



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Monday, September 27, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC
6031 WALLACE RD. EXTENSION

WEXFORD, PA 15090

Re: Permit Modification Approval for J OSBORN HSOP16 202
47-033-05950-00-00

Change in Lateral Trajectory/ Lease Line

ARSENAL RESOURCES LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is written over a printed name and title.

James A. Martin
Chief

Operator's Well Number: J OSBORN HSOP16 202
Farm Name: JUDY M OSBORN (LE) (JUDY M OSBORN IRREV)
U.S. WELL NUMBER: 47-033-05950-00-00
Horizontal 6A New Drill
Date Modification Issued: 9/27/2021

Promoting a healthy environment.

10/01/2021



September 16, 2021

WVDEP
Office of Oil and Gas
ATTN: Laura Adkins
601 57th Street SE
Charleston, WV 25304

*CK# 117497
Amt \$ 5150
Date 9/16/21*

RE: J Osborn HSOP 16 202, API# 47-033-05950 – Expedited modification due to spacing changes.

Dear Laura:

Enclosed please find the modification for the J Osborn HSOP 16 202, (API# 47-033-05950). This permit is being modified due to adjusting the well bore spacing and moving it 300' to the west. The well head locations remained the same. This well was originally permitted to 24,052' this well is now permitted to 25,877 due the shift but it's the same leases as well.

Included are the following update forms:

- Plat
- WW-6B, Well Work Permit Application/Casing
- Well Bore Schematic
- WW-6A1, Lease Information
- Roadway Letter
- Site Safety Plan
- AOR

RECEIVED
Office of Oil and Gas

SEP 20 2021

WV Department of
Environmental Protection

Should you have any questions or need any additional information, please feel free to contact me by phone or email. Thanks!

Sincerely,

Ross Schweitzer
Sr. Director of Drilling, Construction and Permitting
1-724-584-1192 mobile
rschweitzer@arsenalresources.com



Click or tap to enter a date.

Alliance Petroleum Corporation
4150 Beldon Village Ave. NW Ste 410
Canton, OH 44718-2553

RE: J Osborn HSOP 16 Well Pad

Dear Sir/Madam,

Arsenal Resources has developed a Marcellus pad, J Osborn HSOP16 202 well, located in Harrison County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,110 TVD) and existing conventional natural gas wells included in the attached well list for which you are believed to be the operator.

Arsenal Resources anticipates conducting hydraulic fracturing at the J Osborn HSOP16 202 well, during the First Quarter of 2022. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our newly planned wells. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and Arsenal Resources if any changes in water, gas production, pressure or other anomalies are identified.

Please feel free to contact me at 724-940-1218 with any questions or comments. You may also contact the WV Office of Oil and Gas at 304-926-0499.

Sincerely,

Ross Schweitzer
Sr. Director of Drilling, Construction and Permitting



Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near Arsenal Resources hydraulic fracturing in Harrison County, WV prior to hydraulic fracturing at JOsbornHSOP16 Well Number 202.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 7,200' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Benson formations (approximately 4,700' TVD).

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

1. Communications with Conventional Operators.

Arsenal Resources, using available data (WV Geological Survey, WVDEP Website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in Attachment A.

Upon approval of this plan, Arsenal Resources will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in Attachment B.

The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to Arsenal Resources and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and ARSENAL RESOURCES if any changes in water, gas production, pressure or other anomalies are identified.



2. Reporting

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

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

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

1) Well Operator: Arsenal Resources 494519412 Harrison Simpson Rosemont
Operator ID County District Quadrangle

2) Operator's Well Number: J Osborn HSOP16 202 Well Pad Name: J Osborn HSOP16

3) Farm Name/Surface Owner: Judy M. Osborn (LE) Public Road Access: 77/4 Moss Run (Coplin Run)

4) Elevation, current ground: 1164 Elevation, proposed post-construction: 1164'

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):
Target Formation- Marcellus Shale, Top- 7422 ft, Bottom- 7522 ft, Anticipated Thickness- 100 ft, Associated Pressure- 0.5 psi/ft

8) Proposed Total Vertical Depth: 7,510 ft

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 25,877 ft

11) Proposed Horizontal Leg Length: 17,670 ft

12) Approximate Fresh Water Strata Depths: 43 ft, 258 ft, 356 ft, 539 ft, 725 ft

13) Method to Determine Fresh Water Depths: offsetting wells reported water depths (033-02179, 033-02507, 033-02975)

14) Approximate Saltwater Depths: None Expected

15) Approximate Coal Seam Depths: Harlem - 145', Bakerstown - 227', Brush Creek - 325', Upper Froeport - 399', Lower Froeport - 437', Upper Kittanning - 527', Middle Kittanning - 590', Lower Kittanning - 611'

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

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

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

RECEIVED
Office of Oil and Gas

SEP 20 2021

WV Department of
Environmental Protection

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	26	Used		102.7	80	80 ✓	CTS
Fresh Water	13.375	New	J-55	54.5	800	800 ✓	CTS
Coal							
Intermediate	9.625	New	J-55	40	2,500	2,500 ✓	CTS
Production	5.5	New	P-110	20	25,877	25,877 ✓	TOC @ 2,350 ✓
Tubing							
Liners							

*SDW -
9/14/2021*

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	26	36			0	Class A, 3% CaCl2	1.2
Fresh Water	13.375	17.5	0.38	2,730	900	Class A, 3% CaCl2	1.2
Coal							
Intermediate	9.625	12.25	0.395	3,950	1,500	Class A, 3% CaCl2	1.29
Production	5.5	8.5-8.75	0.415	14,360 ✓	9,500 ✓	Class A/50:50 Poz	1.29/1.34
Tubing					5,000		
Liners					N/A		

PACKERS

Kind:				
Sizes:				
Depths Set:				

RECEIVED
Office of Oil and Gas
SEP 20 2021

WV Department of
Environmental Protection

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

The well will be started with a conductor rig drilling a 36" hole to Conductor programmed depth then running 26" casing and circulate cement back to surface. The conductor rig will move out and the drilling rig will move in and rig up. The drilling rig will then spud a 17 1/2" hole and drill to fresh water casing (Surface) to the programmed depth, Run 13- 3/8" casing and cement to surface. The rig will continue drilling a 12- 1/4" intermediate hole to the programmed depth, run 9- 5/8" casing and cement to surface. The rig will then continue to drill an 8- 3/4" hole to a designed KOP. We will then start drilling the curve and lateral section to the programmed total measured depth, run 5 1/2" casing and cement according to the program.

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

The well will be completed using a plug and perforation method and stimulated with a slickwater and sand slurry. The anticipated maximum rate will be 90 bpm and the maximum pressure will be 9,500 psi.

RECEIVED
Office of Oil and Gas

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.26

SEP 20 2021

22) Area to be disturbed for well pad only, less access road (acres): 6.63

WV Department of
Environmental Protection

23) Describe centralizer placement for each casing string:

26"- No centralizers 13 3/8" – one bow spring centralizer on every other joint 9 5/8" – one bow spring centralizer every third joint from TD to surface 5 1/2" – one semi rigid centralizer on every joint from TD of casing to end of curve. Then every other joint to KOP. Every third joint from KOP to 1,600'; there will be no centralizers from 1,600 to surface.

