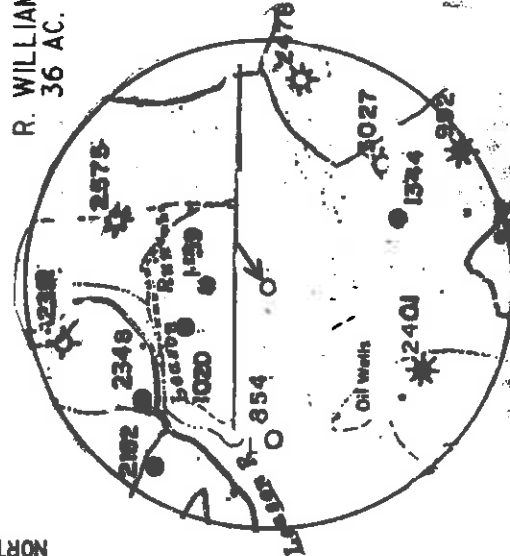
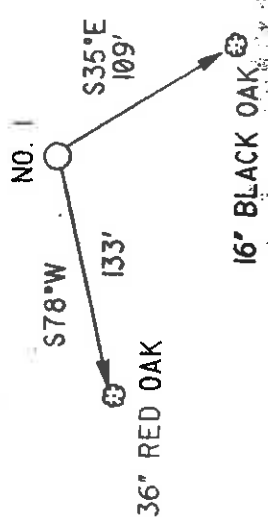


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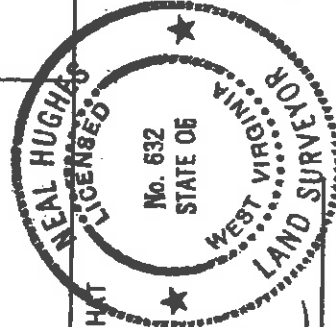
0.9000



REFERENCE POINTS



I THE UNDERSIGNED, DO 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 ENERGY.



L.L.S. *Neal Hughes*  
632

(\*) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

DATE OCTOBER 19 19 95  
OPERATORS WELL NO. ROSS 1

API WELL NO. 47 - 017 - 04227  
STATE WEST VIRGINIA COUNTY OXFORD PERMIT Was 017 3367

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 95-96  
PROVEN SOURCE OF ELEVATION KNOB 1332' SCALE 1" = 500'  
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY OIL AND GAS DIVISION

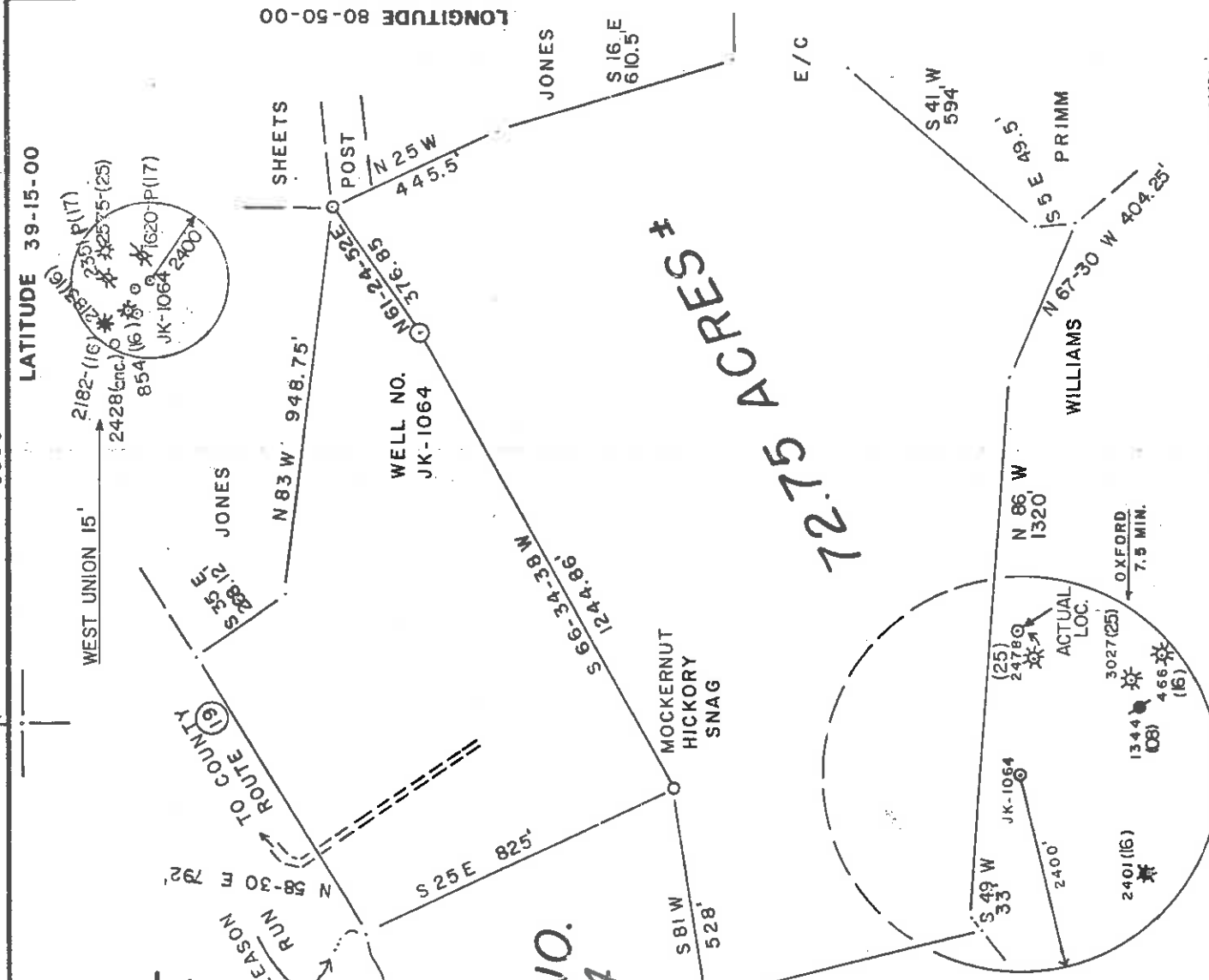
WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF 'GAS' PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1060' WATERSHED LEASON RUN  
DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE OXFORD  
SURFACE OWNER RAY RICHARDS ACREAGE 72.75  
ROYALTY OWNER FORREST M. ROSS, ET AL LEASE ACREAGE 72.75  
PROPOSED WORK:  
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER   
PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ALEXANDER  
ESTIMATED DEPTH 5400'

