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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, July 2, 2025  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC  
6031 WALLACE RD EXT., SUITE 101

WEXFORD, PA 15090

Re: Permit Modification Approval for J Osborn 213  
47-033-06086-00-00

**Lateral Extension**

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.

James A. Martin  
Chief

Operator's Well Number: J Osborn 213  
Farm Name: Judy M Osborn (LE) (Judy M Osborn Irrevocable Trust)  
U.S. WELL NUMBER: 47-033-06086-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 07/02/2025

Promoting a healthy environment.

07/04/2025

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: 213 Well Pad Name: J Osborn
- 3) Farm Name/Surface Owner: Judy M Osborn (LE) Public Road Access: 77/4 Moss Run (Coplin Run)
- 4) Elevation, current ground: 1164 ft Elevation, proposed post-construction: 1164 ft
- 5) Well Type (a) Gas X Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_  
(b) If Gas Shallow X Deep \_\_\_\_\_  
Horizontal X
- 6) Existing Pad: Yes or No Yes
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus Shale, Top 7130ft, Base 7230 ft, Anticipated Thickness 100 ft, Associated Pressure 0.5 psi/ft
- 8) Proposed Total Vertical Depth: 7220 ft
- 9) Formation at Total Vertical Depth: Marcellus Shale
- 10) Proposed Total Measured Depth: 19,924 ft
- 11) Proposed Horizontal Leg Length: 12,134 ft
- 12) Approximate Fresh Water Strata Depths: 174', 232', 260', 372', 488', 609', 680'
- 13) Method to Determine Fresh Water Depths: Offsetting well reported water depths (033-05931, 033-05941, 033-5949, 033-05950)
- 14) Approximate Saltwater Depths: None expected
- 15) Approximate Coal Seam Depths: Bakerstown - 226', Brush Creek - 326', U Freeport - 401', L Freeport - 441', U Kittanning - 531', M Kittanning - 596', L Kittanning - 616'
- 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 X

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

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*Jeff A Propat*

5-19-2025

WW-6B  
(04/15)

API NO. 47- 033 - 06086

OPERATOR WELL NO. 213

Well Pad Name: J Osborn

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	24	New	H-40	94	80	80 ✓	CTS
Fresh Water	13.375	New	J-55	54.5	800	800 ✓	CTS
Coal							
Intermediate	9.625	New	J-55	40	1,500	1,500 ✓	CTS
Production	5.5	New	P-110	23	19,924	19,924 ✓	TOC @ 1,350
Tubing							
Liners							

*Jeff A Propst ✓ 5-19-2025*

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	24	36			0	Class A/L, 3% CaCl <sub>2</sub>	1.2
Fresh Water	13.375	17.5	0.38	2,730	900	Class A/L, 3% CaCl <sub>2</sub>	1.2
Coal							
Intermediate	9.625	12.25	0.395	3,950	1,500	Class A/L, 3% CaCl <sub>2</sub>	1.29
Production	5.5	8.5-8.75	0.415	14,520	9,500	Class A/L, Poz	1.29/1.34
Tubing					5,000		
Liners							

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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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 24" 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 11,500 psi.

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

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

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23) Describe centralizer placement for each casing string:

24" - 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 1,700'; there will be no centralizers from 1,700' to surface.

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

24" will be circulated to surface. The 13 3/8" casing will be cemented to surface with Class A/L cement and no greater than 3% CaCl<sub>2</sub> (calcium chloride). The 9 5/8" casing will be cemented to surface with Class A/L 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/L 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 stands 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.

*Jeff A Propst*

5-19-2025

Well Location Plat  
Page 4 Cross Section

Arsenal Resources  
Applicant / Well Operator Name

DEP ID#

J Osborn HSOP 16 Pad  
Harrison County, WV  
GL 1164' & 27' KB @ 1191.00usft

Well #  
213



WELL PLAN

Operator Name: **Arsenal Resources**  
Well/Farm Name: **J Osborn HSOP 16 Pad**

DEP  
Use  
Only

Permit #

NOTES:

Name	TVD	Latitude	Longitude	TMD
J.O. HSOP-213_SHL	0.00	39.266445	-80.218117	0.00
J.O. HSOP-213_KOP	900.00	39.266445	-80.218117	900.00
J.O. HSOP-213_LP	7220.00	39.266621	-80.223099	7790.12
J.O. HSOP-213_PBHL	7220.00	39.298027	-80.237398	19923.91

