

02/08/2019



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

Wednesday, February 6, 2019
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

ARSENAL RESOURCES LLC
6031 WALLACE ROAD EXTENSION
SUITE 603
WEXFORD, PA 15090

Re: Permit Modification Approval for PRITT SOUTH 205
47-033-05904-00-00

Extending lateral from 10027.54' to 10378.75'.

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 positioned above the printed name and title.

James A. Martin
Chief

Operator's Well Number: PRITT SOUTH 205
Farm Name: IRA & LAURA PRITT
U.S. WELL NUMBER: 47-033-05904-00-00
Horizontal 6A New Drill
Date Modification Issued: 02/06/2019

Promoting a healthy environment.

02/08/2019



January 8, 2019

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

RE: Pritt South Pad – Pritt South 205, API# 47-033-05904 – Modification due to additional leasing to extend lateral

Dear Laura:

Enclosed please find the modification for the Pritt South 205, (API# 47-033-05904). This permit is being modified due to acquiring additional leases to extend the lateral. This well was originally permitted to 6,595.20' and the lateral was extended longer through an approved permit modification to a total of 10,027.54'. We have obtained additional leasing for this site and are requesting to extend the lateral further. We would like to extend the lateral 351.21' for a total of 10,378.75'. Included are the following:

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

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

Sincerely,

A handwritten signature in blue ink that reads 'Kelly Davis'.

Kelly Davis
Permitting Specialist
1-304-517-8743 mobile
1-724-940-1218 office
kdavis@arsenalresources.com

RECEIVED
Office of Oil and Gas

JAN 9 2019

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	Brownton
-----------	----------	---------	----------

Operator ID County District Quadrangle

2) Operator's Well Number: Pritt South 205 Well Pad Name: Pritt South

3) Farm Name/Surface Owner: Ira and Laura Pritt Public Road Access: County Route 17

4) Elevation, current ground: 1,342.50' Elevation, proposed post-construction: 1,345.90'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep _____

Horizontal _____

*SDW
1/8/19*

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus Shale, 7788.0ft (TVD Heel) – 7788.0ft (TVD Toe), 100ft, 0.5 psi/ft Base of Marcellus Shale, 7888.0ft (TVD Heel) - 7888.0ft (TVD Toe)

8) Proposed Total Vertical Depth: 7,874 ft

9) Formation at Total Vertical Depth: Marcellus Shale

10) Proposed Total Measured Depth: 18,903.8 ft

11) Proposed Horizontal Leg Length: 10,378.75 ft

12) Approximate Fresh Water Strata Depths: 6', 36', 81', 210', 248', 291', 306', 336', 376' ✓

13) Method to Determine Fresh Water Depths: Offsetting wells reported water depths (033-00660, 033-00950, 033-00960, 033-00976, 033-00980, 033-03262) ✓

14) Approximate Saltwater Depths: 1391' ✓

15) Approximate Coal Seam Depths: Bakerstown 483', Brush Creek 582', Upper Freeport 643', Lower Freeport 703', Upper Kittanning 778', Middle Kittanning 838', Lower Kittanning 851' ✓

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

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

JAN 9 2019

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	24	New	H-40	94	80	80	CTS
Fresh Water	13.375	New	J-55	54.5	450	450	CTS
Coal							
Intermediate	9.625	New	J-55	40	1500	1500	CTS
Production	5.5	New	P-110	20	18,903	18,903	TOC @ 1,350'MD
Tubing							
Liners							

*SOW
1/8/19*

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, 3% CaCl2	1.20
Fresh Water	13.375	17.5	0.38	2730	900	Class A, 3% CaCl2	1.20
Coal							
Intermediate	9.625	12.25	0.395	3,950	1500	Class A, 3% CaCl2	1.29
Production	5.5	8.5-8.75	0.361	12,640	9500	Class A, 50.50 Poz	1.29/1.34
Tubing					5000		
Liners					N/A		

PACKERS

Kind:				
Sizes:				
Depths Set:				

RECEIVED
Office of Oil and Gas

JAN 9 2019

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 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 9,500 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 29.78

22) Area to be disturbed for well pad only, less access road (acres): 9.15

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 1,600'; there will be no centralizers from 1,600' 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 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.

