

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT ELEV 746 AT ROAD INTERSECTION S.E. OF LOC.

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) Dennis L. Fisher
 R.P.E. _____ L.L.S. #670



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)

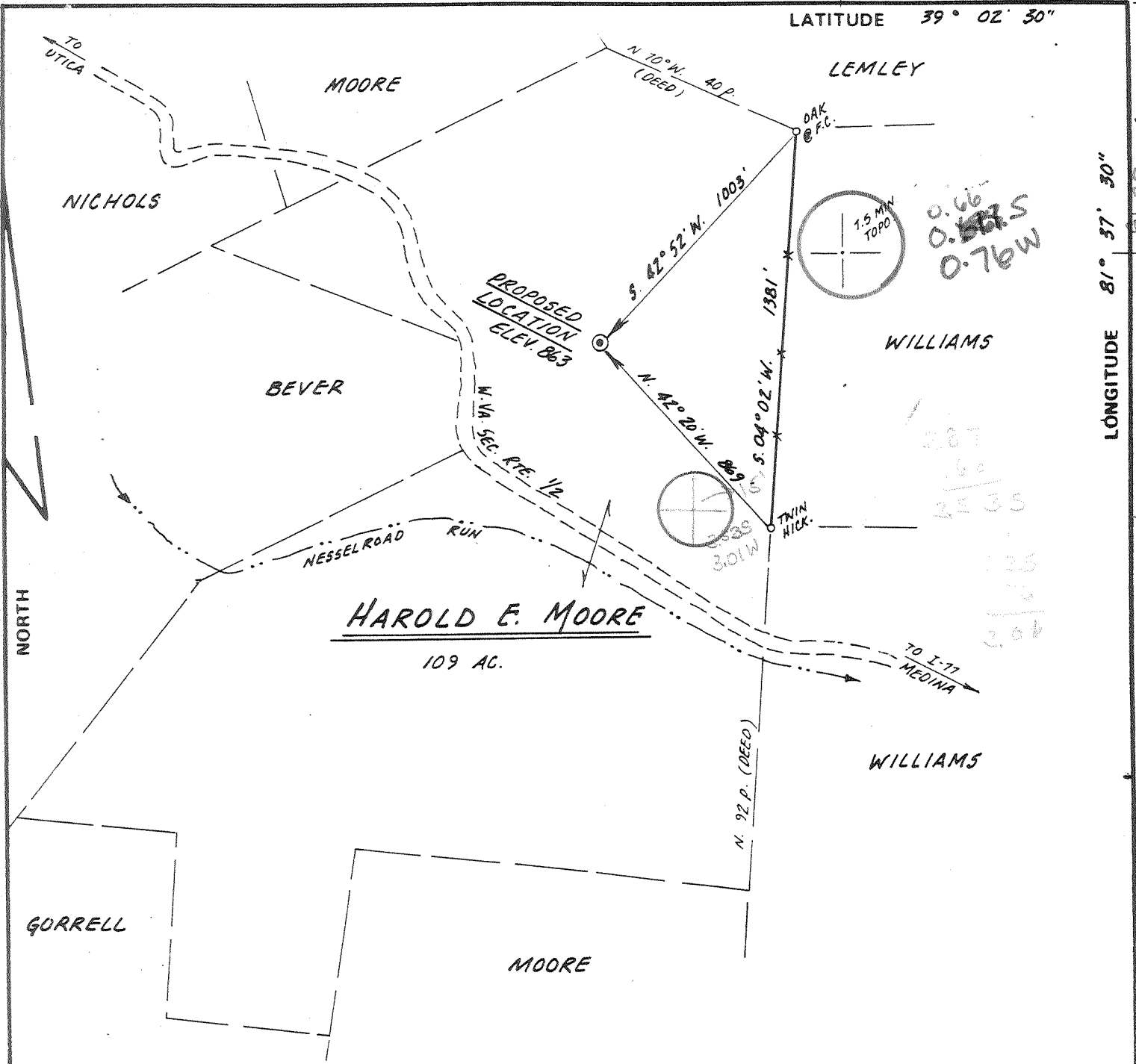


DATE JUNE 30, 1981
 OPERATOR'S WELL NO. KEM 106
 API WELL NO. 47 - 035 - 1589 - P
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 863 WATER SHED NESSELROAD RUN
 DISTRICT GRANT COUNTY JACKSON
 QUADRANGLE POND CREEK (7.5 MIN.)
 SURFACE OWNER HAROLD E. MOORE ACREAGE 109.6
 OIL & GAS ROYALTY OWNER HAROLD E. MOORE, ETAL LEASE ACREAGE 109
 LEASE NO. _____
 PROPOSED WORK: DRILL X 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 ORISKANY ESTIMATED DEPTH 4790
 WELL OPERATOR FRANK H. BARKER DESIGNATED AGENT FRANK BARKER
 ADDRESS Star at Box 232 Racine, West Virginia ADDRESS 836 S. 53rd St. 26110



