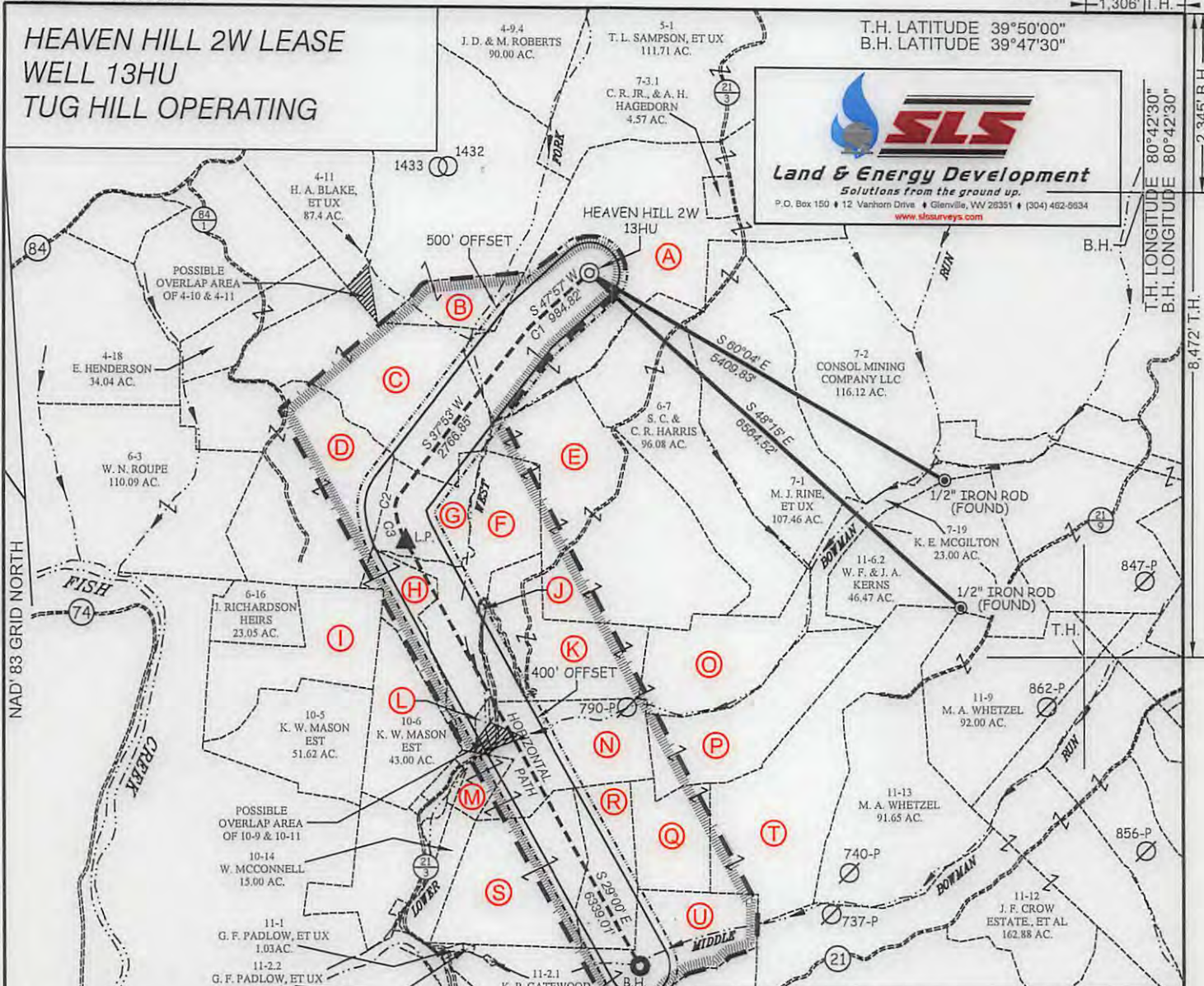


**HEAVEN HILL 2W LEASE
WELL 13HU
TUG HILL OPERATING**

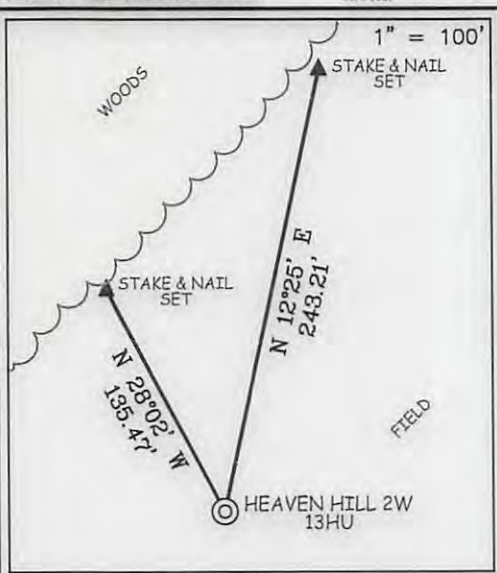
T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°47'30"

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T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°42'30"
8,472' T.H.
2,345' B.H.

