



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

Monday, March 13, 2017  
WELL WORK PERMIT  
Horizontal 6A / Fracture

CNX GAS COMPANY LLC (A)  
POST OFFICE BOX 1248

JANE LEW, WV 263786506

Re: Permit approval for PEN 20 FHS  
47-085-10123-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief

Operator's Well Number: PEN 20 FHS  
Farm Name: COKELEY, LAWRENCE & ANGELA  
U.S. WELL NUMBER:47-085-10123-00-00  
Horizontal 6A / Fracture  
Date Issued: 3/13/2017

Promoting a healthy environment.

03/24/2017

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
2. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
3. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
4. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
5. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
6. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

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

1) Well Operator: CNX GAS COMPANY LLC

<u>494458046</u>	<u>085-Ritchie</u>	<u>Clay</u>	<u>Ellenboro</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: PEN20FHS Well Pad Name: PEN20

3) Farm Name/Surface Owner: Lawrence B. and Angela Cokeley Public Road Access: Bonds Creek Rd

4) Elevation, current ground: 1081 Elevation, proposed post-construction: 1081

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

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus 6178-6239 / 61' thick / 4118 psi

8) Proposed Total Vertical Depth: 6195

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13384'

11) Proposed Horizontal Leg Length: 6217.82'

12) Approximate Fresh Water Strata Depths: 398'

13) Method to Determine Fresh Water Depths: nearest offset wells

14) Approximate Saltwater Depths: none noted for offsets

15) Approximate Coal Seam Depths: None

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: \_\_\_\_\_

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MAR 09 2017



WW-6B  
(04/15)

API NO. 47- 085 - 10123 **F**  
 OPERATOR WELL NO. PEN20FHS  
 Well Pad Name: PEN20

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	NEW	DH-36	94	40'	40'	GTS
Fresh Water	13 3/8"	NEW	J-55	54.5	588.2'	588.2'	636
Coal							
Intermediate	9 5/8"	NEW	HCK-55	36.0	5439.9'	5439.9'	2353.55
Production	5 1/2"	NEW	HCP-110	20.0	13365.1'	13365.1'	3106.6
Tubing							
Liners							

<b>TYPE</b>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	26"	0.25			GTS	GTS
Fresh Water	13 3/8"	17.5"	.380	2730		Type 1	1.20
Coal							
Intermediate	9 5/8"	12.38"	.352	3520		Class A	stage (1) 1.93 Stage (2) 1.19
Production	5 1/2"	8.75" & 8.5"	.361	12,640		Class A	Lead 1.63 tail 1.37
Tubing							
Liners							

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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**MAR 09 2017**

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

Well previously drilled by Noble Energy. Submitting permit application to complete hydraulic fracturing operations and produce the well.

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

The completions phase will be multiple stages over the lateral length of the well, stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand water and chemicals. Max Pressure 9,600 PSI, Max Rate 100 BPM

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 0

*MAB*  
*1/19/17*

22) Area to be disturbed for well pad only, less access road (acres): 0

23) Describe centralizer placement for each casing string:

PREVIOUSLY COMPLETED. From original NOBLE ENERGY submittal "Conductor- No centralizers used. Fresh Water/Surface- Bow spring centralizers every 3 joints to surface. Intermediate- Bow spring centralizers on every joint to KOP, one every third joint from KOP to 100' surface. Production - Rigid bow spring every third joint from KOP to TOC, rigid bow spring every joint to KOP"

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

PREVIOUSLY COMPLETED. From original Noble Energy submittal "Conductor - grout to surface 1.15% CaCl<sub>2</sub>. Fresh Water - Class A Portland cement with flake and 1.15% CaCl<sub>2</sub>, 30% excess yield=1.18. Intermediate - 15.6 ppg Class A +0.4% Ret, 0.15% Disp, 0.2% Anti Foam, 0.125#sk lost circ 20% excess Yield 1.19 to surface. Production: 14.8 ppg Class A 25:75:0 System +2.6% Cement extender, 0.7% fluid loss additive, 0.45% high temp retarder, 0.2% friction reducer 10% excess Yield=1.27 TOC >=200' above 9.625" shoe."

25) Proposed borehole conditioning procedures:

PREVIOUSLY COMPLETED. From original NOBLE ENERGY submittal " Conductor- The hole is drilled w/ air and casing is run in air. apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedure. Fresh Water- The hole is drilled w/air and casing is run with air. Once casing is on bottom, the hole is filled w/ KCl water and a minimum of one hole volume is circulated prior to pumping cement. Coal- The hole is drilled with air and casing is run in air. Once casing is at set depth, the hole is filled w/KCl water and a minimum of one hole volume is circulated prior to pumping cement. Intermediate - Once surface casing is set and cemented intermediate hole is drilled either on air or SOBM and filled w/ KCl water once drilled to TD. The well is conditioned with KCl Circulation prior to running casing. Once casing is at setting depth, the well is circulated a minimum of one hole volume prior to pumping cement. Production - the hole is drilled with synthetic oil base mud and once at TD the hole is circulated at a maximum allowable drilling pump rate for at least 6x bottoms up. Once on Bottom with Casing, Circulate a minimum of one hole volume prior to pumping cement."

\*Note: Attach additional sheets as needed.

*Approved*  
*Office of Oil and Gas*  
*Feb 1 2017*  
WV Department of  
Environmental Protection  
03/24/2017  
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State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-085-10123 County Ritchie District Ellenboro  
Quad Pennsboro Pad Name PEN 20 Field/Pool Name N/A  
Farm name Lawrence & Angela Cokeley Well Number PEN 20FHS  
Operator (as registered with the OOG) Noble Energy, Inc.  
Address 1000 Noble Energy Drive City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing as drilled plat to be submitted by CNX Easting \_\_\_\_\_  
Landing Point of Curve Northing upon completion of the well. Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 1081 GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
Synthetic Oil Based

Date permit issued 07/31/2014 Date drilling commenced 12/29/2014 Date drilling ceased 01/13/2015  
Date completion activities began Not completed Date completion activities ceased na  
Verbal plugging (Y/N) \_\_\_\_\_ Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug  
Freshwater depth(s) ft 398' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft none noted for offsets Void(s) encountered (Y/N) depths N  
Coal depth(s) ft NA Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) No

**APPROVED**  
NAME: Michael Gaff  
DATE: 1/30/17

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Reviewed by:  
AX  
RBDMS  
2/2/17  
03/24/2017



API 47- 085 - 10123 Farm name Lawrence & Angela Cokeley Well number PEN 20FHS

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	26"	20"	40'	New	DH-36		
Surface	17.5"	13 3/8"	588.2'	New	J-55		
Coal							Y
Intermediate 1	12.38"	9 5/8"	5439.9'	New	HCK-55		Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5 1/2"	13,365.1'	New	P-110		N
Tubing							
Packer type and depth set							

Comment Details \*approved cement variance of 2% accelerator (S001) 0.2% Antifoam (D046) 0.125 lb/sk Polyester Flake (D130)

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	PJSM Cement		15.6	1.20	636	25.8	8
Coal							
Intermediate 1	Type 1 / Class A	stage (1) 1024 stage (2) 317	15.6	Stage (1) 1.93 Stage (2) 1.19	total 2353.55	25.8	8
Intermediate 2							
Intermediate 3							
Production	Type 1 / Class A	lead 500 tail 1501	14.8	Lead 1.63 tail 1.37	total 3106.6	2871.37	8
Tubing							

Drillers TD (ft) 13384' Loggers TD (ft) 13356'

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5480'

Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature  sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING No centralizers used on conductor.

5 Centralizers on Surface Casing 65 Centralizers on Intermediate String (Bow string centralizers on first two joints then every third joint to 100' from surface).

195 Centralizers on Production String (rigid bow string every joint to KOP, rigid bow spring every third joint from KOP to top of cement).

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

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WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WV Department of Environmental Protection  
JAN 17 2017

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

WV Department of Environmental Protection









# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'  
Page 1 of 8



### REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad		

### REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 4.0.1
North Reference	Grid	User	Edsaryar
Scale	0.999954	Report Generated	15/Jan/2015 at 15:44
Convergence at slot	0.97° West	Database/Source file	WellArchitectEasternDB/PEN-20F-HS_AWB.xml

### WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-67.90	73.26	1568279.06	305207.68	39°19'40.465"N	81°01'34.360"W
Facility Reference Pt			1568205.80	305275.58	39°19'41.124"N	81°01'35.306"W
Field Reference Pt			0.00	0.00	38°17'12.460"N	86°28'23.077"W

### WELLPATH DATUM

Calculation method	Minimum curvature	Nomac 78 (RKB) to Facility Vertical Datum	1055.00ft
Horizontal Reference Pt	Slot	Nomac 78 (RKB) to Mean Sea Level	1055.00ft
Vertical Reference Pt	Nomac 78 (RKB)	Nomac 78 (RKB) to Mud Line at Slot (Slot F)	26.00ft
MD Reference Pt	Nomac 78 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	320.00°

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# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'  
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REFERENCE WELLPATH IDENTIFICATION					
Operator	NOBLE ENERGY			Slot	Slot F
Area	Ritchie County, WV			Well	PEN-20F-HS
Field	Ritchie			Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad				

**WELLPATH DATA (143 stations) † = interpolated/extrapolated station**

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [%/100ft]	Build Rate [%/100ft]	Turn Rate [%/100ft]
0.00†	0.000	184.620	0.00	0.00	0.00	0.00	1568279.06	305207.68	39°19'40.465"N	81°01'34.360"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	184.620	26.00	0.00	0.00	0.00	1568279.06	305207.68	39°19'40.465"N	81°01'34.360"W	0.00	0.000	0.00	0.00	0.00
100.00	0.230	184.620	100.00	-0.11	-0.15	-0.01	1568279.05	305207.53	39°19'40.464"N	81°01'34.360"W	0.15	184.620	0.31	0.31	0.00
200.00	0.380	243.820	200.00	-0.17	-0.49	-0.33	1568278.73	305207.19	39°19'40.460"N	81°01'34.364"W	0.59	213.377	0.33	0.15	59.20
300.00	0.380	235.580	300.00	-0.06	-0.83	-0.90	1568278.16	305206.85	39°19'40.457"N	81°01'34.371"W	1.22	227.281	0.05	0.00	-8.24
400.00	0.170	162.920	400.00	-0.16	-1.16	-1.13	1568277.93	305206.52	39°19'40.454"N	81°01'34.374"W	1.62	224.233	0.37	-0.21	-72.66
500.00	0.260	46.910	500.00	-0.29	-1.14	-0.92	1568278.14	305206.54	39°19'40.454"N	81°01'34.371"W	1.47	218.727	0.37	0.09	-116.01
600.00	0.320	21.740	599.99	-0.14	-0.73	-0.65	1568278.41	305206.95	39°19'40.458"N	81°01'34.368"W	0.98	221.621	0.14	0.06	-25.17
700.00	0.280	7.100	699.99	0.16	-0.23	-0.51	1568278.55	305207.45	39°19'40.463"N	81°01'34.366"W	0.56	246.115	0.09	-0.04	-14.64
800.00	0.280	313.810	799.99	0.57	0.18	-0.66	1568278.40	305207.86	39°19'40.467"N	81°01'34.368"W	0.69	285.529	0.25	0.00	-53.29
900.00	0.160	230.340	899.99	0.81	0.26	-0.94	1568278.12	305207.94	39°19'40.468"N	81°01'34.372"W	0.98	285.595	0.31	-0.12	-83.47
1000.00	0.210	182.970	999.99	0.68	-0.01	-1.06	1568278.00	305207.67	39°19'40.465"N	81°01'34.373"W	1.06	269.545	0.16	0.05	-47.37
1100.00	0.320	42.360	1099.99	0.58	0.01	-0.88	1568278.18	305207.69	39°19'40.465"N	81°01'34.371"W	0.88	270.967	0.50	0.11	-140.61
1200.00	0.290	80.130	1199.99	0.49	0.26	-0.45	1568278.61	305207.94	39°19'40.468"N	81°01'34.365"W	0.52	300.704	0.20	-0.03	37.77
1300.00	0.260	123.310	1299.99	0.14	0.18	-0.01	1568279.05	305207.86	39°19'40.467"N	81°01'34.360"W	0.18	357.921	0.20	-0.03	43.18
1400.00	0.240	123.150	1399.99	-0.27	-0.06	0.36	1568279.42	305207.62	39°19'40.465"N	81°01'34.355"W	0.36	98.840	0.02	-0.02	-0.16
1500.00	0.150	178.920	1499.99	-0.58	-0.30	0.54	1568279.60	305207.38	39°19'40.462"N	81°01'34.353"W	0.61	119.322	0.20	-0.09	55.77
1600.00	0.340	249.490	1599.99	-0.58	-0.54	0.26	1568279.32	305207.14	39°19'40.460"N	81°01'34.356"W	0.60	154.061	0.32	0.19	70.57
1700.00	0.430	274.610	1699.98	-0.22	-0.61	-0.39	1568278.67	305207.07	39°19'40.459"N	81°01'34.364"W	0.72	212.685	0.19	0.09	25.12
1800.00	0.290	309.110	1799.98	0.30	-0.42	-0.96	1568278.10	305207.26	39°19'40.461"N	81°01'34.372"W	1.05	246.408	0.25	-0.14	34.50
1900.00	0.240	58.900	1899.98	0.51	-0.15	-0.98	1568278.08	305207.53	39°19'40.464"N	81°01'34.372"W	0.99	261.156	0.43	-0.05	109.83
2000.00	0.210	68.800	1999.98	0.32	-0.22	-0.76	1568278.30	305207.46	39°19'40.463"N	81°01'34.369"W	0.80	253.652	0.37	-0.03	109.86
2100.00	0.080	321.600	1999.98	0.23	-0.35	-0.77	1568278.29	305207.33	39°19'40.462"N	81°01'34.369"W	0.85	245.654	0.28	-0.13	152.82
2200.00	0.370	87.700	1999.98	0.10	-0.28	-0.49	1568278.57	305207.40	39°19'40.462"N	81°01'34.366"W	0.57	240.241	0.42	0.29	126.08
2300.00	0.330	131.500	2299.98	-0.38	-0.46	0.05	1568279.11	305207.22	39°19'40.461"N	81°01'34.359"W	0.46	174.252	0.26	-0.04	43.81
2400.00	0.220	13.900	2399.98	-0.55	-0.46	0.31	1568279.37	305207.22	39°19'40.461"N	81°01'34.356"W	0.56	146.411	0.47	-0.11	-117.62
2500.00	0.350	86.660	2499.98	-0.62	-0.26	0.66	1568279.72	305207.42	39°19'40.463"N	81°01'34.351"W	0.71	111.498	0.35	0.13	72.77
2600.00	0.280	200.810	2599.98	-0.93	-0.47	0.88	1568279.94	305207.21	39°19'40.461"N	81°01'34.348"W	1.00	118.167	0.53	-0.07	113.35
2700.00	0.350	267.720	2699.97	-0.89	-0.75	0.50	1568279.56	305206.93	39°19'40.458"N	81°01'34.353"W	0.90	146.570	0.32	0.07	60.71
2800.00	0.220	314.150	2799.97	-0.55	-0.67	0.06	1568279.12	305207.01	39°19'40.459"N	81°01'34.359"W	0.67	175.188	0.28	-0.13	53.43

