

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

API 47-051-02292 County Marshall District Meade
Quad Glen Easton 7.5' Pad Name Hudson Field/Pool Name _____
Farm name CNX Land, LLC Well Number Hudson S-12HU
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 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 4,408,799.78 Easting 528,006.99
Landing Point of Curve Northing 4,408,990.6 Easting 527,567.5
Bottom Hole Northing 4,405,724.6 Easting 529,458.1

Elevation (ft) 1334.81' 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)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 3/11/2020 Date drilling commenced spud: 3/19/2021 big rig: 4/16/2021 Date drilling ceased 9/24/2021
Date completion activities began 4/8/2022 Date completion activities ceased 7/3/2022
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 1013' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1477' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 921-927', 1007-1013' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
Reviewed by:
SG-10-11-22
10/21/2022
Stacy Coover

API 47- 051 - 02292

Farm name CNX Land, LLC

Well number Hudson S-12HU

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	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	26"	20"	1,114'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,853'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,876'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	24,814'	NEW	23#	N/A	Y
Tubing		2 7/8"	12,407'	NEW	4.7#	N/A	Y
Packer type and depth set							

Comment Details _____

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	A	1170	15.6	1.18	1380	0	8
Surface	A	1877	15.6	1.18	2214.86	0	8
Coal							
Intermediate 1	A	2441	15.6	1.18	2664.38	0	8
Intermediate 2	A	3948	14.5	1.42	5606.16	0	8
Intermediate 3							
Production	A	6205	16.5	1.03	6205.75	0	8
Tubing							

Drillers TD (ft) 24,852' Loggers TD (ft) n/a

Deepest formation penetrated Trenton Plug back to (ft) n/a

Plug back procedure n/a

Kick off depth (ft) 11,002'

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 3 centralizers on surface casing at equal distance.

Intermediate - 1 centralizer every other joint.

Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

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 _____

HUDSON S-12HU
STIMULATION INFORMATION PER STAGE

Stage No.	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	86.81	12330	10681	7765	248700	6,534	0
2	86.42	12192	9505	7491	508940	8,993	0
3	87.85	12063	9315	7705	493760	8,041	0
4	88.37	11819	9530	7927	491780	8,071	0
5	87.69	12247	8708	8282	509780	8,206	0
6	86.93	12157	9258	7806	504300	8,065	0
7	87.31	12102	9684	7885	502440	8,249	0
8	86.23	11887	9751	8213	498740	8,016	0
9	88.62	12209	9509	8535	504620	8,167	0
10	88.31	12278	9749	8175	498540	8,119	0
11	87.77	12238	8889	7809	491340	8,129	0
12	88.10	12076	9588	8393	506800	9,786	0
13	90.23	12031	9055	8418	500440	8,120	0
14	84.21	11899	9630	8714	508860	8,133	0
15	86.18	11818	9486	8255	503320	8,436	0
16	88.12	12055	8901	7721	507460	8,211	0
17	84.91	11796	7888	7893	509580	9,729	0
18	85.62	12008	9812	8103	509420	8,170	0
19	84.18	11795	9451	7972	501080	8,005	0
20	88.03	11599	9508	8778	506480	8,093	0
21	87.98	11706	8443	7939	502180	7,965	0
22	87.93	11781	8365	8602	500540	7,998	0
23	87.97	11750	8741	7937	507100	7,990	0
24	87.31	11513	10137	8041	504080	7,976	0
25	84.23	11058	8557	7895	501160	8,053	0
26	86.15	11049	8578	8281	502580	8,012	0
27	86.49	11678	8986	7639	501440	7,931	0
28	85.23	11412	9309	8155	507460	9,338	0
29	87.28	11727	9492	8126	505460	8,110	0
30	84.16	11404	9878	7985	503220	7,823	0
31	85.63	11553	9770	8002	506500	8,086	0
32	83.64	11398	9602	8113	506840	8,048	0

