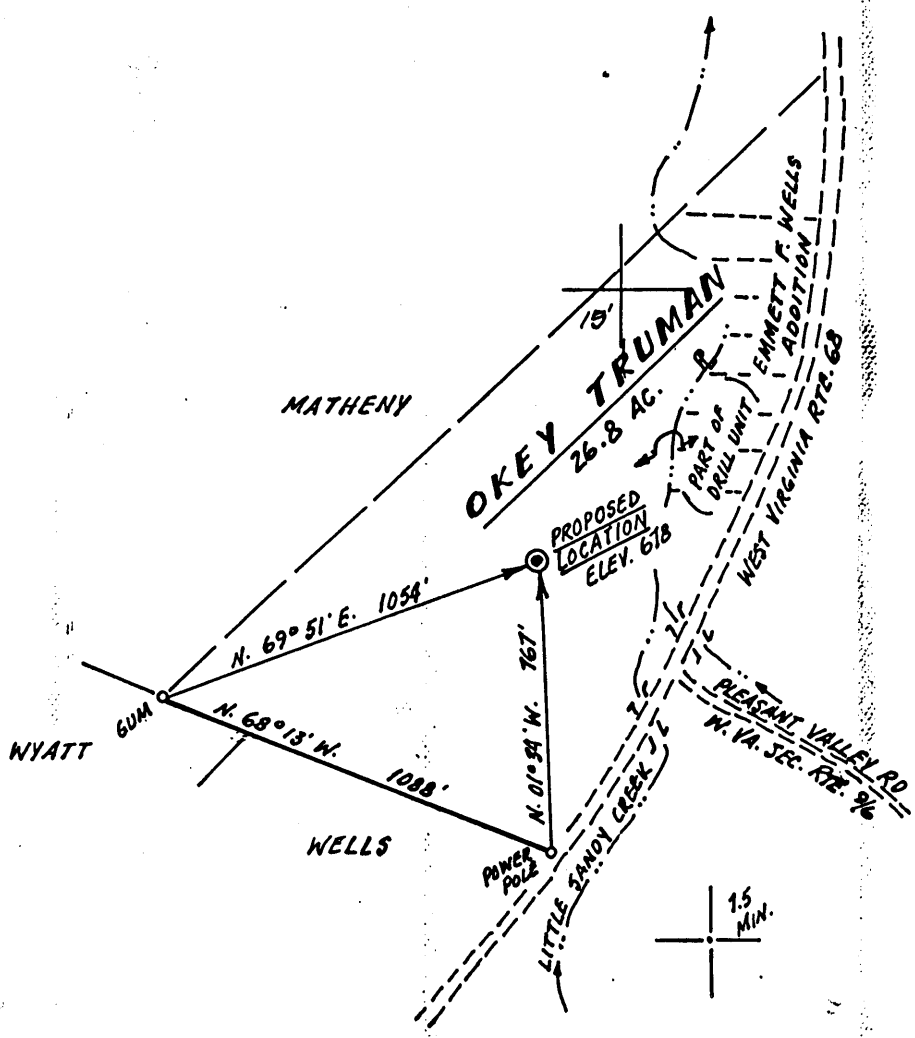


cl 10/14

LATITUDE 39° 15' 00"

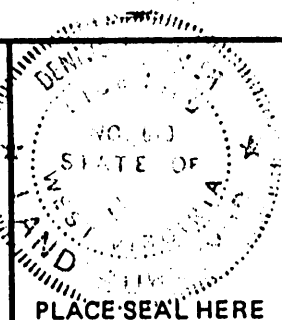
LONGITUDE 81° 37' 30"

NORTH



FILE NO. \_\_\_\_\_  
 DRAWING NO. REV. #1  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 635 AT ROAD INTERSECTION

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)



STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

DATE OCTOBER 8, 1981  
 OPERATOR'S WELL NO. KEM 95 (REV)  
 API WELL NO. 47-107-1182-Frac.  
 STATE COUNTY PERMIT  
Formerly: WOOD-1149  
FRAC CANCELLED

