

WR-35  
Rev. 8/23/13

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

API 47-095-02490 County TYLER District McELROY  
Quad SHIRLEY Pad Name SHR31 Field/Pool Name \_\_\_\_\_  
Farm name SECKMAN Well Number SHR31CHSM  
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 337886.170 (NAD 27) Easting 1626598.440 (NAD 27)  
Landing Point of Curve Northing 337084.93 (NAD 27) Easting 1627917.27 (NAD 27)  
Bottom Hole Northing 329882.68 (NAD 27) Easting 1630368.84 (NAD 27)

Elevation (ft) 1091 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

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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: CARBO-TEC, SURF-COTE, CARBO-GEL II, NEXT-FLC, CALCIUM CHLORIDE, MIL-LIME

Date permit issued 4/6/2018 Date drilling commenced 4/7/2018 Date drilling ceased 6/30/2018  
Date completion activities began 7/28/2018 Date completion activities ceased 8/7/2018  
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 150' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1850' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft TRACE: 800', 870', 1240', & 1510' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed  
*[Signature]*  
1/3/2019

Reviewed by:  
*[Signature]*

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API 47- 095 - 02490 Farm name SECKMAN Well number SHR31CHSM

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"	112	NEW	94lb/ft	N/A	GROUT TO SURFACE
Surface	17.5"	13.375"	695	NEW	J-55 54.5lb/ft	N/A	Y - CEMENT TO SURFACE
Coal							
Intermediate 1	12.25"	9.625"	2715	NEW	J-55 36lb/ft	N/A	Y - CEMENT TO SURFACE
Intermediate 2							
Intermediate 3							
Production	8.75" & 8.5"	5.5"	14832	NEW	Q-125 20lb/ft	N/A	Y - TOC @ 2215
Tubing	5.5"	2.875	7,556.8	NEW	P-110 6.5 lb/ft	N/A	N/A
Packer type and depth set		N/A					

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

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	CLASS A	522	15.6	1.197	624	0	8
Coal							
Intermediate 1	CLASS A	864	15.6	1.186	1024	0	8
Intermediate 2							
Intermediate 3							
Production	NEOCEM	2970	15	1.126	3344	2215	8
Tubing							

Drillers TD (ft) 14,861 Loggers TD (ft) 14,861

Deepest formation penetrated MARCELLUS Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6354.4 MD

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 other joint from shoe to surface

INTERMEDIATE: Centralize every 3rd joint from shoe to surface

PRODUCTION: Centralize every joint from shoe to KOP - then every 3rd joint from KOP to TOC

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS Plug and Perforation

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

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

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
		SEE	ATTACHMENT	2				

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PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6708'	TVD 7167' MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 1550 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 3983 mcfpd Oil 48 bpd NGL \_\_\_\_\_ bpd Water 1104 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 <sub>2</sub> S, ETC)
UNDIFFERENTIATED LIME	0	150	0	150	LIMESTONE
UNDIFFERENTIATED SAND	150	170	150	170	SANDSTONE
UNDIFFERENTIATED SILT	170	520	170	520	SILTSTONE
UNDIFFERENTIATED SAND	520	650	520	650	SANDSTONE
UNDIFFERENTIATED SILT	650	960	650	960	SILTSTONE
UNDIFFERENTIATED LIME	960	1010	960	1010	LIMESTONE
UNDIFFERENTIATED SILT	1010	1100	1010	1100	SILTSTONE
UNDIFFERENTIATED LIME	1100	1160	1100	1160	LIMESTONE
UNDIFFERENTIATED SILT	1160	1340	1160	1340	SILTSTONE
UNDIFFER. SAND / LIME	1340	1700	1340	1700	SANDSTONE / LIMESTONE
UNDIFFERENTIATED SAND	1700	2060	1700	2060	SANDSTONE
BIG LIME	2060	2100	2060	2100	LIMESTONE
BIG INJUN	2100	2210	2100	2210	SANDSTONE
PIERCE	2210	2410	2210	2410	STILSTONE

Please insert additional pages as applicable.

