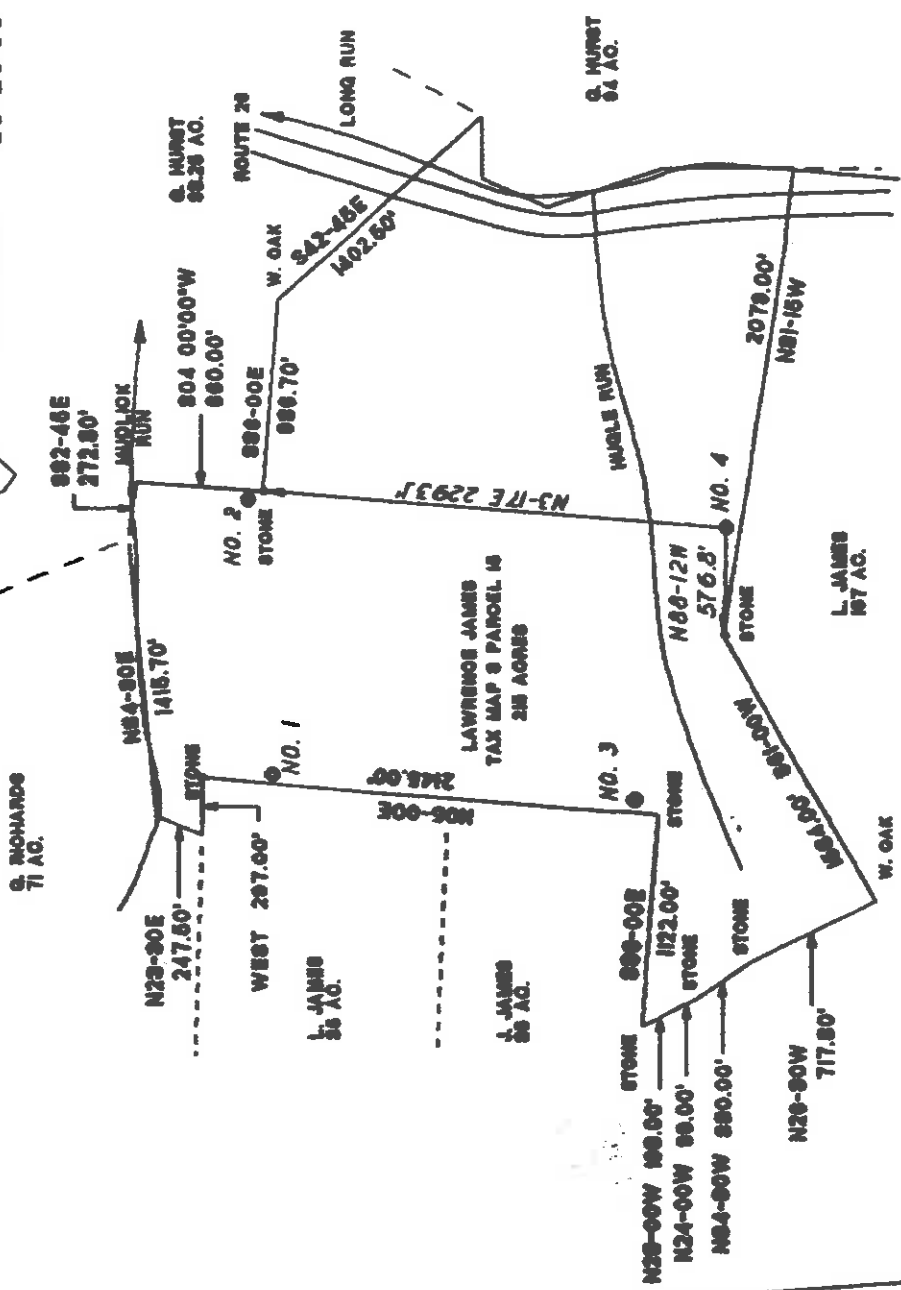


8.150'

LATITUDE 38°20'00"

LONGITUDE 80°50'00"

