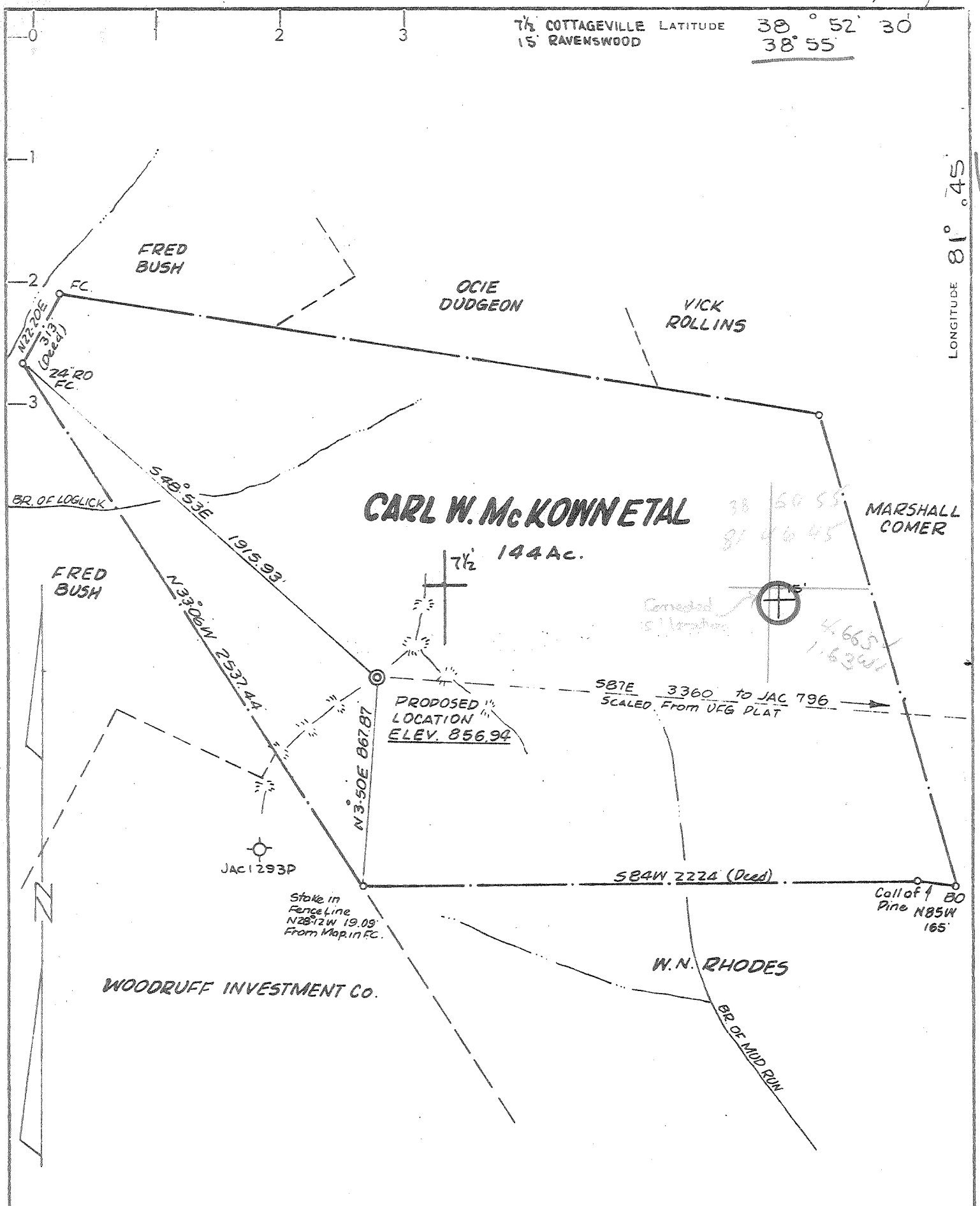


7 1/2 COTTAGEVILLE LATITUDE 38° 52' 30"  
 15 RAVENSWOOD 38° 55'

LONGITUDE 81° 45'



**CERTIFICATE**

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 200

Signed

*Frank J. Barber* LLS #289

COMPANY KAISER EXPLORATION & MINING CO.  
 ADDRESS P.O. Box 437 RIPLEY, W. VA.  
 FARM CARL MCKOWN ETAL  
 MAP \_\_\_\_\_ ACRES 144 LEASE NO. \_\_\_\_\_  
 WELL (FARM) NO. DEK-51 SERIAL NO. \_\_\_\_\_  
 ELEVATION (SPIRIT LEVEL) 856.94  
 QUADRANGLE COTTAGEVILLE 7 1/2 Ravenswood 15'  
 COUNTY JACKSON DISTRICT UNION  
 POINT OF PROVEN ELEVATION USGS EL. 627 Road Intersection  
 LOGLICK RUN  
 FILE NO. \_\_\_\_\_ DRAWING NO. \_\_\_\_\_  
 DATE APRIL 19, 1978 SCALE 1" = 500 FT.