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# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'

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REFERENCE WELLPATH IDENTIFICATION					
Operator	NOBLE ENERGY			Slot	Slot F
Area	Ritchie County, WV			Well	PEN-20F-HS
Field	Ritchie			Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad				

## WELLPATH DATA (143 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
2900.00	0.220	180.080	2899.97	-0.50	-0.72	-0.08	1568278.98	305206.96	39°19'40.458"N	81°01'34.360"W	0.73	186.461	0.41	0.00	-134.07
3000.00	0.330	189.740	2999.97	-0.83	-1.20	-0.13	1568278.93	305206.48	39°19'40.453"N	81°01'34.361"W	1.21	186.230	0.12	0.11	9.66
3100.00	0.290	264.220	3099.97	-0.88	-1.51	-0.43	1568278.63	305206.17	39°19'40.450"N	81°01'34.365"W	1.57	195.956	0.38	-0.04	74.48
3200.00	0.150	62.710	3199.97	-0.77	-1.47	-0.57	1568278.49	305206.21	39°19'40.451"N	81°01'34.366"W	1.58	201.030	0.43	-0.14	158.49
3300.00	0.260	178.720	3299.97	-0.97	-1.64	-0.45	1568278.61	305206.04	39°19'40.449"N	81°01'34.365"W	1.70	195.186	0.35	0.11	116.01
3400.00	0.200	351.090	3399.97	-1.00	-1.70	-0.47	1568278.59	305205.98	39°19'40.448"N	81°01'34.365"W	1.76	195.412	0.46	-0.06	172.37
3500.00	0.310	122.620	3499.97	-1.11	-1.67	-0.27	1568278.79	305206.01	39°19'40.449"N	81°01'34.363"W	1.69	189.077	0.47	0.11	131.53
3600.00	0.240	214.820	3599.97	-1.42	-1.99	-0.16	1568278.90	305205.69	39°19'40.446"N	81°01'34.361"W	1.99	184.558	0.40	-0.07	92.20
3700.00	0.060	222.330	3699.97	-1.48	-2.20	-0.31	1568278.75	305205.48	39°19'40.443"N	81°01'34.363"W	2.22	188.113	0.18	-0.18	7.51
3786.00	0.190	60.340	3785.97	-1.51	-2.16	-0.22	1568278.84	305205.52	39°19'40.444"N	81°01'34.362"W	2.17	185.806	0.29	0.15	-188.36
3797.00	0.480	80.970	3796.97	-1.54	-2.14	-0.16	1568278.90	305205.54	39°19'40.444"N	81°01'34.361"W	2.15	184.223	2.81	2.64	187.55
3892.00	3.940	59.950	3891.88	-2.31	-0.45	3.06	1568282.12	305207.23	39°19'40.461"N	81°01'34.321"W	3.09	98.304	3.68	3.64	-22.13
3987.00	9.510	56.600	3986.19	-3.78	5.51	12.45	1568291.50	305213.19	39°19'40.522"N	81°01'34.202"W	13.61	66.110	5.88	5.86	-3.53
4081.00	14.200	52.470	4078.16	-5.17	16.82	28.08	1568307.14	305224.50	39°19'40.636"N	81°01'34.006"W	32.73	59.083	5.07	4.99	-4.39
4175.00	17.170	55.390	4168.65	-6.97	31.72	48.65	1568327.71	305239.40	39°19'40.787"N	81°01'33.747"W	58.08	56.890	3.27	3.16	3.11
4270.00	19.430	57.030	4258.84	-10.22	48.29	73.45	1568352.51	305255.97	39°19'40.955"N	81°01'33.435"W	87.90	56.676	2.44	2.38	1.73
4364.00	20.880	63.750	4347.10	-16.12	64.21	101.59	1568380.65	305271.89	39°19'41.117"N	81°01'33.081"W	120.19	57.706	2.90	1.54	7.15
4459.00	21.050	72.800	4435.83	-26.75	76.75	133.08	1568412.14	305284.42	39°19'41.246"N	81°01'32.683"W	153.63	60.029	3.41	0.18	9.53
4554.00	24.900	70.100	4523.28	-40.24	88.60	168.20	1568447.25	305296.28	39°19'41.369"N	81°01'32.239"W	190.11	62.221	4.20	4.05	-2.84
4649.00	28.820	68.000	4608.02	-54.20	104.00	208.25	1568487.30	305311.67	39°19'41.528"N	81°01'31.732"W	232.78	63.464	4.24	4.13	-2.21
4743.00	30.330	69.340	4689.80	-65.46	124.24	249.90	1568528.95	305331.91	39°19'41.735"N	81°01'31.207"W	279.08	63.566	4.33	1.61	-8.15
4838.00	32.070	71.550	4771.06	-73.08	149.64	292.03	1568571.08	305357.31	39°19'41.993"N	81°01'30.676"W	328.14	62.869	2.38	1.83	-2.94
4933.00	33.630	72.900	4850.88	-82.27	175.17	336.75	1568615.79	305382.84	39°19'42.253"N	81°01'30.113"W	379.58	62.518	3.47	1.64	5.63
5028.00	35.260	74.590	4929.25	-97.22	196.85	385.84	1568664.88	305404.52	39°19'42.475"N	81°01'29.493"W	433.15	62.970	4.18	1.72	6.75
5123.00	39.510	70.000	5004.72	-117.03	216.48	440.06	1568719.10	305424.15	39°19'42.678"N	81°01'28.807"W	490.42	63.806	4.57	4.47	1.58
5218.00	44.760	77.000	5074.41	-137.72	238.90	498.96	1568778.00	305446.57	39°19'42.910"N	81°01'28.063"W	553.20	64.415	6.02	5.59	-3.34
5312.00	49.520	65.800	5139.02	-157.25	266.88	562.69	1568841.73	305474.54	39°19'43.197"N	81°01'27.258"W	622.77	64.626	5.41	5.01	-2.78
5369.00	47.600	66.150	5174.09	-167.27	283.92	598.58	1568877.61	305491.59	39°19'43.371"N	81°01'26.805"W	662.50	64.624	3.83	-3.62	-1.66
5480.00	43.370	61.880	5254.71	-185.51	321.31	671.53	1568950.56	305528.97	39°19'43.753"N	81°01'25.885"W	744.44	64.430	4.03	-3.68	-2.32
5533.00	42.120	63.180	5300.97	-194.64	341.17	709.39	1568988.42	305548.83	39°19'43.956"N	81°01'25.407"W	787.17	64.316	2.70	-1.98	2.70

WV Department of Environmental Protection  
 Office of Oil and Gas

4708510123F





# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad		

## WELLPATH DATA (143 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
5638.00	42.000	68.960	5371.53	-212.23	366.96	767.51	1569046.53	305574.63	39°19'44.220"N	81°01'24.673"W	850.72	64.446	4.08	-0.13	6.08
5732.00	39.940	68.180	5442.51	-231.87	389.47	824.88	1569103.90	305597.13	39°19'44.452"N	81°01'23.948"W	912.20	64.725	2.26	-2.19	-0.83
5827.00	39.770	63.800	5515.45	-248.63	414.23	880.46	1569159.48	305621.89	39°19'44.706"N	81°01'23.246"W	973.04	64.805	2.96	-0.18	-4.61
5922.00	39.800	62.870	5588.45	-262.66	441.51	934.79	1569213.80	305649.17	39°19'44.985"N	81°01'22.561"W	1033.81	64.718	0.63	0.03	-0.98
6016.00	39.650	66.580	5660.76	-277.92	467.15	989.09	1569268.10	305674.81	39°19'45.248"N	81°01'21.876"W	1093.86	64.718	2.53	-0.16	3.95
6112.00	39.910	62.750	5734.55	-293.46	493.43	1044.58	1569323.59	305701.09	39°19'45.517"N	81°01'21.175"W	1155.26	64.715	2.57	0.27	-3.99
6206.00	36.750	46.060	5808.48	-298.19	526.85	1091.78	1569370.79	305734.50	39°19'45.855"N	81°01'20.582"W	1212.25	64.240	11.48	-3.36	-17.76
6302.00	37.750	30.010	5885.07	-286.14	572.33	1127.24	1569406.25	305779.99	39°19'46.310"N	81°01'20.140"W	1264.22	63.082	10.15	1.04	-16.72
6396.00	42.530	17.120	5957.04	-259.00	627.74	1151.04	1569430.05	305835.39	39°19'46.862"N	81°01'19.849"W	1311.09	61.393	10.18	5.09	-13.71
6490.00	49.250	4.230	6022.57	-216.09	693.83	1163.06	1569442.07	305901.48	39°19'47.517"N	81°01'19.711"W	1354.29	59.181	12.14	7.15	-13.71
6585.00	58.910	353.320	6078.35	-156.06	770.45	1160.97	1569439.98	305978.10	39°19'48.274"N	81°01'19.754"W	1393.36	56.431	13.76	10.17	-11.48
6680.00	65.140	346.950	6122.93	-83.52	852.99	1146.48	1569425.49	306060.63	39°19'49.087"N	81°01'19.956"W	1428.99	53.351	8.83	6.56	-6.71
6775.00	68.560	341.620	6160.29	-3.93	937.01	1122.79	1569401.80	306144.64	39°19'49.913"N	81°01'20.276"W	1462.41	50.154	6.29	3.60	-5.61
6870.00	72.850	333.700	6191.72	81.43	1019.81	1088.67	1569367.68	306227.44	39°19'50.726"N	81°01'20.728"W	1491.72	46.871	9.07	4.52	-8.34
6965.00	77.930	327.840	6215.69	171.68	1099.94	1043.77	1569322.78	306307.57	39°19'51.510"N	81°01'21.316"W	1516.35	43.499	8.01	5.35	-6.17
7061.00	85.010	321.090	6229.94	266.21	1177.07	988.62	1569267.63	306384.69	39°19'52.263"N	81°01'22.035"W	1537.16	40.027	10.13	7.37	-7.03
7156.00	89.880	318.920	6234.17	361.09	1249.75	927.64	1569206.66	306457.37	39°19'52.971"N	81°01'22.826"W	1556.41	36.585	5.61	5.13	-2.28
7252.00	91.020	323.120	6233.42	457.04	1324.36	867.27	1569146.29	306531.97	39°19'53.698"N	81°01'23.610"W	1583.06	33.219	4.53	1.19	4.37
7348.00	91.740	319.730	6231.38	552.98	1399.38	807.43	1569086.46	306606.99	39°19'54.430"N	81°01'24.388"W	1615.62	29.985	3.55	0.42	-3.53
7444.00	91.680	316.950	6229.28	648.91	1471.08	743.64	1569022.67	306678.69	39°19'55.128"N	81°01'25.215"W	1648.36	26.817	2.92	-0.35	-2.90
7539.00	91.680	314.140	6227.82	743.60	1538.87	677.12	1568956.15	306746.48	39°19'55.786"N	81°01'26.076"W	1681.26	23.750	2.99	-0.42	-2.96
7634.00	91.060	314.430	6227.21	838.12	1605.20	609.12	1568888.15	306812.81	39°19'56.430"N	81°01'26.956"W	1716.89	20.780	0.72	-0.65	0.31
7730.00	90.180	318.330	6227.01	933.91	1674.69	542.90	1568821.94	306882.29	39°19'57.106"N	81°01'27.813"W	1760.49	17.962	4.06	0.12	4.06
7825.00	90.280	320.500	6226.63	1028.90	1746.83	481.10	1568760.14	306954.43	39°19'57.809"N	81°01'28.615"W	1811.87	15.398	2.29	0.11	2.28
7921.00	90.880	318.870	6226.49	1124.90	1820.03	418.99	1568698.03	307027.62	39°19'58.521"N	81°01'29.422"W	1867.63	12.964	1.75	-0.42	-1.70
8016.00	90.970	320.980	6226.62	1219.89	1892.72	357.84	1568636.88	307100.31	39°19'59.230"N	81°01'30.215"W	1926.25	10.706	2.22	0.09	2.22
8112.00	90.030	324.820	6226.62	1315.75	1969.27	299.94	1568578.99	307176.86	39°19'59.976"N	81°01'30.969"W	1991.98	8.660	4.00	0.06	4.00
8207.00	90.280	326.990	6226.36	1410.24	2047.93	246.68	1568525.73	307255.51	39°20'00.745"N	81°01'31.663"W	2062.73	6.868	2.29	0.26	2.27
8303.00	90.520	329.000	6225.69	1505.29	2129.37	195.87	1568474.92	307336.95	39°20'01.541"N	81°01'32.328"W	2138.36	5.255	2.21	0.25	2.20
8399.00	90.650	326.610	6224.71	1600.38	2210.64	144.79	1568423.84	307418.21	39°20'02.336"N	81°01'32.995"W	2215.37	3.747	2.59	0.14	-2.58

