

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

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Office of Oil and Gas
SEP 30 2022

WV Department of
Environmental Protection

API 47 - 051 - 02252 County Marshall District Mead
Quad Glen Easton 7.5' Pad Name Keith Stern Field/Pool Name _____
Farm name TH Exploration, LLC Well Number Keith Stern N-14HU
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 4,402,807.63 Easting 526,361.11
Landing Point of Curve Northing 4,402,635.6 Easting 526,443.0
Bottom Hole Northing 4,404,351.6 Easting 525,478.4

Elevation (ft) 744.65' 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 10/22/2019 Date drilling commenced conductor: 11/14/19, big rig: 12/7/19 Date drilling ceased 1/27/2020
Date completion activities began 8/17/2021 Date completion activities ceased 9/4/2021
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 426' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 922' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 340-346', 433-439' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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

API 47-051 - 02252

Farm name TH Exploration, LLC

Well number Keith Stern N-14HU

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"	514'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,241'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,368'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	18,681'	NEW	23#	N/A	Y
Tubing		2 7/8"	9,341'	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	400	15.6	1.2	449	0	8
Surface	A	950	15.6	1.2	1,121	0	8
Coal							
Intermediate 1	A	1,799	15.6	1.19	2,122	0	8
Intermediate 2	A	4,515	14.5	1.19	5,219	0	8
Intermediate 3							
Production	A	4,524	16.5	1.17	4,659	0	8
Tubing							

Drillers TD (ft) 18,718'

Loggers TD (ft) n/a

Deepest formation penetrated Trenton

Plug back to (ft) n/a

Plug back procedure n/a

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Kick off depth (ft) 10,410'

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 _____

10/21/2022

SEP 30 2022

**Keith Stern N-14HU
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	8/17/2021	18,261	18,411	48	Utica
2	8/18/2021	18,059	18,236	48	Utica
3	8/18/2021	17,857	18,034	48	Utica
4	8/19/2021	17,655	17,832	48	Utica
5	8/19/2021	17,453	17,630	48	Utica
6	8/20/2021	17,251	17,428	48	Utica
7	8/20/2021	17,049	17,226	48	Utica
8	8/21/2021	16,847	17,024	48	Utica
9	8/21/2021	16,645	16,822	48	Utica
10	8/22/2021	16,443	16,620	48	Utica
11	8/23/2021	16,241	16,418	48	Utica
12	8/23/2021	16,039	16,216	48	Utica
13	8/23/2021	15,837	16,014	48	Utica
14	8/24/2021	15,635	15,812	48	Utica
15	8/24/2021	15,433	15,610	48	Utica
16	8/25/2021	15,231	15,408	48	Utica
17	8/26/2021	15,029	15,206	48	Utica
18	8/26/2021	14,827	15,004	48	Utica
19	8/27/2021	14,625	14,802	48	Utica
20	8/27/2021	14,423	14,600	48	Utica
21	8/28/2021	14,221	14,398	48	Utica
22	8/28/2021	14,019	14,196	48	Utica
23	8/29/2021	13,817	13,994	48	Utica
24	8/29/2021	13,615	13,792	48	Utica
25	8/30/2021	13,413	13,590	48	Utica
26	8/31/2021	13,211	13,388	48	Utica
27	8/31/2021	13,009	13,186	48	Utica
28	9/1/2021	12,807	12,984	48	Utica
29	9/2/2021	12,605	12,782	48	Utica
30	9/3/2021	12,403	12,580	48	Utica
31	9/3/2021	12,201	12,378	48	Utica
32	9/4/2021	11,999	12,176	48	Utica

10/21/2022

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Keith Stern N-14HU
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	87.00	11,590	10383	7169	495980	10,429	0
2	89.00	10,973	7995	8137	503340	8,845	0
3	89.00	10,971	9548	8065	500140	9,709	0
4	88.00	10,853	8573	7149	503520	8,989	0
5	89.00	10,794	8562	7858	507220	9,025	0
6	90.00	10,919	8773	7572	500600	9,007	0
7	88.00	10,600	9126	8277	502120	9,911	0
8	84.00	10,395	8816	7752	507540	9,069	0
9	88.00	10,644	8989	8301	503340	9,009	0
10	90.00	10,787	9051	7557	497940	8,963	0
11	88.00	10,836	9819	8013	501380	8,887	0
12	87.00	10,681	9600	8261	501040	8,956	0
13	88.00	10,941	9224	8664	495220	8,828	0
14	88.00	10,870	9262	8181	503900	8,815	0
15	89.00	10,790	8294	8031	500540	8,936	0
16	89.00	10,686	8035	7901	509420	8,907	0
17	87.00	10,636	9502	8507	508360	8,971	0
18	88.00	10,596	9046	8686	507600	8,911	0
19	88.00	10,606	9439	8322	506340	9,888	0
20	89.00	10,733	8905	8163	509860	9,008	0
21	88.00	10,609	9169	8068	503340	10,138	0
22	88.00	10,497	9756	8484	500420	8,817	0
23	89.00	10,633	9838	7437	498060	8,725	0
24	88.00	10,483	8922	7935	501340	8,819	0
25	88.00	10,347	9077	7770	492540	8,796	0
26	89.00	10,308	9362	8449	501480	8,747	0
27	89.00	10,234	8743	8377	506140	8,777	0
28	89.00	10,131	9085	8036	503240	8,794	0
29	90.00	10,094	5000	7805	503040	8,715	0
30	89.00	10,078	8230	7808	506490	8,859	0
31	88.00	10,060	8446	8371	507760	8,780	0
32	88.00	10,081	9100	8196	505900	8,766	0

Keith Stern N-14HU

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	1563	1708	1564	1709	Sandstone
Big Lime	1708	1761	1709	1762	Limestone
Big Injun	1761	2021	1762	2024	Sandstone
Weir	2021	2212	2024	2215	Sandstone
Berea	2212	2477	2215	2481	Sandstone
Gordon	2477	2573	2481	2577	Sandstone
Fifty Foot	2573	3209	2577	3213	Sandstone
Speechley	3209	4657	3213	4698	Sandstone
Benson	4657	5050	4698	5103	Sandstone
Alexander	5050	5688	5103	5764	Siltstone
Rhinestreet	5688	6063	5764	6150	Black shale
Middlesex	6063	6141	6150	6230	Black shale
Geneseo/Burkett	6141	6160	6230	6250	Black shale
Tully	6160	6209	6250	6300	Limestone
Hamilton	6209	6338	6300	6432	Grey shale
Marcellus	6338	6389	6432	6485	Black shale
Onondaga	6389	6588	6485	6690	Limestone
Oriskany	6588	6703	6690	6810	Sandstone
Helderberg	6703	7107	6810	7230	Limestone
Salina	7107	8114	7230	8270	Salt/Anhydrite/LS
Lockport	8114	8566	8270	8740	Dolomite
Rose Hill	8566	9017	8740	9207	Shale
Packer Shell	9017	9087	9207	9280	Limestone
Clinton/Tuscarora	9087	9152	9280	9348	Sandstone
Juniata/Queenston	9152	10005	9348	10230	Red Shale
Reedsville	10005	10978	10230	11261	Grey Shale
Utica	10978	11236	11261	11778	Black Shale
Point Pleasant	11236	-	11778	-	Shale/Limestone

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/17/2021
Job End Date:	9/4/2021
State:	West Virginia
County:	Marshall
API Number:	47-051-02252-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Keith Sterns N 14HU
Latitude:	39.77479655
Longitude:	-80.69218531
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,212
Total Base Water Volume (gal):	12,171,432
Total Base Non Water Volume:	0



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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	86.01265	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	10.84647	None
Sand (100 Mesh Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	2.78332	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.19935	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.08677	None
StimStream FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.01920	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01920	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00230	None
MC MX 9-4743	Multi-Chem	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.02179	None
LD-7750W	Multi-Chem	Scale Inhibitor					

			Methanol	67-56-1	60.00000	0.00497	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00044	None
			Proprietary material	Proprietary	30.00000	0.00022	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00015	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00007	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00007	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00018	None
			Acetic Acid	64-19-7	5.00000	0.00004	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	0.19935	
			Butene, homopolymer	9003-29-6	25.00000	0.01920	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00230	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	
			Proprietary material	Proprietary	30.00000	0.00022	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00015	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00007	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00007	
			Acetic Acid	64-19-7	5.00000	0.00004	

* 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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**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
TUG HILL OPERATING**

T.H. LATITUDE 39°47'30"
B.H. LATITUDE 39°47'30"

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

NAD'83 S.P.C.(FT)	N. 466,543.66	E. 1,633,427.68
NAD'83 GEO.	LAT-(N) 39.774797	LONG-(W) 80.692185
NAD'83 UTM (M)	N. 4,402,807.63	E. 526,361.11
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 465,724.3	E. 1,633,818.3
NAD'83 GEO.	LAT-(N) 39.772562	LONG-(W) 80.690757
NAD'83 UTM (M)	N. 4,402,560.0	E. 526,484.3
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 471,656.9	E. 1,630,612.5
NAD'83 GEO.	LAT-(N) 39.788730	LONG-(W) 80.702444
NAD'83 UTM (M)	N. 4,404,351.1	E. 525,477.4

B.H.
A.D.

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°40'00"
6,146' T.H.A.D. 1,068' B.H.A.D.

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-10-12	RAY A. WHETZAL, JR., ET AL	36.51
9-11-3	RAY A. WHETZAL, JR., ET AL	33.33
9-13-11.1	SAMUEL & HEATHER SUHODOLSKI	0.49
9-13-14	MARGARET K. FOX - LIFE	3.00
9-14-1.2	KENNETH N. & TERESA A. SMERTNECK	1.02
9-14-3	MICHAEL L. ALVAREZ	NORTH P/O 3 PCLS
9-14-4	MICHAEL L. ALVAREZ	3 PCLS & 1/8 AC.
9-14-5	MICHAEL L. ALVAREZ	200 X 60 PCL
9-14-6	MICHAEL L. ALVAREZ	120 X 200 PCL
9-14-7	JOHN T. ERAZMUS, III	0.25
9-14-8	JOHNNY C. HOLCOMB & JOHNNY C. HOLCOMB, II	2/5 AC.
9-14-9	JOHN E. DUFFY, ET UX	2/5 AC.
9-14-10	ROBERT I. DUFFY - LIFE	25/100 AC.
9-14-11.1	PATRICK J. SCHELLHASE EST - TRUST	7.617
9-14-11.2	LOYE A. BLAKE	4.00
9-14-20.2	WILLIAM K. STERN, ET UX	1.525
9-14-26	PATRICK J. SCHELLHASE EST - TRUST	12.588
9-14-27	PATRICK J. SCHELLHASE EST - TRUST	3.004
9-14-28	CHARLES R. SCHELLHASE, ET UX	3.029
9-14-45	GEORGE R. TAYLOR, ET UX	10.98
9-14-46.1	MARHA JANE FAZZARO	1.512
9-15-40.1	ADAM WALTER BARTOSZEWICZ	13.50
9-15-43	PHILLIP L. MCCABE	11.716
9-17-4.1	DAVID M. FRABRIZIO	5.780
9-17-4.4	MARGARET A. TOLER - LIFE	1.318

T.H.
A.D.