RECEIVED
Office of Oil and Gas

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 to 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.

JAN 9 2019

WV Department of Environmental Protection

*Note: Attach additional sheets as needed.

ARSENAL RESOURCES PRITT SOUTH 205

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT) N. 272,387.5 E. 1,773,910.7
 NAD'83 GEO. LAT-(N) 39.245807 LONG-(W) 80.187091
 NAD'83 UTM (M) N. 4,344,869.4 E. 570,147.5

LANDING POINT

NAD'83 S.P.C.(FT) N. 272,177.6 E. 1,775,185.4
 NAD'83 GEO. LAT-(N) 39.245263 LONG-(W) 80.187699
 NAD'83 UTM (M) N. 4,344,813.2 E. 570,613.4

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 262,364.3 E. 1,778,815.3
 NAD'83 GEO. LAT-(N) 39.218390 LONG-(W) 80.169510
 NAD'83 UTM (M) N. 4,341,340.5 E. 571,692.5

02/08/2019

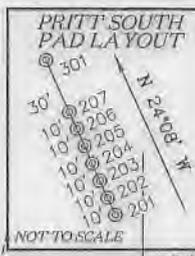
TAG	SURFACE OWNER	TAX MAP/ PARCEL	ACREAGE
HARRISON COUNTY			
A	IRA H. & LAURA E. PRITT	351-4	69.09±
B	ORAN LEE WARDER, ET AL	351-7	31.00±
C	RENEE JOHNSON	351-9	97.72±
D	RENEE JOHNSON	351-10	85.00±
E	ECOSYSTEM INVESTMENT PARTNERS III LLC	351-23	107.00±
F	ECOSYSTEM INVESTMENT PARTNERS III LLC	351-31	121.73±
H	ECOSYSTEM INVESTMENT PARTNERS III LLC	371-6	99.83±
I	ECOSYSTEM INVESTMENT PARTNERS III LLC	371-3	95.98±
BARBOUR COUNTY			
G	JO ANN V SMITH & GARY M. BROWN, JR.	10-2	98.00±
J	POLINO ENTERPRISES, INC.	12-1	12.2±
K	POLINO ENTERPRISES, INC.	11-1	289.5±
L	IRCKSWITH LUMBER CO., INC.	11-12	177.00±
M	JAMES FOSTER	11-1.1	1.33±
N	JAMES FOSTER	11-3	17.00±

LEGEND

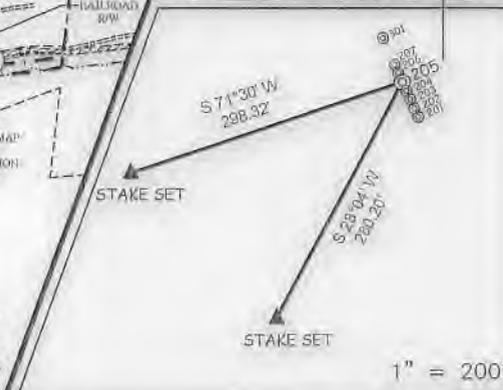
- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- STATE ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- LEASE TAG

PRITT SOUTH 205 WELL TIES

LINE	BEARING	DISTANCE
L1	N 75°37' W	2129.77'
L2	S 02°41' W	1301.36'
L3	N 73°26' E	1376.48'
L4	S 19°00' E	636.73'



REFERENCES

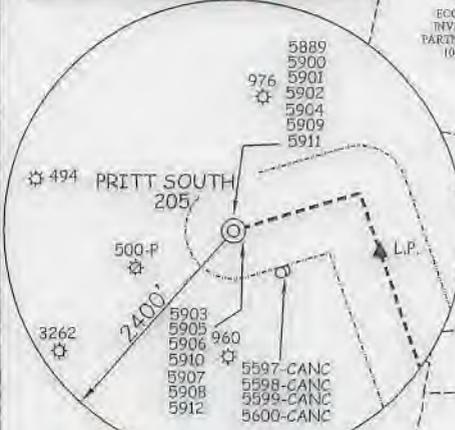


NAD'83 GRID NORTH

11,513' B.H.