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP X SHALLOW \_\_\_  
 LOCATION: ELEVATION 678 WATER SHED LITTLE SANDY CREEK  
 DISTRICT LUBECK COUNTY WOOD  
 QUADRANGLE LUBECK  
 SURFACE OWNER OKEY TRUMAN ACREAGE 26.8  
 OIL & GAS ROYALTY OWNER OKEY TRUMAN LEASE ACREAGE 26.8

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 4570  
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164

WOOD 1182-FRAC

465

cl 10/10

6,225'

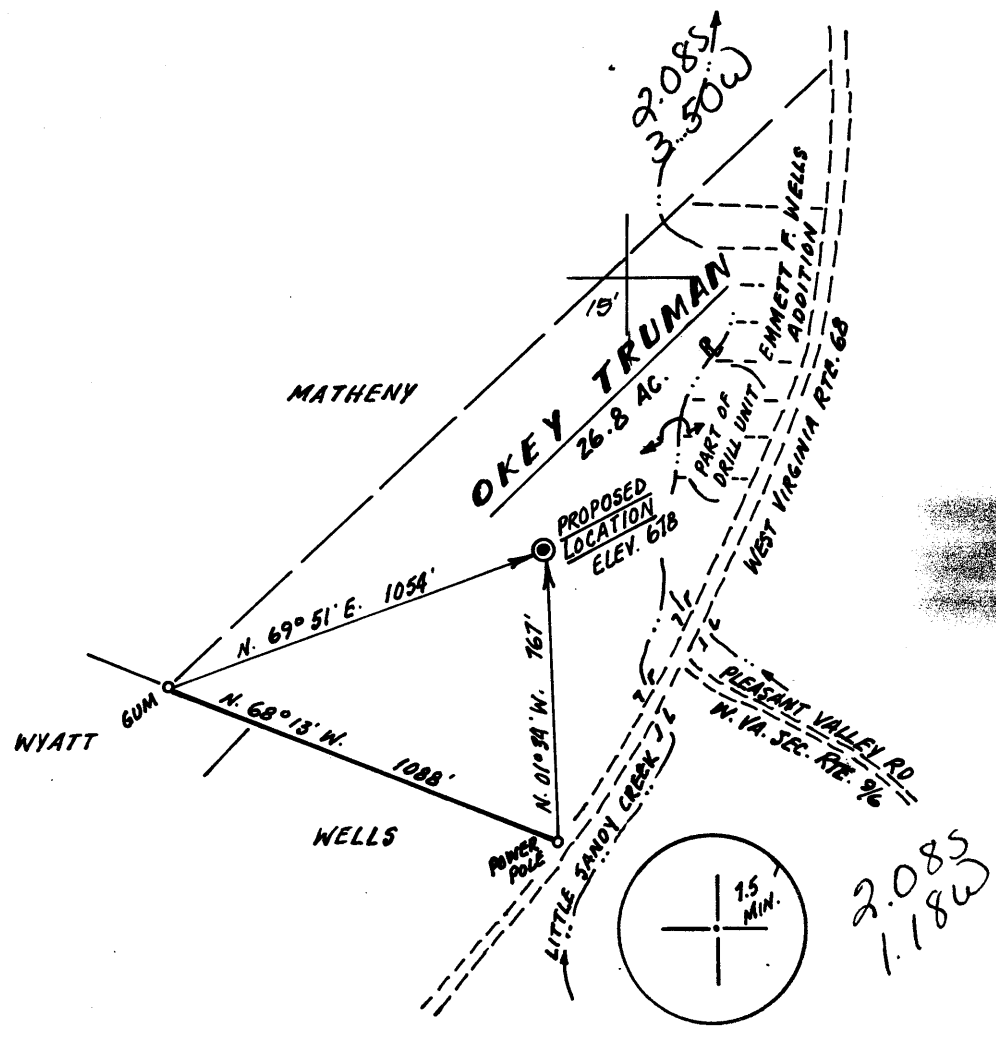
CODE \_\_\_\_\_ CARD \_\_\_\_\_ PLOT \_\_\_\_\_

LATITUDE 39° 15' 00"

LONGITUDE 81° 37' 30"

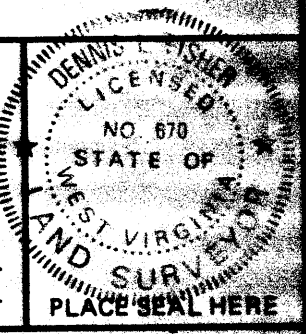
11,050'

