



west virginia department of environmental protection

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

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL  
Horizontal 6A / Horizontal 6A Well - 1

NORTHEAST NATURAL ENERGY LLC  
707 VIRGINIA STREET EAST  
STE 1200  
CHARLESTON, WV 25301

Re: Permit Modification Approval for JENKINS 4H  
47-061-01742-00-00

Adjusted and lengthened the horizontal well bore

NORTHEAST NATURAL ENERGY 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: JENKINS 4H  
Farm Name: LOIS A. JENKINS IRREVOCABLE TRUST  
U.S. WELL NUMBER: 47-061-01742-00-00  
Horizontal 6A / Horizontal 6A Well - 1  
Date Issued: 5/18/2017

Promoting a healthy environment.

05/19/2017

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

1) Well Operator: Northeast Natural Energy LLC 494498281 Monongalia Clay Blacksville  
Operator ID County District Quadrangle

2) Operator's Well Number: Jenkins 4H Well Pad Name: Jenkins

3) Farm Name/Surface Owner: Lois A. Jenkins Irrevocable Trust Public Road Access: Mason Dixon Highway (State Route 7)

4) Elevation, current ground: 1128' Elevation, proposed post-construction: 1113.77'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No No *MJK 5/11/2017*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus, 7921', 103', 3,600 psi

8) Proposed Total Vertical Depth: 7,921'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18,705.54'

11) Proposed Horizontal Leg Length: 10,359'

12) Approximate Fresh Water Strata Depths: 50'; 1,034'

13) Method to Determine Fresh Water Depths: Driller's Log from Offset Wells

14) Approximate Saltwater Depths: 1,340'; 2,182'

15) Approximate Coal Seam Depths: 830; 1,032'

16) Approximate Depth to Possible Void (coal mine, karst, other): NA

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: \_\_\_\_\_

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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	NA	94.71	40'	40'	GTS
Fresh Water	13-3/8"	New	J-55	54.5	1100'	1090'	CTS
Coal							
Intermediate	9-5/8"	New	J-55	40	2280'	2250'	CTS
Production	5-1/2"	New	P-110	20	18,705.54'	18,675.54'	4,451 Cu. Ft.
Tubing	2-7/8"	New	N-80	6.5	NA	8,500'	NA
Liners							

*MDK 5/11/2017*

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"	30"	.375	415		4,500 psi Grout	NA
Fresh Water	13-3/8"	17 1/2"	.38"	2,760	2,000	Class A	1.23
Coal							
Intermediate	9-5/8"	12 1/4"	.395"	3,950	3,000	Class A	1.3
Production	5-1/2"	8 3/4"	.361"	12,530	9,700	50:50 Poz	1.21
Tubing	2-7/8"	NA	.217"	10,570	3,600	NZ	NA
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:

Drilling and completion of a horizontal Marcellus well. The well will be drilled on air to an approximate depth of 6,186.17' TVD/MD. The well will then be horizontally drilled on synthetic based mud from the KOP to approximately 7,921' TVD / 18,705.54' MD along a 149 degree azimuth.

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

Multi-stage / high-rate slickwater fracture treatment using various size sands as proppant. First stage will be initiated via pressurization against a burst disc ran in the production casing string or perforated with coiled tubing. Subsequent stages will be perforated with pumped down guns ran on wireline. Individual stages will be isolated with composite frac plugs. Maximum pump rate during any stage will be 110 BPM with a maximum allowable surface pressure of 9,500 PSI. Composite bridge plugs will be set at the end of the last stage to isolate the treated formation.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.2

22) Area to be disturbed for well pad only, less access road (acres): 9.7

23) Describe centralizer placement for each casing string:

Surface and intermediate casing strings will have bow spring centralizers placed every third joint (~120') from the shoe joint to surface. Production casing will have rigid body centralizers placed at a minimum of every fourth joint (~160') from TD to surface.

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

Surface string cement will be a Class A + Max 3% bwoc Calcium Chloride Fresh Water blend. Intermediate string cement will be a Class A Cement + Max 3% bwoc Calcium Chloride + Fresh Water. Production string cement will be (50:50) Poz (Fly Ash):Type I Cement with a gas migration additive.

25) Proposed borehole conditioning procedures:

Surface string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Intermediate string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Production string will use a 50.0 bbls SealBond 25 + 1 gal/bbl US-40 + 275 lbs/bbl Barite + 1 gal/bbl SS-2 Spacer @ 13.5 ppg prior to cement.

\*Note: Attach additional sheets as needed.

