

7,808' B.H.

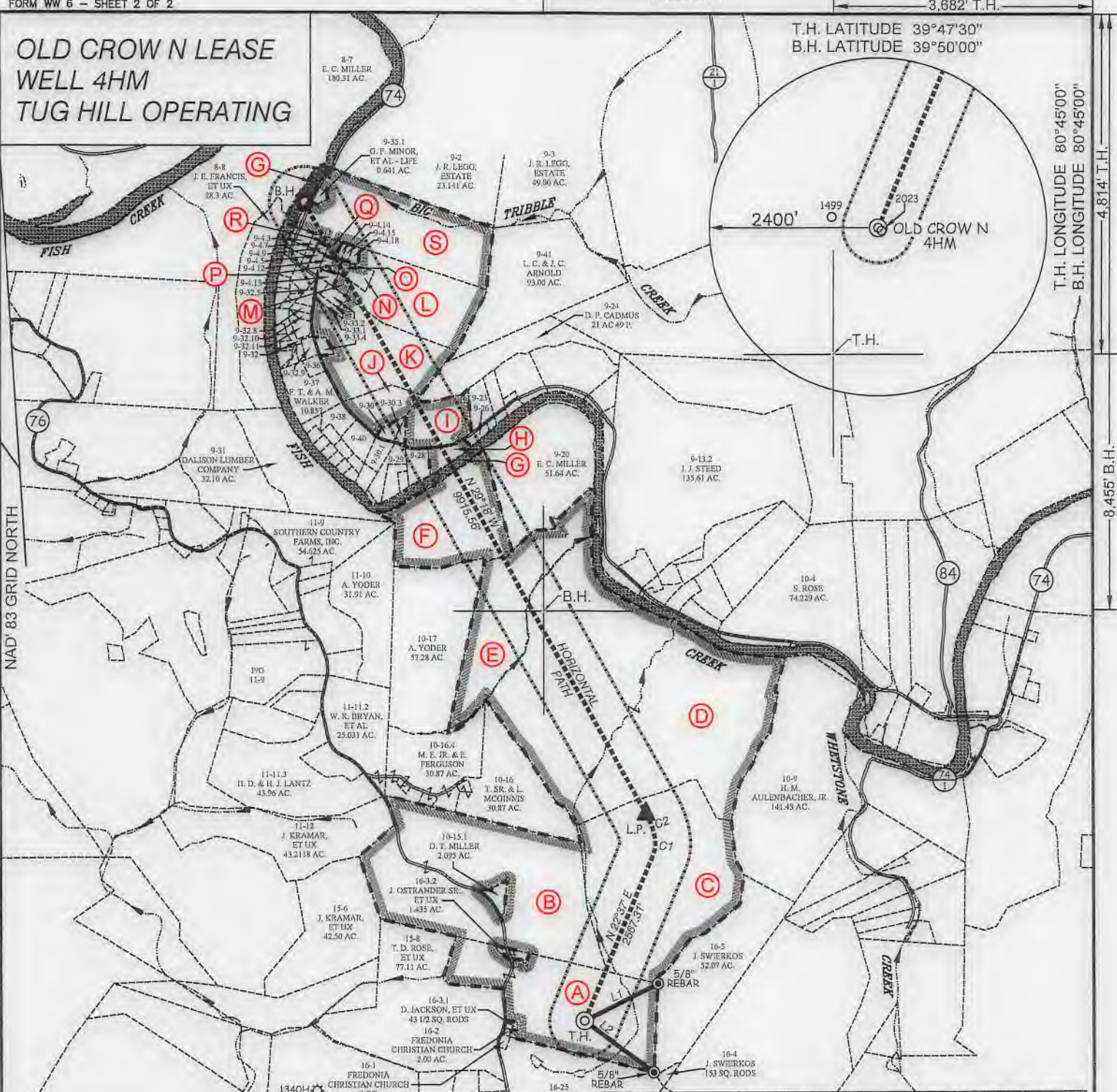
3,682' T.H.

