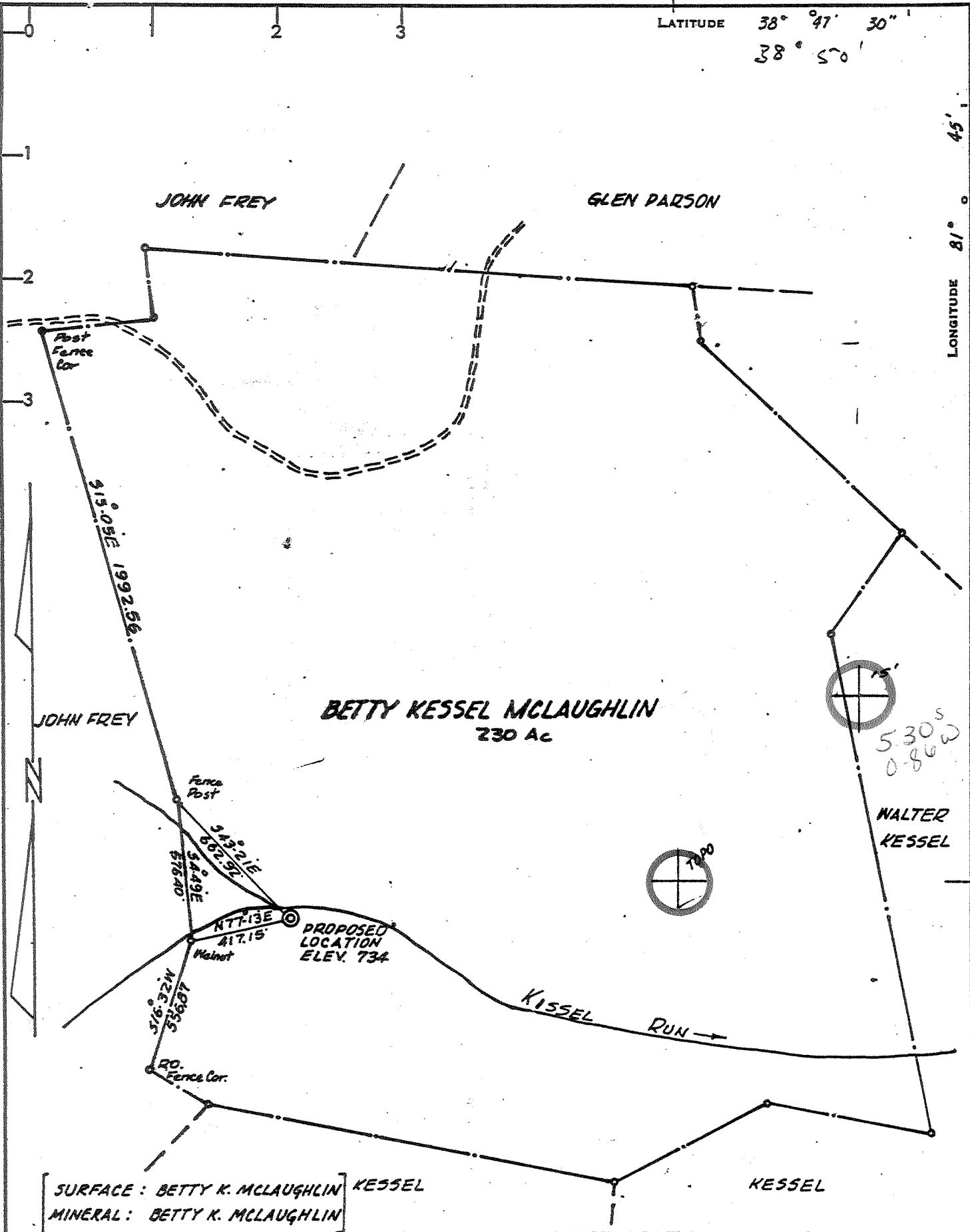


← 4,700' →

LATITUDE 38° 47' 30"
38° 50'

LONGITUDE 81° 45'

14,200'



[SURFACE : BETTY K. MCLAUGHLIN] KESSEL
[MINERAL : BETTY K. MCLAUGHLIN]

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 H. Barber # 289

COMPANY	KAISER EXPLORATION & MINING COMPANY		
ADDRESS	P.O. BOX 8 RAVENSWOOD, WEST VIRGINIA		
FARM	BETTY KESSEL MCLAUGHLIN		
MAP	ACRES	LEASE NO.	
	230		
WELL (FARM) NO.	1	SERIAL NO.	KEM 62
ELEVATION (SPIRIT LEVEL)	734		
QUADRANGLE	COTTAGEVILLE 56 RAVENS 15		
COUNTY	JACKSON	DISTRICT	RIPLEY
POINT OF PROVEN ELEVATION	K706 EL. 1045.		
FILE NO.	JAN. 23, 1981	DRAWING NO.	
DATE		SCALE	1" = 500 FT.