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 DRAWING NO. _____
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 (SIGNED) Dennis C. Fisher
 R.P.E. _____ L.L.S. #670

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6 (8-78)



DATE JUNE 30, 1981
 OPERATOR'S WELL NO. KEM 106
 API WELL NO. 47 - 035 - 1589
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP X SHALLOW ___
 LOCATION: ELEVATION 863 WATER SHED NESSELROAD RUN
 DISTRICT GRANT COUNTY JACKSON
 QUADRANGLE POND CREEK (7.5 MIN.) Ballville 13 SC
 SURFACE OWNER HAROLD E. MOORE ACREAGE 109.6
 OIL & GAS ROYALTY OWNER HAROLD E. MOORE, ETAL LEASE ACREAGE 109
 LEASE NO. _____
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

JUL 20 1981

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION ORISKANY ESTIMATED DEPTH 4790
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY
 ADDRESS PO BOX B COMPANY ADDRESS PO BOX B
RAVENSWOOD, WEST VIRGINIA 26164 RAVENSWOOD, WEST VIRGINIA 26164



Date May 25, 1982
 Operator's Well No. KEM #106
 Farm Harold Moore
 API No. 47 - 035 - 1580

State of West Virginia
 Department of Mines
 Oil and Gas Division

FEB 07 1983

REVISED
 WELL OPERATOR'S REPORT
 OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

1589

WELL TYPE: Oil / Gas x / Liquid Injection / Waste Disposal /
 (If "Gas," Production x / Underground Storage / Deep / Shallow /)

LOCATION: Elevation: 863' Watershed Nesselroad Run
 District: Grant County Jackson Quadrangle Pond Creek 7.5'

COMPANY Kaiser Exploration and Mining Company

ADDRESS P. O. Box 8, Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER Harold F. Moore

ADDRESS Rt. 2, Box 140, Ravenswood, WV 26164

MINERAL RIGHTS OWNER Same

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Richard

Morris ADDRESS P. O. Box 372, Grantsville

PERMIT ISSUED July 8th, 1981

DRILLING COMMENCED 8/1/81

DRILLING COMPLETED 8/8/82 Workover

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

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8			
7			
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION (See original OG-10) Depth feet

Depth of completed well feet Rotary / Cable Tools

Water strata depth: Fresh feet; Salt feet

Coal seam depths: Is coal being mined in the area?

OPEN FLOW DATA

Producing formation Oriskany (See original OG-10) Pay zone depth feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d

Final open flow Mcf/d Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure psig (surface measurement) after hours shut in

(If applicable due to multiple completion--)

Second producing formation Devonian Brown Shale Pay zone depth 3922'-4072' feet

Gas: Initial open flow -0- Mcf/d Oil: Initial open flow -0- Bbl/d

Final open flow 70 Mcf/d Oil: Final open flow -0- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 650 psig (surface measurement) after 15 hours shut in

(Continue on reverse side)

190 MCF FOP

WELL OPERATOR'S REPORT

[08-75]

APPROX: 17-035-1589

035-1589

WELL TYPE: Oil Gas Liquid Infection Other
 "Gas", Production Underground storage Other
 LOCATION: Elevation: 863 Watershed: Nesselroad Run
 District: Grant County: Jackson Substrate: Pond Creek

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

PERMITTED WORK: Drill / Cement / Drill Jumper / Fracture or stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____

PERMIT ISSUED ON July 8, 1981 OIL & GAS INSPECTOR FOR THIS WORK:
 Name Richard Morris
 Address P. O. Box 372 Grantsville, WV

GEOLOGICAL TARGET FORMATION: Oriskany Sandstone Depth 4923 Feet
 Depth of completed well, 4910 feet Rotary / Cable Tools _____
 Water strata depth: Fresh, ___ feet; salt, ___ feet.
 Coal seam depths: _____ Is coal being mined in the area? NO
 Work was commenced August 1, 1981, and completed August 8, 1981