Stage No.	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)
33	84.09	11639	10862	8139	502580	8,002	0
34	84.36	11470	10273	8032	501980	7,953	0
35	83.77	11335	8913	8273	503200	7,939	0
36	89.74	11514	9999	8333	503240	7,879	0
37	87.68	11573	10141	8121	500720	7,843	0
38	86.24	11453	10091	7680	498220	7,878	0
39	87.86	11325	7825	8355	510200	7,948	0
40	88.30	11361	8434	8105	503240	7,812	0
41	88.47	11298	8786	11230	505370	7,912	0
42	89.89	11548	9277	8262	503960	9,150	0
43	86.92	11385	9887	8240	501960	7,691	0
44	86.73	11105	8879	8435	500840	7,715	0
45	88.54	11116	8254	8136	490280	7,748	0
46	87.69	11224	9589	8330	502820	7,834	0
47	85.73	11261	9527	8196	498600	7,749	0
48	87.96	11085	9741	7985	506320	8,172	0
49	87.91	10977	8323	7853	510460	7,882	0
50	87.74	11100	8859	7517	502380	8,592	0
51	88.48	10716	9888	8707	499340	7,742	0
52	88.07	10611	8396	7970	496120	7,715	0
53	87.52	10622	8586	8426	500420	7,821	0
54	88.23	10607	7970	7735	491160	8,745	0
55	87.90	10682	8549	7918	511840	7,800	0
56	89.04	10624	9243	9311	499200	7,742	0
57	87.98	10629	9207	8289	507140	7,775	0
58	89.77	10699	8844	8565	499560	9,538	0
59	87.87	10741	8927	8101	502620	7,707	0
60	89.85	10669	9711	8973	505560	7,770	0
61	87.90	10630	9457	7846	510720	7,797	0
62	90.03	10754	10052	8255	478160	7,402	0

**HUDSON S-12HU
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	4/8/2022	24,645	24,689	12	Utica
2	4/8/2022	24,417	24,593	48	Utica
3	4/9/2022	24,216	24,392	48	Utica
4	4/9/2022	24,015	24,191	48	Utica
5	6/4/2022	23,814	23,990	48	Utica
6	6/5/2022	23,613	23,789	48	Utica
7	6/5/2022	23,412	23,588	48	Utica
8	6/6/2022	23,211	23,387	48	Utica
9	6/6/2022	23,010	23,186	48	Utica
10	6/7/2022	22,809	22,985	48	Utica
11	6/7/2022	22,608	22,784	48	Utica
12	6/7/2022	22,407	22,583	48	Utica
13	6/8/2022	22,206	22,382	48	Utica
14	6/8/2022	22,005	22,181	48	Utica
15	6/9/2022	21,804	21,980	48	Utica
16	6/10/2022	21,603	21,779	48	Utica
17	6/10/2022	21,402	21,578	48	Utica
18	6/11/2022	21,201	21,377	48	Utica
19	6/11/2022	21,000	21,176	48	Utica
20	6/12/2022	20,799	20,975	48	Utica
21	6/12/2022	20,598	20,774	48	Utica
22	6/12/2022	20,397	20,573	48	Utica
23	6/13/2022	20,196	20,372	48	Utica
24	6/13/2022	19,995	20,171	48	Utica
25	6/15/2022	19,794	19,970	48	Utica
26	6/15/2022	19,593	19,769	48	Utica
27	6/16/2022	19,392	19,568	48	Utica
28	6/16/2022	19,191	19,367	48	Utica
29	6/17/2022	18,990	19,166	48	Utica
30	6/17/2022	18,789	18,965	48	Utica
31	6/18/2022	18,588	18,764	48	Utica
32	6/18/2022	18,387	18,563	48	Utica
33	6/18/2022	18,186	18,362	48	Utica
34	6/19/2022	17,985	18,161	48	Utica
35	6/19/2022	17,784	17,960	48	Utica
36	6/20/2022	17,583	17,759	48	Utica
37	6/20/2022	17,382	17,558	48	Utica
38	6/20/2022	17,181	17,357	48	Utica
39	6/21/2022	16,980	17,156	48	Utica
40	6/21/2022	16,779	16,955	48	Utica
41	6/22/2022	16,578	16,754	48	Utica