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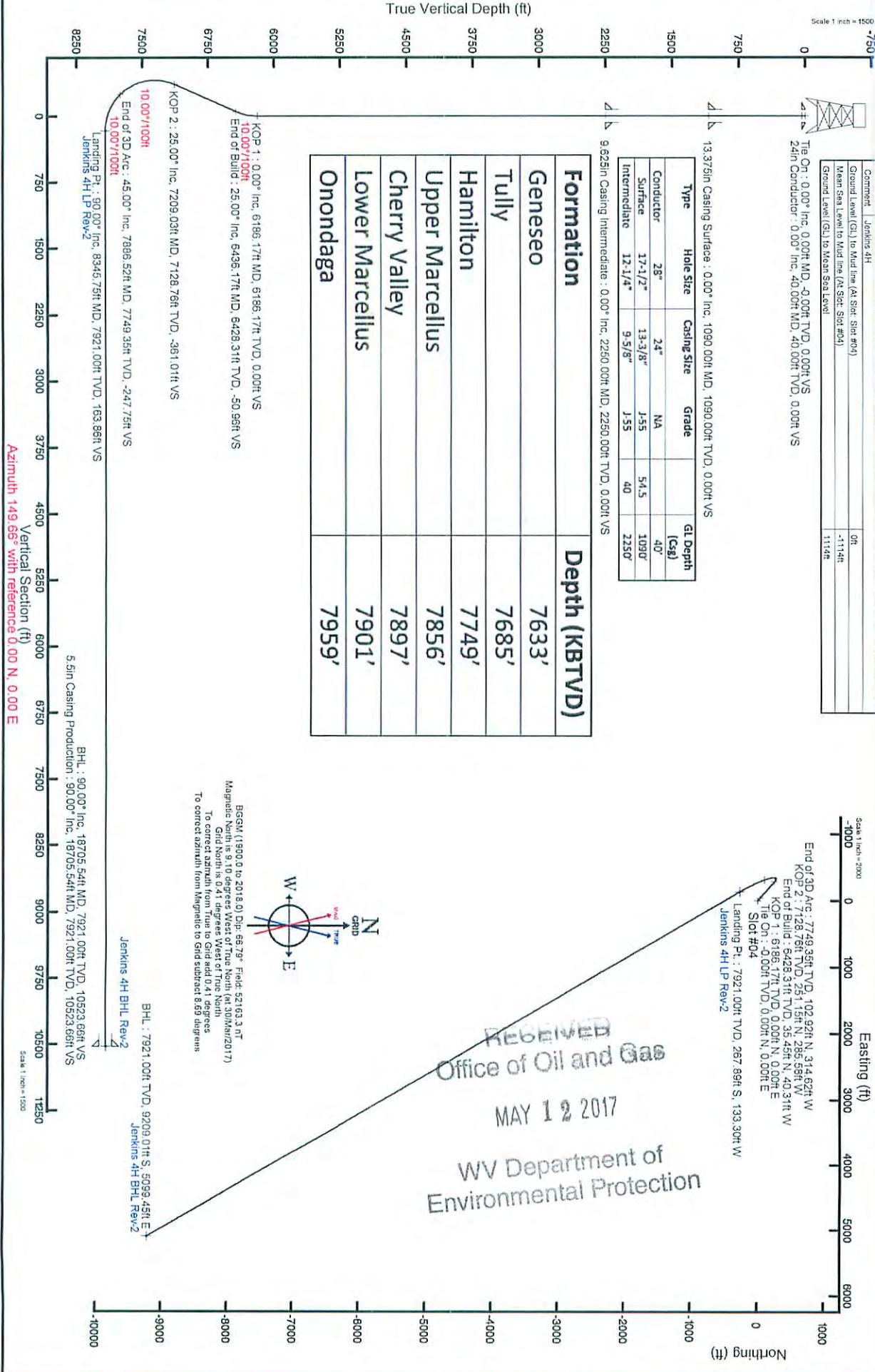
**NORTHEAST NATURAL ENERGY, LLC**  
 Location: Monongalia County, WV  
 Field: Monongalia  
 Facility: Jenkins 4H  
 Slot: Slot #04  
 Wellbore: Jenkins 4H PWB



Location Information			
Facility Name	Jenkins 4H	Grid East (US ft)	441085.188
Grid East (US ft)	1798480.777	Grid North (US ft)	394233.300N
Slot	Jenkins 4H	Grid East (US ft)	441074.830
Slot #04	-11.55	Grid North (US ft)	394233.188N
Comment	Jenkins 4H	Latitude	80°08'23.128"W
Mean Sea Level (GL) to Mud line (AT Slot: Slot #04)		Longitude	80°08'23.128"W
Mean Sea Level to Mud line (AT Slot: Slot #04)		Ground Level (GL) to Mean Sea Level	1114ft

Type	Hole Size	Casing Size	Grade	GL Depth (Csg)
Conductor	28"	24"	NA	40'
Surface	17-1/2"	13-3/8"	1-55	1090'
Intermediate	12-1/4"	9-5/8"	1-55	2250'

Formation	Depth (KBTV D)
Geneseo	7633'
Tully	7685'
Hamilton	7749'
Upper Marcellus	7856'
Cherry Valley	7897'
Lower Marcellus	7901'
Onondaga	7959'



