

**OLD CROW N LEASE
UTICA UNIT - 484.05 AC ±
WELL 19HU
TUG HILL OPERATING**

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

LINE	BEARING	DISTANCE
L1	N 65°57' E	271.26'
L2	N 66°49' W	1292.05'
L3	S 82°14' W	1001.05'

MND 20 AD
47-051-02011
MND 20 BU
47-051-02012

NAD 83 GRID NORTH

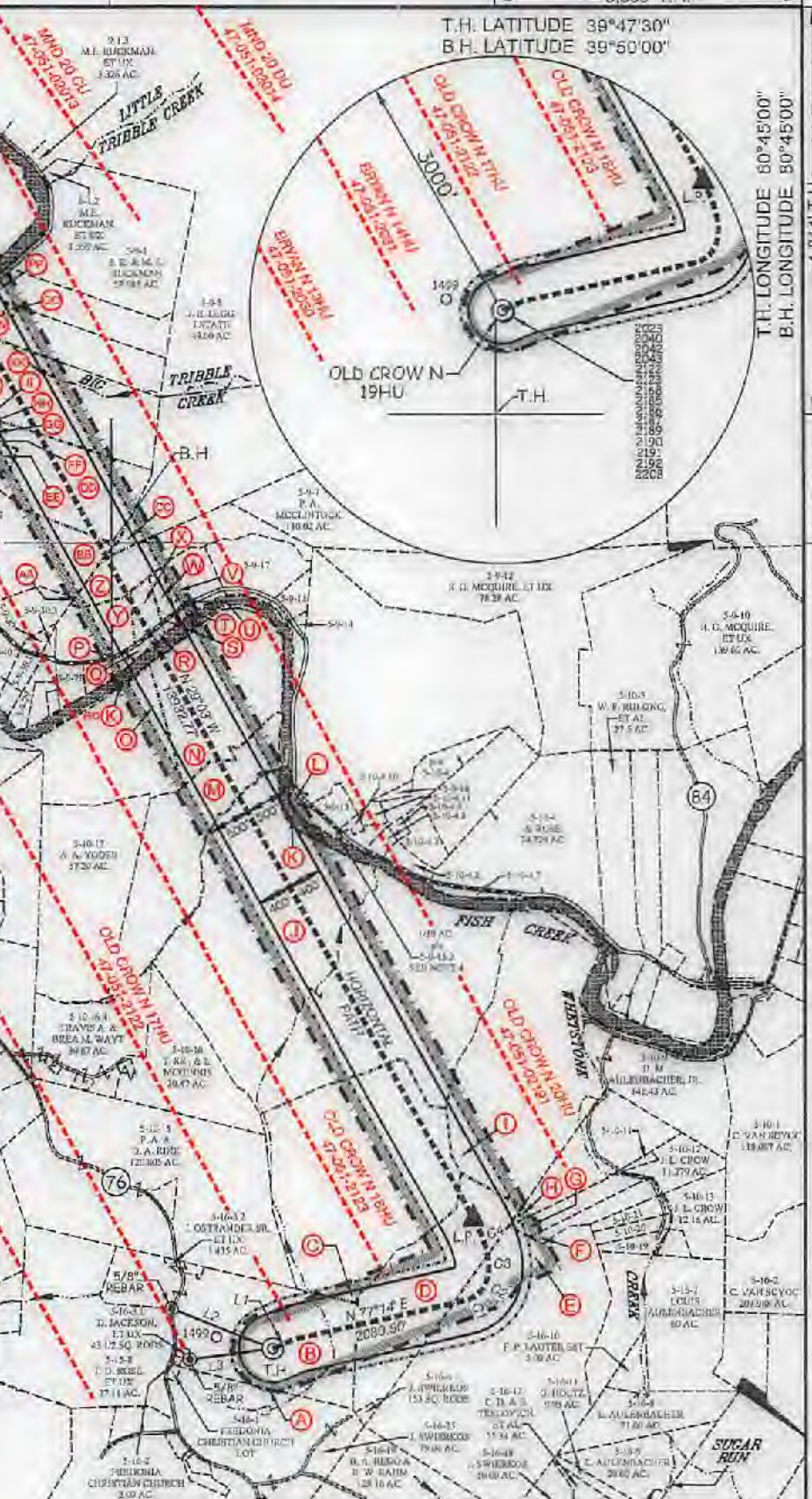
TAG	SURFACE OWNER	PARCEL	ACRES
A	JOHN SWIBKOS	5-16-25	79.04
B	DONNA VIVIAN YOHO - TOD	5-16-3	71.203
C	JOHN SWIBKOS	5-16-16	160.09
D	JOHN SWIBKOS	5-16-5	32.07
E	JOHN SWIBKOS	5-16-6	134.05
F	LOUIS AULONBACHER	5-10-22	6.461
G	JOHN PAUL BIRDA, JR. ET AL	5-10-21	8.86
H	LOUIS DELBERT VAN SOYOC	5-10-10	24.30
I	HERBERT M. AULONBACHER, JR.	5-10-9	141.43
J	HERBERT M. AULONBACHER, JR.	5-10-3	725.50
K	FISH CREEK WV DIVISION OF NATURAL RESOURCES	87A	70A
L	JANON J. STEED	5-9-13.2	135.61
M	WILLIAM FRASER, ET AL	5-10-2	52.38
N	EDWIN C. MILLER	5-9-20	51.54
O	EDWIN C. MILLER	5-10-1	49.86
P	JOHN E. KAZEMKA	5-9-27	4.02
Q	EDWIN C. MILLER	5-9-26	1.00
R	ALBERT P. KAZEMKA	5-9-22	0.50
S	ALBERT P. KAZEMKA	5-9-21	100 PCL
T	MARK S. STOCKLASK	5-9-17.1	1.187
U	MALCOMB E. BROWLER, ET AL	5-9-18	25,809.92 FT
V	DENNIS P. CADMUS	5-9-42	5.42
W	MARK STEPHEN STOCKLASK	5-9-19	2.38
X	DELBERT K. & LINDA E. MYERS	5-9-23	7.01
Y	DELBERT K. & LINDA E. MYERS	5-9-25	14.49
Z	DENNIS P. CADMUS	5-9-24	21AC 499
AA	DENNIS P. CADMUS	5-9-29	9.50
BB	KEITH D. DANIELS, ET UX	5-9-33	40.331
CC	LLOYD C. & JUDITH C. ARNOLD	5-9-41	93.00
DD	LLOYD C. & JUDITH C. ARNOLD	5-9-4	18.854
EE	SAMUEL L. CANTERBURY, ET UX	5-9-4.19	2.075
FF	SAMUEL L. CANTERBURY, ET UX	5-9-4.17	0.500
GG	PAUL G. BROWN	5-9-4.18	0.657
HH	PAUL G. BROWN	5-9-4.15	0.500
II	PAUL G. BROWN	5-9-4.14	0.500
JJ	DEBORAH S. MIDCAP	5-9-4.10	0.812
KK	LLOYD C. & JUDITH C. ARNOLD	5-9-35	47.01
LL	THOMAS MIDCAP, ET UX	5-9-4.5	0.376
MM	GEORGE P. MINOIL, ET AL - LIFE	5-9-33.1	0.641
NN	JAMES R. LEROY ESTATE	5-9-2	23.141
OO	KENNETH E. WHITE, ET UX	5-9-2.2	0.357
PP	JEFFREY L. LEROY ESTATE	5-9-2.1	20.5
QQ	EDWIN C. MILLER	5-9-7	180.31

