

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

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WV Department of
Environmental Protection

API 47-061-01824 County MONONGALIA District BATTELLE
Quad WADESTOWN Pad Name WDTN5 Field/Pool Name _____
Farm name WISE Well Number WDTN5HSM
Operator (as registered with the OOG) CNX GAS COMPANY, LLC
Address 1000 CONSOL 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 440488.82 (NAD 27) Easting 1764412.12 (NAD 27)
Landing Point of Curve Northing 439896.07 (NAD 27) Easting 1763523.25 (NAD 27)
Bottom Hole Northing 445858.01 (NAD 27) Easting 1757240.65 (NAD 27)

Elevation (ft) 1388 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 BASED FLUID

ADDITIVES: ABS MUL (EMULSIFIER), CALCIUM CHLORIDE, FLR PLUS (GILSONITE), CLAYTONE EM (SUSPENSION AGENT), AES WA II (WETTING AGENT), LIME

Date permit issued 1/7/2019 Date drilling commenced 1/9/2019 Date drilling ceased 5/2/2019
Date completion activities began 6/30/2019 Date completion activities ceased 9/6/2019
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 399 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1730, 2479, 2509 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 830, 1170 TRACE: 1810, 1820, 1912, 1918, 2100 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by:
MDK 11/26/2019

API 47-061 - 01824 Farm name WISE Well number WDTN5HHSM

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	24"	20"	129	NEW	94lb/ft	N/A	GROUT TO SURFACE
Surface	17.5"	13.375"	1357	NEW	J-55 54.5lb/ft	N/A	Y - CEMENT TO SURFACE
Coal							
Intermediate 1	12.25"	9.625"	2943	NEW	J-55 36lb/ft	N/A	Y - CEMENT TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.75" & 8.5"	5.5"	17250	NEW	P-110 20lb/ft	N/A	Y - TOC @ 350'
Tubing							
Packer type and depth set							

Comment Details ALL DEPTHS ARE REFERENCED TO RKB = 29' GLE

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	HALCEM	1000	15.8	1.169	1169	0	8
Coal							
Intermediate 1	HALCEM	970	15.8	1.147	1113	0	8
Intermediate 2							
Intermediate 3							
Production	NEOCEM (LEAD) / NEOCEM (TAIL)	1185 (LEAD) / 2125 (TAIL)	14.5 (LEAD) / 14.5 (TAIL)	1.168 (LEAD) / 1.165 (TAIL)	1364 (LEAD) / 2476 (TAIL)	350	8
Tubing							

Drillers TD (ft) 17,284 Loggers TD (ft) N/A
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 7365

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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 _____

SURFACE: Centralize every 3rd joint from shoe to surface

INTERMEDIATE: Centralize every 3rd joint from shoe to surface

PRODUCTION: Centralize every joint from shoe to 2,475'

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 061 - 01824 Farm name WISE Well number WDTN5HHSM

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>8,012</u> TVD	<u>8,422</u> MD
_____	_____	_____
_____	_____	_____

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Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1953 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 8780.80 mcfpd Oil 0 bpd NGL 0 bpd Water 1055.70 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
UNDIFFERENTIATED SAND	0	440	0	440	SANDSTONE / SILTSTONE/ TRACES OF LIMESTONE
UNDIFFERENTIATED LIME	440	470	440	470	LIME STONE / SANDSTONE
UNDIFFERENTIATED SAND	470	510	470	510	SANDSTONE / LIMESTONE
UNDIFFERENTIATED SILT	510	830	510	830	SILTSTONE / LIMESTONE/ TRACES OF SANDSTONE & RED SHALE
WAYNESBURG	830	832	830	832	COAL / SILTSTONE / SANDSTONE
UNDIFFERENTIATED SILT	832	850	832	850	SILTSTONE / SANDSTONE
UNDIFFERENTIATED SAND	850	950	850	950	SANDSTONE
UNDIFFERENTIATED SILT	950	1000	950	1000	SILTSTONE / LIMESTONE
UNDIFFER. LIME / SILT	1000	1170	1000	1170	LIMESTONE / SILTSTONE
PITTSBURGH COAL	1170	1180	1170	1180	COAL / LIMESTONE / SILTSTONE
UNDIFFERENTIATED LIME	1180	1230	1180	1230	LIMESTONE / SILTSTONE
UNDIFFERENTIATED SILT	1230	1400	1230	1400	SILTSTONE / LIMESTONE / RED SHALE
UNDIFFERENTIATED SILT	1400	1730	1400	1730	SILTSTONE / SANDSTONE
UPPER FREEPORT	1730	1740	1730	1740	SANDSTONE

Please insert additional pages as applicable.

Drilling Contractor PATTERSON-UTI DRILLING COMPANY
Address 207 CARLTON DRIVE City EIGHTY FOUR State PA Zip 15330

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company HALLIBURTON
Address 121 CHAMPION WAY SUITE #210 City CANONSBURG State PA Zip 15317

Stimulating Company KEANE
Address 5825 North Sam Houston Parkway West Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Michael Honce Telephone 304-884-2138
Signature [Signature] Title Superintendent Completions Date 10/22/2019

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

LITHOLOGIES CONTINUED

LITHOLOGY / FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT NAME TVD	TOP DEPTH IN FT NAME MD	BOTTOM DEPTH IN FT NAME MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
UNDIFFERENTIATED SAND	1740	1810	1740	1810	SANDSTONE
LOWER FREEPORT	1810	1820	1810	1820	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	1820	1912	1820	1912	SANDSTONE/ SILTSTONE/ TRACES OF COAL
MIDDLE KITTANING	1912	1918	1912	1918	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	1918	2100	1918	2100	SANDSTONE/ SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SILT	2100	2280	2100	2280	SILTSTONE/ TRACES OF COAL
UNDIFFERENTIATED SAND	2280	2300	2280	2300	SANDSTONE
UNDIFFERENTIATED SILT	2300	2340	2300	2340	SILTSTONE
UNDIFFERENTIATED SHALE	2340	2380	2340	2380	RED SHALE
UNDIFFERENTIATED SILT	2380	2420	2380	2420	SILTSTONE/ RED SHALE
BIG LIME	2420	2480	2420	2480	LIMESTONE/ SILTSTONE
KEENER	2480	2510	2480	2510	SANDSTONE/ SILTSTONE
BIG INJUN	2510	2690	2510	2690	SANDSTONE
BIG INJUN BASE	2690	3080	2690	3080	SILTSTONE
50 FOOT	3080	3140	3080	3140	SILTSTONE
GORDON	3140	3305	3140	3305	SANDSTONE/ SILTSTONE
FIFTH	3305	3352	3305	3352	SILTSTONE
BAYARD	3352	5290	3352	5290	SILTSTONE/ TRACES RED & GREY SHALES
ELK	5290	5360			SILTSTONE/ GREY SHALE
UNDIFFERENTIATED SHALE/ SILT	5360	7406			SILTSTONE/ SHALE
RHINESTREET	7406	7490			GREY SHALE
CASHAQUA	7490	7989			GREY SHALE
BURKET	7989	8027			GREY SHALE
TULLY	8027	8083			LIMESTONE/ GRAY SHALE
HAMILTON	8083	8370			GREY SHALE
MARCELLUS	8370				BLACK SHALE
TD (MARCELLUS)				17284	

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WDTN5HSM – PERFORATION RECORD – ATTACHMENT 1

Stage No.	Perforation Date	Perforation from MD ft.	Perforation to MD ft.	Number of Perforations	Formation(s)
1	6/30/2019	17,027.2	17,194.9	40	Marcellus Shale
2	6/30/2019	16,802.6	16,986.2	40	Marcellus Shale
3	7/1/2019	16,575.6	16,759.2	40	Marcellus Shale
4	8/4/2019	16,348.6	16,532.2	40	Marcellus Shale
5	8/5/2019	16,121.6	16,305.2	40	Marcellus Shale
6	8/6/2019	15,894.6	16,078.2	40	Marcellus Shale
7	8/6/2019	15,667.6	15,851.2	40	Marcellus Shale
8	8/7/2019	15,440.6	15,624.2	40	Marcellus Shale
9	8/7/2019	15,213.6	15,397.2	40	Marcellus Shale
10	8/8/2019	14,986.6	15,170.2	40	Marcellus Shale
11	8/8/2019	14,759.6	14,943.2	40	Marcellus Shale
12	8/9/2019	14,532.6	14,716.2	40	Marcellus Shale
13	8/9/2019	14,305.6	14,489.2	40	Marcellus Shale
14	8/10/2019	14,078.6	14,262.2	40	Marcellus Shale
15	8/10/2019	13,851.6	14,035.2	40	Marcellus Shale
16	8/11/2019	13,624.6	13,808.2	40	Marcellus Shale
17	8/11/2019	13,397.6	13,581.2	40	Marcellus Shale
18	8/12/2019	13,170.6	13,354.2	40	Marcellus Shale
19	8/12/2019	12,943.6	13,127.2	40	Marcellus Shale
20	8/13/2019	12,716.6	12,900.2	40	Marcellus Shale
21	8/13/2019	12,490.5	12,673.3	40	Marcellus Shale
22	8/14/2019	12,264.5	12,447.3	40	Marcellus Shale
23	8/14/2019	12,038.5	12,221.3	40	Marcellus Shale
24	8/15/2019	11,812.5	11,995.3	40	Marcellus Shale
25	8/15/2019	11,586.5	11,769.3	40	Marcellus Shale
26	8/16/2019	11,360.5	11,543.3	40	Marcellus Shale
27	8/16/2019	11,134.5	11,317.3	40	Marcellus Shale
28	8/16/2019	10,908.5	11,091.3	40	Marcellus Shale
29	8/17/2019	10,682.5	10,865.3	40	Marcellus Shale
30	8/17/2019	10,456.5	10,639.3	40	Marcellus Shale
31	8/18/2019	10,230.5	10,413.3	40	Marcellus Shale
32	8/18/2019	10,004.5	10,187.3	40	Marcellus Shale
33	8/19/2019	9,778.5	9,961.3	40	Marcellus Shale
34	8/19/2019	9,552.5	9,735.3	40	Marcellus Shale
35	8/19/2019	9,326.5	9,509.3	40	Marcellus Shale
36	8/19/2019	9,100.5	9,283.3	40	Marcellus Shale
37	8/20/2019	8,874.5	9,057.3	40	Marcellus Shale
38	8/20/2019	8,648.5	8,831.3	40	Marcellus Shale
39	8/21/2019	8,422.5	8,605.3	40	Marcellus Shale