NOTES ON SURVEY

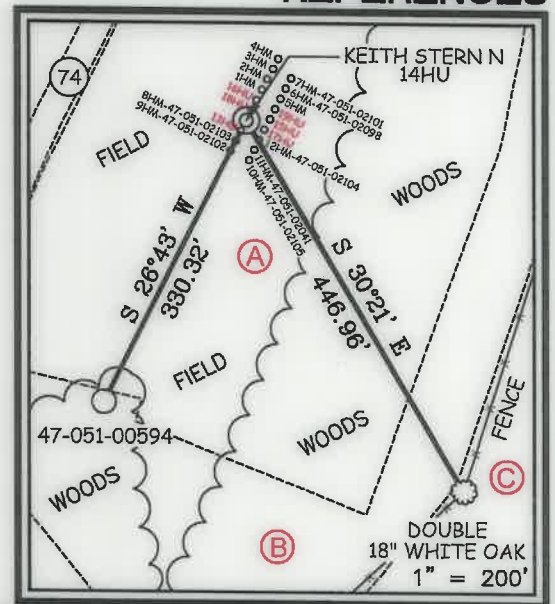
- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS > 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF KEITH STERN N-14HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF THE FOLLOWING: PROPOSED KEITH STERN N-13HU, 15HU & 16HU, PROPOSED KEITH STERN S-17HU, 18HU & 19HU, PROPOSED KNOB CREEK N-13HU, PROPOSED KNOB CREEK S-16HU, HEAVEN HILL 2W-12HU (47-051-01952), HEAVEN HILL 2W-13HU (47-051-01957), HEAVEN HILL 2-6HU (47-051-01910), HEAVEN HILL 2-7HU (47-051-01911) & HEAVEN HILL 2-8HU (47-051-01912)
- AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.

AS DRILLED COORDINATES FOR WELL NO. 14HU

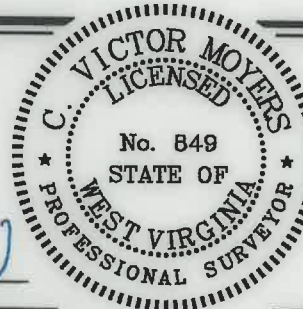
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 466,543.66	E. 1,633,427.68
NAD'83 GEO.	LAT-(N) 39.774797	LONG-(W) 80.692185
NAD'83 UTM (M)	N. 4,402,807.63	E. 526,361.11
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 465,974.6	E. 1,633,687.0
NAD'83 GEO.	LAT-(N) 39.773244	LONG-(W) 80.691236
NAD'83 UTM (M)	N. 4,402,635.6	E. 526,443.0
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 471,656.5	E. 1,630,615.9
NAD'83 GEO.	LAT-(N) 39.788734	LONG-(W) 80.702432
NAD'83 UTM (M)	N. 4,404,351.6	E. 525,476.4

REFERENCES



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.6334
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3332
254 East Beckley Bypass | Beckley, WV 25801 | 304.235.5296
slls.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.

P.S. 849 *C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE JUNE 11, 20 20
REVISED _____
OPERATORS WELL NO. KEITH STERN N-14HU
API WELL NO. 47 - 051 - 2252
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P14HUAD.dwg
KEITH STERN N-14HU-REV3
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



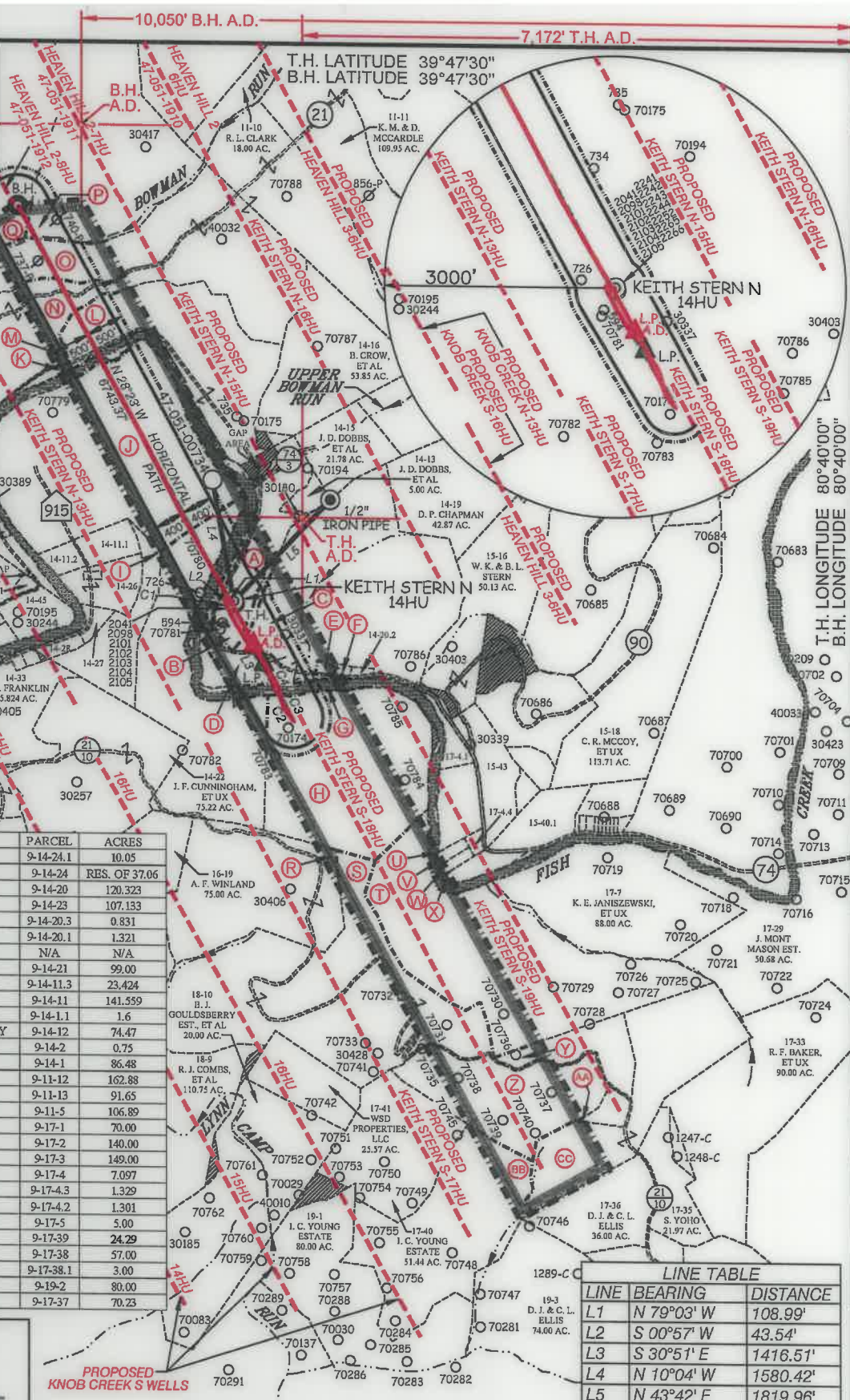
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION:
ELEVATION 744.65' WATERSHED FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'
SURFACE OWNER TH EXPLORATION, LLC ACREAGE 10.05±
ROYALTY OWNER TH EXPLORATION, LLC, ET AL - SEE WW-6A1 ACREAGE 10.05±
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: 11,381' / TMD: 18,819'

WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
TUG HILL OPERATING**



LEGEND
AS DRILLED (Red solid line)
PROPOSED (Red dashed line)

TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION, LLC	9-14-24.1	10.05
B	WILLIAM K. STERN, ET UX	9-14-24	RES. OF 37.06
C	WILLIAM K. STERN, ET UX	9-14-20	120.323
D	WILLIAM K. STERN, ET UX	9-14-23	107.133
E	WILLIAM K. STERN, ET UX	9-14-20.3	0.831
F	WILLIAM K. STERN, ET UX	9-14-20.1	1.321
G	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
H	ELEANOR M. FOX ESTATE	9-14-21	99.00
I	PATRICK J. SCHELLEHASE EST TRUST	9-14-11.3	23.424
J	HOY GLENN CROW	9-14-11	141.559
K	MICHAEL L. ALVAREZ	9-14-1.1	1.6
L	CONSOLIDATION COAL COMPANY MURRAY ENERGY	9-14-12	74.47
M	MICHAEL L. ALVAREZ	9-14-2	0.75
N	SAMUEL & HEATHER SUHODOLSKI	9-14-1	86.48
O	J. E. CROW ESTATE, ET AL	9-11-12	162.88
P	MICHAEL A. WHETZEL	9-11-13	91.65
Q	RAY A. WHETZEL, JR., ET AL	9-11-5	106.89
R	DAVID P. WARSINSKY & ELLEN K. NYLES	9-17-1	70.00
S	I. C. YOUNG ESTATE	9-17-2	140.00
T	KENNETH E. JANISZEWSKI, ET UX	9-17-3	149.00
U	PHILLIP L. MCCABE	9-17-4	7.097
V	SYLVIA JEAN NEEHOUSE	9-17-4.3	1.329
W	RICKY E. DAVIS	9-17-4.2	1.301
X	KENNETH E. JANISZEWSKI, ET UX	9-17-5	5.00
Y	KENNETH E. JANISZEWSKI, ET UX	9-17-39	24.29
Z	KENNETH E. JANISZEWSKI, ET UX	9-17-38	57.00
AA	RYAN J. & MICHELLE L. RIDDLER	9-17-38.1	3.00
BB	DANIEL J. & CINDY L. ELLIS	9-19-2	80.00
CC	RYAN J. & MICHELLE L. RIDDLER	9-17-37	70.23

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 79°03' W	108.99'
L2	S 00°57' E	43.54'
L3	S 30°51' E	1416.51'
L4	N 10°04' W	1580.42'
L5	N 43°42' E	1819.96'

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	84.12'	164.03'	S 17°59' E	83.20'
C2	227.15'	14242.55'	S 31°05' E	227.15'
C3	229.82'	4998.06'	N 27°35' W	229.80'
C4	556.47'	110908342.44'	N 28°23' W	556.47'