NORTH



FILE NO. \_\_\_\_\_  
 DRAWING NO. REV. #1  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 635 AT ROAD INTERSECTION

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 OCTOBER 8, 1981  
 OPERATOR'S WELL NO. WV 95 (REV)  
 API WELL NO. 47-107-1182-Frac.  
 STATE COUNTY PERMIT  
Formerly: WOOD-1149

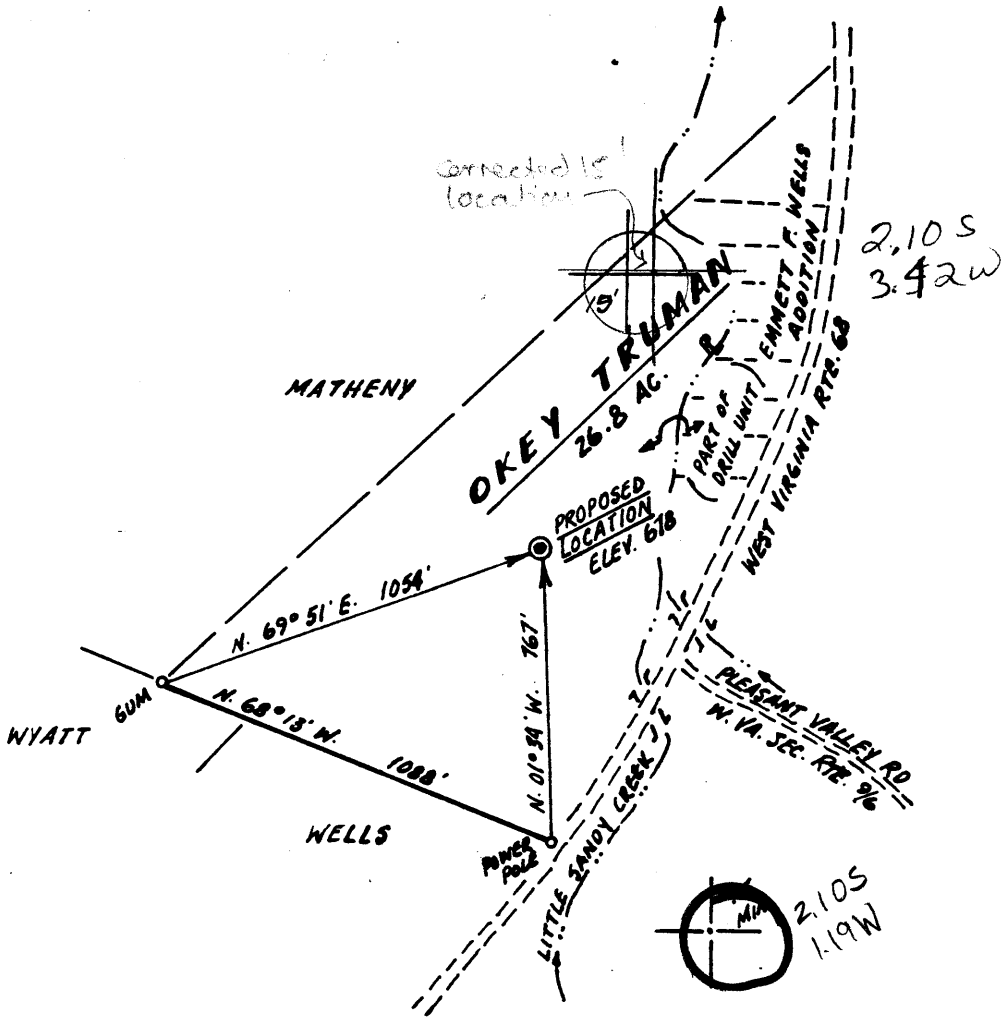
STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP X SHALLOW \_\_\_  
 LOCATION: ELEVATION 678 WATER SHED LITTLE SANDY CREEK  
 DISTRICT LUBECK 3 COUNTY WOOD  
 QUADRANGLE LUBECK 449 009 NL2  
 SURFACE OWNER OKEY TRUMAN ACREAGE 26.8  
 OIL & GAS ROYALTY OWNER OKEY TRUMAN LEASE ACREAGE 26.8  
 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) \_\_\_\_\_

