 LAWRENCE L. GILMORE,
 EILEEN GILMORE MERCADO AND ALBERT MERCADO

TAX MAP NO.
 15-0007-0025-0000-000
 ASSESSED ACREAGE: 10 ACRES
SURFACE OWNERS:
 COFFIELD, WILLIAM E., ET UX.
MINERAL OWNERS:
 BETTY GENEVA COFFIELD,
 WILLIAM E. & BRENDA K. COFFIELD

TAX MAP NO.
 15-0009-0001-0001-0000
 ASSESSED ACREAGE: 7.74 ACRES
SURFACE OWNERS:
 SCHRACK, DAVID W.
MINERAL OWNERS:
 GARNET RUBY BUSH AND KENNETH R. BUSH,
 CO-TRUSTEES OF THE GARNETT BUSH FAMILY
 TRUST, DATED APRIL 16, 2018
 BRENT M. BUSH,
 LAWRENCE L. GILMORE,
 EILEEN GILMORE MERCADO AND ALBERT MERCADO

TAX MAP NO.
 15-0006-0016-0000-0000
 ASSESSED ACREAGE: 77.4 ACRES
SURFACE OWNERS:
 COFFIELD, WILLIAM E., ET UX.
MINERAL OWNERS:
 BETTY GENEVA COFFIELD,
 WILLIAM E. & BRENDA K. COFFIELD

TAX MAP NO.
 15-0007-0026-0001-0000
 ASSESSED ACREAGE: 1.58 ACRES
SURFACE OWNERS:
 RICE, STEVEN T, ET UX.
MINERAL OWNERS:
 JENNIFER L. RICE

TAX MAP NO.
 15-0007-0030-0000-0000
 ASSESSED ACREAGE: 40.00 ACRES
SURFACE OWNERS:
 SCHRACK, DAVID W.
MINERAL OWNERS:
 DAVID SCHRACK

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



DATE: February 7, 2019 - REV - April 30, 2019
 OPERATOR'S WELL #: RIVERRUN-4UH
 API WELL # 47 051 02178 H6A
 STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK - UPPER OHIO RIVER ELEVATION: 1,264.94'
 COUNTY/DISTRICT: MARSHALL / WEBSTER QUADRANGLE: MOUNDVILLE, WV
 SURFACE OWNER: APP MINERALS LLC ACREAGE: 183.31
 OIL & GAS ROYALTY OWNER: APP MINERALS LLC ACREAGE: 183.31

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: 23,314' ±
 WELL OPERATOR: AMERICAN PETROLEUM PARTNERS OPERATING, 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. River Run 4 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

**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: Braulio Silva *[Signature]*
 Its: Vice President-Drilling

RECEIVED
JAN 28 2019

RiverRun-4UH - 400' Buffer Tracts

Map #	LEASE #	LESSOR	CURRENT LESSEE	ROYALTY	MOL RECORDING INFORMATION	TAX PARCEL
1 ✓	WV-MAR-1192	APP Minerals LLC	American Petroleum Partners Operating, LLC	Not Less than 1/8th	984-392	15-2-16
3 ✓	WV-MAR-0688	Harry B. Snyder & Elizabeth J. Snyder, Trustees of the Snyder Family Trust dated December 17, 2014	American Petroleum Partners Operating, LLC	Not Less than 1/8th	741-88	15-2-15
5 ✓	WV-MAR-0021	One World One Family Now, Inc.	American Petroleum Partners Operating, LLC	Not Less than 1/8th	969-410	15-2-8
6 ✓	WV-MAR-1692	Mahatme Hira	American Petroleum Partners Operating, LLC	Not Less than 1/8th	1037-332	15-2-9
7 ✓	WV-MAR-0094	Jeffrey T. Bock	American Petroleum Partners Operating, LLC	Not Less than 1/8th	978-559	15-2-13
7 ✓	WV-MAR-0094	Sally A. Hunter-Bock	American Petroleum Partners Operating, LLC	Not Less than 1/8th	978-559	15-2-13
9 ✓	WV-MAR-0032	Resource Minerals Headwater I, LP	American Petroleum Partners Operating, LLC	Not Less than 1/8th	930-466	15-2-13.1
11 ✓	WV-MAR-1245	David S. Cain	American Petroleum Partners Operating, LLC	Not Less than 1/8th	905-21	15-7-22
11	WV-MAR-1244	Brent E. Cain	American Petroleum Partners Operating, LLC	Not Less than 1/8th	905-19	15-7-22
11	WV-MAR-1582	Herman D. Lantz	American Petroleum Partners Operating, LLC	Not Less than 1/8th	962-509	15-7-22
11	WV-MAR-1142	Thomas A. Bock & Pamela L. Bock	American Petroleum Partners Operating, LLC	Not Less than 1/8th	905-25	15-7-22
11	WV-MAR-1246	Thomas D. Cain	American Petroleum Partners Operating, LLC	Not Less than 1/8th	905-23	15-7-22