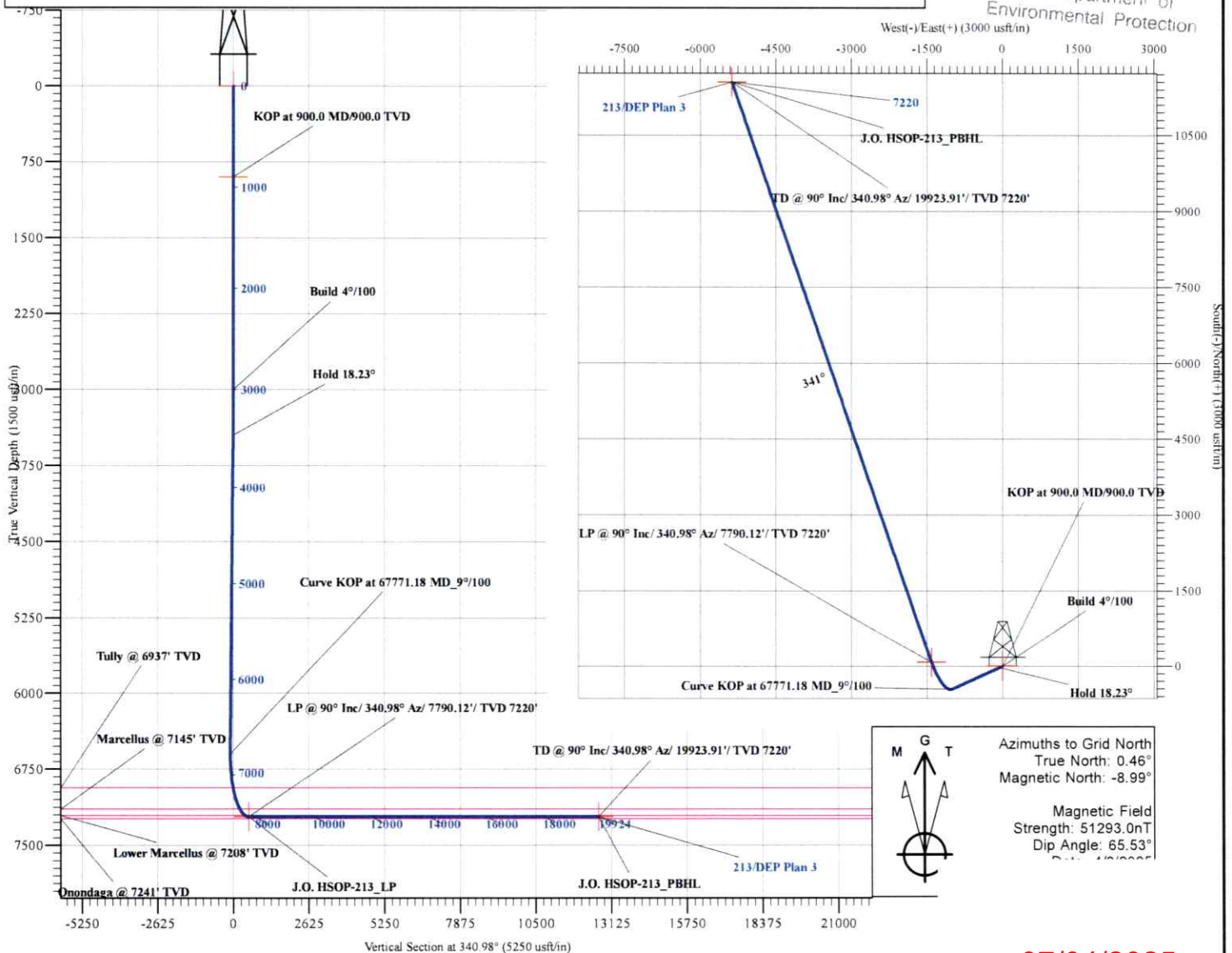
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP at 900.0 MD/900.0 TVD
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	Build 4°/100
3000.00	0.00	0.00	3000.00	0.00	0.00	0.00	0.00	0.00	Hold 18.23°
3455.81	18.23	245.52	3448.16	-29.80	-65.45	4.00	245.52	-6.84	Curve KOP at 67771.18 MD_9°/100
6771.18	18.23	245.52	6597.08	-459.57	-1009.51	0.00	0.00	-105.48	LP @ 90° Inc/ 340.98° Az/ 7790.12' TVD 7220'
7790.12	90.00	340.98	7220.00	75.45	-1410.01	9.00	95.18	530.85	TD @ 90° Inc/ 340.98° Az/ 19923.91' TVD 7220'
19923.91	90.00	340.98	7220.00	11546.78	-5364.45	0.00	0.00	12664.65	