10/21/2022

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	6/22/2022	16,377	16,553	48	Utica
43	6/23/2022	16,176	16,352	48	Utica
44	6/23/2022	15,975	16,151	48	Utica
45	6/24/2022	15,774	15,950	48	Utica
46	6/24/2022	15,573	15,749	48	Utica
47	6/25/2022	15,372	15,548	48	Utica
48	6/26/2022	15,171	15,347	48	Utica
49	6/26/2022	14,970	15,146	48	Utica
50	6/26/2022	14,769	14,945	48	Utica
51	6/27/2022	14,568	14,744	48	Utica
52	6/27/2022	14,367	14,543	48	Utica
53	6/28/2022	14,166	14,342	48	Utica
54	6/29/2022	13,965	14,141	48	Utica
55	6/29/2022	13,764	13,940	48	Utica
56	6/30/2022	13,563	13,739	48	Utica
57	6/30/2022	13,362	13,538	48	Utica
58	7/1/2022	13,161	13,337	48	Utica
59	7/1/2022	12,960	13,136	48	Utica
60	7/2/2022	12,759	12,935	48	Utica
61	7/2/2022	12,558	12,734	48	Utica
62	7/3/2022	12,357	12,533	48	Utica

Hudson S-12HU

Lithology Information

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
Maxton	1908	2107	1908	2108	Sandstone
Big Lime	2107	2230	2108	2232	Limestone
Big Injun	2230	2528	2232	2532	Sandstone
Weir	2528	2725	2532	2731	Sandstone
Berea	2725	2978	2731	2984	Sandstone
Gordon	2978	3078	2984	3085	Sandstone
Fifty Foot	3078	3651	3085	3665	Sandstone
Speechley	3651	5114	3665	5152	Sandstone
Benson	5114	5495	5152	5539	Sandstone
Alexander	5495	6105	5539	6159	Siltstone
Rhinestreet	6105	6573	6159	6634	Black Shale
Middlesex	6573	6638	6634	6700	Black Shale
Geneseo/Burkett	6638	6671	6700	6733	Black Shale
Tully	6671	6697	6733	6760	Limestone
Hamilton	6697	6785	6760	6849	Gray Shale
Marcellus	6785	6835	6849	6900	Black Shale
Onondaga	6835	7062	6900	7131	Limestone
Oriskany	7062	7189	7131	7262	Sandstone
Helderberg	7189	7638	7262	7736	Limestone
Salina	7638	8645	7736	8808	Salt/Anhydrite/LS
Lockport	8645	9018	8808	9200	Dolomite
Rose Hill	9018	9297	9200	9502	Shale
Packer Shell	9297	9506	9502	9727	Limestone
Clinton/Tuscarora	9506	9611	9727	9840	Sandstone
Juniata/Queenston	9611	10438	9840	10720	Red Shale
Reedsville	10438	11435	10720	11784	Gray Shale
Utica	11435	11671	11784	12172	Black Shale
Point Pleasant	11671	-	12172	-	Shale/Limestone

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/8/2022
Job End Date:	7/3/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-02292-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Hudson S 12HU
Latitude:	39.82873300
Longitude:	-80.67271100
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,820
Total Base Water Volume (gal):	21,077,952
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	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.71403	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.70046	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.18298	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.23027	None
StimStream FR 9800	Chemstream	Friction Reducer	Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10024	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02143	None
			Butene, homopolymer	9003-29-6	25.00000	0.02143	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00257	None
MC MX 9-4743	Multi-Chem	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.02152	None
D-7750W	Multi-Chem	Scale Inhibitor					