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P.S. 849 *C. Victor Moyers*

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD83 S.P.C.(FT)	N. 498,146.82	E. 1,613,548.58	
NAD83 GEO.	LAT-(N) 39.779452	LONG-(W) 80.762886	
NAD83 UTM (M)	N. 4,403,194.88	E. 520,296.67	
LANDING POINT			
NAD83 S.P.C.(FT)	N. 499,985.4	E. 1,615,896.3	
NAD83 GEO.	LAT-(N) 39.782767	LONG-(W) 80.754508	
NAD83 UTM (M)	N. 4,403,675.7	E. 521,016.3	
BOTTOM HOLE			
NAD83 S.P.C.(FT)	N. 491,866.1	E. 1,609,172.2	
NAD83 GEO.	LAT-(N) 39.815042	LONG-(W) 80.779251	
NAD83 UTM (M)	N. 4,407,352.2	E. 518,893.8	

SCALE 1" = 2000'
FILE NO. 8786P19HUR3.dwg
DATE FEBRUARY 22, 2019
REVISED 04/25/19, 05/14/19, 08/28/19
OPERATORS WELL NO. OLD CROW N-19HU
API WELL NO. 47-051-02270
NO. STATE COUNTY PERMIT



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	205.07'	376.99'	N 62°15' E	202.55'
C2	247.60'	382.13'	N 25°47' E	243.48'
C3	263.15'	707.40'	N 03°49' W	261.64'
C4	424.74'	1392.49'	N 21°43' W	423.48'