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

26" will be circulated to surface. The 13 3/8" casing will be cemented to surface with Class A cement and no greater than 3% CaCl (calcium chloride). The 9 5/8" casing will be cemented to surface with Class A cement, & no greater than 3% calcium chloride. The 5 1/2" production string will be cemented back to 1,350' (+/- 150' above the casing shoe for the 9 5/8") with Class A and 50/50 Poz cement retarded (to extend pumpability) cellophane flaked for fluid loss, Bentonite gel as an extender (increased pumpability and fluid loss), a defoaming agent to decrease cement foaming during mixing to insure the cement is of proper weight to placement and possibly gypsum gas blocking additive to aid in blocking/gas migration (in combination with other additive mentioned here, helps cement achieve a "right angle" set) during the plastic phase of the cement set-up.

25) Proposed borehole conditioning procedures:

Top holes will be drilled with fresh water KOP. At KOP, the wellbore will be loaded with synthetic oil based mud, barite-weighted mud system with such properties as to build a filter-cake on the face of the bore-hole. This will provide lubricity as well as stabilizing the well bore. We will begin rotating the drill string and mud will be circulated upon reaching TD until no further cuttings are observed coming across the shaker screens. Once clean mud is circulated back to surface, we will pull three stands of drill pipe, load the hole, pull three strands and load the hole. The weight indicator on the rig will be monitored for any occurrences of drag and if any are noticed, we will re-run the previous stand of pipe pulled across and circulate 2x bottoms up while watching shakers for signs of cuttings. Once at the base curve, the string will be continuously rotated while pumping 2x bottoms up. We will pull three stands and fill the hole until we reach the vertical section of the well.

*Note: Attach additional sheets as needed.

Area of Review Report - J Osborn HSOP 16 Pad, 202 Lateral, Harrison County, WV

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
Long 1	033-03978	Alliance Petroleum Corporation	Existing	39.218479	-80.202826	4604	Fifth, Riley, Benson	NA
Johnson-Lang 1	033-00458	Delta Drilling	Plugged - 1971	39.226725	-80.208028	2577	Fifth	NA

RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 WV Department of
 Environmental Protection



ARSENAL
R E S O U R C E S

SITE SAFETY PLAN

J OSBORN HSOP16 WELL PAD, #202

911 Address:

**2687 Coplin Run Rd
Bridgeport, WV 26330**

*SDW
9/14/2021*

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

10/01/2021

BHL is located on topo map 12,173 feet south of Latitude: 39° 15' 00"
 SHL is located on topo map 9,370 feet south of Latitude: 39° 17' 30"

BHL is located on topo map 10,221 feet west of Longitude: 80° 10' 00"
 SHL is located on topo map 2,709 feet west of Longitude: 80° 12' 30"

	SURFACE OWNER	DIST-TM/PAR
1	JUDY M. OSBORN (LE) (JUDY M. OSBORN IRREVOCABLE TRUST)	15-330/5
2	CHARLES THOMAS DAVIS II, ET AL	15-330/4
3	CAROLYN S. HARRON	15-330/3
4	CHARLES E. REED 1/2 INTEREST GERALD W. BURNER ET AL 1/2 INTEREST	15-330/25
5	MICHAEL A. & ROBERTA OSBORN	15-350/4
6	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3
7*	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3.3
8*	GORDON F. & DONNA R. OSBORN (BRIAN MATTHEW OSBORN)	15-350/3.1
9	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/16.1
10	DONALD N. & CYNTHIA J. McHENRY	15-350/16.4
11	DONALD N. & CYNTHIA J. McHENRY	15-350/16.2
12	CHRISTOPHER L. HUMMEL	15-350/16.5
13	JASON J. POTH	15-350/16.9
14	CHARLES W. CLEVINGER IRR TRUST C/O MARY M. TUCKER	15-350/24
15	CHARLES W. CLEVINGER IRR TRUST	15-370/13
16	CHARLES W. CLEVINGER IRR TRUST	15-370/12
17	SHAWN R. NEWBROUGH	15-370/21
18	JOHN JAMES JONES C/O ANTHONY JONES	15-370/27
19	CHARLES A. & JOYCE G. MATHENY	15-370/28.1
20	CHARLES A. & JOYCE G. MATHENY	15-370/28

	LESSOR	DIST-TM/PAR
A	GOBEL OSBORN, ET AL	15-330/5
B	GEORGE T. FARIS, ET AL	15-330/3
C	CHARLES THOMAS DAVIS, ET UX	15-330/4
D	JOHN B. WEBB, ET AL	15-330/25
E	MICHAEL A. OSBORN ET UX	15-350/4
F	NORVIL D. LANTZ	15-350/5
G	XTO ENERGY INC.	15-350/3
		15-350/3.1
		15-350/3.3
H	ALDERSON BROADBENT COLLEGE & AMP FUND II LP	15-350/6
J	REBECCA A. COMPTON; JAMES MICHAEL COMPTON & JENNIFER NOR COMPTON	15-350/16.4
		15-350/16.2
		15-350/16.8
		15-350/16.5
K	GRAFTON COAL COMPANY	15-350/25.3
		15-350/25.1
		15-350/25.2
L	CLARENCE E. CLEVINGER IRR TRUST	15-350/24
M	W. R. JOHNSON ET AL	15-370/13
		15-370/29
		15-371/7.1
		15-371/7
N	N. D. PARKS ET AL	15-370/21
P	JOHN JAMES JONES	P/O 15-370/27
Q	JOHN JAMES JONES AUDREY U. DAVIS ET UX.	P/O 15-370/27
		15-370/28.1
		15-370/28



THRASHER

THE THRASHER GROUP, INC.
 600 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M) N:4346590.450 E:567465.400 NAD83, WV NORTH (FT) N:279788.999 E:1785230.413

APPROX. LANDING POINT
UTM 17-NAD83(M) N:4346181.210 E:566999.360 NAD83, WV NORTH (FT) N:276504.370 E:1763579.370

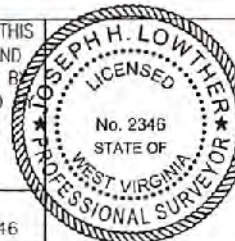
BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M) N:4341121.820 E:568841.100 NAD83, WV NORTH (FT) N:261802.070 E:1769446.800

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

FILR #: J OSBORN HSOP 16 202
 DRAWING #: J OSBORN HSOP 16 202
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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.: _____ L.L.S.: P.S. No. 2346



