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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

April 16, 2015

CNX GAS COMPANY LLC  
POST OFFICE BOX 1248  
JANE LEW, WV 26378

Re: Permit Modification Approval for API Number 1706576 , Well #: OXFD13CHS

**Extend Lateral**

Oil and Gas Operator:

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

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

Gene Smith  
Assistant Chief of Permitting  
Office of Oil and Gas



Kelly Eddy  
Permitting Supervisor  
P.O. Box 1248  
Jane Lew, WV 26378  
(304) 884-2131



April 9, 2015

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

**RE: OXFD13CHS - API# 47-017-06576**  
**OXFD13DHS - API# 47-017-06577**  
**OXFD13EHS - API# 47-017-06578**

Dear Laura,

Enclosed, please find modifications for the OXFD13CHS - OXFD13EHS to extend the laterals due to additional leasing being obtained. I have attached updated casing plans, mylar plats, lease breakdowns, and road letters.

We are extending the length of each lateral as follows:

OXFD13CHS/API# 47-017-06576: Extending 1,194.92' more  
OXFD13DHS/API# 47-017-06577: Extending 3,624.55' more  
OXFD13EHS/API# 47-017-06578: Extending 3,168.22' more

Should you need any further information, please contact me at (304) 884-2131 or by email at KellyEddy@consolenergy.com. Thank you!

Sincerely,

  
Kelly Eddy

RECEIVED  
Office of Oil and Gas

APR 14 2015

WV Department of  
Environmental Protection

WW-6B  
(9/13)

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>Doddridge</u>	<u>Southwest</u>	<u>New Milton</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: OXFD13CHS Well Pad Name: OXFD13HS

3) Farm Name/Surface Owner: I.L. Morris Public Road Access: Co. Rt. 40

4) Elevation, current ground: 1178' Elevation, proposed post-construction: 1152'

5) Well Type (a) Gas  Oil  Underground Storage

Other

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No NO

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Target - Marcellus, Depth - 6950', Thickness - 60', Pressure - 2500#

8) Proposed Total Vertical Depth: 7050'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 12934'

11) Proposed Horizontal Leg Length: 5105.15'

12) Approximate Fresh Water Strata Depths: 50', 600'

13) Method to Determine Fresh Water Depths: Offset Well

14) Approximate Saltwater Depths: 1250', 1955'

15) Approximate Coal Seam Depths: 600'

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

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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WW-6B  
(9/13)

18) CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling</u>	<u>INTERVALS: Left in Well</u>	<u>CEMENT: Fill-up (Cu. Ft.)</u>
Conductor	20"	N	L.S.	81.3#	100'	100'	Grout to surface w/ Class A type cement
Fresh Water	13 3/8"	N	J-55	54.5#	1050'	1050'	CTS w/ Class A Type Cement
Coal							
Intermediate	9 5/8"	N	J-55	36#	2700'	2700'	CTS w/ Class A Type Cement
Production	5 1/2"	N	P-110	20#	12934'	12934'	2200 cu. ft. w/ 50/50 POZ Lead & Class A
Tubing	2 3/8"	N	J-55	4.7#	7450'	7450'	
Liners							

<u>TYPE</u>	<u>Size</u>	<u>Wellbore Diameter</u>	<u>Wall Thickness</u>	<u>Burst Pressure</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	26"	0.438	2110	Class A Type	1.18
Fresh Water	13 3/8"	17 1/2"	0.380	2730	Class A Type	1.39
Coal						
Intermediate	9 5/8"	12 3/8"	0.352	3520	Class A Type	1.18
Production	5 1/2"	8 3/4" & 8 1/2"	0.361	14360	Class A Type	1.26
Tubing	2 3/8"	5 1/2" Csg	0.190	7700	.....	.....
Liners						

PACKERS

Kind:	None			
Sizes:	None			
Depths Set:	None			

WW-6B  
(9/13)

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

Drill and stimulate new horizontal Marcellus well. Well to be drilled to a TMD of 12934'. Well to be drilled to a TVD of 6830', formation at TVD - Onondaga Group. The well bore will not be drilled any deeper than 100' into the Onondaga Group, nor will there be any perforation, stimulation, or production of any formations below the target formation. Well will be plugged back to an approximate depth of 6000' (approximate due to exact kick off point being unknown). Plugging back will be done using the displacement method and Class A Type cement. A solid cement plug will be set from TD to KOP. If an unexpected void is encountered, plan will be to set casing at a minimum of 30' past void and cement to surface with approved Class A type cement.