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON  
 WELL LOCATION MAP  
 FILE NO. JAC-1442  
 035  
 + DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 62,500. LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.  
 - DENOTES ONE INCH PLACES ON BORDER LINE OF ORIGINAL TRACED.  
 47-035

Cap Well 4850' @ 2 1/2" Rate NORTH RIPLEY 342 JUN 1 1978



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
**Oil and Gas Division**  
**WELL RECORD** <sup>12</sup>

**RECEIVED**

DEC - 6 1978

OIL & GAS DIVISION  
DEPT. OF MINES

Quadrangle Cottageville  
Permit No. JAC 1442 (47-035-1442)

Rotary X Oil \_\_\_\_\_  
Cable \_\_\_\_\_ Gas X  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind)

Company Kaiser Exploration & Mining Co.  
Address PO Box 537, Ripley, WV 25271  
Farm Carl W. McKown Acres 144  
Location (waters) Mud Run  
Well No. DEK #51 Elev. 856.94  
District Union County Jackson  
The surface of tract is owned in fee by Carl W. McKown  
Address 1844 S. Cooper Lantern Dr.  
Hacienda Hgts., CA 91745  
Mineral rights are owned by Same as above  
Address \_\_\_\_\_  
Drilling Commenced June 16, 1978  
Drilling Completed June 22, 1978  
Initial open flow Show cu. ft. \_\_\_\_\_ bbls.  
Final production 100 MCFD ~~xxxxxxx~~ bbls.  
Well open \_\_\_\_\_ hrs. before test 1100 RP. 4 Day

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"			
9 5/8	251	251	199 Sacks
8 5/8			
7	2442	2442	75 Sacks
5 1/2			
4 1/2	4854	4854	150 Sacks
3			
2			
Liners Used			

Well treatment details: Attach copy of cementing record. Halliburton  
Perforated from 4739' to 4741'. Treated Oriskany with 541 BBL of treated water, 100,000 SCF of nitrogen, 47,000 of 80/100 and 30,000 lbs of 20/40 sand. Average rate was 10 BPM at 3300 PSI.

Coal was encountered at None Feet \_\_\_\_\_ Inches \_\_\_\_\_  
Fresh water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_  
Producing Sand Oriskany Sand Depth 4709-4746

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Surface			0	14		
Shales & Red Rock			14	337		
Sand			337	371		
Shales & Red Rock			371	732		
Sand			732	760		
Broken Sand			760	842		
Red Rock & Shale			842	1177		
Sand			1177	1266		
Shale			1266	1362		
Sand			1362	1384		
Shale			1384	1429		
Sand			1429	1474		
Shale			1474	1488		
Sand			1488	1505		
Broken Sand			1505	1620		
Shale			1620	1676		
Sand			1676	1747		
Shale			1747	1769		
Sand			1769	1828		
Big Lime			1828	1912		
Shale			1912	1936		
Injun Sand			1936	2070		
Shale			2070	2392		
Coffee Shale			2392	2416		

(over)

\* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet <sup>12</sup>	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			2416	3586		
Brown Shale			3586	4064		
Shale			4064	4484		
Marcellus Shale			4484	4632		
Onondaga L. S.			4632	4709		
Oriskany Sand			4709	4746		
Helderberg L. S.			4746			
Total Depth			4868			

4632	4709	4746
85.7	85.7	85.7
3775	3852	3889

November 14 79

Date December 1, 1978

APPROVED Kaiser Exploration & Mining Co Owner

By Kathleen A. P...  
 (Title)  
 Operations Manager

REVISED  
WELL OPERATOR'S REPORT  
OF

[08-78]

DEVELOPMENT, MAINTENANCE AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil \_\_\_ / Gas X / Liquid Injection \_\_\_ / Waste Disposal \_\_\_  
(If "Gas", Production X / Underground storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_)  
LOCATION: Elevation: 856.94 Watershed: Mud Run  
District: Union County: Jackson Quadrangle: Cottageville (7.5')

WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT SAME  
Address P. O. Box 8 Address \_\_\_\_\_  
Ravenswood, WV 26164

PERMITTED WORK: Drill \_\_\_ / Convert \_\_\_ / Drill deeper \_\_\_ / Ream \_\_\_ / Fracture or stimulate  
Plug off old formation X / Perforate new formation X / **RECEIVED**  
Other physical change in well (specify) \_\_\_\_\_  
FEB 9 1982

PERMIT ISSUED ON May 22, 1978 OIL & GAS INSPECTOR FOR THIS WORK: **OIL AND GAS DIVISION WV DEPARTMENT OF MINES**

(IF APPLICABLE: PLUGGING OF DRY HOLE OR CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED) Name Richard Morris  
Address P. O. Box 372  
Grantsville, WV

GEOLOGICAL TARGET FORMATION: Plugged Oriskany; Fractured Br. Shale old Depth 4868 feet  
NEW Depth of completed well, 4160 feet Rotary \_\_\_ / Cable Tools \_\_\_  
Water strata depth: Fresh, \_\_\_ feet; salt, \_\_\_ feet.  
Coal seam depths: NONE Is coal being mined in the area? NO