MAR 24 1986

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION ORISKANY ESTIMATED DEPTH 4570  
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164

NORTH



LONGITUDE 81° 35'  
81° 37' 30"

11,050'

FILE NO. \_\_\_\_\_  
DRAWING NO. REV. #1  
SCALE 1" = 500'  
MINIMUM DEGREE OF ACCURACY 1:200  
PROVEN SOURCE OF ELEVATION SPOT ELEV. 635 AT ROAD INTERSECTION

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

PLACE SEAL HERE

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

FORM IV-6 (8-78)



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

DATE OCTOBER 8, 19 81  
OPERATOR'S WELL NO. KEM 95 (REV)  
API WELL NO. 47 - 107 - 1182  
STATE COUNTY PERMIT  
Formerly: WOOD - 1149

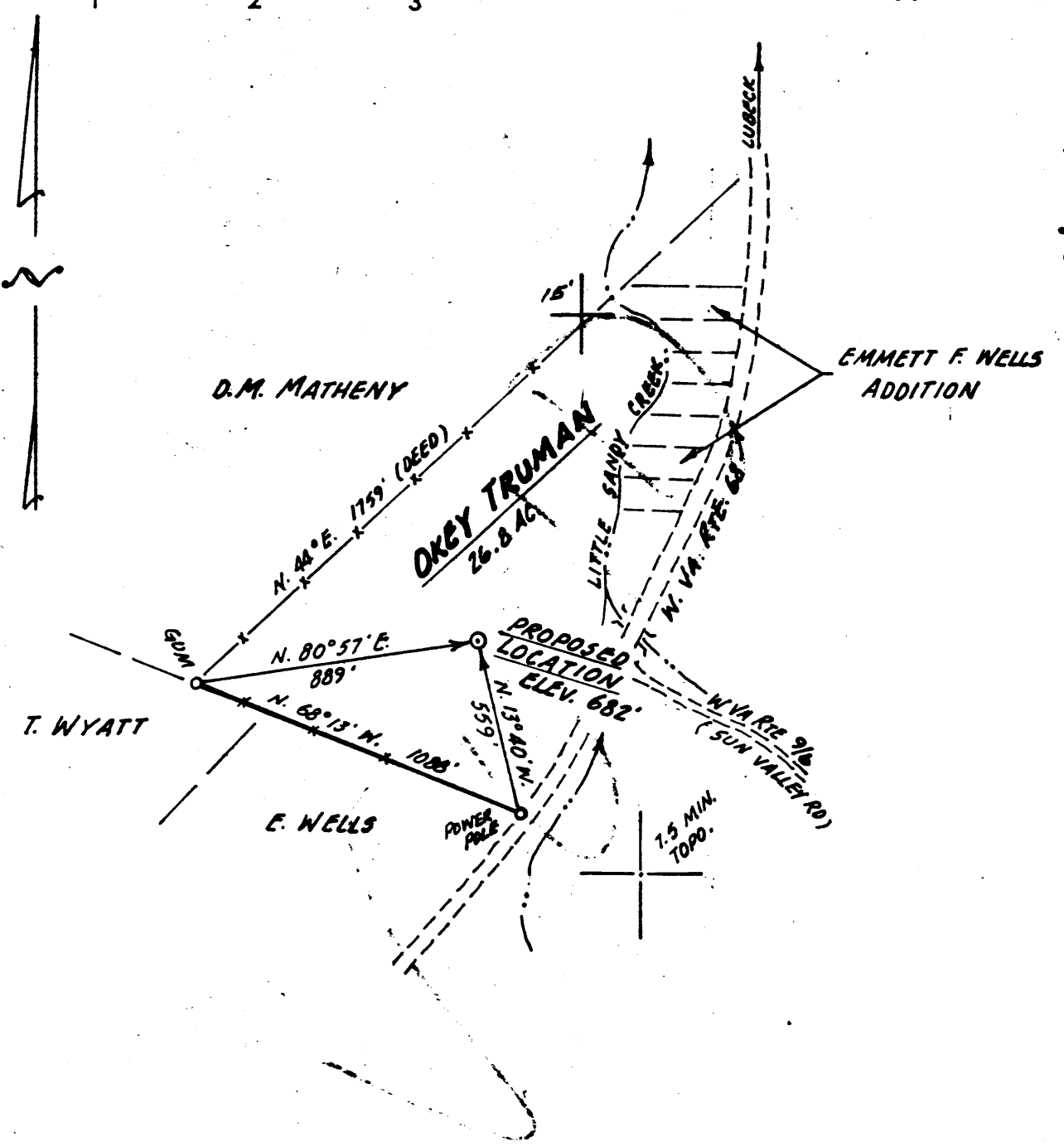
WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP X SHALLOW \_\_\_  
LOCATION: ELEVATION 678 WATER SHED LITTLE SANDY CREEK  
DISTRICT LUBECK COUNTY WOOD  
QUADRANGLE LUBECK Belleville 15' NW  
SURFACE OWNER OKEY TRUMAN ACREAGE 26.8  
OIL & GAS ROYALTY OWNER OKEY TRUMAN LEASE ACREAGE 26.8