COUNTY NAME

PERMIT



NOTES ON SURVEY

- No water wells were found within 250' of proposed gas well. No agricultural buildings > 2500 sq. ft. or dwellings were found within 625' of the center of proposed well pad.
- Location of 625 sq. ft. grave site as recorded in db 30 pg 433, situated within 71.5 acres and 11.5 acres, unable to be determined. Proper leasing of 625 sq. ft. tract to be obtained prior to drilling within the 71.5 and 11.5 acre tracts.

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vaughan Drive • Glenville, WV 26351 • (304) 482-5634
www.slsurveys.com

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE AUGUST 15, 20 17
 REVISED 08/28/18, 09/12/18 & 1/03/19
 OPERATORS WELL NO. PRITT SOUTH 205
 API WELL NO. 47 - 033 - 5904M
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8383P205R7.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

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

LOCATION: ELEVATION EXISTING: 1,342.50' / PROPOSED: 1,345.90' WATERSHED BEARDS RUN & PIGTAIL RUN
 DISTRICT SIMPSON COUNTY HARRISON QUADRANGLE BROWNTON 7.5'
 SURFACE OWNER IRA & LAURA PRITT ACREAGE 69.096±
 ROYALTY OWNER IRA & LAURA PRITT ET AL ACREAGE 69.096±
 PROPOSED WORK: LEASE NO. 00006622
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH 18,903.8' TMD / 7,874' TVD

WELL OPERATOR ARSENAL RESOURCES DESIGNATED AGENT WILLIAM VEIGEL
 ADDRESS 6031 WALLACE RD. EXT. SUITE 300 ADDRESS 65 PROFESSIONAL PLACE
WEXFORD, PA 15090 BRIDGEPORT, WV 26330

WW-6A1
(5/13)

Operator's Well No. Pritt South 205

**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
-------------------------	-----------------------	-----------------------	---------	-----------

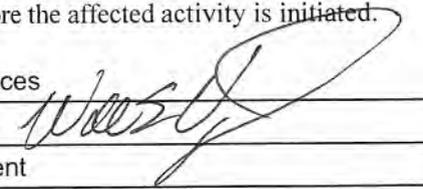
See Attached

**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: Arsenal Resources
 By: William Veigel 
 Its: Designated Agent

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
JAN 9 2019
Department of Environmental Protection
Environ

Letter Designation/Number Designation on Plat	Grantor, Lessor, Assignor, etc.	Grantee, Lessee, Assignee, etc.	Royalty	Book/Page	Page
A [00006622]	Ira Pritt and Laura E. Pritt, Husband and Wife	Carrizo (Marcellus) LLC	15.00%	1448 / 804 1579/26	92.06
	Carrizo (Marcellus) LLC	ACP II Marcellus LLC and Carrizo (Marcellus) LLC		1460/1083	
	Carrizo (Marcellus) LLC and ACP II Marcellus LLC	PDC Mountaineer, LLC		1518/395	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
B [00004364]	O. Carl Morris and Rachel L. Morris, his wife; William T. Morris and Willa R. Morris, his wife; Mary Morris Warder and Willis E. Warder, her husband	Petroleum Development Corporation	12.50%	1018/107	122
	Petroleum Development Corporation	PDC Mountaineer, LLC		1474/612	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
C [00007872]	Walter D. Goodwin and Dorothy Goodwin, his wife	Petro-Lewis Corp.	12.50%	1062/391	103
	Petro-Lewis Corp.	Partnership Properties Co.		1072/213	
	Partnership Properties Co.	Easter American Energy Corporation		1124/449	
	Easter American Energy Corporation	Petroleum Development Corporation		1134/83	
	Petroleum Development Corporation	PDC Mountaineer, LLC		1440/364	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