13 ✓	WV-MAR-0340	Lorraine Haslam	American Petroleum Partners Operating, LLC	Not Less than 1/8th	827-494	15-7-23.3
14 ✓	WV-MAR-0080	ISKCON New Vrindaban, Inc.	American Petroleum Partners Operating, LLC	Not Less than 1/8th	827-480	15-7-24
15 ✓	WV-MAR-0135	Lorraine Haslam & Sri Haslam	American Petroleum Partners Operating, LLC	Not Less than 1/8th	828-339	15-7-23
16	WV-MAR-0340	Lorraine Haslam	American Petroleum Partners Operating, LLC	Not Less than 1/8th	827-494	15-7-23.2
18 ✓	Pending	Steven T. Rice & Tammie R. Rice	American Petroleum Partners Operating, LLC	Not Less than 1/8th	871-413	15-7-26-.2
19 ✓	WV-MAR-0083	ECO-Vrindaban, Inc., dba Gorakshya-Seva and Environmental Education Trust of America, Inc	American Petroleum Partners Operating, LLC	Not Less than 1/8th	987-198	15-7-24.1
20 ✓	Pending	Betty Geneva Coffield	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-34	15-7-25
20	Pending	William E. Coffield & Brenda K. Coffield	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-156	15-7-25
21 ✓	WV-MAR-0729	Betty Geneva Coffield	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-37	15-6-16
21	WV-MAR-0727	William E. Coffield & Brenda K. Coffield	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-120	15-6-16
23 ✓	Pending	David Schrack	American Petroleum Partners Operating, LLC	Not Less than 1/8th	659-37	15-7-30
24 ✓	WV-MAR-1165	Betty Geneva Coffield	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-54	15-7-26
24	WV-MAR-1171	Judith Lawhead	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-31	15-7-26
24	Pending	Debra Holdren & Paul Holdren	American Petroleum Partners Operating, LLC	Not Less than 1/8th	916-16	15-7-26
24	WV-MAR-1171	Kimber Lee Lawhead	American Petroleum Partners Operating, LLC	Not Less than 1/8th	865-31	15-7-26

SI-02178

06/14/2019

Note: The ones that say pending belong to APP. Internally they were not assigned a lease number as of yet.



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

November 6, 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.

Sincerely,

A handwritten signature in blue ink, appearing to read "Braulio Silva", with a stylized flourish at the end.

Braulio Silva
VP- Drilling

BS/djs

RECEIVED
Office of Oil and Gas

JAN 28 REC'D
WV Department of
Environmental Protection

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

51 02178

Date of Notice Certification: _____

API No. 47- 051 - _____
Operator's Well No. River Run 4 UH
Well Pad Name: Dire Wolf-River Run

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: _____	West Virginia	UTM NAD 83	Easting: _____	531909.3970
County: _____	Marshall		Northing: _____	4422695.3500
District: _____	Webster	Public Road Access: _____	McCreary's Ridge Road (CR 7)	
Quadrangle: _____	Moundsville	Generally used farm name: _____	App Mineral, LLC	
Watershed: _____	Upper Ohio South			

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:	OOG OFFICE USE ONLY
*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 type="checkbox"/> RECEIVED/ NOT REQUIRED
<input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED	<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input checked="" type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	<input type="checkbox"/> RECEIVED/ NOT REQUIRED
<input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION	<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 5. PUBLIC NOTICE	<input type="checkbox"/> RECEIVED
<input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION	<input type="checkbox"/> RECEIVED

Required Attachments:

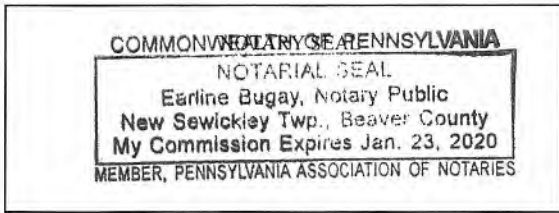
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

RECEIVED
Office of Oil and Gas
JAN 9 8 REC'D
WV Department of
Environmental Protection

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</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Vice President-Drilling</u>	Facsimile:	<u>na</u>
Telephone:	<u>1-724-338-8629</u>	Email:	<u>Regulatory@app-lp.com</u>



Subscribed and sworn before me this 12th day of November 2018.

Earline Bugay Notary Public

My Commission Expires 1/23/2020

Oil and Gas Privacy Notice:

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

RECEIVED
 11/14/18
 11:58 AM
 WV DEPARTMENT OF
 Environmental Protection

**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: 1/23/19 **Date Permit Application Filed:** 1/23/19

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: APP Mins LLC
Address: 4900 J. Barry Ct. Suite 310
Canonsburg, PA 15317

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Mark Meberg, Et Ux & Mary P. Meberg
Address: 325 McCreary's Ridge
Moundsville, WV 26041

Name: David Hunt
Address: 6906 Conley Street
Baltimore, MD 21224

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 List
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: None
Address: _____

*Please attach additional forms if necessary

Office of Oil and Gas
JAN 28 2019
WV Department of Environmental Protection

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
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- REGISTERED MAIL
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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: _____
Address: _____

Name: _____
Address: _____

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

Name: Gorakshya Seva & ENV EDU/Eco-Vrindaban Inc.
Address: Rd 3 Box 278 B
Wheeling, WV 26003

Name: Lakshmi D. Dove et al. William E & Irene M. Dove, Et al
Address: Rd 3 Box 278 B
Wheeling, WV 26003

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: _____
Address: _____

COAL OPERATOR

Name: _____
Address: _____

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

Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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

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

SURFACE OWNER(s)
Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: _____
Address: _____

 COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Gorakshya Seva & ENV EDU/Eco-Vrindaban Inc.
Address: Rd 3 Box 278 B
Wheeling, WV 26003
Name: Lakshmi D. Dove et al. William E & Irene M. Dove, Et al
Address: Rd 3 Box 278 B
Wheeling, WV 26003

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

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

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

*Please attach additional forms if necessary

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

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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: _____
Address: _____

COAL OWNER OR LESSEE
Name: _____
Address: _____

Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

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

Name: Joy Chicione
Address: 61 Waymans Ridge
Moundsville, WV 26041

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

Name: David & Lonna Hudson
Address: 319 Oxen Drive
Moundsville, WV 26041

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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: 1/23/19 Date Permit Application Filed: 1/23/19

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: _____
Address: _____
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: _____
Address: _____
 COAL OPERATOR
Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Marian E. Phillips
Address: 247 Oxen Drive
Moundsville, WV 26041
Name: Norma C. Payne & Eric G. Dailey
Address: 8794 Pasture Gate Lane
Baldwinsville, NY 13027

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

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

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: None
Address: _____

*Please attach additional forms if necessary

RECEIVED
Office of Oil and Gas
JAN 28 REC'D
WV Department of Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

WW-6A
(8-13)

API NO. 42051-09178
OPERATOR WELL NO. River Run 4 UH
Well Pad Name: Dire Wolf-River Run
06/14/2019

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

RECEIVED
Office of Oil and Gas

JAN 28 REC'D
WV Department of
Environmental Protection

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

WW-6A
(8-13)

API NO. 51-02178
OPERATOR WELL NO. River Run 4 UH 06/14/2019
Well Pad Name: Dire Wolf-River Run

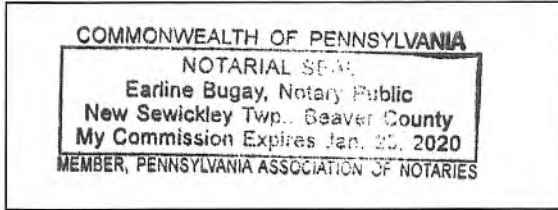
Notice is hereby given by:

Well Operator: American Petroleum Partners Operating, LLC
Telephone: 1-724-338-8629
Email: Regulatory@APP-LP.com

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

Oil and Gas Privacy Notice:

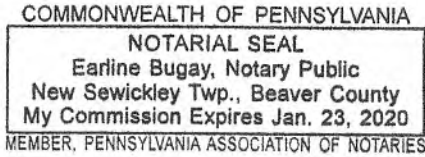
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory 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.