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

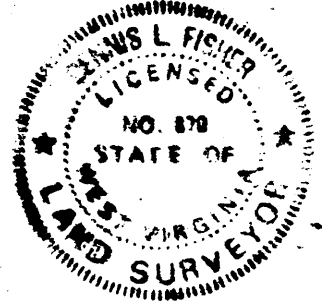
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION ORISKANY ESTIMATED DEPTH 4570  
WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26168 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26168

NOV 5 1981

DEEP WELL 6-6 Washington Bottom (357)



[ SURFACE: OKEY TRUMAN  
MINERAL: OKEY TRUMAN ]



**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

*James L. Fisher* LL5 #670

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

COMPANY KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX #8, RAVENSWOOD, WEST VIRGINIA 26164  
 FARM OKEY TRUMAN  
 MAP \_\_\_\_\_ ACRES 26.8 LEASE NO. \_\_\_\_\_  
 WELL (FARM) NO. \_\_\_\_\_ SERIAL NO. KEH 95  
 ELEVATION (SPIRIT LEVEL) 682'  
 QUADRANGLE LUBECK, W. VA. - OHIO (7.5 MIN.) RE  
 COUNTY WOOD DISTRICT LUBECK  
 POINT OF PROVEN ELEVATION INTERSECTION N. VA. RTE. 68  
& RTE. 9/6, ELEV. 635  
 FILE NO. \_\_\_\_\_ DRAWING NO. \_\_\_\_\_  
 DATE MARCH 27, 1981 SCALE 1" = 500'