Attachment to WW-6A1, Pritt South 205

D [00006674]	Debra A. Mulneix	Mar Key, LLC	15.00%	1561/464	85
D [00006675]	Phyllis G. Steele	Mar Key, LLC	15.00%	1561/454	85
D [00006676]	Alice L. Donley	Mar Key, LLC	15.00%	1561/451	85
D [00006677]	Rebecca Collins Biser, acting in her capacity as Attorney in Fact for James R. Collins, Jr.	Mar Key, LLC	15.00%	1561/490	85
D [00006697]	Gale M. Steele, widow	Mar Key, LLC	15.00%	1568/76	85
D [00007736]	Marlene B. Steele, widow, by David E. Bowen and Cheryl L. Bowen, as Attorney-in-Fact	Mar Key, LLC	15.00%	1585/239	85
D [00007761]	George F. Jack, Jr., single	Mar Key, LLC	15.00%	1598/842	85.1375
D [00007766]	Charles H. Roberts, widower	Mar Key, LLC	15.00%	1596/493	85.1375
D [00007864]	Mike Ross Inc. & Waco Oil and Gas Inc.	Mar Key, LLC	15.00%	1599/315	85.1375
D [00007990]	Chad W. Johnson	Mar Key, LLC	14.00%	1604/287	85.1375
E, F [00003555]	Lydia Drainer, widow	Union Carbide Corporation	12.50%	853/91	380
	Union Carbide Corporation	Creslenn Oil Company		897/286	
	Creslenn Oil Company	Delta Producing Corporation		925/629	
	Delta Producing Corporation	Petroleum Corporation of America		967/575 977/168	

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
61029
JAN 9
WV Department of Environmental Protection

	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	
H [00005712]	John Stewart, Blanche Stewart, Hollie Stewart	Union Drilling, Inc. and Allerton Miller	12.50%	1101/790 (Harrison) 71/432 (Barbour)	100
	Allerton Miller	Union Drilling, Inc.		98/11 (Barbour) 1107/1040 (Harrison) 88/259 (Barbour)	
	Union Drilling, Inc.	Equitable Resources Exploration, Inc.		1189/1209 (Harrison) 325/171 (Barbour)	
	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company		1199/642 (Harrison) 328/171 (Barbour)	
	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.		116/81 (Barbour)	
	Fuel Resources Production and Development Company, Inc.	The Houston Exploration Company		136/162 (Barbour) 383/187 (Barbour)	
	The Houston Exploration Company	Keyspan Natural Fuel, LLC.		1289/821	
	Keyspan Natural Fuel, LLC.	The Houston Exploration Company		1351/1260 (Harrison)	
	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.		1367/1084 (Harrison) 404/381 (Barbour) 139/48 (Barbour)	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC		1467/119 (Harrison) 59/1032 (Harrison) 447/129 (Barbour) 16/637 (Barbour)	

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
JAN 9 2019
100
WV Department of
Environmental Protection

I (00008032)	Jeffrey Craig Hinkle, a single man	Mar Key, LLC	13.00%	1604/1349	
I (00007742)	Charles Kisner, a married man dealing in his sole and separate property	Mar Key, LLC	12.50%	1587/956	100
I (00005119)	William Michael Henline II	PDC Mountaineer, LLC	12.50%	1489/1030	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008176)	Walter S. Flanigan, Jr. dealing in his sole and separate property	Mar Key, LLC	16.00%	1616/1127	100
I (00008035)	Michael Max Waldo, a married man dealing in his own right	Mar Key, LLC	13.00%	1606/709	100
I (00007795)	Paul W. Sturm, Jr. a/k/a Paul William Sturm, Jr., a single man	Mar Key, LLC	12.50%	1595/1300	100
I (00005122)	Diana Villare a/k/a Diane M. Dunn a/k/a Diana Murray	PDC Mountaineer, LLC	12.50%	1486/1178	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00005116)	Susan Lang Bauer	PDC Mountaineer, LLC	12.50%	1484/857	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008173)	Dorrinda S. Flanigan, widow	Mar Key, LLC	16.00%	1616/1121	100
I (00005130)	James Morrison	PDC Mountaineer, LLC	12.50%	1499/246	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00005125)	Erma Phillips	PDC Mountaineer, LLC	12.50%	1488/1215	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
JAN 9 2019
WV Department of
Environmental Protection