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

The stimulation will be multiple stages divided 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 - 9500 psi. Max Rate - 100 bbl/min.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.4 Acres

22) Area to be disturbed for well pad only, less access road (acres): 10.6 Acres

23) Describe centralizer placement for each casing string:

Conductor - No centralizers used. Fresh Water & Coal - Bow spring centralizers on first joint then every fourth joint to 100 feet from surface. Intermediate - Bow spring centralizers one on the first two joints and every fourth joint until inside surface casing. Production - Rigid bow spring centralizer on first joint then every 2 casing joints (free floating) through the lateral and the curve. (Note: cementing the 5 1/2" casing completely in open hole lateral and curve.)

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

Conductor - 2% CaCl<sub>2</sub>. Fresh Water/Coal - 2% CaCl<sub>2</sub>. Intermediate - 2% CaCl<sub>2</sub>. Production - 2.6% Cement extender, 0.7% Fluid loss additive, 0.5% High Temperature Retarder, 0.2% Friction Reducer

25) Proposed borehole conditioning procedures:

Conductor - The hole is drilled w/ air and casing ran in air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Fresh Water/Coal - The hole is drilled w/ air and casing is ran in air. Once casing is on bottom, the casing shoe will be cleared with fresh water and gel prior to cementing. Intermediate - The hole is drilled w/ air and casing is ran in air. Once casing is on bottom, the casing shoe will be cleared with fresh water and gel prior to cementing. (Note: Drilling soap may be utilized if the hole gets wet/damp during the drilling of all air holes with the exception of the conductor). Production - The hole will be drilled with synthetic oil base mud and once at TD the hole is circulated at a drilling pump rate until the hole is clean. Once casing is ran the hole is circulated for a minimum of one hole volume prior to pumping cement.

\*Note: Attach additional sheets as needed.

Well is located on topo map 14,406 feet south of Latitude: 39° 12' 30"

Well is located on topo map 11,149 feet west of Longitude: 80° 42' 30"

LINE	BEARING	DISTANCE
R1	S 60°57'03" W	124.47'
R2	N 49°19'22" W	87.58'
R3	N 41°53'36" E	104.70'
R4	S 55°25'40" E	1603.79'
R5	N 73°23'10" E	1285.51'
R6	S 82°15'31" W	1870.27'

NOTES:

- There are no water wells or developed springs within 250' of proposed well.
- The center of pad is less than 625' from a dwelling.
- Proposed well pad 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.

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

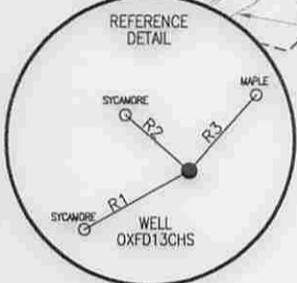
**LEGEND**

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

**GAS WELLS**

- EXISTING WELLS
- PLUGGED WELLS

SURFACE HOLE LOCATION (SHL)	APPROX. LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83 N:4335536.94 E:521798.89 NAD27, WV NORTH N:246009.200 E:1646213.600 LAT/LON DATUM-NAD83 LAT:39.168781 LON:-80.747656	UTM 17-NAD83 N:4335771.19 E:521793.52 NAD27, WV NORTH N:246778.200 E:1646208.800 LAT/LON DATUM-NAD83 LAT:39.170892 LON:-80.747711	UTM 17-NAD83 N:4337223.74 E:521237.13 NAD27, WV NORTH N:251575.383 E:1644462.487 LAT/LON DATUM-NAD83 LAT:39.183994 LON:-80.754106



**Blue Mountain Inc.**  
10125 MASON DIXON HIGHWAY  
BURTON, WV 26562  
PHONE: (304) 662-6486

FILE #: OXFD13CHS  
DRAWING #: OXFD13CHS  
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:

