

**KEITH STERN S LEASE  
WELL 11HM  
TUG HILL OPERATING**

7,164' T.H.

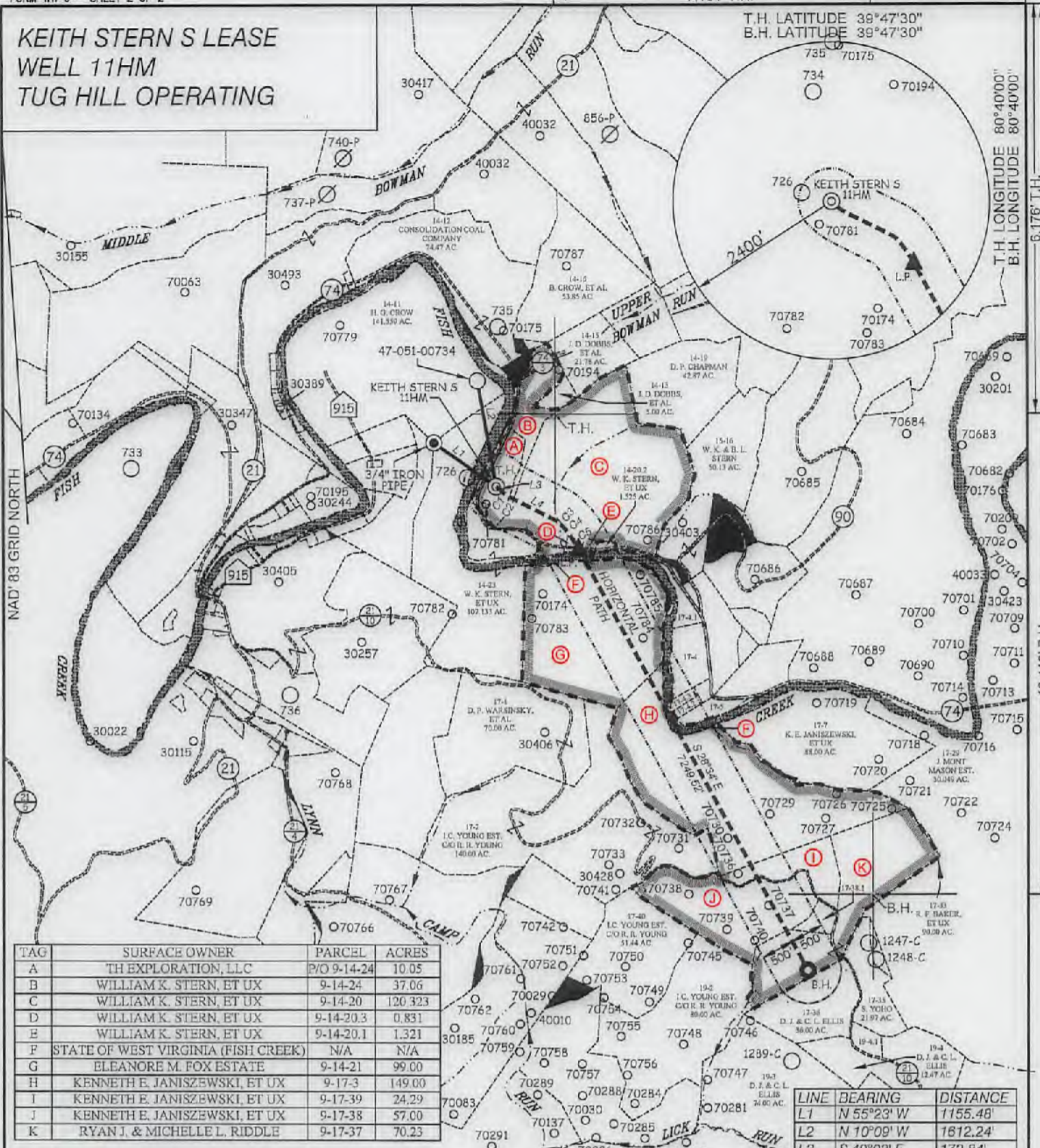
2,355' B.H.

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

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

NAD'83 GRID NORTH

13,416' B.H.



TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION, LLC	P/O 9-14-24	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	9-14-20.3	0.831
E	WILLIAM K. STERN, ET UX	9-14-20.1	1.321
F	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
G	ELEANORE M. FOX ESTATE	9-14-21	99.00
H	KENNETH E. JANISZEWSKI, ET UX	9-17-3	149.00
I	KENNETH E. JANISZEWSKI, ET UX	9-17-39	24.29
J	KENNETH E. JANISZEWSKI, ET UX	9-17-38	57.00
K	RYAN J. & MICHELLE L. RIDDLE	9-17-37	70.23

LINE	BEARING	DISTANCE
L1	N 55°23' W	1155.48'
L2	N 10°09' W	1612.24'
L3	S 49°03' E	172.84'
L4	S 63°32' E	706.28'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	39.91'	298.26'	S 55°46' E	39.88'
C2	135.02'	2083.33'	S 61°38' E	134.99'
C3	106.44'	381.08'	S 51°25' E	106.10'
C4	221.89'	1250.64'	S 38°28' E	221.60'
C5	215.05'	2251.26'	S 31°18' E	214.97'