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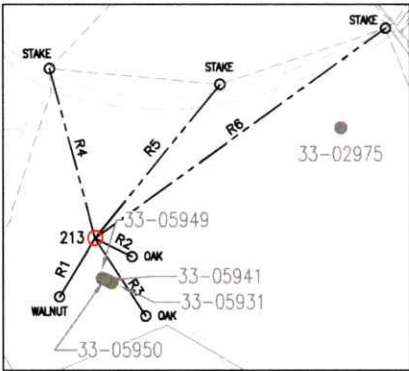
**Area of Review Report - J Osborn Pad, 213 Lateral, Harrison County, WV**

Well Name	API Number	Operator Name / Address	Well Type	Latitude	Longitude	Total Depth	Perforated Formation(s)	Producing Zones not Perforated
J Osborn HSOP 16 204	033-05931	Arsenal Resources, LLC	Existing	39.265907	-80.217852	24662	Marcellus Shale	NA
J Osborn HSOP 16 203	033-05941	Arsenal Resources, LLC	Existing	39.265924	-80.2179	24873	Marcellus Shale	NA
J Osborn HSOP 16 201	033-05949	Arsenal Resources, LLC	Existing	39.265958	-80.217997	25871	Marcellus Shale	NA
J Osborn HSOP 16 202	033-05950	Arsenal Resources, LLC	Existing	39.265941	-80.217949	25505	Marcellus Shale	NA
Gaylord/G Flowers 1	033-03028	Diversified Production, LLC	Existing	39.273905	-80.227182	4250	Benson	NA
Rt 76 Associates 1	033-03037	Diversified Production, LLC	Existing	39.279576	-80.228666	4349	Benson	NA
Elliott Thrasher 1	033-03778	Petroleum Development Corp	Cancelled	39.285231	-80.233332	NA	NA	NA
Belasco Mobile Homes 1	033-03188	Diversified Production, LLC	Existing	39.291612	-80.234641	4538	Benson	NA

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BHL is located on topo map 12,793 feet south of Latitude: 39°20'00"  
SHL is located on topo map 9,164 feet south of Latitude: 39°17'30"



LINE	BEARING	DISTANCE
R1	S 31°25'37" W	302.82'
R2	S 63°28'24" E	182.59'
R3	S 33°03'50" E	409.67'
R4	N 15°03'12" W	774.95'
R5	N 39°05'51" E	874.61'
R6	N 54°11'19" E	1584.04'

J OSBORN HSOP 16 213		
SURFACE HOLE LOCATION (SHL)		
UTM 17-NAD83 (M):	NAD83, WV NORTH (FT)	NAD83, GEOGRAPHIC
NORTHING: 4346636.238	NORTHING: 279972.886	LAT. (N) 39.266445
EASTING: 567450.391	EASTING: 1765184.207	LONG. (W) 80.218117
LANDING POINT LOCATION (LPL)		
UTM 17-NAD83 (M):	NAD83, WV NORTH (FT)	NAD83, GEOGRAPHIC
NORTHING: 4346652.104	NORTHING: 280048.410	LAT. (N) 39.266621
EASTING: 567020.475	EASTING: 1763774.355	LONG. (W) 80.223098
BOTTOM HOLE LOCATION (BHL)		
UTM 17-NAD83 (M):	NAD83, WV NORTH (FT)	NAD83, GEOGRAPHIC
NORTHING: 4350126.958	NORTHING: 291519.669	LAT. (N) 39.298027
EASTING: 565757.502	EASTING: 1759819.758	LONG. (W) 80.237398

- 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.
  7. Well Spot Circle & Topo Mark Scale is 1"=2000'.