Drilling Contractor SEE ATTACHMENT  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Logging Company \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Cementing Company SEE ATTACHMENT  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

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 10/30/2018

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

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## SHIRLEY31CHSM – PERF SUMMARY – ATTACHMENT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	7/27/2018	14,679.8	14,777.5	24	Marcellus Shale
2	7/28/2018	14,457.9	14,620.7	40	Marcellus Shale
3	7/29/2018	14,256.9	14,419.7	40	Marcellus Shale
4	7/29/2018	14,055.9	14,218.7	40	Marcellus Shale
5	7/30/2018	13,854.9	14,017.7	40	Marcellus Shale
6	7/30/2018	13,653.9	13,816.7	40	Marcellus Shale
7	7/30/2018	13,452.9	13,615.7	40	Marcellus Shale
8	7/31/2018	13,251.9	13,414.7	40	Marcellus Shale
9	7/31/2018	13,050.9	13,213.7	40	Marcellus Shale
10	7/31/2018	12,849.9	13,012.7	40	Marcellus Shale
11	7/31/2018	12,648.9	12,811.7	40	Marcellus Shale
12	8/1/2018	12,447.9	12,610.7	40	Marcellus Shale
13	8/1/2018	12,246.9	12,409.7	40	Marcellus Shale
14	8/1/2018	12,045.9	12,208.7	40	Marcellus Shale
15	8/2/2018	11,844.9	12,007.7	40	Marcellus Shale
16	8/2/2018	11,643.9	11,806.7	40	Marcellus Shale
17	8/2/2018	11,442.9	11,605.7	40	Marcellus Shale
18	8/2/2018	11,241.9	11,404.7	40	Marcellus Shale
19	8/3/2018	11,040.9	11,203.7	40	Marcellus Shale
20	8/3/2018	10,839.9	11,002.7	40	Marcellus Shale
21	8/3/2018	10,638.9	10,801.7	40	Marcellus Shale
22	8/4/2018	10,437.9	10,600.7	40	Marcellus Shale
23	8/4/2018	10,236.9	10,399.7	40	Marcellus Shale
24	8/4/2018	10,035.0	10,198.6	40	Marcellus Shale
25	8/4/2018	9,833.0	9,996.6	40	Marcellus Shale
26	8/5/2018	9,631.0	9,794.6	40	Marcellus Shale
27	8/5/2018	9,429.0	9,592.6	40	Marcellus Shale
28	8/5/2018	9,227.0	9,390.6	40	Marcellus Shale
29	8/5/2018	9,025.0	9,188.6	40	Marcellus Shale
30	8/6/2018	8,823.0	8,986.6	40	Marcellus Shale
31	8/6/2018	8,621.0	8,784.6	40	Marcellus Shale
32	8/6/2018	8,419.0	8,582.6	40	Marcellus Shale
33	8/6/2018	8,217.0	8,380.6	40	Marcellus Shale
34	8/7/2018	8,015.0	8,178.6	40	Marcellus Shale
35	8/7/2018	7,813.0	7,976.6	40	Marcellus Shale
36	8/7/2018	7,611.0	7,774.6	40	Marcellus Shale

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## SHIRLEY31CHSM – FRAC SUMMARY – ATTACHMENT 2