4708510123F



# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad		

## WELLPATH DATA (143 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
8494.00	90.920	321.460	6223.41	1695.10	2287.49	89.02	1568368.07	307495.07	39°20'03.086"N	81°01'33.721"W	2289.23	2.229	5.43	0.28	-5.42
8590.00	90.680	315.870	6222.06	1791.03	2359.54	25.65	1568304.70	307567.11	39°20'03.787"N	81°01'34.543"W	2359.68	0.623	5.83	-0.25	-5.82
8685.00	90.250	316.300	6221.29	1885.80	2427.97	-40.24	1568238.82	307635.54	39°20'04.452"N	81°01'35.397"W	2428.31	359.050	0.64	-0.45	0.45
8781.00	89.970	319.570	6221.11	1981.73	2499.23	-104.55	1568174.51	307706.79	39°20'05.146"N	81°01'36.230"W	2501.42	357.605	3.42	-0.29	3.41
8876.00	90.340	320.760	6220.85	2076.73	2572.18	-165.41	1568113.66	307779.74	39°20'05.856"N	81°01'37.020"W	2577.49	356.321	1.31	0.39	1.25
8971.00	89.970	319.950	6220.59	2171.72	2645.33	-226.02	1568053.05	307852.88	39°20'06.569"N	81°01'37.808"W	2654.97	355.117	0.94	-0.39	-0.85
9066.00	90.000	318.310	6220.62	2266.71	2717.17	-288.18	1567990.90	307924.72	39°20'07.269"N	81°01'38.614"W	2732.41	353.946	1.73	0.03	-1.73
9162.00	90.060	313.460	6220.57	2362.43	2786.07	-354.98	1567924.09	307993.62	39°20'07.938"N	81°01'39.479"W	2808.59	352.739	5.05	0.06	-5.05
9258.00	89.600	312.540	6220.85	2457.71	2851.54	-425.19	1567853.89	308059.08	39°20'08.573"N	81°01'40.387"W	2883.07	351.519	1.07	-0.48	-0.96
9353.00	89.970	317.130	6221.21	2552.30	2918.50	-492.54	1567786.54	308126.04	39°20'09.224"N	81°01'41.258"W	2959.77	350.421	4.85	0.39	4.83
9449.00	89.880	324.020	6221.34	2648.24	2992.61	-553.47	1567725.61	308200.15	39°20'09.946"N	81°01'42.050"W	3043.37	349.522	7.18	-0.09	7.18
9545.00	90.030	322.870	6221.41	2744.07	3069.73	-610.65	1567668.44	308277.26	39°20'10.698"N	81°01'42.794"W	3129.88	348.749	1.21	0.16	-1.20
9641.00	90.280	319.650	6221.15	2840.03	3144.60	-670.72	1567608.38	308352.13	39°20'11.428"N	81°01'43.574"W	3215.33	347.960	3.36	0.26	-3.35
9736.00	90.180	320.230	6220.77	2935.03	3217.31	-731.86	1567547.24	308424.83	39°20'12.136"N	81°01'44.368"W	3299.50	347.185	0.62	-0.11	0.61
9832.00	90.220	320.310	6220.44	3031.03	3291.14	-793.22	1567485.88	308498.66	39°20'12.856"N	81°01'45.165"W	3385.38	346.449	0.09	0.04	0.08
9927.00	90.150	321.690	6220.13	3126.01	3364.96	-853.00	1567426.10	308572.48	39°20'13.575"N	81°01'45.942"W	3471.40	345.775	1.45	-0.07	1.45
10022.00	90.180	323.560	6219.86	3220.90	3440.45	-910.66	1567368.44	308647.97	39°20'14.312"N	81°01'46.692"W	3558.94	345.174	1.97	0.03	1.97
10117.00	90.400	323.580	6219.37	3315.72	3516.89	-967.08	1567312.03	308724.40	39°20'15.057"N	81°01'47.426"W	3647.43	344.625	0.23	0.23	0.02
10213.00	90.370	322.030	6218.73	3411.60	3593.36	-1025.11	1567254.00	308800.86	39°20'15.803"N	81°01'48.181"W	3736.72	344.078	1.61	-0.03	-1.61
10309.00	90.280	317.520	6218.18	3507.57	3666.63	-1087.09	1567192.02	308874.14	39°20'16.517"N	81°01'48.986"W	3824.39	343.486	4.70	-0.09	-4.70
10404.00	90.250	315.880	6217.75	3602.41	3735.77	-1152.24	1567126.88	308943.27	39°20'17.189"N	81°01'49.830"W	3909.43	342.858	1.73	-0.03	-1.73
10500.00	90.430	316.140	6217.18	3698.18	3804.84	-1218.91	1567060.21	309012.33	39°20'17.861"N	81°01'50.693"W	3995.31	342.237	0.33	0.19	0.27
10595.00	90.310	317.130	6216.56	3793.01	3873.90	-1284.14	1566994.98	309081.39	39°20'18.532"N	81°01'51.538"W	4081.19	341.660	1.05	-0.13	1.04
10691.00	90.550	319.690	6215.84	3888.96	3945.69	-1347.86	1566931.27	309153.18	39°20'19.231"N	81°01'52.365"W	4169.56	341.140	2.68	0.25	2.67
10787.00	90.520	323.190	6214.94	3984.91	4020.74	-1407.69	1566871.44	309228.23	39°20'19.962"N	81°01'53.143"W	4260.04	340.705	3.65	-0.03	3.65
10882.00	90.650	326.500	6213.97	4079.55	4098.40	-1462.38	1566816.75	309305.88	39°20'20.721"N	81°01'53.855"W	4351.49	340.363	3.49	0.14	3.48
10978.00	90.740	324.860	6212.81	4175.07	4177.68	-1516.50	1566762.64	309385.16	39°20'21.495"N	81°01'54.561"W	4444.41	340.049	1.71	0.09	-1.71
11073.00	90.590	321.290	6211.71	4269.91	4253.61	-1573.56	1566705.58	309461.08	39°20'22.236"N	81°01'55.304"W	4535.33	339.699	3.76	-0.16	-3.76
11168.00	90.520	318.790	6210.79	4364.90	4326.41	-1634.56	1566644.58	309533.89	39°20'22.945"N	81°01'56.096"W	4624.89	339.303	2.63	-0.07	-2.63
11264.00	90.250	319.230	6210.14	4460.88	4398.87	-1697.53	1566581.61	309606.34	39°20'23.650"N	81°01'56.913"W	4715.05	338.898	0.54	-0.28	0.46

4708510123F



# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'

Page 6 of 8



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad		

## WELLPATH DATA (143 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
11360.00	90.150	319.770	6209.81	4556.88	4471.87	-1759.88	1566519.27	309679.34	39°20'24.361"N	81°01'57.722"W	4805.71	338.518	0.57	-0.10	0.56
11455.00	90.340	319.300	6209.40	4651.88	4544.15	-1821.53	1566457.62	309751.61	39°20'25.065"N	81°01'58.523"W	4895.64	338.157	0.53	0.20	-0.49
11551.00	90.370	317.200	6208.81	4747.82	4615.76	-1885.45	1566393.70	309823.22	39°20'25.762"N	81°01'59.352"W	4986.00	337.781	2.19	0.03	-2.19
11646.00	90.460	317.430	6208.12	4842.72	4685.60	-1949.85	1566329.30	309893.05	39°20'26.441"N	81°02'00.186"W	5075.11	337.406	0.26	0.09	0.24
11742.00	90.620	319.160	6207.21	4938.67	4757.26	-2013.72	1566265.44	309964.71	39°20'27.139"N	81°02'01.015"W	5165.91	337.057	1.81	0.17	1.80
11838.00	90.220	317.880	6206.51	5034.63	4829.18	-2077.30	1566201.86	310036.63	39°20'27.839"N	81°02'01.839"W	5257.01	336.725	1.40	-0.42	-1.33
11933.00	90.250	318.960	6206.12	5129.59	4900.24	-2140.35	1566138.81	310107.69	39°20'28.530"N	81°02'02.657"W	5347.28	336.405	1.14	0.03	1.14
12029.00	89.850	320.980	6206.04	5225.59	4973.74	-2202.09	1566077.07	310181.19	39°20'29.246"N	81°02'03.459"W	5439.42	336.119	2.15	-0.42	2.10
12124.00	90.060	323.760	6206.11	5320.50	5048.97	-2260.09	1566019.08	310256.41	39°20'29.980"N	81°02'04.213"W	5531.74	335.885	2.93	0.22	2.93
12220.00	90.400	325.750	6205.72	5416.16	5127.37	-2315.48	1565963.69	310334.81	39°20'30.745"N	81°02'04.935"W	5625.96	335.696	2.10	0.35	2.07
12315.00	90.770	322.250	6204.75	5510.91	5204.21	-2371.31	1565907.86	310411.64	39°20'31.495"N	81°02'05.663"W	5719.00	335.504	3.70	0.39	-3.68
12411.00	90.370	318.940	6203.80	5606.88	5278.38	-2432.24	1565846.94	310485.80	39°20'32.218"N	81°02'06.454"W	5811.80	335.260	3.47	-0.42	-3.45
12507.00	90.340	317.810	6203.20	5702.84	5350.13	-2496.01	1565783.17	310557.56	39°20'32.916"N	81°02'07.281"W	5903.73	334.989	1.18	-0.03	-1.18
12603.00	90.770	319.710	6202.27	5798.81	5422.31	-2559.29	1565719.90	310629.74	39°20'33.619"N	81°02'08.102"W	5995.95	334.733	2.03	0.45	1.98
12699.00	90.650	319.560	6201.08	5894.80	5495.45	-2621.46	1565657.73	310702.87	39°20'34.331"N	81°02'08.909"W	6088.68	334.498	0.20	-0.12	-0.16
12794.00	90.680	316.880	6199.98	5989.74	5566.28	-2684.75	1565594.44	310773.69	39°20'35.020"N	81°02'09.730"W	6179.91	334.251	2.83	0.03	-2.83
12890.00	90.680	315.880	6198.84	6085.54	5635.75	-2750.99	1565528.20	310843.16	39°20'35.696"N	81°02'10.588"W	6271.33	333.981	1.06	0.00	-1.06
12985.00	90.590	318.280	6197.79	6180.40	5705.28	-2815.71	1565463.49	310912.69	39°20'36.372"N	81°02'11.427"W	6362.27	333.732	2.54	-0.09	2.54
13081.00	90.650	322.330	6196.75	6276.37	5779.12	-2877.02	1565402.18	310986.52	39°20'37.091"N	81°02'12.223"W	6455.65	333.534	4.24	0.06	4.24
13176.00	90.370	321.650	6195.90	6371.31	5853.96	-2935.52	1565343.68	311061.36	39°20'37.821"N	81°02'12.984"W	6548.75	333.368	0.77	-0.29	-0.72
13272.00	90.250	319.840	6195.39	6467.30	5928.30	-2996.26	1565282.94	311135.69	39°20'38.545"N	81°02'13.773"W	6642.46	333.187	1.89	-0.13	-1.89
13356.00	90.250	316.580	6195.02	6551.25	5990.92	-3052.22	1565226.98	311198.32	39°20'39.154"N	81°02'14.499"W	6723.63	333.002	3.87	0.00	-3.87
13384.00	90.250	316.580	6194.90	6579.20	6011.26	-3071.47	1565207.74	311218.66	39°20'39.352"N	81°02'14.749"W	6750.50	332.935	0.00	0.00	0.00

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# Actual Wellpath Report

PEN-20F-HS AWP Proj: 13384'

Page 7 of 8



REFERENCE WELLPATH IDENTIFICATION			
Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWB
Facility	PEN-20 Pad		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PEN-20F-HS BHL Rev-3		6202.27	6014.59	-3066.43	1565212.78	311221.98	39°20'39.386"N	81°02'14.685"W	point
PEN-20F-HS LP Rev-3		6237.00	1200.00	973.50	1569252.51	306407.62	39°19'52.487"N	81°01'22.232"W	point
PEN-20 ALT Vertices		6948.00	-3.50	-30.34	1568248.72	305204.18	39°19'40.426"N	81°01'34.745"W	polygon
PEN-20 Cokely Tract 1		6948.00	-3.50	-30.34	1568248.72	305204.18	39°19'40.426"N	81°01'34.745"W	polygon
PEN-20 Cokely Tract 2		6948.00	-3.50	-30.34	1568248.72	305204.18	39°19'40.426"N	81°01'34.745"W	polygon
PEN-20 LL		6948.00	-3.50	-30.34	1568248.72	305204.18	39°19'40.426"N	81°01'34.745"W	polygon
PEN-20 Parcel 3.12-1.2		6948.00	-3.50	-30.34	1568248.72	305204.18	39°19'40.426"N	81°01'34.745"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: PEN-20F-HS AWB Ref Wellpath: PEN-20F-HS AWP Proj: 13384'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	3786.00	Generic gyro - northseeking (Standard)	01_MS Gyro <12-3/4"> (100'-3786')	PEN-20F-HS AWB
3786.00	5365.00	ISCWSA MWD, Rev. 2 (Standard)	02_Scientific EM <12-3/4"> (3786')(3797'-5365') Proj:5455'	PEN-20F-HS AWB
5365.00	13356.00	NaviTrak (AT Curve Short Spaced)	03_BHI AT Curve <8-3/4"> (5365')(5480'-13356')	PEN-20F-HS AWB
13356.00	13384.00	Blind Drilling (std)	Projection to bit	PEN-20F-HS AWB

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**Actual Wellpath Report**  
PEN-20F-HS AWP Proj: 13384'  
Page 8 of 8



**REFERENCE WELLPATH IDENTIFICATION**

Operator	NOBLE ENERGY	Slot	Slot F
Area	Ritchie County, WV	Well	PEN-20F-HS
Field	Ritchie	Wellbore	PEN-20F-HS AWP
Facility	PEN-20 Pad		

**COMMENTS**

**Wellpath general comments**

API: 47-085-10123-0000  
BHI Job #: 6697417  
Rig: Nomac 78  
Duration: 1/6/2015-1/11/2015  
MS Gyro <12-3/4"> (100'-3786')  
Scientific EM <12-3/4"> (3786')(3797'-5365')  
BHI AT Curve <8-3/4"> (5365')(5480'-13356')  
Projected MD at TD: 13384'