Subscribed and sworn before me this 12th day of November 2018

Earline Bugay Notary Public

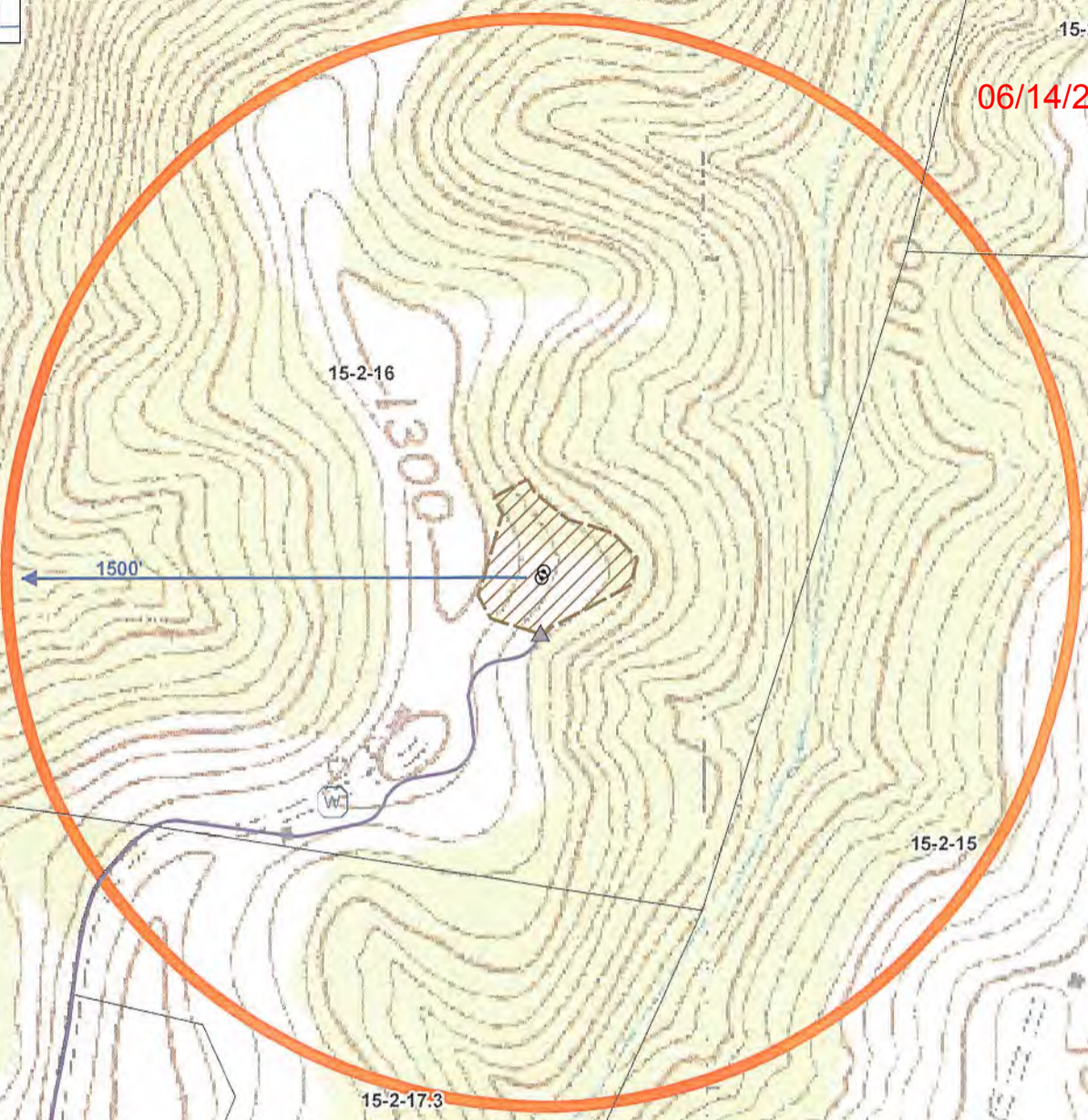
My Commission Expires 1/23/2020



1 WATER PURVEYOR WITHIN 1,500'



06/14/2019



RiverRun 4UH & 5UH
Surface Location Coordinates
 4UH = -80.626429, 39.953791
 5UH = -80.626450, 39.953738

Affidavit of Personal Service

State Of Pennsylvania
County Of Washington

51 02178

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)___/ WW-3(A)___/ WW-4(A)___/ WW-5(A)___/ WW-6(A)___
- (2) Application on Form WW-2(B)___/ WW-3(B)___/ WW-4(B)___/ WW-5(B)___/ WW-6(B)___
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. River Run located in Webster District, Marshall County, West Virginia, upon the person or organization named--

APP Minerals, LLC

--by delivering the same in Washington County, State of Pennsylvania on the 1st day of July, 20 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him___/ her___/ or, because he___/ she___/ refused to take it when offered it, by leaving it in his___/ her___/ presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

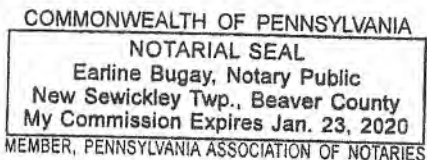
Handing it to the corporation's employee___/ officer___/ director___/ attorney in fact___/ named Braulio Silva.

[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 12th day of November 2018.
My commission expires 1/23/2020.

[Signature]
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



[Signature]

STATE OF WEST VIRGINIA **51 02178**
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: 7/17/18 **Date of Planned Entry:** 7/25/18

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: APP Minerals LLC
Address: 4600 J. Barry Ct, Suite 310
Canonsburg, PA 15317

Name: _____
Address: _____

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: Consol Mining Company LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: APP Minerals LLC
Address: 4600 J. Barry Ct, Suite 310
Canonsburg, PA 15317

**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>Latitude: 39.953868 & Longitude: -80.626477</u>
County: <u>Marshall</u>	Public Road Access: <u>Oxen Dr.</u>
District: <u>Webster</u>	Watershed: <u>Upper Ohio South</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>APP Minerals LLC</u>

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

Notice is hereby given by:

Well Operator: <u>American Petroleum Partners Operating, LLC</u>	Address: <u>4600 J. Barry Ct, Suite 310</u>
Telephone: <u>844-835-5277</u>	<u>Canonsburg, PA 15317</u>
Email: <u>regulatory@app-ip.com</u>	Facsimile: _____

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.

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: 1/23/19 **Date Permit Application Filed:** 1/23/19

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: APP Minerals, LLC
Address: 4600 J. Barry Court, Suite 310
Canonsburg, PA 15317

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>531909.3970</u>
County:	<u>Marshall</u>		Northing:	<u>4422695.3500</u>
District:	<u>Webster</u>	Public Road Access:	<u>McCreary's Ridge Road (CR 7)</u>	
Quadrangle:	<u>Moundsville</u>	Generally used farm name:	<u>App Mineral, LLC</u>	
Watershed:	<u>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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: American Petroleum Partners Operating, LLC
Telephone: 1-724-338-8629
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.

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: 1/23/19 **Date Permit Application Filed:** 1/23/19

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

- CERTIFIED MAIL HAND
- RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

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

Name: Joyce Chicione
Address: 61 Waymans Ridge
Moundsville, WV 26041

Name: David and Lonna Hudson
Address: 319 Oxen Drive
Moundsville, WV 26041

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:

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County: <u>Marshall</u>	Northing: <u>4422695.3500</u>
District: <u>Webster</u>	Public Road Access: <u>McCreary's Ridge Road (CR 7)</u>
Quadrangle: <u>Moundsville</u>	Generally used farm name: <u>App Minerals, LLC</u>
Watershed: <u>Upper Ohio South</u>	

This Notice Shall Include:

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Well Operator: <u>American Petroleum Partners OPerationg, LLC</u>	Address: <u>4600 J. Barry Court, Suite 110</u>
Telephone: <u>724-338-8629</u>	<u>Canonsburg, PA 15317</u>
Email: <u>Regulatory@app-lp.com</u>	Facsimile: <u>NA</u>

Oil and Gas Privacy Notice:

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



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

November 28, 2018

Jill M. Newman
Deputy Commissioner

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

Subject: DOH Permit for the Riverrun Pad, Marshall County
Riverrun 4UH Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0543 which has been issued to American Petroleum Partners for access to the State Road for a well site located off of Marshall County Route 7 SLS.