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



DATE: SEPTEMBER 13, 2021
 OPERATOR'S WELL #: J OSBORN HSOP 16 202
 API WELL #: 47 33
 STATE COUNTY PERMIT

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

WATERSHED: SIMPSON CREEK ELEVATION: 1163.30±
 COUNTY/DISTRICT: HARRISON / SIMPSON QUADRANGLE: ROSEMONT, WV 7.5'
 SURFACE OWNER: JUDY M OSBORN (LE) (JUDY M OSBORN IRREVOCABLE TRUST) ACREAGE: 70.00±
 OIL & GAS ROYALTY OWNER: GOBEL OSBORN, ET AL ACREAGE: 1324.06±
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

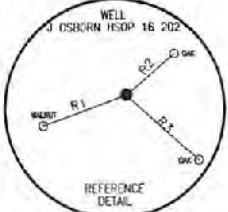
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: (LATERAL) 7,510± TMD: 25,877±
 WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT GARY SHORT
 Address 6031 WALLACE ROAD EXTENSION, SUITE 300 Address 633 WEST MAIN ST.
 City WEXFORD State PA Zip Code 15090 City BRIDGEPORT State WV Zip Code 26330

RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 Department of Environmental Protection

See Attachment A

J OSBORN HSOP 16 202

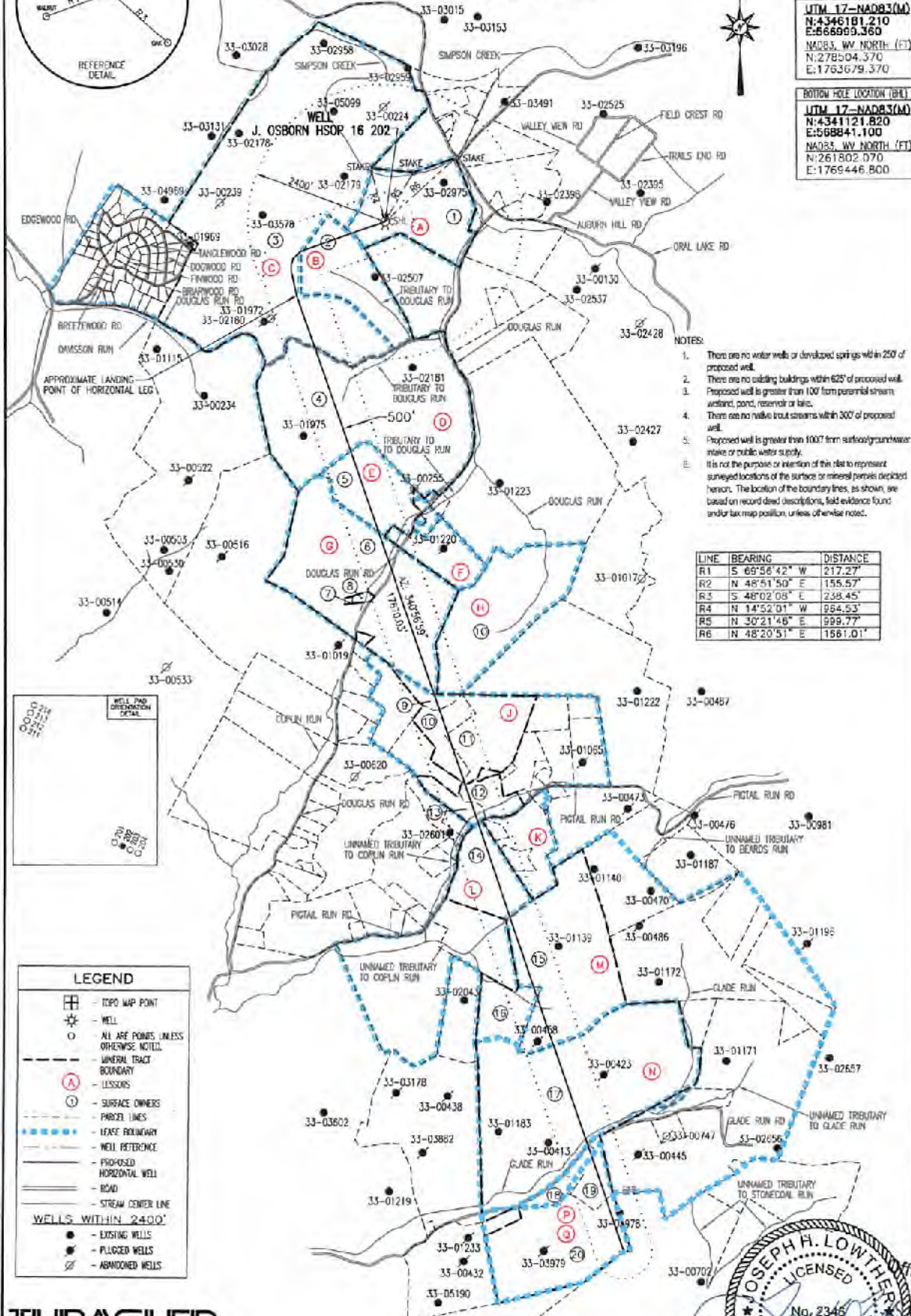
PAGE 2 OF 2



SURFACE HOLE LOCATION (SHL)	
UTM 17-NAD83(M)	N:4346580.450
	E:567465.400
NAD83, WV NORTH (FT)	
	N:279788.999
	E:1765230.413

APPROX. LANDING POINT	
UTM 17-NAD83(M)	N:4346181.210
	E:566899.360
NAD83, WV NORTH (FT)	
	N:278504.370
	E:1763079.370

BOTTOM HOLE LOCATION (BHL)	
UTM 17-NAD83(M)	N:4341121.820
	E:568841.100
NAD83, WV NORTH (FT)	
	N:261802.070
	E:1769446.800



- NOTES:
1. There are no water wells or developed springs within 250' of proposed well.
 2. There are no existing buildings within 625' of proposed well.
 3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 4. There are no viable trout streams within 300' of proposed well.
 5. Proposed well is greater than 1000' from surface groundwater intake or public water supply.
- It is not the purpose or intention of this site to represent surveyed locations of the surface or mineral parcels depicted herein. 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.

LINE	BEARING	DISTANCE
R1	S 69°56'42" W	217.27'
R2	N 48°51'50" E	155.57'
R3	S 48°02'08" E	238.45'
R4	N 14°52'01" W	954.53'
R5	N 30°21'46" E	999.77'
R6	N 48°20'51" E	1561.01'



LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- LESSORS
- SURFACE OWNERS
- PARCEL LINES
- LEASE BOUNDARY
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 2400'

- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

THRASHER
 THE THRASHER GROUP, INC.
 500 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

SEPTEMBER 13, 2021



RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 Department of Environmental Protection

As per Attachment A

10/01/2021

BHL is located on topo map 12,173 feet south of Latitude: 39° 15' 00"
 SHL is located on topo map 9,370 feet south of Latitude: 39° 17' 30"

BHL is located on topo map 10,221 feet west of Longitude: 80° 10' 00"
 SHL is located on topo map 2,709 feet west of Longitude: 80° 12' 30"