**THRASHER**

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



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SEE PAGE 2 FOR PLAT

SEE PAGE 3 FOR SURFACE OWNER TABLE

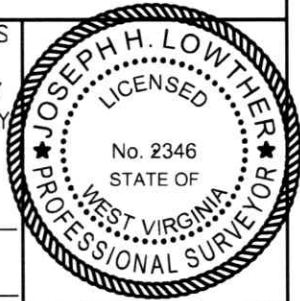
FILE #: J OSBORN HSOP 16 213  
DRAWING #: J OSBORN HSOP 16 213  
SCALE: AS SHOWN  
MINIMUM DEGREE OF ACCURACY: 1/2500  
PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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:

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: MAY 15, 2025  
OPERATOR'S WELL #: J OSBORN HSOP 16 213  
API WELL #: 47 033 06086  
STATE COUNTY PERMIT

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

WATERSHED: SIMPSON CREEK ELEVATION: 1163.90'±

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: 1,399.52±

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

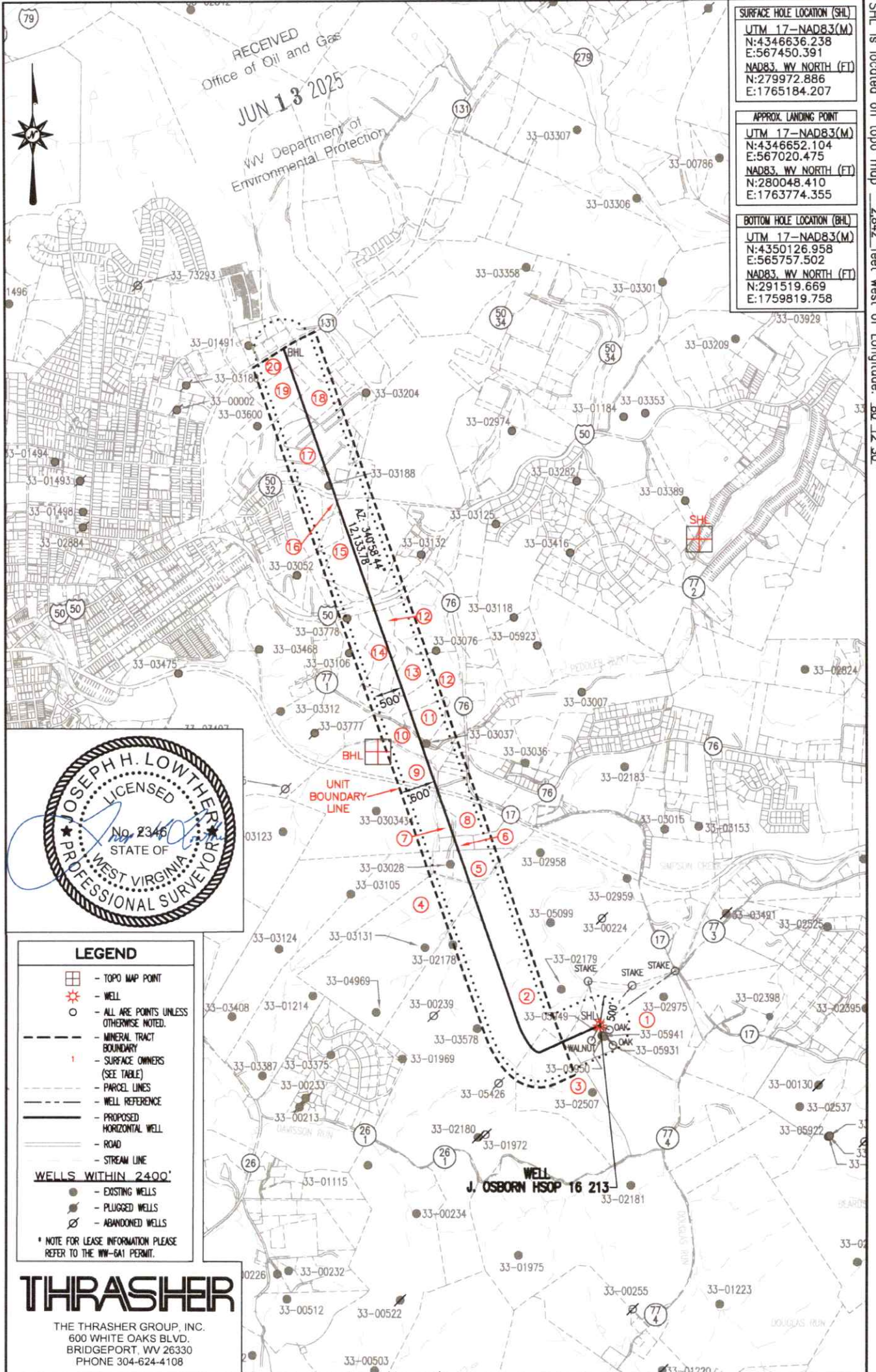
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7220'± TWD / 19,924' TMD

WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT ERIC MORRIS  
Address 6031 WALLACE ROAD EXTENSION, SUITE 101 Address 633 WEST MAIN ST.  
City WEXFORD State PA Zip Code 15090 City BRIDGEPORT State WV Zip Code 26330

07/04/2025



BHL is located on topo map 12,793 feet south of Latitude: 39°20'00"  
SHL is located on topo map 9,164 feet south of Latitude: 39°17'30"



SURFACE HOLE LOCATION (SHL)	
UTM 17-NAD83(M)	N:4346636.238
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	E:1765184.207
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UTM 17-NAD83(M)	N:4346652.104
	E:567020.475
NAD83, WV NORTH (FT)	N:280048.410
	E:1763774.355
BOTTOM HOLE LOCATION (BHL)	
UTM 17-NAD83(M)	N:4350126.958
	E:565757.502
NAD83, WV NORTH (FT)	N:291519.669
	E:1759819.758

BHL is located on topo map 8,226 feet west of Longitude: 80°12'30"  
SHL is located on topo map 2,842 feet west of Longitude: 80°12'30"

**LEGEND**

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT BOUNDARY
- SURFACE OWNERS (SEE TABLE)
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM LINE

**WELLS WITHIN 2400'**

- EXISTING WELLS
- PLUGGED WELLS
- ABANDONED WELLS

\* NOTE FOR LEASE INFORMATION PLEASE REFER TO THE WV-6A1 PERMIT.

**THRASHER**

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


DATE: MAY 15, 2025		FILE #: J OSBORN HSOP 16 213
OPERATOR'S WELL #: J OSBORN HSOP 16 213		DRAWING #: J OSBORN HSOP 16 213
API WELL #: 47 033 06086		SCALE: 1" = 2000'
STATE COUNTY PERMIT	DESIGNATED AGENT ERIC MORRIS	
WELL OPERATOR ARSENAL RESOURCES	Address 633 WEST MAIN ST.	
Address 6031 WALLACE ROAD EXTENSION, SUITE 101	City BRIDGEPORT State WV Zip Code 26330	
City WEXFORD State PA Zip Code 15090		



J OSBORN WELL 213			
ID	SURFACE OWNER	DIST-TM-PAR	ACREAGE
1	OSBORN JUDY M (LE) (JUDY M OSBORN IRREVOCABLE	15-0330-0005	56.67
2	HARRON CAROLYN S	15-0330-0003	355.02
3	DAVIS CHARLES THOMAS II	15-0330-0004	41.84
2	HARRON CAROLYN S	15-0330-0003	355.02
4	WHYTE KAREN SUE	15-0330-0001	75.43
5	BENZAKEIN MARY ANNE	15-0310-0062	8.54
6	NUTTER CHARLES SCOTT & LEIGH ANN	15-0310-0060	3.79
7	NUTTER CHARLES SCOTT & LEIGH ANN	15-0310-0042	3.11
8	BENZAKEIN MARY ANNE	15-0310-0043	11.25
RXR	CSX RAILROAD	N/A	N/A
9	KINGERY SARAH H	15-0310-0018	22.22
10	SNIDER DANNY M & ALESIA J	15-0310-0017	13.06
ROAD	LANGTOWN ROAD	N/A	N/A
11	G A L LAND COMPANY	15-0310-0003-0004	7.56
12	G A L LAND COMPANY	15-0310-0003	38.79
13	G A L LAND COMPANY	15-0310-0003-0006	7.77
12	G A L LAND COMPANY	15-0310-0003	38.79
14	G A L LAND COMPANY	15-0310-0003-0005	6.48
12	G A L LAND COMPANY	15-0310-0003	38.79
ROAD	US ROUTE 50	N/A	N/A
15	BENEDUM AIRPORT AUTHORITY	16-0310-0004	23.83
16	HARRISON COUNTY DEVELOPMENT AUTHORITY	15-0290-0044	1.68
ROAD	AIRPORT ROAD	N/A	N/A
17	BELASCO MOBILE HOME SALES	15-0290-0029	54.25
18	CITY OF BRIDGEPORT	16-0290-0029-0003	9.27
19	CITY OF BRIDGEPORT	16-0290-0028	15.03
20	BELASCO STEPHANIE ANN & JUSTIN DUANE MOLINA	15-0290-0029-0007	8.47