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 October 1, 2018.

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: Bill Dorsch
American Petroleum Partners
CH, OM, D-6
File

Hydraulic Fracturing Fluid Product Component Information Disclosure

Hydraulic Fracturing Fluid Composition:

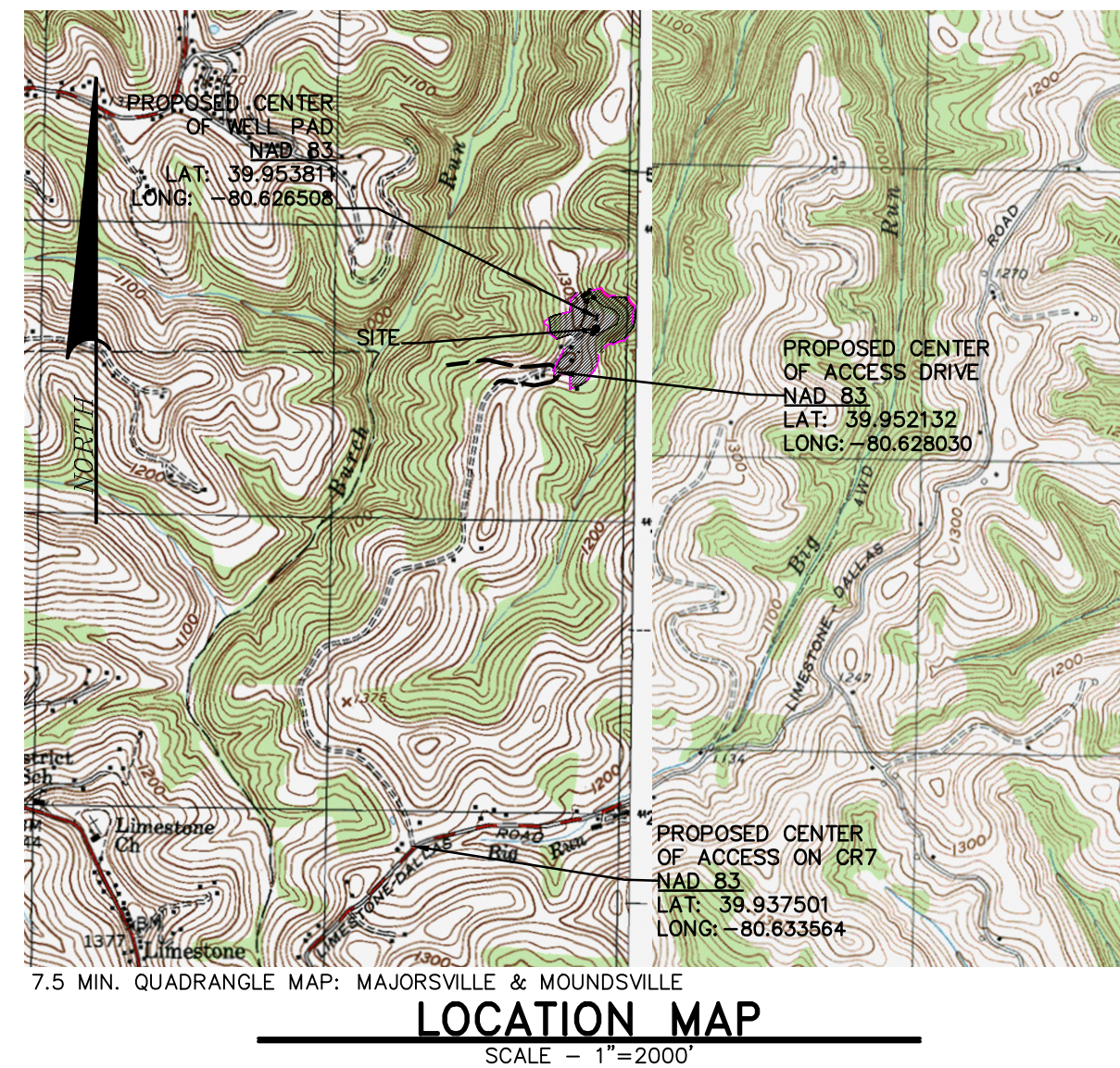
Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)
Water	Operator	Carrier/Base Fluid	Water	7732-18-5	100.00000
Terraprop Plus 30/50	Baker Hughes	Proppant	Aluminum Oxide	1344-28-1	100.00000
			Amorphous Silica	7631-86-9	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	25322-68-3	50.00000
			Water	7732-18-5	30.00000
			2,2-Dibromo-3-nitripropionamide	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	64743-02-8	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-36 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