WDTN5HHSM – STIMULATION INFORMATION PER STAGE – ATTACHMENT 2

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (ibs)	Amount of Water (bbls)	Amount of Nitrogen/Other (units)
1	6/30/2019	81	8,711.0	6,222.0	5,899.0	217,592.0	11,013.00	N/A
2	7/1/2019	82	8,899.0	6,321.0	5,794.0	213,525.0	12,014.02	N/A
3	7/2/2019	84	8,641.0	6,329.0	4,993.0	215,285.0	10,416.67	N/A
4	8/5/2019	93	9,280.0	6,730.0	4,286.0	538,936.0	10,263.00	N/A
5	8/5/2019	87	9,033.0	7,639.0	5,595.0	542,737.0	12,699.95	N/A
6	8/6/2019	90	9,497.0	6,898.0	5,591.0	541,802.0	10,258.00	N/A
7	8/7/2019	89	9,175.0	7,101.0	5,771.0	541,052.0	10,033.00	N/A
8	8/7/2019	92	9,435.0	7,096.0	5,906.0	538,641.0	10,233.00	N/A
9	8/7/2019	90	9,188.0	7,032.0	5,758.0	539,375.0	10,199.02	N/A
10	8/8/2019	92	9,310.0	6,856.0	5,955.0	536,026.0	10,176.00	N/A
11	8/9/2019	91	9,276.0	6,432.0	5,919.0	539,459.0	10,126.00	N/A
12	8/9/2019	87	9,039.0	6,612.0	6,091.0	542,634.0	10,155.02	N/A
13	8/10/2019	91	9,254.0	7,655.0	6,017.0	540,679.0	10,078.02	N/A
14	8/10/2019	92	9,190.0	7,131.0	5,612.0	536,931.0	10,119.00	N/A
15	8/11/2019	93	9,253.0	6,889.0	5,954.0	538,285.0	10,044.00	N/A
16	8/11/2019	95	9,345.0	6,914.0	5,976.0	542,367.0	9,600.00	N/A
17	8/12/2019	92	9,334.0	7,374.0	5,568.0	539,890.0	9,409.00	N/A
18	8/12/2019	96	9,045.0	6,352.0	5,941.0	544,645.0	8,382.95	N/A
19	8/13/2019	93	8,957.0	6,632.0	5,888.0	544,201.0	8,338.98	N/A
20	8/13/2019	92	9,218.0	6,609.0	5,423.0	538,841.0	8,444.00	N/A
21	8/14/2019	98	9,044.0	7,620.0	5,965.0	546,826.0	8,333.00	N/A
22	8/14/2019	99	9,073.0	7,378.0	6,157.0	542,023.0	8,327.00	N/A
23	8/15/2019	97	9,407.0	7,164.0	5,914.0	543,576.0	8,285.00	N/A
24	8/15/2019	101	9,980.0	7,134.0	5,810.0	522,172.0	7,828.00	N/A
25	8/15/2019	97	9,291.0	6,844.0	6,274.0	536,488.0	8,260.00	N/A
26	8/16/2019	101	9,876.0	6,886.0	5,889.0	532,799.0	8,088.00	N/A
27	8/16/2019	98	9,193.0	6,643.0	5,770.0	544,186.0	8,287.00	N/A
28	8/17/2019	99	9,836.0	6,991.0	5,596.0	534,138.0	7,916.00	N/A
29	8/17/2019	98	9,658.0	6,404.0	5,903.0	529,547.0	7,766.00	N/A
30	8/18/2019	99	8,837.0	6,505.0	5,631.0	539,598.0	7,864.00	N/A
31	8/18/2019	99	9,669.0	6,345.0	5,732.0	534,863.0	7,805.00	N/A
32	8/18/2019	98	8,678.0	6,728.0	5,599.0	542,475.0	8,213.00	N/A
33	8/19/2019	98	9,847.0	7,550.0	5,922.0	531,974.0	7,627.00	N/A
34	8/19/2019	100	9,620.0	7,541.0	5,981.0	539,687.0	7,931.00	N/A
35	8/20/2019	98	8,592.0	6,700.0	5,981.0	546,884.0	8,207.00	N/A
36	8/20/2019	101	8,867.0	6,724.0	6,060.0	537,462.0	7,858.00	N/A
37	8/20/2019	99	8,170.0	7,175.0	6,118.0	547,935.0	8,263.00	N/A
38	8/21/2019	100	8,712.0	6,717.0	5,712.0	537,156.0	7,664.00	N/A
39	8/21/2019	100	8,647.0	6,897.0	5,729.0	529,244.0	8,002.00	N/A

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/30/2019
Job End Date:	8/21/2019
State:	West Virginia
County:	Monongalia
API Number:	47-061-01824-00-00
Operator Name:	CNX Gas Company LLC
Well Name and Number:	WDTN5 HHSM
Latitude:	39.70646000
Longitude:	-80.33715700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,075
Total Base Water Volume (gal):	14,354,256
Total Base Non Water Volume:	0

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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	CNX	Carrier/Base Fluid	Water	7732-18-5	100.00000	85.01454	None
Sand (Proppant)	Keane	Proppant	Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	14.18581	None
Hydrochloric Acid (15%)	Keane	Acidizing	Water	7732-18-5	85.00000	0.35516	None
			Hydrochloric Acid	7647-01-0	15.00000	0.06267	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor	Water	7732-18-5	92.50000	0.23153	None
			Hydrochloric Acid	7647-01-0	7.50000	0.01877	None
KFR-48	Keane	Friction Reducer	Water	7732-18-5	47.00000	0.03276	None
			butene, homopolymer	9003-29-6	25.00000	0.01742	None
			alkanes, C16-20-iso-	90622-59-6	25.00000	0.01742	None
			Alcohols, C12-18, ethoxylated	58213-23-0	3.00000	0.00209	None
KWG-111LS	Keane	Gel					

				Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.01017	None
				Guar gum	9000-30-0	55.00000	0.01017	None
KSI-22	Keane	Scale Inhibitor		Methanol	67-56-1	50.00000	0.01079	None
				2-propanoic acid, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00216	None
MBC-516	Keane	Biocide		glutaral	111-30-8	26.70000	0.00453	None
				didecyltrimethylammonium chloride	7173-51-5	8.00000	0.00135	None
				quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00090	None
				Ethanol	64-17-5	2.80000	0.00048	None
KFEAC-20	Keane	Iron Control		acetic acid	64-19-7	50.00000	0.00154	None
				Citric acid	77-92-9	30.00000	0.00092	None
KAI-18	Keane	Acid Inhibitor		methanol	67-56-1	65.00000	0.00098	None
				alkyl pyridine quaternary ammonium chloride	68909-18-2	20.00000	0.00030	None
				formic acid	64-18-6	20.00000	0.00030	None
				surfactant	Proprietary	10.00000	0.00015	None
				propargyl alcohol	107-19-7	5.00000	0.00008	None
KWBO-2	Keane	Breaker		Sodium persulfate	7775-27-1	99.00000	0.00018	None
Ingredients shown above are subject to 29 CFR 1910.1200(j) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.								
Other Chemical(s)	Listed Above	See Trade Name(s) List		Water	7732-18-5	85.00000	0.35516	
				Water	7732-18-5	92.50000	0.23153	
				alkanes, C16-20-iso-	90622-59-6	25.00000	0.01742	
				butene, homopolymer	9003-29-6	25.00000	0.01742	
				Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.01017	
				2-propanoic acid, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00216	
				Alcohols, C12-18, ethoxylated	68213-23-0	3.00000	0.00209	
				didecyltrimethylammonium chloride	7173-51-5	8.00000	0.00135	
				Citric acid	77-92-9	30.00000	0.00092	
				quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00090	