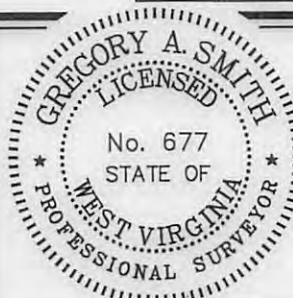
REFERENCES



TAG	SURFACE OWNER	PARCEL	ACRES
A	CHARLES R. JR., & ANNE MARIE HAGEDORN	9-7-3	203.07
B	PAUL STEVEN ALLEN, ET UX	9-4-10	172.3
C	RONALD D. MASON, ET UX	9-6-5	92.85
D	ROBERT LEE CARNEY, ET UX	9-6-4	118.17
E	J. F. CROW ESTATE, ET AL	9-6-9	131.8
F	RONALD KEITH & RUBY MASON	9-6-12	59.00
G	RAY C. HARTZELL, ET AL	9-6-13	34.50
H	KENNETH W. MASON EST	9-6-14	19.37
I	J. F. CROW ESTATE, ET AL	9-6-15	55.23
J	J. F. CROW ESTATE, ET AL	9-6-11	7/8 AC.
K	J. F. CROW ESTATE, ET AL	9-6-10	64.01
L	RALPH MARTIN TAYLOR	9-10-10	2.23
M	J. F. CROW ESTATE, ET AL	9-10-9	17.14
N	J. F. CROW ESTATE, ET AL	9-10-11	60.00
O	J. F. CROW ESTATE, ET AL	9-6-8	53.33
P	RHDK INVESTMENTS LLC	9-11-4	53.00
Q	RAY A. WHETZEL JR., ET AL	9-11-3	33.33
R	RAY A. WHETZEL JR., ET AL	9-10-12	36.51
S	RAY A. WHETZEL JR., ET AL	9-10-13	71.11
T	RAY A. WHETZEL JR., ET AL	9-11-5	106.89
U	MARGARET K. FOX - LIFE	9-11-2	84.37

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	129'	596.32'	S 43°52' W	128.75'
C2	171.3'	247.44'	S 12°21' W	167.9'
C3	440.19'	1054.22'	S 18°14' E	437'

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'83 S.P.C.(FT) N. 479,470.78 E. 1,627,756.59
 NAD'83 GEO. LAT.(N) 39.810074 LONG.(W) 80.712982
 NAD'83 UTM (M) N. 4,406,717.08 E. 524,567.56
LANDING POINT
 NAD'83 S.P.C.(FT) N. 475,955.7 E. 1,625,337.6
 NAD'83 GEO. LAT.(N) 39.800335 LONG.(W) 80.721422
 NAD'83 UTM (M) N. 4,405,633.9 E. 523,849.5
BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 470,411.6 E. 1,628,411.1
 NAD'83 GEO. LAT.(N) 39.785230 LONG.(W) 80.710218
 NAD'83 UTM (M) N. 4,403,960.5 E. 524,813.1



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

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 PGS. 1 & 3)
- SURFACE OWNER (SEE TABLE)

SCALE 1" = 2000' FILE NO. 8703P13HU.dwg
 DATE JULY 27, 20 17
 REVISED _____, 20 _____
 OPERATORS WELL NO. HEAVEN HILL 2W-13HU
 API WELL NO. 47 - 051 - 01957HEA
 NO. STATE COUNTY PERMIT