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# northeast

NATURAL ENERGY

## Jenkins 4H

### SITE SAFETY PLAN

May 2, 2017

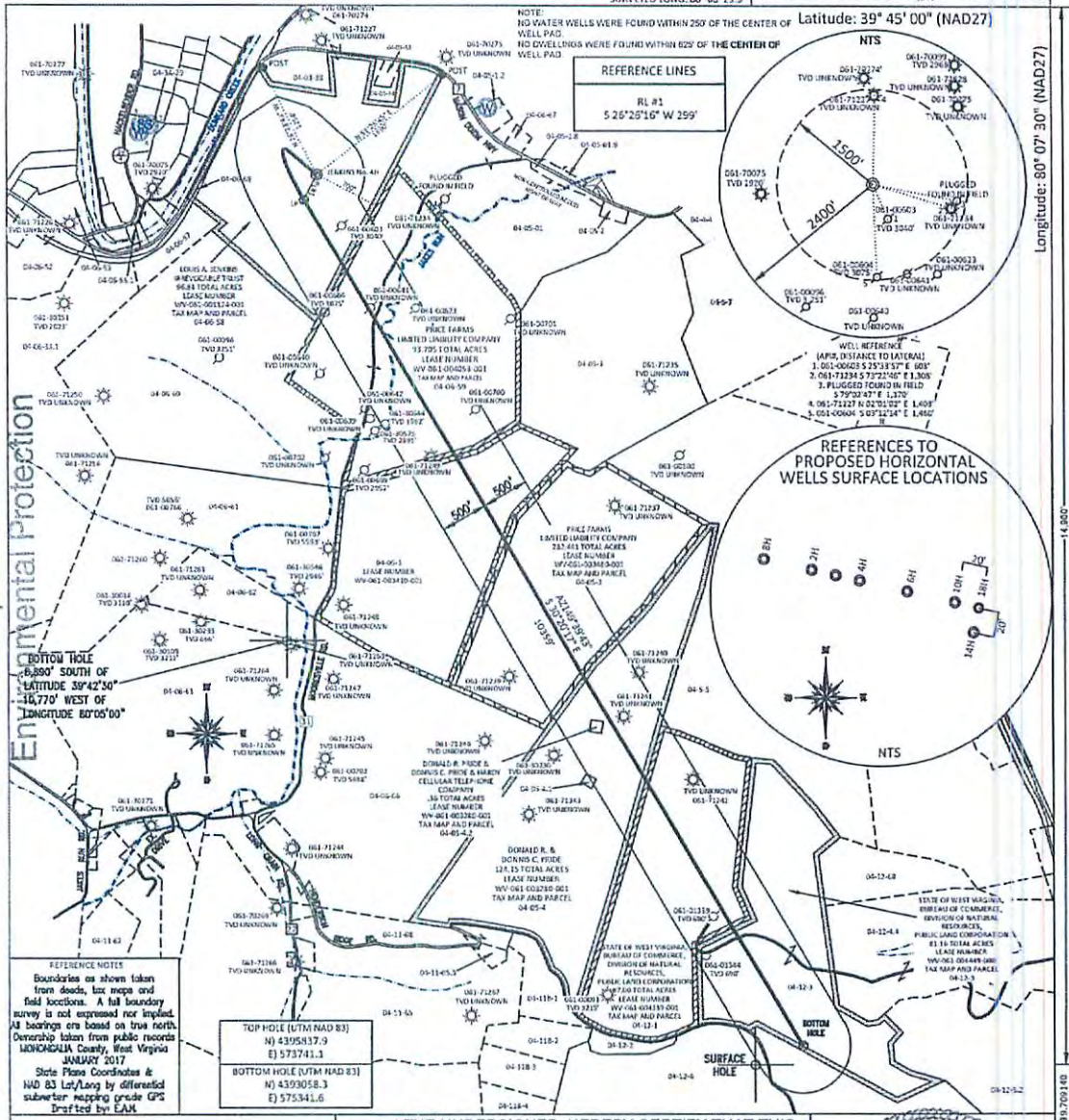
*MJK*  
*5/11/2017*

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BOUNDARIES AS SHOWN TAKEN FROM DEEDS, TAX MAPS AND FIELD LOCATIONS. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia JANUARY 2017  
State Plane Coordinates is NAD 83 Lat/Long by differential submeter mapping grade GPS Drifted by EAM.

TOP HOLE (UTM NAD 83)  
N) 4395837.3  
E) 573741.3  
BOTTOM HOLE (UTM NAD 83)  
N) 4393058.3  
E) 575341.6

FILE #: NNE16  
DRAWING #: 2733  
SCALE: PLAT: 1" = 1500' TOG: 1" = 2000'  
MINIMUM DEGREE OF ACCURACY: 1/200  
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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]*



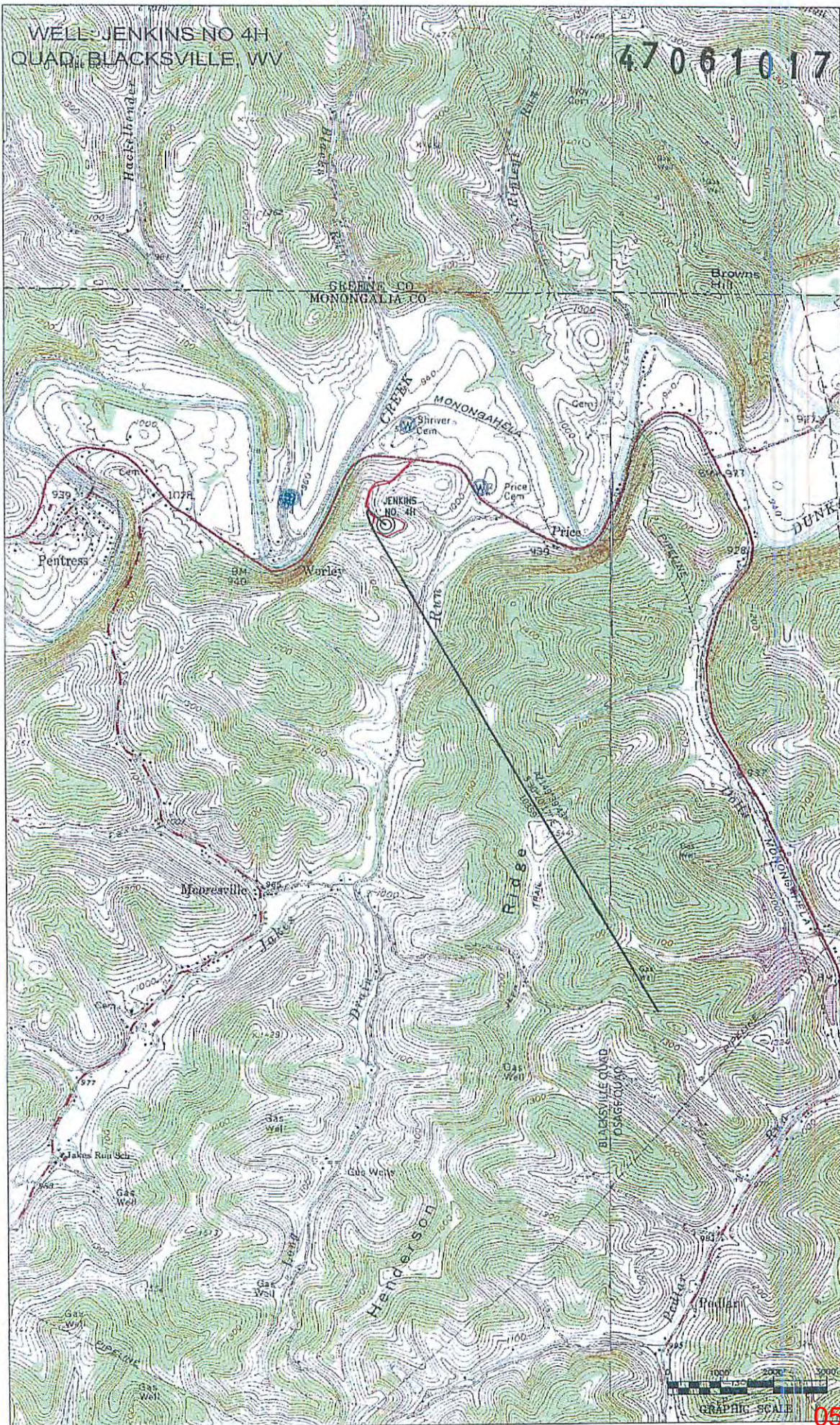
L.L.S. #2124 : Ernest J. Benchek III

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25304 Well Type: <input type="checkbox"/> Oil <input type="checkbox"/> Waste Diposal <input type="checkbox"/> Production <input type="checkbox"/> Deep <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Liquid Injection <input type="checkbox"/> Storage <input checked="" type="checkbox"/> Shallow		DATE: MAY 10, 2017 OPERATOR'S WELL #: JENKINS NO. 4H API WELL #: 47 61 STATE COUNTY PERMIT PROPOSED ELEVATION: 1,113.77' CURRENT ELEVATION: 1,128'
WATERSHED: DUNKARD CREEK COUNTY/DISTRICT: MONONGALIA / CLAY SURFACE OWNER: LOIS A. JENKINS IRREVOCABLE TRUST OIL & GAS ROYALTY OWNER: LOIS A. JENKINS IRREVOCABLE TRUST, ET AL LEASE NUMBERS:		QUADRANGLE: BLACKSVILLE ACREAGE: 96.84 +/- ACREAGE: 765.656 +/-
TARGET FORMATION: MARCELLUS WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 CITY: CHARLESTON STATE: WV ZIP CODE: 25301		DRILL <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY): ESTIMATED DEPTH: TVD: 7,921' TMD: 18,705.54' DESIGNATED AGENT: JOHN ADAMS ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