	SURFACE OWNER	DIST-TM/PAR
1	JUDY M. OSBORN (LE) (JUDY M. OSBORN IRREVOCABLE TRUST)	15-330/5
2	CHARLES THOMAS DAVIS II, ET AL	15-330/4
3	CAROLYN S. HARRON	15-330/3
4	CHARLES E. REED 1/2 INTEREST GERALD W. BURNER ET AL 1/2 INTEREST	15-330/25
5	MICHAEL A. & ROBERTA OSBORN	15-350/4
6	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3
7*	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3.3
8*	GORDON F. & DONNA R. OSBORN (BRIAN MATTHEW OSBORN)	15-350/3.1
9	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/16.1
10	DONALD N. & CYNTHIA J. McHENRY	15-350/16.4
11	DONALD N. & CYNTHIA J. McHENRY	15-350/16.2
12	CHRISTOPHER L. HUMMEL	15-350/16.5
13	JASON J. POIH	15-350/16.9
14	CHARLES W. CLEVINGER IRR TRUST C/O MARY M. TUCKER	15-350/24
15	CHARLES W. CLEVINGER IRR TRUST	15-370/13
16	CHARLES W. CLEVINGER IRR TRUST	15-370/12
17	SHAWN R. NEWBROUGH	15-370/21
18	JOHN JAMES JONES C/O ANTHONY JONES	15-370/27
19	CHARLES A. & JOYCE G. MATHENY	15-370/28.1
20	CHARLES A. & JOYCE G. MATHENY	15-370/28

	LESSOR	DIST-TM/PAR
A	GOBEL OSBORN, ET AL	15-330/5
B	GEORGE T. FARIS, ET AL	15-330/3
C	CHARLES THOMAS DAVIS, ET UX	15-330/4
D	JOHN B. WEBB, ET AL	15-330/25
E	MICHAEL A. OSBORN ET UX	15-350/4
F	NORVIL D. JANTZ	15-350/5
G	XTO ENERGY INC.	15-350/3
		15-350/3.1
		15-350/3.3
H	ALDERSON BROADJUS COLLEGE & AMP FUND III, LP	15-350/6
J	REBECCA A. COMPTON, JAMES MICHAEL COMPTON & JENNIFER NOR COMPTON	15-350/16.1
		15-350/16.4
		15-350/16.2
		15-350/16.8
		15-350/16.5
K	GRAFTON COAL COMPANY	15-350/25.1
		15-350/25.2
L	CLARENCE E. CLEVINGER IRR TRUST	15-350/24
M	W. R. JOHNSON ET AL	15-370/13
		15-370/29
		15-371/7.1
		15-371/7.2
N	N. D. PARKS ET AL	15-370/21
P	JOHN JAMES JONES	P/O 15-370/22
Q	JOHN JAMES JONES AUDREY U. DAVIS ET UX.	P/O 15-370/27
		15-370/28.1
		15-370/28



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4346580.450
 E:567485.400
 NAD83, WV NORTH (FT)
 N:279768.959
 E:1765230.413

APPROX LANDING POINT
 UTM 17-NAD83(M)
 N:4346181.210
 E:566999.360
 NAD83, WV NORTH (FT)
 N:278504.370
 E:1763679.370

BOTTOM HOLE LOCATION (BH1)
 UTM 17-NAD83(M)
 N:4341121.820
 E:568841.100
 NAD83, WV NORTH (FT)
 N:261802.070
 E:1769446.900

THRASHER

THE THRASHER GROUP, INC.
 500 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-824-4108

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

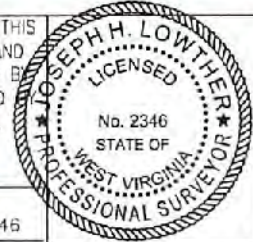
FILE #: J OSBORN HSOP 16 202
 DRAWING #: J OSBORN HSOP 16 202
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'
 I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: [Signature]
 R.P.E.: _____ L.L.S.: P.S. No. 2346

DATE: SEPTEMBER 13, 2021
 OPERATOR'S WELL #: J OSBORN HSOP 16 202
 API WELL #: 47 33
 STATE COUNTY PERMIT

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

WATERSHED: SIMPSON CREEK ELEVATION: 1163.30'±
 COUNTY/DISTRICT: HARRISON / SIMPSON QUADRANGLE: ROSEMONT, WV 7.5'
 SURFACE OWNER: JUDY M OSBORN (LE) (JUDY M OSBORN IRREVOCABLE TRUST) ACREAGE: 70.00±
 OIL & GAS ROYALTY OWNER: GOBEL OSBORN, ET AL ACREAGE: 1324.06±
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: (LATERAL) TVD: 7,510'± TMD: 25,877'±
 WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT GARY SHORT
 Address 6031 WALLACE ROAD EXTENSION, SUITE 300 Address 833 WEST MAIN ST.
 City WEXFORD State PA Zip Code 15090 City BRIDGEPORT State WV Zip Code 26330



RECEIVED
 Office of Oil and Gas

SEP 20 2021

WV Department of
 Environmental Protection

10/01/2021

BHL is located on topo map 12,173 feet south of Latitude: 39° 15' 00"
 SHL is located on topo map 9,370 feet south of Latitude: 39° 17' 30"

BHL is located on topo map 10,221 feet west of Longitude: 80° 10' 00"
 SHL is located on topo map 2,709 feet west of Longitude: 80° 12' 30"

	SURFACE OWNER	DIST-TM/PAR
1	JUDY M. OSBORN (LE) (JUDY M. OSBORN IRREVOCABLE TRUST)	15-330/5
2	CHARLES THOMAS DAVIS II, ET AL	15-330/4
3	CAROLYN S. HARRON	15-330/3
4	CHARLES E. REED 1/2 INTEREST GERALD W. BURNER ET AL 1/2 INTEREST	15-330/25
5	MICHAEL A. & ROBERTA OSBORN	15-350/4
6	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3
7*	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/3.3
8*	GORDON F. & DONNA R. OSBORN (BRIAN MATTHEW OSBORN)	15-350/3.1
9	GORDON F. OSBORN (LE) (BRIAN MATTHEW OSBORN)	15-350/16.1
10	DONALD N. & CYNTHIA J. McHENRY	15-350/16.4
11	DONALD N. & CYNTHIA J. McHENRY	15-350/16.2
12	CHRISTOPHER L. HUMMEL	15-350/16.5
13	JASON J. POTH	15-350/16.9
14	CHARLES W. CLEVINGER IRR TRUST C/O MARY M. TUCKER	15-350/24
15	CHARLES W. CLEVINGER IRR TRUST	15-370/13
16	CHARLES W. CLEVINGER IRR TRUST	15-370/12
17	SHAWN R. NEWBROUGH	15-370/21
18	JOHN JAMES JONES C/O ANTHONY JONES	15-370/27
19	CHARLES A. & JOYCE G. MATHENY	15-370/28.1
20	CHARLES A. & JOYCE G. MATHENY	15-370/28