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

(+) 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)

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

**OLD CROW N LEASE
UTICA UNIT - 484.05 AC±
WELL 19HU
TUG HILL OPERATING**

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

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

NAD'83 S.P.C.(FT)	N. 488,148.92	E. 1,613,548.58
NAD'83 GEO.	LAT-(N) 39.778452	LONG-(W) 80.752896
NAD'83 UTM (M)	N. 4,403,194.88	E. 520,296.67

LANDING POINT

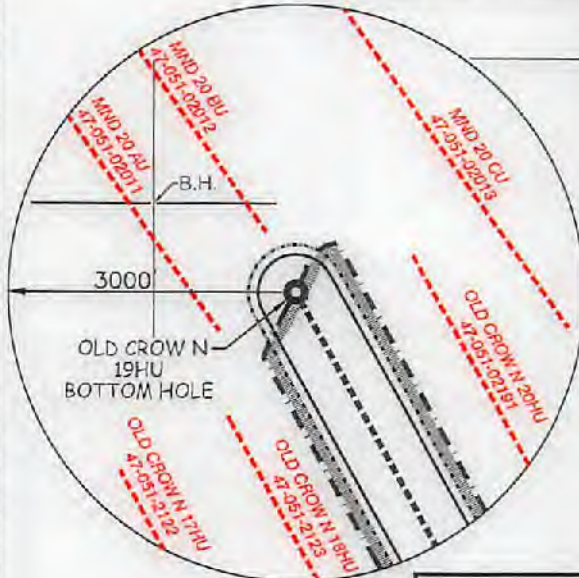
NAD'83 S.P.C.(FT)	N. 489,685.4	E. 1,615,935.3
NAD'83 GEO.	LAT-(N) 39.782767	LONG-(W) 80.754568
NAD'83 UTM (M)	N. 4,403,675.7	E. 521,016.3

BOTTOM HOLE

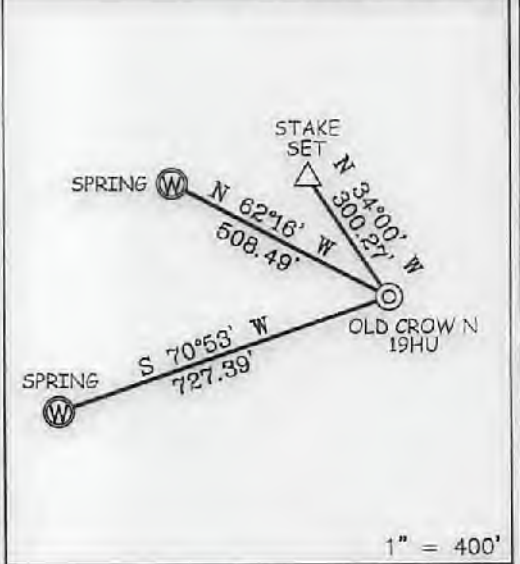
NAD'83 S.P.C.(FT)	N. 481,866.1	E. 1,609,172.2
NAD'83 GEO.	LAT-(N) 39.815942	LONG-(W) 80.779251
NAD'83 UTM (M)	N. 4,407,352.2	E. 518,899.5

T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°45'00"