05/19/2017

WELL JENKINS NO 4H  
QUAD BLACKSVILLE, WV

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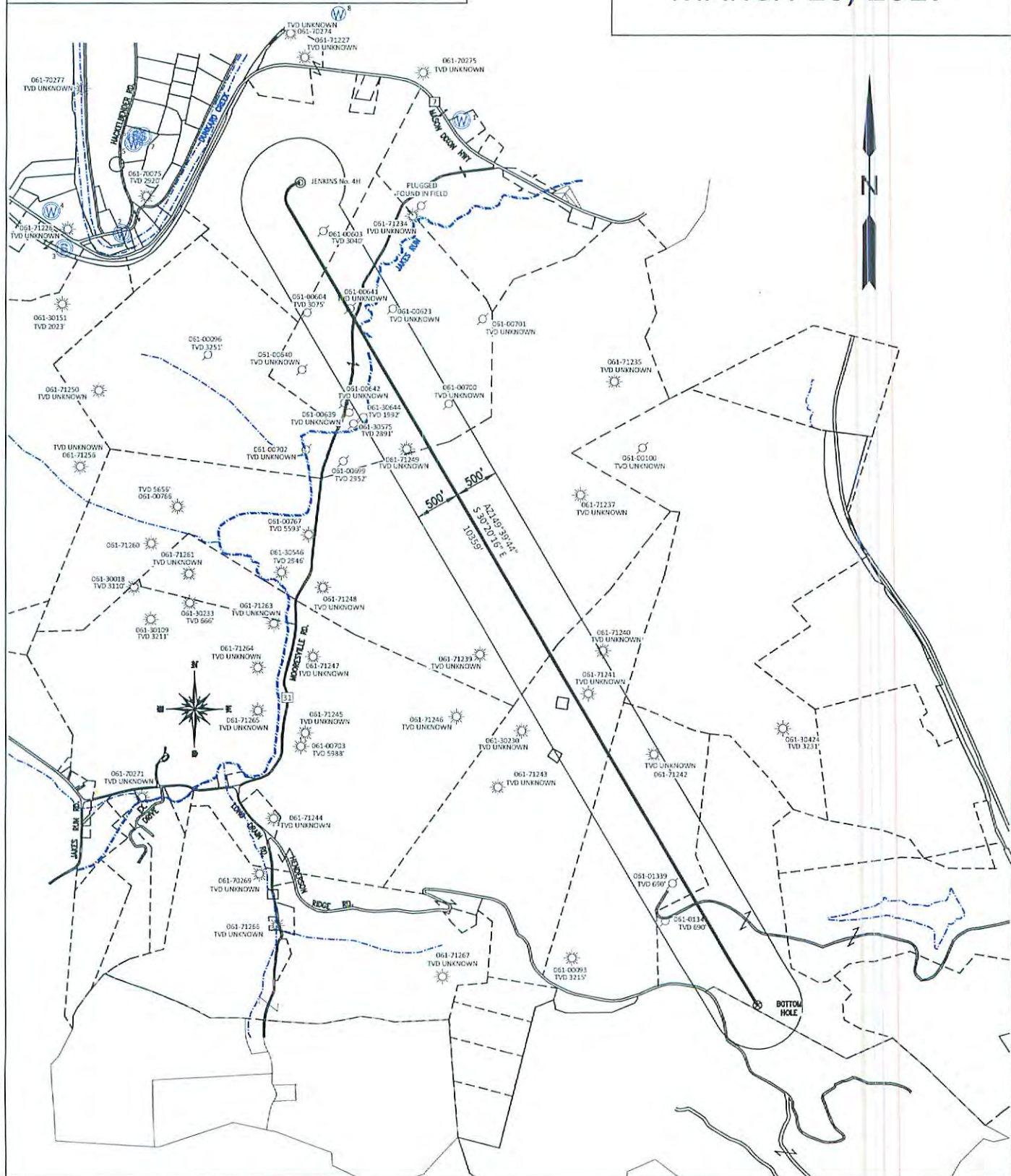
06/19/2017



SCALE: 1" = 1,500'



# JENKINS No. 4H EXISTING GAS WELLS MARCH 10, 2017



Jenkins 4H Area of Review

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API Number	Well Name	Well Number	Operator	Latitude (NAD 27)	Longitude (NAD 27)	TMP	TVD	Producing Formation
47-061-00604	L R Shriver	4	Consolidation Coal Co.	39.705223	-80.139433	4-06-59	3,075'	Plugged 1/22/1981
47-061-30644	CM Toothman	1 & 3	South Penn Oil (S. Penn Nat. Gas)	39.611935	-80.248204	4-06-59	1,922'	Pre 1929 Well
47-061-71249	A B & J O Price	NA	UNKNOWN	39.701011	-80.135301	4-06-59	NA	Pre 1929 Well
47-061-01339	WV DNR Public Land Division	NA	Noumenon Corp, a WV Corp	39.687798	-80.124788	4-12-01	690'	Plugged 9/28/2015
47-061-01344	WV DNR Public Land Corporation	3-9	Noumenon Corp, a WV Corp	39.686637	-80.125059	4-12-03	690'	Plugged 9/24/2015
47-061-71242	N G Brand	NA	UNKNOWN	39.692157	-80.125541	4-12-01	NA	Pre 1929 Well
47-061-71241	A I Tennant	NA	Hope Natural Gas Company	39.693609	-80.128169	4-05-04	NA	Pre 1929 Well
47-061-71240	A I Tennant	NA	UNKNOWN	39.694915	-80.127606	4-05-04	NA	Pre 1929 Well
47-061-00700	A B & J O Price	NA	Consolidation Coal Co.	39.702468	-80.133801	4-06-59	1,277'	Plugged 8/30/1982
47-061-00623	A B Price	4	Consolidation Coal Co.	39.705368	-80.136054	4-06-59	1,088'	Plugged 8/5/1981
47-061-00641	A B Price	3	Consolidation Coal Co.	39.705368	-80.137744	4-06-59	1,145'	Plugged 1/29/1982'
47-061-00603	Junior Jenkins	5	Consolidation Coal Co.	39.707688	-80.139058	4-06-58	3040'	Plugged 8/5/1980