WELL OPERATOR KEY OIL CO. DESIGNATED AGENT JAN CHAPMAN  
ADDRESS 22 GARTON PLAZA ADDRESS 22 GARTON PLAZA  
WESTON, WV 26452 WESTON, WV 26452

# ROSS LEASE

## WELL NO. JK-1064

NORTH

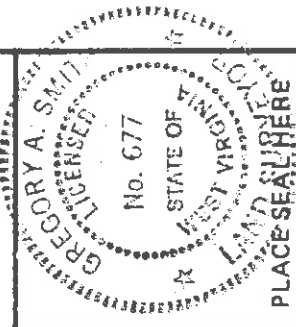


### REFERENCES

JK-1064  
 46-43-40 W 72.40'  
 15-09-06 W 90.48'  
 60 P. SPIKE  
 12' BLACK OAK  
 1"=100'

FILE NO. 16-9  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1"=400'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION TOP OF KNOB  
 ELEV. 1223'

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) *Gregory A. Smith*  
 R.P.E. L.L.S. 677



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



DATE SEPTEMBER 3, 19 84  
 OPERATOR'S WELL NO. JK-1064  
 API WELL NO. 47-017-3367  
 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 1053' WATER SHED LEASON RUN  
 DISTRICT CENTRAL COUNTY DODDRIDGE  
 QUADRANGLE OXFORD 7.5  
 SURFACE OWNER RAY H. & LORAGALE RICHARDS ACREAGE 72.75  
 OIL & GAS ROYALTY OWNER F. H. ROSS et al. LEASE NO. JJ-1548

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 ALEXANDER ESTIMATED DEPTH 5375'  
 WELL OPERATOR J & J ENTERPRISES, INC. DESIGNATED AGENT RICHARD M. REDDECLIFF  
 ADDRESS P.O. BOX 48 423 ADDRESS P.O. BOX 48 BUCKHANNON, WV 26201  
 BUCKHANNON, WV 26201

DODD 3367

NOV 24 1986



CODE \_\_\_\_\_

PLOT \_\_\_\_\_

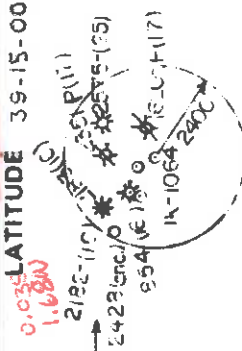
3890'