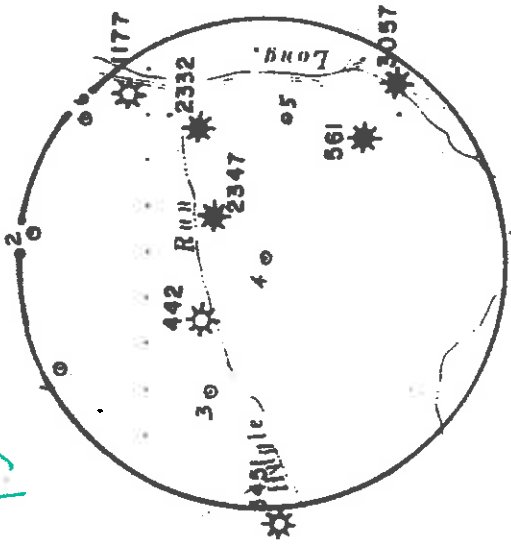


NORTH

12° BLACK OAK

20° POPLAR NO. 4

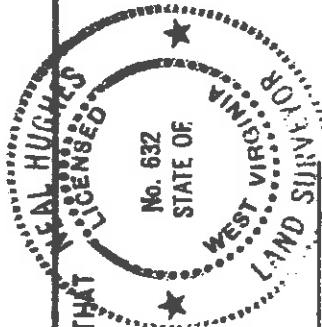
2.125  
2.560



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



1\* INDENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

DATE APRIL 21 19 93  
OPERATORS WELL NO. JAMES NO. 4

API WELL NO. 47 - STATE 017 COUNTY 4132 PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 93-106  
PROVEN SOURCE OF ELEVATION NOB 1118' SCALE 1"=1000'

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 965" WATERSHED MUDLICK RUN

DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION 15 SC  
SURFACE OWNER LAWRENCE JAMES ACREAGE 215  
ROYALTY OWNER LAWRENCE JAMES LEASE ACREAGE 215

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) 6-6 84 TARGET FORMATION ALEXANDER ESTIMATED DEPTH 5500'

WELL OPERATOR KEY OIL CO. 475 DESIGNATED AGENT JAN CHAPMAN 1994  
ADDRESS 22 GARTON PLAZA ADDRESS 22 GARTON PLAZA

DODDRIDGE

COUNTY NAME PERMIT

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

Well Operator's Report of Well Work

Farm name: JAMES, LAWRENCE L. Operator Well No.: JAMES #4

LOCATION: Elevation: 965.00 Quadrangle: WEST UNION  
District: CENTRAL County: DODDRIDGE  
Latitude: 10900 Feet South of 39 Deg. 20Min. Sec.  
Longitude 8150 Feet West of 80 Deg. 50 Min. Sec.

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

Agent: JAN E. CHAPMAN

Inspector: MIKE UNDERWOOD  
Permit Issued: 05/31/94  
Well work Commenced: 7-10-94  
Well work Completed: 7-15-94  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary X Cable \_\_\_\_\_ Rig  
Total Depth (feet) 5283  
Fresh water depths (ft) 90', 496'

Salt water depths (ft) -0-

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): -0-

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
11 3/4	133	133	80 sks. to surface
8 5/8	1489	1489	389 sks. to surface
4 1/2		5224	260 sks.
1 1/2		5097	

OPEN FLOW DATA

Riley Benson  
Alexander

4426-4458  
4829-4836

Producing formation \_\_\_\_\_ Pay zone depth (ft) 5114-5130  
Gas: Initial open flow 146 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 769 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests N/A Hours  
Static rock Pressure 1600 psig (surface pressure) after 96 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.

**RECEIVED**  
WV Division of  
Environmental Protection

AUG 09 1994

Permitting  
Office of Oil & Gas

For: KEY OIL COMPANY

AUG 26 1994

By: *[Signature]* President  
Date: August 8, 1994

James #4 (47-017-4132)  
3 Stage Foam Frac - Halliburton

Stage 1: Alexander (10 holes) 5118.50'-5125' 60 Quality Foam, 750 gal. 15% HCl, 30,000 lbs. 20-40 sand, 358,000 SCF N<sub>2</sub>, 523 bbls. Foam.

Stage 2: Benson (10 holes) 4831.50'-4833.75' 75 Quality Foam, 750 gal. 15% HCl, 25,000 lbs. 20-40 sand, 397,000 SCF N<sub>2</sub>, 470 bbls. Foam.