4706101742  
MOS

**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 Attachment	See Attachment	See Attachment	See Attachment	See Attachment

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**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: Northeast Natural Energy LLC  
 By: Hollie M. Medley  
 Its: Regulatory Coordinator

WW-6A1			Operator's Well No.	Jenkins 4H
NNE Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
WV-061-001124-001	JUNIOR JENKINS AND LOIS JENKINS	*CHESAPEAKE APPALACHIA LLC	0.125 OR GREATER	1359/668
WV-061-004053-001	PRICE, JOHN E., ET AL	*JOSEPH J. MCDERMOTT	0.125 OR GREATER	137/21
WV-061-003410-001	PRICE FARMS LLC	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1512/733
WV-061-003411-001	PRICE FARMS LLC	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1514/083
WV-061-003412-001	PRICE FARMS LLC	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1513/301
WV-061-003480-001	RUCKER, HELEN JOANNE AND BERT E.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/0781
WV-061-003480-002	GROVES, JOHN T. AND ANDREA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/123
WV-061-003480-003	CLARK, WILLIAM J. AND VANIA L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1520/156
WV-061-003480-004	HASSETT, DIANE LEE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/194
WV-061-003480-005	CLARK, JR., THOMAS	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1519/824
WV-061-003480-006	GROVES, ALLEN W. AND MOLINDA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/0779
WV-061-003480-007	GROVES, EDGAR W. AND JEANETTE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/336
WV-061-003480-008	HENNING, VICTORIA R. AND JAMES L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/0385
WV-061-003480-009	TAYLOR, IV, JOSIAH PRESTON AND DIANE FERGUSON	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/0775
WV-061-003480-010	BURTON, SHERYL T.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/0403
WV-061-003480-011	GROVES, LESTER R. AND DEBRA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/5
WV-061-003480-012	TAYLOR, SANDRA J.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1520/94
WV-061-003480-013	REID, JULIE A. AND KURT L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/158
WV-061-003480-014	HART, DEBORAH ANN AND TIMOTHY LEE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/0401
WV-061-003480-015	SARMANTO, JOANNA L. AND RAYMOND	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1518/35
WV-061-003480-016	THISTLETHWAITE, RICHARD AND JODI	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/359
WV-061-003480-017	HARRIS, ROBERT L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/791
WV-061-003480-018	THISTLETHWAITE, JAMES E. AND DAWNA LISA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1523/797
WV-061-003480-019	THISTLETHWAITE, BRENDA L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/786
WV-061-003480-020	THISTLETHWAITE, ALETA Y.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/338
WV-061-003480-021	THISTLETHWAITE, ROBERT JAVIER AND DAWN ROSE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/242
WV-061-003480-022	THISTLETHWAITE, SHELLY	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/709
WV-061-003587-001	GWYNNE, JOHN ROBERT	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1532/140
WV-061-003587-002	GWYNNE, JOHN T.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1529/57
WV-061-003587-003	GWYNNE, JAMES RICHARD	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1532/142
WV-061-003480-001	RUCKER, HELEN JOANNE AND BERT E.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/781
WV-061-003480-002	GROVES, JOHN T. AND ANDREA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/123
WV-061-003480-003	CLARK, WILLIAM J. AND VANIA L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1520/156
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WV-061-003480-008	HENNING, VICTORIA R. AND JAMES L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/385
WV-061-003480-009	TAYLOR, JOSIAH PRESTON AND DIANE FERGUSON	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/775
WV-061-003480-010	BURTON, SHERYL T.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/403
WV-061-003480-011	GROVES, LESTER R. AND DEBRA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/5
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WV-061-003587-003	GWYNNE, JAMES RICHARD	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1532/142
WV-061-003280-001	CHESAPEAKE APPALACHIA, LLC.	*CHESAPEAKE APPALACHIA LLC	0.125 OR GREATER	1487/282
WV-061-003280-002	STATOIL USA ONSHORE PROPERTIES INC	*STATOIL USA ONSHORE PROPERTIES INC	0.125 OR GREATER	1488/756
WV-061-004339-001	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NORTHEAST NATURAL ENERGY LLC	MODIFICATION	1586/642
WV-061-004449-000	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1586/640

\*See Attachment

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WV Department of  
Environmental Protection 05/19/2017