	LESSOR	DIST-TM/PAR
A	GOBEL OSBORN, ET AL	15-330/5
B	GEORGE T. FARIS, ET AL	15-330/3
C	CHARLES THOMAS DAVIS, ET UX	15-330/4
D	JOHN B. WEBB, ET AL	15-330/25
E	MICHAEL A. OSBORN ET UX	15-350/4
F	NORVIL D. LANTZ	15-350/5
G	XTO ENERGY INC.	15-350/3
		15-350/3.1
		15-350/3.3
H	ALDERSON BROADDUS COLLEGE & AMP FUND III, LP	15-350/6
J	REBECCA A. COMPTON; JAMES MICHAEL COMPTON & JENNIFER NOR COMPTON	15-350/16.1
		15-350/16.4
		15-350/16.2
		15-350/16.8
		15-350/16.5
K	GRAFTON COAL COMPANY	15-350/25.3
		15-350/25.1
		15-350/25.2
L	CLARENCE E. CLEVINGER IRR TRUST	15-350/24
M	W. R. JOHNSON ET AL	15-370/13
		15-370/29
		15-371/7.1
		15-371/7
N	N. D. PARKS ET AL	15-370/21
P	JOHN JAMES JONES	P/O 15-370/27
Q	JOHN JAMES JONES AUDREY U. DAVIS ET UX.	P/O 15-370/27
		15-370/28.1
		15-370/28



SURFACE HOLE LOCATION (SHL)	
UTM 17-NAD83(M)	
N:4346580.450	
E:567465.400	
NAD83, WV NORTH (FT)	
N:279788.999	
E:1785230.413	

APPROX. LANDING POINT	
UTM 17-NAD83(M)	
N:4346181.210	
E:566999.360	
NAD83, WV NORTH (FT)	
N:278504.370	
E:1763679.370	

BOTTOM HOLE LOCATION (BHL)	
UTM 17-NAD83(M)	
N:4341121.820	
E:568841.100	
NAD83, WV NORTH (FT)	
N:261802.070	
E:1769446.800	

THRASHER

THE THRASHER GROUP, INC.
 600 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

SEE PAGE 2 FOR PLAT DUE TO LENGTH OF LATERAL

FILE #: J OSBORN HSOP 16 202
 DRAWING #: J OSBORN HSOP 16 202
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: Joseph H. Lowther

R.P.E.:

L.L.S.: P.S. No. 2346



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



DATE: SEPTEMBER 13, 2021
 OPERATOR'S WELL #: J OSBORN HSOP 16 202
 API WELL #: 47 33 05750
 STATE COUNTY PERMIT

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

WATERSHED: SIMPSON CREEK ELEVATION: 1163.30'±

COUNTY/DISTRICT: HARRISON / SIMPSON QUADRANGLE: ROSEMONT, WV 7.5'

SURFACE OWNER: JUDY M OSBORN (LE) (JUDY M OSBORN IRREVOCABLE TRUST) ACREAGE: 70.00±

OIL & GAS ROYALTY OWNER: GOBEL OSBORN, ET AL ACREAGE: 1324.06±

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

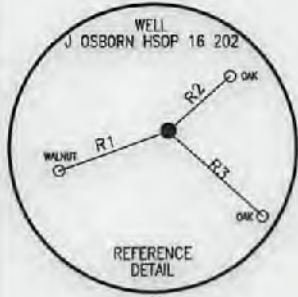
10/01/2021

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: (LATERAL)TVD: 7,510'± TMD: 25,877'±

WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT GARY SHORT
 Address 6031 WALLACE ROAD EXTENSION, SUITE 300 Address 633 WEST MAIN ST.
 City WEXFORD State PA Zip Code 15090 City BRIDGEPORT State WV Zip Code 26330

J OSBORN HSOP 16 202

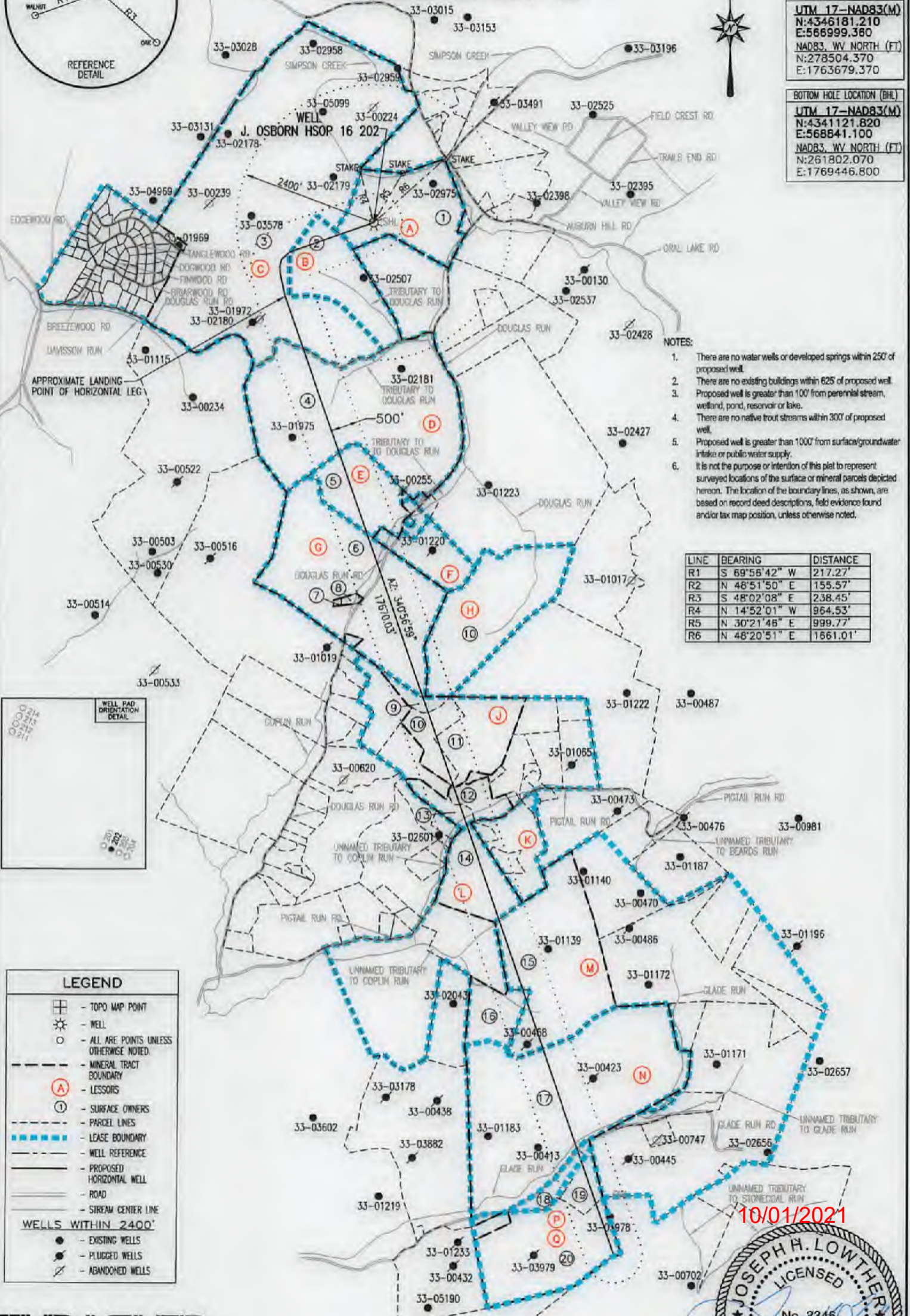
PAGE 2 OF 2



SURFACE HOLE LOCATION (SHL)
 UTM 17-NAD83(M)
 N:4346580.450
 E:567465.400
 NAD83, WV NORTH (FT)
 N:279788.999
 E:1765230.413

APPROX. LANDING POINT
 UTM 17-NAD83(M)
 N:4346181.210
 E:566999.380
 NAD83, WV NORTH (FT)
 N:278504.370
 E:1763679.370

BOTTOM HOLE LOCATION (BHL)
 UTM 17-NAD83(M)
 N:4341121.820
 E:568841.100
 NAD83, WV NORTH (FT)
 N:261802.070
 E:1769446.800



NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. 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.