**OLD CROW N LEASE  
WELL 4HM  
TUG HILL OPERATING**

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

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

NAD'83 GRID NORTH



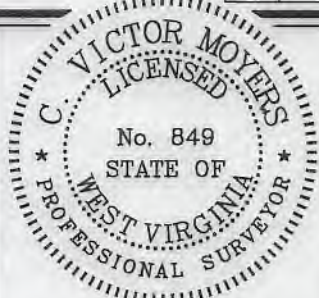
TAG	SURFACE OWNER	PARCEL	ACRES
A	DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO	5-16-3	71.205
B	PAUL ANDREW & DEBRA A. RINE	5-10-15	120.805
C	JOHN SWIERKOS	5-10-14	100.00

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	247.71'	433.60'	N 04°36' E	244.35'
C2	356.40'	1036.87'	N 20°03' W	354.65'

TAG	SURFACE OWNER	PARCEL	ACRES
D	HERBERT M. AULENBACHER, JR.	5-10-3	225.50
E	WILLIAM A. PRASCIK, ET AL	5-10-2	52.00
F	EDWIN C. MILLER	5-10-1	49.96
G	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
H	JOHN F. KAZEMKA	5-9-27	4.02
I	DELBERT K. & LINDA K. MYERS	5-9-25	14.49
J	DENNIS P. CADMUS	5-9-39	9.50
K	KEITH D. DANIELS, ET UX	5-9-33	40.331
L	LLOYD C. & JUDITH C. ARNOLD	5-9-4	18.854
M	GARY PORTER	5-9-4.11	1.00
N	SAMUEL L. CANTERBURY, ET UX	5-9-4.19	2.078
O	SAMUEL L. CANTERBURY, ET UX	5-9-4.17	0.500
P	SAMUEL L. CANTERBURY, ET UX	5-9-4.16	0.517
Q	DEBORAH S. MIDCAP	5-9-4.10	0.819
R	THOMAS MIDCAP, ET UX	5-9-4.8	0.376
S	LLOYD C. & JUDITH C. ARNOLD	5-9-35	47.00

LINE	BEARING	DISTANCE
L1	N 63°00' E	1174.92'
L2	S 53°50' E	1217.93'

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

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
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE WW-6A1)

SCALE 1" = 2000' FILE NO. 8796P4HMR.dwg  
 OLD CROW NORTH 4HM REV1  
 DATE JUNE 22, 2018  
 REVISED JANUARY 17, 2019  
 OPERATORS WELL NO. OLD CROW N-4HM  
 API WELL NO. 47  
 NO. 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  
 CT CORPORATION SYSTEM  
 ADDRESS 5400 D BIG TYLER ROAD  
 CHARLESTON, WV 25313

7,808' B.H.

3,682' T.H.

**OLD CROW N LEASE  
WELL 4HM  
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. 468,147.23 E. 1,613,516.69  
 NAD'83 GEO. LAT-(N) 39.778452 LONG-(W) 80.763100  
 NAD'83 UTM (M) N. 4,403,194.81 E. 520,286.96  
**LANDING POINT**  
 NAD'83 S.P.C.(FT) N. 471,093.7 E. 1,614,402.3  
 NAD'83 GEO. LAT-(N) 39.786574 LONG-(W) 80.760096  
 NAD'83 UTM (M) N. 4,404,097.0 E. 520,541.8  
**BOTTOM HOLE**  
 NAD'83 S.P.C.(FT) N. 479,741.4 E. 1,609,550.8  
 NAD'83 GEO. LAT-(N) 39.810124 LONG-(W) 80.777796  
 NAD'83 UTM (M) N. 4,406,706.8 E. 519,019.7