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	7/28/2018	80	7,766.0	6,498.0	3,289.0	401,350.0	8,495.00	N/A
2	7/29/2018	82	7,974.0	7,869.0	4,991.0	400,000.0	6,895.31	N/A
3	7/29/2018	85	7,874.0	5,430.0	4,406.0	401,220.0	7,292.02	N/A
4	7/29/2018	87	8,100.0	7,757.0	4,527.0	400,000.0	7,423.00	N/A
5	7/30/2018	95	8,496.0	8,070.0	4,121.0	400,000.0	7,094.00	N/A
6	7/30/2018	89	8,090.0	5,510.0	3,973.0	397,320.0	7,110.83	N/A
7	7/30/2018	92	8,390.0	8,522.0	5,387.0	400,000.0	7,032.00	N/A
8	7/31/2018	92	8,240.0	7,513.0	4,733.0	405,295.0	6,751.00	N/A
9	7/31/2018	89	7,816.0	5,348.0	4,938.0	400,000.0	6,643.40	N/A
10	7/31/2018	89	8,026.0	8,035.0	5,164.0	400,000.0	6,608.00	N/A
11	8/1/2018	88	8,059.0	6,609.0	4,795.0	400,000.0	6,659.00	N/A
12	8/1/2018	90	8,221.0	5,784.0	3,991.0	400,000.0	6,198.57	N/A
13	8/1/2018	85	8,237.0	6,013.0	3,931.0	360,373.0	8,041.02	N/A
14	8/1/2018	95	8,572.0	6,471.0	4,429.0	399,500.0	6,679.02	N/A
15	8/2/2018	91	8,268.0	5,451.0	3,661.0	400,000.0	6,613.95	N/A
16	8/2/2018	95	8,613.0	6,238.0	3,778.0	400,940.0	6,137.12	N/A
17	8/2/2018	100	8,555.0	5,931.0	3,877.0	400,250.0	6,508.98	N/A
18	8/3/2018	97	8,695.0	5,740.0	3,969.0	400,530.0	6,473.02	N/A
19	8/3/2018	96	8,369.0	5,847.0	3,701.0	399,999.0	6,506.00	N/A
20	8/3/2018	92	8,446.0	6,142.0	3,518.0	405,000.0	6,356.02	N/A
21	8/3/2018	100	8,615.0	6,280.0	4,064.0	400,270.0	6,482.00	N/A
22	8/4/2018	100	8,296.0	5,205.0	3,526.0	399,740.0	7,174.98	N/A
23	8/4/2018	95	8,400.0	6,173.0	3,474.0	405,000.0	6,421.00	N/A
24	8/4/2018	100	8,400.0	6,312.0	3,645.0	403,000.0	6,665.00	N/A
25	8/5/2018	100	8,420.0	5,108.0	3,904.0	403,660.0	6,419.98	N/A
26	8/5/2018	94	8,214.0	6,295.0	3,488.0	400,000.0	6,353.00	N/A
27	8/5/2018	98	8,165.0	6,705.0	3,744.0	401,000.0	6,356.00	N/A
28	8/5/2018	99	8,266.0	6,915.0	3,827.0	403,416.0	6,376.98	N/A
29	8/6/2018	100	8,229.0	6,447.0	3,740.0	401,170.0	6,349.00	N/A
30	8/6/2018	100	8,151.0	6,024.0	3,730.0	401,001.0	6,308.00	N/A
31	8/6/2018	98	8,186.0	5,947.0	3,766.0	400,150.0	6,329.71	N/A
32	8/6/2018	100	8,314.0	5,544.0	4,383.0	401,900.0	6,392.98	N/A
33	8/6/2018	100	8,078.0	5,676.0	4,250.0	402,251.0	6,308.00	N/A
34	8/7/2018	93	8,062.0	5,646.0	3,693.0	405,069.0	7,735.00	N/A
35	8/7/2018	96	7,971.0	6,348.0	4,091.0	424,999.0	6,559.98	N/A
36	8/7/2018	100	7,705.0	6,494.0	3,904.0	402,000.0	6,271.00	N/A

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## L7LITHOLOGIES 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)
WEIR	2410	2590	2410	2590	SANDSTONE / SILTSTONE
BEREA	2590	2620	2590	2620	SHALE / TRACES SILTSTONE
DEVONIAN SHALE	2620	3010	2620	3010	GREY SHALE
GORDON	3010	3547	3010	3550	SANDSTONE / SILTSTONE
WARREN SAND	3547	3936	3550		SANDSTONE
L HURON	3936	5099			SHALE / SILTSTONE
BENSON	5099	5338			SILTSTONE
ALEXANDER	5338	6387			SILTSTONE / TRACES OF SHALE
CASHAQUA	6387	6531			SHALE
MIDDLE SEX	6531	6623		6920	SHALE
BURKETT	6623	6652	6920	6975	BLACK SHALE
TULLY	6652	6664	6975	7025	LIMESTONE
HAMILTON	6664	6676	7025	7100	BLACK SHALE
MARCELLUS	6676	6690	7100	7150	BLACK SHALE
TD				14,861	

