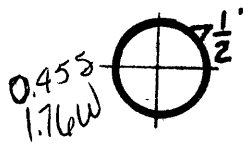




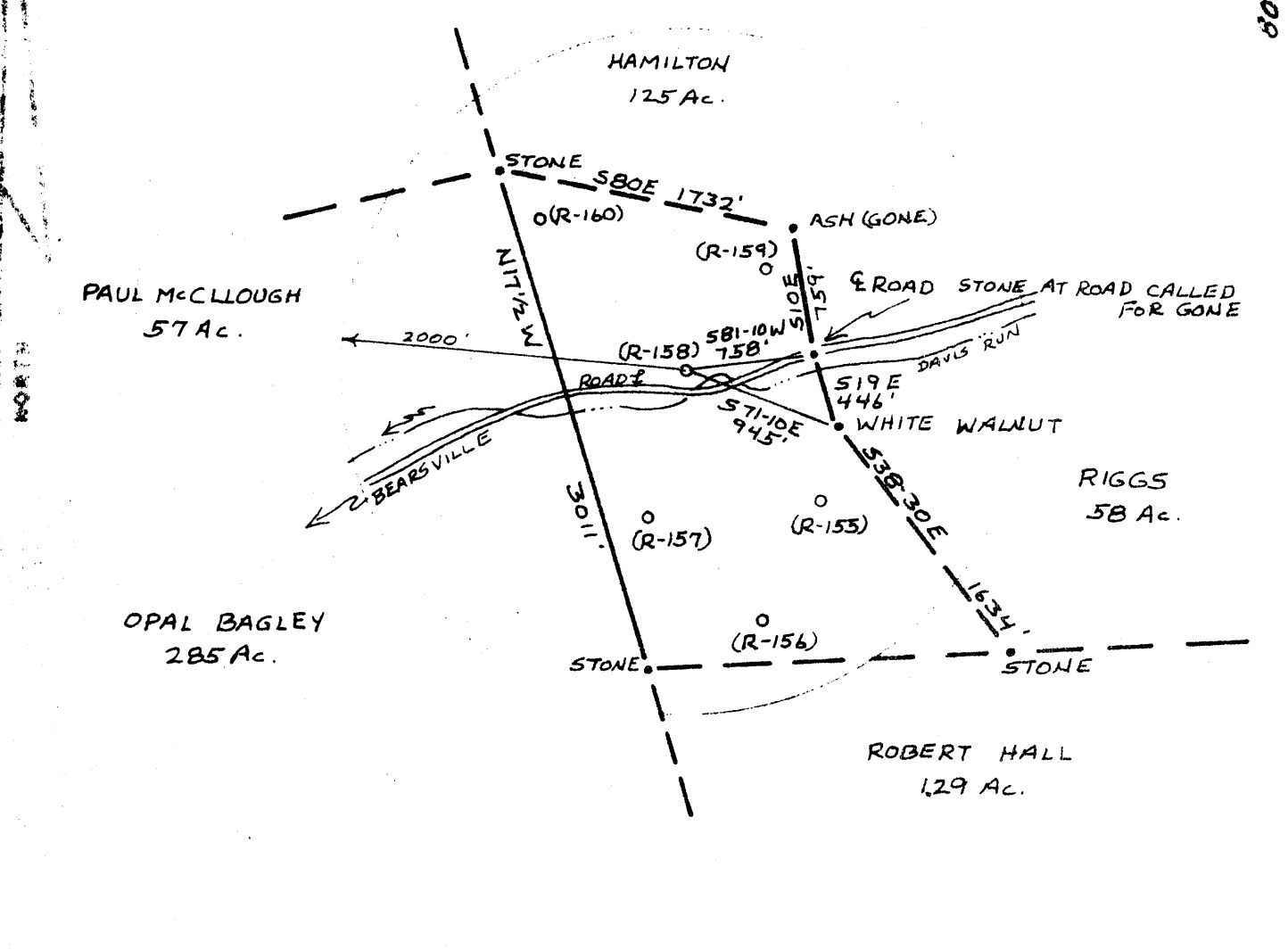
3.98W
0.45S



0.45S
1.76W

39 24 35
80 54 15

80° 50'
80° 52 1/2'



SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION HIGH KNOB ELEV. 1190'

I HEREBY CERTIFY THAT THIS PLAN IS A TRUE AND CORRECT COPY OF THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT I AM A LICENSED SURVEYOR BY LAW AND THAT I AM NOT PROVIDING ANY SERVICE AND RECEIVING ANY FEE FROM THE DEPARTMENT OF MINES.
 (SIGNED) *William R. Messer*
 R-158 ELEV. 551

INDICATES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM W-8
 (6-78)



DATE 15 JUNE 1979
 OPERATOR'S WELL NO. R-158
 API WELL NO. 47-095-0797
 STATE COUNTY PERMIT

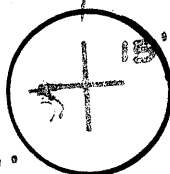
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

FORMERLY-TYL-720

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS", PRODUCTION STORAGE _____ DEEP _____ SHALLOW
 LOCATION: ELEVATION 868' WATER BORN DAVIS RUN OF SANCHO CREEK
 DISTRICT CENTERVILLE COUNTY TYLER
 QUADRANGLE MIDDLEBOURNE W. VA. 7 1/2' QUAD. WEST UNION 15' C
 SURFACE OWNER E.O. McCullough ACRES 97 1/2
 OIL & GAS ROYALTY OWNER SAME ACRES
 LEASE NO. _____ ELSE ACRES
 PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR
 STIMULATE _____ PLUS OFF OLD FORMATION _____ PERFORATE NEW
 FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
 PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
 TARGET FORMATION UPPER DEVONIAN ESTIMATED DEPTH 3000'
 WELL OPERATOR E.W. RIGGS, INC. DESIGNATED AGENT E.W. RIGGS
 ADDRESS Box 358, ST. MARYS, W.VA. ADDRESS Box 358, ST. MARYS, W.VA.

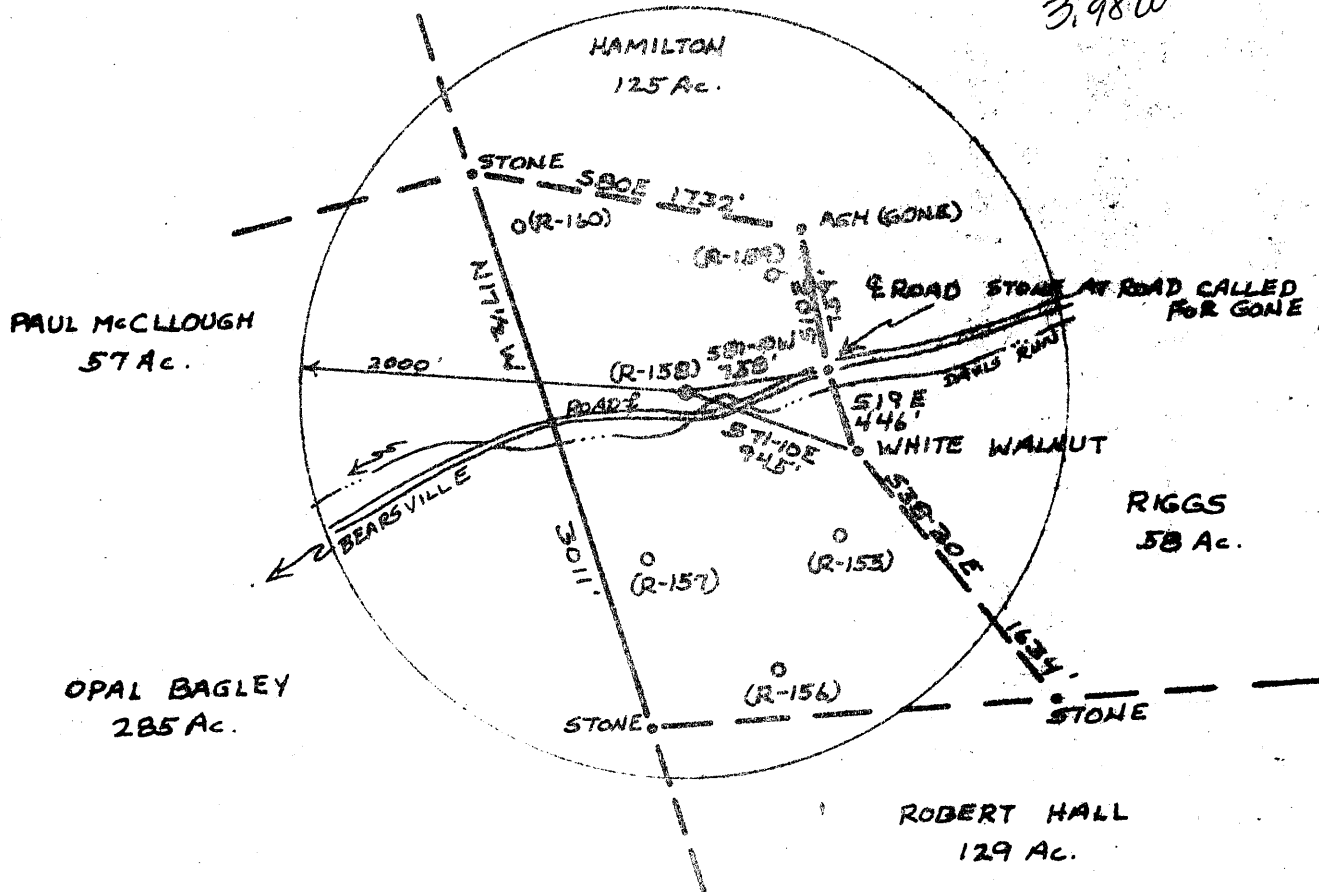
LATITUDE 39° 25'