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

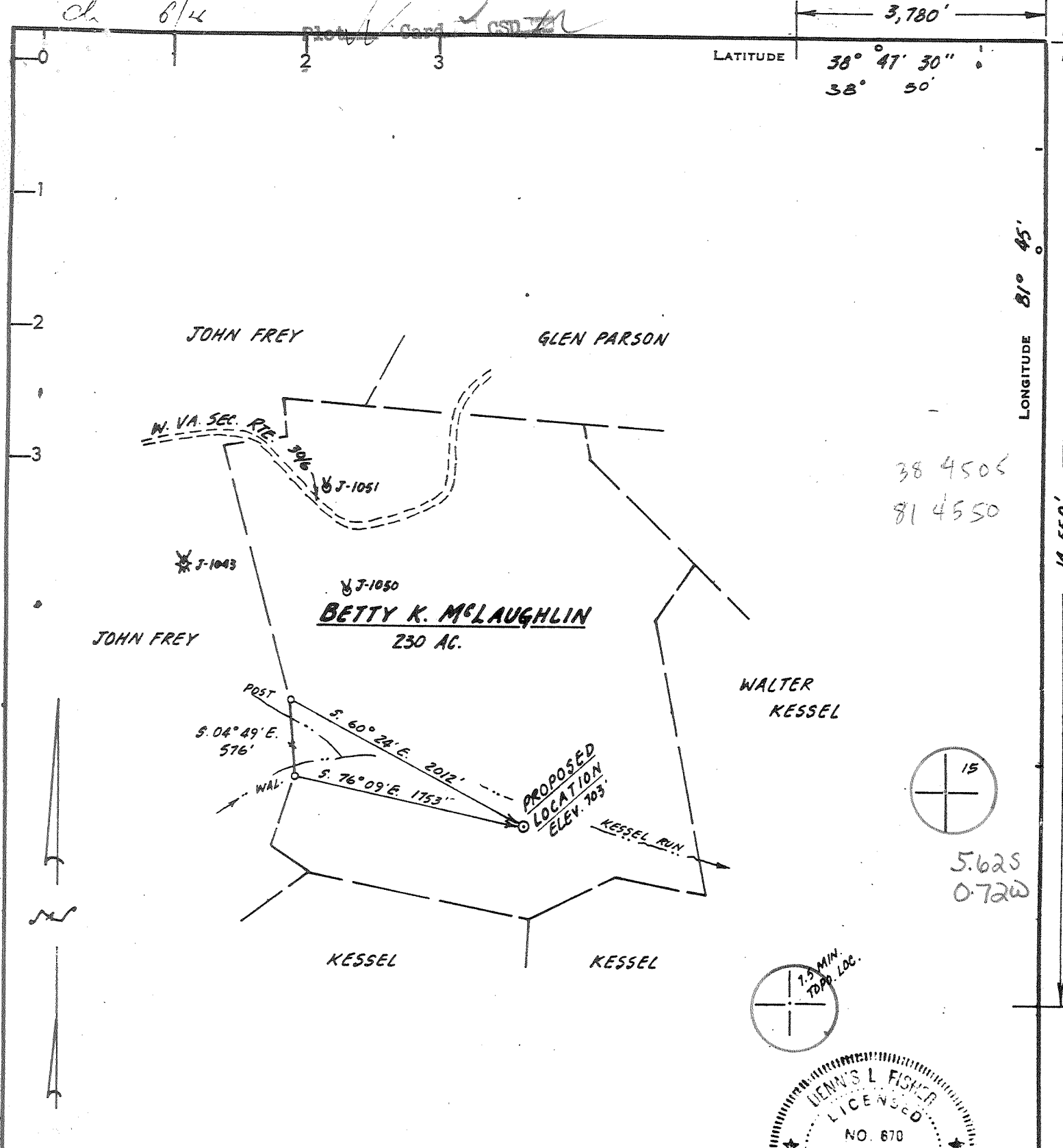
WELL LOCATION MAP

FILE NO. 47-035-1549

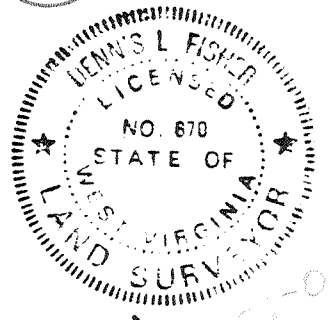
+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 25,000. LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.

- DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

4950' Oriskany



[SURFACE : BETTY K. McLAUGHLIN
 MINERAL : BETTY K. McLAUGHLIN]



(ELK-POCA
 5P UNIT No 19)

CERTIFICATE

"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 Dennis L. Fisher ULS #670

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

COMPANY KAISER EXPLORATION & MINING COMPANY
 ADDRESS P.O. BOX #8, RAVENSWOOD, WEST VIRGINIA 26664
 FARM BETTY K. McLAUGHLIN
 MAP _____ ACRES 230 LEASE NO. _____
 WELL (FARM) NO. _____ SERIAL NO. KEM 62-REV
 ELEVATION (SPIRIT LEVEL) 703'
 QUADRANGLE COTTAGEVILLE 7.5 MIN. Ravenswood 15'SE
 COUNTY JACKSON DISTRICT RIPLEY
 POINT OF PROVEN ELEVATION PREV. KEM 62 LOCATION REFERENCED TO KNOB ELEV. 1045
 FILE NO. _____ DRAWING NO. _____
 DATE MAY 19, 1981 SCALE 1"=1000'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
WELL LOCATION MAP
 FILE No. 035-1549-REV

+ DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS. SCALE 1 TO 24,000 LATITUDE AND LONGITUDE LINES BEING REPRESENTED BY BORDER LINES AS SHOWN.
 - DENOTES ONE INCH SPACES ON BORDER LINE OF ORIGINAL TRACING.

Deep. Criskany 6-6 4950 JUN 20 1981 (348) JUN 20 1981

RECEIVED
NOV 1 1982



Date October 26, 1982
Operator's Well No. KEM #62
Farm Betty K. McLaughlin
API No. 47 - 035 - 1549

State of West Virginia
Department of Mines
Oil and Gas Division

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 734' Watershed Kessel Run
District: Ripley County Jackson Quadrangle Cottageville

COMPANY Kaiser Exploration and Mining Company

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

DESIGNATED AGENT R. A. Pryce

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

SURFACE OWNER Betty K. McLaughlin

ADDRESS 152 Mayfair Drive, Mr. Lebanon

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK Richard

Morris ADDRESS P. O. Box 372, Grantsville, WV

PERMIT ISSUED 3/03/82

DRILLING COMMENCED 4/29/82

DRILLING COMPLETED 5/05/82

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

Casing & Tubing Size Cond.	Used in Drilling	Left in Well	Cement fill up Cu. ft.
20-16			
13-10"		250'	100 sks
9 5/8			
8 5/8			
7		2469'	165 sks
5 1/2			
4 1/2		4895'	225 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4840'-4902' feet

Depth of completed well 4965' feet Rotary X / 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 Sandstone Pay zone depth 4880'-4890' feet

Gas: Initial open flow 2.5 Mcf/d Oil: Initial open flow -- Bbl/d

Final open flow 400 Mcf/d Final open flow -- Bbl/d

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

Static rock pressure 1650 psig (surface measurement) after -- hours shut in

(If applicable due to multiple completion--)

Second producing formation Devonian Brown Shale Pay zone depth 3938'-4146' feet

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

Final open flow 175.5 Mcf/d Oil: Final open flow -- Bbl/d

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

Static rock pressure 1075 psig (surface measurement) after -- hours shut in

*ORISKANY
PLUGGED BACK
8/25/82
PBD = 4210
SHALE
PRODUCER
400
X15
ST-511P
FOR*

(Continue on reverse side)

NOV 8 1982

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

- 5/12/82 Oriskany Sandstone Perforations: 4880'-4890', w/4 shots/ft, 40 holes
- 5/13/82 Oriskany Sandstone Fracture: 50,000# of 20/40 sand; treatment pressure: 4200 psig; ISIP: 3400 psig; total of 720 bbl of water & 135,000 SCF of nitrogen.
- 8/25/82 Devonian Brown Shale Perforations: 3938'-4146' shot selectively w/25 holes, .39" in diameter.
- 8/27/82 Devonian Brown Shale Fracture: 90,000# of 20/40 sand; treatment pressure: 2850 psig; ISIP: 1200 psig; total of 460 bbl of water and 990,000 SCF of nitrogen.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sandstone & Shale			0	1050	
Sandstone			1050	1130	
Shale			1130	1206	
Sandstone & Shale			1256	1573	
Limestone			1573	1911	
Sandstone & Shale			1911	2067	
Shale			2067	2393	
Coffee Shale			2393	2415	
Berea Sandstone			2415	2427	
Shale			2427	3620	S/g @ 3462', 3480', 3492', 3529', 3563', 3580', 3601'
Brown Shale			3620	4288	
Shale			4288	4384	
Marcellus			4384	4765	
Onondaga Limestone			4765	4840	
Oriskany Sandstone			4840	4902	
Helderberg			4902	4965 TD	

3938
2427

1511

4146
2427

1719

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: K. A. P.