06/14/2019

EROSION & SEDIMENT CONTROL PLAN FOR DIRE WOLF - RIVERRUN PAD WEBSTER TAX DISTRICT, MARSHALL COUNTY, WEST VIRGINIA

GENERAL NOTES

1. THE BOUNDARY AND TOPOGRAPHIC SURVEY FOR THE PROJECT AREA WERE PROVIDED BY APP OPERATING, LLC IN APRIL 2018.
2. PROPERTY BOUNDARIES, LANDOWNER INFORMATION AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS DATA AND BOUNDARY SURVEY PROVIDED BY APP OPERATING LLC.
3. EXISTING STRUCTURES, TREE LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ONLINE AERIAL PHOTOGRAPHY AND SURVEY PROVIDED BY APP OPERATING LLC.
4. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (WV83-NF), NORTH ZONE.
5. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1983 (WV83-NV) WHICH ORIGINATES FROM FIELD RUN TOPOGRAPHIC SURVEY.
6. A WETLANDS SURVEY WAS PERFORMED BY RETTEW ASSOCIATES ON APRIL AND MAY 2018.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING, PRIOR TO CONSTRUCTION, ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING ALL SAFETY REQUIREMENTS.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PREVENT ANY DAMAGE TO PRIVATE PROPERTY, PROVIDE ACCESS TO ALL DRIVES DURING CONSTRUCTION, NOTIFY UTILITY COMPANIES AND VERIFY LOCATION OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION, AND PROTECT ALL UTILITIES TO REMAIN IN SERVICE.
10. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS GOVERNING EXCAVATION WHEN APPLICABLE TO THE PROJECT. THESE PLANS SHALL BE SEALED BY AN ENGINEER EXPERIENCED IN THE DESIGN OF TRENCH SAFETY SYSTEMS AND LICENSED BY THE STATE IN WHICH THE WORK IS OCCURRING. CONTRACTOR SHALL SUBMIT THE PLAN TO APP OPERATING, LLC PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS FOR WORK RELATED TO EXCAVATION.
11. ANY DAMAGES THAT MAY OCCUR TO PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE PROPERTY OR IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES. IN THE EVENT OF SUCH DAMAGE, CONTRACTOR SHALL NOTIFY APP OPERATING, LLC IMMEDIATELY PRIOR TO THE RESTORATION. THIS RESTORATION SHALL BE SUBJECT TO THE OWNER'S APPROVAL; MOREOVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION SITE CLEAR OF ALL TRASH AND DEBRIS.
13. PRIOR TO ANY EARTHWORK EXCAVATION OR TOPSOIL REMOVAL, ALL EROSION CONTROL MEASURES DETAILED ON THESE DRAWINGS SHALL BE PROPERLY INSTALLED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY APP OPERATING, LLC AT ANY TIME.
14. THE CONTRACTOR SHALL INSPECT STABILIZATION AND EROSION CONTROL MEASURES AT A MINIMUM OF ONCE EVERY 7 DAYS OR WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES DURING CONSTRUCTION.
15. SILT FENCE AND SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL RE-VEGETATION HAS BEEN COMPLETELY ESTABLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS UNTIL PROJECT COMPLETION.
16. DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED UNTIL THE CONTRACTOR IS RELEASED FROM THE JOB SITE. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEEDED OR RE-SODDED, IF NECESSARY.
17. FOR DESIGN PURPOSES, THE PAD CROSS SECTION AND ROAD SECTION WAS ASSUMED TO BE 16". THIS IS DUE TO SETTLEMENT OF THE CRUSHER RUN INTO THE R-3 ZONE.
18. A GEOTECHNICAL INVESTIGATION HAS NOT BEEN PERFORMED. SEE SHEET 13 FOR TYPICAL BONDING (TOE BENCH DETAIL).
19. PRIOR TO FILL PLACEMENT, EXISTING SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6". MOISTURE ADJUSTED TO OPTIMUM, AND RE-COMPACTED TO THE SAME DENSITY AND MOISTURE CONTENT AS THE PROPOSED FILL.
20. IMPORTED SELECT FILL IS DEFINED AS UNIFORMLY BLENDED SANDY CLAY TO CLAYEY SAND WITH A LIQUID LIMIT (LL) OF LESS THAN 35 PERCENT AND A PLASTICITY INDEX (PI) OF BETWEEN 6 AND 15. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE THICKNESS. ROCK FILL LIFTS SHALL BE NO GREATER THAN 36". FILLS WILL BE FREE OF OBJECTIONABLE MATERIAL, NOTHING LARGER THAN 6". LIFT THICKNESSES WILL BE 12" MAXIMUM, NOTHING FROZEN OR WET.
21. FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698), IN CONJUNCTION WITH THE COMPACTING OPERATION, FILL MATERIAL SHALL BE BROUGHT TO OPTIMUM MOISTURE CONTENT.



**AMERICAN
PETROLEUM
PARTNERS**

OPERATOR

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

LIMITS OF DISTURBANCE

PAD	12.41 ACRES
ROAD	2.59 ACRES
TOTAL	14.7 ACRES
PER LAND OWNER	ACRES
APP MINERALS, LLC	15.0



AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES. ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

DATE: 5-31-2018 TICKET #: 1615162355

06/14/2019

SOILS CLASSIFICATION

QmD: CULLEOKA-DORMANT COMPLEX, 15 TO 25% SLOPES

DsE: DORMANT-CULLEOKA COMPLEX, 35 TO 70% SLOPES, VERY STONY

CUT & FILL

	WELL PAD	ACCESS DRIVE	SITE
CUT (SOIL)	+ 99,245 CY	+ 1,214 CY	+100,459 CY
FILL	- 75,976 CY	- 5,501 CY	- 81,477 CY
NET	+ 23,269 CY	- 4,287 CY	= 18,982 CY
STONE	+ 5,557 CY	+ 754 CY	= 6,311 CY
TOPSOIL	- 5,303 CY	- 855 CY	= -6,158 CY
NET	+ 23,523 CY	- 4,388 CY	= 19,135 CY