WW-6A1		Operator's Well No. Jenkins 10H		
NNE Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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WV-061-003413-000	PRICE FARMS LLC	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1214/037
WV-061-004053-001	PRICE, JOHN E., ET AL	*JOSEPH J. MCDERMOTT	0.125 OR GREATER	137/21
WV-061-003412-001	PRICE FARMS LLC	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1513/301
WV-061-003598-001	MOORE, SANDY	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/30
WV-061-003480-001	RUCKER, HELEN JOANNE AND BERT E.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/781
WV-061-003480-002	GROVES, JOHN T. AND ANDREA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/123
WV-061-003480-003	CLARK, WILLIAM J. AND VANIA L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1520/156
WV-061-003480-004	HASSETT, DIANE LEE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/194
WV-061-003480-005	CLARK, THOMAS J. JR.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1519/824
WV-061-003480-006	GROVES, ALLEN W. AND MOLINDA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/779
WV-061-003480-007	GROVES, EDGAR W. AND JEANETTE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/336
WV-061-003480-008	HENNING, VICTORIA R. AND JAMES L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/385
WV-061-003480-009	TAYLOR, JOSIAH PRESTON AND DIANE FERGUSON	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/775
WV-061-003480-010	BURTON, SHERYL T.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/403
WV-061-003480-011	GROVES, LESTER R. AND DEBRA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/5
WV-061-003480-012	TAYLOR, SANDRA J.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1520/94
WV-061-003480-013	REID, JULIE A. AND KURT L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1516/158
WV-061-003480-014	HART, DEBORAH ANN AND TIMOTHY LEE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1517/401
WV-061-003480-015	SARMANTO, JOANNA L. AND RAYMOND	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1518/35
WV-061-003480-016	THISTLETHWAITE, RICHARD AND JODI	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/359
WV-061-003480-017	HARRIS, ROBERT L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/791
WV-061-003480-018	THISTLETHWAITE, JAMES E. AND DAWNA LISA	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1523/797
WV-061-003480-019	THISTLETHWAITE, BRENDA L.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/786
WV-061-003480-020	THISTLETHWAITE, ALETA Y.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/338
WV-061-003480-021	THISTLETHWAITE, ROBERT JAVIER AND DAWN ROSE	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1524/242
WV-061-003480-022	THISTLETHWAITE, SHELLY	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1521/123
WV-061-003587-001	GWYNNE, JOHN ROBERT	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1532/140
WV-061-003587-002	GWYNNE, JOHN T.	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1529/57
WV-061-003587-003	GWYNNE, JAMES RICHARD	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1532/142
WV-061-003280-001	CHESAPEAKE APPALACHIA, LLC.	*CHESAPEAKE APPALACHIA LLC	0.125 OR GREATER	1487/282
WV-061-003280-002	STATOIL USA ONSHORE PROPERTIES INC	*STATOIL USA ONSHORE PROPERTIES INC	0.125 OR GREATER	1488/756
WV-061-004449-000	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1586/640
WV-061-004449-000	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1586/640
WV-061-004449-000	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NORTHEAST NATURAL ENERGY LLC	0.125 OR GREATER	1586/640

\*See Attachment

RECEIVED  
Office of Oil and Gas

MAY 12 2017

WV Department of  
Environmental Protection

05/19/2017



Noumenon retained a 50% interest in leasehold

RECEIVED  
Office of Oil and Gas  
MAY 12 2017  
WV Department of  
Environmental Protection

4706101742 MOD

Chesapeake Appalachia, LLC.  
Statoil USA Onshore Properties, Inc

Northeast Natural Energy  
Assignment  
BK 120/769

RECEIVED  
Office of Oil and Gas

MAY 19 2017

WV Department of  
Environmental Protection

05/19/2017

WW-60  
(7-01)

RECEIVED  
Office of Oil and Gas

MAY 12 2017

DATE: April 26<sup>th</sup>, 20 17  
OPERATOR'S  
WELL NO. JENKINS 4H

API NO: 47-  
State County Permit No.

WV Department of  
Environmental Protection

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

A F F I D A V I T

State of WEST VIRGINIA

County of MONONGALIA

I, Jeannie Morgan Johnson (the designated owner or operator, or authorized representative thereof), after being duly sworn, do declare that the undersigned is authorized by the owner of the working interest in the well permit application to which this affidavit is attached to state that (he, she, or it) shall tender to the owner of the oil and gas in place not less than one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid or set aside for the owner of the oil or gas in place, or all such oil or gas to be extracted, produced, or marketed from the well. West Virginia Code 22-6-8(e).

Signed: Jeannie Morgan Johnson

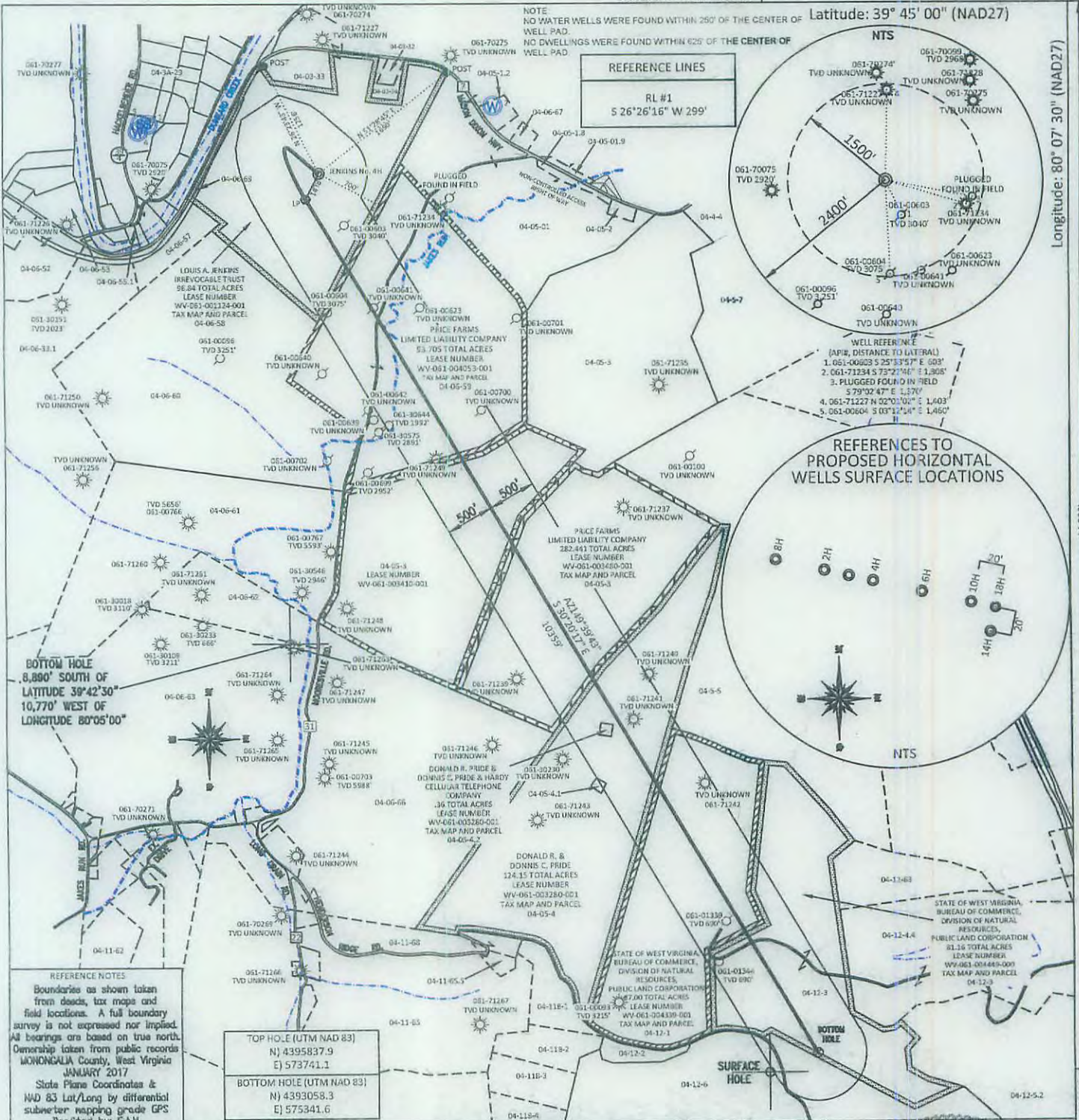
Taken, subscribed and sworn to before me this 26<sup>th</sup> day of April, 20 17.