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

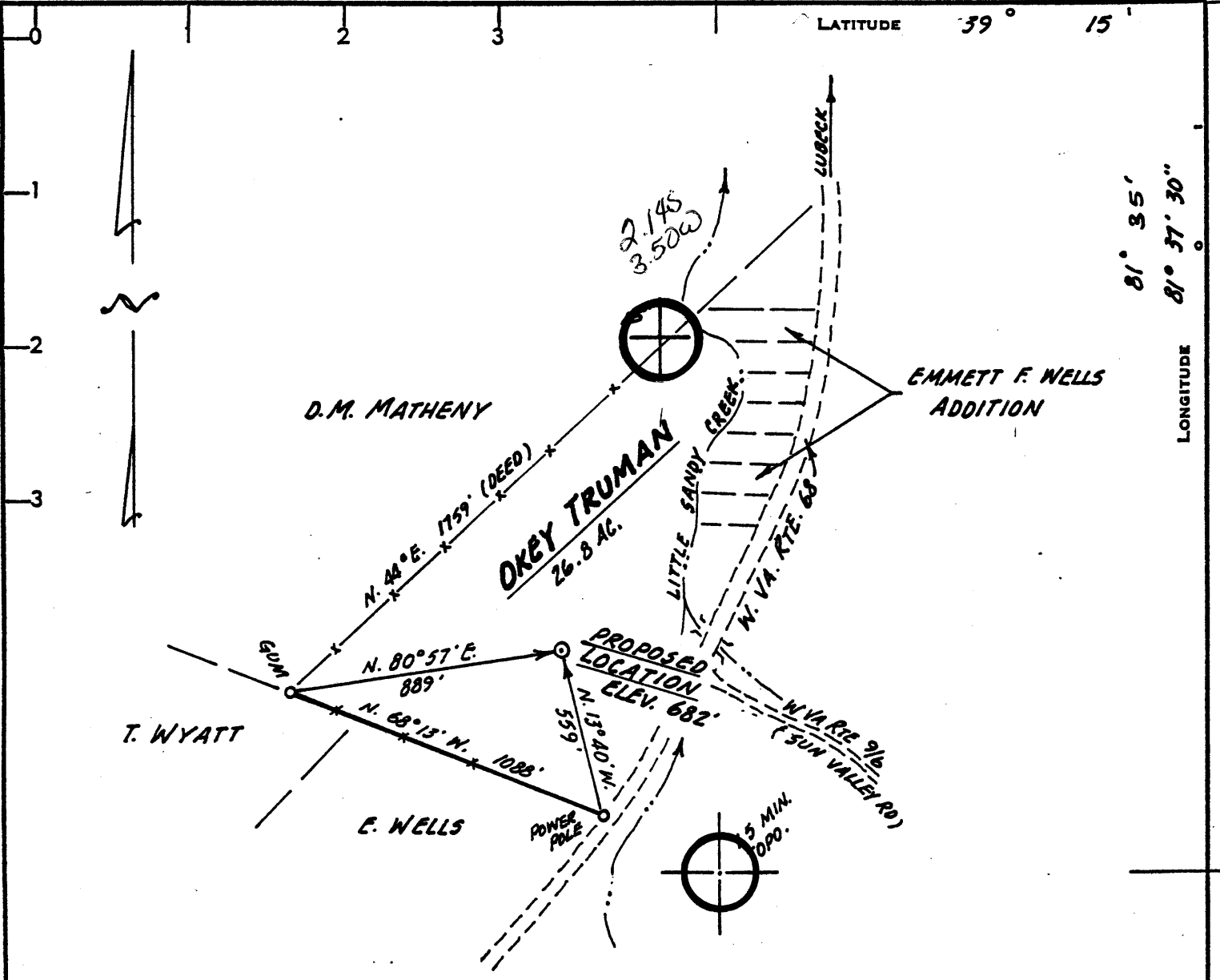
**WELL LOCATION MAP**

FILE NO. 47-107-1149

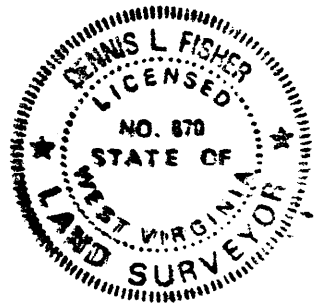
Cancelled - see: WOOD-1182

+ 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.



[ SURFACE: OKEY TRUMAN  
MINERAL: OKEY TRUMAN ]



**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 LLS #670

- NEW LOCATION
- RECONDITION
- DRILL DEEPER
- ABANDONMENT

COMPANY KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX #8, RAVENSWOOD, WEST VIRGINIA 26164  
 FARM OKEY TRUMAN  
 MAP \_\_\_\_\_ ACRES 26.8 LEASE NO. \_\_\_\_\_  
 WELL (FARM) NO. \_\_\_\_\_ SERIAL NO. KEM 95  
 ELEVATION (SPIRIT LEVEL) 682' NC  
 QUADRANGLE LUBECK, W. VA. - OHIO (7.5 MIN.) Bellville  
 COUNTY WOOD DISTRICT LUBECK  
 POINT OF PROVEN ELEVATION INTERSECTION W. VA. RTE. 68 & RTE. 916, ELEV. 635  
 FILE NO. \_\_\_\_\_ DRAWING NO. \_\_\_\_\_  
 DATE MARCH 17, 1981 SCALE 1" = 500'

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

**WELL LOCATION MAP**

FILE NO. 47-107-1149  
 ROW: 1182

+ 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 Well APR 13 1981 W.V. D. O'Keefe

IV-35  
(Rev 8-81)