10/21/2022

			Methanol	67-56-1	60.00000	0.00484	None
ProHib 100			Phosphonic Acid Salt	Proprietary	5.00000	0.00040	None
	CNR		Acid Inhibitor				
			2-Butoxyethanol	111-76-2	60.00000	0.00054	None
			Proprietary material	Proprietary	30.00000	0.00027	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00018	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	None
ProFE 105	CNR		Iron Control				
			Citric Acid	77-92-9	20.00000	0.00022	None
			Acetic Acid	64-19-7	5.00000	0.00005	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	85.00000	0.23027	
			Butene, homopolymer	9003-29-6	25.00000	0.02143	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00257	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00040	
			Proprietary material	Proprietary	30.00000	0.00027	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00018	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	
			Acetic Acid	64-19-7	5.00000	0.00005	

* 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)

**HUDSON S LEASE
UTICA UNIT - 394.63 AC±
WELL 12HU
TUG HILL OPERATING**

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°50'00"

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-2-9.1	CONSOLIDATION COAL CO.	1.00
9-2-9.2	CONSOLIDATION COAL CO.	1.00
9-3-1.2	CONSOLIDATION COAL CO.	1.00
9-5-6.9	CNX LAND CO. LLC	22.39
9-5-13	SHELLY ANN JORDAN	5.51
9-8-13	LARRY LEE CONKLE SR ET UX	24.03
9-8-13.1	LARRY LEE CONKLE SR ET UX	1.666
9-8-13.2	TERESA & MICHAEL HUGHES	3.582
9-8-13.3	CASSANDRA A. & JAMES R. DOWNES	3.22

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 486,116.50	E. 1,639,157.22
NAD'83 GEO.	LAT-(N) 39.828733	LONG-(W) 80.672711
NAD'83 UTM (M)	N. 4,408,799.78	E. 528,006.99

LANDING POINT

NAD'83 S.P.C.(FT)	N. 486,815.5	E. 1,637,714.6
NAD'83 GEO.	LAT-(N) 39.830800	LONG-(W) 80.677880
NAD'83 UTM (M)	N. 4,409,005.4	E. 527,563.9

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 475,944.8	E. 1,643,748.6
NAD'83 GEO.	LAT-(N) 39.800974	LONG-(W) 80.655898
NAD'83 UTM (M)	N. 4,405,724.3	E. 529,457.6

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°37'30"
1.676 T.H. A.D.
11,787 B.H. A.D.

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF HUDSON S-12HU (47-051-02292) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF HUDSON S-11HU (47-051-02296), HUDSON S-13HU (47-051-02293), HUDSON S-14HU (47-051-02327), HUDSON S-15HU (47-051-02328), HUDSON S-16HU (47-051-02329), FITZGERALD S-17HU (47-051-02324), FITZGERALD S-18HU (47-051-02325), FITZGERALD S-19HU (47-051-02326), TEN HIGH 1N-20HU (47-051-02021), TEN HIGH 1S-17HU (47-051-02033).
- MINIMUM OFFSET SPACING REQUIREMENTS EXEMPTED BY WAIVER WITH THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS AND OFFSET LEASEHOLDER AGREEMENTS AS PROVIDED BY TUG HILL OPERATING.
- WVDOH/DOH OWNERSHIP WITHIN UNIT SET FORTH IN WW-6A1.
- PLAT UPDATED TO SHOW AS DRILLED PATH.
- AS DRILLED DATA PROVIDED BY TUG HILL OPERATING.



AS DRILLED COORDINATES FOR WELL NO. 12HU

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 486,116.50	E. 1,639,157.22
NAD'83 GEO.	LAT-(N) 39.828733	LONG-(W) 80.672711
NAD'83 UTM (M)	N. 4,408,799.78	E. 528,006.99