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# NOBLE ENERGY

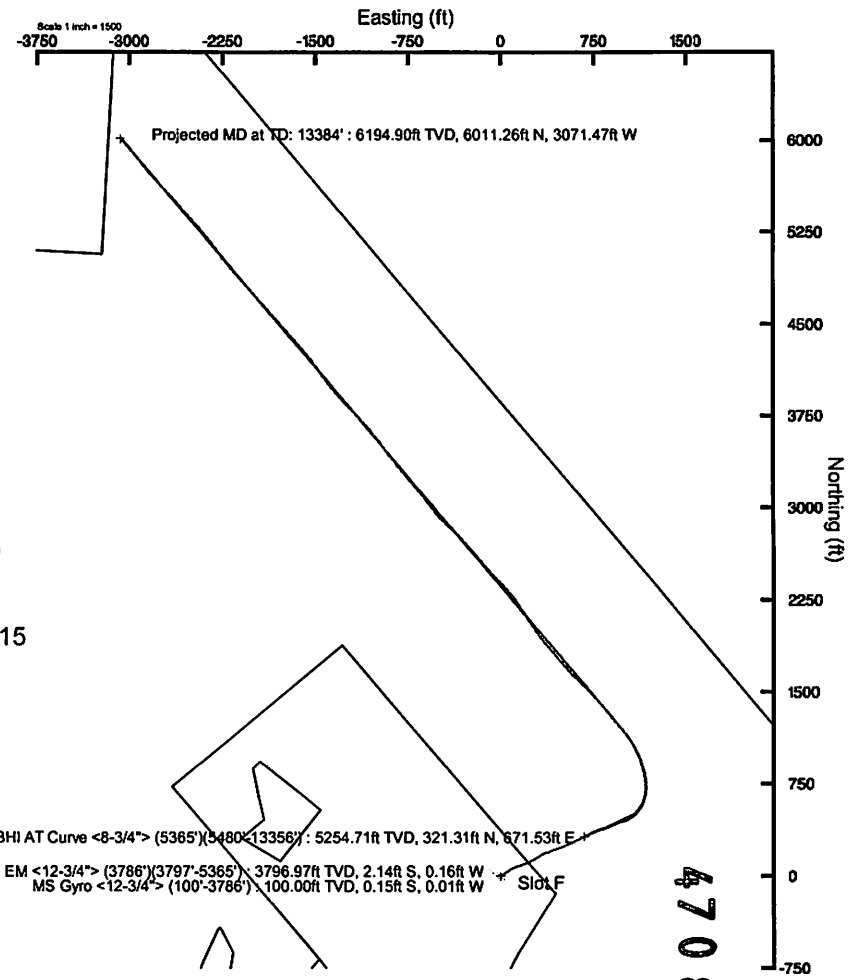
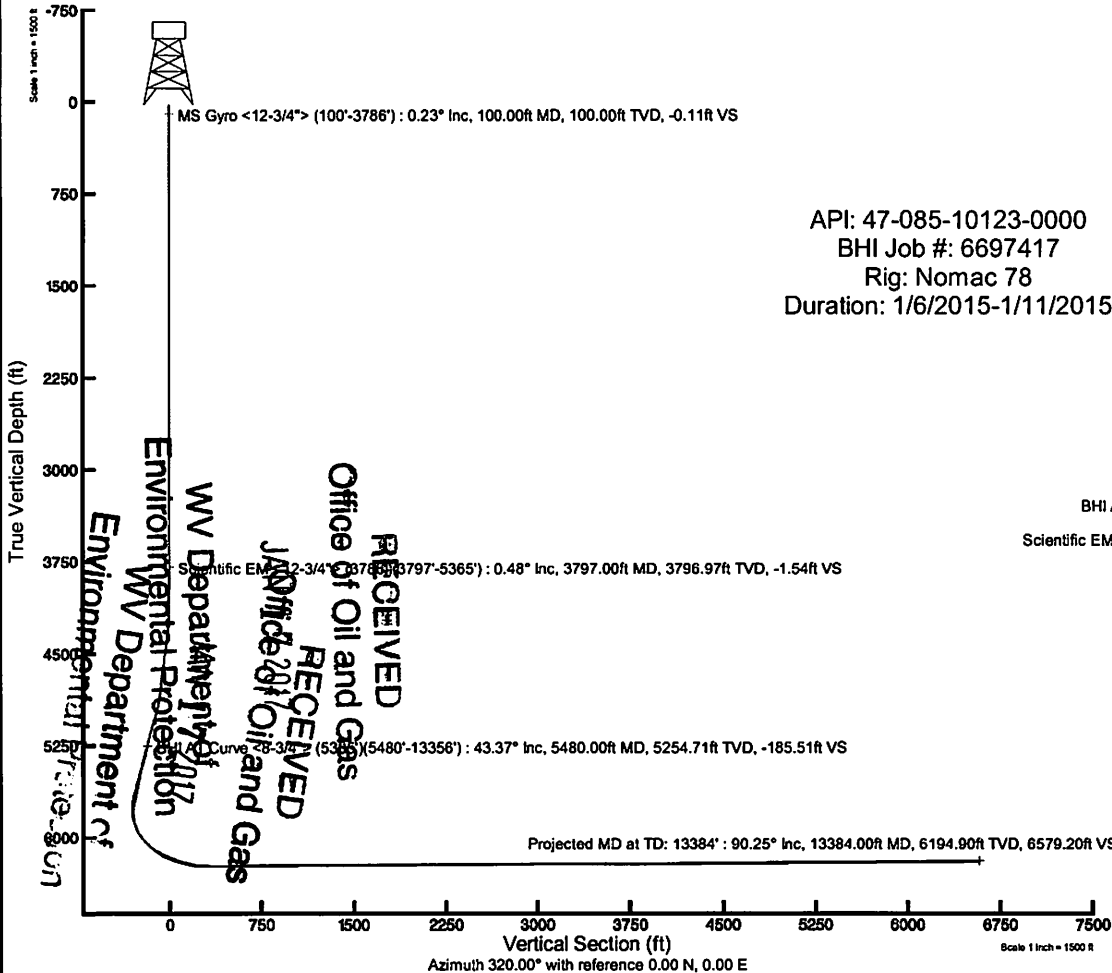


Location: Ritchie County, WV  
 Field: Ritchie  
 Facility: PEN-20 Pad

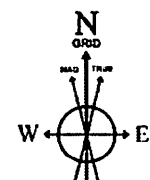
Slot: Slot F  
 Well: PEN-20F-HS  
 Wellbore: PEN-20F-HS PWB

Plot reference wellpath is PEN-20F-HS PWP Rev-0.0	
True vertical depths are referenced to Nomac 78 (RKB)	Grid System: NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet
Measured depths are referenced to Nomac 78 (RKB)	North Reference: Grid north
Nomac 78 (RKB) to Mean Sea Level: 1055 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot F): -1029 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: edanyar on 19/Jen/2015

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
PEN-20 Pad	1568205.800	305275.580	39°19'41.124"N	81°01'35.306"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot F	-67.90	73.26	1568279.060	305207.680
			39°19'40.465"N	81°01'34.360"W
Nomac 78 (RKB) to Mud line (At Slot: Slot F)				26ft
Mean Sea Level to Mud line (At Slot: Slot F)				-1029ft
Nomac 78 (RKB) to Mean Sea Level				1055ft



API: 47-085-10123-0000  
 BHI Job #: 6697417  
 Rig: Nomac 78  
 Duration: 1/6/2015-1/11/2015



User specified (HDGM) Dip: 66.76° Field: 2.15 nT  
 Magnetic North is 7.93 degrees West of True North (W/Dec/2014)  
 Grid North is 0.97 degrees West of True North  
 To correct azimuth from True to Grid add 0.97 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.96 degrees

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Pen 20 Wells

Formations	Top	Base
Shale and Sandstone	0	1222
Sandstone	1222	1346
Shale and Sandstone	1336	1506
Sandstone	1506	1548
Shale and Sandstone	1548	1650
Maxton Sand	1650	1733
Shale and Sandstone	1733	1856
Big Lime	1856	1911
Big Injun	1911	2046
Price	2046	2318
Weir	2318	2357
Shale	2357	2637
Gordon	2637	2654
Shale and Sandstone	2654	2834
5th Sand	2834	2846
Shale	2846	2989
Sandstone	2989	3003
Shale	3003	3411
Warren	3411	3473
Shale	3473	3807
Sandstone	3807	3844
Shale and Sandstone	3844	4838
Benson	4838	4900
Shale	4900	5060
Alexander	5060	5128
Shale	5128	5638
Rheinstreet	5638	5964
Cashaqua	5964	6056
Middlesex	6056	6085
West River	6085	6129
Burkett	6129	6172
Tully Limestone	6172	6173
Hamilton	6173	6174
Marcellus	6174	6233
Onondaga	6233	

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WW-9  
(4/16)

API Number 47 - 085 - 10109  
Operator's Well No. PEN201HS  
F

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CNX GAS COMPANY LLC OP Code 494458046

Watershed (HUC 10) North Fork Hughs River/Bonds Creek Quadrangle Ellenboro

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: no utilization of a pit

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.?

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ at next anticipated wells SHR3 A,B,C,D. 4709502193, 4709502124, 470952194, 4709502195)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain No drilling activity, unused frac water will be reused at other wells in the area.)

MAG  
1/19/17

Will closed loop system be used? If so, describe: NA

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. NA No Drilling

-If oil based, what type? Synthetic, petroleum, etc. NA No Drilling

Additives to be used in drilling medium? NA No Drilling

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. NA No Drilling

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) NA

-Landfill or offsite name/permit number? NA

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Matt Hanley

Company Official Title Manager - Permitting

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Subscribed and sworn before me this 18<sup>th</sup> day of January, 2017

[Signature]

NOTARY PUBLIC

Notary Public

My commission expires 12-11-17

WV Department of Environmental Protection

03/24/2017



CNX GAS COMPANY LLC

Proposed Revegetation Treatment: Acres Disturbed 0 Prevegetation pH 6.0

Lime 2-3 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-10-20 or equal

Fertilizer amount 500 lbs/acre

Mulch hay or straw at 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Michael Duff

Comments: Noble Energy's Original WW-9 attached. Will follow procedures of what was previously permitted.

Title: Oil & Gas Inspector Date: 1/19/17

Field Reviewed?  Yes  No

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WV Department of Environmental Protection  
03/26/2017

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WW-9  
(9/13)

API Number 47 - 085 - \_\_\_\_\_  
Operator's Well No. PEN 20 AHS \_\_\_\_\_

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Noble Energy, Inc. OP Code 494501907

Watershed (HUC 10) North Fork Hughs River / Bonds Creek Quadrangle Ellenboro

Elevation \_\_\_\_\_ County 085-Ritchie District Clay

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: closed loop-no utilization of a pit

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ at next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Acifer based fluid through intermediate string then SOBIM

-If oil based, what type? Synthetic, petroleum, etc.Synthetic

Additives to be used in drilling medium? Please see attached sheet

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfills

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? please see attached sheet

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature \_\_\_\_\_

Company Official (Typed Name) Dee Swiger

Company Official Title Regulatory Analyst III

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_

Notary Public

03/24/2017

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Form WW-9

Operator's Well No. PEN 20 AHS

Noble Energy, Inc.

Proposed Revegetation Treatment: Acres Disturbed 18.9 Prevegetation pH 6.0

Lime 2-3 Tons/acre or to correct to pH \_\_\_\_\_  
10-10-20 or equal

Fertilizer type \_\_\_\_\_

Fertilizer amount 500 lbs/acre

Mulch Hay or Straw at 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

\*\*alternative seed mixtures are shown on the Site Design.

Attach:  
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: David Wilson

Comments: press & Muck all ext area maintain all O&G during operation

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Title: Oil and Gas Inspector

Date: 2-20-14

03/24/2017

Field Reviewed?  Yes  No



# Safety Plan for PEN20 Well Pad

Wells PEN20BHS, PEN20CHS, PEN20DHS, PEN20EHS, PEN20FHS, PEN20GHS,  
PEN20HHS

## CNX Gas Company LLC



FEB 01 2017



# Approval Sheet- PEN20 Well Pad

The Office of Oil and Gas and the Oil and Gas Conservation Commission have set forth minimum requirements for necessary equipment and procedures that must be addressed in a Safety Plan ("Plan") and shall be submitted and approved prior to drilling a deep well. A deep well shall be any well which meets the definition as provided for in Chapter 22C, Article 9 of the West Virginia Code.

A site specific Safety Plan must be submitted with each deep well application or no later than one week prior to spudding. Approved Plans shall be maintained and available at the drilling rig at all times.

The Office of Oil and Gas must approve all changes and modifications to previously approved plans.

This plan has met the requirements of the Policy Statement Deep Well Drilling Procedures and Site Safety Plan Requirements as set forth by:

West Virginia Division of Environmental Protection, Office of Oil and Gas

And

West Virginia Oil and Gas Conservation Commission.