LINE	BEARING	DISTANCE
R1	S 69°56'42" W	217.27'
R2	N 48°51'50" E	155.57'
R3	S 48°02'08" E	238.45'
R4	N 14°52'01" W	964.53'
R5	N 30°21'46" E	999.77'
R6	N 48°20'51" E	1861.01'



LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- LESSORS
- SURFACE OWNERS
- PARCEL LINES
- LEASE BOUNDARY
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE

WELLS WITHIN 2400'

- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

10/01/2021



THRASHER
 THE THRASHER GROUP, INC.
 600 WHITE OAKS BLVD.
 BRIDGEPORT, WV 26330
 PHONE 304-624-4108

SEPTEMBER 13, 2021



People Powered. Asset Strong.

September 11, 2021

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

RE: Ownership of Roadways; J Osborn HSOP 16 201 -204 Wells

Dear Mr. Martin:

In preparation of filing a permit application for the above referenced well, Arsenal Resources has conducted a thorough title examination in order to determine the ownership of the oil and gas underlying roadways crossed by the proposed well(s). If owned in fee by the West Virginia Department of Transportation, Division of Highways, a lease covering its interest in the roadway or roadways has been properly obtained and provided in the application materials. If a right of way only, the oil and gas underlying such roadway or roadways is owned by the adjoining landowners and is also covered by the leaseholds provided in the application materials.

If you have any questions, concerns or need further information, please do not hesitate to contact me at the address listed below.

Sincerely,

A handwritten signature in cursive script that reads "Jon Sheldon".

Jon Sheldon
Chief Operating Officer

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

6031 Wallace Road Ext, Suite 300
Wexford, PA 15090
P: 724-940-1100
F: 800-428-0981
www.arsenalresources.com

10/01/2021

WW-6A1
(5/13)

Operator's Well No. J Osborn HSOP 16 202

**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				

RECEIVED
Office of Oil and Gas

SEP 20 2021

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

WV Department of
Environmental Protection

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: Arsenal Resources
 By: Jon Sheldon *Jon Sheldon*
 Its: COO

Attachment to WW-6A1, J Osborn HSOP 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
A (00003703)	J. Earl Teter, Widower; Irvin D. Teter and Vera Teter, his wife	Petro-Lewis Corp.	12.50%	1062/405	116
	Petro-Lewis Corp.	Partnership Properties Co.		1072/213	
	Partnership Properties Co.	Eastern American Energy Corporation		1124/449	
	Eastern American Energy Corporation	Energy Corporation of America		59/879	
	Energy Corporation of America	Greylock Production, LLC		1603/1121	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
A (00003704)	Gobel Osborn and Audrey Osborn, his wife and Judy Nicholson and Gary Nicholson, her husband	Petroleum Development Corporation	12.50%	1074/420	72
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
B (00008352)	George T. Faris and Nell Steele Faris, his wife, Rachel F. Shuttleworth, widow, Florence Faris, single, and Nell Faris Shinn, widow	Delaware Gas Company	12.50%	820/128	1562
	Delaware Gas Company	Union Carbide Corporation		845/221	
	Union Carbide Corporation	Creslenn Oil Company		897/286 898/258	
	Creslenn Oil Company	Deminex Oil Corporation		Delaware Secretary of State	
	Deminex Oil Corporation	Deminex U.S. Oil Company		Delaware Secretary of State	
	Deminex U.S. Oil Company	Southwest Exploration and Acquisition Company		Delaware Secretary of State	
	Southwest Exploration and Acquisition Company	Southwest Royalties		Delaware Secretary of State	
	Southwest Royalties	HG Energy II Appalachia, LLC		1605/194	
	HG Energy II Appalachia, LLC	Mar Key, LLC		1611/595	
	C (00008233)	Charles Thomas Davis and Deborah A. Davis, husband and wife	NRM Petroleum Corporation	14.00%	1097/75

RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 Environmental Protection Department of

Attachment to WW-6A1, J Osborn HSOP 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
	NRM Petroleum Corporation	Natural Resources Management Corporation		Unrecorded (WV Secretary of State)	
	Natural Resources Management Corporation	Edisto Resources Corporation		Unrecorded (WV Secretary of State)	
	NRM Operating Company, LP, Edisto Resources, NRM 1984-B Income, Ltd., and NRM 1984-D Income, Ltd.	Eastern American Energy Corporation		1216/558	
	Eastern American Energy Corporation	Energy Corporation of America		1441/1003 (also 59/879)	
	Energy Corporation of America	Greylock Production, LLC		1603/1121	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
C (00008232)	G. Lester Douglas and Mariellen Douglas, husband and wife	NRM Petroleum Corporation	12.50%	1097/77	47
	NRM Petroleum Corporation	Natural Resources Management Corporation		Unrecorded (WV Secretary of State)	
	Natural Resources Management Corporation	Edisto Resources Corporation		Unrecorded (WV Secretary of State)	
	NRM Operating Company, LP, Edisto Resources, NRM 1984-B Income, Ltd., and NRM 1984-D Income, Ltd.	Eastern American Energy Corporation		1216/558	
	Eastern American Energy Corporation	Energy Corporation of America		1441/1003 (also 59/879)	
	Energy Corporation of America	Greylock Production, LLC		1603/1121	
	Greylock Production, LLC	Mar Key, LLC		1607/855	
D (00008340)	John B. Webb and Tensie Webb, his wife & William W. Webb and Opal Webb, his wife	Delaware Gas Company	13.00%	820/19	188
	Delaware Gas Company	Union Carbide Corporation		845/221	
	Union Carbide Corporation	Creslenn Oil Company		897/286 898/258	

RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 WV Department of
 Environmental Protection