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

DATE: MAY 15, 2025		FILE #: J OSBORN HSOP 16 213 07/04/2025
OPERATOR'S WELL #: J OSBORN HSOP 16 213		DRAWING #: J OSBORN HSOP 16 213
API WELL #: 47 033 08086		SCALE: N/A
STATE COUNTY PERMIT		
WELL OPERATOR ARSENAL RESOURCES	STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS	DESIGNATED AGENT ERIC MORRIS
Address 6031 WALLACE ROAD EXTENSION, SUITE 101		Address 633 WEST MAIN ST.
City WEXFORD State PA Zip Code 15090		City BRIDGEPORT State WV Zip Code 26330

## Attachment to WW-6A1, J OSBORN HSOP 213

Letter Designation/ Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
✓ 1(00003703)	J. Earl Teter, Widower; Irvin D. Teter and Vera Teter, his wife	Petro-Lewis Corp.	12.5+%	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	
1 (00003704)	Gobel Osborn and Audrey Osborn, his wife and Judy Nicholson and Gary Nicholson, her husband	Petroleum Development Corporation	12.5+%	1074/420	72
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
✓ 2 (00008352)	George T. Faris ET AL	Delaware Gas Company	12.5+%	820/128	1,529
	Delaware Gas Company	Creslenn Oil Company		897/279	
	Creslenn Oil Company	Deminex Oil Corporation		see Delaware Secretary of State site for name change documents	
	Deminex Oil Corporation	Deminex U.S. Oil Company		see Delaware Secretary of State site for name change documents	
	Deminex U.S. Oil Company	Southwest Exploration And Acquisition Company		see Delaware Secretary of State site for name change documents	

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JUN 13 2025  
WV Department of  
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## Attachment to WW-6A1, J OSBORN HSOP 213

Letter Designation/ Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Acreage
	Southwest Exploration And Acquisition Company	Southwest Royalties Inc		see Delaware Secretary of State site for name change documents	
	Southwest Royalties Inc	HG Energy II Appalachia		1605/194	
	HG Energy II Appalachia	Mar Key, LLC		1611/595	
✓ 3 (0008233)	Charles Thomas Davis ET UX	NRM Petroleum Corporation	12.5+%	1097/75	46
	NRM PETROLEUM CORPORATION	NRM 80-2 LTD		1159/9	
	NRM 80-2 LTD	NRM OPERATING COMPANY		1165/229	
	NRM OPERATING COMPANY ET AL	EASTERN AMERICAN ENERGY CORPORATION		1216/558	
	EASTERN AMERICAN ENERGY CORPORATION	ENERGY CORPORATION OF AMERICA		1441/1003	
	ENERGY CORPORATION OF AMERICA	GREYLOCK PRODUCTION LLC		1603/1121	
	GREYLOCK PRODUCTION LLC	MAR KEY LLC		1607/0855	
✓ 3 (00008232)	G Lester Douglas	NRM PRODUCTION CORPORATION	12.5+%	1097/77	46
	NRM PETROLEUM CORPORATION	NRM 80-2 LTD		1159/9	
	NRM 80-2 LTD	NRM OPERATING COMPANY		1165/229	
	NRM OPERATING COMPANY ET AL	EASTERN AMERICAN ENERGY CORPORATION		1216/558	
	EASTERN AMERICAN ENERGY CORPORATION	ENERGY CORPORATION OF AMERICA		1441/1003	
	ENERGY CORPORATION OF AMERICA	GREYLOCK PRODUCTION LLC		1603/1121	
	GREYLOCK PRODUCTION LLC	MAR KEY LLC		1607/0855	
✓ 4 (00004068)	Alden C. Rogers and Betty J. Rogers	PETROLEUM DEVELOPMENT CORP.	12.5+%	1059/946	82
	PETROLEUM DEVELOPMENT CORP.	PDC Mountaineer LLC		1440/364	
	PDC Mountaineer LLC	River Ridge Energy, LLC		59/1263	
✓ 5, 8 (00009370)	Bradley Morris and Lacie Morris	MAR KEY LLC	12.5+%	1789/0067	26
✓ 6 (00004030)	Gaylord Flowers and Grace V Flowers	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1134/468	6.17

