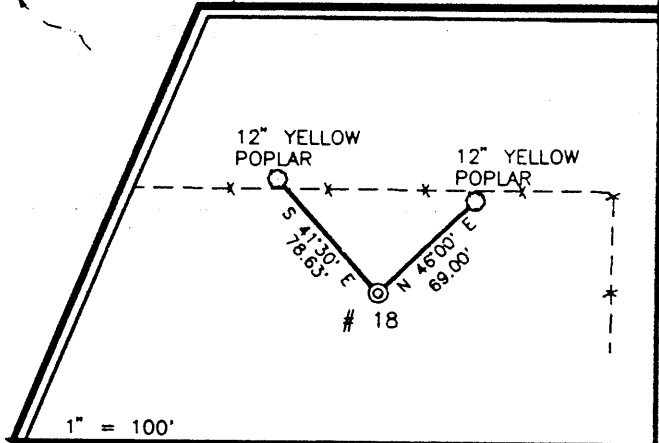
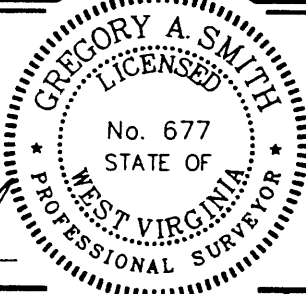


REFERENCES



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 DEPARTMENT OF ENERGY.



P.S. 677 *Gregory A. Smith*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MAY 13, 19 98
 OPERATORS WELL NO. BERWIND # 18
 API WELL NO. 47-47-01352
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 2901P18 (58-19)
 PROVEN SOURCE OF ELEVATION TOP OF KNOB ELEVATION 2345' SCALE 1" = 1000'

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY OIL AND GAS DIVISION

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

LOCATION :
 ELEVATION 1759' WATERSHED VALL CREEK
 DISTRICT BIG CREEK COUNTY McDOWELL QUADRANGLE AMONATE 7.5'

SURFACE OWNER BERWIN WHITE COAL Co. (TRACT 118) ACREAGE 1440.39
 ROYALTY OWNER BERWIND LAND Co. LEASE ACREAGE 2164 OF 24,625.33

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 BEREA
 ESTIMATED DEPTH 5000'

WELL OPERATOR CABOT OIL AND GAS CORPORATION DESIGNATED AGENT JOHN ABSHIRE
 ADDRESS P.O. BOX 454 GLASGOW, WV 25086 ADDRESS P.O. BOX 454 GLASGOW, WV 25086

MCDOWELL COUNTY NAME PERMIT 1352

6-6-267

OPEN FLOW DATA

Perf'd Berea from 4305'-4311'. Broke down with 250 gals 15% HCl acid. Displaced with 12,000 scf N₂. Frac'd with 75Q foam. Used 533,400 scf N₂ and 60,052# sand. ATP: 2454 psi. MTP: 2893 psi. ATR: 5.5 bpm. ISIP: 2529 psi.

FORMATION	TOP	BOTTOM	REMARKS
Silt/Shale	0	580	
Shale	580	645	
Silt/Shale	645	822	
Shale	822	1078	
RV	1078	1265	
Shale	1265	1340	
Avis	1340	1390	
Shale	1390	1805	
Silt/Shale	1805	2304	
Maxton	2304	2356	
Silt/Shale	2356	2515	
Shale	2515	2615	
L. Lime	2615	2730	
Shale	2730	2825	
B. Lime	2825	3668	
Pocono	3688	3938	
Shale	3938	4275	
Berea	4275	4320	
Shale	4320	4370	
Gordon	4370	4440 - TD	