Brenda Malone-Pence  
Notary Public

My Commission expires: 09/06/2017







**REFERENCE NOTES**  
 Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records MONONGALIA County, West Virginia JANUARY 2017  
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS  
 Drafted by EAM

TOP HOLE (UTM NAD 83)  
 N) 4395837.9  
 E) 573741.1  
 BOTTOM HOLE (UTM NAD 83)  
 N) 4393058.3  
 E) 575341.6

FILE #: NNE16  
 DRAWING #: 2733  
 SCALE: PLAT: 1" = 1500'  
TICK: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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]  
 L.L.S. #2124 : Ernest J. Benchek III



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

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

WATERSHED: DUNKARD CREEK  
 COUNTY/DISTRICT: MONONGALIA / CLAY  
 SURFACE OWNER: LOIS A. JENKINS IRREVOCABLE TRUST  
 OIL & GAS ROYALTY OWNER: LOIS A. JENKINS IRREVOCABLE TRUST, ET AL  
 LEASE NUMBERS: \_\_\_\_\_

DATE: MAY 10, 2017  
 OPERATOR'S WELL #: JENKINS NO. 4H  
 API WELL #: 47 61 01742 Mod  
 STATE COUNTY PERMIT  
 PROPOSED ELEVATION: 1,113.77'  
 CURRENT ELEVATION: 1,128'  
 QUADRANGLE: BLACKSVILLE  
 ACREAGE: 96.84 +/-  
 ACREAGE: 765.656 + **05/19/2017**

TARGET FORMATION: MARCELLUS  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_

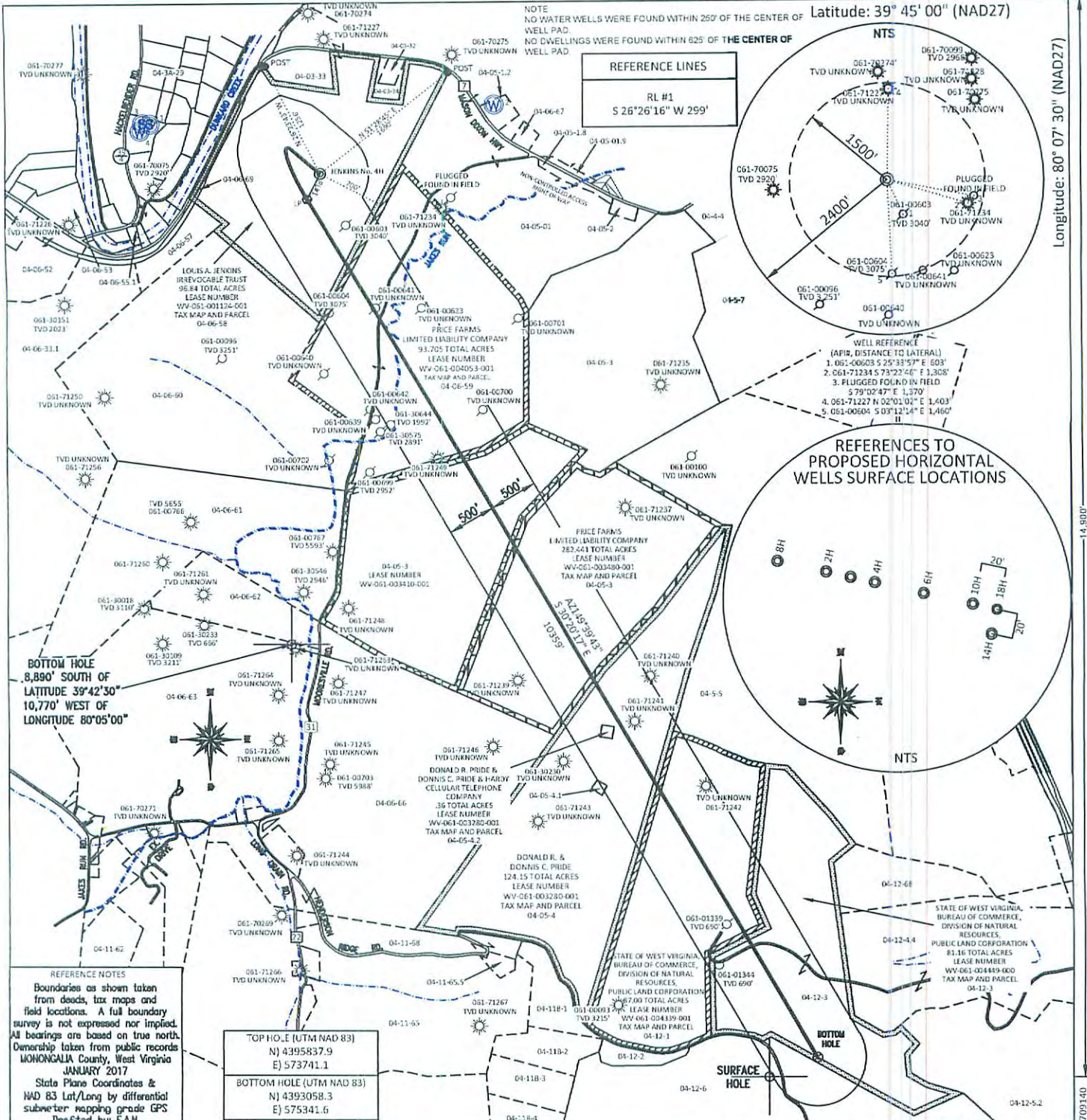
ESTIMATED DEPTH: TVD: 7,921' TMD: 18,705.54'  
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301  
 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