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

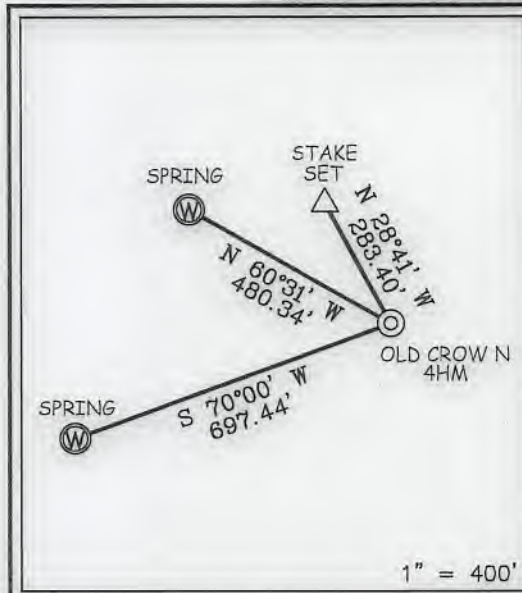
MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
5-9-4.3	HARRY E. KARR, JR., ET UX	1.471
5-9-4.5	DYLAN AULENBACHER	0.991 & PCL 10x40x50
5-9-4.7	FRANCIS D. BARR, ET UX	0.481
5-9-4.9	THOMAS MIDCAP, ET UX	0.375
5-9-4.12	SAMUEL L. & DEBRA N. CANTERBURY	0.650
5-9-4.13	SAMUEL LEE CANTERBURY, ET UX	0.9284
5-9-4.14	PAUL G. BROWN	0.500
5-9-4.15	PAUL G. BROWN	0.500
5-9-4.18	PAUL G. BROWN	0.657
5-9-23	DELBERT K. & LINDA K. MYERS	7.00
5-9-26	EDWIN C. MILLER	1.00
5-9-28	WILLIAM N. & DOLORES E. MCDONOUGH - LIFE	4.01
5-9-29	JAMES M. & ROBERTA 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	SANDRA J. BONNETTE	2.321
5-9-32.5	GARNET D. MIDCAP	PCL 270 x 390
5-9-32.8	TIMMOTHY Q. HOYT, ET UX	0.711
5-9-32.9	LIONEL E. HENRY SR., ET AL	1.269
5-9-32.10	TIMMOTHY Q. HOYT, ET UX	0.588
5-9-32.11	TIMMOTHY Q. HOYT, ET UX	1.717
5-9-33.1	KEITH D. & BEVERLY A. DANIELS	1.00
5-9-33.2	KEITH D. DANIELS, ET UX	1.534
5-9-33.4	DAVID D. & CHRISTINE S. DANIELS	1.025
5-9-36	FRANK T. & ANNA M. WALKER	PARCEL
5-9-38	SHIRLEY A. HILL EST.	3.331
5-9-40	SHIRLEY A. HILL EST.	PCL 368 x 425

B.H.

**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'

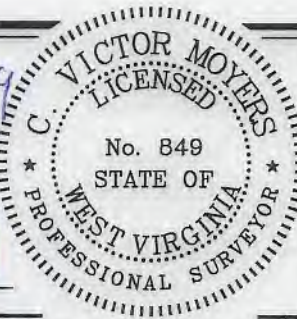
**REFERENCES**



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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 JUNE 22, 20 18  
 REVISED JANUARY 17, 20 19  
 OPERATORS WELL NO. OLD CROW N-4HM  
 API WELL NO. 47 - 51 - 02227  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8796P4HMR.dwg  
OLD CROW NORTH 4HM 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  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: GROUND = 1,286.40' 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 ACREAGE 71.205±

PROPOSED WORK: LEASE NO. SEE VVW-6A1  
 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: 6,694' / TMD: 17,638'