Approved this day ~~19th~~<sup>19th</sup> of month January, 2017 by

Michael Duff

Date: 1/19/17

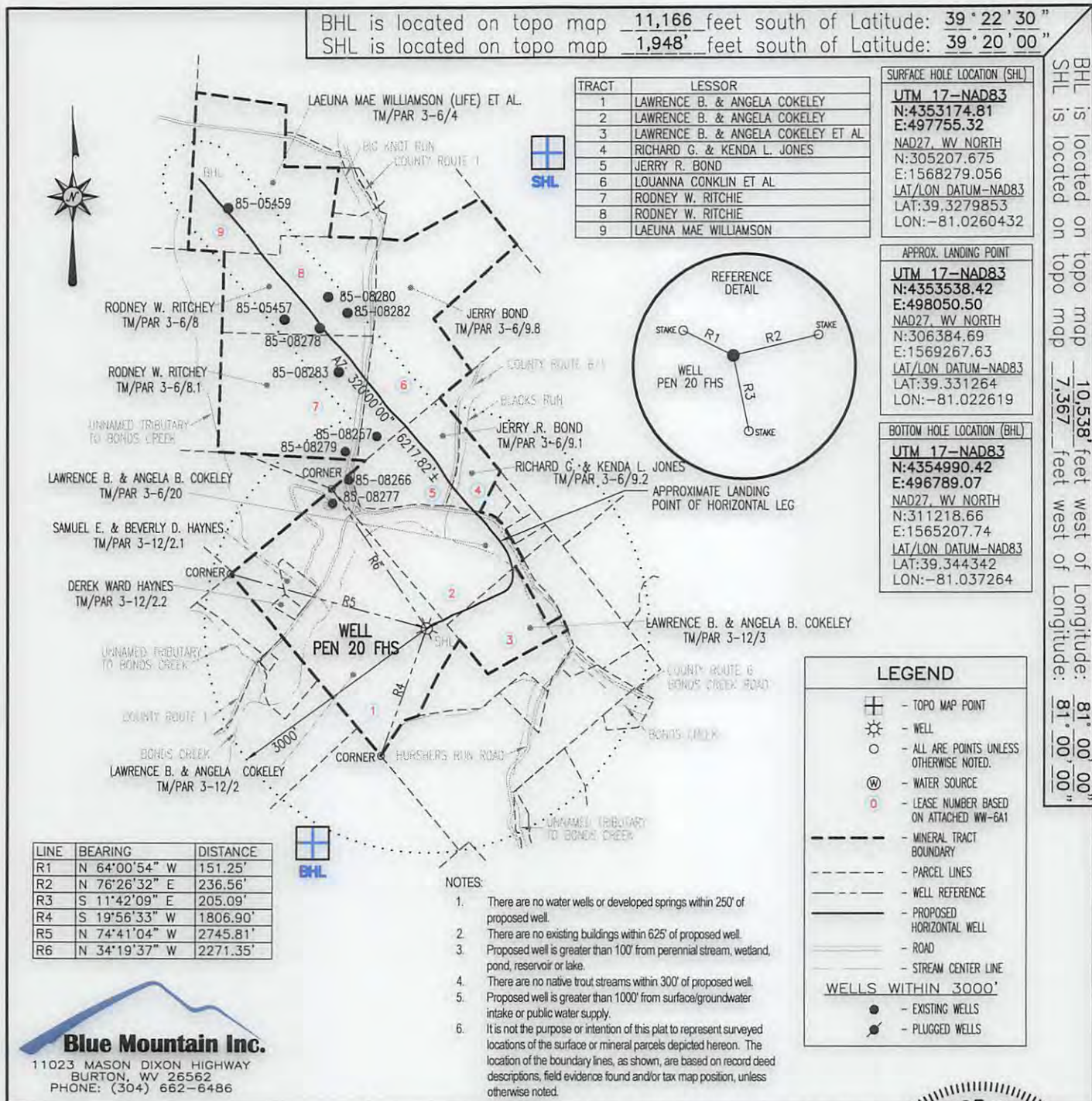
\_\_\_\_\_

Date: \_\_\_\_\_



BHL is located on topo map 11,166 feet south of Latitude: 39° 22' 30"  
 SHL is located on topo map 1,948' feet south of Latitude: 39° 20' 00"

BHL is located on topo map 10,538' feet west of Longitude: 81° 00' 00"  
 SHL is located on topo map 7,367' feet west of Longitude: 81° 00' 00"



LINE	BEARING	DISTANCE
R1	N 64°00'54" W	151.25'
R2	N 76°26'32" E	236.56'
R3	S 11°42'09" E	205.09'
R4	S 19°56'33" W	1806.90'
R5	N 74°41'04" W	2745.81'
R6	N 34°19'37" W	2271.35'

NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- There are no existing buildings within 625' of proposed well.
- Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
- There are no native trout streams within 300' of proposed well.
- Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
- It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

**Blue Mountain Inc.**  
 11023 MASON DIXON HIGHWAY  
 BURTON, WV 26562  
 PHONE: (304) 662-6486

FILE #: PEN 20 FHS

DRAWING #: PEN 20 FHS

SCALE: 1" = 2000'

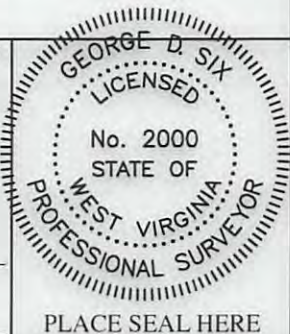
MINIMUM DEGREE OF ACCURACY: 1/2500

PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: *George D. Six*

R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304



DATE: MARCH 8, 2017  
 OPERATOR'S WELL #: PEN 20 FHS  
 API WELL #: 47 85 10123.F  
 STATE COUNTY PERMIT

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

WATERSHED: NORTH FORK HUGHES RIVER ELEVATION: 1081'±

COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: ELLENBORO, WV 7.5'

SURFACE OWNER: LAWRENCE & ANGELA COKELEY ACREAGE: 126.17±

OIL & GAS ROYALTY OWNER: LAWRENCE B. & ANGELA COKELEY ACREAGE: 523.671±

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: TVD: 6,195'± TMD: 13,384'±

WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT CHRIS TURNER

Address 1000 CONSOL ENERGY DRIVE Address 1 DOMINION DR.

City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

03/24/2017



WW-6A1  
(5/13)

Operator's Well No. PEN20FHS

**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.

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**MAR 09 2017**

Well Operator: CNX GAS COMPANY LLC  
 By: Matt Hanley   
 Its: Manager - Permitting

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MAR 14 2017

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Attachment - Form WW-6A-1 for PENS20FHS

<u>Tract ID</u>	<u>Tax Map &amp; Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
1	3-12-2	281715000	S T & Pearl Weekly F P Weekly J H Wagner J H Wagner J D Israel and Mary E Israel, h/w Harry E Snyder and Lulu Snyder, h/w Nina Virginia Snyder, widow of Roy E Snyder James R Smith and Virginia Smith, h/w Kenneth E Mosser and Lorena D Mosser, h/w Noble Energy, Inc.	J H Wagner J D Israel W E Snyder  Kenneth E Mosser and Lorena D Mosser, h/w  Noble Energy, Inc. CNX Gas Company, LLC	Not less than 1/8 Assignment Assignment  Assignment  Assignment Assignment	56/385 91/103 91/104  189/121  272/128 304/344

<u>Tract ID</u>	<u>Tax Map &amp; Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
2	3-6-20	Unknown	C C & B H Weekley F P Weekly Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company  Charles E Reed  Chief Drilling Inc. Charles E Reed Chief Drilling Inc. Hi-Lo Investment Company Chief Drilling Inc. Wilbur Williams Mackenzie Products Company James M Burger Edwin Morrill Chester Hilinski Ralph J Hunter Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy, Inc.	Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company Charles E Reed Chief Drilling Inc. Wilbur Williams Hi-Lo Investment Company James Burger Edwin Morrill Charles E Reed Chief Drilling Inc. Chester Hilinski The Mackenzie Products Company  Ralph J Hunter  Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy, Inc. CNX Gas Company, LLC	Not less than 1/8 Assignment Assignment Assignment  Assignment  Assignment Assignment Assignment Assignment Assignment Assignment  Assignment Assignment Assignment Assignment	57/129 76/264 76/488 109/584  109/602  109/606 112/505 158/115 112/623  112/608  112/621 256/781 271/662 304/344

<u>Tract ID</u>	<u>Tax Map &amp; Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
3	3-12-3	258040000	Wade Goodwin, et ux The Coastal Corporation Pardee Gas Company Pardee Gas Company Pardee Exploration Company Pardee Minerals LLC  Antero Resources Appalachian Corporation Noble Energy, Inc.	The Coastal Corporation Pardee Gas Company Pardee Exploration Company Pardee Exploration Company Pardee Minerals LLC Antero Resources Appalachian Corporation CNX Gas Company LLC Noble Energy, Inc. CNX Gas Company LLC	Not less than 1/8 Merger Assignment Assignment Merger Assignment Assignment Assignment	205/714 CR 4/801 208/527 217/610 CR 6/776 256/314 273/115 304/344

<u>Tract ID</u>	<u>Tax Map &amp; Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
4	3-6-9.2	Unknown	C C & B H Weekley F P Weekly Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company  Charles E Reed  Chief Drilling Inc. Charles E Reed Chief Drilling Inc. Hi-Lo Investment Company Chief Drilling Inc. Wilbur Williams Mackenzie Products Company James M Burger Edwin Morrill Chester Hilinski Ralph J Hunter Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy, Inc.	Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company Charles E Reed Chief Drilling Inc. Wilbur Williams Hi-Lo Investment Company James Burger Edwin Morrill Charles E Reed Chief Drilling Inc. Chester Hilinski The Mackenzie Products Company  Ralph J Hunter  Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy Inc. CNX Gas Company, LLC	Not less than 1/8 Assignment Assignment Assignment  Assignment  Assignment Assignment Assignment Assignment Assignment Assignment  Assignment Assignment Assignment Assignment	57/129 76/264 76/488 109/584  109/602  109/606 112/505 158/115 112/623  112/608  112/621 256/781 271/662 304/344

<u>Tract ID</u>	<u>Tax Map &amp; Parcel</u>	<u>Title Opinion QLS #</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
5	3-6-9.1	Unknown	C C & B H Weekley F P Weekly Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company	Henaghan & Hanlon Inc. E L Hanlon Hanlon Oil Company Charles E Reed	Not less than 1/8 Assignment Assignment Assignment	57/129 76/264 76/488 109/584



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Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page	
			Charles E Reed	Chief Drilling Inc. Wilbur Williams Hi-Lo Investment Company James Burger Edwin Morrill Charles E Reed Chief Drilling Inc. Chester Hilinski The Mackenzie Products Company	Assignment	109/602	
			Chief Drilling, Inc. Charles E Reed Chief Drilling Inc. Hi-Lo Investment Company Chief Drilling Inc. Wilbur Williams Mackenzie Products Company James M Burger Edwin Morrill Chester Hilinski Ralph J Hunter Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy, Inc.	Ralph J Hunter	Assignment	112/608	
				Big Knot Oil Company Inc. The Glass Development Co. Inc. Noble Energy Inc. CNX Gas Company, LLC	Assignment Assignment Assignment Assignment	112/621 256/781 271/662 304/344	
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page	
6	3-6-9.8	256141000	William Simonton and M. Victoria Simonton, h/w L. J. Murphy E. W. Mallory, Executor of the Estate of J. W. Mallory L. B. Ekas and Bertha Ekas, h/w H. W. Masters, attorney in fact for J. W. Stewart and Olive Stewart, husband and wife James Henaghan and E. I. Hanlon Henaghan & Hanlon, Inc. E. I. Hanlon Hanlon Oil Company	L. J. Murphy Mallory Brothers & Stewart L. B. Ekas James Henaghan and E. I. Hanlon James Henaghan and E. I. Hanlon Henaghan & Hanlon, Inc. E. I. Hanlon Hanlon Oil Company Charles E. Reed Chief Drilling, Inc. Wilbur Williams Hi-Lo Investment Company James M. Burger Edwin Morrill Charles E. Reed Chief Drilling, Inc. Chester Hilinski Chester Hilinski The Mackenzie Products Company The Mackenzie Products Company	Not less than 1/8 Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment	12/273 12/274 49/253 49/543 49/561 50/266 76/264 76/488 109/584 109/602 109/606 112/105 158/115 112/108 112/623 112/618	
			Charles E. Reed	Chief Drilling, Inc. Charles E. Reed Chief Drilling, Inc. Chief Drilling, Inc. Hi-Lo Investment Company Hi-Lo Investment Company Chief Drilling, Inc. Wilbur Williams Mackenzie Products Company James M. Burger Edwin Morrill Chester Hilinski Ralph J. Hunter Big Knot Oil Company, Inc. The Glass Development Co., Inc. Noble Energy, Inc.	Ralph J. Hunter	Assignment	112/608
				Big Knot Oil Company, Inc. The Glass Development Co., Inc. Noble Energy, Inc. CNX Gas Company LLC	Assignment Assignment Assignment Assignment	112/621 256/781 271/662 304/344	
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page	
7	3-6-8.1	269219000	F. P. Weekley, et al L. J. Murphy George W. Barnes F. E. Mallory and Jennie R. Mallory, husband and wife E. W. Mallory, Executor of the Estate of J. F. Mallory L. B. Ekas and Bertha Ekas, h/w H. W. Masters, attorney in fact for J. W. Stewart and Olive Stewart, husband and wife James Henaghan and E. I. Hanlon Henaghan & Hanlon, Inc. E. I. Hanlon Hanlon Oil Company	L. J. Murphy Mallory Brothers & Stewart Mallory Bros. & Stewart J. F. Mallory and J. W. Stewart L. B. Ekas James Henaghan and E. I. Hanlon James Henaghan and E. I. Hanlon Henaghan & Hanlon, Inc. E. I. Hanlon Hanlon Oil Company Charles E. Reed Chief Drilling, Inc. Wilbur Williams Hi-Lo Investment Company James M. Burger Edwin Morrill Charles E. Reed Chief Drilling, Inc. Chester Hilinski Chester Hilinski The Mackenzie Products Company The Mackenzie Products Company	Not less than 1/8 Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment Assignment	12/275 12/277 49/460 49/463 49/253 49/543 49/561 50/266 76/264 76/488 109/584 109/602 109/606 112/105 158/115 112/108 112/623 112/618	
			Charles E. Reed	Chief Drilling, Inc. Charles E. Reed Chief Drilling, Inc. Chief Drilling, Inc. Hi-Lo Investment Company Hi-Lo Investment Company Chief Drilling, Inc. Wilbur Williams Mackenzie Products Company James M. Burger Edwin Morrill Chester Hilinski Ralph J. Hunter Big Knot Oil Company, Inc. The Glass Development Co., Inc. Noble Energy, Inc.	Ralph J. Hunter	Assignment	112/608
				Big Knot Oil Company, Inc. The Glass Development Co., Inc. Noble Energy, Inc. CNX Gas Company LLC	Assignment Assignment Assignment Assignment	112/621 256/781 271/662 304/344	
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page	
8	3-6-8	269219000	F. P. Weekley, et al L. J. Murphy George W. Barnes	L. J. Murphy Mallory Brothers & Stewart Mallory Bros. & Stewart	Not less than 1/8 Assignment Assignment	12/275 12/277 49/460	