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	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
✓ 7 (00007777)	JAMES D BARR	MAR KEY LLC	12.5+%	1599/320	4
✓ 7 (00007785)	JEFFREY S BARR	MAR KEY LLC	12.5+%	1595/1294	4
✓ RXR (00009426)	CSX TRANSPORTATION INC	MAR KEY LLC	12.5+%	1794/1330	22.8
✓ 9 (00008783)	ROBIN LYNN JENKINS	MAR KEY LLC	12.5+%	1637/647	20.2
9 (00008784)	JANA ANN FLOYD PALUMBO	MAR KEY LLC	12.5+%	1639/649	20.2
9 (00008327)	AMY VIRGINIA MCCracken ET VIR	MAR KEY LLC	12.5+%	1616/1157	59.4
9 (00008383)	ELIZABETH DAVIS BLOUNT	MAR KEY LLC	12.5+%	1619/193	59.4
9 (00008412)	DAVID LINCOLN HOOD	MAR KEY LLC	12.5+%	1621/927	59.4
9 (00008457)	BRIAN LEE FLOYD AND KIM M FLOYD	MAR KEY LLC	12.5+%	1622/651	59.4
✓ 9, 10 (00003596)	WILLIAM G TETRICK JR ET AL	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/27	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
✓ 9, 10 (00003597)	VIRGINIA LONG HARTSOCK	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1150/725	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
✓ 9, 10 (00003598)	CECELE GRAHAM	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/11	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
✓ 9, 10 (00003599)	MARY LEE GRIFFITH TRUST	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1157/303	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	

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9, 10 (00003600)	MARGUERITE L BROWN	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1157/110	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003601)	RAYMOND A LAWSON JR ET UX	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/654	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003602)	KATHRYN E PAYNE ET AL	SHELDON & SHELDON INC	12.5+%	1137/946	376
	SHELDON & SHELDON INC	PETROLEUM DEVELOPMENT CORPORATION		1149/708	
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003603)	SHIRLEY GRIFFIN	SHELDON & SHELDON INC	12.5+%	1144/642	376
	SHELDON & SHELDON INC	PETROLEUM DEVELOPMENT CORPORATION		1149/708	
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003604)	JEAN HAWKER AND FRANK M. HAWKER	SHELDON & SHELDON INC	12.5+%	1144/644	376
	SHELDON & SHELDON INC	PETROLEUM DEVELOPMENT CORPORATION		1149/78? (not legible)	
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003605)	FRANCIS WATKINS	SHELDON & SHELDON INC	12.5+%	1144/646	376
	SHELDON & SHELDON INC	PETROLEUM DEVELOPMENT CORPORATION		1149/738	

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	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003606)	JAMES A PAYNE & BEVERLY D PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1177/70	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003607)	RACHEL NICKELL & ROY NICKELL	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1155/524	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003608)	RUTH HANNAH & SYLVESTER R HANNAH	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1153/236	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003609)	KATHRYN CONRAD & CHARLES R CONRAD	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1155/856	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003610)	ROBERT E PAYNE & KAREN PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1152/519	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003611)	THEODORE PAYNE & JUDY PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1152/684	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	

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	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003612)	JEANNE GLASPELL & LEON GLASPELL	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1155/520	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003613)	HELEN PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1155/528	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003614)	W M KESTER ET AL	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1158/575	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003615)	MARY LEE WATSON & BETH J SUTTON	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/31	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003616)	BETTY JANE SUTTON	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/23	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003617)	LEOMA CHANDLER	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/342	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	