Attachment to WW-6A1, J Osborn HSOP 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
	Creslenn Oil Company	Deminex Oil Corporation		Delaware Secretary of State	
	Deminex Oil Corporation	Deminex U.S. Oil Company		Delaware Secretary of State	
	Deminex U.S. Oil Company	Southwest Exploration and Acquisition Company		Delaware Secretary of State	
	Southwest Exploration and Acquisition Company	Southwest Royalties		Delaware Secretary of State	
	Southwest Royalties	HG Energy II Appalachia, LLC		1605/194	
	HG Energy II Appalachia, LLC	Mar Key, LLC		1611/595	
E (00007247)	Michael A. and Roberta Osborn, husband and wife ✓	Mar Key, LLC	14.00%	1579/637	41.03
F (00008141)	Norvil D. Lantz, single ✓	Mar Key, LLC	12.50%	1609/139	23.75
F (00008130)	Tammy Carson, married ✓	Mar Key, LLC	12.50%	1609/131	23.75
F (00008131)	Terry J. Kelly, married ✓	Mar Key, LLC	12.50%	1609/133	23.75
F (00008142)	Donna Smith, married ✓	Mar Key, LLC	12.50%	1609/141	23.75
F (00008150)	Michal W. Goforth, widow ✓	Mar Key, LLC	12.50%	1610/713	23.75
F (00008151)	Clifford Aaron Harris, married ✓	Mar Key, LLC	12.50%	1610/715	23.75
F (00008152)	Kelly Klepaldo, married ✓	Mar Key, LLC	12.50%	1610/717	23.75
F (00008153)	June Medina, widow ✓	Mar Key, LLC	12.50%	1610/719	23.75
F (00008154)	Stanley Moore, married ✓	Mar Key, LLC	12.50%	1610/721	23.75
F (00008155)	April L. Strickland, married ✓	Mar Key, LLC	12.50%	1610/723	23.75
F (00008404)	Judy M. Osborn ✓	Mar Key, LLC	12.50%	1621/919	23.75
F (00008416)	Karen Sue Whyte ✓	Mar Key, LLC	12.50%	1624/1091	23.75

RECEIVED
 Office of Oil and Gas
 SEP 20 2021
 Department of Environmental Protection

Attachment to WW-6A1, J Osborn HSOP 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
F (00008474)	Gordon F. Osborn ✓	Mar Key, LLC	12.50%	1624/1094	23.75
F (00008540)	Ernest Osborn ✓	Mar Key, LLC	12.50%	1626/1150	23.75
G (00008601)	XTO Energy, Inc. ✓	Mar Key, LLC	14.50%	1628/983	139
H (00008356)	Trustees of Alderson Broaddus University, f/k/a Alderson Broaddus College ✓	Mar Key, LLC	13.00%	1616/1169	86
H (00006680)	DWG Oil and Gas Acquisitions, LLC ✓	Mar Key, LLC	15.00%	1561/493	86
J (00008178)	Rebecca A. Compton ✓	Mar Key, LLC	14.00%	1610/832	164.48
J (00008179)	James Michael Compton ✓	Mar Key, LLC	14.00%	1610/834	164.48
J (00008180)	Jennifer Nora Corton, fka Jennifer Nora Compton ✓	Mar Key, LLC	14.00%	1610/836	164.48
K (00008183)	Grafton Coal Company ✓	Mar Key, LLC	14.00%	1610/838	29
L (00007235)	Charles W. Cleavenger Irrevocable Trust dated July 15, 2015 ✓	Mar Key, LLC	14.00%	1578/1072	205.85
M (00004238)	W.R. Johnson and Andra Johnson, his wife and Hursey R. Lang and Hazel M. Lang, his wife	Union Carbide Corporation	12.50%	852/587	466
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		925/522	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 (977/168)	
	Petroleum Corporation of America	Petroleum Development Corporation		977/153	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

RECEIVED
 Office of Oil and Gas
SEP 20 2021
 WV Department of Environmental Protection

Attachment to WW-6A1, J Osborn HSOP 202

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
N (00004299)	ND Parks and Oliva Parks, his wife, James C. Parks and Abbie Y. Parks, his wife	Union Carbide Corporation	12.50%	852/563	250
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		919/740	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 (977/168)	
	Petroleum Corporation of America	Petroleum Development Corporation		977/153	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
P (00007752)	John James Jones, married	Mar Key, LLC	12.50%	1587/510	5.75
Q (00004070)	Audry U Davis and Lucille P. Davis, his wife	Petroleum Development Corporation	12.50%	1244/556	96.5
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

RECEIVED
 Office of Oil and Gas
SEP 20 2021
 WY Department of
 Environmental Protection

West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

SENECA-UPSHUR PETROLEUM, LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC Limited Liability Company	2/12/1973		2/12/1973	Domestic	Profit			

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock
Charter County		Control Number	0
Charter State	WV	Excess Acres	0
At Will Term	A	Member Managed	MBR
At Will Term Years		Par Value	
Authorized Shares		Young Entrepreneur	Not Specified

RECEIVED
Office of Oil and Gas

SEP 20 2021

WV Department of
Environmental Protection

Addresses	
Type	Address
Designated Office Address	633 W. MAIN STREET BRIDGEPORT, WV, 26330
Mailing Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Notice of Process Address	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302

Principal Office Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

Officers	
Type	Name/Address
Member	RIVER RIDGE ENERGY, LLC 6031 WALLACE ROAD EXTENSION, SUITE 300 WEXFORD, PA, 15090
Organizer	TAMMY J OWEN 300 SUMMERS STREET, STE 1500 PO BOX 2107 CHARLESTON, WV, 25328 USA
Type	Name/Address

DBA			
DBA Name	Description	Effective Date	Termination Date
KEYSPAN PRODUCTION & DEVELOPMENT COMPANY	TRADENAME	6/11/2004	
NATIONAL GRID	TRADENAME	8/17/2007	
NATIONAL GRID PRODUCTION AND DEVELOPMENT	TRADENAME	12/5/2008	5/9/2012
DBA Name	Description	Effective Date	Termination Date

Name Changes	
Date	Old Name
3/28/2011	SENECA-UPSHUR PETROLEUM, INC.
Date	Old Name

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

Date	Amendment
6/15/2016	AMENDMENT FILED CHANGING FROM A MANAGER-MANAGED CO. TO A MEMBER-MANAGED CO. >> REMOVED ROBERT KOZEL & STEPHEN A. BISHOP AS MANAGERS & ADDED SOLE MEMBER (C IMAGE).
3/28/2011	CONVERSION: FROM SENECA-UPSHUR PETROLEUM, INC. TO SENECA-UPSHUR PETROLEUM, LLC
7/25/1997	MERGER: MERGING LITTLE SWISS DRILLING COMPANY, A QUAL WV CORP AND PALACE VALLEY PETROLEUM COMPANY, A QUAL WV CORP WITH AND INTO SENECA-UPSHUR PETROLEUM, INC., A QUAL WV CORP, THE SURVIVOR.
Date	Amendment

Annual Reports

Filed For

2021

2020

2019

2018

2017

2016

2015

2014

2013

2012

2011

2010

2009

2008

2007

2006

2005

2004

2003

2002

2001

2000

1999

1998

Date filed

For more information, please contact the Secretary of State's Office at 304-558-8000.