			Ethanol	64-17-5	2.80000	0.00048
			alkyl pyridine quaternary ammonium chloride	68909-18-2	20.00000	0.00030
			formic acid	64-18-6	20.00000	0.00030
			surfactant	Proprietary	10.00000	0.00015
			propargyl alcohol	107-19-7	5.00000	0.00008
			water	7732-18-5	75.00000	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



CNX GAS COMPANY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: WTN-5 Pad

Slot: Slot H
Well: WDTN-5H-HSM
Wellbore: WDTN-5H-HSM.PWB



True vertical depth is WDTN-5H-HSM.PWB Rev C.O.	Grid System: NAD83 / Lambert West Virginia Spher. (7701), US Feet
True vertical depths are referenced to Patterson 801 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 801 (RKB)	Scale: True distance
Patterson 801 (RKB) to Mean Sea Level: 1416.82 ft	Depth are in feet
Mean Sea Level to Mud line (At Slot: Slot H): -1387.82 ft	Created by: schwaner on 2019-04-30
Coordinates are in feet referenced to Slot	Database: WVA_MPL_EASTERNUS_Data

VES Gyro <17-1/2"> (100°-1340°) : 0.38° Inc, 100.00ft MD, 100.00ft TVD, -0.16ft VS

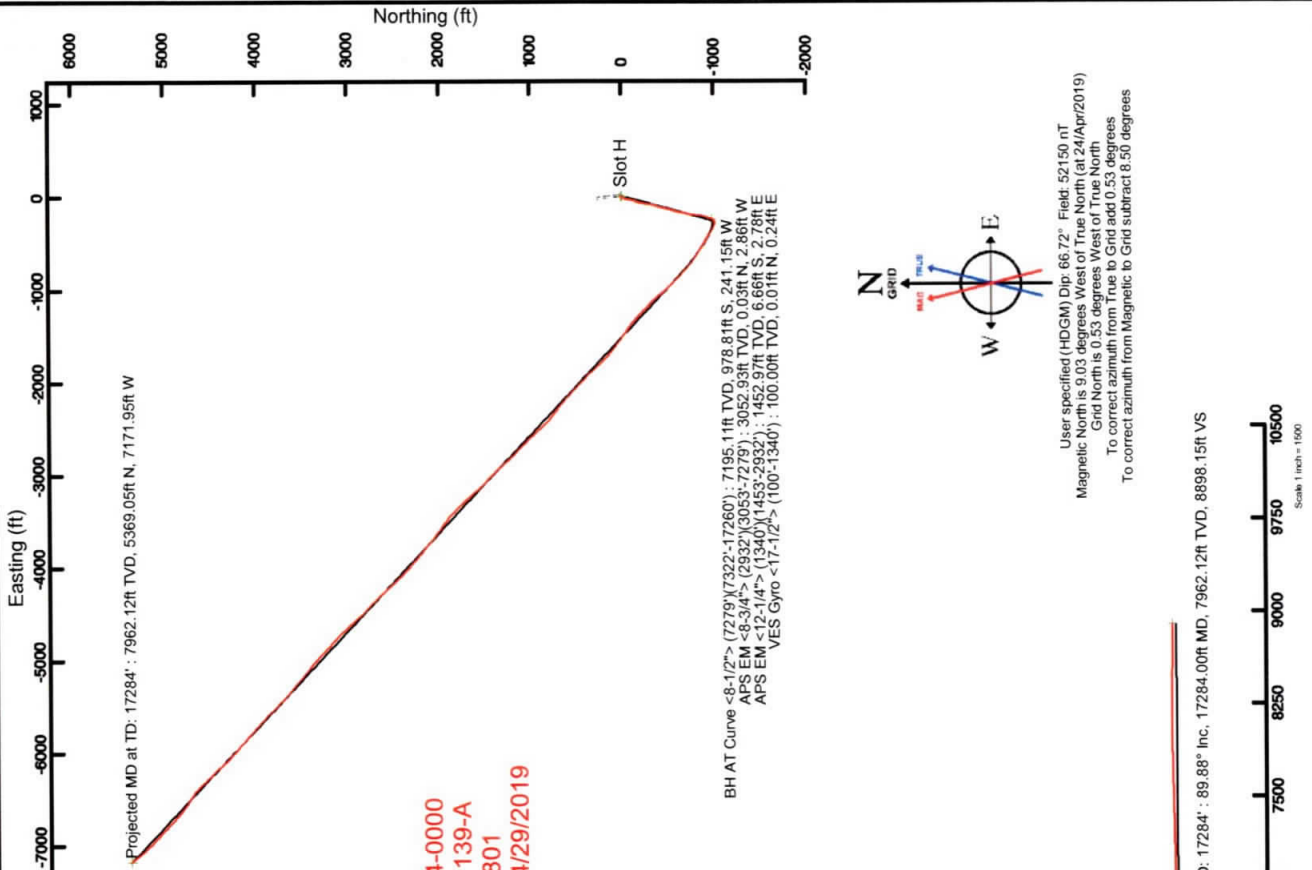
APS EM <12-1/4"> (1340°-1453-2932°) : 0.35° Inc, 1453.00ft MD, 1452.93ft TVD, -6.60ft VS

APS EM <8-3/4"> (2932°-3053-7279°) : 0.47° Inc, 3053.00ft MD, 3052.93ft TVD, 2.10ft VS

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
WTN-5 Pad	1764427.450	440390.830	80°20'14.303"W
Slot	Local E (ft)	Grid North (US ft)	Longitude
Slot H	-42.01	1764412.120	80°20'14.464"W
Patterson 801 (RKB) to Mud line (At Slot: Slot H)	29ft		
Mean Sea Level to Mud line (At Slot: Slot H)	-1387.82ft		
Patterson 801 (RKB) to Mean Sea Level	1416.82ft		

Well Profile Data					
Design Comment	MD (ft)	Az (°)	Inc (°)	TVD (ft)	Local N (ft)
Tie On	1340.00	0.320	202.070	1339.97	-6.48
Proj. to Bottom	1388.00	0.320	202.070	1387.97	-6.73
Dyfl Out	1437.00	0.320	202.070	1436.97	-6.99
End of Drop	1469.00	0.000	194.941	1468.97	-7.07
KOP 1	3150.00	0.000	194.941	3149.97	-7.07
End of Build	3626.85	14.305	194.941	3621.88	-64.29
Curve KOP	7964.57	14.305	194.941	7243.70	-956.82
Landing Pl.	8576.81	80.200	313.500	8025.00	-592.79
BHL	17238.55	80.200	313.500	7994.77	5369.52
					-7171.90
					8898.45

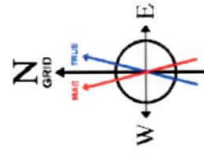
BH AT Curve <8-1/2"> (7279°-7322°-17260°) : 17.91° Inc, 7322.00ft MD, 7195.11ft TVD, -498.84ft VS



Projected MD at TD: 17284' : 7962.12ft TVD, 5369.05ft N, 7171.95ft W

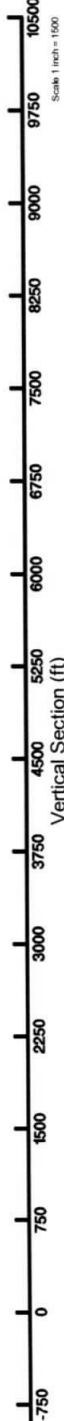
API: 47-061-01824-0000
BH Job #: 109667139-A
Rig: Patterson 801
Duration: 4/26/2019-4/29/2019

BH AT Curve <8-1/2"> (7279°-7322°-17260°) : 7195.11ft TVD, 978.81ft S, 241.15ft W
APS EM <8-3/4"> (2932°-3053°-7279°) : 3052.93ft TVD, 0.03ft N, 2.86ft W
APS EM <12-1/4"> (1340°-1453-2932°) : 1452.93ft TVD, 0.66ft S, 2.79ft E
VES Gyro <17-1/2"> (100°-1340°) : 100.00ft TVD, 0.01ft N, 0.24ft E



User specified (HDGM) Dip: 66.72° Field: 52150 nT
Magnetic North is 9.03 degrees West of True North (at 24/Apr/2019)
Grid North is 0.53 degrees West of True North
To correct azimuth from True to Grid add 0.53 degrees
To correct azimuth from Magnetic to Grid subtract 8.50 degrees

Projected MD at TD: 17284' : 89.88° Inc, 17284.00ft MD, 7962.12ft TVD, 8898.15ft VS