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9, 10 (00003618)	MARY B FITTRO	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/7	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003619)	ERNESTINE WHITE & JOHN J WHITE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/35	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003620)	DULCIE STARKEY	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1149/401	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003621)	TERRY H BUTTS	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/338	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003622)	MARTHA ROBERTS	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/350	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003623)	ELLENOR LAWSON WHITEMAN ET VIR	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/39	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003624)	JO ANN ROSE AND DONALD ROSE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1153/282	376

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	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003625)	RUTH STANHOPE & GLENN R STANHOPE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/666	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003626)	ROBERT LAWSON & LENORE H LAWSON	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1140/1073	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003627)	NANCY LEE MUNN & JAMES R MUNN	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1139/16	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003628)	ELIZABETH A JOHNSON ET AL	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1148/547	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003629)	C GARNETT RITTER	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1150/717	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003630)	VESTA PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1151/355	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	

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	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003631)	W HOBERT PAYNE & MAVA PAYNE	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1150/935	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003632)	ROXIE A WHITEMAN & ROY E WHITEMAN	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1150/721	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (00003633)	RALPH HOOPER & MARY HOOPER	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1150/1065	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
9, 10 (D0000090)	FRED H GOFF	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1134/1023	376
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER LLC		1440/364	
	PDC MOUNTAINEER LLC	River Ridge Energy, LLC		59/1263	
Road (p/o 11, 12, 13, 14) (Langtown Road)	N/A	N/A	N/A	N/A	
/11, 12, 13, 14 (00003833)	Route 76 Associates	Petroleum Development Corporation	12.5+%	1135/111	56.7
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER, LLC		1440/364	
	PDC MOUNTAINEER, LLC	River Ridge Energy, LLC		59/1263	
11,12, 13, 14 (00003778)	Elliott Thrasher	Petroleum Development Corporation	12.5+%	1135/413	42.75
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER, LLC		1440/364	

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	PDC MOUNTAINEER, LLC	River Ridge Energy, LLC		59/1263	
Road (p/o 11, 12, 13, 14) (US ROUTE 50)	N/A	N/A	N/A	N/A	
15 (00008012)	Benedum Airport Authority	Mar Key LLC	12.5+%	1608/1126	197.509065
16 (Unleased)	ROYALTY OWNER SUBJECT TO	UNITIZATION FILING	N/A	N/A	N/A
Road (p/o 17) (Airport Road)	N/A	N/A	N/A	N/A	
17, 20 (00004026)	BELASCO MOBILE HOME SALES	PETROLEUM DEVELOPMENT CORPORATION	12.5+%	1146/397	69.05
	PETROLEUM DEVELOPMENT CORPORATION	PDC MOUNTAINEER, LLC		1440/364	
	PDC MOUNTAINEER, LLC	River Ridge Energy, LLC		59/1263	
18 (Unleased)	ROYALTY OWNER SUBJECT TO	UNITIZATION FILING	N/A	N/A	N/A
19 (Unleased)	ROYALTY OWNER SUBJECT TO	UNITIZATION FILING	N/A	N/A	N/A

\* Horizontal well unit utilization - Subject to unitization filing with the West Virginia Oil and Gas Commission

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June 11, 2025

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
ATTN: Taylor Brewer  
601 57th Street SE  
Charleston, WV 25304

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Environmental Protection

**RE: J. Osborn #213 (47-033-06086) - Expedited Modification Due to Well Extension**

Dear Mr. Brewer,

Enclosed please find the permit modification for the J. Osborn #213 (47-033-06086).

The wellhead location remains the same as the current permit. The well is being extended to the planned lateral length of 12,134 feet.

Revised documents attached include the WW-6B, Wellbore schematic with plan, revised plat, revised WW-6A1, and revised area of review. The expedited modification review fee is also included.

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

Sincerely,

Emily Glick  
Geologist & Permitting Specialist  
(c) 724-759-9612  
(e) eglick@arsenalresources.com

Ch#203986  
7500.00

P.S. My apologies for forgetting to include the check in the original mailing!

6031 Wallace Road Ext., Suite 200  
Wexford, PA 15090  
P - 724-940-1100  
F - 800-428-0981  
www.arsenalresources.com

07/04/2025