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

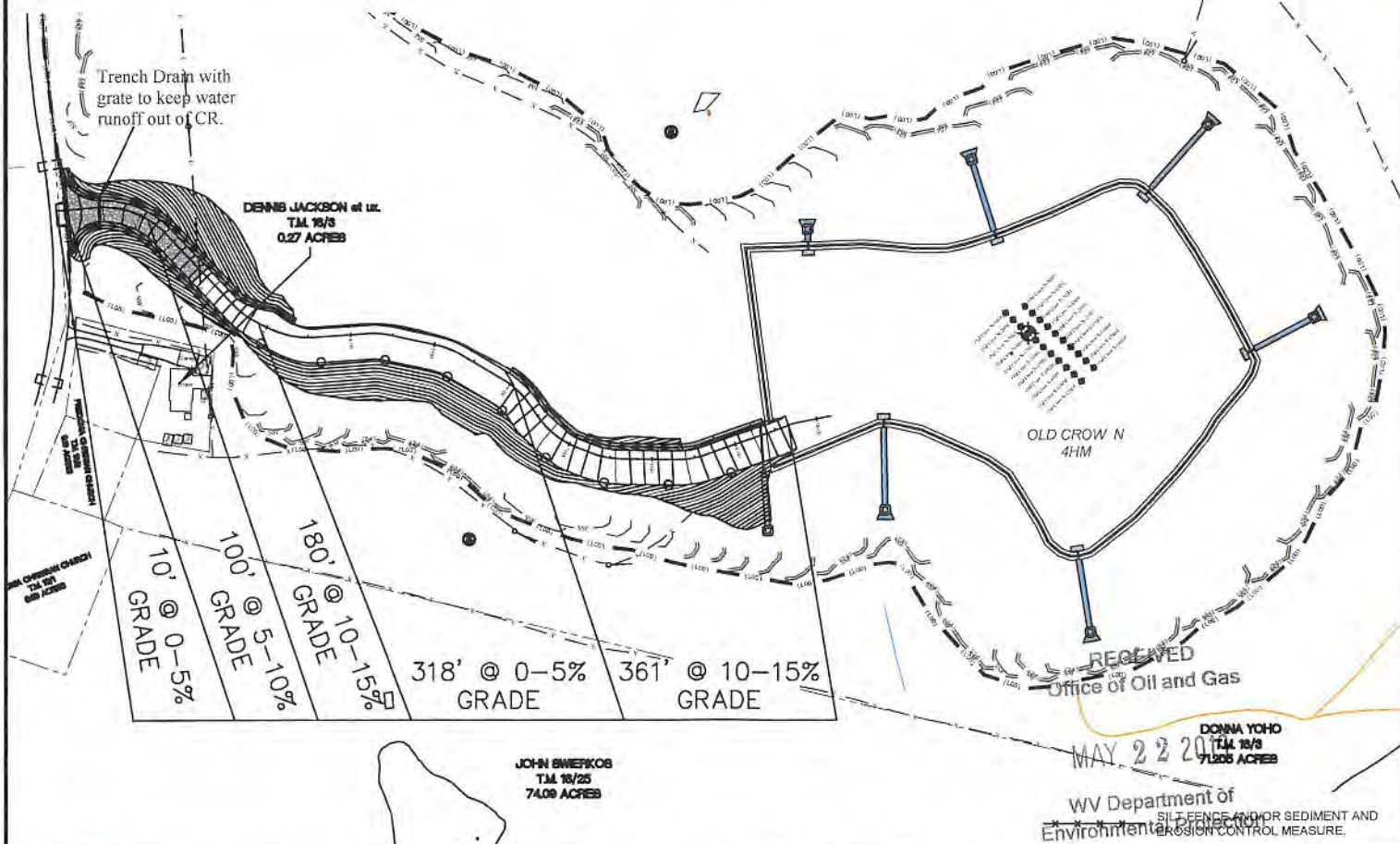
COUNTY NAME  
PERMIT

# PROPOSED OLD CROW N - 4HM

4705102227

**NOTES:**

1. Ⓞ-- DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (RIP RAP SPLASH PAD)
2. DRAWING NOT TO SCALE
3. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.
8. ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE OLD CROW N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