I (00005117)	Jennifer Morgan, a/k/a Jennifer Merritt	PDC Mountaineer, LLC	12.50%	1488/1212	
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00005131)	Daniel W. Morrison	PDC Mountaineer, LLC	12.50%	1497/656	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008174)	Tamra L. Rogers, dealing in her sole and separate property	Mar Key, LLC	16.00%	1616/1123	100
I (00005128)	Gay Ellen Preston a/k/a Ellen Preston	PDC Mountaineer, LLC	12.50%	1495/1058	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008003)	Donna S. Marshall, fka Donna S. McElwain, a single woman	Mar Key, LLC	13.00%	1602/1186	100
I (00005123)	Chassidi Parker	PDC Mountaineer, LLC	12.50%	1488/1218	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00007817)	Joyce A. Moyer, a married woman dealing in her sole and separate property	Mar Key, LLC	15.00%	1597/346	100
I (00005129)	George Morrison	PDC Mountaineer, LLC	12.50%	1499/243	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00005126)	Thomas L. Morrison	PDC Mountaineer, LLC	12.50%	1489/1027	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
100
JAN 9 2019
WV Department of
Environmental Protection

I (00007743)	Vietta A. Hawkins, a/k/a Vietta Fleming Hawkins, a married woman dealing in her sole and separate property	Mar Key, LLC	12.50%	1587/954	
I (00005120)	Brian Morrison	PDC Mountaineer, LLC	12.50%	1486/1181	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008269)	James Lee Horner, a single man	Mar Key, LLC	12.50%	1614/1084	100
I (00008175)	Walter R. Flanigan, dealing in his sole and separate property	Mar Key, LLC	12.50%	1616/1125	100
I (00005127)	George Ernest Grant	PDC Mountaineer, LLC	12.50%	1495/1061	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008034)	Mark Lee Waldo, a married man dealing in his own right	Mar Key, LLC	13.00%	1606/707	100
I (00005121)	Ashley McElroy	PDC Mountaineer, LLC	12.50%	1489/1021	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008161)	Lawrence A. Bowman, a widower	Mar Key, LLC	13.00%	1610/828	100
I (00005115)	Dianna Lynn Morrison	PDC Mountaineer, LLC	12.50%	1483/1347	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008107)	Kimberly K. Twyman, married woman dealing in her own right	Mar Key, LLC	13.00%	1611/609	100
I (00005124)	George E. Morrison, Jr.	PDC Mountaineer, LLC	12.50%	1489/1024	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	

Attachment to WW-6A1, Pritt South 205

RECEIVED
Office of Oil and Gas
JAN 9 2019
WV Department of
Environmental Protection

I (00008072)	Judy Mae Holaway, f/k/a Judy Me Rodgers and Judy Rogers, a married woman dealing in her own right	Mar Key, LLC	13.00%	1606/329	
I (00005118)	Gay Hayhurst a/k/a Gay Lorraine Cox a/k/a Gay Goodwin	PDC Mountaineer, LLC	12.50%	1486/1175	100
	PDC Mountaineer, LLC	River Ridge Energy, LLC		59/1263	
I (00008440)	Robert B. Jones Jr., married man dealing in his own right	Mar Key, LLC	13.00%	1622/699	100
I (00008428)	Sharon Diane Criss, single	Mar Key, LLC	12.50%	1621/935	100
G (00008219)	Hal S. Raper, jr. and Cathy C. Raper, husband and wife	Mar Key, LLC	12.50%	181/144 181/173	227.563
J, K (00008268)	Susan Shepard Starceвич, a married woman dealing in her own right	Mar Key, LLC	12.50%	180/292	21
J, K (00008324)	David Deutsch, a married man dealing in his own right	Mar Key, LLC	12.50%	180/583	21
J, K (00008210)	Jane Richardson D'Angelo, a married woman dealing in her own right	Mar Key, LLC	12.50%	179/523	21
J, K (00008211)	William B. Richardson, Jr., a married man dealing in his own right	Mar Key, LLC	12.50%	179/525	21
J, K (00008267)	Charles S. Kefover, Jr., a single man	Mar Key, LLC	12.50%	180/290	21
J, K (00008322)	The John A. Mosesso Credit Trust, by John Marshall Mosesso, trustee	Mar Key, LLC	12.50%	180/581	21
K (00008219)	Hal S. Raper and Cathy C. Raper, husband and wife	Mar Key, LLC	12.50%	181/173	98.5
K (00005936)	Mabel Cleavenger	Union Drilling, Inc.	12.50%	78/284	85