**SLS**  
Land & Energy Development  
Solutions from the ground up.  
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26031 • (304) 582-9834  
www.slsurveyors.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
- LEASE # (SEE WW-6A1)
- SURFACE OWNER (SEE TABLE)

SCALE 1" = 2000' FILE NO. 8811P11HM.dwg  
DATE APRIL 17, 2018  
REVISED \_\_\_\_\_, 20\_\_\_\_  
OPERATORS WELL NO. KEITH STERN S-11HM  
API WELL NO. 47-051-02041 H6A  
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 CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

08/03/2018

COUNTY NAME PERMIT



47 051 02041  
 7,164' T.H.      2,355' B.H.

**KEITH STERN S LEASE  
 WELL 11HM  
 TUG HILL OPERATING**

T.H. LATITUDE 39°50'00"  
 B.H. LATITUDE 39°47'30"

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

NAD'83 S.P.C.(FT)	N. 466,512.72	E. 1,633,435.45
NAD'83 GEO.	LAT-(N) 39.774712	LONG-(W) 80.692156
NAD'83 UTM (M)	N. 4,402,793.24	E. 526,363.63

LANDING POINT

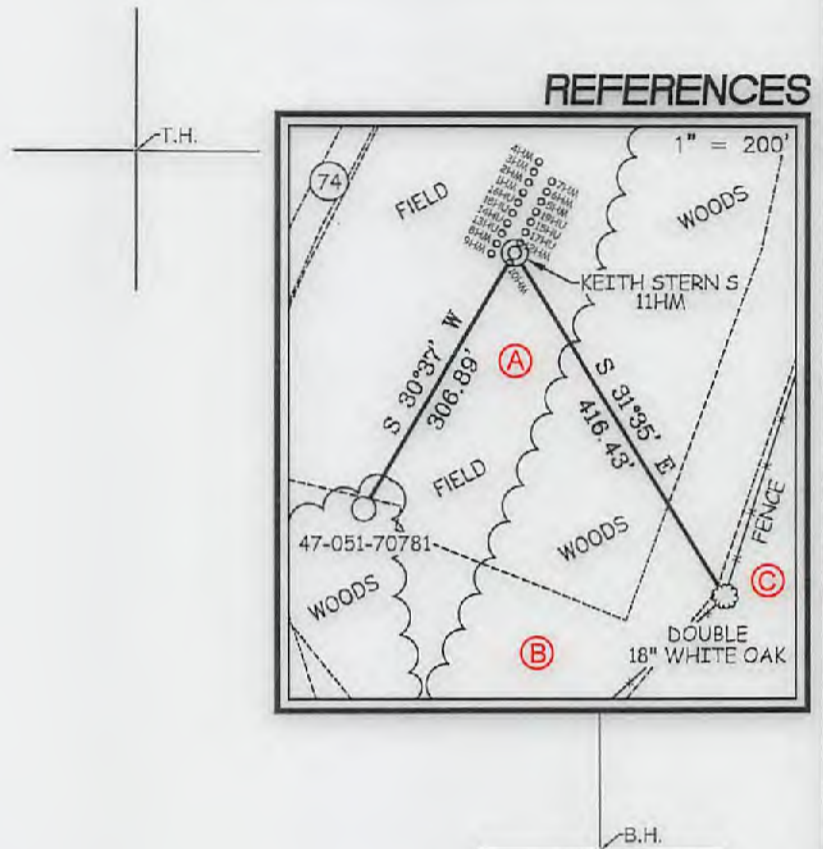
NAD'83 S.P.C.(FT)	N. 465,574.9	E. 1,634,632.6
NAD'83 GEO.	LAT-(N) 39.772183	LONG-(W) 80.687675
NAD'83 UTM (M)	N. 4,402,518.9	E. 526,748.3

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 459,208.3	E. 1,638,150.0
NAD'83 GEO.	LAT-(N) 39.754831	LONG-(W) 80.675044
NAD'83 UTM (M)	N. 4,400,596.9	E. 527,837.1

T.H. LONGITUDE 80°40'00"  
 B.H. LONGITUDE 80°40'00"  
 6,176' T.H.  
 13,418' B.H.

TAX MAP/PCL	ADJOINING SURFACE OWNER	ACRES
17-4	PHILLIP L. MCCABE	7.097
17-4.1	DAVID M. FRABRIZIO	5.780
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
17-38.1	RYAN J. & MICHELLE L. RIDDLE	3.00
19-4.1	SAMUEL YOHO	3.97



**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'



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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 APRIL 17, 20 18  
 REVISED \_\_\_\_\_, 20 \_\_\_\_  
 OPERATORS WELL NO. KEITH STERN S-11HM  
 API WELL NO. 47  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8811P11HM.dwg  
 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 = 1,342.20' ELEVATION PROPOSED = 1,326.35' 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 MARCELLUS ESTIMATED DEPTH TVD: 6,409' / TMD: 14,322'

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

08/03/2018

COUNTY TIME PERMIT