Date: October 26, 1982

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 ... encountered in the drilling of a well."



RENEW

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE February 25, 1982
Company Kaiser Exploration and Mining Company
Address P. O. Box 8, Ravenswood, WV 26164
Farm Hugh P. McLaughlin Acres 288
Location (waters) Kessel Run
Well No. KEM 62 Elevation 734
District Ripley County Jackson
Quadrangle Cottageville

Surface Owner Betty K. McLaughlin
Address 152 Mayfair Drive, Mt. Lebanon
Mineral Owner Betty K. McLaughlin
Address 152 Mayfair Drive, Mt. Lebanon
Coal Owner Same as above
Address Same as above
Coal Operator None
Address _____

THIS PERMIT MUST BE POSTED AT THE WELL SITE
ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 7
ARTICLE 4 OF THE W.V. CODE THE LOCATION IS HEREBY
APPROVED FOR drilling renewed
IF OPERATIONS HAVE NOT COMMENCED BY 11-3-82
BY [Signature]

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

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 December 2, 1977 by Betty Kessel & H McLaughlin made to Kaiser Exploration & Mining Co. and recorded on the 6th day of February 9, 78 in Jackson County, Book 146 Page 586

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 and 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
GEOPHYSICAL 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) R. A. Pryce
R. A. Pryce Well Operator
P. O. Box 8

Street
Ravenswood

City or Town
West Virginia 26164

State

Address
of
Well Operator

*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.

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

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME Clint Hurt & Associates, Inc. NAME Robert A. Pryce
 ADDRESS P. O. Box 388, Elkview, WV 25071 ADDRESS P. O. Box 8, Ravenswood, WV 26164
 TELEPHONE 273-5371 TELEPHONE 273-5371
 ESTIMATED DEPTH OF COMPLETED WELL: 4950' 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	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8 10 3/4"	250	250'	150 sks class A
8 - 5/8			
7	2475	2475	65 sks pozmix, 100 sks class A
5 1/2	4950	4950	225 sks pozmix
4 1/2			Perf. Top
3			Perf. Bottom
2			Perf. Top
Liners			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 hereof.

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



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED

FEB - 3 1981

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 Betty R. McLaughlin
Address 152 Mayfair Drive, Mt. Lebanon
Mineral Owner Betty K. McLaughlin
Address 152 Mayfair Drive, Mt. Lebanon
Coal Owner Same as above
Address Same as above
Coal Operator None
Address _____

DATE February 3 1981
Company Kaiser Exploration and Mining Company
Address P. O. Box 8, Ravenswood WV 26164
Farm Hugh P. McLaughlin Acres 288
Location (waters) Kessel Run
Well No. KEM 62 Elevation 734
District Ripley County Jackson
Quadrangle Cottageville

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 10-4-81

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

Fred B. Russell
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 December 2 1977 by Betty Kessel & Hugh
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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) R. A. Prycke
R. A. Prycke Well Operator
P. O. Box 8
Address _____ Street _____
of _____
Well Operator Ravenswood
City or Town _____
West Virginia 26164
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 PERMITS

47-035-1549

PERMIT NUMBER

THIS IS AN ESTIMATE ONLY

PROPOSED WORK ORDER TO X DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME Not known at this time NAME Robert A. Pryce
 ADDRESS _____ ADDRESS P. O. Box 8
 TELEPHONE _____ TELEPHONE Ravenswood, WV 26164
 ESTIMATED DEPTH OF COMPLETED WELL: 4950' 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	LEFT IN WELL	CEMENT FILL UP OR SACKS - (CUBK FT.)
20 - 16			
13 - 10 10-3/4	250	250	150 SX Class A
9 - 5/8			
8 - 5/8			
7	2475	2475	65SX POZMIX 100 SX Class
5 1/2			
4 1/2	4950	4950	225SX 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.

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 For Coal Company

 Official Title