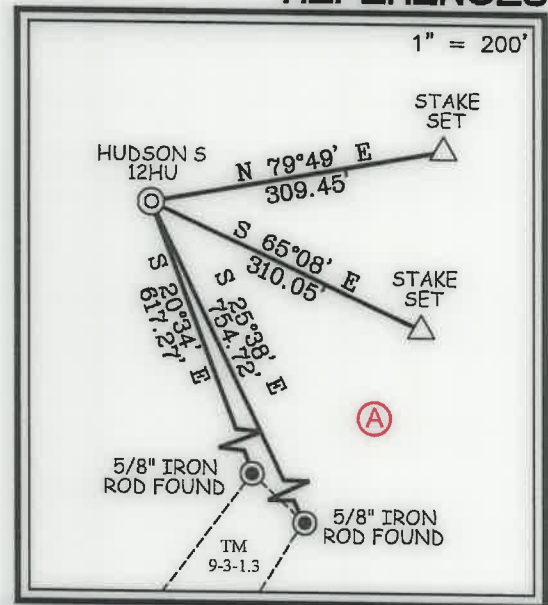
LANDING POINT

NAD'83 S.P.C.(FT)	N. 486,787.0	E. 1,637,725.5
NAD'83 GEO.	LAT-(N) 39.830467	LONG-(W) 80.677839
NAD'83 UTM (M)	N. 4,408,990.6	E. 527,567.5

BOTTOM HOLE

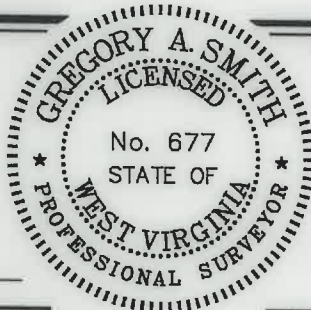
NAD'83 S.P.C.(FT)	N. 475,945.8	E. 1,643,750.5
NAD'83 GEO.	LAT-(N) 39.800976	LONG-(W) 80.655891
NAD'83 UTM (M)	N. 4,405,724.6	E. 529,458.1

REFERENCES



12 Vashon Drive | P.O. Box 150 | Glenville, WV 26031 | 304.482.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.285.5296
slsvv.com

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 DIVISION OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE SEPTEMBER 30, 20 22
REVISED _____
OPERATORS WELL NO. HUDSON S-12HU
API WELL NO. 47 - 051 - 02292
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8911P12HUAD.dwg
HUDSON S-12HU REV8
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: GROUND = 1,370.20' PROPOSED = 1,344.81' WATERSHED GRAVE CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER CNX LAND LLC ACREAGE 106.935±
ROYALTY OWNER CHARLENE L. BAKER, ET AL ACREAGE 106.935±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
ESTIMATED DEPTH TVD: 11,923' / TMD: 24,826'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