LATITUDE 39-15-00

700

# ROSS LEASE

0.035  
1.68W  
WEST UNION IS'



LONGITUDE 80-50-00

SHEETS

N 83 W 948.75'

WELL NO.  
JK-1064

PCST

N 25 W

445.5'

N61.24-52E

376.85

JONES

S 16 E

610.5'

S 66-34-38 W 1244.86'

MOCKERNUT  
HICKORY  
SNAG

## WELL NO. JK-1064

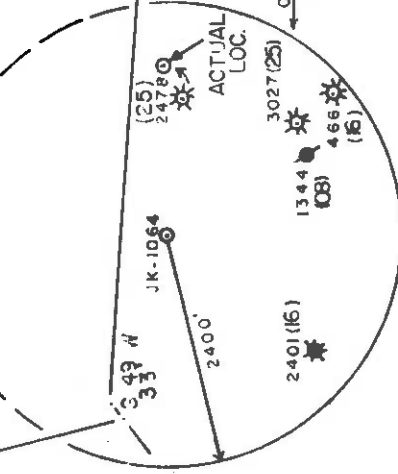
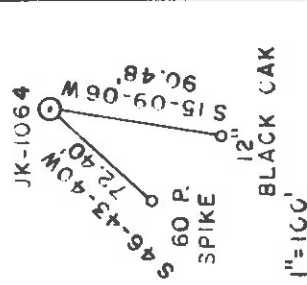
NORTH

# 72.75 ACRES #

N 14 W  
693'

E/C

REFERENCES



FILE NO. 16-9

DRAWING NO. \_\_\_\_\_

SCALE 1" = 400'

MINIMUM DEGREE OF ACCURACY 1:200

PROVEN SOURCE OF ELEVATION TOP OF KNOB

ELEV. 1223'

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) Gregory A. Smith

R.P.E. \_\_\_\_\_ L.L.S. 677

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

FORM IV-6 (8-78)



DATE SEPTEMBER 3, 19 84

OPERATOR'S WELL NO. JK-1064

API WELL NO. 47-017-3367

STATE WV COUNTY PUTNAM PERMIT Now: 0174227

### 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 1053' WATER SHED LEASON RUN

DISTRICT CENTRAL COUNTY DODDRIDGE

QUADRANGLE OXFORD 7.5 526 Holbrook 058 No2

SURFACE OWNER RAY H. LORAGALE RICHARDS ACREAGE 72.75

OIL & GAS ROYALTY OWNER F.H. ROSS et al. LEASE ACREAGE 72.75

LEASE NO. JJ-1548

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 ALEXANDER ESTIMATED DEPTH 5375'

WELL OPERATOR J.B.J. ENTERPRISES, INC. DESIGNATED AGENT RICHARD M. REDDECLIFF

ADDRESS P.O. BOX 48 ADDRESS P.O. BOX 48

BUCKHANNON, WV 26201 BUCKHANNON, WV 26201

NOV 05 1984

PLACE SEAL HERE



**RECEIVED**  
WV Division of  
Environmental Protection

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

DEC 08 1995

Permitting  
Office of Oil & Gas

Well Operator's Report of Well Work

Farm name: RICHARDS, RAY Operator Well No.: Ross #1

LOCATION: Elevation: 1,060.00 Quadrangle: OXFORD

District: CENTRAL County: DODDRIDGE  
Latitude: 300 Feet South of 39 Deg. 15Min. 0 Sec.  
Longitude 8950 Feet West of 80 Deg. 50 Min. 0 Sec.

Company: KEY OIL COMPANY  
22 GARTON PLAZA  
WESTON, WV 26452-0000

Agent: JAN E. CHAPMAN

Inspector: MIKE UNDERWOOD  
Permit Issued: 10/30/95  
Well work Commenced: 11/9/95  
Well work Completed: 11/15/95  
Verbal Plugging  
Permission granted on:  
Rotary X Cable Rig  
Total Depth (feet) 5448  
Fresh water depths (ft) -0-

Salt water depths (ft) 1726'

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): 1600'-1685', 1900'-1907'

**OPEN FLOW DATA**

Balltown Sands  
Riley  
Third Riley  
Benson

Producing formation Alexander  
Gas: Initial open flow 21 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 1,524 MCF/d Final open flow Show Bbl/d  
Time of open flow between initial and final tests N/A Hours  
Static rock Pressure 1725 psig (surface pressure) after 96 Hours

Second producing formation  
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

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4	132	132	70 sks. to surface
8 5/8	2016	2016	540 sks. to surface
4 1/2		5413	360 sks.
1.5		5278	

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: KEY OIL COMPANY

By:   
Date: December 5 1995

President

69 89

Ross #1 (47-017-4227)  
Four Stage Foam Frac - Halliburton

1st Stage: Alexander (12 holes) 60 Quality Foam, 750 gal. 15% HCl, 60,000 lbs. 20-40 sand, 490,000 SCF N<sub>2</sub>, 812 bbls. foamed fluid.