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor									Winds NONE
Fresh water	10 3/4	H	32.75	X		265(KB)	265(KB)	150sx Class A	
Seal									Lines
Intermediate	7	K	20	X		2235(KB)	2235(KB)	65sx Pozmix 100sx Class A	
Production	4 1/2	N	11.60	X			4890(KB)	275sx Pozmix	Depth set
Perforations									Perforations: Top Bottom 4828 4846(KB)

OPEN FLOW DATA

Producing formation Oriskany Sandstone Pay zone depth 4828 - 4846 feet
 Gas: Initial open flow, Trace Mcf/d Oil: Initial open flow, ___ Mcf/d
 Final open flow, 50 Mcf/d Final open flow, ___ Mcf/d
 Time of open flow between initial and final tests, ___ hours
 Static rock pressure, 700 psig (surface measurement) after 16 hours shut in
 [If applicable for multiple completion--]
 Second producing formation _____ Pay zone depth _____ feet
 Gas: Initial open flow, ___ Mcf/d Oil: Initial open flow, ___ Mcf/d
 Final open flow, ___ Mcf/d Final open flow, ___ Mcf/d
 Time of open flow between initial and final tests, ___ hours
 Static rock pressure, ___ psig (surface measurement) after ___ hours shut in

[09-78]

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

8/11/81: Basin Surveys Perforated Oriskany Sandstone 4828'-4834'(KB) and 4841'-4846(KB); 3 holes/ft; 33 holes; 3 1/2" glass jets
 8/15/81: Halliburton, BJ Hughes treated Oriskany with 15,00# 80/100 sand; 45,000# 20/40 sand; 180,000 SCF nitrogen; 838 BBL water; 1500 gal. 28% HCL acid; breakdown was 4000 psig; treated at an average rate of 20 BPM; Average pressure was 4350 psig; used 2130 hydraulic horsepower; instantaneous shut in pressure was 3800 psig.

FEB 07 1983

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
Soil & Shale			0	60	
Siltstone			60	137	
Sand			137	150	
Siltstone			150	189	
Shale			189	244	
Sand			244	278	
Shale			278	410	
Sand			410	460	
Shale			460	634	
Sand			634	700	
Shale			700	756	
Sand			756	779	
Shale			779	808	
Sand			808	832	
Shale			832	1146	
Sand			1146	1254	
Shale			1254	1300	
Sand			1300	1322	
Shale			1322	1372	
Salt Sand			1372	1498	
Shale			1498	1556	
Salt Sand			1556	1662	
Shale			1662	1764	
Big Lime (Greenbrier)			1764	1882	
Shale			1882	2313	
Coffee Shale (Sunbury)			2313	2339	
Berea Horizon			2339	2339	
Shale			2339	3487	
Brown Shale			3487	4078	
Shale			4078	4444	
Marcellus Shale			4444	4722	Gas show @ 4480
Onondaga Lime			4722	4824	Gas show @ 4800
Oriskany Sand			4824	4858	Gas show @ 4844
Helderberg Lime			4858	4926	
Total Depth		3922 2339 <u>1583</u>	4926		

(Attach separate sheets to complete as necessary.)

Kaiser Exploration and Mining Company
Well Operator

By R. A. P.
Its General Manager

NOTE: Regulation 2.2111 provides as follows:
 "The term 'well' as used in this regulation shall mean a system, installed or planned, for the purpose of exploring, producing, or recovering hydrocarbons, including gas, encountered in the drilling of a well."

1589



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED
JUL - 6 1981
OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE July 1, 1981

Surface Owner Harold & Eulah Moore
Address Rt. 2, Box 140, Ravenswood, WV 26164
Mineral Owner Harold E. Moore, et al
Address Rt. 2, Box 140, Ravenswood, WV 26164
Coal Owner Same as above
Address _____
Coal Operator None
Address _____

Company Kaiser Exploration and Mining Company
Address P. O. Box 8, Ravenswood, WV 26164
Farm Harold Moore, et al Acres 109.6
Location (waters) Nesselroad Run
Well No. KEM #106 Elevation 863
District Grant County Jackson
Quadrangle Pond Creek

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 3-8-82.

