

11,327' B.H.

7,156' T.H.

**KEITH STERN N LEASE
WELL 1HM
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. 466,575.71 E. 1,633,444.07
NAD'83 GEO. LAT-(N) 39.774885 LONG-(W) 80.692129
NAD'83 UTM (M) N. 4,402,817.48 E. 526,365.94

LANDING POINT

NAD'83 S.P.C.(FT) N. 464,921.1 E. 1,632,372.0
NAD'83 GEO. LAT-(N) 39.770304 LONG-(W) 80.695864
NAD'83 UTM (M) N. 4,402,307.9 E. 526,047.7

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 470,506.7 E. 1,629,324.0
NAD'83 GEO. LAT-(N) 39.785525 LONG-(W) 80.706974
NAD'83 UTM (M) N. 4,403,994.1 E. 525,090.7

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

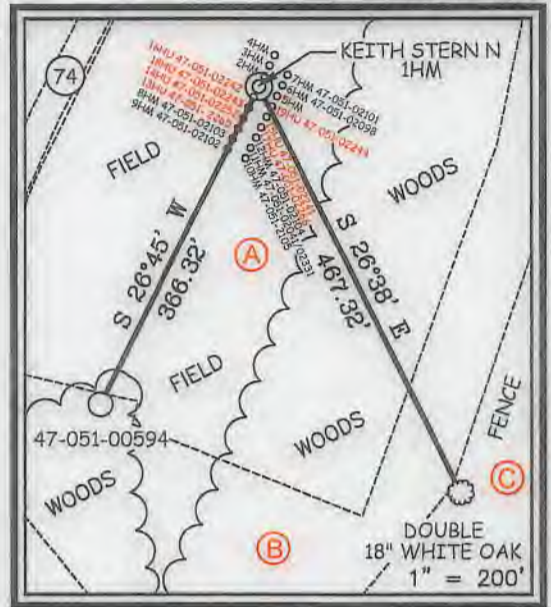
6,113' T.H.

B.H.

T.H.

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-13-8	SHUTLER FAMILY TRUST	56.04
9-13-14	MARGARET K. FOX - LIFE	3.00
9-13-22	TRICYCLE LLC	42.27
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	0.23
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
9-14-23	PATRICIA A. DUGAS	0.559
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

REFERENCES



NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS OR DWELLINGS ≥ 2500 SQ. FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.

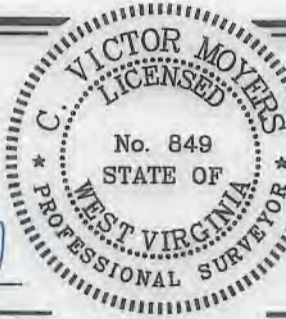


12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 26001 | 304.255.5296
slswv.com

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 JULY 31, 20 18

REVISED AUGUST 19, 20 20

OPERATORS WELL NO. KEITH STERN N-1HM

API WELL NO. 47 - 051 - 02372 **HGA**

STATE WV COUNTY MARSHALL PERMIT 0416/2021

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P1HMR.dwg
KEITH STERN N-1HM-REV1

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 INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: GROUND = 742.30' PROPOSED = 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 ISAAC CROW, 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 MARCELLUS

ESTIMATED DEPTH TVD: 6,398' / TMD: 13,796'