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc	Royalty	Book/Page
9	3-6-4	281568000	F. E. Mallory and Jennie R. Mallory, husband and wife	J. F. Mallory and J. W. Stewart	Assignment	49/463
			E. W. Mallory, Executor of the Estate of J. F. Mallory	L. B. Ekas	Assignment	49/253
			L. B. Ekas and Bertha Ekas, h/w	James Henaghan and E. I. Hanlon	Assignment	49/543
			H. W. Masters, attorney in fact for J. W. Stewart and Olive Stewart, husband and wife	James Henaghan and E. I. Hanlon	Assignment	49/561
			James Henaghan and E. I. Hanlon	Henaghan & Hanlon, Inc.	Assignment	50/266
			Henaghan & Hanlon, Inc.	E. I. Hanlon	Assignment	76/264
			E. I. Hanlon	Hanlon Oil Company	Assignment	76/488
			Hanlon Oil Company	Charles E. Reed	Assignment	109/584
			Charles E. Reed	Chief Drilling, Inc.	Assignment	109/602
			Chief Drilling, Inc.	Charles E. Reed	Assignment	109/606
			Chief Drilling, Inc.	Chief Drilling, Inc.	Assignment	112/105
			Chief Drilling, Inc.	Chester Hilinski	Assignment	158/115
			Hi-Lo Investment Company	Chester Hilinski	Assignment	112/108
			Hi-Lo Investment Company	The Mackenzie Products Company	Assignment	112/623
			Chief Drilling, Inc.	The Mackenzie Products Company	Assignment	112/618
			Wilbur Williams	Ralph J. Hunter	Assignment	112/608
			Mackenzie Products Company	Big Knot Oil Company, Inc.	Assignment	112/621
			James M. Burger	The Glass Development Co., Inc.	Assignment	256/781
			Edwin Morrill	Noble Energy, Inc.	Assignment	271/662
			Chester Hilinski	CNX Gas Company LLC	Assignment	304/344
			Ralph J. Hunter	J. H. Ellsworth and A. D. Davis	Not less than 1/8	13/138
			Big Knot Oil Company, Inc.	J. F. Stewart	Assignment	14/114
			The Glass Development Co., Inc.	J. C. Trees	Assignment	14/322
			Noble Energy, Inc.	J. D. Brown	Assignment	18/141
			CNX Gas Company LLC	J. C. Trees	Assignment	18/140
	A. D. Davis	Assignment	18/541			
	J. C. Trees Oil Company	Assignment	24/390			
	J. F. Stewart	Assignment	23/323			
	Susan S. McLean, Executrix of the Estate of Nancy W. McLean (commonly called N. W. McLean)	Assignment	24/188			
	Susan S. McLean, in her own right	Assignment	26/399			
	J. Howard McBride	Assignment	26/394			
	Nettie Davis	Assignment	26/398			
	J. Rolla McMahon	Assignment	26/396			
	Mrs. Carrie Ellsworth, Individually					
	Mrs. Carrie Ellsworth as wife of J. H. Ellsworth					
	Miss Pauline Ellsworth, daughter of J. H. Ellsworth					
	J. H. Ellsworth	Quitclaim Deed	28/355			
	W. C. Dutton, Committee for J. H. Ellsworth					
	J. H. McBride	Assignment	28/513			
	James Henaghan and Edward I. Hanlon	Deed of Assignment	37/294			
	James Henaghan and E. I. Hanlon	Assignment	37/307			
	Henaghan & Hanlon, Inc.	Assignment	50/266			
	E. I. Hanlon	Assignment	76/264			
	Hanlon Oil Company	Assignment	76/488			
	Charles E. Reed	Assignment	109/584			
	Chief Drilling, Inc.					
	Wilbur Williams					
	Hi-Lo Investment Company	Assignment	109/602			
	James M. Burger					
	Edwin Morrill	Assignment	109/606			
	Charles E. Reed	Assignment	112/623			
	The Mackenzie Products Company	Assignment	112/108			
	Chester Hilinski					
	Ralph J. Hunter	Assignment	112/608			
	Big Knot Oil Company, Inc.	Assignment	112/621			
	The Glass Development Co., Inc.	Assignment	256/781			
	Noble Energy, Inc.	Assignment	271/662			
	CNX Gas Company LLC	Assignment	304/344			

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CNX Gas Company LLC  
Conventional Operator Notice and Monitoring Plan – Hydraulic Fracturing Activity  
**PEN20HS Well Pad**  
Ritchie County, West Virginia



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Purpose:

The purpose of this hydraulic fracturing monitoring plan is to identify and notify any potentially affected conventional well operators near planned CNX hydraulic fracturing activity.

CNX has evaluated the existing geologic conditions in the area, and the potential for communication between the geologic zone being stimulated by CNX and the zone being produced by the conventional wells exists.

This plan is being implemented as an additional safety measure to be utilized in conjunction with the existing best management practices and the site safety/emergency response plans included for the site.

1. Communications with Conventional Well Operators

CNX has identified all known conventional wells and well operators within five hundred feet (500') of this pad and lateral sections pursuant to WV Code 35 CSR 8(5.11). A list and map of these wells and operators is provided as **Attachment A**.

Upon approval of this plan, CNX will notify operators identified in the referenced attachment, via letter, of the anticipated fracturing schedule associated with this pad. A copy of this letter is included as **Attachment B**, and includes the recommended steps a conventional operator can take to ensure safe and compliant operations.

2. Reporting

CNX will provide information relating to the hydraulic fracturing schedule, any communication with conventional operators, and ongoing monitoring of the work upon request of the OOG or immediately in the event of any discovered abnormalities that create additional risk or concern.

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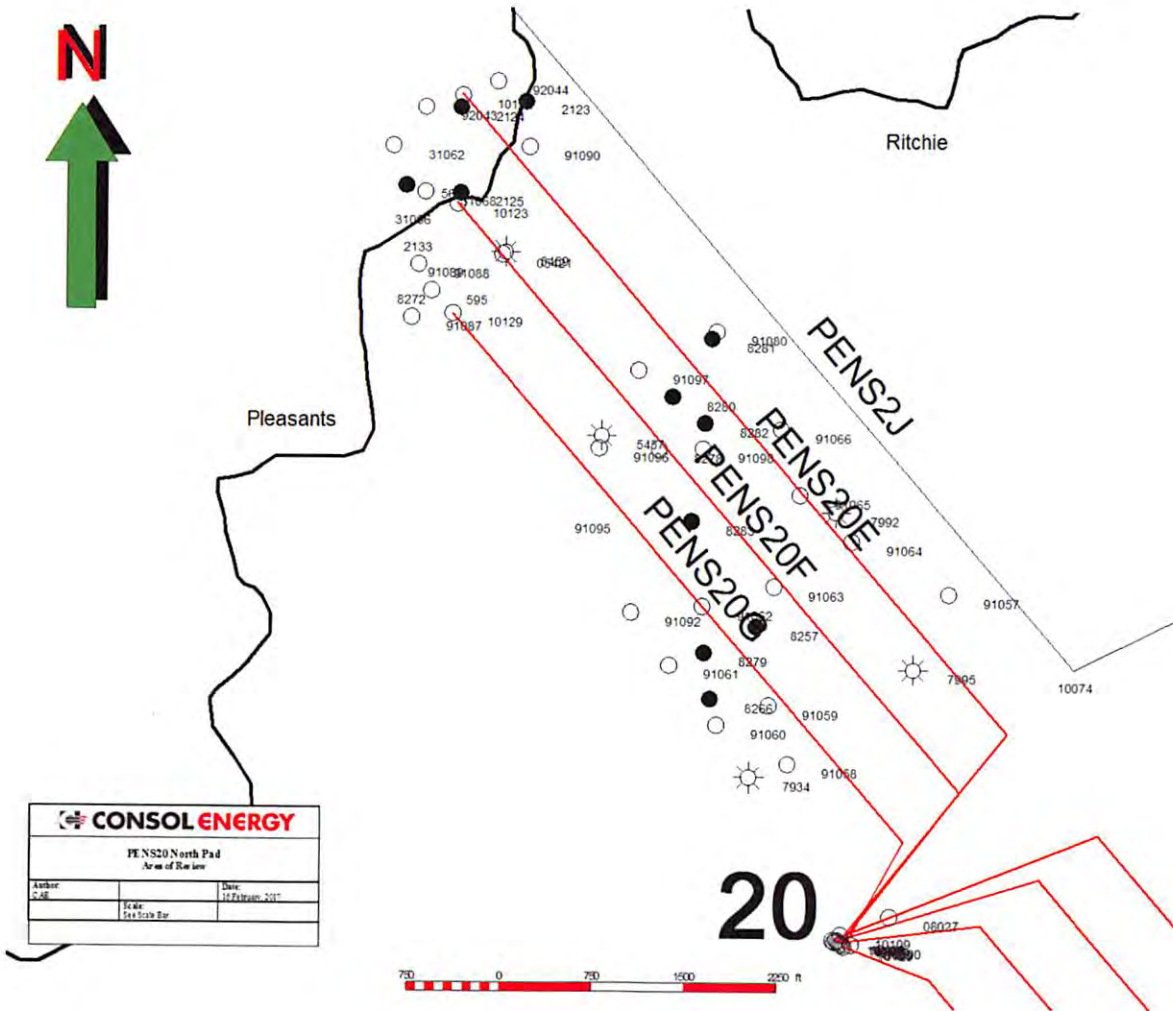
**Attachment A:  
Map and List of Conventional Operators in the PEN20 Project Area**

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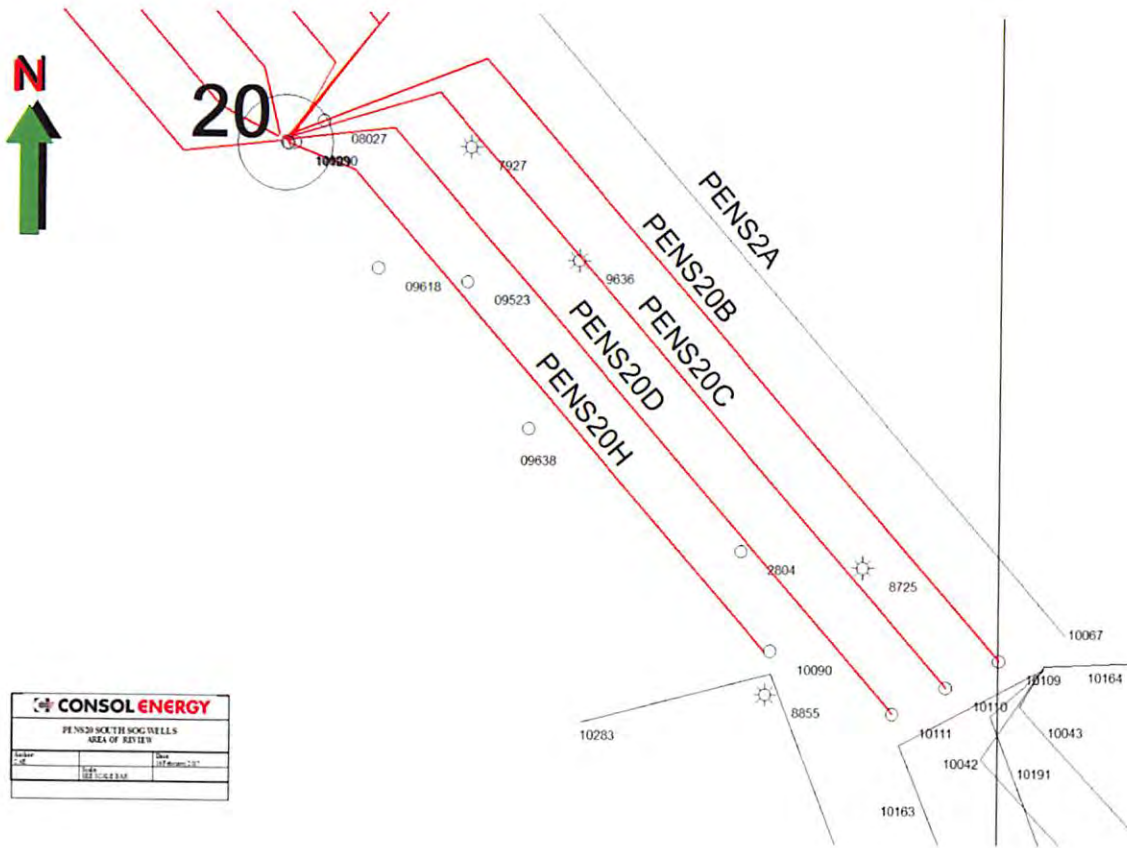
PENS20 North Pad Area of Interest	
Author:	Date:
Scale:	Scale:

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PENS20 SOUTH HOG WELLS	
AREA OF REVIEW	
Author	Date
10/11/16	10/11/16
10/11/16	10/11/16