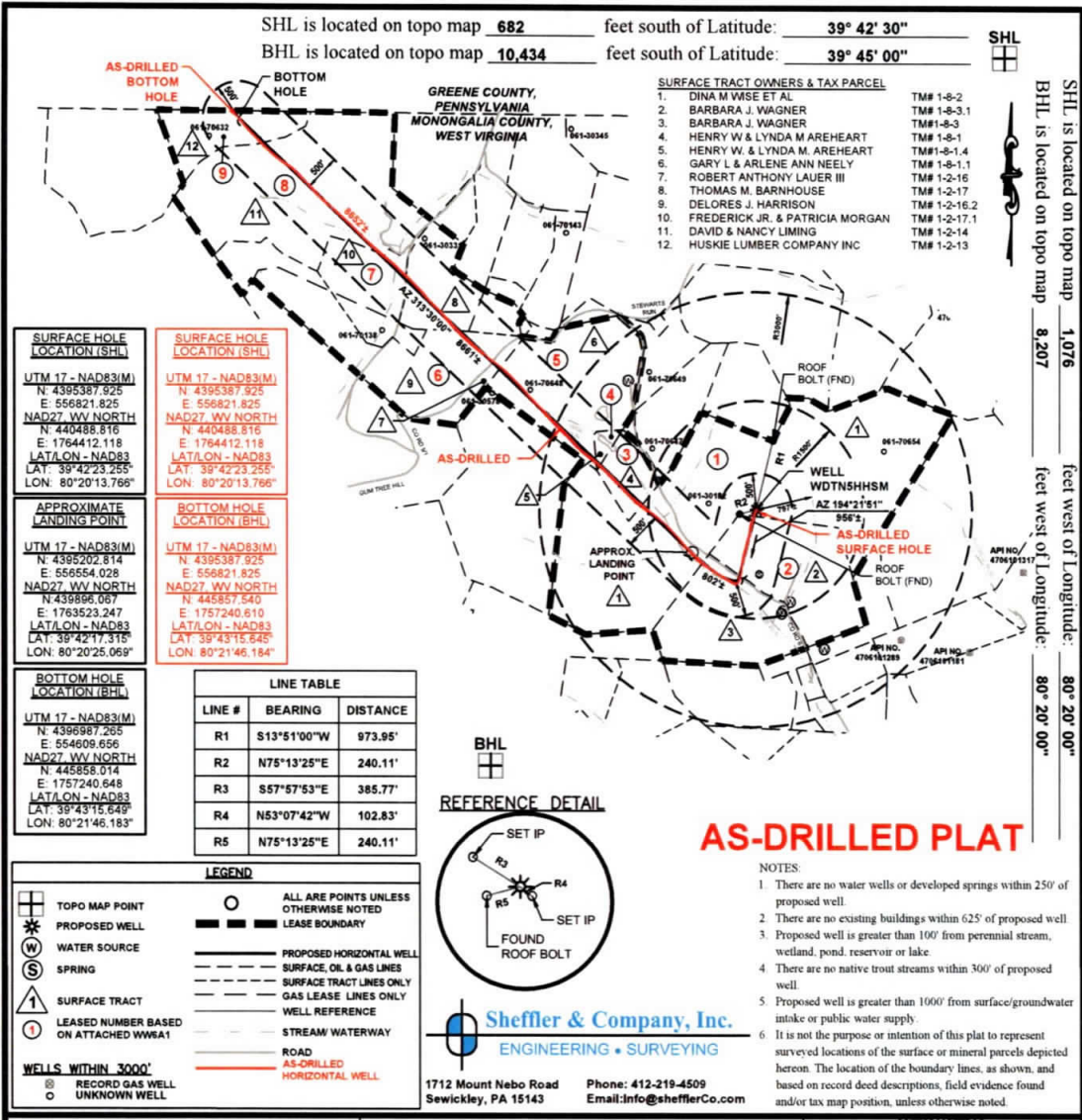
Vertical Section (ft)
Azimuth 313.50° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500

SHL is located on topo map **682** feet south of Latitude: **39° 42' 30"**
 BHL is located on topo map **10,434** feet south of Latitude: **39° 45' 00"**

SHL

SHL is located on topo map **1,076** feet west of Longitude: **80° 20' 00"**
 BHL is located on topo map **8,207** feet west of Longitude: **80° 20' 00"**



FILE #: **WDTN5HSM**
 DRAWING #: **3601 - WDTN5H - AD.DWG**
 SCALE: **1"=2000'**
 MINIMUM DEGREE OF ACCURACY: **1/2500**
 PROVEN SOURCE OF ELEVATION: **USGS MONUMENT X1864: 1,496.32'**

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

SIGNED: *[Signature]*
 R.P.E.: **21452** L.L.S.: P.S. NO.



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

DATE: **September 21, 2018, Rev. July 10, 2019**

OPERATOR'S WELL #: **WDTN5HSM**

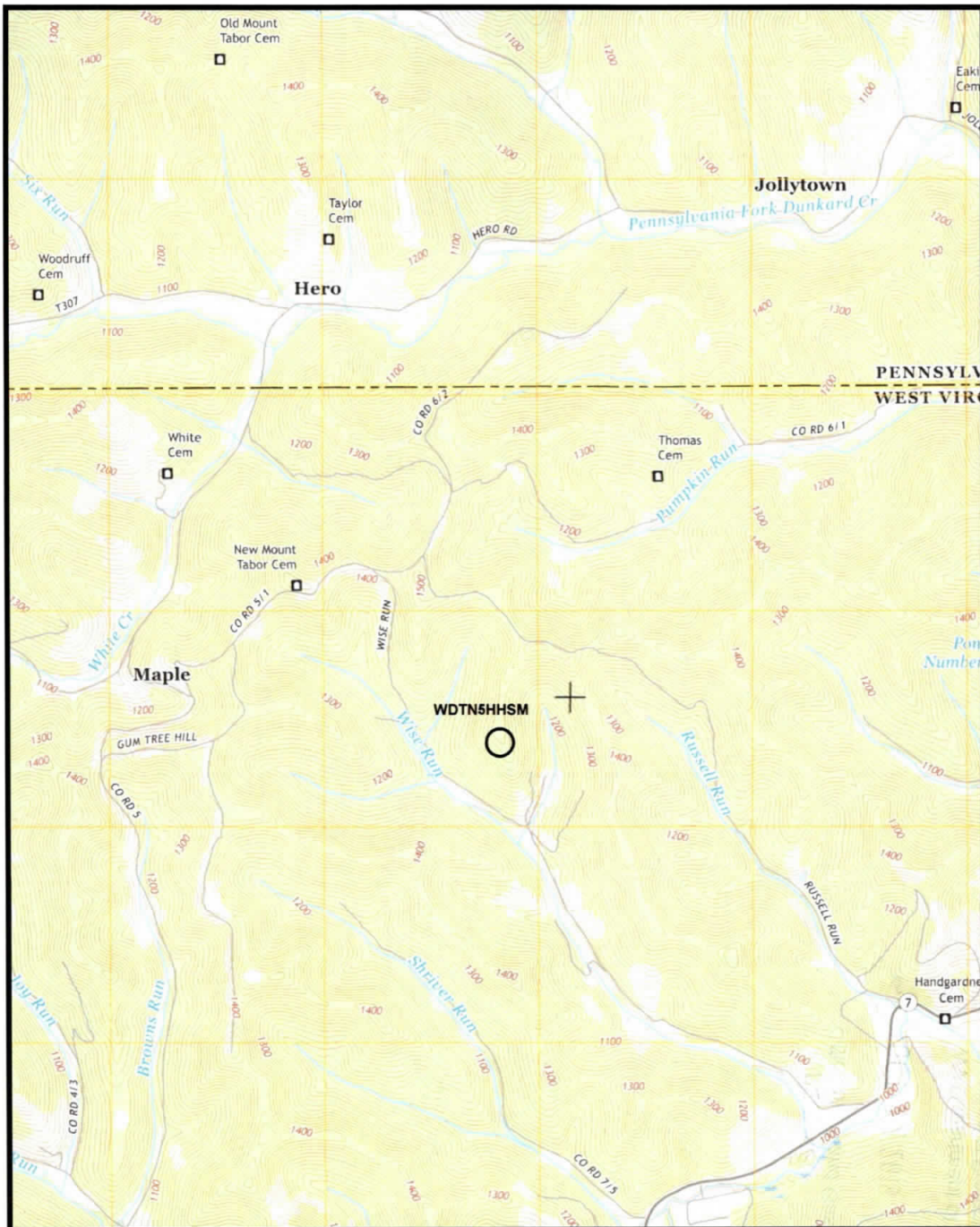
API WELL # **47** **061**
 STATE COUNTY PERMIT

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

WATERSHED **DUNKARD CREEK** ELEVATION: **1412'**
 COUNTY/DISTRICT: **MONONGALIA / BATTELLE** QUADRANGLE: **WADESTOWN, WV**
 SURFACE OWNER: **JOHN M. WISE, ET UX., ET AL.** ACREAGE: **207.36**
 OIL & GAS ROYALTY OWNER: **RICHARD W. WISE, ET AL.** ACREAGE: **207.36**

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

TARGET FORMATION: **MARCELLUS** ESTIMATED DEPTH: **TVD: 7,715' ± TMD: 16,939' ±**
 WELL OPERATOR: **CNX GAS COMPANY, LLC** DESIGNATED AGENT: **CHRIS TURNER**
 Address: **1000 CONSOL ENERGY DRIVE** Address: **1 DOMINION DRIVE**
 City **CANONSBURG** State **PA** Zip Code **15317** City **JANE LEW** State **WV** Zip Code **26378**



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



DATE: September 21, 2018, Rev. July 10, 2019
 OPERATOR'S WELL #: WDTN5HHSM
 API WELL # 47 061
 STATE COUNTY PERMIT