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

**GEORGE D. SIX**  
LICENSED  
No. 2000  
STATE OF  
WEST VIRGINIA  
PROFESSIONAL SURVEYOR

PLACE SEAL HERE

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



DATE: APRIL 2, 2015  
OPERATOR'S WELL #: OXFD13CHS  
API WELL #: 47 17 016576M03  
STATE COUNTY PERMIT

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

WATERSHED: SOUTH FORK HUGHES RIVER ELEVATION: 1,152.4'±

COUNTY/DISTRICT: DODDRIDGE / SOUTHWEST QUADRANGLE: NEW MILTON, WV 7.5'

SURFACE OWNER: I. L. (IKE) MORRIS ACREAGE: 6603.75±

OIL & GAS ROYALTY OWNER: S.W. STOUT ET AL ACREAGE: 1065.427±

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: 7,050'± TMD: 12,934±

WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT MATTHEW IMRICH  
Address P.O. BOX 1248 Address P.O. BOX 1248  
City JANE LEW State WV Zip Code 26378 City JANE LEW State WV Zip Code 26378

# OXFD13CHS

## PAGE 2 OF 2

	SURFACE OWNER	DIST-TM/PAR
A	I. L. (IKE) MORRIS	7-10/2
B	JERRY L. & SHARON LEGGETT (SURV)	7-15/3.1
C	TYLER GARRETT BUNTING C/O LENORA BUNTING	7-15/1
D	JEFFREY LYNN & LINEY ELAINE MCKINNEY (SURV)	7-15/1.1
E	LINEY MCKINNEY	7-15/1.6
F	MARIE E. HYDE & RICHARD A. BAKER (SURV)	7-15/1.5
G	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.3
H	KEVIN L. & TERESA A. MULLEN (SURV)	7-15/1.2
J	ROBERT K. SWIGER	7-15/1.4
K	WILLIAM L. JONES TRUST C/O ROBERT K. SWIGER (TRUSTEE)	7-11/8
L	ROBERT K. SWIGER	7-11/7
M	MAY REVOCABLE TRUST-EXEMPTION TRUST 1/2 INT. SUSAN V. DRENNAN 1/2 INT.	7-11/5
N	KEY OIL COMPANY	7-11/1

PARCEL	LESSOR
1,3,4, 5&7	S.W. STOUT ET AL
10	J.P. MORGAN CHASE BANK, N.A., TRUSTEE OF S.A. SMITH & C. BURKE MORRIS TRUST
	J.P. MORGAN CHASE BANK, N.A., TRUSTEE OF WILL E. MORRIS TRUST
	JAMES D. POWELL, II
	CYNTHIA FAYE POWELL
	LINDA FREDERICK
	LESLIE FREDERICK
	EMMANUEL LUTHERAN CHURCH
	VADA BARNETT
	JO ANN B. WATERS, ET VIR.
	UDELLA MAE PROUDFOOT BARNETT
	LESLIE FREDERICK, AIF FOR BETTY J. BARNETT
	GENEVIEVE STOUT SUMMERS
	KATHLEEN C. SUMMERS, BY MARY LOU DEISLER HER AIF
	KATHRYN SUMMERS
	PAULINE SUMMERS
CHAD W. JOHNSON	

**SURFACE HOLE LOCATION (SHL)**  
**UTM 17-NAD83**  
**N:4335536.94**  
**E:521798.89**  
 NAD27, WV NORTH  
 N:246009.200  
 E:1646213.600  
 LAT/LON DATUM-NAD83  
 LAT:39.168781  
 LON:-80.747656

**APPROX. LANDING POINT**  
**UTM 17-NAD83**  
**N:4335771.19**  
**E:521793.52**  
 NAD27, WV NORTH  
 N:246778.200  
 E:1646208.800  
 LAT/LON DATUM-NAD83  
 LAT:39.170892  
 LON:-80.747711

**BOTTOM HOLE LOCATION (BHL)**  
**UTM 17-NAD83**  
**N:4337223.74**  
**E:521237.13**  
 NAD27, WV NORTH  
 N:251575.383  
 E:1644462.487  
 LAT/LON DATUM-NAD83  
 LAT:39.183994  
 LON:-80.754106

47-017-06576  
MOD

APRIL 2, 2015

Attachment - Form WW-6A-1 for Oxford 13 CHS:

<u>Tract ID</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
1,3,4,5,7	S.W. Stout, et al M.G. Zinn The Carter Oil Company Hope Natural Gas Company Consolidated Gas Supply Corporation	M.G. Zinn The Carter Oil Company Hope Natural Gas Company Consolidated Gas Supply Corporation Consolidated Gas Transmission Corp	1/8 Assignment Assignment Assignment Assignment	11/464 14/127 42/410 DB 143/345 135/583
	Consolidated Gas Transmission Corp	CNG Transmission Corp	Merger/Name Change	Harrison Co. Aol 51/795
	CNG Transmission Corp Dominion Transmission, Inc. Consol Energy Holdings Consol Gas Company	Dominion Transmission, Inc. Consol Energy Holdings Consol Gas Company CNX Gas Company LLC	Merger/Name Change Assignment Merger/Name Change Merger/Name Change	Harrison Co. Aol 58/362 245/1 DB 292/469 DB 293/252
<u>Tract ID</u>	<u>Grantor, Lessor, etc</u>	<u>Grantee, Lessee, etc</u>	<u>Royalty</u>	<u>Book/Page</u>
10	J.P. Morgan Chase Bank, N.A, Trustee of S.A. Smith and C. Burke Morris, Trust	CNX Gas Company LLC	1/8	393/670
10	J.P. Morgan Chase Bank, N.A., Trustee of the Will E Morris, Trust	CNX Gas Company LLC	1/8	393/675
10	Chad W. Johnson, a married man dealing with his sole and separate property	CNX Gas Company LLC	1/8	393/728
10	James D. Powell, II, a married man dealing with his sole and separate property	CNX Gas Company LLC	1/8	394/5
10	Cynthia Faye Powell, an unmarried person	CNX Gas Company LLC	1/8	394/1
10	Linda Frederick, a divorced woman	CNX Gas Company LLC	1/8	380/629
10	Leslie Frederick, a single woman	CNX Gas Company LLC	1/8	380/633
10	Emmanuel Lutheran Church	CNX Gas Company LLC	1/8	380/624
10	Vada Barnett, single Key Oil Company Antero Resources Appalachian Corp.	Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment	173/320 256/285 353/272
10	Jo Ann B. Waters, et vir. Key Oil Company Antero Resources Appalachian Corp.	Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment	173/327 256/285 353/272
10	Udella Mae Proudfoot Barnett Key Oil Company Antero Resources Appalachian Corp.	Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment	175/432 256/285 353/272
10	Leslie Frederick, AIF for Betty J. Barnett, single Key Oil Company Antero Resources Appalachian Corp.	Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment	173/316 256/285 353/272
10	Genevieve Stout Summers Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp.	Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment Assignment	177/623 178/85 256/285 353/272
10	Kathleen C. Summers, by Mary Iou Deisler her AIF Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp.	Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment Assignment	177/625 178/85 256/285 353/272
10	Kathryn Summers Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp.	Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment Assignment	177/627 178/85 256/285 353/272
10	Pauline Summers Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp.	Murvin Oil Company Key Oil Company Antero Resources Appalachian Corp. CNX Gas Company LLC	1/8 Assignment Assignment Assignment	177/629 178/85 256/285 353/272

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Office of Oil and Gas  
APR 14 2015

WV Department of  
Environmental Protection



April 7, 2015

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

RE: CONSOL Energy's proposed OXFD13CHS Well, in Doddridge County, West Virginia  
Drilling Under CR 19/11, South Fork Hughes River Road.

To Whom It May Concern:

CONSOL Energy, Inc. (CNX) is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to CNX's right to drill under CR 19/11, South Fork Hughes River Road. Please be advised that according to the title information we have relied on in submitting this application, the State owns no oil and gas rights under said road(s) and/or railroad(s) that CNX has leased said rights from the appropriate parties as set forth on the accompanying Form WW-6A1.

Very truly yours,

A handwritten signature in blue ink that reads "Kelly Eddy".

Kelly Eddy  
Supervisor - Permitting  
CONSOL Energy, Inc.

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Office of Oil and Gas  
APR 14 2015  
WV Department of  
Environmental Protection