COUNTY NAME
PERMIT

10/21/2022

HUDSON S LEASE UTICA UNIT - 394.63 AC± WELL 12HU TUG HILL OPERATING

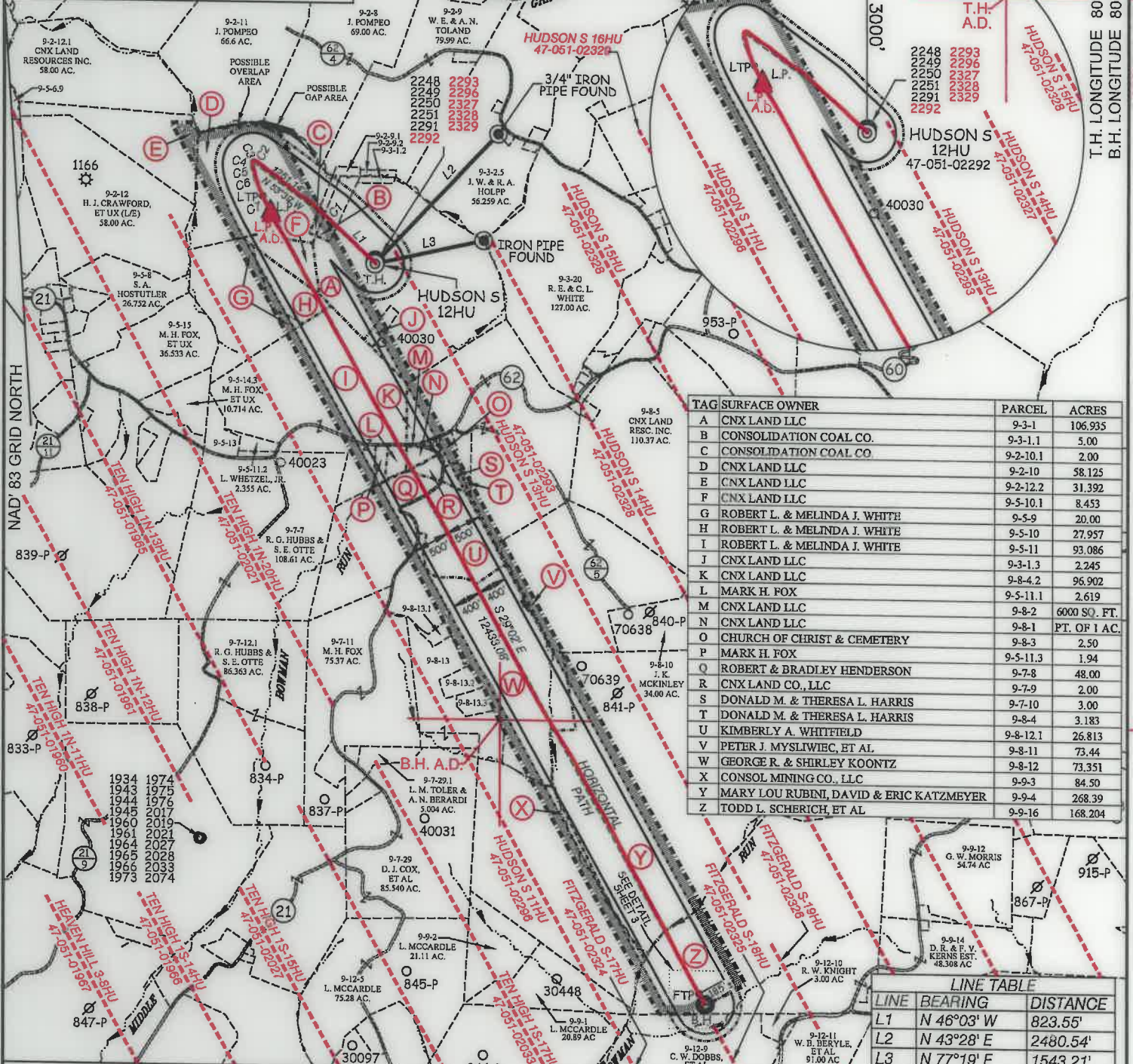
LEGEND

AS DRILLED ———

PROPOSED - - - - -

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°50'00"

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°37'30"



TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND LLC	9-3-1	106.935
B	CONSOLIDATION COAL CO.	9-3-1.1	5.00
C	CONSOLIDATION COAL CO.	9-2-10.1	2.00
D	CNX LAND LLC	9-2-10	58.125
E	CNX LAND LLC	9-2-12.2	31.392
F	CNX LAND LLC	9-5-10.1	8.453
G	ROBERT L. & MELINDA J. WHITE	9-5-9	20.00
H	ROBERT L. & MELINDA J. WHITE	9-5-10	27.957
I	ROBERT L. & MELINDA J. WHITE	9-5-11	93.086
J	CNX LAND LLC	9-3-1.3	2.245
K	CNX LAND LLC	9-8-4.2	96.902
L	MARK H. FOX	9-5-11.1	2.619
M	CNX LAND LLC	9-8-2	6000 SQ. FT.
N	CNX LAND LLC	9-8-1	PT. OF 1 AC.
O	CHURCH OF CHRIST & CEMETERY	9-8-3	2.50
P	MARK H. FOX	9-5-11.3	1.94
Q	ROBERT & BRADLEY HENDERSON	9-7-8	48.00
R	CNX LAND CO., LLC	9-7-9	2.00
S	DONALD M. & THERESA L. HARRIS	9-7-10	3.00
T	DONALD M. & THERESA L. HARRIS	9-8-4	3.183
U	KIMBERLY A. WHITFIELD	9-8-12.1	26.813
V	PETER J. MYSLIWIEC, ET AL.	9-8-11	73.44
W	GEORGE R. & SHIRLEY KOONTZ	9-8-12	73.351
X	CONSOL MINING CO., LLC	9-9-3	84.50
Y	MARY LOU RUBINI, DAVID & ERIC KATZMEYER	9-9-4	268.39
Z	TODD L. SCHERICH, ET AL.	9-9-16	168.204