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
294 East Beckley Bypass | Beckley, WV 25801 | 304.255.5295
sllsww.com

P.S. 849 *C. Victor Moyers*

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

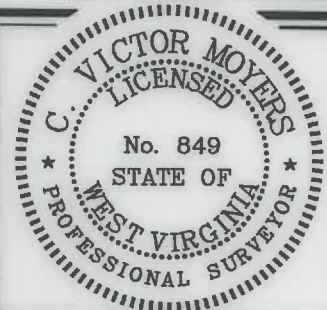
NAD'83 S.P.C.(FT)	N. 466,543.66	E. 1,633,427.68
NAD'83 GEO.	LAT-(N) 39.774797	LONG-(W) 80.692185
NAD'83 UTM (M)	N. 4,402,807.63	E. 526,361.11

LANDING POINT

NAD'83 S.P.C.(FT)	N. 465,724.3	E. 1,633,818.3
NAD'83 GEO.	LAT-(N) 39.772562	LONG-(W) 80.690757
NAD'83 UTM (M)	N. 4,402,560.0	E. 526,484.3

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 471,656.9	E. 1,630,612.5
NAD'83 GEO.	LAT-(N) 39.788730	LONG-(W) 80.702444
NAD'83 UTM (M)	N. 4,404,351.1	E. 525,477.4



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

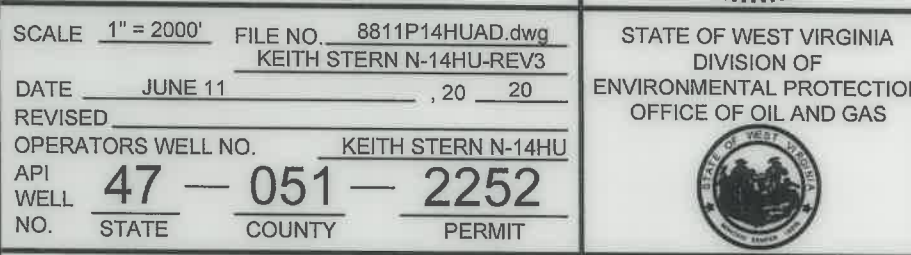
LEGEND

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

SCALE 1" = 2000' FILE NO. 8811P14HUAD.dwg
KEITH STERN N-14HU-REV3
DATE JUNE 11, 2020
REVISED
OPERATORS WELL NO. KEITH STERN N-14HU
API WELL NO. 47 - 051 - 2252
STATE COUNTY PERMIT

WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

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



COUNTY NAME PERMIT

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
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
slswv.com

No.	Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Deed Book/Page
1	10*15605	A	9-14-24.1	ISAAC CROW ET UX	74 394
2	10*15605	B	9-14-24	ISAAC CROW ET UX	74 394
3	10*15509	C	9-14-20	WILLIAM K STERN AND BETTY L STERN	718 320
4	10*15812	D	9-14-23	WILLIAM K STERN AND BETTY L STERN	687 220
5	10*16436	D	9-14-23	REAGAN D YEATTS AND CHRISTOPHER M YEATTS	961 339
6	10*18269	D	9-14-23	GENELDA MASON	942 460
7	10*18299	D	9-14-23	CAROL L BOBBY AND DONALD J BOBBY	929 281
8	10*18354	D	9-14-23	DEBORAH L TURLEY	931 352
9	10*18355	D	9-14-23	JUDITH F TEMPLE AND LOUIS I TEMPLE	931 350
10	10*18356	D	9-14-23	LARRY W ALLEY	931 348
11	10*18357	D	9-14-23	DEBORAH SUE KYLE	931 346
12	10*18358	D	9-14-23	SHARLA ROLLINS AND GARY ROLLINS	931 358
13	10*18419	D	9-14-23	CARLA MAE ALLEY	932 539
14	10*18420	D	9-14-23	VICTOR E ALLEY JR AND DEBRA A ALLEY	932 582
15	10*18421	D	9-14-23	DONNA JUNE STRAIT AND GARY E STRAIT	932 588
16	10*18429	D	9-14-23	GEORGE L DUNN AND NANCY MARIE DUNN	932 601
17	10*18430	D	9-14-23	JAMES DUNN AND DONNA K DUNN	932 604
18	10*18432	D	9-14-23	ROSEMARIE BERISFORD	932 572
19	10*18484	D	9-14-23	BRENDA REED	933 107
20	10*18485	D	9-14-23	BARBARA JO BEVERIDGE	933 109
21	10*18490	D	9-14-23	STACY L BARNHART	933 123
22	10*18491	D	9-14-23	LORI A FARMER AND DANIEL K FARMER	933 131
23	10*18512	D	9-14-23	CHRISTINA NESTELL AND CHARLES E NESTELL III	933 565
24	10*18515	D	9-14-23	WILLIAM P DALBE	933 573
25	10*18518	D	9-14-23	SUSAN I BAKER	933 580
26	10*18520	D	9-14-23	CHRISTOPHER SAUDERS	933 584
27	10*18612	D	9-14-23	NANNETTE BERLETC	932 542
28	10*18617	D	9-14-23	SHEILA SIMMONS AND JEFFREY R SIMMONS	934 613
29	10*18644	D	9-14-23	FRANK A STORCH JR AND SUSAN STORCH	936 149
30	10*18645	D	9-14-23	SANDRA SUE HALL AND DAVID HALL	936 155
31	10*18647	D	9-14-23	PETTER G STORCH AND LAURIE L STORCH	936 152
32	10*18648	D	9-14-23	LAWRENCE E CHIAPPETTA AND PATRICIA A CHIAPPETTA	936 161
33	10*18649	D	9-14-23	RODNEY K BANE AND CATHIE J BANE	936 164
34	10*18652	D	9-14-23	BECKY LANDRIS	936 172
35	10*18653	D	9-14-23	DALE R ALLEY	936 174
36	10*18673	D	9-14-23	RACHEL THORNE AND FRED THORNE JR	938 574
37	10*18674	D	9-14-23	JOHN T CRISWELL AND CATHERINE A CRISWELL	938 579
38	10*18675	D	9-14-23	JEFFREY BRYAN CRISWELL	938 582
39	10*18676	D	9-14-23	JENNIFER SHAWN GLOVER	938 576
40	10*18677	D	9-14-23	PATRICIA DOFKA	938 585
41	10*18678	D	9-14-23	WILLIAM LINSLEY CRISWELL	938 588
42	10*18763	D	9-14-23	VAUGHN HONE SR & LINDA MARIE HONE	938 225
43	10*18766	D	9-14-23	TOM ALLEY	938 223
44	10*18797	D	9-14-23	DORETTA RUSH	937 622
45	10*18308	D	9-14-23	PATRICIA KIRCHNER	937 644
46	10*18809	D	9-14-23	JUDITH C LORADITCH	937 647
47	10*19392	D	9-14-23	RODNEY W RUSH AND CRYSTAL D RUSH	940 336
48	10*19400	D	9-14-23	BULA F YOST	940 342
49	10*19406	D	9-14-23	ANN MARIE STEVENS AND CURTIS STEVENS	939 287
50	10*19417	D	9-14-23	SYLVIA R SPALENY AND ROBERT A SPALENY	939 595
51	10*19423	D	9-14-23	KEITH W STORCH AND DEBORAH A STORCH	934 600
52	10*19477	D	9-14-23	DEBORAH A MILLER	941 320
53	10*19479	D	9-14-23	DENISE WILLIAMSON	941 329
54	10*19510	D	9-14-23	REED O MILLER	933 571
55	10*19525	D	9-14-23	AUGUSTUS R MCMAHON III AND MICHELE M MCMAHON TRUSTEES OF THE AUGUSTUS R MCMAHON III LIVING TRUST	943 509
56	10*19527	D	9-14-23	AUGUSTUS RUSH MCMAHON III TRUSTEE OF THE PAMELA J MCMAHON REVOCBLE TRUST	943 1
57	10*19530	D	9-14-23	SHAROL K CASADA	942 615
58	10*19531	D	9-14-23	DELBERT D RUSH AND BETTY RUTH RUSH	944 150
59	10*19625	D	9-14-23	DURR SUCKEL & ELIZABETH SUCKEL	944 153
60	10*19626	D	9-14-23	LAURIE R BROWN	944 456
61	10*19676	D	9-14-23	RONALD W REINBEAU	944 147
62	10*19677	D	9-14-23	NEIL SCHAFER AND CHRISTAL L SHAFER	944 140
63	10*19681	D	9-14-23	TIMOTHY LEE COLLEY	944 145
64	10*19683	D	9-14-23	TERESA ALLEY	944 142
65	10*19686	D	9-14-23	KAREN J AND MICHAEL E BRUGGEMAN	957 139
66	10*19712	D	9-14-23	CHAZ AARON COLLEY AND DANA COLLINS	957 131
67	10*19723	D	9-14-23	REID ELATTRAICHE AND TONYA ELATTRAICHE	945 603
68	10*19859	D	9-14-23	ELIZABETH A STARC	945 601
69	10*19860	D	9-14-23	ALICIA N STARC	945 605
70	10*19861	D	9-14-23	JOSEPH F STARC JR AND DONNA STARC	945 608
71	10*19862	D	9-14-23	STACY R BENNETT	945 610
72	10*19864	D	9-14-23	JOE Y KELLER JR AND SHARON MARIE KELLER	948 553
73	10*19935	D	9-14-23	SARA E STARC	948 255
74	10*19936	D	9-14-23	SHERWOOD MASON NILA JUNE MASON	948 551
75	10*19940	D	9-14-23	EMMA JO CRISWELL	951 159
76	10*21028	D	9-14-23	BRENDA GILBERT	951 151
77	10*21094	D	9-14-23	KATHERINE DEGROOT AND DANIEL DEGROOT	951 154
78	10*21111	D	9-14-23	DONNA G AND PAUL L CHMELYNSKI	951 157
79	10*21209	D	9-14-23	CHARLES R WILLIAMSON JR	952 434
80	10*21228	D	9-14-23	CHARLES F HORNER & LORAIN G HORNER	952 432
81	10*21229	D	9-14-23	TARA E CAUSEY	956 625
82	10*21395	D	9-14-23	DANIEL L LANDRIS AND JOAN L LANDRIS	956 647
83	10*21396	D	9-14-23	MICHAEL D ZUCKER	956 631
84	10*21441	D	9-14-23	JOSEPH A MURPHY AND VIRGINIA ANNE MURPHY	956 628
85	10*21443	D	9-14-23	ROBERT L LANDRIS AND LIBERTY JANE LANDRIS	957 153
86	10*21490	D	9-14-23	DANIEL E WILLIAMSON AND HEATHER R WILLIAMSON	958 64
87	10*21493	D	9-14-23	DENZIL ALLEY JR	957 324
88	10*21497	D	9-14-23	KATHLEEN G WILLIAMSON	959 627
89	10*21837	D	9-14-23	WILLIAM BRYAN COLLEY	953 501
90	10*21873	D	9-14-23	MICHAEL WAYNE ALLEY AND LINDA ALLEY	960 24
91	10*21961	D	9-14-23	JOHN WILLIAMSON JR	960 586
92	10*21972	D	9-14-23	CATHERINE I AND ERNEST M SILVERIO	954 340
93	10*21979	D	9-14-23	CHARLES C SEAMON	953 341
94	10*21991	D	9-14-23	THE JOANN REILLY TRUST KIMBERLY MAEZ TRUSTEE	953 506
95	10*21997	D	9-14-23	MICHAEL SAUDERS AND AMI SAUDERS	953 507
96	10*22004	D	9-14-23	RALPH EDWARD WILLIAMSON	953 503
97	10*22037	D	9-14-23	JOSHUA W SEAMON	953 344
98	10*22053	D	9-14-23	LARRY R CRANE	