INSPECTOR
TO BE NOTIFIED Richard Morris
ADDRESS P. O. Box 372, Grantsville, WV
PHONE 354-7259

J. Hussey
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 there to, (or as the case may be) under grant or lease dated June 23 19 79 by Harold & Eulah Moore made to Kaiser Exploration and Mining Company and recorded on the 29 day of May 1980, in Jackson County, Book 156 Page 184

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 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 coal owners at their above shown respective address _____ day _____ before, or on the _____ day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOLOGICAL LOGS DIRECTLY TO:

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

Very truly yours,
(Sign Name) [Signature]
Well Operator

Address of Well Operator Kaiser Exploration and Mining Company
P. O. Box 8 Street
Ravenswood City or Town
West Virginia State 26164

*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

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____

DRILLING CONTRACTOR: (If Known)
 NAME Clint Hurt & Associates, Inc.
 ADDRESS P. O. Box 388, Elkview, WV 25071
 TELEPHONE 273-5371

RESPONSIBLE AGENT:
 NAME Robert A. Pryce
 ADDRESS P. O. Box 8, Ravenswood, WV 26164
 TELEPHONE 273-5371

ESTIMATED DEPTH OF COMPLETED WELL: 4923' ROTARY X CABLE TOOLS _____

PROPOSED GEOLOGICAL FORMATION: Oriskany

TYPE OF WELL: OIL _____ GAS X COMB. _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LIST IN WELL	CEMENT CHILL UP OR SACKS - CUBIC FT.
20 - 16			
- 10			
- 5/8 10 3/4"	250	250	Cement to surface
- 5/8			
7	2243'	2243	65 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	4923'	4923'	225 sks pozmix
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS _____ FEET SALT WATER _____ FEET

APPROXIMATE COAL DEPTHS _____

IS COAL BEING MINED IN THE AREA? None 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

WV Division of
Environmental Protection

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

MAR 17 83

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT ^{Permitting} SHOULD BE IN TRIPPLICATE, one copy mailed to the Division, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name: MOORE, HAROLD E., ETAL Operator Well No.: MOORE-106

LOCATION: Elevation: 863.00 Quadrangle: POND CREEK
District: GRANT County: JACKSON
Latitude: 3415 Feet South of 39 Deg. 2 Min. 30 Sec.
Longitude 3925 Feet West of 81 Deg. 37 Min. 30 Sec.

Well Type: OIL _____ GAS X

Company: Frank Barker Associates Coal Operator _____
Star Route Box 232 or Owner NA
Racine, WVA-25165

Agent: Frank Barker Coal Operator _____
or Owner NA

Permit Issued: 10/27/92

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of JACKSON

ss:

under the direction of Mr. Chan Robinson State
Inspector

Frank Barker and Steven Kelly being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by the above named well operator, and participated in the work of plugging and filling the above well, and Oil and Gas Inspector representing the Director, say that said work was commenced on the _____ day of _____, 19____, and that the well was plugged and filled in the following manner:

TYPE	FROM	TO	PIPE REMOVED	LEFT
<u>WIRE LINE Permanent Bridge Plug set at 4796'</u>	<u>Plug</u>	<u>4794'</u>	<u>4820' of</u>	
<u>Dumped Twd Sack</u>			<u>2 3/4 Tubing</u>	
<u>Can seal on top.</u>				

No monument Partial Plug only.

Description of monument: _____ and that the work of plugging and filling said well was completed on the 27 day of October, 1992

And further deponents saith not.

Sworn and subscribe before me this 17 day of March, 19 93
My commission expires: Aug 31, 1998

Stephen W Kelly
Frank Barker
James S. Stevens Jr.
Notary Public
Ma Glen P. Robinson

Oil and Gas Inspector:

RECEIVED

WV Division of Environmental Protection

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

MAR 17 93

Permitting
Office of Oil & Gas

Well Operator's Report of Well Work

Farm name: MOORE, HAROLD E., ETAL Operator Well No.: MOORE-106

LOCATION: Elevation: 863.00 Quadrangle: POND CREEK

District: GRANT County: JACKSON
Latitude: 3475 Feet South of 39 Deg. 2 Min. 30 Sec.
Longitude 3925 Feet West of 81 Deg. 37 Min. 30 Sec.

Company: BARKER, FRANK & ASSOCIAT
STAR ROUTE - BOX 232
RACINE, WV 25165-0232

Agent: FRANK H. BARKER

Inspector: GLEN P. ROBINSON
Permit Issued: 10/27/92
Well work Commenced: 10/27/92
Well work Completed: 10/27/92
Verbal Plugging
Permission granted on: 10/26/92
Rotary Cable Rig
Total Depth (feet) _____
Fresh water depths (ft) _____

Salt water depths (ft) _____

Is coal being mined in area (Y/N)? N
Coal Depths (ft): _____

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
10 3/4	265	265	150 SKS
7	2235	2235	165 SKS
4 1/2	4890	4890	275 SKS

OPEN FLOW DATA

Producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: BARKER, FRANK & ASSOCIATES

Reviewed TMG
Recorded _____

By: Frank H. Barker
Date: 3/17/93

3/26/93