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 46°03' W	823.55'
L2	N 43°28' E	2480.54'
L3	N 77°19' E	1543.21'

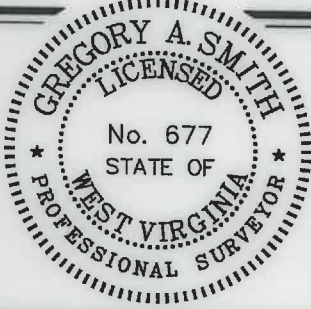
CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	59.00'	522.73'	N 50°49' W	58.97'
C2	37.60'	96.71'	N 63°23' W	37.36'
C3	23.80'	19.76'	S 64°47' W	22.39'
C4	37.15'	81.23'	S 07°17' W	36.83'
C5	89.81'	464.62'	S 11°45' E	89.67'
C6	173.17'	1673.70'	S 20°14' E	173.09'
C7	415.13'	4051.67'	S 26°17' E	414.95'



12 Vanzhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.482.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 354 East Beckley Bypass | Beckley, WV 25801 | 304.253.5295
 slwv.com

P.S. 677 *Gregory A. Smith*



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

LEGEND

- UNIT BOUNDARY
- LEASED TRACTS INSIDE
- UNIT BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- PROPOSED FIRST TAKE POINT
- PROPOSED LAST TAKE POINT
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE ADDITIONAL SHEETS)

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 486,116.50	E. 1,639,157.22
NAD'83 GEO.	LAT-(N) 39.828733	LONG-(W) 80.672711
NAD'83 UTM (M)	N. 4,408,799.78	E. 528,008.99

LANDING POINT

NAD'83 S.P.C.(FT)	N. 486,815.5	E. 1,637,714.6
NAD'83 GEO.	LAT-(N) 39.830600	LONG-(W) 80.677880
NAD'83 UTM (M)	N. 4,409,005.4	E. 527,563.9

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 475,944.8	E. 1,643,748.6
NAD'83 GEO.	LAT-(N) 39.800974	LONG-(W) 80.655898
NAD'83 UTM (M)	N. 4,405,724.3	E. 529,457.6