2320 SOUTH
9210 WEST



0.485
3.760
3.98W

80° 50'
80° 52 1/2'



FILE NO. _____

DRAWING NO. _____

SCALE 1"=1000'

MINIMUM DEGREE OF ACCURACY 1:200

PROVEN SOURCE OF ELEVATION HIGH KNOB ELEV. 1790'

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 MINES.

(SIGNED) William R Messer

R.P.E. _____ L.L.S. 551

PLACE SEAL HERE

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

FORM IV-6 (8-78)



DATE 15 JUNE, 19 79
OPERATOR'S WELL NO R-158
API WELL NO. 47-095-0720
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
(IF "GAS", PRODUCTION STORAGE _____ DEEP _____ SHALLOW
LOCATION: ELEVATION 868' WATER SHED DAVIS RUN OF SANCHO CREEK
DISTRICT CENTERVILLE COUNTY TYLER
QUADRANGLE MIDDLEBOURNE, W.VA. 7 1/2 QUAD., WEST UNION 15'
SURFACE OWNER E.O. McCULLOUGH ACRES 97%
OIL & GAS ROYALTY OWNER SAME LEASE ACRES _____
LEASE NO. _____
PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE _____ PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON _____ CLEAN OUT AND REPLUG _____
TARGET FORMATION UPPER DEVONIAN ESTIMATED DEPTH 3000' AUG 10 1979
WELL OPERATOR C.W. RIGGS, INC. DESIGNATED AGENT C.W. RIGGS
ADDRESS Box 358, ST. MARYS, W.VA. ADDRESS Box 358, ST. MARYS, W.VA.

UNDER 3000'

RECEIVED

OCT 29 1980

OIL & GAS DIVISION
DEPT. OF MINES

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

Date 10-28, 1980

FORM IV-35
(Obverse)

Operator's
Well No. McCunough R-158

[08-78,

WELL OPERATOR'S REPORT

API Well No. 47-095-0199
State County Perm

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection ___ / Waste Disposal ___
(If "Gas", Production X / Underground storage ___ / Deep ___ / Shallow ___)

LOCATION: Elevation: 868' Watershed: DAVIS RUN
District: CENTERVILLE County: TYLER Quadrangle: MIDDLEBOURNE

WELL OPERATOR C.W. Riggs, Inc. DESIGNATED AGENT SAME AS OPERATOR
Address Box 358 Address _____
ST. MARYS, W. VA.