2nd Stage: Benson (10 holes) 75 Quality Foam, 750 gal. 15% HCl, (5024' -5026.25') 5,000 lbs. 80-100 sand, 35,000 lbs. Third Riley (2 holes) 20-40 sand, 517,000 SCF N<sub>2</sub>, (4951.50' -4963') 654 bbls. foamed fluid.

3rd Stage: Riley (7 holes) 60 Quality Foam, 750 gal. 15% HCl, (4614' -4651.25') 10,000 lbs. 80-100 sand, 30,000 lbs. Lower Bailtown (5 holes) 20-40 sand, 508,000 SCF N<sub>2</sub>, (4367.25' -4536.25') 612 bbls. foamed fluid.

4th Stage: Bailtown (11 holes) 60 Quality Foam, 750 gal. 15% HCl, (3950.75' -4204.50') 10,000 lbs. 80-100 sand, 50,000 lbs. 20-40 sand, 629,000 SCF N<sub>2</sub>, 855 bbls. foamed fluid.

Well Log

Formation	Top Feet	Bottom Feet	Remarks
Shale & Red Rock	0	206	
Sand, Shale & Red Rock	206	650	1" stream water at 1726'
White Sand	650	1680	
Coal	1680	1685	
Sand & Shale	1685	1900	
Coal	1900	1907	
Sand & Shale	1907	2033	
Little Lime	2033	2074	2006 N/S
Pencil Cave	2074	2094	2100 N/S
Big Lime	2094	2176	2504 N/S
Big Injun	2176	2220	3034 N/S
Shale	2220	2386	3497 N/S
Weir	2386	2516	4115 4/10 thru 1" w/water
Sand & Shale	2516	3448	4706 4/10 thru 1" w/water
Warren	3448	3546	5105 4/10 thru 1" w/water
Shale	3546	3636	5448 T.D. 4/10 thru 1" w/water
Speechley	3636	3644	
Sand & Shale	3644	3881	
Bailtown Sands	3881	4218	
Sand & Shale	4218	4592	
Riley	4592	4661	
Sand & Shale	4661	4948	
Third Riley	4948	4980	
Sand & Shale	4980	5022	
Benson	5022	5028	
Sand & Shale	5028	5280	
Alexander	5280	5350	
Shale	5350	5448	
T. D.	5448		

FILE COPY



1) Date: September 10, 19 84  
 2) Operator's Well No. JK-1064  
 3) API Well No. 47 State 017 County 3367 Permit

NO W. 017 4227

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES, OIL AND GAS DIVISION  
 APPLICATION FOR A WELL WORK PERMIT

4) WELL TYPE: A OH / Gas  / Production   
 B (If "Gas", Production  / Shallow   
 5) LOCATION: Elevation: 1053'  
 District: Central  
 Watershed: Leason Run LKH10EE1  
 County: Doddridge  
 6) WELL OPERATOR J & J Enterprises, Inc.  
 Address P.O. Box 48  
Buckhannon, WV 26201  
 7) DESIGNATED AGENT Richard M. Reddecliff  
 Address P.O. Box 48  
Buckhannon, WV 26201  
 8) OIL & GAS INSPECTOR TO BE NOTIFIED  
 Name Mike Underwood  
 Address Rt. 2, Box 114  
Salem, WV 26426  
 9) DRILLING CONTRACTOR:  
 Name S.W. Jack Drilling, Co.  
 Address P.O. Box 48  
Buckhannon, WV 26201  
 10) PROPOSED WELL WORK: Drill  / Redrill  / deeper  / Stimulate   
 Plug off old formation  / Perforate new formation   
 Other physical change in well (specify) \_\_\_\_\_

11) GEOLOGICAL TARGET FORMATION, Alexander  
 12) Estimated depth of completed well, 5375' feet  
 13) Approximate trata depths: Fresh, 125' feet; salt, N/A feet.  
 14) Approximate coal seam depths: \_\_\_\_\_ feet  
 Is coal being mined in the area? Yes \_\_\_\_\_  
 15) CASING AND TUBING PROGRAM