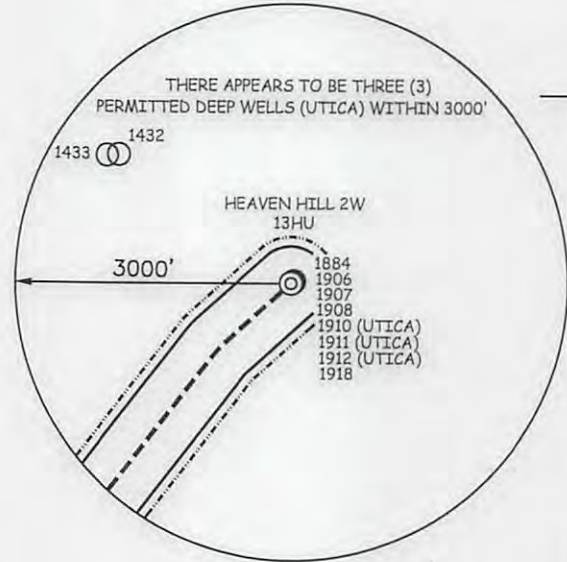
STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS

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

**HEAVEN HILL 2W LEASE
WELL 13HU
TUG HILL OPERATING**

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

No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owners	Dead Book/Page
1	10*15521	A	9-7-3	VENANGO 21ST CENTURY ENERGY INC	722 281
2	10*15608	A	9-7-3	CHARLES B HAGEDORN JR	816 423
3	10*47051.073.1	A	9-7-3	VENANGO 21ST CENTURY ENERGY INC	888 618
4	10*47051.073.2	A	9-7-3	PATRIOT RESTORATIONS LLC	908 541
5	10*47051.073.3	A	9-7-3	TRIENERGY HOLDINGS, LLC	878 330
6	10*17229	B	9-4-10	STEPHEN MENENDEZ	913 66
7	10*15661	C	9-6-5	CHESTNUT HOLDINGS LLC	839 170
8	10*15510	D	9-6-4	ROBERT LEE CARNEY AND BONNIE ANNE CARNEY	682 255
9	10*15521	E	9-6-9	ELAINE PHELPS ET VIR	718 376
10	10*15521	E	9-6-9	DAVID E CROW	718 376
11	10*15512	E	9-6-9	FRANCES COFFEY	718 378
12	10*15513	E	9-6-9	KAY KEYES	718 330
13	10*15514	E	9-6-9	L PAUL CROW	718 336
14	10*15515	E	9-6-9	DESIRE L CROW	718 334
15	10*15516	E	9-6-9	ROSE MARIE KIELGCZEWSKI	718 354
16	10*15517	E	9-6-9	DIANNE GELLNER & GARY GELLNER	718 345
17	10*15518	E	9-6-9	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718 347
18	10*15519	E	9-6-9	JOHN CROW	726 580
19	10*15520	E	9-6-9	TIMOTHY CROW	726 582
20	10*47051.123.1	E	9-6-9	LLOYD G BAKER	865 389
21	10*47051.123.2	E	9-6-9	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873 143
22	10*15525	F	9-6-12	RONALD KETH MASON ET UX	772 445
23	10*15541	F	9-6-12	MARY JOTH FROHNAPPEL	781 312
24	10*15542	F	9-6-12	KENNETH D SIBURT	781 218
25	10*15543	F	9-6-12	SANDRA FROWEN	781 307
26	10*15544	F	9-6-12	VICKI J CHERRY A/W/VICKIE L CHERRY	793 318
27	10*15545	F	9-6-12	JAMES B SIBURT ET UX	793 312
28	10*15546	F	9-6-12	ALAN K SIBURT ET UX	793 325
29	10*15547	F	9-6-12	RODNEY L SIBURT	793 346
30	10*15507	G	9-6-13	RAY C HARTZELL AND CAROL J. HARTZELL, HUSBAND AND WIFE	689 162
31	10*15504	H	9-6-14	JAMES MASON ET AL	692 461
32	10*15510	I	9-6-15	ELAINE PHELPS ET VIR	718 376
33	10*15511	I	9-6-15	DAVID E CROW	718 376
34	10*15512	I	9-6-15	FRANCES COFFEY	718 378
35	10*15513	I	9-6-15	KAY KEYES	718 330
36	10*15514	I	9-6-15	L PAUL CROW	718 336
37	10*15515	I	9-6-15	DESIRE L CROW	718 334
38	10*15516	I	9-6-15	ROSE MARIE KIELGCZEWSKI	718 354
39	10*15517	I	9-6-15	DIANNE GELLNER & GARY GELLNER	718 345
40	10*15518	I	9-6-15	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718 347
41	10*15519	I	9-6-15	JOHN CROW	726 580
42	10*15520	I	9-6-15	TIMOTHY CROW	726 582
43	10*47051.123.1	I	9-6-15	LLOYD G BAKER	865 389
44	10*47051.123.2	I	9-6-15	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873 143
45	10*15510	J	9-6-11	ELAINE PHELPS ET VIR	718 376
46	10*15511	J	9-6-11	DAVID E CROW	718 376
47	10*15512	J	9-6-11	FRANCES COFFEY	718 378
48	10*15513	J	9-6-11	KAY KEYES	718 330
49	10*15514	J	9-6-11	L PAUL CROW	718 336
50	10*15515	J	9-6-11	DESIRE L CROW	718 334
51	10*15516	J	9-6-11	ROSE MARIE KIELGCZEWSKI	718 354
52	10*15517	J	9-6-11	DIANNE GELLNER & GARY GELLNER	718 345
53	10*15518	J	9-6-11	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718 347
54	10*15519	J	9-6-11	JOHN CROW	726 580
55	10*15520	J	9-6-11	TIMOTHY CROW	726 582
56	10*47051.123.1	J	9-6-11	LLOYD G BAKER	865 389
57	10*47051.123.2	J	9-6-11	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873 143
58	10*15510	K	9-6-10	ELAINE PHELPS ET VIR	718 376
59	10*15511	K	9-6-10	DAVID E CROW	718 376
60	10*15512	K	9-6-10	FRANCES COFFEY	718 378
61	10*15513	K	9-6-10	KAY KEYES	718 330
62	10*15514	K	9-6-10	L PAUL CROW	718 336
63	10*15515	K	9-6-10	DESIRE L CROW	718 334
64	10*15516	K	9-6-10	ROSE MARIE KIELGCZEWSKI	718 354
65	10*15517	K	9-6-10	DIANNE GELLNER & GARY GELLNER	718 345
66	10*15518	K	9-6-10	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718 347
67	10*15519	K	9-6-10	JOHN CROW	726 580
68	10*15520	K	9-6-10	TIMOTHY CROW	726 582
69	10*47051.123.1	K	9-6-10	LLOYD G BAKER	865 389
70	10*47051.123.2	K	9-6-10	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873 143
71	10*47051.165.0	L	9-10-10	RALPH MARTIN TAYLOR	865 386
72	10*15510	M	9-10-9	ELAINE PHELPS ET VIR	718 376
73	10*15511	M	9-10-9	DAVID E CROW	718 376
74	10*15512	M	9-10-9	FRANCES COFFEY	718 378
75	10*15513	M	9-10-9	KAY KEYES	718 330