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03/24/2017





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API	OPERATOR	WELL NAME	WELL #	TD	PRODUCING FORMATION AT TD	PERMIT DATE	STATUS COMMENTS	DISTANCE FROM LATERAL (2D MAP VIEW)
4708510163	ANTERO RESOURCES CORP	MUSGRAVE UNIT 1H	1H	6391	MARCELLUS	11/25/2014	PRODUCING HORIZONTAL MARCELLUS LATERAL	325
4708509636	HALL DRILLING	FOX RUSSELL E. SR	A. HALL 2	6040	MARCELLUS	10/10/2007	PLUGGED 11-11-14	32
4708508725	KEY OIL	BAKER LEROY	1	5332	ALEXANDER	12/12/2000	GAS	150
4708507927	PARDEE EXPLORATION COMPANY	GOODWIN WADE	1	5275	ALEXANDER	3/21/1990	GAS	118
4708507740	MAY GAS	NICHOLS MICHAEL D.	NICHOLS 1	5201	ALEXANDER	2/22/1988	GAS	320
4708508855	KEY OIL	BAKER LEROY	BAKER 2	5177	BENSON	11/13/2001	GAS	440
4708507924	CONSOL	Bachelor #1, F. L.	3944	5172	BENSON	1/12/1990	GAS	160
4708507982	CONSOL	Baker #2, O. D.	4530	5123	BENSON	7/2/1990	GAS	140
4708505521	KEY OIL	MIDDLETON HERALD	MIDDLETON 2	5005	BENSON	2/8/2007	GAS	20
4708509639	HALL DRILLING	HALL BRYAN	B. HALL 1	4962	BENSON	10/12/2007	GAS	48
4708509618	KEY OIL	MIDDLETON HAROLD B.	MIDDLETON 3R	4927	BENSON	7/23/2007	GAS	130
4708509381	KEY OIL	MIDDLETON HERALD	MIDDLETON 1	4917	BENSON	7/31/2006	GAS	67
4708502804	TRANSCAPITAL INVESTMENT GROUP	BAKER OKEY	1	2806	GORDON	10/11/1963	ABDGAS	104
4708509522	KEY OIL	MIDDLETON HERALD B.	MIDDLETON 3	924	UNKNOW	7/24/2007	PLG	72
4708500335	GLENN F MCBURNEY	BAKER D.L.	1	UNKNOW	UNKNOW		PLG	
4708500797	M A WILLNER	MORGAN O.E.	1	UNKNOW	UNKNOW		ABD	
4708508027	ANVIL OIL	GOODWIN W. ETUX	C. C WEEKLEY 2		NEVER DRILLED	1/4/1991	CAN	
4708509523	KEY OIL	MIDDLETON HERALD B.	MIDDLETON 4		NEVER DRILLED	2/8/2007	CAN	
4708509638	HALL DRILLING	HALL BRYAN D.	A. HALL 5		NEVER DRILLED	10/10/2007	CAN	
4708510090	CONSOL	PEN 20 HHS	PEN 20 HHS			5/30/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510090	CONSOL	PEN 20 HHS	PEN 20 HHS			5/30/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510107	CONSOL	PEN 20 KHS	PEN 20 KHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510108	CONSOL	PEN 20 LHS	PEN 20 LHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510109	CONSOL	PEN 20 BHS	PEN 20 BHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510110	CONSOL	PEN 20 CHS	PEN 20 CHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510111	CONSOL	PEN 20 DHS	PEN 20 DHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510123	CONSOL	PEN 20 FHS	PEN 20 FHS			8/1/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708510129	CONSOL	PEN 20 GHS	PEN 20 GHS			8/8/2014	DRILLED MARCELLUS LATERAL, BUT NOT YET FRAC'D	
4708591100	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	
4708591101	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	
4708591168	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	NEVER DRILLED	

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**Attachment B:  
Conventional Operator Notice Letter - Example**

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MAR 05 2017

03/24/2017

**CONSOL Energy Inc.**

CNX Center  
1000 CONSOL Energy Drive  
Canonsburg, PA 15317-6506

**phone:** (724) 485 – 4040

**e-mail:** PCR@consolenergy.com

**web:** www.consolenergy.com

**CNX GAS PRODUCTION TEAM**

[Conventional Well Operator]

[Address]

[State]

**Re: Ritchie County Hydraulic Fracturing Notice**

Dear Sir or Madam,

CNX Gas Company LLC (CNX) has developed a Marcellus pad PEN20HS located in Ritchie County, West Virginia. Through CNX's evaluation pursuant to WV Code 35 CSR 8(5.11), you have been identified as the owner or operator of a well within a 500' radius of the surface location or lateral section of the wellbore. Due to the apparent presence of unique geological conditions, communication between CNX hydraulic fracturing operations and the identified well is a possibility. As an owner or operator of a conventional natural gas well in this area, we are requesting your assistance in monitoring for changes that would indicate communication between your well(s) and our planned operation.

CNX anticipates conducting hydraulic fracturing activity at the PEN20HS during the 2<sup>nd</sup> Quarter 2017 through 3<sup>rd</sup> Quarter 2017. Plats for each well being hydraulically fractured on this pad are attached.

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

1. Inspect surface equipment prior to fracturing, to establish integrity and confirm well conditions.
2. Observe wells during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect and upgrade master valves or other necessary equipment for wellhead integrity as you see fit.
4. Notify the OOG and CNX if any changes in water, gas production, pressure, or other conditions that cause abnormal risk or concern.

Please feel free to contact CNX's Production Control Room at 724-485-4040 (staffed 24/7) with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0499.

Sincerely,  
CNX Production

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Matthew Hanley  
Manager – Gas Permitting  
CONSOL Energy Inc.  
1000 CONSOL Energy Drive  
Canonsburg, PA 15317

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304-2345

**RE: Road Letter – PENS 20 Well Pad Rework Applications**

To Whom It May Concern:

CNX Gas Company LLC has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or need additional information, please do not hesitate to contact me at [matthanley@consolenergy.com](mailto:matthanley@consolenergy.com) or 724-485-3011.

Sincerely,

A handwritten signature in blue ink that reads 'Matthew Hanley'.

Matthew Hanley  
CNX Gas Company LLC

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Environmental Protection

03/24/2017



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

Date of Notice Certification: 1/27/17

API No. 47- 085 - 10123  
Operator's Well No. PEN20FHS  
Well Pad Name: PEN20

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

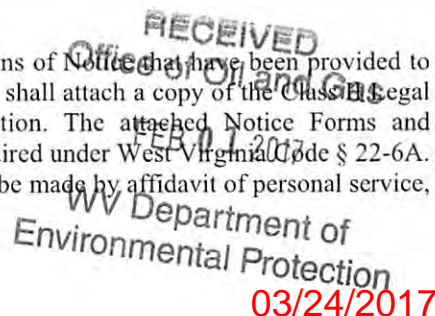
State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>497737.179</u>
County: <u>085-Ritchie</u>	UTM NAD 83 Northing: <u>4353191.046</u>
District: <u>Clay</u>	Public Road Access: <u>Bonds Creek Rd</u>
Quadrangle: <u>Ellenboro</u>	Generally used farm name: <u>Lawrence B. and Angela Cokeley</u>
Watershed: <u>North Fork Hughs River/Bonds Creek</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p align="center"><b>NO DRILLING</b></p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

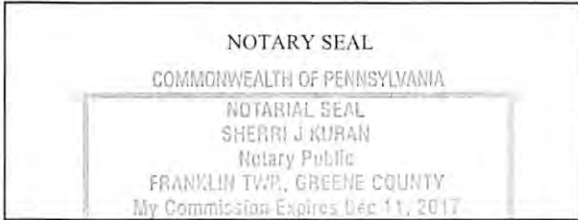

  
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**03/24/2017**

**Certification of Notice is hereby given:**

THEREFORE, I Matt Hanley, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: CNX GAS COMPANY LLC  
By: Matt Hanley *[Signature]*  
Its: Manager - Permitting  
Telephone: 724-485-3011

Address: 1000 Consol Energy Dr  
Canonsburg, PA 15317  
Facsimile: \_\_\_\_\_  
Email: Matthanley@consolenergy.com



Subscribed and sworn before me this 18<sup>th</sup> day of January 2017.  
Sherril J Kuram Notary Public  
My Commission Expires 12-11-17

**Oil and Gas Privacy Notice:**

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

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 1/27/17 Date Permit Application Filed: 1/30/17

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

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

SURFACE OWNER(s)  
Name: Lawrence B. and Angela Cokeley  
Address: 4573 Bonds Creek Road  
Pennsboro, WV 26415

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
Name: Lawrence B. and Angela Cokeley  
Address: 4573 Bonds Creek Road  
Pennsboro, WV 26415

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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\*Please attach additional forms if necessary

WV Department of  
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**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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

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**Time Limits and Methods for Filing Comments.**

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WW-6A  
(8-13)

API NO. 47-085 - 10123 **F**  
OPERATOR WELL NO. PEN20FHS  
Well Pad Name: PEN20

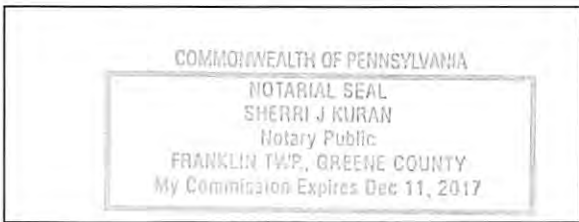
**Notice is hereby given by:**

Well Operator: CNX GAS COMPANY LLC *Matt Hanley*  
Telephone: 724-485-3011  
Email: MattHanley@consolenergy.com

Address: 1000 CONSOL ENERGY DRIVE  
Ganonsburg, PA 15317  
Facsimile:

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 18<sup>th</sup> day of January 2017.

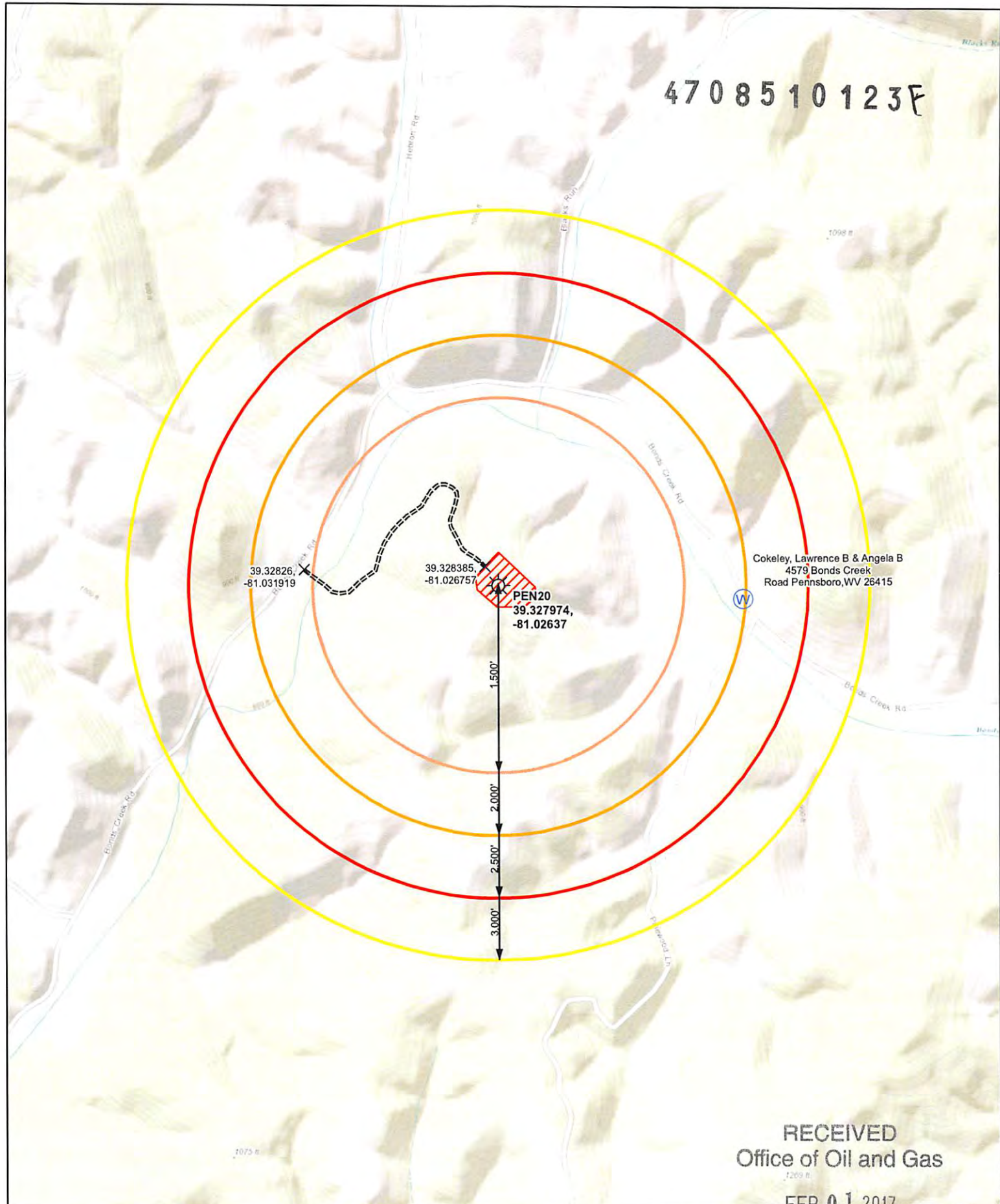
*Sherril J. Kuran* Notary Public

My Commission Expires 12-11-17

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4708510123E



Cokeley, Lawrence B & Angela B  
4579 Bonds Creek  
Road Pennsboro, WV 26415

**PEN20**  
39.327974,  
-81.02637

39.32826,  
-81.031919

39.328385,  
-81.026757

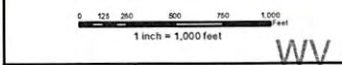
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- Well Site
- Water Wells
- Access Points

