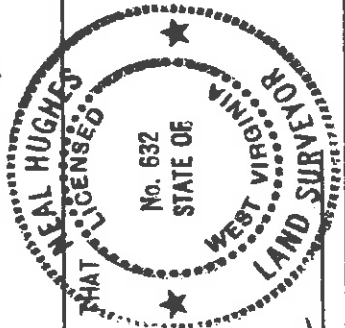


I THE UNDERSIGNED, DO HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

L.L.S. *Neal Hughes*
632



(1) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
DATE SEPT. 16 19 94
OPERATORS WELL NO. SHEPHERD 2
API WELL NO. 47 - 017 - 4162

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 94-96
PROVEN SOURCE OF ELEVATION RD. INTER. 7.55' 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 1170' WATERSHED ARNOLD CREEK
DISTRICT CENTRAL COUNTY DODDRIDGE QUADRANGLE WEST UNION SC
SURFACE OWNER LONNIE JAMES ACREAGE 88
ROYALTY OWNER SHEPHERD HOLDING CO., ET AL LEASE ACREAGE 88
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'

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

6-6 91

3.500' 1.250'

LATITUDE 39°20'00"
LONGITUDE 80°50'00"

0.233
0.960

NOV 14 1994

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

Permitting
Office of Oil & Gas

Well Operator's Report of Well Work

Farm name: JAMES, LONNIE

Operator Well No.: SHEPHERD #2

LOCATION: Elevation: 1,170.00 Quadrangle: WEST UNION

District: CENTRAL County: DODDRIDGE
Latitude: 1250 Feet South of 39 Deg. 20Min. 0 Sec.
Longitude 3500 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: 10/03/94
Well work Commenced: 10-18-94
Well work Completed: 10-24-94
Verbal Plugging
Permission granted on: _____ Rig
Rotary X Cable _____
Total Depth (feet) 5532
Fresh water depths (ft) 679'

Salt water depths (ft) -0-

Is coal being mined in area (Y/N)? N
Coal Depths (ft): NONE

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	1680	1680	450 SKS. TO SURFACE
4 1/2		5461	260 SKS.
1.5		5312	

OPEN FLOW DATA

RILEY
BENSON

4642-4686
5058-5066

Producing formation ALEXANDER

Gas: Initial open flow 60 MCF/d Oil: Initial open flow 0 Bbl/d
Final open flow 1061 MCF/d Final open flow SHOW Bbl/d
Time of open flow between initial and final tests N/A Hours
Static rock Pressure 1500 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

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: NOVEMBER 10, 1994

PRESIDENT

47-017-4162 SHEPHERD #2
3 STAGE FOAM FRAC (HALLIBURTON)

1ST STAGE: ALEXANDER (5331.75'-5376.25') (12 HOLES) 60 QUALITY FOAM, 750 GAL. 15% HCl, 40,000 LBS. 20-40 SAND, 407,000 SCF N₂, 621 BBLs. FOAM.

2ND STAGE: (BENSON) (5061'-5063.25') (10 HOLES) 75 QUALITY FOAM, 750 GAL. 15% HCl, 30,000 LBS. 20-40 SAND, 413,000 SCF N₂, 521 BBLs. FOAM.

3RD STAGE: RILEY (4633.50'-4683') (13 HOLES) 60 QUALITY FOAM, 750 GAL. 15% HCl, 10,000 LBS. 80-100 SAND, 40,000 LBS. 20-40 SAND, 525,000 SCF N₂, 703 BBLs. FOAM.

FORMATION	TOP FEET	BOTTOM FEET	REMARKS
SAND, SHALE AND RED ROCK	0	2010	- 1/4" STREAM OF H ₂ O @ 679'
LITTLE LIME	2010	2030	
SAND AND SHALE	2030	2050	
BIG LIME	2050	2134	
KEENER	2134	2154	
BIG INJUN	2154	2236	
SAND AND SHALE	2236	4642	
RILEY	4642	4686	
SAND AND SHALE	4686	5058	
BENSON	5058	5066	
SAND AND SHALE	5066	5327	
ALEXANDER	5327	5380	
SHALE	5380	5532 T.D.	
			1916 N/S
			2103 N/S
			2507 N/S
			3009 N/S
			3513 N/S
			4040 N/S
			4506 N/S
			4950 2/10 THRU 2" W/WATER
			5200 2/10 THRU 2" W/WATER
			T.D. 2/10 THRU 2" W/WATER
			DRILL COLLARS 2/10 THRU 2" W/WATER

5881

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WV Division of
Environmental Protection

017-4162
Issued 10/03/94
Page 06

FORM WV-2B

SEP 30 1994

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
Permitting
Office of Oil & Gas
Well Work Permit Application

Well Operator: Key Oil Company 25455 ① 671
Operator's Well Number: Shepherd #2
Elevation: 1170

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

Proposed Target Formation(s): Alexander
Proposed Total Depth: 5500 feet
Approximate fresh water strata depths: 95' - 0170'

Approximate salt water depths: 1610'
Approximate coal seam depths: None
Does land contain coal seams tributary to active mine? Yes No

Proposed Well Work: Drill, Stimulate, Produce
Newell

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEME
	" size	Grade	Weight per ft.	For drilling	Left in well	
Conductor	16"	Used		20	3858 10/13	Fill-ut (cu. ft)
Fresh Water	11 3/4"	ERW	42	132	3858 10/13 to 20 sks.	
Coal					3858 10/13 to surface	
Intermediate	8 5/8"	ERW	23	1660	1660 0.16" to surface	430 sks. to surface
Production	4 1/2"	J-55	10.50		→ 5425	260 sks.
Tubing	1.5"				3858 10/13	
Liners						

PACKERS : Kind
Sizes
Depths set

001964 31
Fees paid: Well Work Permit Reclamation Fund

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Environmental Protection

SEP 30 1994

1) Date: September 19, 1994
2) Operator's well number
Shepherd #2
3) API Well No: 47 - 017 - 4162
State - County - Permit

Permitting 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 Lonnie James
Address Rt. 1 Box 91A
Greenwood, WV 26360

(b) Name _____
Address _____

(c) Name _____
Address _____

5) (a) Coal Operator:
Name _____
Address _____

(b) Coal Owner(s) with Declaration
Name _____
Address _____

Name _____
Address _____

6) Inspector Mike Underwood

Address Rt. 2 Box 135

Sallem, 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

X 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)
X 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.

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

Subscribed and sworn before me this 19th day of September, 1994

My commission expires March 24, 2003

[Signature] Notary Public