SCALE 1" = 2000' FILE NO. 8911P12HUAD.dwg
 HUDSON S-12HU REV8

DATE SEPTEMBER 30, 2022
 REVISED _____

OPERATORS WELL NO. HUDSON S-12HU
 API WELL 47 — 051 — 02292
 NO. STATE COUNTY PERMIT

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

WELL OPERATOR TUG HILL OPERATING, LLC
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
 FORT WORTH, TX 76107

DESIGNATED AGENT DARREN BROWN - CT CORPORATION
 ADDRESS 5098 WASHINGTON ST. W, STE 407
 CHARLESTON, WV 25313-1561

10/21/2022

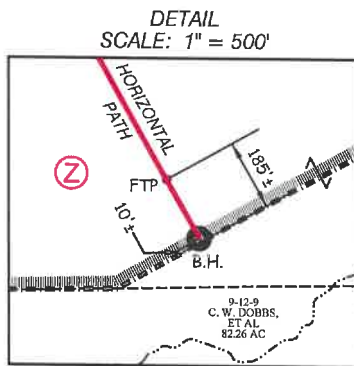
COUNTY NAME PERMIT

**HUDSON S LEASE
UTICA UNIT - 394.63 AC ±
WELL 12HU
TUG HILL OPERATING**



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
sllwv.com

NO.	Lease ID	Parcel	Tags	Grantor, Lessor, Etc.	Deed Book/Page	
1	10*26041	9-3-1	A	FREDDIE C WHITE AND VIOLET L WHITE, ET AL	728	527
2	10*26044	9-3-1.1	B	JOYCE A WALLACE, ET AL	863	296
3	10*26711	9-2-10.1	C	CNX GAS COMPANY LLC	1074	593
4	10*26001	9-2-10	D	FREDDIE C WHITE AND VIOLET L WHITE	655	555
5	10*26000	9-2-12.2	E	HARRY J CRAWFORD AND DONNA JEAN CRAWFORD, LIFE ESTATE, ET AL	661	156
6	10*26001	9-5-10.1	F	FREDDIE C WHITE AND VIOLET L WHITE	655	555
7	10*26001	9-5-9	G	FREDDIE C WHITE AND VIOLET L WHITE	655	555
8	10*26001	9-5-10	H	FREDDIE C WHITE AND VIOLET L WHITE	655	555
9	10*24424	9-5-11	I	THE FAYE A SKOEN REVOCABLE TRUST	1024	291
10	10*26018	9-3-1.3	J	NANCY L WEST, ET AL	737	248
11	10*47051.109.0	9-8-4.2	K	DONALD M AND THERESA L HARRIS	859	440
12	10*26045	9-5-11.1	L	ROBERT E TOEPFER AND JANATHE RUTH TOEPFER, ET AL	884	631
13	10*47051.061.0	9-8-2	M	VELMA RUTH HARRIS	865	397
14	10*47051.061.0	9-8-1	N	VELMA RUTH HARRIS	865	397
15	10*26113	9-8-3	O	ELDWIN OTIS RINE AND MARY L RINE, ET AL	880	434
16	10*26045	9-5-11.3	P	ROBERT E TOEPFER AND JANATHE RUTH TOEPFER, ET AL	884	631
17	10*26003	9-7-8	Q	ROBERT HENDERSON AND DEBRA HENDERSON, HUSBAND & WIFE, AND BRADLEY HENDERSON	697	215
18	10*47051.061.0	9-7-9	R	VELMA RUTH HARRIS	865	397
19	10*47051.109.0	9-7-10	S	DONALD M AND THERESA L HARRIS	859	440
20	10*28092	9-8-4	T	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	1073	370
21	10*47051.208.0	9-8-12.1	U	SHIRLEY KOONTZ POA KELLI KOONTZ BENLINE	869	222
22	10*22745	9-8-11	V	BONNIE J JENKINS, ET AL	968	288
23	10*47051.208.0	9-8-12	W	SHIRLEY KOONTZ POA KELLI KOONTZ BENLINE	869	222
24	10*47051.304.0	9-9-3	X	UNITED BANK INC	905	5
25	10*31001	9-9-4	Y	ERIC KATZMEYER, ET AL	791	226
26	10*19987	9-9-16	Z	LESLEY D BALLA, ET AL	955	103



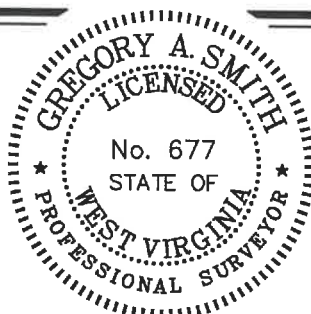
FILE NO. 8911P12HUAD.dwg
HUDSON S-12HU REV4

DATE SEPTEMBER 30, 20 22

REVISED _____

OPERATORS WELL NO. HUDSON S-12HU

API WELL NO. 47 — 051 — 02292
STATE COUNTY PERMIT



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

10/21/2022

P.S. 677 *Gregory A. Smith*

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

DESIGNATED AGENT DARREN BROWN - CT CORPORATION
ADDRESS 5098 WASHINGTON ST. W, STE 407
CHARLESTON, WV 25313-1561

COUNTY NAME _____
PERMIT _____