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**DRILLING CONTRACTOR**

**TOPHOLE**

DECKER DRILLING, INC

11565 OH-676

VINCENT, OH 45784

**KOP to TD**

PATTERSON-UTI DRILLING COMPANY

207 CARLTON DRIVE

EIGHTY FOUR, PA 15330

**CEMENTING COMPANY**

**TOPHOLE**

BJ SERVICES

11211 FARM TO MARKET 2920

TOMBALL, TX 77375

**PRODUCTION**

HALLIBURTON

121 CHAMPION WAY SUITE #210

CANONSBURG, PA 15317

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/28/2018
Job End Date:	8/7/2018
State:	West Virginia
County:	Tyler
API Number:	47-095-02490-00-00
Operator Name:	CNX Gas Company LLC
Well Name and Number:	SHR31 CHSM
Latitude:	39.42023560
Longitude:	-80.82160040
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,738
Total Base Water Volume (gal):	10,447,626
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Ascent	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	85.11072	None
Sand (Proppant)	Keane	Proppant					
			Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	14.12040	None
Hydrochloric Acid (7.5%)	Keane	Acid Inhibitor					
			Water	7732-18-5	92.50000	0.59645	None
			Hydrochloric Acid	7647-01-0	7.50000	0.04836	None
KFR-23	Keane	Friction Reducer					
			Water	7732-18-5	50.00000	0.04490	None
			copolymer of 2-propenamamide	69418-26-4	20.00000	0.01796	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01796	None
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00180	None
			oleic acid diethanolamide	93-83-4	2.00000	0.00180	None
KSI-22	Keane	Scale Inhibitor					
			Methanol	67-56-1	50.00000	0.00643	None

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			2-propenoic acid, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00129	None
MBC-516	Keane	Biocide	glutaral	111-30-8	26.70000	0.00448	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00134	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00089	None
			Ethanol	64-17-5	2.80000	0.00047	None
KWG-111LS	Keane	Gel	Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00128	None
			Guar gum	9000-30-0	55.00000	0.00128	None
KFEAC-30	Keane	Iron Control	acetic acid	64-19-7	60.00000	0.00130	None
			Citric acid	77-92-9	40.00000	0.00087	None
KAI-12	Keane	Acid Inhibitor	Methanol	67-56-1	90.00000	0.00010	None
			isoproyl alcohol	67-63-0	5.00000	0.00001	None
			prop-2-yn-1-ol	107-19-7	5.00000	0.00001	None
			Alcohols, C7-9-iso-, C8-rich	68526-83-0	5.00000	0.00001	None
			Fatty imidazoline	61790-69-0	5.00000	0.00001	None
			xylene	1330-20-7	5.00000	0.00001	None
			ethylbenzene	100-41-4	1.00000	0.00000	None
KWBO-2	Keane	Breaker	Sodium persulfate	7775-27-1	99.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) 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	92.50000	0.59645	
			copolymer of 2-propenamide	69418-26-4	20.00000	0.01796	
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01796	
			oleic acid diethanolamide	93-83-4	2.00000	0.00180	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00180	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00134	
			2-propenoic acid, polymer with 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propensulfonic acid monosodium salt and sodium phosphinite	110224-99-2	10.00000	0.00129	
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.00128	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00089	

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					77-82-9	40.00000	0.00087
					84-17-5	2.80000	0.00047
					61780-69-0	5.00000	0.00001
					87-83-0	5.00000	0.00001
					107-19-7	5.00000	0.00001
					88526-83-0	5.00000	0.00001
					1330-20-7	5.00000	0.00001
					100-41-4	1.00000	0.00000
					7732-18-5	85.00000	

\* 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)

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Environmental Protection

**SURFACE HOLE LOCATION (SHL)**  
 UTM 17 - NAD83  
 N: 4363427.448(m)  
 E: 515356.145(m)  
 NAD27, WV NORTH  
 N: 337886.182(ft)  
 E: 1626598.496(ft)  
 LAT/LON - NAD83  
 LAT: N39.4202356  
 LON: W80.8216004

**APPROXIMATE LANDING POINT**  
 UTM 17 - NAD83  
 N: 4363190.061(m)  
 E: 515761.987(m)  
 NAD27, WV NORTH  
 N: 337084.935(ft)  
 E: 1627917.271(ft)  
 LAT/LON - NAD83  
 LAT: N39.4180893  
 LON: W80.8198912