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

WATERSHED DUNKARD CREEK ELEVATION: 1412'
 COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
 SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
 OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

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

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
6 (CONT.)	Parcel 1-2-16.2 p/o 1-2-16.1 p/o 1-2-17.1 p/o 1-2-17.1	189578000	Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC
			Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	CNX Gas Company, LLC
			David Wayne Anderson	CNX Gas Company, LLC
			Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC
			Chris Pelger	CNX Gas Company, LLC
			Shannon Harker	CNX Gas Company, LLC
			Chase Schwesenska	CNX Gas Company, LLC
			John Pelger	CNX Gas Company, LLC
			Holly Pelger	CNX Gas Company, LLC
			Brenda Murphy	EQT Production Company
			Vickie L. Simmons	EQT Production Company
			Sherry C. McCoy	EQT Production Company
David C. Anderson	EQT Production Company			
Kelly Dilbeck	CNX Gas Company, LLC			
7	Parcel 1-2-17.2 p/o 1-2-17.1 p/o 1-2-16.1	239935000	XTO Energy, Inc.	CNX Gas Company, LLC
			Three Rivers Royalty II, LLC	CNX Gas Company, LLC
			Elizabeth A. Martineau, a/k/a, Elizabeth Ada Snyder, a/k/a, Elizabeth Snyder Martineau	CNX Gas Company, LLC
			Rebecca Snyder Bromley, a/k/a Alice Rebecca Snyder Bromley	CNX Gas Company, LLC
			James Brant Snyder	CNX Gas Company, LLC
			Sharon White Bartholomew, a/k/a Sharon R. W. Bartholomew, a/k/a, Sharon Ruth White Bartholomew	CNX Gas Company, LLC
			David T. White and Sarah K. White, h/w, as JTROS	CNX Gas Company, LLC
			Glenn L. White, individually and as trustee of Glenn L. White Trust	CNX Gas Company, LLC
			Alice T. Boone	CNX Gas Company, LLC
			Eldon Bryant Tucker, et ux	CNX Gas Company, LLC
			Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC
			Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	CNX Gas Company, LLC
David Wayne Anderson	CNX Gas Company, LLC			
Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC			
Chris Pelger	CNX Gas Company, LLC			
Shannon Harker	CNX Gas Company, LLC			
Chase Schwesenska	CNX Gas Company, LLC			
John Pelger	CNX Gas Company, LLC			
Holly Pelger	CNX Gas Company, LLC			
Brenda Murphy	EQT Production Company			
Vickie L. Simmons	EQT Production Company			
Sherry C. McCoy	EQT Production Company			
David C. Anderson	EQT Production Company			
Kelly Dilbeck	CNX Gas Company, LLC			
8	Parcel 1-2-14	189577000	XTO Energy, Inc.	CNX Gas Company, LLC
			David Liming and Nancy Liming	CNX Gas Company, LLC
			Three Rivers Royalty II, LLC	CNX Gas Company, LLC
			Elizabeth A. Martineau, a/k/a, Elizabeth Ada Snyder, a/k/a, Elizabeth Snyder Martineau	CNX Gas Company, LLC
			Rebecca Snyder Bromley, a/k/a Alice Rebecca Snyder Bromley	CNX Gas Company, LLC
			James Brant Snyder	CNX Gas Company, LLC
			Sharon White Bartholomew, a/k/a Sharon R. W. Bartholomew, a/k/a, Sharon Ruth White Bartholomew	CNX Gas Company, LLC
			David T. White and Sarah K. White, h/w, as JTROS	CNX Gas Company, LLC
			Glenn L. White, individually and as trustee of Glenn L. White Trust	CNX Gas Company, LLC
			Alice T. Boone	CNX Gas Company, LLC
			Eldon Bryant Tucker, et ux	CNX Gas Company, LLC
			Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC

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 601 57TH STREET
 CHARLESTON, WV 25304



Sheffler & Company, Inc.
 ENGINEERING • SURVEYING

1712 Mount Nebo Road Phone: 412-219-4509
 Sewickley, PA 15143 Email: info@shefflerCo.com

DATE: September 21, 2018, Rev. July 10, 2019

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 OPERATOR'S WELL #: WDTN5HHSM
 API WELL # 47 061
 STATE COUNTY PERMIT

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
 COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
 SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
 OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

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 Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
8 (CONT.)	1-2-14	188577000	Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	EQT Production Company
			David Wayne Anderson	CNX Gas Company, LLC
			Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC
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			Shannon Harker	CNX Gas Company, LLC
			Chase Schwarsenska	CNX Gas Company, LLC
			John Pelger	CNX Gas Company, LLC
			Holly Pelger	CNX Gas Company, LLC
			Brenda Murphy	EQT Production Company
			Vickie L. Simmons	EQT Production Company
			Sherry C. McCoy	EQT Production Company
			David C. Anderson	EQT Production Company
			Kelly Dilbeck	CNX Gas Company, LLC
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
9	1-2-13	188610000	Ralph Six	CNX Gas Company LLC
			Huskie Lumber Co., Inc.	Antero Resources Corporation

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
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 ENGINEERING • SURVEYING

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 API WELL # 47 061
 STATE COUNTY PERMIT

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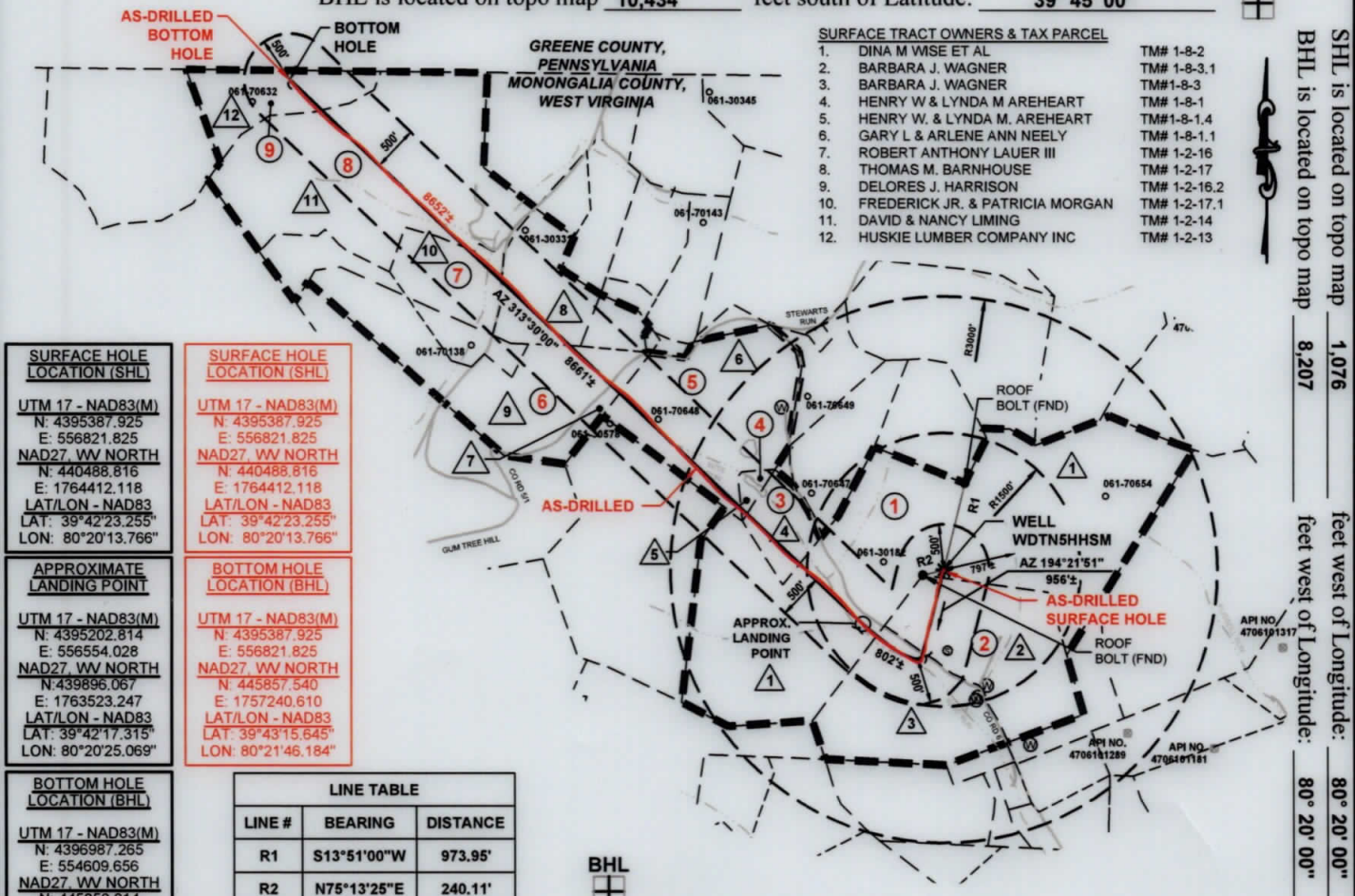
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SHL is located on topo map 682 feet south of Latitude: 39° 42' 30"
 BHL is located on topo map 10,434 feet south of Latitude: 39° 45' 00"