RECEIVED
Office of Oil and Gas
SEP 30 2022
WV Department of
Environmental Protection

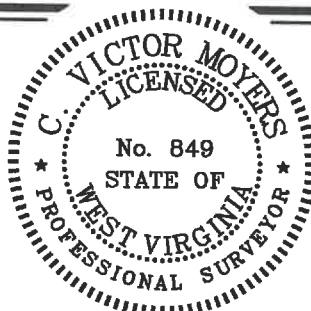
FILE NO. 8811P14HUAD.dwg
KEITH STERN N-14HU-REV3

DATE JUNE 11, 20 20

REVISED

OPERATORS WELL NO. KEITH STERN N-14HU

API WELL NO. 47 — 051 — 2252
STATE COUNTY PERMIT



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



P.S. 849 *C. Victor Moyers*

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC ±
WELL 14HU
TUG HILL OPERATING**



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1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slev.com

99	10*22089	D	9-14-23	MARCIA A LUKE	961	333
100	10*22110	D	9-14-23	JENNIFER ALLEY FISHER & ROBERT D FISHER	961	347
101	10*22127	D	9-14-23	JUDITH L BENEDICT AND LOUIS G BENEDICT	961	343
102	10*22150	D	9-14-23	CHAD ERIC BENNETT AND MARY A BENNETT	954	338
103	10*22257	D	9-14-23	CHARLES F ALLEY TRUST EMMANUEL PREVOLES TRUSTEE	970	26
104	10*22328	D	9-14-23	SUSAN L GOLDSBERRY	962	549
105	10*22329	D	9-14-23	SALLY M COTEREL-CHANEY	962	547
106	10*22380	D	9-14-23	JUDITH S KNIGHT	962	276
107	10*22411	D	9-14-23	EARL FRAZIER AND LYDIA ARMENTA	963	128
108	10*22461	D	9-14-23	BRIAN R MORGAN	964	453
109	10*22501	D	9-14-23	UNDA K AND MICHAEL HUMES	948	372
110	10*22502	D	9-14-23	JAMES P MILLER	946	215
111	10*22775	D	9-14-23	DIANNA LEA SHEPARD	970	30
112	10*22778	D	9-14-23	DANNY E COCHRAN AND LORI ANN COCHRAN	972	40
113	10*22833	D	9-14-23	RANDY W MORRIS SR AND CHERYL MORRIS	966	465
114	10*22848	D	9-14-23	JULIA RAE BROOKS	977	30
115	10*22854	D	9-14-23	SUSAN EXLINE	977	32
116	10*22878	D	9-14-23	AUBREY E REILLY	977	26
117	10*22879	D	9-14-23	BRENDAN Q REILLY	977	28
118	10*23148	D	9-14-23	IDA A ALLEY AND J F ALLEY	117	45
119	10*15957	E	9-14-20.3	BRADLEY CROW AND BETTY L CROW	768	350
120	10*15958	E	9-14-20.3	GLADYS CROW	769	609
121	10*15959	E	9-14-20.3	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	769	603
122	10*15960	E	9-14-20.3	CONNIE HECKLE	770	547
123	10*15961	E	9-14-20.3	H GLENN CROW	770	565
124	10*15962	F	9-14-20.1	BRADLEY CROW AND BETTY L CROW	768	362
125	10*15963	F	9-14-20.1	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	769	416
126	10*15964	F	9-14-20.1	GLADYS CROW	769	410
127	10*15965	F	9-14-20.1	H GLENN CROW	770	535
128	10*15966	F	9-14-20.1	CONNIE HECKLE	770	541
129	10*23488	G	WV - FISH CREEK	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019	373
130	10*47051.243.1	H	9-14-21	MARY A FOX	879	332
131	10*47051.243.2	H	9-14-21	PAUL G FOX	879	335
132	10*47051.243.3	H	9-14-21	MARK H FOX	879	338
133	10*47051.243.4	H	9-14-21	DAVID E FOX	876	55
134	10*47051.243.5	H	9-14-21	LOUIS T FOX AND KAREN A FOX	876	58
135	10*47051.243.6	H	9-14-21	THOMAS J FOX	876	61
136	10*23053	I	9-14-11.3	CE YOUNG	63	146
137	10*23053	J	9-14-11	CE YOUNG	63	146
138	10*19621	K	9-14-1.1	MARY RUTH FROHNAPFEL	938	595
139	10*19622	K	9-14-1.1	KENNETH D SIBURT JR AND LORI SIBURT	938	597
140	10*19623	K	9-14-1.1	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	600
141	10*19627	K	9-14-1.1	RONALD S YOUNG	944	192
142	10*19655	K	9-14-1.1	CHESTNUT HOLDINGS INC	949	309
143	10*19678	K	9-14-1.1	WILLIAM O. JOBES	944	188
144	10*19679	K	9-14-1.1	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	54
145	10*19725	K	9-14-1.1	MAMIE V ARNOLD	944	454
146	10*21213	K	9-14-1.1	JAMES B SIBURT AND DELILA D SIBURT	957	177
147	10*21214	K	9-14-1.1	VICKI J CHERRY AND RICKEY E CHERRY	949	139
148	10*21215	K	9-14-1.1	ALAN K SIBURT ET UX	949	136
149	10*21216	K	9-14-1.1	RODNEY L SIBURT	949	142
150	10*21559	K	9-14-1.1	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	388
151	10*22464	K	9-14-1.1	DONNA KYLE	964	470
152	10*22465	K	9-14-1.1	LOIS KURPIL FKA LOIS HERCULES	964	472
153	10*22466	K	9-14-1.1	JUDITH MAY CONNER	964	468
154	10*22516	K	9-14-1.1	SHARON RUSSELL	964	464
155	10*22518	K	9-14-1.1	GEORGE EDWARDS	964	466
156	10*22856	K	9-14-1.1	CHARLES W MILLER AND ESTHER JEAN MILLER	977	51
157	10*23435	K	9-14-1.1	LLOYD C. ARNOLD & JUDITH C. ARNOLD	1008	301
158	10*23087	L	9-14-12	REASON AND CATHERINE V YOUNG	68	69
159	10*19621	M	9-14-2	MARY RUTH FROHNAPFEL	938	595
160	10*19622	M	9-14-2	KENNETH D SIBURT JR AND LORI SIBURT	938	597
161	10*19623	M	9-14-2	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	600
162	10*19627	M	9-14-2	RONALD S YOUNG	944	192
163	10*19655	M	9-14-2	CHESTNUT HOLDINGS INC	949	309
164	10*19678	M	9-14-2	WILLIAM O. JOBES	944	188
165	10*19679	M	9-14-2	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	54
166	10*19725	M	9-14-2	MAMIE V ARNOLD	944	454
167	10*21213	M	9-14-2	JAMES B SIBURT AND DELILA D SIBURT	957	177
168	10*21214	M	9-14-2	VICKI J CHERRY AND RICKEY E CHERRY	949	139
169	10*21215	M	9-14-2	ALAN K SIBURT ET UX	949	136
170	10*21216	M	9-14-2	RODNEY L SIBURT	949	142
171	10*21559	M	9-14-2	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	388
172	10*22464	M	9-14-2	DONNA KYLE	964	470
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174	10*22466	M	9-14-2	JUDITH MAY CONNER	964	468
175	10*22516	M	9-14-2	SHARON RUSSELL	964	464
176	10*22518	M	9-14-2	GEORGE EDWARDS	964	466
177	10*22856	M	9-14-2	CHARLES W MILLER AND ESTHER JEAN MILLER	977	51
178	10*23435	M	9-14-2	LLOYD C. ARNOLD & JUDITH C. ARNOLD	1008	301
179	10*19621	N	9-14-1	MARY RUTH FROHNAPFEL	938	595
180	10*19622	N	9-14-1	KENNETH D SIBURT JR AND LORI SIBURT	938	597
181	10*19623	N	9-14-1	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	600
182	10*19627	N	9-14-1	RONALD S YOUNG	944	192
183	10*19655	N	9-14-1	CHESTNUT HOLDINGS INC	949	309
184	10*19678	N	9-14-1	WILLIAM O. JOBES	944	188
185	10*19679	N	9-14-1	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	54
186	10*19725	N	9-14-1	MAMIE V ARNOLD	944	454
187	10*21213	N	9-14-1	JAMES B SIBURT AND DELILA D SIBURT	957	177
188	10*21214	N	9-14-1	VICKI J CHERRY AND RICKEY E CHERRY	949	139
189	10*21215	N	9-14-1	ALAN K SIBURT ET UX	949	136
190	10*21216	N	9-14-1	RODNEY L SIBURT	949	142
191	10*21559	N	9-14-1	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	388
192	10*22464	N	9-14-1	DONNA KYLE	964	470
193	10*22465	N	9-14-1	LOIS KURPIL FKA LOIS HERCULES	964	472
194	10*22466	N	9-14-1	JUDITH MAY CONNER	964	468
195	10*22516	N	9-14-1	SHARON RUSSELL	964	464
196	10*22518	N	9-14-1	GEORGE EDWARDS	964	466
197	10*22856	N	9-14-1	CHARLES W MILLER AND ESTHER JEAN MILLER	977	51
198	10*23435	N	9-14-1	LLOYD C. ARNOLD & JUDITH C. ARNOLD	1008	301
199	10*15510	O	9-11-12	ELAINE PHELPS ET VIR	718	326

