



0.075  
1.93W

38 54 55  
81 47 10

5' Longitude 81° 45'  
7.5' Topo = 81° 45'

New Location   
 Drill Deeper   
 Abandonment

Minimum Error of Closure ..... 1 IN. 200  
 Source of Elevation U.S.G.S. Elev. 798' TOP OF KNOB SOUTH WEST  
 OF LOC.  
 "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."

Company KAISER EXPL. & MINING Co.  
 Address Box 98 RAVENSWOOD, WV  
 Farm WAYNE HUGHES  
 Tract \_\_\_\_\_ Acres 78.25 Lease No. 2566  
 Well (Farm) No. DEK # 42 Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 726.0  
 Quadrangle 7.5' RAVENSWOOD 15' RAVENSWOOD EC  
 County JACKSON District UNION  
 Engineer N. Z. Lepton  
 Engineer's Registration No. 1832  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date 4-23-77 Scale 1" = 500'

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

WELL LOCATION MAP  
 FILE NO. JAC-1407

+ Denotes location of well on United States Topographic Maps, scale 1 to 62 500 latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.

47-035 (owwoj)

Deep well + 500' distance

6-6 North Ripley (342)

JUL 20 1977



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FEB 9 - 1982

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
REVISED  
**Oil and Gas Division**

**WELL RECORD**

Rotary XXX Oil \_\_\_\_\_  
Cable \_\_\_\_\_ Gas XXX  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind) \_\_\_\_\_

Quadrangle Ravenswood 15'

Permit No. Jac 1407

Company Kaiser Exploration & Mining Co.  
Address Box 98, Ravenswood, WV  
Farm Wayne Hughes Acres 78.25  
Location (waters) Cedar Run of Ohio River  
Well No. DEK # 42 Elev. 726  
District Union County Jackson  
The surface of tract is owned in fee by \_\_\_\_\_  
Wayne and Mary Hughes  
Address Rt 1, Box 82, Ravenswood, WV  
Mineral rights are owned by Same as above  
Address \_\_\_\_\_  
Drilling Commenced 8/5/77  
Drilling Completed 8/20/77 B. Shale  
Initial open flow Show 213 MCFD - BS cu. ft. \_\_\_\_\_ bbls.  
Final production 25 MCFD ~~xxxxx~~ per day \_\_\_\_\_ bbls.  
Well open \_\_\_\_\_ hrs. before test 1000 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"			
9 5/8	211'	211'	110 Sax
8 5/8			
7	2249'	2249'	75 Sax
5 1/2			
4 1/2	4515	4515	150 Sax
3			
2			
Liners Used			

Well treatment details:

Attach copy of cementing record. Halliburton

Perforated Marcellus with 27 omeja jet shots from 4155'-4337'. Displaced 1500 gal of HCl.

1820 } Marcellus Shale interval uneconomical; Set permanent bridge plug at 3830. Perforated the Brown Shale interval from 3681-3791 with 19 holes. Foam fractured the Brown Shale using 70 quality foam with 310 bbls of water, 21,000# of 80/100 sand, 21,000# of 20/40 sand at a rate of 10 BPM and a pressure of 2500 psig. Instantaneous shut-in pressure was \_\_\_\_\_ Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches 1100 psig.

Fresh water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_  
Producing Sand Marcellus Shale & Brown Shale Depth 4155-4337 3681-3791

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			0	156		
Sand			156	165		
Shale			165	196		
Sand			196	225		
Shale			225	304		
Sand			304	323		
Shale			323	411		
Sand			411	499		
Red Rock			499	520		
Shale			520	544		
Red Rock			544	575		
Sand			575	586		
Red Rock			586	669		
Sand			669	690		
Red Rock			690	740		
Shale			740	811		
Sand			811	823		
Shale			823	917		
Red Rock			917	958		
Sand			958	1017		
Shale			1017	1026		
Sand			1026	1088		
Shale			1088	1157		
Sand			1157	1187		

(over)

\* Indicates Electric Log tops in the remarks section.