SHL is located on topo map 1,076 feet west of Longitude: 80° 20' 00"
 BHL is located on topo map 8,207 feet west of Longitude: 80° 20' 00"

- SURFACE TRACT OWNERS & TAX PARCEL**
- | | |
|-------------------------------------|--------------|
| 1. DINA M WISE ET AL | TM# 1-8-2 |
| 2. BARBARA J. WAGNER | TM# 1-8-3.1 |
| 3. BARBARA J. WAGNER | TM# 1-8-3 |
| 4. HENRY W & LYNDA M AREHEART | TM# 1-8-1 |
| 5. HENRY W. & LYNDA M. AREHEART | TM# 1-8-1.4 |
| 6. GARY L & ARLENE ANN NEELY | TM# 1-8-1.1 |
| 7. ROBERT ANTHONY LAUER III | TM# 1-2-16 |
| 8. THOMAS M. BARNHOUSE | TM# 1-2-17 |
| 9. DELORES J. HARRISON | TM# 1-2-16.2 |
| 10. FREDERICK JR. & PATRICIA MORGAN | TM# 1-2-17.1 |
| 11. DAVID & NANCY LIMING | TM# 1-2-14 |
| 12. HUSKIE LUMBER COMPANY INC | TM# 1-2-13 |



SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83(M)
 N: 4395387.925
 E: 556821.825
 NAD27 WV NORTH
 N: 440488.816
 E: 1764412.118
 LAT/LON - NAD83
 LAT: 39°42'23.255"
 LON: 80°20'13.766"

SURFACE HOLE LOCATION (SHL)

UTM 17 - NAD83(M)
 N: 4395387.925
 E: 556821.825
 NAD27 WV NORTH
 N: 440488.816
 E: 1764412.118
 LAT/LON - NAD83
 LAT: 39°42'23.255"
 LON: 80°20'13.766"

APPROXIMATE LANDING POINT

UTM 17 - NAD83(M)
 N: 4395202.814
 E: 556554.028
 NAD27 WV NORTH
 N: 439896.067
 E: 1763523.247
 LAT/LON - NAD83
 LAT: 39°42'17.315"
 LON: 80°20'25.069"

BOTTOM HOLE LOCATION (BHL)

UTM 17 - NAD83(M)
 N: 4395387.925
 E: 556821.825
 NAD27 WV NORTH
 N: 445857.540
 E: 1757240.610
 LAT/LON - NAD83
 LAT: 39°43'15.645"
 LON: 80°21'46.184"

LINE TABLE

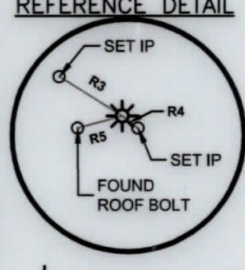
LINE #	BEARING	DISTANCE
R1	S13°51'00"W	973.95'
R2	N75°13'25"E	240.11'
R3	S57°57'53"E	385.77'
R4	N53°07'42"W	102.83'
R5	N75°13'25"E	240.11'

BOTTOM HOLE LOCATION (BHL)

UTM 17 - NAD83(M)
 N: 4396987.265
 E: 554609.656
 NAD27 WV NORTH
 N: 445858.014
 E: 1757240.648
 LAT/LON - NAD83
 LAT: 39°43'15.649"
 LON: 80°21'46.183"

LEGEND

	TOPO MAP POINT		PROPOSED WELL		WATER SOURCE		SPRING		SURFACE TRACT		LEASED NUMBER BASED ON ATTACHED WW6A1		WELLS WITHIN 3000'
	RECORD GAS WELL		UNKNOWN WELL		ALL ARE POINTS UNLESS OTHERWISE NOTED		LEASE BOUNDARY		PROPOSED HORIZONTAL WELL		SURFACE, OIL & GAS LINES		SURFACE TRACT LINES ONLY
	GAS LEASE LINES ONLY		WELL REFERENCE		STREAM/WATERWAY		ROAD		AS-DRILLED HORIZONTAL WELL				



Sheffler & Company, Inc.
 ENGINEERING • SURVEYING

1712 Mount Nebo Road
 Sewickley, PA 15143
 Phone: 412-219-4509
 Email: info@shefflerCo.com

AS-DRILLED PLAT

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, and based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

FILE #: WDTN5HHSM
 DRAWING #: 3601 - WDTN5H - AD.DWG
 SCALE: 1"=2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: USGS MONUMENT JX1864: 1,496.32'

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.: 21452 L.L.S.: P.S. NO. _____



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

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

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
 COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
 SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
 OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DATE: September 21, 2018, Rev. July 10, 2019

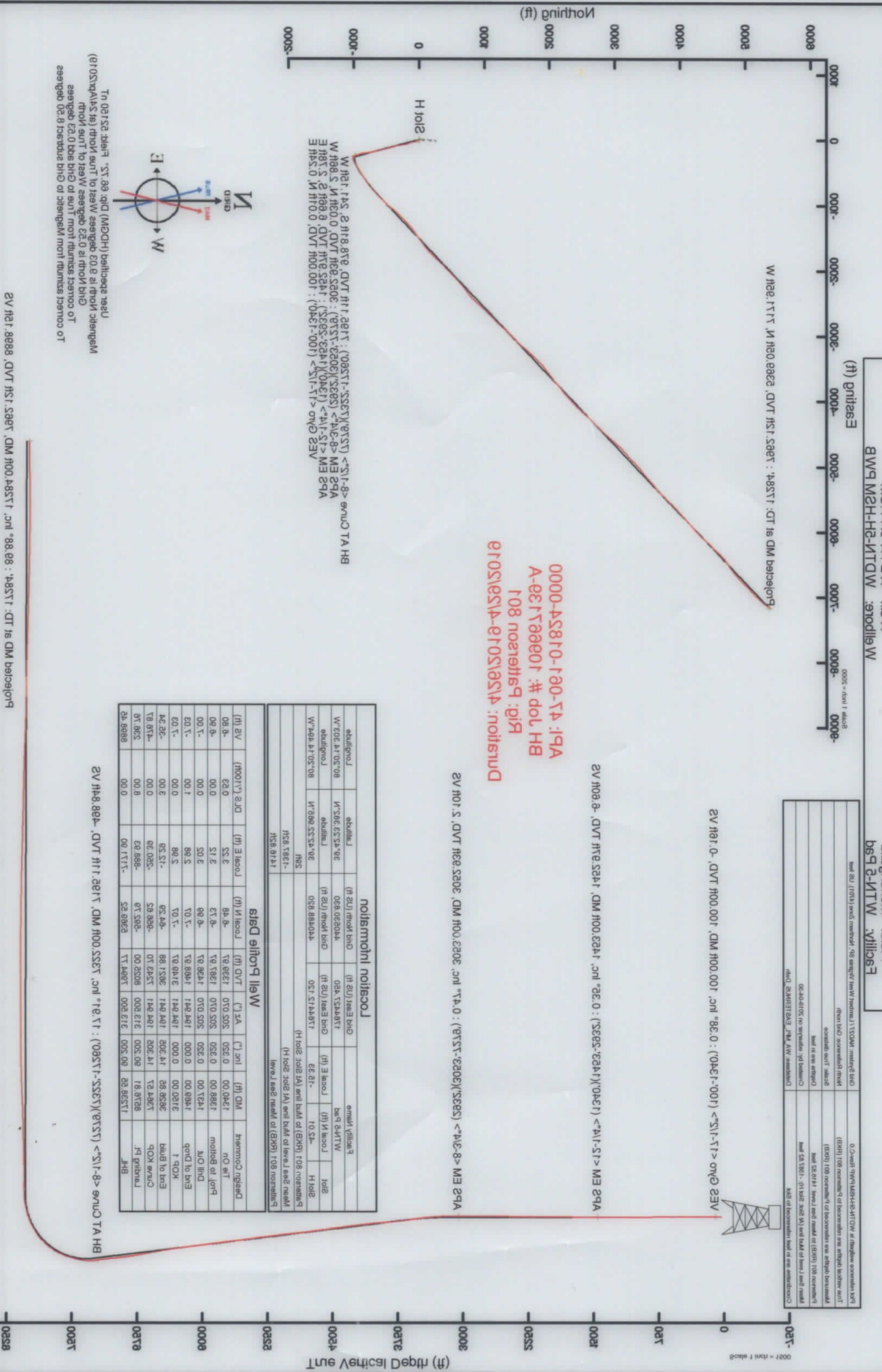
OPERATOR'S WELL #: WDTN5HHSM

API WELL # 47 061 01824
 STATE COUNTY PERMIT

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
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TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,715' ± TMD: 16,939' ±
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 Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
 City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378





Well Profile Dists

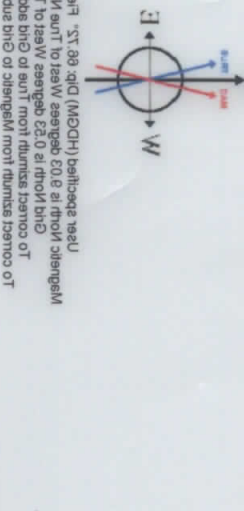
Depth (ft)	North (ft)	South (ft)	East (ft)	West (ft)	Elevation (ft)
0	0	0	0	0	0
10	10	10	10	10	10
20	20	20	20	20	20
30	30	30	30	30	30
40	40	40	40	40	40
50	50	50	50	50	50
60	60	60	60	60	60
70	70	70	70	70	70
80	80	80	80	80	80
90	90	90	90	90	90
100	100	100	100	100	100