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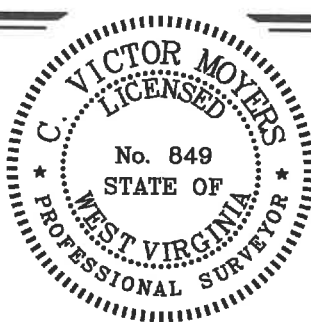
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KEITH STERN N-14HU-REV3

DATE JUNE 11, 2020

REVISED

OPERATORS WELL NO. KEITH STERN N-14HU

API WELL NO. 47 — 051 — 2252
STATE COUNTY PERMIT



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



10/27/2022

P.S. 849 *C. Victor Moyers*

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME
PERMIT

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
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
slsvw.com

200	10*15511	O	9-11-12	DAVID E CROW	718	376
201	10*15512	O	9-11-12	FRANCES COFFEY	718	378
202	10*15513	O	9-11-12	KAY KEYES	718	330
203	10*15514	O	9-11-12	L PAUL CROW	718	336
204	10*15515	O	9-11-12	DESIRE L CROW	718	334
205	10*15516	O	9-11-12	ROSE MARIE KIELGCZEWSKI	718	354
206	10*15517	O	9-11-12	DIANNE GELLNER & GARY GELLNER	718	345
207	10*15518	O	9-11-12	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718	347
208	10*15519	O	9-11-12	JOHN CROW	725	580
209	10*15520	O	9-11-12	TIMOTHY CROW	725	582
210	10*19685	O	9-11-12	MORGAN H MOSSER AND NANCY MOSSER	944	445
211	10*21093	O	9-11-12	DUNCAN S LINN AND POLLY LU BROWN	952	157
212	10*21492	O	9-11-12	JUDITH FISK	957	282
213	10*21494	O	9-11-12	EILEEN M SLATE AND DALE A SLATE	957	284
214	10*21495	O	9-11-12	E JEN BAIRD AND GEORGE S BAIRD AMENDED REVOCABLE TRUST AGREEMENT	956	618
215	10*21843	O	9-11-12	JOHN B HOAGLAND AND PATRICIA A HOAGLAND	959	620
216	10*21923	O	9-11-12	DOROTHY JEAN BURKLE BOYD	953	468
217	10*22090	O	9-11-12	KATHERINE ANN BOYD BLAKE	953	473
218	10*22153	O	9-11-12	JODY A SCHOTTLER AND THOMAS A SCHOTTLER	953	470
219	10*22462	O	9-11-12	ROBERT CALDWELL MEAD	954	490
220	10*22608	O	9-11-12	SARAH BAIRD LINN	966	620
221	10*22666	O	9-11-12	JOSEPH W LINN JR AND TAMMY S LINN	968	230
222	10*22771	O	9-11-12	KATHARINE B SILBAUGH AND DANIEL JURAYI	970	24
223	10*22855	O	9-11-12	KIM O MAGHAN AND JAMES G MAGHAN	977	49
224	10*23024	O	9-11-12	KATHRYN A TAGGART AND EVERETT TAGGART JR	977	289
225	10*23059	O	9-11-12	GAIL W STEWART	977	287
226	10*23165	O	9-11-12	EDITH BOYD ORR AND WENDELL FRANKLIN ORR	984	68
227	10*23389	O	9-11-12	LEESA O THOMPSON	972	45
228	10*23427	O	9-11-12	SANDY VINCENT AND STEVEN VINCENT	1008	307
229	10*23652	O	9-11-12	KATHARINE ATWOOD AND MICHAEL GRITTON	1009	291
230	10*23686	O	9-11-12	RANDALL T LULLOM AND RCSALIE FERMO-LULLOM	1010	400
231	10*23687	O	9-11-12	ELIZABETH F BAIRD	1010	402
232	10*23688	O	9-11-12	MELISSA DUBOIS BAIRD	1010	404
233	10*23692	O	9-11-12	WILLIAM ATWOOD AND ELIZABETH ATWOOD	1010	408
234	10*23693	O	9-11-12	JOHN A TWOOD AND ANNETTE ATWOOD	1010	406
235	10*24222	O	9-11-12	SALVATION ARMY	1022	371
236	10*24282	O	9-11-12	CLARA OSBORNE DOUGLAS	1023	481
237	10*24296	O	9-11-12	KATHARINE D LINN	1023	522
238	10*24400	O	9-11-12	JANE W VARDY ET AL	1024	317
239	10*47051.123.1	O	9-11-12	LLOYD G BAKER	865	389
240	10*47051.123.2	O	9-11-12	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873	148
241	10*16258	P	9-11-13	CHESTNUT HOLDINGS INC	848	234
242	10*15584	Q	9-11-5	VICKIE MASON	686	239
243	10*15585	Q	9-11-5	SHARON L WHETZAL	687	147
244	10*15586	Q	9-11-5	MARY A SOUTH	690	615
245	10*15587	Q	9-11-5	ROBERT L WHETZAL	690	559
246	10*15588	Q	9-11-5	RAY A WHETZAL JR	693	571
247	10*15589	Q	9-11-5	MARK L WHETZAL	693	576
248	10*47051.108.1	Q	9-11-5	MICHAEL A WHETZEL	885	51
249	10*47051.108.5	Q	9-11-5	BRENDA J WHETZEL	885	55
250	10*17135	R	9-17-1	ELLEN K NYLES	919	625
251	10*17136	R	9-17-1	DAVID P WARSINSKY	919	627
252	10*15910	S	9-17-2	SHIRLEY KOONTZ	701	303
253	10*15911	S	9-17-2	ROBERT W. GRAY	715	441
254	10*15912	S	9-17-2	DELORES I RICHTER	715	448
255	10*15913	S	9-17-2	LULA MCGUIRE	715	449
256	10*15914	S	9-17-2	JUDY CALLOWAY	715	450
257	10*15915	S	9-17-2	JUDY WARNER	715	451
258	10*15916	S	9-17-2	CHRISTI LYNN CLAYTON	715	452
259	10*15917	S	9-17-2	CINDY LOU SMITH	715	453
260	10*15918	S	9-17-2	ARTHUR EMORY	715	457
261	10*15919	S	9-17-2	CAROLYN SUE HENRY	715	454
262	10*15920	S	9-17-2	DENNIS KOTKE	715	458
263	10*17233	S	9-17-2	TIMOTHY MCDOWELL	713	355
264	10*17234	S	9-17-2	GAREN P. MCDOWELL	715	280
265	10*17235	S	9-17-2	WINONA RIDDLE	715	353
266	10*17236	S	9-17-2	TEXYN L. MILLER	716	270
267	10*17237	S	9-17-2	JENNIFER WHEATON	715	610
268	10*17238	S	9-17-2	LISA ANN MCDOWELL	715	341
269	10*17239	S	9-17-2	ANITA RAE MILLER	715	336
270	10*17240	S	9-17-2	BONNIE GRISELL	715	331
271	10*17241	S	9-17-2	BARBARA K BURLEY	716	290
272	10*17242	S	9-17-2	GERALD L MILLER	716	285
273	10*17243	S	9-17-2	DAVID MCDOWELL	717	26
274	10*17244	S	9-17-2	KAREN CECIL	716	295
275	10*17245	S	9-17-2	CHAD E LONGFELLOW	833	218
276	10*17666	S	9-17-2	LULA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	172
277	10*17673	S	9-17-2	JAMES PERRY COCHRAN	932	567
278	10*17707	S	9-17-2	JACQUELYN S FERRARI AND JOHN C FERRARI	949	177
279	10*17709	S	9-17-2	CAROL GONGOLA	949	167
280	10*17981	S	9-17-2	MICHAEL E SWIFT AND MELODY A SWIFT	925	372
281	10*18099	S	9-17-2	RAE ELLEN FLOYD AND KENNETH FLOYD	927	233
282	10*18107	S	9-17-2	ANITA MAE MASON	927	238
283	10*18167	S	9-17-2	NEIL CALL AND MELINDA CALL	927	492
284	10*18168	S	9-17-2	SANDRA YANAGAWA	927	498
285	10*18169	S	9-17-2	KAREN K WILLIAMS	927	628
286	10*18192	S	9-17-2	STEPHEN S MASON AND CAROLE K MASON	928	625
287	10*18193	S	9-17-2	CAROLYN LEE FUREY AND MARTIN J FUREY	949	158
288	10*18194	S	9-17-2	PAMELA BEYLER AND CHAD R BEYLER	928	630
289	10*18198	S	9-17-2	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	643
290	10*18199	S	9-17-2	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	532
291	10*18260	S	9-17-2	GEMMA RUDY AND TIMOTHY RUDY	928	584
292	10*18261	S	9-17-2	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	928	553
293	10*18262	S	9-17-2	KAREN MCDOWELL CECIL AND JAMES E CECIL	928	555
294	10*18263	S	9-17-2	LISA ANN MCDOWELL AND ROBERT JOSEPH HILL	928	551
295	10*18264	S	9-17-2	DAVID MCDOWELL AND CRYSTAL MCDOWELL	928	549
296	10*18295	S	9-17-2	THOMAS R BAKER AND VICKIE L BAKER	929	262
297	10*18417	S	9-17-2	CHERYL L HILL	932	577
298	10*18487	S	9-17-2	NANCY L STANGEL AND JOHN J STANGEL	933	113
299	10*18488	S	9-17-2	CHARLINE MENGLE AND KEVIN E MENGLE	933	118
300	10*18508	S	9-17-2	PATRICIA LUANNE BONAR	925	351

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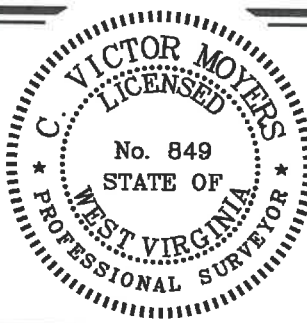
KEITH STERN N-14HU-REV3

DATE JUNE 11, 2020

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OPERATORS WELL NO. KEITH STERN N-14HU

API WELL NO. 47 — 051 — 2252
STATE COUNTY PERMIT



STATE OF WEST VIRGINIA
DIVISION OF
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OFFICE OF OIL AND GAS



P.S. 849

C. Victor Moyers

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME
PERMIT

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
TUG HILL OPERATING**



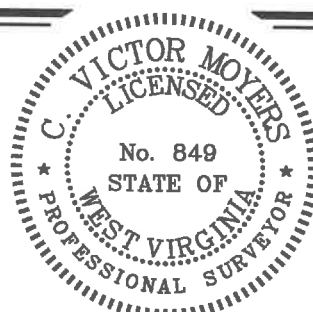
12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
sleww.com