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

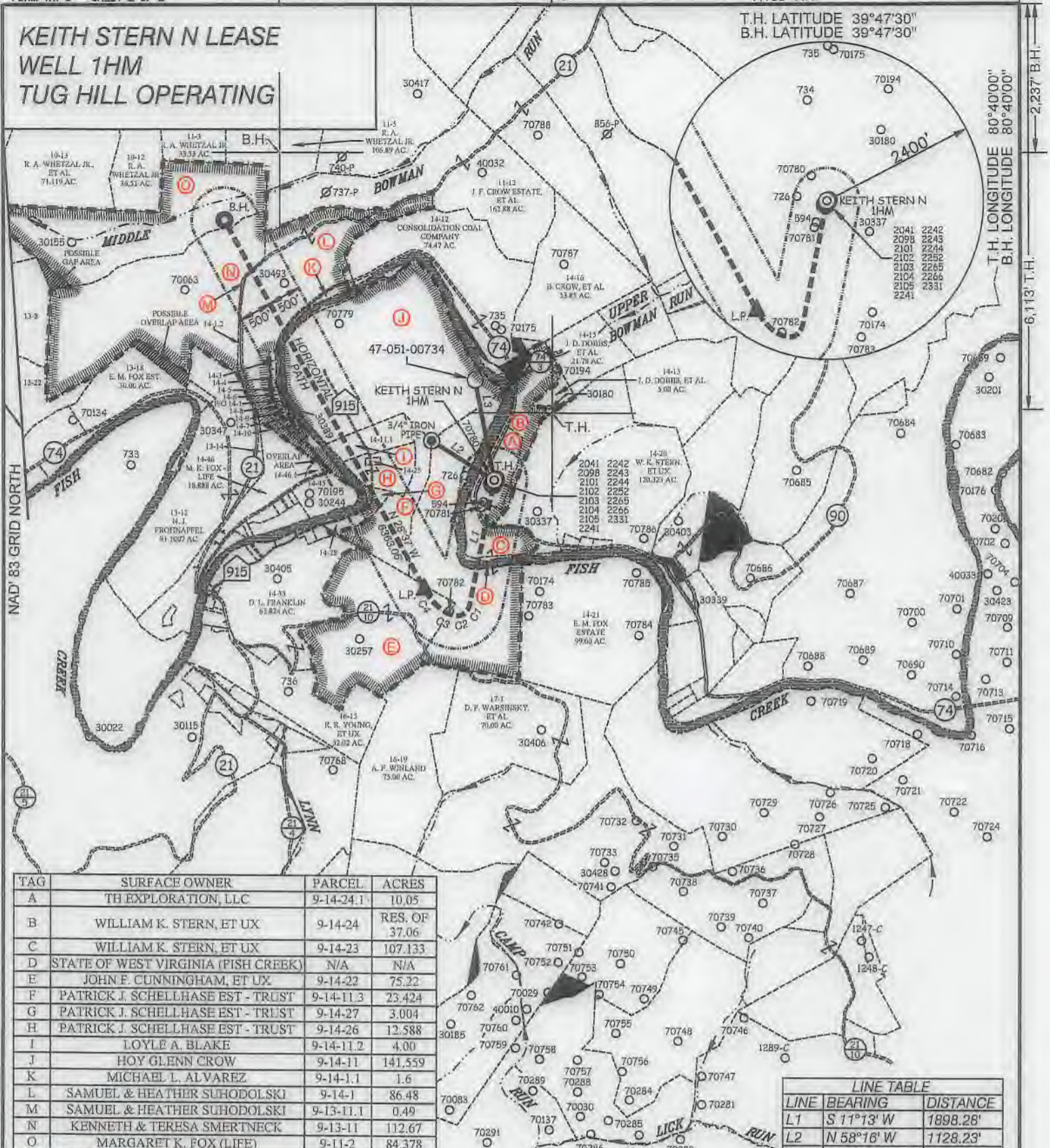
DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

**KEITH STERN N LEASE
WELL 1HM
TUG HILL OPERATING**

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

T.H. LONGITUDE 80°40'00"
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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	9-14-23	107.133
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	JOHN E. CUNNINGHAM, ET UX	9-14-22	75.22
F	PATRICK J. SCHELLHASE EST - TRUST	9-14-11.3	23.424
G	PATRICK J. SCHELLHASE EST - TRUST	9-14-27	3.004
H	PATRICK J. SCHELLHASE EST - TRUST	9-14-26	12.588
I	LOYLE A. BLAKE	9-14-11.2	4.00
J	HOY GLENN CROW	9-14-11	141.559
K	MICHAEL L. ALVAREZ	9-14-1.1	1.6
L	SAMUEL & HEATHER SUHODOLSKI	9-14-1	86.48
M	SAMUEL & HEATHER SUHODOLSKI	9-13-11.1	0.49
N	KENNETH & TERESA SMERTNECK	9-13-11	112.67
O	MARGARET K. FOX (LIFE)	9-11-2	84.378

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 11°13' W	1898.28'
L2	N 58°16' W	1128.23'
L3	N 10°52' W	1551.88'

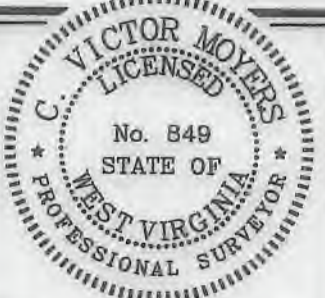
CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	177.86'	270.86'	S 27°56' W	174.68'
C2	155.30'	192.28'	S 74°00' W	151.11'
C3	239.43'	463.23'	N 66°53' W	236.77'
C4	406.56'	988.32'	N 39°44' W	403.70'



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slaw.com

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P.S. 849 *C. Victor Moyers*

LEGEND

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- LEASE # (SEE WW-6A1)
- SURFACE OWNER (SEE TABLE)

SCALE 1" = 2000' FILE NO. 8811P1HMR.dwg
KEITH STERN N-1HM-REV1
DATE JULY 31, 2018
REVISED AUGUST 19, 2020
OPERATORS WELL NO. KEITH STERN N-1HM
API WELL NO. 47-051-02372
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 DIANNA STAMPER
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

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04/15/2021