Location

Well Name	Location	Elevation (ft)
Well 1	0000 0000 0000	0000
Well 2	0000 0000 0000	0000
Well 3	0000 0000 0000	0000
Well 4	0000 0000 0000	0000

Log Data

Depth (ft)	Well Name	Log Data
0	Well 1	0000
10	Well 1	0000
20	Well 1	0000
30	Well 1	0000
40	Well 1	0000
50	Well 1	0000
60	Well 1	0000
70	Well 1	0000
80	Well 1	0000
90	Well 1	0000
100	Well 1	0000



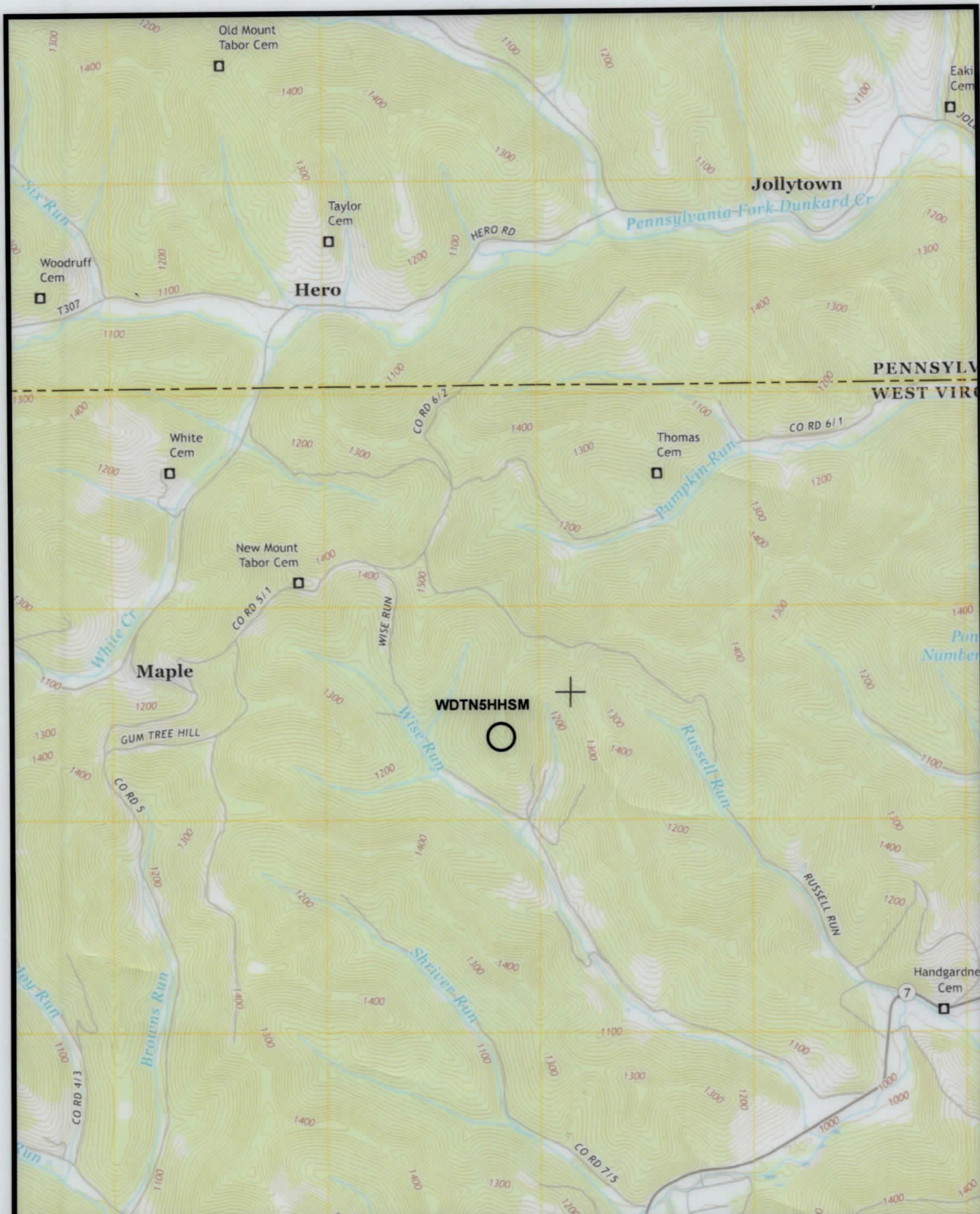
The reference bearing is based on the magnetic declination for the location. To correct the bearing to true bearing, add the declination to the magnetic bearing. If the declination is negative, subtract it from the magnetic bearing.

ВНЕШНЯЯ КОМПОНЕНТА: 0.20, ГОРИЗОНТАЛЬНАЯ КОМПОНЕНТА: 0.20, ПЕРИОД ПОВТОРЕНИЯ: 0.20, КОЭФИЦИЕНТ ПОВТОРЕНИЯ: 0.20

ВНЕШНЯЯ КОМПОНЕНТА: 0.20, ГОРИЗОНТАЛЬНАЯ КОМПОНЕНТА: 0.20, ПЕРИОД ПОВТОРЕНИЯ: 0.20, КОЭФИЦИЕНТ ПОВТОРЕНИЯ: 0.20

СХХ САЙТС СОМПАНИ ГЛС

Address: ВНЕШНЯЯ КОМПОНЕНТА
 City: Москва
 Phone: +7 495 100 000 000
 Email: info@scx.com



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



DATE: September 21, 2018, Rev. July 10, 2019

OPERATOR'S WELL #: WDTN5HHSM

API WELL # 47 061 01924
STATE COUNTY PERMIT

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

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,715' ± TMD: 16,939' ±
WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
1	1-8-2	189010000	Richard L. McCauley	CNX Gas Company LLC
			Judy A. Eckman	CNX Gas Company LLC
			Thomas E. McCauley	CNX Gas Company LLC
			Regina Wise Myers, aka Violet Regina Myers	CNX Gas Company LLC
			Evaloe A. Everly Shaheen	CNX Gas Company LLC
			Zelda Ruth Brummage	CNX Gas Company LLC
			Dexter Murlie Stewart	CNX Gas Company LLC
			Walter C. Ord	CNX Gas Company LLC
			James Freeman Stewart	CNX Gas Company LLC
			Clifford J. Wise	CNX Gas Company LLC
			Victor E. Wise, a single man	CNX Gas Company LLC
			Jesse D. Jones, a married man	CNX Gas Company LLC
			Phyllis J. Petrosky, a widowed woman	CNX Gas Company LLC
			Annette E. Stewart, single	CNX Gas Company LLC
			Harold M. Jones, Jr., a single man	CNX Gas Company LLC
			Robert Stewart	CNX Gas Company LLC
			Richard W. Wise	CNX Gas Company LLC
			Walter R. Currence	CNX Gas Company LLC
			Donald D. Wise, aka Donald G. Wise	CNX Gas Company LLC
			Maureen S. Currence	CNX Gas Company LLC
			Opal Jane Wise, Life Estate Holder and John Matthew Wise and Dina M. Wise, Remaindermen	CNX Gas Company LLC
			Michelle L. Currence	CNX Gas Company LLC
			Justin P. Stewart, single	CNX Gas Company LLC
			Debra Goff	CNX Gas Company LLC
			Eleanor J. Wise, single	CNX Gas Company LLC
			Donald E. Nunley and Deborah L. Nunley	CNX Gas Company LLC
			Fred C. Wise and Alice F. Wise	CNX Gas Company LLC
			Patricia J. Mumaw and Richard L. Mumaw	CNX Gas Company LLC
			Richard A. Nunley and Diana K. Nunley	CNX Gas Company LLC
			Mary Nunley Stepelton and Donald Stepelton	CNX Gas Company LLC
			Linda Stapp	CNX Gas Company LLC
			Melissa A. Bookout	CNX Gas Company LLC
			Jane Irons, widow	CNX Gas Company LLC
			Eileen Ann Lyle	CNX Gas Company LLC
Robert Eugene Michael, Sr.	CNX Gas Company LLC			
Frank Dennis Michael, Jr.	CNX Gas Company LLC			
Evelyn June Michael	CNX Gas Company LLC			
Tonya Chersin	CNX Gas Company LLC			
Boyd Hawkins	CNX Gas Company LLC			
Becky L. Hawkins f/k/a Becky Bortnick	CNX Gas Company LLC			
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
2	1-8-3 1-8-3.1	204769000	Barbara J. Wagner, a widow	CNX Gas Company LLC
			Donald L. White, et al	CNX Gas Company LLC
			Arnold D. Anderson, individually, and as Trustee of the Arnold D. Anderson and Barbara J. Anderson Living Trust UTD May 14th, 2008	CNX Gas Company LLC
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
3	1-8-1	204516000	CBC Holdings, LLC	CNX Gas Company LLC
			Henry W. Areheart and Lynda M. Areheart, h/w	CNX Gas Company LLC
			Earl W. Kennedy	CNX Gas Company LLC
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
4	1-8-1.4	204776000	CBC Holdings, LLC	CNX Gas Company LLC
			Henry W. Areheart and Lynda M. Areheart, h/w	CNX Gas Company LLC
			Earl W. Kennedy	CNX Gas Company LLC
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
5	1-8-1.1	188587000	CBC Holdings, LLC	CNX Gas Company LLC
			Gary L. Neely and Arlene Ann Neely	CNX Gas Company LLC
			Earl W. Kennedy	CNX Gas Company LLC
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
6	1-2-16 1-2-16.2 p/o 1-2-16.1 p/o 1-2-17 p/o 1-2-17.1	188578000	XTO Energy, Inc.	CNX Gas Company, LLC
			Three Rivers Royalty II, LLC	CNX Gas Company, LLC
			Elizabeth A. Martineau, a/k/a, Elizabeth Ada Snyder, a/k/a/, Elizabeth Snyder Martineau	CNX Gas Company, LLC
			Rebecca Snyder Bromley, a/k/a Alice Rebecca Snyder Bromley	CNX Gas Company, LLC
			James Brant Snyder	CNX Gas Company, LLC
			Sharon White Bartholomew, a/k/a Sharon R. W. Bartholomew, a/k/a, Sharon Ruth White Bartholomew	CNX Gas Company, LLC
			David T. White and Sarah K. White, h/w, as JTROS	CNX Gas Company, LLC
			Glenn L. White, individually and as trustee of Glenn L. White Trust	CNX Gas Company, LLC
			Alice T. Boone	CNX Gas Company, LLC
			Eldon Bryant Tucker, et ux	CNX Gas Company, LLC