PERMITTED WORK: Drill X / Convert ___ / Drill deeper ___ / Redrill ___ / Fracture or stimulate ___
Plug off old formation ___ / Perforate new formation ___
Other physical change in well (specify) _____

PERMIT ISSUED ON 4-21, 1980

OIL & GAS INSPECTOR FOR THIS WORK:
Name Phillip Tracy
Address MIDDLEBOURNE, W. VA.

(IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED

GEOLOGICAL TARGET FORMATION: Upper Devonian Depth 2981 feet
Depth of completed well, 2981 feet Rotary X / Cable Tools ___
Water strata depth: Fresh, N/A feet; salt, N/A feet.
Coal seam depths: N/A Is coal being mined in the area? No
Work was commenced 6-10, 1980, and completed 6-14, 1980

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	FACHERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	<u>10 3/4"</u>		<u>32.75#</u>	<u>X</u>		<u>338'</u>	<u>338'</u>	<u>150 SKS.</u>	
Coal									Sizes
Intermediate									
Production Tubing	<u>4 1/2"</u>		<u>10.5#</u>	<u>X</u>			<u>2960'</u>	<u>225 SKS</u>	Depths set
Liners									Perforations:
									Top Bottom

OPEN FLOW DATA

Producing formation 30' E Gordon Pay zone depth 2796' feet
Gas: Initial open flow, 22 Mcf/d Oil: Initial open flow, 0 Bbl/d
Final open flow, 10 Mcf/d Final open flow, 0
Time of open flow between initial and final tests, 2 hours
Static rock pressure, 600# psig (surface measurement) after 27 hours shut in
[If applicable due to multiple completion--] ⇒ SINGLE COMPLETION

NOV 25 1980

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

7 shots .50 CALIBER 2632' - 2638'
 12 " " " 2776' - 2789'

STIMULATION

1200 BBL H₂O, 60,000 # 20-40 SAND, 133,000 SCF N

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
COW RUN			1165	1234	
1ST SALT			1266	1280	
2ND SALT			1420	1448	
MAXON			1584	1626	
KEENER			1646	1660	
INJUN			1700	1958	
			1980	2001	
SQUAW					
WEIR			2186	2208	
WELCH STRAY			2260	2284	
BEREA			2350	2364	
50'			2536	2564	
30'			2628	2642	GAS
GORDON			2774	2797	GAS
5th SAND			2880	2890	

(Attach separate sheets to complete as necessary)

C.W. Riggs, Inc.
 Well Operator
 By John Cox
 Its V.P.

NOTE: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic, detailed geological record of all formations, including coal, encountered in the drilling of a well."



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED

APR 21 1980

Oil and Gas Division

OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

Surface Owner E. O. McCullough
Address Bearsville, W. Va.
Mineral Owner E. O. McCullough
Address Bearsville, W. Va.
Coal Owner E. O. McCullough
Address Bearsville, W. Va.
Coal Operator None
Address _____

DATE 4-3-80
Company C. W. Riggs, Inc.
Address Box 358, St. Marys, W. Va.
Farm E. O. McCullough Acres 97½
Location (waters) Davis Run
Well No. R-158 Elevation 868'
District Centerville County Tyler
Quadrangle Middlebourne, W. Va.

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22,
of the W. Va. Code, the location is hereby approved
for drilling. This permit shall expire if
operations have not commenced by 12-23-80.