NOTES:

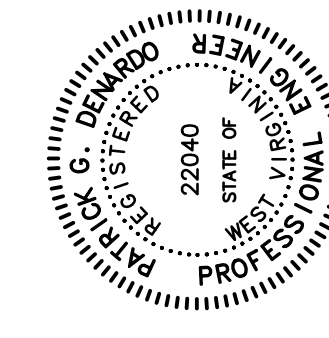
1. THE TOPSOIL DEPTH FOR THE ACCESS DRIVE IS APPROXIMATELY 6.0". THE TOPSOIL DEPTH FOR THE PAD IS ASSUMED 6.0".
2. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY EXISTING GRADES AND VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
3. THE EXCESS TOPSOIL AND SUBSOIL WILL BE STORED IN THE DESIGNATED FILL STOCKPILES AS SHOWN ON THE PLANS.

LIST OF DRAWINGS

- 1 OF 16 COVER SHEET & GENERAL NOTES
- 2 OF 16 ENLARGED LAYOUT PLAN
- 3 OF 16 EROSION & SEDIMENT CONTROL PLAN
- 4 OF 16 WV DEP ERS PLAN
- 5 OF 16 OXEN DRIVE PROFILE
- 6 OF 16 OXEN DRIVE PROFILE
- 7 OF 16 ACCESS DRIVE PROFILE
- 8 OF 16 CROSS SECTIONS PLAN VIEW
- 9 OF 16 CROSS SECTIONS - ACCESS DRIVE
- 10 OF 16 CROSS SECTIONS - PAD
- 11 OF 16 RECLAMATION PLAN
- 12 OF 16 EVACUATION ROUTE PLAN
- 13 OF 16 EVACUATION ROUTE PLAN - USGS
- 14 OF 16 NOTES & DETAILS
- 15 OF 16 DETAILS
- 16 OF 16 DETAILS



FOR RETTEW ASSOCIATES BY: [Signature]



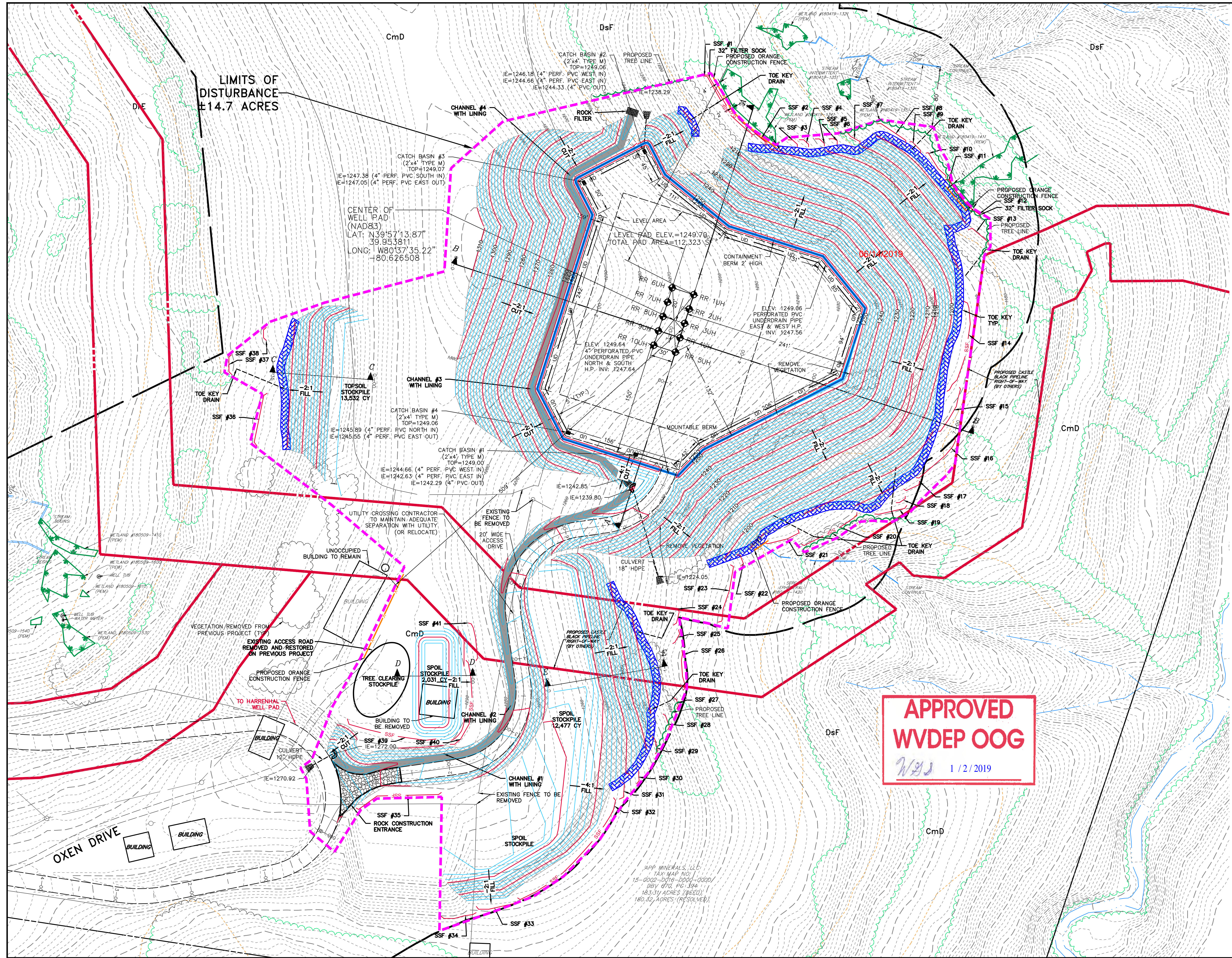
MANAGER: PATRICK DEMARDO, P.E.
DESIGN BY: CHKO BY: MEI
PDZ
DRAWN BY: CHKO BY: MEI
PDZ
SURV. CHIEF: FIELDBOOK NO. DATA COLLECTOR