Saturday, September 11, 2021 — 9:02 PM

© 2021 State of West Virginia

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

West Virginia Secretary of State — Online Data Services**Business and Licensing**

Online Data Services Help

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

MAR KEY LLC

Organization Information								
Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
LLC Limited Liability Company	7/11/2011		7/11/2011	Domestic	Profit			

Organization Information			
Business Purpose	2111 - Mining, Quarrying, Oil & Gas Extraction - Oil and Gas Extraction - Crude Oil and Natural Gas Extraction		Capital Stock
Charter County		Control Number	99Q1F
Charter State	WV	Excess Acres	
At Will Term	A	Member Managed	MBR
At Will Term Years		Par Value	
Authorized Shares		Young Entrepreneur	Not Specified

Addresses	
Type	Address
Designated Office Address	633 W. MAIN STREET BRIDGEPORT, WV, 26330
Mailing Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Notice of Process Address	CORPORATION SERVICE COMPANY 209 WEST WASHINGTON STREET CHARLESTON, WV, 25302

RECEIVED
Office of Oil and Gas

SEP 20 2021

WV Department of
Environmental Protection

Principal Office Address	6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090 USA
Type	Address

Officers	
Type	Name/Address
Member	ARSENAL RESOURCES DEVELOPMENT LLC 6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090
Organizer	PAUL M HERZING 560 EPSILON DR. PITTSBURGH, PA, 15238 USA
Type	Name/Address

Annual Reports	
Filed For	
2021	
2020	
2019	
2018	
2017	
2016	
2015	
2014	
2013	
2012	
Date filed	

For more information, please contact the Secretary of State's Office at 304-558-8000.

Saturday, September 11, 2021 — 9:01 PM

© 2021 State of West Virginia

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Mountaineer Keystone LLC, a West Virginia limited liability company ("Mountaineer Keystone"), PDC Mountaineer, LLC, a Delaware limited liability company ("PDC"), and PDC Mountaineer Holdings, LLC, a Delaware limited liability company ("PDC Holdings"), is effective as of October 15, 2014. (the "Effective Date") and sets forth the terms pursuant to which Mountaineer Keystone will drill, complete and operate the Wells (as defined below) on behalf of PDC and PDC Holdings. Mountaineer Keystone, PDC, and PDC Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

1. **Term:** This Agreement is effective from the Effective Date until terminated by Mountaineer Keystone on the one hand or PDC and PDC Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
2. **Authorization to Operate:** PDC and PDC Holdings authorize Mountaineer Keystone to undertake and perform, on PDC and PDC Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by PDC or PDC Holdings. PDC, PDC Holdings and Mountaineer Keystone are affiliates with a common parent. Mountaineer Keystone was formed to operate oil and gas leasehold acreage held by PDC, PDC Holdings and certain other affiliates. Mountaineer Keystone agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by PDC or PDC Holdings from time to time as directed by PDC or PDC Holdings (collectively, the "Wells").
3. **No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
4. **Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

RECEIVED
Office of Oil and Gas


SEP 20 2021

WV Department of
Environmental Protection


10/01/2021

IN WITNESS WHEREOF, Mountaineer Keystone, PDC, and PDC Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.


MOUNTAINEER KEYSTONE LLC

By: 
Name: Robert Keel
Title: CEO

PDC MOUNTAINEER, LLC

By: 
Name: Robert Keel
Title: CEO

PDC MOUNTAINEER HOLDINGS, LLC

By: 
Name: Robert Keel
Title: CEO

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

Agreement to Drill, Complete and Operate Oil & Gas Wells

This Agreement to Drill, Complete and Operate Oil & Gas Wells (this "Agreement"), by and among Arsenal Resources LLC, a West Virginia limited liability company ("Arsenal"), River Ridge Energy, LLC, a Delaware limited liability company ("River Ridge"), and River Ridge Energy, Holdings, LLC, a Delaware limited liability company ("River Ridge Holdings"), is effective as of March 1, 2017. (the "Effective Date") and sets forth the terms pursuant to which Arsenal will drill, complete and operate the Wells (as defined below) on behalf of River Ridge and River Ridge Holdings. Arsenal, River Ridge, and River Ridge Holdings are each a "Party" and are collectively the "Parties". In consideration of the foregoing and the respective agreements hereinafter set forth and the mutual benefits to be derived therefrom, the Parties, intending to be legally bound, hereby agree as follows:

- 1. Term:** This Agreement is effective from the Effective Date until terminated by Arsenal on the one hand or River Ridge and River Ridge Holdings on the other hand with 30 days' written notice to the other Party or Parties, as applicable (the "Term").
- 2. Authorization to Operate:** River Ridge and River Holdings authorize Arsenal to undertake and perform, on River Ridge and River Ridge Holdings behalf, all operations, including without limitation permit applications, well pad preparation, drilling and completing wells, and marketing gas, oil and other hydrocarbons therefrom with respect to all oil and gas wells to be drilled on oil and gas leasehold acreage held by River Ridge or River Ridge Holdings. River Ridge, River Ridge Holdings and Arsenal are affiliates with a common parent. Arsenal was formed to operate oil and gas leasehold acreage held by River Ridge, River Ridge Holdings and certain other affiliates. Arsenal agrees that it shall, in a good and workmanlike manner and in accordance with industry standards as they prevail in the area, drill, complete and operate oil and gas wells on leasehold acreage owned by River Ridge or River Ridge Holdings from time to time as directed by River Ridge or River Ridge Holdings (collectively, the "Wells").
- 3. No Third Party Beneficiary:** This Agreement is for the benefit of the Parties and is not for the benefit of any third party.
- 4. Counterparts:** This Agreement may be simultaneously executed in several counterparts and via facsimile or similar electronic transmittal, each of which shall be deemed to be an original and taken together shall constitute one and the same instrument.

[Signature Page Follows]

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

10/01/2021

IN WITNESS WHEREOF, Arsenal, River Ridge, and River Ridge Holdings have caused their duly authorized representatives to execute this Agreement as of the Effective Date.

ARSENAL RESOURCES LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE ENERGY, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RIVER RIDGE HOLDINGS, LLC

By: Joel E. Symonds
Name: Joel E. Symonds
Title: Vice President - Land

RECEIVED
Office of Oil and Gas
SEP 20 2021
WV Department of
Environmental Protection

10/01/2021



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Expedited Modification H6A Horizontal Well Work Permit (API: 47-033-05950)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Wed, Sep 29, 2021 at 8:39 AM

To: rschweitzer@arsenalresources.com, Samuel D Ward <samuel.d.ward@wv.gov>, dpalmer@harrisoncountywv.com, mcopeland@harrisoncountywv.com

I have attached a copy of the newly issued well permit number "J OSBORN HSOP16 202", API (47-033-05950). This will serve as your copy.

If you have any questions, then please contact us here at the Office of Oil and Gas.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115


(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

|

3 attachments

 **IR-26 Blank.pdf**
152K

 **47-033-05950 - mod.pdf**
2353K

 **33-05950 SSP signed.pdf**
1467K

10/01/2021