301	10*18517	S	9-17-2	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
302	10*18619	S	9-17-2	LOIS ELAINE WICKHAM	934	617
303	10*18620	S	9-17-2	MICHAEL A WALKER	934	620
304	10*18621	S	9-17-2	MARK A WALKER	934	622
305	10*18622	S	9-17-2	CHAD A YOUNG	934	624
306	10*18623	S	9-17-2	NEIL ROBERT YOUNG	934	626
307	10*18624	S	9-17-2	CLARA SUE YOUNG	934	629
308	10*18655	S	9-17-2	PATRICIA L LEHN	936	95
309	10*18656	S	9-17-2	PAMELA CALL	936	100
310	10*18658	S	9-17-2	ELIZABETH JANE KELLER	936	107
311	10*18762	S	9-17-2	TRACY L BARNBY	938	481
312	10*19373	S	9-17-2	JESSICA WHEATON	931	411
313	10*19408	S	9-17-2	CAROLYN J YOUNG	940	149
314	10*19508	S	9-17-2	STONE HILL MINERALS HOLDINGS LLC	941	446
315	10*19532	S	9-17-2	CYNTHIA K KIRCHHOFF	942	637
316	10*19618	S	9-17-2	RONALD W YOUNG	937	371
317	10*19619	S	9-17-2	ERIC J YOUNG	937	377
318	10*19620	S	9-17-2	RONALD R YOUNG AND GERALDINE YOUNG	937	365
319	10*19624	S	9-17-2	JOHN T YINGLING	944	209
320	10*19668	S	9-17-2	MELISSA D FLETCHER & SCOTT A FLETCHER	938	326
321	10*19713	S	9-17-2	MARSHA BERISFORD	944	452
322	10*19879	S	9-17-2	MARY V GILSON AND WALTER M GILSON	945	588
323	10*19933	S	9-17-2	MARY ANN GRIFFITH	948	555
324	10*21226	S	9-17-2	PENNY YODER AND KEVIN LYNN YODER	951	605
325	10*21342	S	9-17-2	LELAND SINCLAIR YOUNG	946	52
326	10*21400	S	9-17-2	DENNIS REASBECK AND BARBARA REASBECK	956	645
327	10*21487	S	9-17-2	FLOYD D ANDERSON & CAROLYN SUE ANDERSON	957	294
328	10*21488	S	9-17-2	ALEXA B YOUNG	957	296
329	10*21517	S	9-17-2	SUSAN C YOUNG	949	201
330	10*21572	S	9-17-2	CARLA J SIMMS	957	452
331	10*21574	S	9-17-2	ALICE F WINLAND	957	404
332	10*21575	S	9-17-2	MICHAEL S OTT AND SYBIL OTT	957	449
333	10*21738	S	9-17-2	CRYSTAL DAWN YOUNG	957	409
334	10*21741	S	9-17-2	HOLLY A YOUNG	957	411
335	10*21749	S	9-17-2	GRANT D RICHARDS AND KERRI S RICHARDS	957	459
336	10*21842	S	9-17-2	JOSEPH NOKOVICH	959	635
337	10*21844	S	9-17-2	ROBERTA YOUNG	959	629
338	10*21927	S	9-17-2	BLACK GOLD GROUP LTD	964	474
339	10*21928	S	9-17-2	JOHN D COX AND CONNIE J COX	953	511
340	10*21940	S	9-17-2	ALYSIA JORDAN & TERRY M JORDAN	953	346
341	10*21967	S	9-17-2	ROGER G ALLEN AND DONNA KAY ALLEN	960	571
342	10*21970	S	9-17-2	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	960	578
343	10*21971	S	9-17-2	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	960	580
344	10*21975	S	9-17-2	RAYMOND A KUDERSKI AND KELLI J KUDERSKI	960	582
345	10*21984	S	9-17-2	SANFORD METZ	960	576
346	10*21986	S	9-17-2	RONALD D KOONTZ & BETH ANN KOONTZ	960	569
347	10*22052	S	9-17-2	RONALD R YOUNG	960	573
348	10*22088	S	9-17-2	BRANNEN DAUGHERTY	961	345
349	10*22147	S	9-17-2	LARRY R BONAR AND DEBRA L BONAR	957	406
350	10*22154	S	9-17-2	DONALD EUGENE ANDERSON	953	509
351	10*22599	S	9-17-2	BRYANT R SWIFT AND KATHY SWIFT	966	456
352	10*22600	S	9-17-2	AIDEN BOYD YOUNG JENNIFER A YOUNG, PETITIONER	966	462
353	10*22776	S	9-17-2	JAMES ROBERT WELLS	970	19
354	10*22849	S	9-17-2	NEIL MCELROY AND SUE MASON MCELROY	977	44
355	10*22851	S	9-17-2	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39
356	10*22853	S	9-17-2	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	34
357	10*23076	S	9-17-2	JACK R BERISFORD AKA RANDY BERISFORD	984	43
358	10*23260	S	9-17-2	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
359	10*23539	S	9-17-2	STONE HILL MINERALS HOLDINGS LLC	1010	224
360	10*23668	S	9-17-2	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	286
361	10*15832	T	9-17-3	ANITA DIANE ANTILL AND TERRY ANTILL	742	121
362	10*15835	T	9-17-3	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	104
363	10*15847	T	9-17-3	ROGER BRIGHT AND SUSAN LEIMER - DECEASED	743	285
364	10*15848	T	9-17-3	HOMER L SIMMONS AND GLADYS R SIMMONS	745	194
365	10*15855	T	9-17-3	ALICE THIPPHAVONG AND VISITH THIPPHAVONG	747	635
366	10*15856	T	9-17-3	LEO C HILKE AND BETTY M HILKE	747	629
367	10*15870	T	9-17-3	JOHN H HILKE AND ALDA HILKE	750	206
368	10*15872	T	9-17-3	SUSAN H KEY	751	191
369	10*15836	U	9-17-4	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	79
370	10*15837	U	9-17-4	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
371	10*15842	U	9-17-4	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
372	10*16007	U	9-17-4	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
373	10*16008	U	9-17-4	DONNA KAY ALLEN AND ROGER ALLEN	801	222
374	10*17169	U	9-17-4	ALMA L VAN SCYOC	692	404
375	10*17171	U	9-17-4	OPAL MICKEY	690	631
376	10*17173	U	9-17-4	LLOYD R EVANS	694	526
377	10*17500	U	9-17-4	TRACY LAND KEITH W BARNBY	916	116
378	10*17666	U	9-17-4	LILA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	172
379	10*17673	U	9-17-4	JAMES PERRY COCHRAN	932	567
380	10*17707	U	9-17-4	JACQUELYN S FERRARI AND JOHN C FERRARI	949	177
381	10*17709	U	9-17-4	CAROL GONGOLA	949	167
382	10*17765	U	9-17-4	ROBERTA YOUNG	949	168
383	10*17840	U	9-17-4	RONALD D KOONTZ & BETH ANN KOONTZ	942	432
384	10*17886	U	9-17-4	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	536
385	10*17887	U	9-17-4	LEO C HILKE AND BETTY M HILKE	924	531
386	10*17977	U	9-17-4	BRANNEN DAUGHERTY	925	359
387	10*17980	U	9-17-4	ANITA RAE MILLER	925	370
388	10*17981	U	9-17-4	MICHAEL E SWIFT AND MELODY A SWIFT	925	372
389	10*18031	U	9-17-4	LEE ANNE MILLER	927	222
390	10*18092	U	9-17-4	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	283
391	10*18093	U	9-17-4	JENNIFER WHEATON	927	289
392	10*18094	U	9-17-4	BONNIE GRISELL	927	231
393	10*18095	U	9-17-4	TEKYN L MILLER AND GEORGIA A MILLER	927	287
394	10*18098	U	9-17-4	USA ANN MCDOWELL AND ROBERT JOSEPH HILL	939	263
395	10*18099	U	9-17-4	RAE ELLEN FLOYD AND KENNETH FLOYD	927	233
396	10*18107	U	9-17-4	ANITA MAE MASON	927	238
397	10*18167	U	9-17-4	NEIL CALL AND MELUNDA CALL	927	492
398	10*18168	U	9-17-4	SANDRA YANAGAWA	927	498
399	10*18169	U	9-17-4	KAREN K WILLIAMS	927	628
400	10*18170	U	9-17-4	KAREN MCDOWELL CECIL AND JAMES E CECIL	927	633
401	10*18192	U	9-17-4	STEPHEN S MASON AND CAROLE K MASON	928	625

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WV Department of
Environmental Protection



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



P.S.
849

C. Victor Moyers

COUNTY NAME
PERMIT

FILE NO. 8811P14HUAD.dwg
KEITH STERN N-14HU-REV3

DATE JUNE 11, 20 20

REVISED

OPERATORS WELL NO. KEITH STERN N-14HU

API WELL NO. 47 — 051 — 2252
STATE COUNTY PERMIT

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS 5400 D BIG TYLER ROAD
CT CORPORATION SYSTEM
CHARLESTON, WV 25313

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC ±
WELL 14HU
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
slsvv.com

