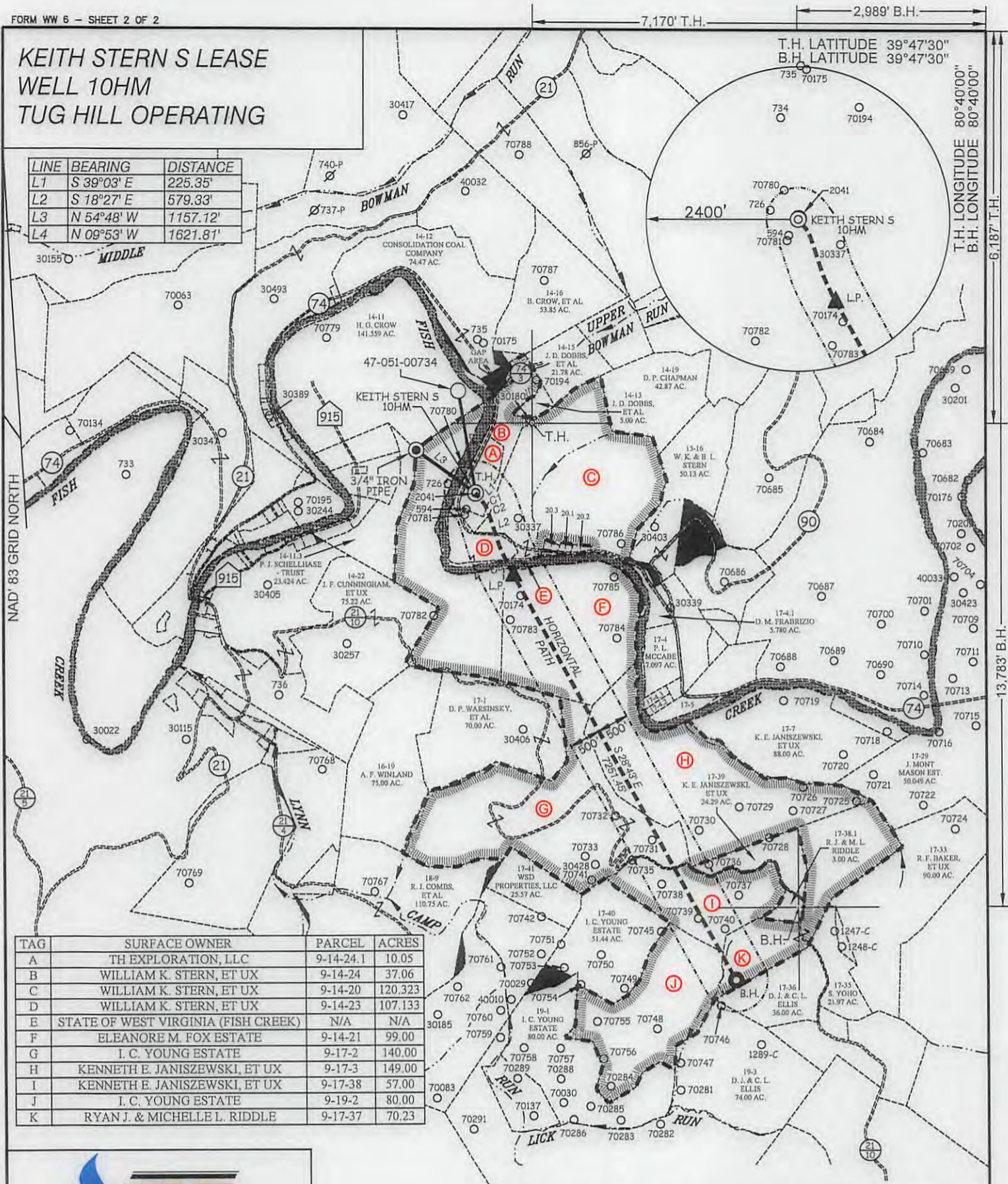


**KEITH STERN S LEASE
WELL 10HM
TUG HILL OPERATING**

LINE	BEARING	DISTANCE
L1	S 39°03' E	225.35'
L2	S 18°27' E	579.33'
L3	N 54°48' W	1157.12'
L4	N 09°53' W	1621.81'



TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION, LLC	9-14-24.1	10.05
B	WILLIAM K. STERN, ET UX	9-14-24	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	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
F	ELEANORE M. FOX ESTATE	9-14-21	99.00
G	I. C. YOUNG ESTATE	9-17-2	140.00
H	KENNETH E. JANISZEWSKI, ET UX	9-17-3	149.00
I	KENNETH E. JANISZEWSKI, ET UX	9-17-38	57.00
J	I. C. YOUNG ESTATE	9-19-2	80.00
K	RYAN J. & MICHELLE L. RIDDLE	9-17-37	70.23

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	70.65'	328.42'	S 26°52' E	70.52'
C2	68.31'	1574.23'	S 21°02' E	68.30'
C3	490.12'	4316.88'	S 26°02' E	489.85'

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634
www.slsurveys.com



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

P.S. 677

Gregory A. Smith
LEGEND

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL 00-00
- LEASE # (SEE WW-6A1) A
- SURFACE OWNER (SEE TABLE)

SCALE 1" = 2000' FILE NO. 8811P10HMv2.dwg

DATE JULY 31, 2018
REVISED _____, 20____
OPERATORS WELL NO. KEITH STERN S-10HM
API WELL NO. 47-051-02105
STATE COUNTY PERMIT

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



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 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

**KEITH STERN S LEASE
WELL 10HM
TUG HILL OPERATING**

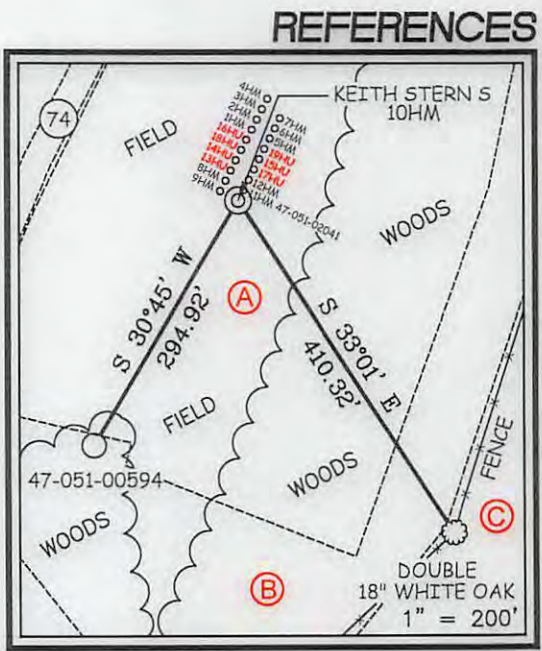
TAX MAP/PCL	ADJOINING SURFACE OWNER	ACRES
14-20.1	WILLIAM K. STERN, ET UX	1.321
14-20.2	WILLIAM K. STERN, ET UX	1.525
14-20.3	WILLIAM K. STERN, ET UX	0.831
17-4.2	RICKY E. DAVIS	1.301
17-4.3	SYLVIA JEAN NEEHOUSE	1.329
17-5	KENNETH E. JANISZEWSKI, ET UX	5.00

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

NAD'83 S.P.C.(FT)	N. 466,502.04	E. 1,633,429.99
NAD'83 GEO.	LAT-(N) 39.774682	LONG-(W) 80.692175
NAD'83 UTM (M)	N. 4,402,794.96	E. 526,362.02
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 465,210.7	E. 1,634,026.6
NAD'83 GEO.	LAT-(N) 39.771159	LONG-(W) 80.689992
NAD'83 UTM (M)	N. 4,402,404.6	E. 526,550.4
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 458,851.3	E. 1,637,511.3
NAD'83 GEO.	LAT-(N) 39.753828	LONG-(W) 80.677299
NAD'83 UTM (M)	N. 4,400,484.9	E. 527,644.3

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

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



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 IS 1"=2000'

8/1/18



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. 677 *Gregory A. Smith*



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

DATE JULY 31, 20 18

REVISED _____, 20 _____

OPERATORS WELL NO. KEITH STERN S-10HM

API WELL NO. 47-051-02105
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P10HMv2.dwg
SCALE 1" = 2000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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



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

LOCATION: ELEVATION GROUND = 741.00' 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: LEASE NO. SEE WW-6A1

DRILL X CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE X 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: 6,405' / TMD: 13,996'

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