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
5-9-4.3	HARRY E. JR. & MICHELA KARR	1.471
5-9-4.5	DYLAN AULENBACHER	0.991
5-9-4.7	FRANCIS D. BARR, ET UX	0.481
5-9-4.9	THOMAS MIDCAP, ET UX	0.375
5-9-4.11	GARY PORTER	1.00
5-9-4.12	SAMUEL L. & DEBRA N. CANTERBURY	0.650
5-9-4.13	SAMUEL LEE CANTERBURY, ET UX	0.9284
5-9-4.16	SAMUEL L. & DEBRA N. CANTERBURY	0.517
5-9-13	KAREN M. KAZEMKA (N.K.A. KAREN M. WILSON)	3.69
5-9-14	DENNIS P. CADMUS	136 POLES
5-9-15	DENNIS P. CADMUS	3.85
5-9-16	SHEENA ROSE	1.05
5-9-17	DENNIS P. CADMUS	28.063
5-9-28	WILLIAM N. & DELORES E. MCDONOUGH - LIFE	4.01
5-9-29	JAMES M. & ROBERT A. L. STERN	3.1777
5-9-30	MATTHEW B. GRIFFITH	2.708
5-9-30.1	DAVID JR. & MELISSA LOVE	2.518
5-9-30.3	MATTHEW B. GRIFFITH	0.82
5-9-32	MILLARD JUNIOR BONNETTE, ET UX	2.321
5-9-32.3	RUBY M. HENRY ESTATE	0.552
5-9-32.4	DAVID D. & CHRISTINE S. DANIELS	1.025
5-9-32.5	GARNET D. MIDCAP	270±390'
5-9-32.8	TIMOTHY Q. HOYT, ET UX	0.711
5-9-32.10	TIMOTHY Q. HOYT, ET UX	0.588
5-9-32.11	TIMOTHY Q. HOYT, ET UX	1.717
5-9-32.12	JOHN DRAKE ALBAUGH	1.09
5-9-33.1	KEITH D. & BEVERLY A. DANIELS	1.00
5-9-33.2	KEITH D. & BEVERLY A. DANIELS	1.534
5-9-33.4	DAVID D. & CHRISTINE S. DANIELS	1.025
5-9-36	FRANK T. & ANNA M. WALKER	1.55
5-9-37	FRANK T. & ANNA M. WALKER	10.857
5-9-38	SHIRLEY A. HILL ESTATE	3.331
5-9-38.10	ROBERT S. COWGILL	0.920
5-9-40	SHIRLEY A. HILL ESTATE	3.92
5-10-4.2	JACK E. RECTOR	2.887
5-10-4.3	ANTHONY A. & KAREN L. ANKROM	5.697
5-10-4.7	LINDA BECHTOLD, ET AL	2.110
5-10-4.8	SAMUEL FRANKLIN	1.898
5-10-4.9	JAMES E. KAREN M. WILSON	0.8692
5-10-4.10	SHEENA ROSE	0.803
5-10-4.11	JASON E. BONNETTE	1.50
5-10-11	JOSEPH LEE CROW	LOT
5-10-19	BRADLEY L. & CONNIE I. HUBBARD	3.209
5-10-20	LOUIS AULENBACHER	3.554
5-10-21	LOUIS AULENBACHER	3.667



REFERENCES

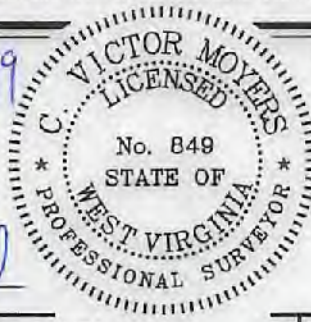


NOTES ON SURVEY

- 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 OLD CROW N-19HU (47-051-02190) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF EXISTING WELLS BRYAN N 13HU (47-051-02030), BRYAN N 14HU (47-051-02031), OLD CROW N-17HU (47-051-02122), OLD CROW N-18HU (47-051-02123), MND20 AU (47-051-02011), MND20 BU (47-051-02012), MND20 CU (47-051-02013), MND20 DJ (47-051-02014) & PROPOSED OLD CROW N-20HU (47-051-02191).
- THE ASSESSMENT OF THE 1/10 ACRE LOT, OWNED BY JASON J. STEED AND DESCRIBED AS THE SECOND PARCEL IN DEED BOOK 643 PAGE 319 AND CORRECTIVE DEED 843 PAGE 300, IS NOT CURRENTLY ACCOUNTED FOR WITHIN THE 135.61 ACRE ASSESSMENT OF SURFACE TAX MAP 5-9-13.2
- THIS PLAT WAS CREATED FOR REVISED BOREHOLE PERMIT.

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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. 849 *C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE FEBRUARY 22, 20 19
REVISED 04/25/19, 05/14/19, 08/28/19
OPERATORS WELL NO. OLD CROW N-19HU
API WELL NO. 47 - 051 - 02270
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 8796P19HUR3.dwg
OLD CROW NORTH 19HU REV0
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 = 1,286.80' ELEVATION PROPOSED = 1,264.99' WATERSHED TRIBUTARY OF FISH CREEK (HUC-10)

DISTRICT FRANKLIN COUNTY MARSHALL QUADRANGLE POWHATAN POINT 7.5'

SURFACE OWNER DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO ACREAGE 71.205±

ROYALTY OWNER DONNA VIVIAN YOHO, ET AL - SEE ADDITIONAL SHEETS ACREAGE 71.205±

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: 11,614' / TMD: 26,626'