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

RETTEW
RETTEW Associates, Inc.
One Robison Plaza, Suite 200, Pittsburgh, PA 15205
Tel: (412) 446-1725
Fax: (412) 446-1725
Email: info@rettew.com
Website: www.rettew.com
Engineers • Planners • Surveyors • Landscape Architects
Environmental Consultants

COVER SHEET & GENERAL NOTES
FOR
DIRE WOLF - RIVERRUN PAD
WEBSTER TAX DISTRICT MARSHALL COUNTY, WV

DATE: 06/05/2018
SHEET NO. 1 OF 16
DWG. NO. 109562001



LIMITS OF DISTURBANCE
±14.7 ACRES

CATCH BASIN #2
(2'x4' TYPE M)
TOP=1249.06
IE=1246.18 (4" PERF. PVC WEST IN)
IE=1244.66 (4" PERF. PVC EAST IN)
IE=1244.33 (4" PVC OUT)

CATCH BASIN #3
(2'x4' TYPE M)
TOP=1249.07
IE=1247.38 (4" PERF. PVC SOUTH IN)
IE=1247.05 (4" PERF. PVC EAST OUT)

CATCH BASIN #4
(2'x4' TYPE M)
TOP=1249.06
IE=1245.89 (4" PERF. PVC NORTH IN)
IE=1245.55 (4" PERF. PVC EAST OUT)

CATCH BASIN #1
(2'x4' TYPE M)
TOP=1249.00
IE=1244.66 (4" PERF. PVC WEST IN)
IE=1242.63 (4" PERF. PVC EAST IN)
IE=1242.29 (4" PVC OUT)

LEVEL PAD
ELEV.=1249.70
TOTAL PAD AREA=112,323 SF

APPROVED
WVDEP OOG
WJS 1 / 2 / 2019

LEGEND

EXISTING PAVEMENT	
PROPOSED TREE LINE	
LIMITS OF DISTURBANCE	
PROPOSED CONTAINMENT BERM	
ROCK CONSTRUCTION ENTRANCE	
EXISTING WETLAND	
EXISTING STREAM	
EXISTING UTILITY POLE	
EXISTING OVERHEAD ELECTRIC LINE	
EXISTING STRUCTURE	
WETLAND A01	

- NOTES:**
- CONTRACTOR SHALL FIELD LOCATE ALL PROPERTY LINES, AND SHALL NOT CROSS EXCEPT WHERE SHOWN.
 - REFER TO SHEETS 12 THROUGH 14 FOR EROSION CONTROLS.
 - CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN.
 - ALL WORK SHALL STAY OUT OF BED AND BANKS OF ALL STREAMS UNLESS PREVIOUSLY AUTHORIZED.
 - REFER TO SHEET 15 FOR CHANNEL LININGS.

FOR RETTEW ASSOCIATES BY: AREFS:

MANAGER:	PATRICK DEMARDO, P.E.	CHKD BY:	MEI
DESIGN BY:	PDZ	CHKD BY:	MEI
DRAWN BY:	PDZ	CHKD BY:	MEI
SURV. CHIEF:	FIELDBOOK NO.	DATE:	2/1/2018
	DNA COLLECTOR	REVISION:	1 19/12/2018 PER WV DEP COMMENTS
			2 11/21/2018 PER WV DEP COMMENTS

CLIENT: AMERICAN PETROLEUM PARTNERS OPERATING, LLC
4600 J. BARRY COURT
CANONSBURG, PA 15317

PROFESSIONAL ENGINEER: PATRICK DEMARDO, P.E. No. 22040
STATE OF PENNSYLVANIA

SCALE: 1"=60'

DATE: 06/05/2018

SHEET NO.: 3 OF 16

DWG. NO.: 109562001

WEBSTER TAX DISTRICT MARSHALL COUNTY, WV

RETTEW
Engineers • Planners • Surveyors • Landscape Architects
Environmental Consultants

RETTEW Associates, Inc.
One Robinson Plaza, Suite 200, Pittsburgh, PA 15205
Phone: (412) 446-1722 Fax: (412) 446-1725
Email: info@rettew.com
Website: www.rettew.com

EROSION & SEDIMENT CONTROL PLAN
FOR
DIRE WOLF-RIVERRUN PAD
WEBSTER TAX DISTRICT MARSHALL COUNTY, WV