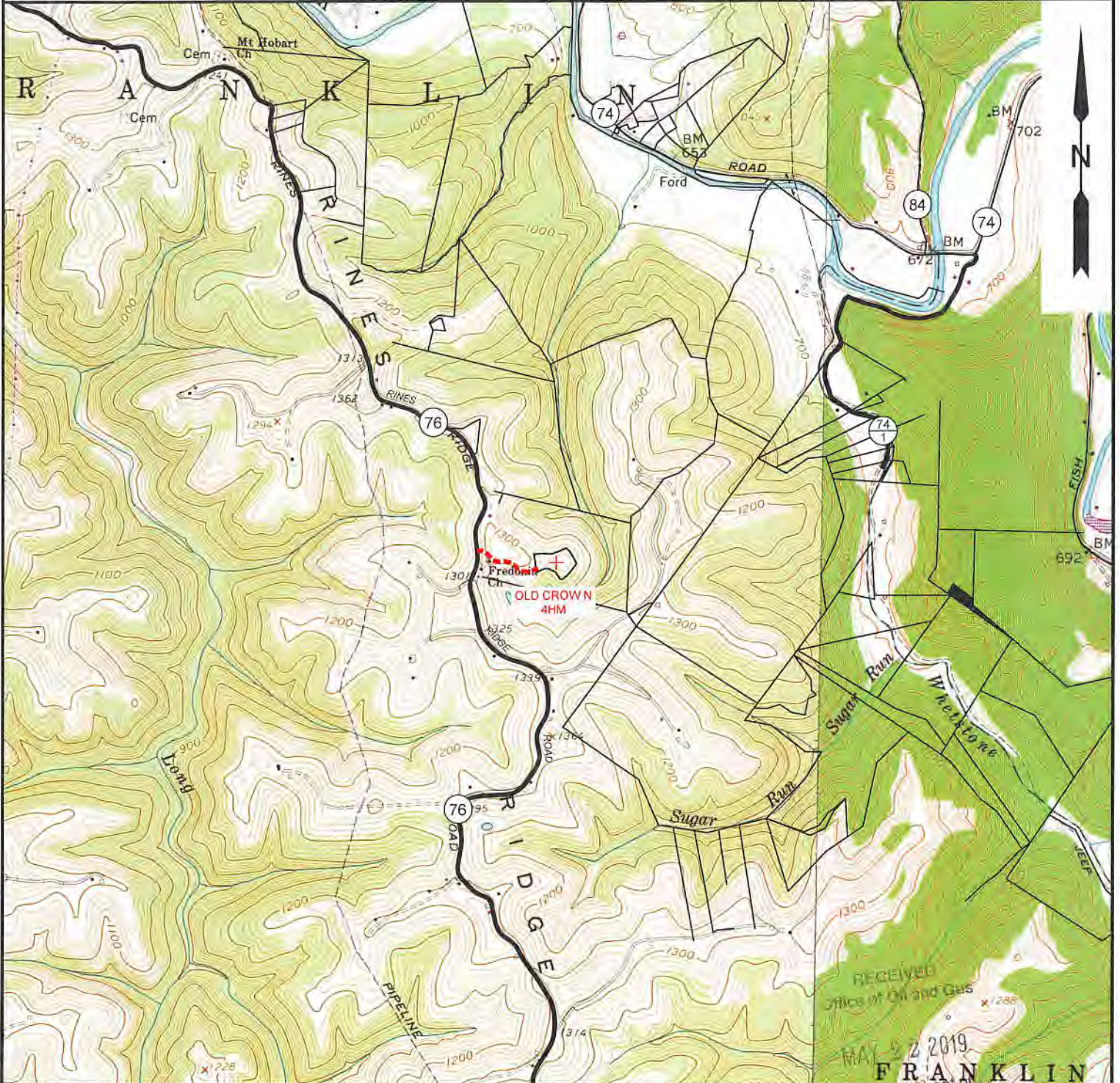
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TOPO SECTION:		OPERATOR:	
POWHATAN POINT 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	FRANKLIN		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8769	06/22/18	NONE

**TUG HILL  
OPERATING**

WV Department of Environmental Protection  
SILT FENCE AND/OR SEDIMENT AND EROSION CONTROL MEASURE.

# PROPOSED OLD CROW N - 4HM



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

LAT: 39.7137712  
LON: -80.8258327  
LOCATED: S 37°39'00" W AT 29,404.13' FROM OLD CROW N - 4HM SURFACE LOCATION

RECEIVED  
Office of Oil and Gas  
MAY 22 2019  
FRANKLIN  
WV Department of  
Environmental Protection

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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	06/22/18	1" = 2000'

**TUG HILL**  
OPERATING