T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°42'30"
2,345' B.H.
8,472' T.H.

NOTES ON SURVEY

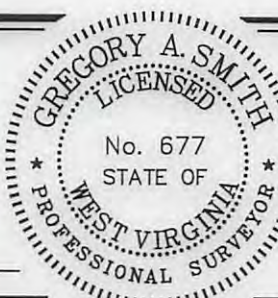
1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPD MARK SCALE IS 1"=2000'

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'83 S.P.C.(FT)	N. 479,470.78	E. 1,627,756.58	
NAD'83 GEO.	LAT-(N) 39.810074	LONG-(W) 80.712982	
NAD'83 UTM (M)	N. 4,406,717.08	E. 524,567.56	
LANDING POINT			
NAD'83 S.P.C.(FT)	N. 475,955.7	E. 1,625,337.6	
NAD'83 GEO.	LAT-(N) 39.800335	LONG-(W) 80.721422	
NAD'83 UTM (M)	N. 4,405,633.9	E. 523,848.5	
BOTTOM HOLE			
NAD'83 S.P.C.(FT)	N. 470,411.6	E. 1,628,411.1	
NAD'83 GEO.	LAT-(N) 39.785230	LONG-(W) 80.710218	
NAD'83 UTM (M)	N. 4,403,960.5	E. 524,813.1	

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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 27, 20 17
REVISED _____, 20 ____
OPERATORS WELL NO. HEAVEN HILL 2W-13HU
API WELL NO. 47 - 051 - 01959H6A
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8703P13HU.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 X LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION X STORAGE DEEP X SHALLOW

LOCATION: GROUND = 1,350.0' ELEVATION PROPOSED = 1,331.26' WATERSHED WEST FORK OF LOWER BOWMAN RUN OF FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER C.R. JR. & A.H. HAGEDORN ACREAGE 203.07±
ROYALTY OWNER C.R. JR. & A.H. HAGEDORN ET AL (SEE ABOVE) ACREAGE 203.07±

PROPOSED WORK: LEASE NO. SEE PAGES 1 & 2 **10/27/2017**
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 POINT PLEASANT
ESTIMATED DEPTH TVD: 11,789' / TMD: 19,088'

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