State of West Virginia  
Department of Mines  
Oil and Gas Division

Date May 16, 1983  
Operator's  
Well No. KEM #95  
Farm Okey Truman  
API No. 47 - 107 - 1182

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    / Shallow x /)

LOCATION: Elevation: 682' Watershed Little Sandy Creek  
District: Lubeck County Wood Quadrangle Lubeck

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 Okey Truman

ADDRESS Rt. 1, Box 4, Mineral Wells, WV

MINERAL RIGHTS OWNER Same

ADDRESS   

OIL AND GAS INSPECTOR FOR THIS WORK Paul

Goodnight ADDRESS Smithville, WV 26175

PERMIT ISSUED 10/21/81

DRILLING COMMENCED 11/10/81

DRILLING COMPLETED 11/16/81

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"	265' (KB)	265' (KB)	150 sks class A
9 5/8			
8 5/8			
7	1849" (KB)	1849' (KB)	55 sks pozmix 100 sks Class A
5 1/2			
4 1/2	4384' (KB)	4384' (KB)	225 sks pozmix
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany Sandstone Depth 4317' -    feet

Depth of completed well 4397' 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 4317-4322 feet

Gas: Initial open flow Trace Mcf/d Oil: Initial open flow 4328-4335 Bbl/d

Final open flow N/A\* Mcf/d Final open flow    Bbl/d

Time of open flow between initial and final tests    hours

Static rock pressure 325 psig (surface measurement) after 24 hours shut in

(If applicable due to multiple completion--)

Note: Oriskany uneconomical to produce due to excessive salt water

back: Second producing formation Brown Shale Pay zone depth 3537 feet

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

Final open flow 170 Mcf/d Oil: Final open flow MAY - 9 1984 Bbl/d

Time of open flow between initial and final tests 1 hours

Static rock pressure 965 psig (surface measurement) after 1 Mo hours shut in

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

- 11/19/81: Perforated Oriskany with 3 5/8" hollow carrier gun; 4317'-4322' and 4328'-4335' total 48 ceramic jet charges (McCullough).
- 11/20/81: Hydrofractured Oriskany with 15000# 80/100 sand, 45,000# 20/40 sand, 331,000 SCF of nitrogen, 730 bbl water at 36 BPM and 2450 psig. Formation breakdown at 2000 psig. Shut in at 1200 psig.
- 4/14/82: Basin Surveys set <sup>Huron</sup> permanent bridge plug in 4 1/2" casing at 3682' (KB); perforated Brown Shale at 3537-3641' (KB); 15 holes; .39" diameter.
- 4/23/83: B.J. Hughes foam fractured Brown Shale with 500 gal of 15% HCL acid, 60,000# 20/40 sand, 298 bbl water, and 797,000 SCF of nitrogen, 3400 psig average treating pressure.

## WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Sand			0	326	
Shale			326	406	
Sand			406	420	
Shale & Siltstone			420	854	
Sand			854	877	
Shale			877	950	
Sand			950	998	
Shale & Siltstone			998	1137	
Sand			1137	1216	
Shale & Siltstone			1216	1486	
Salt Sand			1486	1607	
Shale			1607	1927	
Coffee Shale (Sunbury)			1927	1954	
Berea Sand			1954	1956	Gas show at 1954'
Shale			1956	3104	Gas show at 3012'
Brown Shale			3104	3642	Gas show at 3592, 3619'
Shale			3642	3986	Gas show at 3882'
Marcellus Shale			3986	4216	Gas show at 4035', 4119', 4182'
Onondaga Lime			4216	4297	Gas show at 4220', 4250', 4235'
Oriskany Sand			4297	4360	Gas show at 4308', 4317', 4330'
Helderberg Lime			4360	4397	Gas show at 4378'
Total Depth			4397		

3537  
1956  
—  
1581

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY  
Well Operator

By: R.A.P.  
Date: May 16, 1983

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





**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:  4570'  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			
9 - 5/8      10 3/4"	250'	250'	150 sks class A (to surface)
8 - 5/8			
7	1900'	1900'	50 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	4570'	4570'	225 sks class A
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**  
FEB 27 1986



1) Date: January 31, 1986  
 2) Operator's Well No. KEM #95, Truman  
 3) API Well No. 47 107 1182-F  
 State County Permit