INSPECTOR
TO BE NOTIFIED Phillip Tracy
ADDRESS Middlebourne, W. Va.
PHONE 758-4573

Robert L. Bell
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated June 6 1979 by Paul & Mary McCullough made to Loren E. Bagley and recorded on the 22nd day of June 1979, in Tyler County, Book 219 Page 431

NEW WELL _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE
_____ OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. *

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND
ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 292-6331

Very truly yours,
(Sign Name) E. W. Riggs
Well Operator

Address _____
of _____
Well Operator _____
_____ Street
St. Marys _____
City or Town
W. Va. _____
State

*SECTION 3 If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

(Formerly: TYL-720)

47-095-0797

PERMIT NUMBER

**THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION**

PROPOSED WORK ORDER TO DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT:
 NAME Haught Drilling NAME C. W. Riggs, Inc.
 ADDRESS Smithville, W. Va. ADDRESS St. Marys, W. Va.
 TELEPHONE 477-3333 TELEPHONE 684-3974
 ESTIMATED DEPTH OF COMPLETED WELL: 3000' ROTARY CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Upper Devonian (Gordon?)
 TYPE OF WELL: OIL _____ GAS _____ COMB. STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT LIFT UP OR SACKS CUBIC FT
20 - 16			
13 - 10			
9 - 5/8			
8 - 5/8 250'		250'	cement top-bottom
7			
5 1/2			
4 1/2		3000'	200 sks.
3			
2			Perf. Top
Liners			Perf. Bottom
			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 120 FEET SALT WATER _____ FEET
 APPROXIMATE COAL DEPTHS _____
 IS COAL BEING MINED IN THE AREA? no BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

For Coal Company

Official Title



RECEIVED
JUL 20 1979

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

Surface Owner E.O. McCullough
Address Bearsville, W. Va.
Mineral Owner E.O. McCullough
Address Bearsville, W. Va.
Coal Owner E.O. McCullough
Address Bearsville, W. Va.
Coal Operator None
Address _____

DATE 7-6-79
Company C.W. Riggs, Inc.
Address Box 358, St. Marys, W. Va.
Farm E.O. McCullough Acres 97 1/2
Location (waters) Davis Run
Well No. R-158 Elevation 868'
District Centerville County Tyler
Quadrangle Middlebourne

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22,
of the W. Va. Code, the location is hereby approved
for drilling _____. This permit shall expire if
operations have not commenced by 3-23-80.

INSPECTOR
TO BE NOTIFIED Phillip Tracy
ADDRESS Middlebourne, W. Va.
PHONE 758-4573

[Signature]
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee
title thereto, (or as the case may be) under grant or lease dated June 6 1979 by Paul & Mary
McCullough made to Loren Bagley and recorded on the 22nd day of June
1979 in Tyler County, Book 219 Page 431

NEW WELL DRILL DEEPER REDRILL FRACTURE OR STIMULATE
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators
have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required
to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. *

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators
or coal owners at their above shown respective address _____ day _____ before, or on the
same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
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WEST VIRGINIA GEOLOGICAL AND
ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
C-304 - 292-6331

Very truly yours,

(Sign Name) C.W. Riggs
Well Operator

Address Box 358
of _____ Street
Well Operator St. Marys
City or Town
W. Va.
State

*SECTION 3... If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of
notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting
the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved
and the well operator authorized to proceed.

BLANKET 2000

**THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION**

PROPOSED WORK ORDER TO DRILL _____ DEEPEN _____ FRACTURE STIMULATE _____
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT
 NAME Little Swiss Drilling NAME C.W. Riggs, Inc.
 ADDRESS Buchannon, W.Va. ADDRESS St. Marys, W.Va.
 TELEPHONE 472-6396 TELEPHONE 684-3974
 ESTIMATED DEPTH OF COMPLETED WELL 3000' ROTARY CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION Upper Devonian
 TYPE OF WELL: * OIL _____ GAS _____ COMB. STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LET IN WELL	CEMENT TIE UP OR SACKS CUBIC FT
20 - 16			
13 - 10			
9 - 5/8			
8 - 5/8 250'		250'	Cement Top-Bottom
7			
5 1/2"			
4 1/2"		3000'	200 sks.
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 120 FEET _____ SALT WATER _____ FEET
 APPROXIMATE COAL DEPTHS _____
 IS COAL BEING MINED IN THE AREA? No BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

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OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OF - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

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Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WE, THE _____ Coal Company, have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

For Coal Company

Official Title