MAR 01 1982

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			1187	1286		
Sand			1286	1316		
Shale			1316	1323		
Sand			1323	1337		
Shale			1337	1347		
Sand			1347	1391		
Shale			1391	1404		
Sand			1404	1420		
Shale			1420	1440		
Sand			1440	1454		
Shale			1454	1498		
Sand			1498	1511		
Shale			1511	1615		
Maxon Sand			1615	1653		
Big Lime			1653	1741		
Shale			1741	1851		
Injun Sand			1851	1882		
Shale			1882	2176		
Coffee Shale			2176	2195		
Shale			2195	3336		
Brown Shale			3336	3796		
Shale			3796	4206		
Marcellus			4206	4340		
Corniferous			4340	4420		
Oriskany			4420	4447		
<u>Lime H.C.D.</u>			4447	4533		

Date March 2, 19 73

APPROVED Kath A. [Signature], Owner

By Operations Manager  
(Title)

5003 L D SAM



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STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
Oil and Gas Division

OIL & GAS DIVISION  
DEPT. OF MINES

WELL RECORD 16

Rotary XXX Oil \_\_\_\_\_  
Cable \_\_\_\_\_ Gas XXX  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind) \_\_\_\_\_

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District Union County Jackson  
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Mineral rights are owned by Same as above  
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Attach copy of cementing record. Halliburton

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Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches  
Fresh water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_  
Producing Sand Marcellus Shale Depth 4155-4337

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
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(over)

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Shale			1316	1323		
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Shale			1337	1347		
Sand			1347	1391		
Shale			1391	1404		
Sand			1404	1420		
Shale			1420	1440		
Sand			1440	1454		
Shale			1454	1498		
Sand			1498	1511		
Shale			1511	1615		
Maxon Sand			1615	1653		
Big Lime			1653	1741		
Shale			1741	1851		
Injun Sand			1851	1882		
Shale			1882	2176		
Coffee Shale			2176	2195		
Shale			2195	3336		
Brown Shale			3336	3796		
Shale			3796	4206		
Marcellus			4206	4340		
Corniferous			4340	4420		
Oriskany			4420	4447		
Lime			4447	4533		

Date March 2, 19 78

APPROVED Kath A. Poyner, Owner

By Operations Manager  
(Title)



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STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

OIL & GAS DIVISION  
DEPT. OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE April 26, 1977

Surface Owner Wayne & Mary Hughes

Company Kaiser Exploration & Mining Co.

Address Rt. 1, Box 82, Ravenswood, WV

Address Box 98, Ravenswood, WV

Mineral Owner Same as above

Farm Wayne Hughes Acres 78.25

Address \_\_\_\_\_

Location (waters) Cedar Run of Ohio River

Coal Owner Same as above

Well No. DEK #42 Elevation 726

Address \_\_\_\_\_

District Union County Jackson

Coal Operator Not operated

Quadrangle Ravenswood 7<sup>0</sup>, Ravenswood 15<sup>0</sup>

Address \_\_\_\_\_

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 11-5-77.

INSPECTOR  
TO BE NOTIFIED Mr. Richard J. Morris

ADDRESS Grantsville, W. Va.

PHONE 354-7259

[Signature]  
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 June 24 1975 by Wayne & Mary Hughes made to Devon Corporation & Eason Oil Co. and recorded on the 23rd day of April 1975 in Jackson County, Book 130 Page 635

XXX 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

Address  
of  
Well Operator

Very truly yours, KAISER EXPLORATION & MINING CO.

(Sign Name) [Signature]

W. F. Wegener, Well Operator's Representative  
Box 98

Street

Ravenswood

City or Town

West Virginia

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 BOND

JAC-1407

PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

47-035

Signed by [Signature]

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

PROPOSED WORK ORDER TO XXX DRILL \_\_\_\_\_ DEEPEN \_\_\_\_\_ FRACTURE-STIMULATE \_\_\_\_\_  
 DRILLING CONTRACTOR: (If Known) \_\_\_\_\_ RESPONSIBLE AGENT: \_\_\_\_\_  
 NAME FWA Drilling Co. NAME Bill W. Backus  
 ADDRESS Box 448, Elkview, W. Va. ADDRESS Box 1433, Charleston, W. Va.  
 TELEPHONE 965-3379 TELEPHONE 342-3171  
 ESTIMATED DEPTH OF COMPLETED WELL: 4500 ROTARY XXX CABLE TOOLS \_\_\_\_\_  
 PROPOSED GEOLOGICAL FORMATION: Oriskany  
 TYPE OF WELL: OIL \_\_\_\_\_ GAS XXX 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	200	200	100 Sax = To surface
8 - 5/8			
7	2250	650'	75 Sax = 625'
5 1/2			
4 1/2	4500'	4500'	125 Sax = 1500'
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS \_\_\_\_\_ FEET SALT WATER \_\_\_\_\_ FEET  
 APPROXIMATE COAL DEPTHS None Anticipated  
 IS COAL BEING MINED IN THE AREA? No 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