RECEIVED  
 DEPT. OF MINES, OIL & GAS DIVISION  
 No. SEP 6 1984  
 Kind Permits set  
 by rule 15-01

CASING OR TUBING TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	Perforations: Top Bottom
	Size	Grade	Weight per ft.	Left in well		
Conductor	11 3/4	H-40	42	0	0 Sacks	
Fresh water	8 5/8	ERW	23	1153'	To surface	
Coal	8 5/8	ERW	23	1153'	To surface	
Intermediate						
Production	4 1/2	J-55	10.5	5275'	300 Sacks	
Tubing					or as required	
Liners						

OFFICE USE ONLY  
 DRILLING PERMIT

Permit number 47-017-3367

Date November 1, 19 84

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. 5) 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 November 1, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>82</u>	<u>MW TS</u>	<u>TS</u>	<u>TS</u>	<u>1808</u>

Margaret J. Hase  
 Administrator, Office of Oil and Gas

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

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





OCT 24 1995 DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

STATE OF WEST VIRGINIA

WELL WORK PERMIT APPLICATION

Permitting  
 Office of Regulator: KEY OIL COMPANY 25655 ① 526

Operator's Well Number: ROSS #1 3) Elevation: 1060'

Well type: (a) OIL  or Gas  Drilled 10/30/95

(b) If Gas: Production  / Underground Storage  / Shallow  / Deep  Expired 10/30/97

- 5) Proposed Target Formation(s): 439 ALEXANDER
- 6) Proposed Total Depth: 5500 feet
- 7) Approximate fresh water strata depths: 90'
- 8) Approximate salt water depths: 1715'
- 9) Approximate coal seam depths: N/A

- 10) Does land contain coal seams tributary to active mine? Yes  No
- 11) Proposed Well Work: DRILL, STIMULATE, PRODUCE New Well.
- 12)

**CASING AND TUBING PROGRAM**

TYPE	SIZE	GRADE	Weight per ft.	FOOTAGE FOR drilling	Left in well	FILL-UP (cu. ft)	CEME.
Conductor	16	USED		25	-0-	38500/13	
Fresh Water	11 3/4	ERW	42	132	132	70 SKS. TO SURFACE	
Coal						38500/12	
Intermediate	8 5/8	ERW	23	2000	2000	540 SKS. TO SURFACE	
Production	4 1/2		10.50		5425	500 SKS.	
Tubing	1.5						
Liners							

PACKERS : Kind \_\_\_\_\_ Sizes \_\_\_\_\_ Depths sec \_\_\_\_\_

For Division of Oil and Gas Use Only  
 Fees: paid:  Well Work Permit  Reclamation Fund

**RECEIVED**  
WV Division of  
Environmental Protection

OCT 24 1995

Permitting  
Office of Oil & Gas

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

Page 1 of \_\_\_\_\_  
Form WV2-A  
(09/87)  
File Copy

1) Date: OCTOBER 23, 1995  
2) Operator's well number  
ROSS #1  
3) API well No: 47 - 017 - 4227  
State - County - Permit

4) Surface Owner(s) to be served:

(a) Name RAY RICHARDS  
Address RT. 1 BOX 43  
GREENWOOD, WV 26360

5) (a) Coal Operator:  
Name NONE  
Address \_\_\_\_\_

(b) Name \_\_\_\_\_  
Address \_\_\_\_\_

(b) Coal Owner(s) with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

(c) Name \_\_\_\_\_  
Address \_\_\_\_\_

Name \_\_\_\_\_  
Address \_\_\_\_\_

6) Inspector MIKE UNDERWOOD

Address RT. 2 BOX 135

SALEM, WV 26426

Telephone (304) - 782-1043

(c) Coal Lessee with Declaration  
Name \_\_\_\_\_  
Address \_\_\_\_\_

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_\_\_ on the above named parties, by:

Personal Service (Affidavit attached)  
\_\_\_\_\_  
Certified Mail (Postmarked postal receipt attached)  
\_\_\_\_\_  
Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

OFFICIAL SEAL NOTARY PUBLIC

STATE OF WEST VIRGINIA

KAREN COOK

ROUTE 2, BOX 1

JANE LEW, WV 26378

My Commission Expires Mar. 24, 2003

Well Operator  
By: Karen Cook  
Its PRESIDENT  
Address 22 GARTON PLAZA  
WESTON, WV 26452

Telephone 304-269-7102

Subscribed and sworn before me this 23RD day of OCTOBER, 1995

Karen Cook

Notary Public

My commission expires MARCH 24, 2003