SURFACE HOLE DEC. LAT: 39.708140 SURVEYED LAT: 39° 42' 32.9"

SURFACE HOLE DEC. LONG: 80.139966 SURVEYED LONG: 80° 08' 23.9"

Latitude: 39° 45' 00" (NAD27)

Longitude: 80° 07' 30" (NAD27)



**REFERENCE NOTES**  
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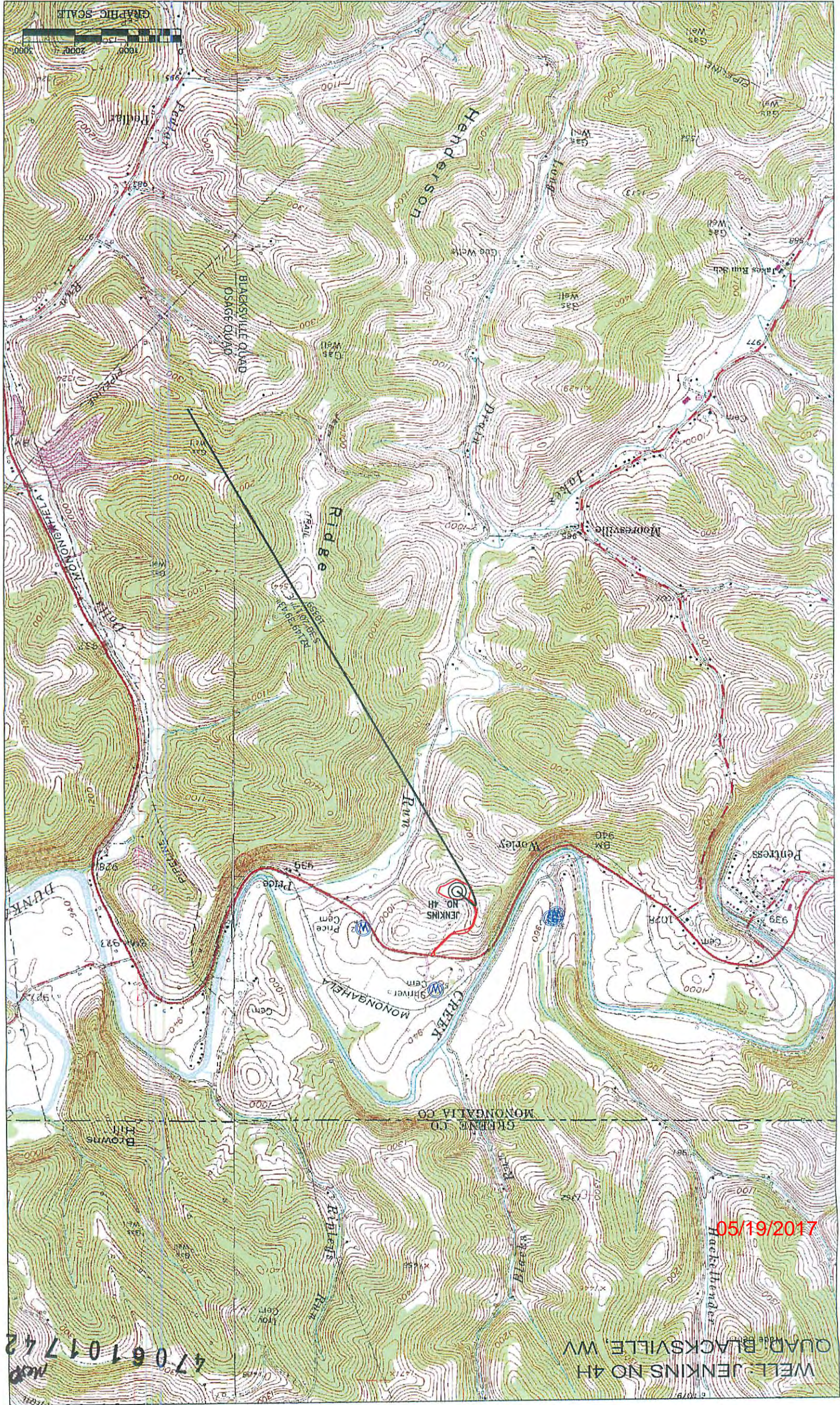
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 Signed: [Signature]  
 L.L.S. #2124 : Ernest J. Benchek III



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 OIL & GAS ROYALTY OWNER: LOIS A. JENKINS IRREVOCABLE TRUST, ET AL  
 LEASE NUMBERS: \_\_\_\_\_  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY): \_\_\_\_\_  
 TARGET FORMATION: MARCELLUS  
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
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 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

SURFACE HOLE DEC. LAT: 39.709140 SURVEYED LAT: 39° 42' 32.9"



GRAPHIC SCALE



BLACKSVILLE QUAD  
OSAGE QUAD

Henderson

Ridge

Jukes

Pentress

JENKINS  
NO. 4H

MONONGAHELA  
CREEK

GREENE CO  
MONONGALIA CO

05/19/2017

WELL: JENKINS NO 4H  
QUAD: BLACKSVILLE, WV

4706101742  
MAP



**northeast**  
NATURAL ENERGY

May 11, 2017

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

Re: Jenkins 2H, 4H, 6H, 8H, 10H, 14H and 18H Permit Modifications  
API # 061-01741, 061-01742, 061-01743, 061-01720, 061-01725

Dear Permit Reviewer,

Northeast Natural Energy LLC ("NNE") would like to request modifications to its existing Jenkins 2H, 4H, 6H, 8H, and 10H Permits (061-01741, 061-01742, 061-01743, 061-01720, 061-01725). Additionally, NNE has submitted to the Office for review two applications for its proposed Jenkins 14H and 18H wells. NNE has adjusted and lengthened the horizontal well bores to allow for more efficient development of the permitted Jenkins Pad.

Please find enclosed with this request revised WW-6B Forms, WW-6A1 Forms and Attachments, Site Safety Plans, Well Bore Schematics, Area of Review Maps and Spreadsheets, and Mylar Plats for all seven wells.

Should you have any questions please contact me at 304.212.0422 or by email at [hmedley@nne-llc.com](mailto:hmedley@nne-llc.com).

Sincerely,

Hollie M. Medley  
Regulatory Coordinator

RECEIVED  
Office of Oil and Gas

MAY 12 2017

WV Department of  
Environmental Protection