PLUG BACK Work was commenced June 15, 1979, and completed June 17, 1979

CASING AND TUBING PROGRAM: See previous well record filed upon Oriskany completion

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								Winds
Fresh water								
Coal								Sines
Intermediate								
Production								Deaths set
Tubing								
Miners								Perforations: Br. Shal 3843 Top 4057 Bottom

OPEN FLOW DATA  
OLD Producing formation Devonian Oriskany Sandstone OLD Pay zone depth 4709-4746 feet  
Gas: Initial open flow, Show Mcf/d Oil: Initial open flow, 0 bbl/d  
Final open flow, 100 Mcf/d Final open flow, 0 bbl/d  
Time of open flow between initial and final tests, \_\_\_ hours  
Static rock pressure, 1100 psig (surface measurement) after 96 hours shut in

[If applicable due to multiple completion--]  
Second producing formation Devonian Brown Shale Pay zone depth 3843-4057 feet  
Gas: Initial open flow, 0 Mcf/d Oil: Initial open flow, 0 bbl/d  
Final open flow, 179 Mcf/d Final open flow, 0 bbl/d  
Time of open flow between initial and final tests, \_\_\_ hours  
Static rock pressure, 900 psig (surface measurement) after 24 hours shut in

MAR 01 1982

[08-78]

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

6/15/79 Set permanent bridge plug in 4 1/2" casing at 4160' (KB). Perforated the Brown Shale with 22 holes (.50" diameter, 3 1/2" glass jets) from 3843' - 4057' (KB)

6/17/79 Foam Fractured the Brown Shale interval with 500 gallons of 15% HCL Acid, 45,000# of sand, 171 BBLs of water, and 396,000 SCF of nitrogen. Formation treated with an average rate of 9.5 BBL/min and average pressure of 1800 psig.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
NOTE: See previous well record filed upon completion of Oriskany Sandstone.					

(Attach separate sheets to complete as necessary.)

KAISER EXPLORATION AND MINING COMPANY  
Well Operator

By R. A. P. —

Its Operation Manager

NOTE: Regulation 2.05(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  
MAY 18 1978

OIL & GAS  
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE April 24, 1978

Surface Owner Carl W. McKown Company Kaiser Exploration & Mining Company  
 Address 1844 S. Cooper Lantern Dr., Hacienda Heights Address P.O. Box 537, Ripley, WV 25271  
 Mineral Owner Carl W. McKown CA 91745 Farm Carl W. McKown Acres 144  
 Address Same as above Location (waters) Mud Run  
 Coal Owner Carl W. McKown Well No. DEK 51 Elevation 856.94  
 Address Same as above District Union County Jackson  
 Coal Operator None Quadrangle Cottageville  
 Address \_\_\_\_\_

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 9-22-78.

INSPECTOR TO BE NOTIFIED Richard Morris

ADDRESS P. O. Box 372, Grantsville, WV

PHONE 354-7259

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 24 August 1976 by Carl W. McKown & Joan McKown made to Devon Corp. & Eason Oil Co and recorded on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_, in Jackson County, Book 141 Page 609  
 XXX 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:

Very truly yours, Kaiser Exploration & Mining Co.  
(Sign Name) R. A. Pryce

Well Operator  
R. A. Pryce/Operations Manager  
P. O. Box 537  
Street

Address of Well Operator

Ripley  
City or Town  
West Virginia 25271  
State

W. VA. OIL & GAS CONSERVATION COMMISSION  
613 WASHINGTON STREET, EAST  
CHARLESTON, WEST VIRGINIA 25311

\*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

JAC-1442 PERMIT NUMBER

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

PROPOSED WORK ORDER TO XXX DRILL \_\_\_\_\_ DEEPEN \_\_\_\_\_ FRACTURE-STIMULATE \_\_\_\_\_  
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT: \_\_\_\_\_  
 NAME F.W.A. Drilling Co. NAME R. A. Pryce  
 ADDRESS Box 448, Elkview, WV ADDRESS P.O. Box 537, Ripley, WV 25271  
 TELEPHONE 965-3379 TELEPHONE 372-2828  
 ESTIMATED DEPTH OF COMPLETED WELL: 4850' ROTARY XXX CABLE TOOLS \_\_\_\_\_  
 PROPOSED GEOLOGICAL FORMATION: Oriskany  
 TYPE OF WELL: OIL \_\_\_\_\_ GAS XXX COMB. \_\_\_\_\_ STORAGE \_\_\_\_\_ DISPOSAL \_\_\_\_\_  
 RECYCLING \_\_\_\_\_ WATER FLOOD \_\_\_\_\_ OTHER \_\_\_\_\_

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8	250	250	100 sacks to surface
8 - 5/8			
7	2450	2450	75 sacks - 625 feet
5 1/2			
4 1/2	4850	4850	125 sacks = 1500 feet
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS \_\_\_\_\_ FEET SALT WATER \_\_\_\_\_ FEET  
 APPROXIMATE COAL DEPTHS None anticipated  
 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