Attachment to WW-6A1, Pritt South 205

	Union Drilling, Inc.	Equitable Resources Exploration, Inc.		1189/1209 (Harrison) 325/171 (Barbour)	RECEIVED Office of Oil and Gas JAN 9 2019 WV Department of Environmental Protection
	Equitable Resources Exploration, Inc.	Equitable Resources Energy Company		1199/642 (Harrison) 328/171 (Barbour)	
	Equitable Resources Energy Company	Fuel Resources Production and Development, Inc.		116/81 (Barbour)	
	Fuel Resources Production and Development Company, Inc.	The Houston Exploration Company		136/162 (Barbour) 383/187 (Barbour)	
	The Houston Exploration Company	Keyspan Natural Fuel, LLC.		1289/821	
	Keyspan Natural Fuel, LLC.	The Houston Exploration Company		1351/1260 (Harrison)	
	The Houston Exploration Company	Seneca-Upshur Petroleum, Inc.		1367/1084 (Harrison) 404/381 (Barbour) 139/48 (Barbour)	
	Seneca-Upshur Petroleum, Inc.	Seneca-Upshur Petroleum, LLC		1467/119 (Harrison) 59/1032 (Harrison) 447/129 (Barbour) 16/637 (Barbour)	

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	

RECEIVED
Office of Oil and Gas

JAN 9 2019

WV Department of
Environmental Protection

Authorized Shares

--

Addresses

Type	Address
Designated Office Address	65 PROFESSIONAL PLACE SUITE 200 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	ARSENAL RESOURCES ENERGY LLC 6031 WALLACE ROAD EXTENSION SUITE 300 WEXFORD, PA, 15090
Organizer	PAUL M HERZING 560 EPSILON DR. PITTSBURGH, PA, 15238 USA
Type	Name/Address

RECEIVED
Office of Oil and Gas
JAN 9 2019

WV Department of
Environmental Protection

Annual Reports

Date filed

--

3/30/2017
6/20/2016
6/30/2015
4/28/2014
6/28/2013
5/8/2012
Date filed

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

Tuesday, November 28, 2017 — 9:44 AM

© 2017 State of West Virginia

RECEIVED
Office of Oil and Gas
JAN 9 2019
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
JAN 9 2019
WV Department of
Environmental Protection

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
JAN 9 2019
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.

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			

RECEIVED
Office of Oil and Gas

JAN 9 2019

WV Department of
Environmental Protection

Addresses	
Type	Address
Designated Office Address	65 PROFESSIONAL PLACE SUITE 200 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

RECEIVED
Office of Oil and Gas

JAN 9 2019

WV Department of
Environmental Protection

Name Changes

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

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	
2018	
2017	
2016	
2015	
2014	
2013	
2012	
2011	
2010	
2009	
2008	
2007	
2006	
2005	
2004	
2003	
2002	
2001	
2000	

RECEIVED
Office of Oil and Gas

JAN 9 2019

WV Department of
Environmental Protection

1999
1998
Date filed

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

Wednesday, July 18, 2018 — 1:13 PM

© 2018 State of West Virginia

RECEIVED
Office of Oil and Gas
JAN 9 2019
WV Department of
Environmental Protection

02/08/2019



People Powered. Asset Strong.

September 10, 2018

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; Pritt South Pad

Dear Mr. Martin:

In preparation of filing a permit application for the above referenced well, the Title Department of Arsenal Resources has conducted a thorough title examination in order to determine the ownership of the oil and gas underlying all roadways crossed by the proposed wells. The findings of the title examination show that some of the roadways crossed by the proposed wells are owned in fee by the West Virginia Department of Transportation, Division of Highways and that some are only right of ways. 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 blue ink that reads 'Coty Brandon'.

Coty Brandon
Title Manager

RECEIVED
Office of Oil and Gas

JAN 9 2019

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

WV Department of
Environmental Protection