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



Sheffler & Company, Inc.
ENGINEERING • SURVEYING
1712 Mount Nebo Road Phone: 412-219-4509
Sewickley, PA 15143 Email: info@shefflerCo.com

DATE: September 21, 2018, Rev. July 10, 2019

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

OPERATOR'S WELL #: WDTN5HSM
API WELL # 47 061 01824
STATE COUNTY PERMIT

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,715' ± TMD: 16,939' ±
WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
6 (CONT.)	1-2-16 1-2-16.2 p/o 1-2-16.1 p/o 1-2-17 p/o 1-2-17.1	188578000	Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC
			Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	CNX Gas Company, LLC
			David Wayne Anderson	CNX Gas Company, LLC
			Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC
			Chris Pelger	CNX Gas Company, LLC
			Shannon Harker	CNX Gas Company, LLC
			Chase Schwersenska	CNX Gas Company, LLC
			John Pelger	CNX Gas Company, LLC
			Holly Pelger	CNX Gas Company, LLC
			Brenda Murphy	EQT Production Company
			Vickie L. Simmons	EQT Production Company
			Sherry C. McCoy	EQT Production Company
			David C. Anderson	EQT Production Company
Kelly Dilbeck	CNX Gas Company, LLC			
7	1-2-17.2 p/o 1-2-17 p/o 1-2-17.1 p/o 1-2-16.1	239935000	XTO Energy, Inc.	CNX Gas Company, LLC
			Three Rivers Royalty II, LLC	CNX Gas Company, LLC
			Elizabeth A. Martineau, a/k/a, Elizabeth Ada Snyder, a/k/a/, Elizabeth Snyder Martineau	CNX Gas Company, LLC
			Rebecca Snyder Bromley, a/k/a Alice Rebecca Snyder Bromley	CNX Gas Company, LLC
			James Brant Snyder	CNX Gas Company, LLC
			Sharon White Bartholomew, a/k/a Sharon R. W. Bartholomew, a/k/a, Sharon Ruth White Bartholomew	CNX Gas Company, LLC
			David T. White and Sarah K. White, h/w, as JTROS	CNX Gas Company, LLC
			Glenn L. White, individually and as trustee of Glenn L. White Trust	CNX Gas Company, LLC
			Alice T. Boone	CNX Gas Company, LLC
			Eldon Bryant Tucker, et ux	CNX Gas Company, LLC
			Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC
			Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	CNX Gas Company, LLC
			David Wayne Anderson	CNX Gas Company, LLC
Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC			
Chris Pelger	CNX Gas Company, LLC			
Shannon Harker	CNX Gas Company, LLC			
Chase Schwersenska	CNX Gas Company, LLC			
John Pelger	CNX Gas Company, LLC			
Holly Pelger	CNX Gas Company, LLC			
Brenda Murphy	EQT Production Company			
Vickie L. Simmons	EQT Production Company			
Sherry C. McCoy	EQT Production Company			
David C. Anderson	EQT Production Company			
Kelly Dilbeck	CNX Gas Company, LLC			
8	1-2-14	188577000	XTO Energy, Inc.	CNX Gas Company, LLC
			David Liming and Nancy Liming	CNX Gas Company, LLC
			Three Rivers Royalty II, LLC	CNX Gas Company, LLC
			Elizabeth A. Martineau, a/k/a, Elizabeth Ada Snyder, a/k/a/, Elizabeth Snyder Martineau	CNX Gas Company, LLC
			Rebecca Snyder Bromley, a/k/a Alice Rebecca Snyder Bromley	CNX Gas Company, LLC
			James Brant Snyder	CNX Gas Company, LLC
			Sharon White Bartholomew, a/k/a Sharon R. W. Bartholomew, a/k/a, Sharon Ruth White Bartholomew	CNX Gas Company, LLC
			David T. White and Sarah K. White, h/w, as JTROS	CNX Gas Company, LLC
			Glenn L. White, individually and as trustee of Glenn L. White Trust	CNX Gas Company, LLC
			Alice T. Boone	CNX Gas Company, LLC
			Eldon Bryant Tucker, et ux	CNX Gas Company, LLC
			Charles Tucker, et ux	CNX Gas Company, LLC
			Robert Earl, et ux	CNX Gas Company, LLC
			David Tucker	CNX Gas Company, LLC
			James Tucker, et ux	CNX Gas Company, LLC
			Cheryl Molesky	CNX Gas Company, LLC

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



Sheffler & Company, Inc.
ENGINEERING • SURVEYING
1712 Mount Nebo Road Sewickley, PA 15143 Phone: 412-219-4509 Email: info@shefflerCo.com

DATE: September 21, 2018, Rev. July 10, 2019

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

OPERATOR'S WELL #: WDTN5HHSM
API WELL # 47 STATE 061 COUNTY 01824 PERMIT

WATERSHED: DUNKARD CREEK ELEVATION: 1412'
COUNTY/DISTRICT: MONONGALIA / BATTELLE QUADRANGLE: WADESTOWN, WV
SURFACE OWNER: JOHN M. WISE, ET UX., ET AL. ACREAGE: 207.36
OIL & GAS ROYALTY OWNER: RICHARD W. WISE, ET AL. ACREAGE: 207.36

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON
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TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,715' ± TMD: 16,939' ±
WELL OPERATOR: CNX GAS COMPANY, LLC DESIGNATED AGENT: CHRIS TURNER
Address: 1000 CONSOL ENERGY DRIVE Address: 1 DOMINION DRIVE
City CANONSBURG State PA Zip Code 15317 City JANE LEW State WV Zip Code 26378

Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
8 (CONT.)	1-2-14	188577000	Laurence D. Hare	CNX Gas Company, LLC
			James F. Hare III, et ux	CNX Gas Company, LLC
			Lacy L. Adams, et vir	CNX Gas Company, LLC
			Donald Pelger	CNX Gas Company, LLC
			Carl L. Anderson, et ux	EQT Production Company
			David Wayne Anderson	CNX Gas Company, LLC
			Deborah Horton, Trustee and Beneficiary of the Ronald L. Horton Revocable Living Trust	CNX Gas Company, LLC
			Chris Pelger	CNX Gas Company, LLC
			Shannon Harker	CNX Gas Company, LLC
			Chase Schwersenska	CNX Gas Company, LLC
			John Pelger	CNX Gas Company, LLC
			Holly Pelger	CNX Gas Company, LLC
			Brenda Murphy	EQT Production Company
			Vickie L. Simmons	EQT Production Company
			Sherry C. McCoy	EQT Production Company
David C. Anderson	EQT Production Company			
Kelly Dilbeck	CNX Gas Company, LLC			
Tract ID	Tax Map & Parcel	Title Opinion QLS #	Grantor, Lessor, etc	Grantee, Lessee, etc
9	1-2-13	188610000	Ralph Six	CNX Gas Company LLC
			Huskie Lumber Co., Inc.	Antero Resources Corporation

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Sheffler & Company, Inc.
ENGINEERING • SURVEYING
1712 Mount Nebo Road Sewickley, PA 15143 Phone: 412-219-4509 Email: info@shefflerCo.com

DATE: September 21, 2018, Rev. July 10, 2019

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
 OPERATOR'S WELL #: WDTN5HHSM
 API WELL # 47 061 01824
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TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 7,715' ± TMD: 16,939' ±
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