Stage 3: Riley (10 holes) 4431.50'-4441.25' 60 Quality Foam, 750 gal. 15% HCl, 10,000 lbs. 80-100 sand, 40,000 lbs. 20-40 sand, 481,000 SCF N<sub>2</sub>, 752 bbls. Foam.

WELL LOG

FORMATION	TOP FEET	BOTTOM FEET	REMARKS
Rock and Shale Sand	0 15	15 30	3/4" Stream H <sub>2</sub> O @ 90' Hole damp @ 410'
Sand and Shale Sand	30 90	90 115	<u>Gas Checks:</u> 1941 N/S 2535 8/10 thru 2" w/water 3000 6/10 thru 2" w/water 3530 10/10 thru 2" w/water 4623 12/10 thru 2" w/water 4966 8/10 thru 2" w/water Gas at T.D. 8/10 thru 2" w/water
Red Rock and Shale Sand	115 130	130 150	
Shale and Red Rock Sand	130 150	150 608	
Red Rock and Shale	150 608	608 889	
Red Rock and Shale Little Lime	608 889	889 1811	
Big Lime	1811 1850	1811 1850	
Big Injun	1850 1960	1850 1960	
Sand and Shale Weir	1960 2009	1960 2009	
Sand and Shale Riley	2009 2170	2009 2170	
Sand and Shale Benson	2170 2292	2170 2292	
Sand and Shale Alexander	2292 4426	2292 4426	
Shale	4426 4458	4426 4458	
	4458 4829	4458 4829	
	4829 4836	4829 4836	
	4836 5114	4836 5114	
	5114 5130	5114 5130	
	5130 5283	5130 5283	
	5283	5283	T.D.

8501  
10248

**RECEIVED**  
W Division of  
Environmental Protection  
AUG 09 1994  
Permitting  
Office of Oil & Gas

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
Office of Oil & Gas WELL WORK PERMIT APPLICATION Expns 05/31/96

Well Operator: -Key Oil Company 25655 ① 671  
Operator's Well Number: James #4 965

Well type: (a) Oil  or Gas   
(b) If Gas: Production  Underground Storage   
Deep  Shallow

- Proposed Target Formation(s): Alexander 439
- Proposed Total Depth: 5300 feet
- Approximate fresh water strata depths: 100'
- Approximate salt water depths: -0-
- Approximate coal seam depths: None
- Does land contain coal seams tributary to active mine? Yes  No
- Proposed Well Work: Drill, Stimulate, Produce

CASING AND TUBING PROGRAM

TYPE	SIZE	Grade	Weight per ft.	FOOTAGE INTERVALS	Left in well	FILL-IN (cu. f)
Conductor	16'	Used		20	ZACSP/11.3	
Fresh Water	11 3/4"	ERW	42	132	45	70 SKS TO SURFACE
Coal				1475	45	0.2 MW
Intermediate	8 5/8"	ERW	23	5200		195 SKS TO SURFACE
Production	4 1/2"	J-55	10.5			
Tubing	1.5"					260 SKS.
Liners						

PACKERS : Kind Sizes Depths set

For Division of Oil and Gas Use Only  
Fee(s) paid: Well Work Permit Reclamation Fund  
PAC WW-2B WW-2B

1) Date: May 4, 1994  
2) Operator's well number  
James #4  
3) API Well No: 47 - 017 - 4132  
State - County - Permit

Permitting  
Office of Oil & Gas

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
- (a) Name Lawrence L. James 5) (a) Coal Operator:  
Address Rt. 1 Box 104 Name None  
Greenwood, WV 26360 Address \_\_\_\_\_
- (b) Name \_\_\_\_\_ (b) Coal Owner(s) with Declaration  
Address \_\_\_\_\_ Name \_\_\_\_\_  
Address \_\_\_\_\_
- (c) Name \_\_\_\_\_ Name \_\_\_\_\_  
Address \_\_\_\_\_ Address \_\_\_\_\_
- 6) Inspector Mike Underwood (c) Coal Lessee with Declaration  
Address Rt. 2 Box 135 Name \_\_\_\_\_  
Salem, WV 26426 Address \_\_\_\_\_  
Telephone (304) - 782-1043

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

By: [Signature] Key Oil Company  
Its: Operator  
Address 22 Garton Plaza  
Weston, WV 26452  
Telephone 304-269-7102

Subscribed and sworn before me this 4th day of May, 1994

My commission expires March 24, 2003 Notary Public