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

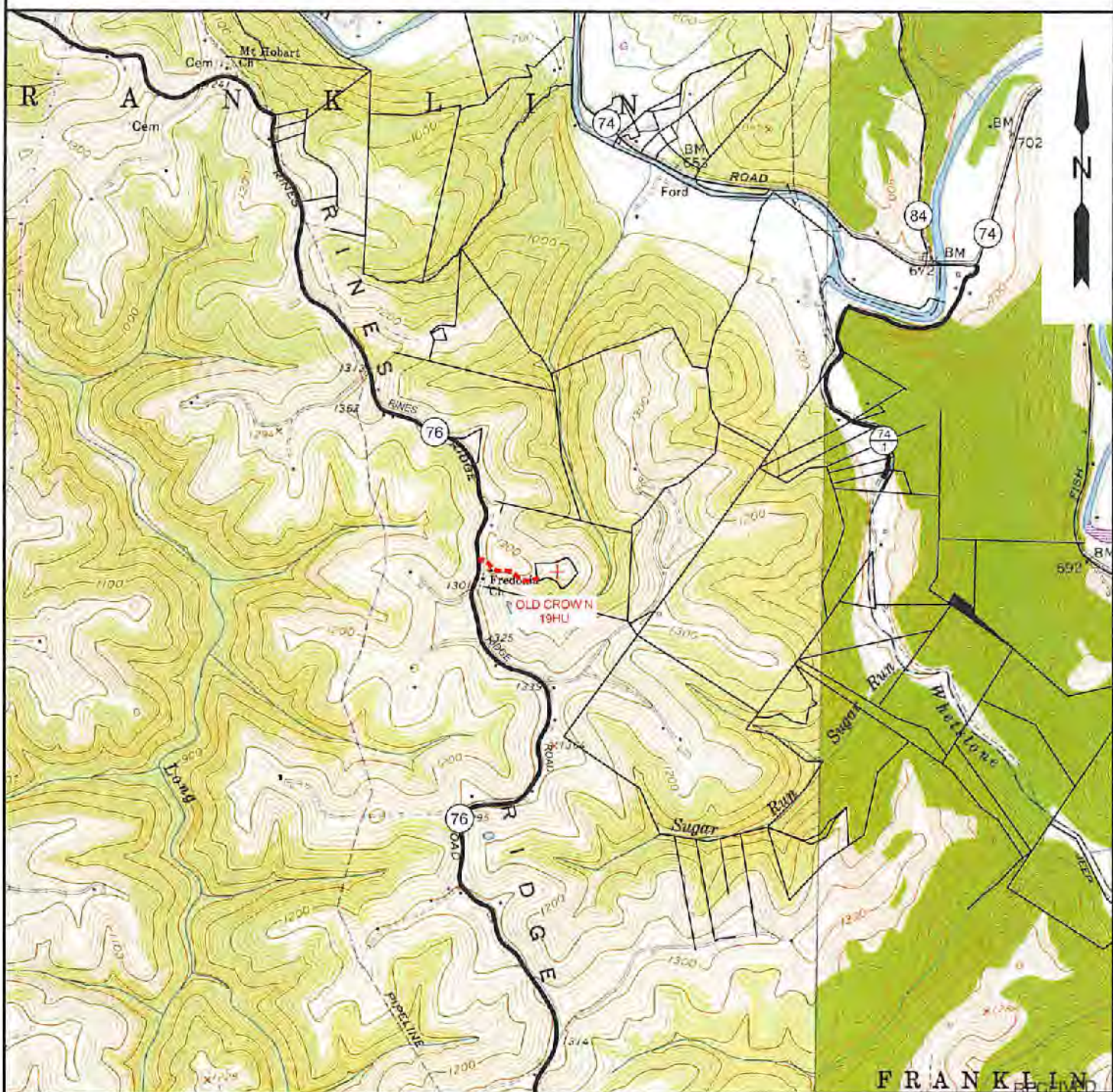
COUNTY NAME
PERMIT

105102270

WW-9

PROPOSED OLD CROWN - 19HU

SUPPLEMENT PG. 2



NOTE: CLOSEST WATER PURVEYOR GRANDVIEW - DOOLIN PUBLIC SERVICE DISTRICT PROCTOR, WV

LAT: 39 7137712
 LON: -80.8259327
 LOCATED: S 37°39'00" W AT 29,404.13' FROM OLD CROWN - 19HU SURFACE LOCATION

Office of Oil and Gas

SEP - 5 2019

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TOPO SECTION:		OPERATOR:	
GLEN EASTON & POWHATAN POINT 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	FRANKLIN	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8796	01/23/19	1" = 2000'

WV Department of Environmental Protection

TUG HILL OPERATING