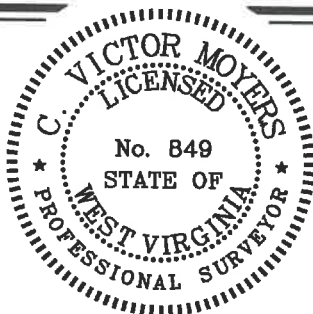
402	10*18193	U	9-17-4	CAROLYN LEE FUREY AND MARTIN J FUREY	949	158
403	10*18194	U	9-17-4	PAMELA BEYLER AND CHAD R BEYLER	928	630
404	10*18197	U	9-17-4	BARBARA K BURLEY AND DAVID K BURLEY	928	641
405	10*18198	U	9-17-4	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	643
406	10*18199	U	9-17-4	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	532
407	10*18260	U	9-17-4	GEMMA RUDY AND TIMOTHY RUDY	928	584
408	10*18295	U	9-17-4	THOMAS R BAKER AND VICKIE L BAKER	929	262
409	10*18298	U	9-17-4	MAUREEN GREGG	929	273
410	10*18300	U	9-17-4	ROBERT W ODOM AND CASSANDRA L ODOM	929	283
411	10*18361	U	9-17-4	MARY JO CAIN	931	407
412	10*18417	U	9-17-4	CHERYL L HILL	932	577
413	10*18487	U	9-17-4	NANCY L STANGEL AND JOHN J STANGEL	933	113
414	10*18488	U	9-17-4	CHARLINE M ENGLE AND KEVIN E ENGLE	933	118
415	10*18508	U	9-17-4	PATRICIA LUANNE BONAR	925	351
416	10*18517	U	9-17-4	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
417	10*18613	U	9-17-4	JANE LOUISE CAIN AND DANIEL CARL HOLTZ	934	603
418	10*18655	U	9-17-4	PATRICIA L LEHN	936	95
419	10*18656	U	9-17-4	PAMELA CALL	936	100
420	10*18658	U	9-17-4	ELIZABETH JANE KELLER	936	107
421	10*18659	U	9-17-4	CATHERINE P MASON	936	112
422	10*18799	U	9-17-4	CHARLES J DARMAFALL DECEASED	937	634
423	10*18805	U	9-17-4	CINDY STEVENS TOZIER	937	628
424	10*19373	U	9-17-4	JESSICA WHEATON	931	411
425	10*19403	U	9-17-4	LAWRENCE R LOTZ	951	114
426	10*19404	U	9-17-4	HOWARD M CAIN AND EMMA JEAN CAIN	939	283
427	10*19476	U	9-17-4	WINONA RIDDLE	941	331
428	10*19689	U	9-17-4	EDMOND TURGEON JR AND CATHY STEVENS TURGEON	944	156
429	10*19702	U	9-17-4	WV MINERALS INC	951	108
430	10*19718	U	9-17-4	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	944	412
431	10*19879	U	9-17-4	MARY V GILSON AND WALTER M GILSON	945	588
432	10*19933	U	9-17-4	MARY ANN GRIFFITH	948	555
433	10*19937	U	9-17-4	JAMES D STEVENS AND DOROTHY M STEVENS	949	151
434	10*19938	U	9-17-4	JOHN H STEVENS AND LYNDA L STEVENS	949	144
435	10*21026	U	9-17-4	NANCY M MORGAN	951	110
436	10*21211	U	9-17-4	NILA JEAN BAYLES	951	118
437	10*21841	U	9-17-4	ENERGY DEEP RESOURCES INC	959	631
438	10*21842	U	9-17-4	JOSEPH NOKOVICH	959	635
439	10*21927	U	9-17-4	BLACK GOLD GROUP LTD	964	474
440	10*21940	U	9-17-4	ALYSIA JORDAN & TERRY M JORDAN	953	346
441	10*22376	U	9-17-4	MARGARET KUCHARZ AND JAMES C KUCHARZ	962	270
442	10*22412	U	9-17-4	CHAD E LONGFELLOW	963	124
443	10*22599	U	9-17-4	BRYANT R SWIFT AND KATHY SWIFT	966	456
444	10*22776	U	9-17-4	JAMES ROBERT WELLS	970	19
445	10*22849	U	9-17-4	NEIL MCELROY AND SUE MASON MCELROY	977	44
446	10*22851	U	9-17-4	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39
447	10*22853	U	9-17-4	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	34
448	10*23076	U	9-17-4	JACK R BERISFORD AKA RANDY BERISFORD	984	43
449	10*23260	U	9-17-4	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
450	10*23568	U	9-17-4	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	286
451	10*47051.219.1	U	9-17-4	DAVID LEE FRANKLIN	874	312
452	10*47051.219.27	U	9-17-4	MARSHA BERISFORD	902	425
453	10*47051.219.33	U	9-17-4	JOHN H HILKE AND ALIDA HILKE	898	602
454	10*47051.219.36	U	9-17-4	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	615
455	10*47051.219.37	U	9-17-4	SUSAN H KEY	898	621
456	10*47051.219.38	U	9-17-4	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	431
457	10*47051.219.39	U	9-17-4	ALICE THIPPHAVONG AND VISITH THIPPHAVONG	902	437
458	10*15836	V	9-17-4.3	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	79
459	10*15837	V	9-17-4.3	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
460	10*15842	V	9-17-4.3	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
461	10*16007	V	9-17-4.3	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
462	10*16008	V	9-17-4.3	DONNA KAY ALLEN AND ROGER ALLEN	801	222
463	10*17169	V	9-17-4.3	ALMA L VAN SCYOC	692	404
464	10*17171	V	9-17-4.3	OPAL MICKY	690	631
465	10*17173	V	9-17-4.3	LLOYD R. EVANS	694	526
466	10*17500	V	9-17-4.3	TRACY L AND KEITH W BARNBY	915	116
467	10*17666	V	9-17-4.3	LULA FAYE BONAH SNOODGRASS AND DONALD T SNOODGRASS	949	172
468	10*17673	V	9-17-4.3	JAMES PERRY COCHRAN	932	567
469	10*17707	V	9-17-4.3	JACQUELYN S FERRARI AND JOHN C FERRARI	949	177
470	10*17709	V	9-17-4.3	CAROL GONGOLA	949	167
471	10*17765	V	9-17-4.3	ROBERTA YOUNG	949	163
472	10*17840	V	9-17-4.3	RONALD D KOONTZ & BETH ANN KOONTZ	942	432
473	10*17886	V	9-17-4.3	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	536
474	10*17887	V	9-17-4.3	LEO C HILKE AND BETTY M HILKE	924	531
475	10*17977	V	9-17-4.3	BRANNEN DAUGHERTY	925	359
476	10*17980	V	9-17-4.3	ANITA RAE MILLER	925	370
477	10*17981	V	9-17-4.3	MICHAEL E SWIFT AND MELODY A SWIFT	925	372
478	10*18031	V	9-17-4.3	LEE ANNE MILLER	927	222
479	10*18092	V	9-17-4.3	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	283
480	10*18093	V	9-17-4.3	JENNIFER WHEATON	927	289
481	10*18094	V	9-17-4.3	BONNIE GRISELL	927	231
482	10*18095	V	9-17-4.3	TEXYN L MILLER AND GEORGIA A MILLER	927	287
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API WELL NO. 47 — 051 — 2252
NO. STATE COUNTY PERMIT



STATE OF WEST VIRGINIA
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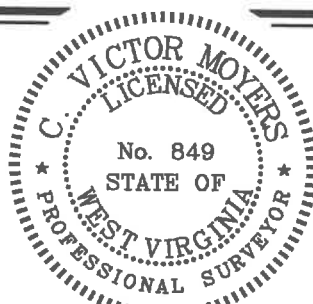
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508	10*18666	V	9-17-4.3	PAMELA CALL	936	100
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541	10*47051.219.27	V	9-17-4.3	MARSHA BERISFORD	902	425
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543	10*47051.219.36	V	9-17-4.3	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	615
544	10*47051.219.37	V	9-17-4.3	SUSAN H KEY	898	621
545	10*47051.219.38	V	9-17-4.3	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	431
546	10*47051.219.39	V	9-17-4.3	ALICE THIPPHAVONG AND VISITH THIPPHAVONG	902	437
547	10*15836	W	9-17-4.2	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	79
548	10*15837	W	9-17-4.2	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
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556	10*17666	W	9-17-4.2	LILA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	172
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571	10*18095	W	9-17-4.2	TEXNY L MILLER AND GEORGIA A MILLER	927	287
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582	10*18197	W	9-17-4.2	BARBARA K BURLEY AND DAVID K BURLEY	928	641
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600	10*18799	W	9-17-4.2	CHARLES J DARMAFALL DECEASED	937	634
601	10*18905	W	9-17-4.2	CINDY STEVENS TOZIER	937	628
602	10*19373	W	9-17-4.2	JESSICA WHEATON	931	411
603	10*19403	W	9-17-4.2	LAWRENCE R LOTZ	951	114

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WV Department of
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FILE NO. 8811P14HUAD.dwg
KEITH STERN N-14HU-REV3
DATE JUNE 11, 20 20
REVISED _____
OPERATORS WELL NO. KEITH STERN N-14HU
API WELL NO. 47 — 051 — 2252
STATE COUNTY PERMIT



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



P.S.
849

C. Victor Moyers

COUNTY NAME
PERMIT

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

**KEITH STERN N LEASE
UTICA UNIT - 452.76 AC±
WELL 14HU
TUG HILL OPERATING**



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1432 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
sleuv.com