- Access Road
- Well Pad

- Buffer Distance**
- 1500 ft
  - 2000 ft
  - 2500 ft
  - 3000 ft

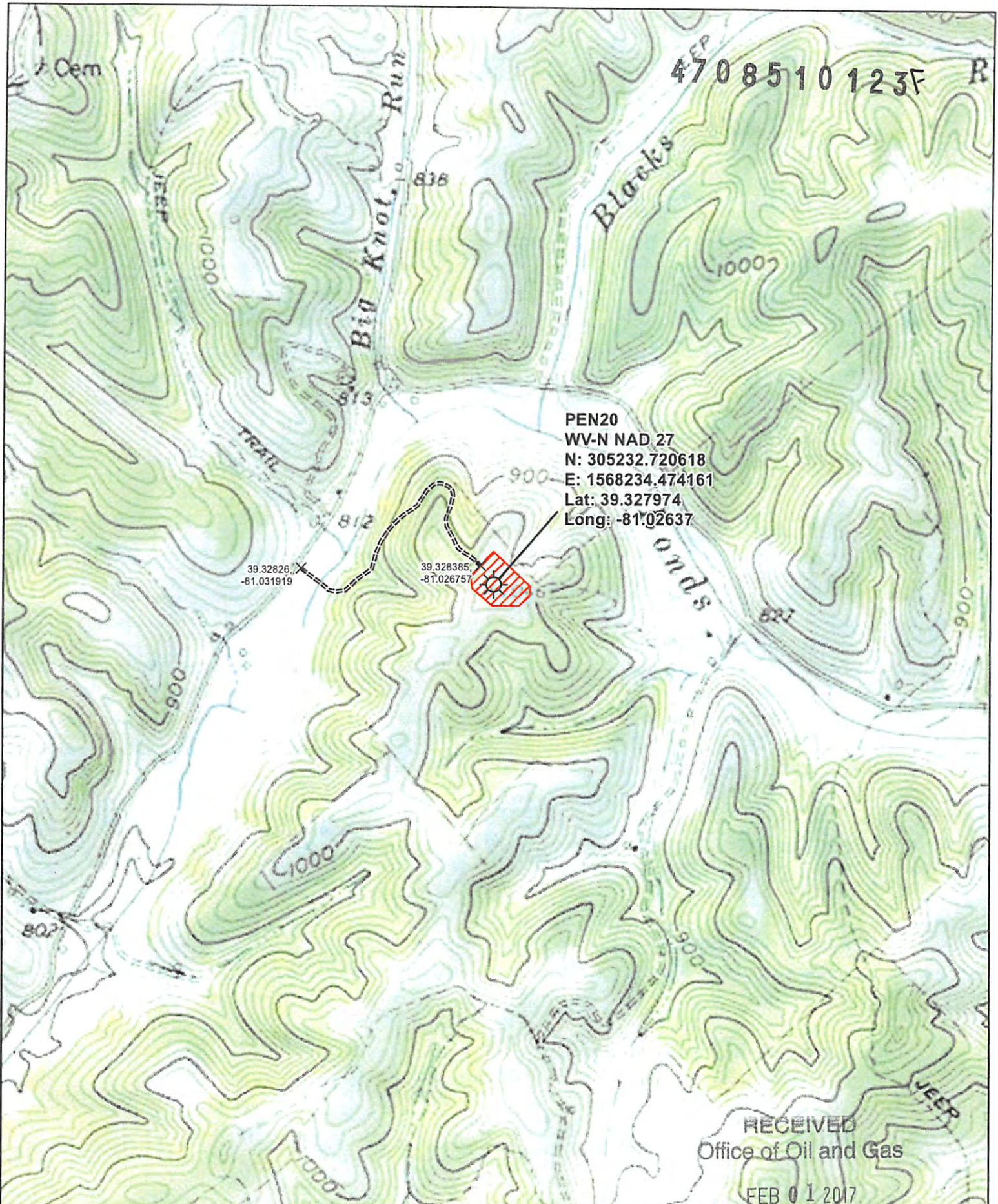


Date: 1/17/2017	Prepared By: J. Steiner
Revisions: 1	Approved By: R. Hoorn

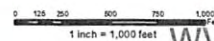
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**CONSOL ENERGY**  
WV Department of  
Environmental Protection  
03/24/2017  
Water Purveyor Map





-  Well Site
-  Access Points
-  Access Road
-  Well Pad



Date: 1/17/2017    Prepared By: J Steiner  
 Revisions: 1    Approved By: R Hoon

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WV Department of Environmental Protection  
 PEN20

03/29/2017

Topo Well Map



4708510123F

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

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 1/27/17 Date Permit Application Filed: 1/30/17

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

- CERTIFIED MAIL  
RETURN RECEIPT REQUESTED
- HAND  
DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

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

Name: Lawrence B. and Angela Cokeley  
Address: 4573 Bonds Creek Road  
Pennsboro, WV 26415

Name: \_\_\_\_\_  
Address: \_\_\_\_\_

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>497737.179</u>
County: <u>085-Ritchie</u>	UTM NAD 83 Northing: <u>4353191.046</u>
District: <u>Clay</u>	Public Road Access: <u>Bonds Creek Rd</u>
Quadrangle: <u>Ellenboro</u>	Generally used farm name: <u>Lawrence B. and Angela Cokeley</u>
Watershed: <u>North Fork Hughs River/Bonds Creek</u>	

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: CNX GAS COMPANY LLC  
Telephone: 724-485-3011  
Email: Malthanley@consolenergy.com

Address: 1000 Consol Energy Dr  
Canonsburg, PA 15317  
Facsimile: \_\_\_\_\_

Oil and Gas Privacy Notice:

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



## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

## Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110  
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Jim Justice  
 Governor

Gregory L. Bailey, P. E.  
 Acting Commissioner of Highways

January 24, 2017

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

Subject: DOH Permit for the PEN-20 Well Pad, Ritchie County

PEN20BHS

PEN20CHS

PEN20DHS

PEN20EHS

PEN20FHS ✓

PEN20FHS

PEN20GHS

PEN20HHS

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #03-2014-0091 for the subject site to CNX Gas for access to the State Road for the well site located off of Ritchie County Route 1 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton  
 Regional Maintenance Engineer  
 Central Office of Oil and Gas

RECEIVED  
 FEB 01 2017

Cc: Ray Hoon  
 CNX Gas  
 CH, OM, D-3  
 File

WV Department of  
 Environmental Protection  
 03/24/2017



## Section V – Proposed Additives to be used in Fracturing or Stimulations

Type: Water CAS: 7732-18-5

Type: Silica CAS: 14808-60-7

Type: Hydrochloric Acid CAS: 7647-01-0

Type: Copolymer of Two Propenamide CAS: 69418-26-4

Type: Petroleum distillate CAS: 64742-47-8

Type: Glutaraldehyde CAS: 111-30-8

Type: Ethylene glycol CAS: 107-21-1

Type: Diethylene glycol mono n-butyl ether CAS: 112-34-5

Type: Oleic acid diethanolamide CAS: 93-83-4

Type: Alcohols, C12-16, ethoxylated CAS: 68551-12-2

Type: Quaternary ammonium compound CAS: 68424-85-1

Type: Ammonium chloride CAS: 12125-02-9

Type: Short chained glycol ether CAS: 112-34-5

Type: Ethoxylated (C10-16) alcohols CAS: 68002-97-1

Type: Metanol CAS: 67-56-1

Type: Formaldehyde CAS: 50-00-0

Type: Thiourea CAS: 62-56-6

Type: Acetophenone CAS: 98-86-2

RECEIVED  
Office of Oil and Gas

FEB 01 2017

WV Department of  
Environmental Protection

03/24/2017

API#8510090

# EROSION & SEDIMENT CONTROL PLAN

## FOR

# PEN 20 WELL PAD

## CLAY DISTRICT, RITCHIE COUNTY, WV

**APPROVED**  
**WVDEP OOG**  
JAY 5/23/2014

### GENERAL NOTES

1. THE TOPOGRAPHIC SURVEY UTILIZED FOR THIS BASE MAPPING WAS PERFORMED BY RETIEW ASSOCIATES, INC. IN OCTOBER 2013.
2. PROPERTY BOUNDARIES, LINEDOWN INFORMATION AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS PARCEL DATA.
3. EXISTING STRUCTURES, TREE LINES AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ORDN. ALTIM. PHOTOGRAPHY.
4. THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83), NORTH ZONE.
5. THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).
6. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION PRIOR TO ANY EXCAVATION BY NOTING THE UTILITY OF WEST VIRGINIA AT 1-800-245-4364.
7. A METADATA PRESENCE/ABSENCE SURVEY WAS PERFORMED BY RETIEW ASSOCIATES IN OCTOBER 2013 AND JANUARY 2014.
8. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR PERMITTING AND INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING GRADES AND TO VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.
9. ALL EXISTING UTILITIES HAVE BEEN SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION.
10. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL ABOVE AND BELOW GROUND UTILITIES AND STRUCTURES AND WILL BE RESPONSIBLE FOR THE PROTECTION OF THESE UTILITIES AND STRUCTURES AT ALL TIMES.
11. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AND ANY DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED IMMEDIATELY AND COMPLETELY AT HIS EXPENSE.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF DAMAGED OR DESTROYED LANDSCAPE AND TREES.
13. CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON THE PROJECT SITE PRIOR TO THE START OF CONSTRUCTION.
14. CONTRACTOR TO RELOCATE UTILITIES AS REQUIRED.
15. CONTRACTOR MAY WASH ACCESS ROAD DUE TO STEEP SLOPES IF DELAYED NECESSARY AND PER APPROVAL BY THE OWNER AND ENGINEER.
16. PROPOSED ROAD CONSTRUCTION PARALLEL TO HWY ROUTE 50 ON THAT RUNOFF FROM PROPOSED ACCESS WILL NOT SPILL FLOW ON TO PUBLIC ROAD.
17. SEED AND MULCH ALL DISTURBED AREAS PER DETAILS IN THIS PLAN.
18. ALL CLEARED TREE BRANCHES SHALL BE PLACED ON UPHILL SIDE OF COMFORT FILLER SOCKS AND NOT DISPOSED ON-SITE.
19. CONTRACTOR SHALL STOP WORK IMMEDIATELY AND CONTACT NOBLE ENERGY AND APPROPRIATE RESPONSIBLE AUTHORITIES SHOULD ANY HISTORICAL ARTIFACTS (I.E. BONES, POTTERY, ETC.) BE ENCOUNTERED DURING CONSTRUCTION.
20. NO WORK SHALL BE DONE OUTSIDE THE LIMITS OF DISTURBANCE OR IN PROTECTED AREAS.

### DIRECTIONS TO THE SITE

FROM ELLENBORO HWY TAKE HWY-18 N FOR 3.3 MILES  
TURN RIGHT ON OLD US-50 HIGHWAY AND GO NORTH  
AND FOLLOW FOR 1.4 MILES TURN LEFT ON WOODCOCK  
HWY (R. 1) AND FOLLOW FOR 2.1 MILES TURN RIGHT TO  
STAY ON BONDS CREEK (L. 1) AND PROPOSED ACCESS  
DRIVE WILL BE ON RIGHT IN APPROXIMATELY 2.1 MILES

### CUT & FILL

	CUT	FILL	TOTAL
GRAVEL	+178.57 C.Y.	+16,831 C.Y.	+17,009.57 C.Y.
STONE	+4,078 C.Y.	+1,818 C.Y.	+5,896 C.Y.
FILL	-16,435 C.Y.	-16,308 C.Y.	-32,743 C.Y.
10% COMPACTION	-1,787 C.Y.	-3,384 C.Y.	-5,171 C.Y.
TOTAL	-16,389 C.Y.	+17,751 C.Y.	+1,362 C.Y.
NET	-	+1,063 C.Y.	+1,063 C.Y.

- NOTES:  
1. THE ASSUMED TOP SOIL DEPTH IS 8".  
2. THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING GRADES AND VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.



7.5 MIN. QUADRANGLE MAP: ELLENBORO, WV

LOCATION MAP  
SCALE = 1"=2000'

**WEST VIRGINIA 811**  
CALL BEFORE YOU DIG!  
Dial 811 or 800.245.4848  
Save Lives at West Virginia

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO COMMENCING ANY GROUND PENETRATION ACTIVITIES. ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT 811 OR 1-800-245-4848 AT 811 OR 1-800-245-4848. TIME: # 15365332 DATE: 12/21/2013

### SOILS CLASSIFICATION

- U1: UPR-UPPER COMPLEX, 0% TO 10% SILT
- U2: UPR-UPPER COMPLEX, 10% TO 20% SILT
- U3: UPR-UPPER COMPLEX, 20% TO 30% SILT
- U4: UPR-UPPER COMPLEX, 30% TO 40% SILT
- U5: UPR-UPPER COMPLEX, 40% TO 50% SILT
- U6: UPR-UPPER COMPLEX, 50% TO 60% SILT
- U7: UPR-UPPER COMPLEX, 60% TO 70% SILT
- U8: UPR-UPPER COMPLEX, 70% TO 80% SILT
- U9: UPR-UPPER COMPLEX, 80% TO 90% SILT
- U10: UPR-UPPER COMPLEX, 90% TO 100% SILT

### LIST OF DRAWINGS

- 1 OF 14 COVER SHEET
- 2 OF 14 ENVIRONMENTAL RESOURCES BUFFER PLAN
- 3 OF 14 GENERAL SITE PLAN
- 4 OF 14 AREA "A" LAYOUT PLAN
- 5 OF 14 AREA "B" LAYOUT PLAN
- 6 OF 14 AREA "C" EROSION & SEDIMENT CONTROL PLAN
- 7 OF 14 AREA "D" EROSION & SEDIMENT CONTROL PLAN
- 8 OF 14 ACCESS DRIVE PROFILES
- 9 OF 14 ACCESS DRIVE PROFILES
- 10 OF 14 CROSS SECTIONS PLAN VIEW
- 11 OF 14 CROSS SECTIONS
- 12 OF 14 WELL PAD INFORMATION PLAN
- 13 OF 14 NOTES & DETAILS
- 14 OF 14 DETAILS

### DISTURBANCE SUMMARY

TOTAL LIMITS OF DISTURBANCE = 10.9 ACRES  
SEEDING REQUIRED = 11.2 ACRES  
PAD DISTURBANCE = 7.1 ACRES



SCALE	DATE	REVISION
AS SHOWN		



FOR REVIEW ASSOCIATED BY:	DESIGN BY:	DATE:
MICHAEL R. ODEEN	JOHN	5/23/2014

CLIENT: NOBLE ENERGY, 333 TECHNOLOGY DRIVE, SUITE 116, CANONSBURG, PA 15317-3077, BEN DERDINE, PE, (724) 820-3500, nenergy.com

REVIEW: RETIEW ASSOCIATES, INC., 1000 MAIN ST., SUITE 200, PITTSBURGH, PA 15222, Phone (412) 441-1129, Fax (412) 441-1753, Website: www.retiew.com

COVER SHEET FOR PEN 20 WELL PAD  
CLAY DISTRICT, RITCHIE COUNTY, WV

DATE:	2/19/2014
SHEET NO.:	1 OF 14
DWG. NO.:	093842025

Electronic Version of These Plans May Be Viewed at: Q:\OIL GAS\SAY FILES\REVIEWS

NOT FOR CONSTRUCTION/NOT FOR BIDDING