STATE OF WEST VIRGINIA

DIVISION OF OIL & GAS DEPARTMENT OF ENERGY, OIL AND GAS DIVISION  
 DEPARTMENT OF ENERGY APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil        / Gas X /  
 B (If "Gas", Production X / Underground storage        / Deep        / Shallow X /)
- 5) LOCATION: Elevation: 682 Watershed: Little Sandy Creek  
 District: Lubeck County: Wood Quadrangle: Lubeck
- 6) WELL OPERATOR Kaiser Exploration and Mining Company CODE: 25350 7) DESIGNATED AGENT R. A. Pryce  
 Address P. O. Box 8 Address Same  
Ravenswood, WV 26164
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Glen Robinson  
 Address Rt. 1, #6 Mt. Pleasant Estates  
Mineral Wells, WV 26150
- 9) DRILLING CONTRACTOR: Name         
 Address
- 10) PROPOSED WELL WORK: Drill        / Drill deeper        / Redrill        / Stimulate         
 Plug off old formation        / Perforate new formation         
 Other physical change in well (specify) Frac Berea and Produce Commingled w/shale
- 11) GEOLOGICAL TARGET FORMATION, Brown SHALE
- 12) Estimated depth of completed well, 3682 feet
- 13) Approximate trata depths: Fresh, N/A feet; salt, N/A feet.
- 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes        / No X /
- 15) 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									Kinds
Fresh water	10 3/4	H-40	32.75	X		265	265	150 sks class	A
Coal									Sizes
Intermediate	7"	K-55	20	X		1849	1849	165 sks	
Production	4 1/2	N-80	11.6	X		4385	4385	225 sks poz	Depth set
Tubing	2 3/8	J-55	4.7	X		3629		225 sks poz	ix
Liners									Perforations:
								Oriskany	Top 4317 Bottom 4335
								Brown Sh.	3537 3641

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47-107-1182-Frac Date March 20, 1986

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector. (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires March 20, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <u>✓</u>	Agent: <u>FLB</u>	Plat: <u>AS</u>	Casing: <u>MS</u>	Fee: <u>969339</u>	WPCP: <u>FRAC TANK</u>	S&E: <u>AS</u>	Other: <u>      </u>
----------------	-------------------	-----------------	-------------------	--------------------	------------------------	----------------	----------------------

NOTE: Keep one copy of this permit posted at the drilling location.

John H. Johnston by Margaret J. Wass  
 Director, Division of Oil and Gas File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.



REVISED

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

RECEIVED

OCT 13 1981

Oil and Gas Division

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

OIL AND GAS WELL PERMIT APPLICATION

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

DATE October 8, 1981

Surface Owner Okey Truman  
Address Rt. 1, Box 4, Mineral Wells, WV  
Mineral Owner Same  
Address \_\_\_\_\_  
Coal Owner Same  
Address \_\_\_\_\_  
Coal Operator None  
Address \_\_\_\_\_

Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm Okey Truman Acres 26.8  
Location (waters) Little Sandy Creek  
Well No. KEM #95 Elevation 682'  
District Lubeck County Wood  
Quadrangle Lubeck, O/WV

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 6-21-82.

INSPECTOR  
TO BE NOTIFIED Paul Goodnight Deo Mace  
ADDRESS Smithville, WV 26178  
PHONE 477-2455 655-8693

*J. M. Muzey*  
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 19 19 80 by Okey & Bessie Truman made to Kaiser Exploration and Mining Company and recorded on the 16th day of January 19 81, in Kanawha County, Book 749 Page 539

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. A. P.  
Well Operator  
Kaiser Exploration and Mining Company  
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.

BLANKET BOND

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 Unknown at this time \_\_\_\_\_ NAME Robert A. Pryce \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ ADDRESS P. O. Box 8, Ravenswood, WV 26164 \_\_\_\_\_  
 TELEPHONE \_\_\_\_\_ TELEPHONE 273-5371 \_\_\_\_\_  
 ESTIMATED DEPTH OF COMPLETED WELL: 4570' \_\_\_\_\_ 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 (to surface)
8 - 5/8			
7	1900'	1900'	65 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	4570'	4570'	225 sks class A or into 7"
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