604	10*19404	W	9-17-4.2	HOWARD M CAIN AND EMMA JEAN CAIN	939	283
605	10*19476	W	9-17-4.2	WINONA RIDDLE	941	331
606	10*19689	W	9-17-4.2	EDMOND TURGEON JR AND CATHY STEVENS TURGEON	944	156
607	10*19702	W	9-17-4.2	WV MINERALS INC	951	108
608	10*19718	W	9-17-4.2	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	944	412
609	10*19879	W	9-17-4.2	MARY V GILSON AND WALTER M GILSON	945	588
610	10*19833	W	9-17-4.2	MARY ANN GRIFFITH	948	555
611	10*19937	W	9-17-4.2	JAMES D STEVENS AND DOROTHY M STEVENS	949	151
612	10*19938	W	9-17-4.2	JOHN H STEVENS AND LYNDAL STEVENS	949	144
613	10*21026	W	9-17-4.2	NANCY M MORGAN	951	110
614	10*21211	W	9-17-4.2	NILA JEAN BAYLES	951	118
615	10*21841	W	9-17-4.2	ENERGY DEEP RESOURCES INC	959	631
616	10*21842	W	9-17-4.2	JOSEPH NOKOVICH	959	635
617	10*21927	W	9-17-4.2	BLACK GOLD GROUP LTD	964	474
618	10*21940	W	9-17-4.2	ALYSIA JORDAN & TERRY M JORDAN	953	346
619	10*22376	W	9-17-4.2	MARGARET KUCHARZ AND JAMES C KUCHARZ	962	270
620	10*22412	W	9-17-4.2	CHAD E LONGFELLOW	968	124
621	10*22599	W	9-17-4.2	BRYANT R SWIFT AND KATHY SWIFT	966	456
622	10*22776	W	9-17-4.2	JAMES ROBERT WELLS	970	19
623	10*22849	W	9-17-4.2	NEIL MCELROY AND SUE MASON MCELROY	977	44
624	10*22851	W	9-17-4.2	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39
625	10*22853	W	9-17-4.2	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	34
626	10*23076	W	9-17-4.2	JACK R BERISFORD AKA RANDY BERISFORD	984	43
627	10*23260	W	9-17-4.2	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
628	10*23668	W	9-17-4.2	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNIAKiewicz	1009	286
629	10*47051.219.1	W	9-17-4.2	DAVID LEE FRANKLIN	874	312
630	10*47051.219.27	W	9-17-4.2	MARSHA BERISFORD	902	425
631	10*47051.219.33	W	9-17-4.2	JOHN H HILKE AND ALIDA HILKE	896	602
632	10*47051.219.36	W	9-17-4.2	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	615
633	10*47051.219.37	W	9-17-4.2	SUSAN H KEY	898	621
634	10*47051.219.38	W	9-17-4.2	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	431
635	10*47051.219.39	W	9-17-4.2	ALICE THIPPHAVONG AND VISITH THIPPHAVONG	902	437
636	10*15836	X	9-17-5	LUICINDA RAE ALLEN AND DAVID A ALLEN	742	79
637	10*15837	X	9-17-5	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
638	10*15842	X	9-17-5	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
639	10*16007	X	9-17-5	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
640	10*17169	X	9-17-5	ALMA L VAN SCYOC	692	404
641	10*17171	X	9-17-5	OPAL MCKEY	690	631
642	10*17173	X	9-17-5	LLOYD R. EVANS	694	526
643	10*17500	X	9-17-5	TRACY LAND KEITH W BARNBY	916	116
644	10*17666	X	9-17-5	ULA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	172
645	10*17673	X	9-17-5	JAMES PERRY COCHRAN	932	567
646	10*17707	X	9-17-5	JACQUELYN S FERRARI AND JOHN C FERRARI	949	177
647	10*17709	X	9-17-5	CAROL GONGOLA	949	167
648	10*17765	X	9-17-5	ROBERTA YOUNG	949	163
649	10*17840	X	9-17-5	RONALD D KOONTZ & BETH ANN KOONTZ	942	432
650	10*17886	X	9-17-5	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	536
651	10*17887	X	9-17-5	LEO C HILKE AND BETTY M HILKE	924	531
652	10*17977	X	9-17-5	BRANNEN DAUGHERTY	925	359
653	10*17980	X	9-17-5	ANITA RAE MILLER	925	370
654	10*17981	X	9-17-5	MICHAEL E SWIFT AND MELODY A SWIFT	925	372
655	10*18019	X	9-17-5	SUSAN H KEY	927	272
656	10*18020	X	9-17-5	ALICE THIPPHAVONG AND VISITH THIPPHAVONG	927	270
657	10*18031	X	9-17-5	LEE ANNE MILLER	927	222
658	10*18092	X	9-17-5	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	283
659	10*18093	X	9-17-5	JENNIFER WHEATON	927	289
660	10*18094	X	9-17-5	BONNIE GRISELL	927	231
661	10*18095	X	9-17-5	TEXYN L MILLER AND GEORGIA A MILLER	927	287
662	10*18098	X	9-17-5	USA ANN MCDOWELL AND ROBERT JOSEPH HILL	939	263
663	10*18099	X	9-17-5	RAE ELLEN FLOYD AND KENNETH FLOYD	927	233
664	10*18107	X	9-17-5	ANITA MAE MASON	927	238
665	10*18113	X	9-17-5	JOHN H HILKE	927	159
666	10*18167	X	9-17-5	NEIL CALL AND MELINDA CALL	927	492
667	10*18168	X	9-17-5	SANDRA YANAGAWA	927	498
668	10*18169	X	9-17-5	KAREN K WILLIAMS	927	628
669	10*18170	X	9-17-5	KAREN MCDOWELL CECIL AND JAMES E CECIL	927	633
670	10*18192	X	9-17-5	STEPHEN S MASON AND CAROLE K MASON	928	625
671	10*18193	X	9-17-5	CAROLYN LEE FUREY AND MARTIN J FUREY	949	158
672	10*18194	X	9-17-5	PAMELA BEYLER AND CHAD R BEYLER	928	630
673	10*18197	X	9-17-5	BARBARA K BURLEY AND DAVID K BURLEY	928	641
674	10*18198	X	9-17-5	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	643
675	10*18199	X	9-17-5	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	532
676	10*18260	X	9-17-5	GEMMA RUDY AND TIMOTHY RUDY	928	584
677	10*18295	X	9-17-5	THOMAS R BAKER AND VICKIE L BAKER	929	262
678	10*18298	X	9-17-5	MAUREEN GREGG	929	273
679	10*18300	X	9-17-5	ROBERT W ODOM AND CASSANDRA L ODOM	929	283
680	10*18361	X	9-17-5	MARY JO CAIN	931	407
681	10*18417	X	9-17-5	CHERYL L HILL	932	577
682	10*18487	X	9-17-5	NANCY L STANGEL AND JOHN J STANGEL	933	113
683	10*18488	X	9-17-5	CHARUNE MENGLE AND KEVIN E ENGLE	933	118
684	10*18508	X	9-17-5	PATRICIA LUANNE BONAR	925	351
685	10*18517	X	9-17-5	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
686	10*18613	X	9-17-5	JANE LOUISE CAIN AND DANIEL CARL HOLTZ	934	603
687	10*18655	X	9-17-5	PATRICIA L LEHN	936	95
688	10*18656	X	9-17-5	PAMELA CALL	936	100
689	10*18658	X	9-17-5	ELIZABETH JANE KELLER	936	107
690	10*18659	X	9-17-5	CATHERINE P MASON	936	112
691	10*18799	X	9-17-5	CHARLES J DARMAFALL DECEASED	937	684
692	10*18805	X	9-17-5	CINDY STEVENS TOZIER	937	628
693	10*19373	X	9-17-5	JESSICA WHEATON	931	411
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700	10*19879	X	9-17-5	MARY V GILSON AND WALTER M GILSON	945	588
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702	10*19937	X	9-17-5	JAMES D STEVENS AND DOROTHY M STEVENS	949	151
703	10*19938	X	9-17-5	JOHN H STEVENS AND LYNDAL STEVENS	949	144
704	10*21026	X	9-17-5	NANCY M MORGAN	951	110

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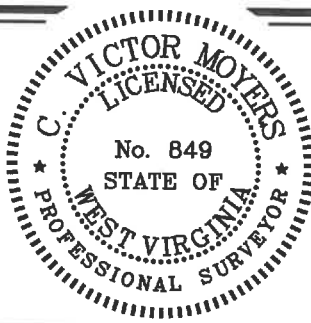
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718	10*23260	X	9-17-5	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
719	10*23668	X	9-17-5	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNAK EXECUTRIX	1009	286
720	10*47051.219.1	X	9-17-5	DAVID LEE FRANKLIN	874	312
721	10*47051.219.27	X	9-17-5	MARSHA BBRISFORD	902	425
722	10*47051.219.36	X	9-17-5	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	615
723	10*47051.185.1	Y	9-17-39	HOMER L SIMMONS AND GLADYS R SIMMONS	885	68
724	10*47051.185.2	Y	9-17-39	LUCINDA RAE ALLEN AND DAVID A ALLEN	894	482
725	10*47051.185.3	Y	9-17-39	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
726	10*47051.185.1	Z	9-17-38	HOMER L SIMMONS AND GLADYS R SIMMONS	885	68
727	10*47051.185.2	Z	9-17-38	LUCINDA RAE ALLEN AND DAVID A ALLEN	894	482
728	10*47051.185.3	Z	9-17-38	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
729	10*47051.185.1	AA	9-17-38.1	HOMER L SIMMONS AND GLADYS R SIMMONS	885	68
730	10*47051.185.2	AA	9-17-38.1	LUCINDA RAE ALLEN AND DAVID A ALLEN	894	482
731	10*47051.185.3	AA	9-17-38.1	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
732	10*18610	BB	9-19-2	NEIL ROBERT YOUNG	934	636
733	10*18614	BB	9-19-2	MICHAEL A WALKER	934	607
734	10*18615	BB	9-19-2	MARK A WALKER	934	609
735	10*18616	BB	9-19-2	CHAD A YOUNG	934	611
736	10*18625	BB	9-19-2	LOIS ELAINE WICKHAM	934	632
737	10*18626	BB	9-19-2	CLARA SUE YOUNG	934	634
738	10*19409	BB	9-19-2	CAROLYN J YOUNG	939	291
739	10*19667	BB	9-19-2	ERIC J YOUNG	937	375
740	10*19669	BB	9-19-2	RONALD W YOUNG	937	373
741	10*19670	BB	9-19-2	RONALD R YOUNG AND GERALDINE YOUNG	937	368
742	10*19671	BB	9-19-2	MELISSA D FLETCHER & SCOTT A FLETCHER	938	316
743	10*21343	BB	9-19-2	LELAND SINCLAIR YOUNG	945	649
744	10*21489	BB	9-19-2	ALEXA B YOUNG	957	299
745	10*21518	BB	9-19-2	SUSAN C YOUNG	949	203
746	10*21568	BB	9-19-2	LARRY R BONAR AND DEBRA L BONAR	957	399
747	10*21573	BB	9-19-2	CARLA J SIMMS	957	397
748	10*21576	BB	9-19-2	AUCE F WINLAND	957	395
749	10*21577	BB	9-19-2	MICHAEL S OTT AND SYBIL OTT	957	446
750	10*21739	BB	9-19-2	CRYSTAL DAWN YOUNG	957	413
751	10*21740	BB	9-19-2	HOLLY A YOUNG	957	415
752	10*21742	BB	9-19-2	GRANT D RICHARDS AND KERRI S RICHARDS	957	456
753	10*21743	BB	9-19-2	SHIRLEY KOONTZ POA KELU KOONTZ BENLINE	957	454
754	10*22022	BB	9-19-2	PENNY YODER AND KEVIN LYNN YODER	952	356
755	10*22057	BB	9-19-2	RONALD R YOUNG	960	584
756	10*22600	BB	9-19-2	AIDEN BOYD YOUNG JENNIFER A YOUNG, PETITIONER	966	462
757	10*15802	CC	9-17-37	TOM GOULDSBERRY	683	640
758	10*15803	CC	9-17-37	CHARLOTTE CROW	683	631
759	10*15804	CC	9-17-37	JOE GOULDSBERRY	683	637
760	10*15805	CC	9-17-37	MARY ELLEN CHAMBERS	684	82
761	10*15806	CC	9-17-37	JOANNE FOX	683	634
762	10*15807	CC	9-17-37	GLORIS VAN SCYOC	685	190
763	10*15808	CC	9-17-37	ANGELA YOHO	685	193
764	10*15809	CC	9-17-37	RYAN J AND MICHELE L RIDDLE	687	225
765	10*15810	CC	9-17-37	FLOSSIE P RUTAN	690	266
766	10*15811	CC	9-17-37	SANDRA M WINSLOW	719	51
767	10*21969	CC	9-17-37	MARK WESLEY RICHARDSON	960	507

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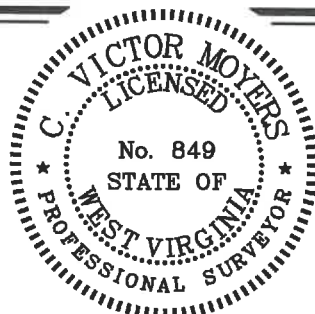
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