**BOTTOM HOLE LOCATION (BHL)**  
 UTM 17 - NAD83  
 N: 4361006.059(m)  
 E: 516539.326(m)  
 NAD27, WV NORTH  
 N: 329875.494(ft)  
 E: 1630348.523(ft)  
 LAT/LON - NAD83  
 LAT: N39.3983954  
 LON: W80.8079148

**SURFACE HOLE LOCATION (SHL)**  
 UTM 17 - NAD83  
 N: 4363427.445(m)  
 E: 515356.128(m)  
 NAD27, WV NORTH  
 N: 337886.170(ft)  
 E: 1626598.440(ft)  
 LAT/LON - NAD83  
 LAT: N39.4202356  
 LON: W80.8216006

SHL is located on topo map **13,877** feet south of Latitude: **39° 27' 30"**  
 BHL is located on topo map **6,660** feet south of Latitude: **39° 25' 00"**

**REFERENCE DETAIL**



SHL is located on topo map **8,455** feet west of Longitude: **80° 47' 30"**  
 BHL is located on topo map **4,569** feet west of Longitude: **80° 47' 30"**

**APPROXIMATE LANDING POINT**  
 UTM 17 - NAD83  
 N: 4363084.346(m)  
 E: 515794.278(m)  
 NAD27, WV NORTH  
 N: 336756.256(ft)  
 E: 1626017.445(ft)  
 LAT/LON - NAD83  
 LAT: N39.4171351  
 LON: W80.8165185

**BOTTOM HOLE LOCATION (BHL)**  
 UTM 17 - NAD83  
 N: 4361008.353(m)  
 E: 516545.479(m)  
 NAD27, WV NORTH  
 N: 329882.690(ft)  
 E: 1630368.840(ft)  
 LAT/LON - NAD83  
 LAT: N39.3984159  
 LON: W80.8078432

LINE	BEARING	DISTANCE
R1	N30°03'36"E	455.04'
R2	N61°01'13"E	314.51'
R3	N37°14'57"W	273.44'
R4	N61°01'13"E	314.51'
R5	S46°19'38"E	795.16'

**LEGEND**

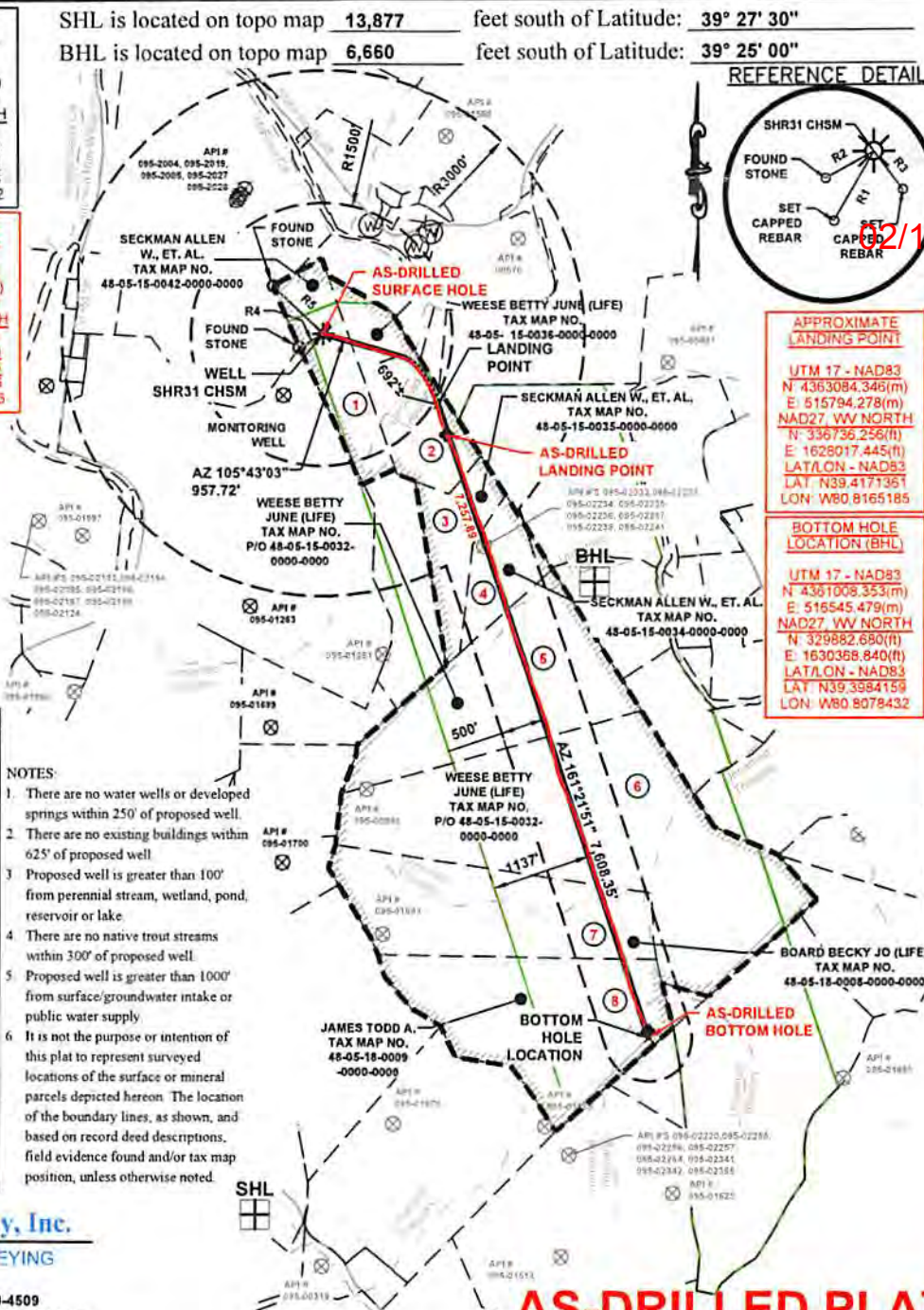
- TOPO MAP POINT
- PROPOSED WELL
- WATER SOURCE
- LEASED NUMBER BASED ON ATTACHED WMSA1
- ALL ARE POINTS UNLESS OTHERWISE NOTED
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- PROPOSED HORIZONTAL WELL
- WELL REFERENCE
- STREAM/WATERWAY
- ROAD
- AS-DRILLED HORIZONTAL WELL
- UNIT BOUNDARY

**WELLS WITHIN 3000'**

- EXISTING GAS WELL
- RECORD GAS WELL

**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.



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

**AS-DRILLED PLAT**

FILE #: **SHR 31 CHSM**  
 DRAWING #: **3601 - SHR31C WELL - AD -DWG**  
 SCALE: **1"=2000'**  
 MINIMUM DEGREE OF ACCURACY: **1/2500**  
 PROVEN SOURCE OF ELEVATION: **USGS MONUMENT A 142: 724.61'**

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

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

WATERSHED: **McELROY CREEK**  
 COUNTY/DISTRICT: **TYLER / MCELROY**  
 SURFACE OWNER: **ALLEN W. SECKMAN, ET AL.**  
 OIL & GAS ROYALTY OWNER: **ALLEN W. SECKMAN, ET AL.**



DATE: **November 6, 2018**  
 OPERATOR'S WELL #: **SHR 31 CHSM**  
 API WELL # **47** **095**  
 STATE COUNTY PERMIT

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 WV Department of Environmental Protection

ELEVATION: **1,111.0'**  
 QUADRANGLE: **SHIRLEY, WV**  
 ACREAGE: **30.48**  
 ACREAGE: **30.48 (652.92 UNIT ACREAGE)**

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**  
 WELL OPERATOR: **CNX GAS COMPANY, LLC**  
 Address: **1000 CONSOL ENERGY DRIVE**  
 City **CANONSBURG** State **PA** Zip Code **15317**

ESTIMATED DEPTH: **TVD: 6,725' ± TMD: 14,930' ±**  
 DESIGNATED AGENT: **CHRIS TURNER**  
 Address: **1 DOMINION DRIVE**  
 City **JANE LEW** State **WV** Zip Code **26378**