

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

Date April 24, 1980

FORM IV-35
(Obverse)

WELL OPERATOR'S REPORT 5
OF

Operator's
Well No. L. Broadwater #1

API Well No. 47-017-2585
State County Perry

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)
LOCATION: Elevation: 938' Watershed: Hughes River
District: Southwest County: Doddridge Quadrangle: Oxford

WELL OPERATOR Petroleum Development Corporation DESIGNATED AGENT Petroleum Development Corporation
Address 103 East Main Street, PO Box 26 Address 103 East Main Street, PO Box 26
Bridgeport, W. Va. 26330 Bridgeport, W. Va. 26330

PERMITTED WORK: Drill X Convert / Drill deeper / Re-drill / Fracture or stimulate
Plug off old formation / Perforate new formation /
Other physical change in well (specify)

PERMIT ISSUED ON January 25, 1980

OIL & GAS INSPECTOR FOR THIS WORK:

IF APPLICABLE: PLUGGING OF DRY HOLE OR
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED

Name Paul Garrett
Address 321 Beech Street
Clarksburg, W. Va. 26301

GEOLOGICAL TARGET FORMATION: Cedar Creek Depth 5240 feet
Depth of completed well, 5269 feet Rotary X / Cable Tools
Water strata depth: Fresh, feet; salt, feet.
Coal seam depths: Is coal being mined in the area? no
Work was commenced February 9, 1980, and completed February 14, 1980

LOGGING AND TUBING PROGRAM

LOGGING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL- OR PACKS (Cubic Feet)	PACKERS	
	Size	Grade	Weight per ft	New	Used	For drilling			Left in well
conductor	11 3/4"			X		19'	19'	surface	Winds
fresh water									
rel.									
intermediate	8 5/8"	H-40	20# & 23#	X		1950'	1920'	450 sks.	
production	4 1/2"	J-55	9.5#	X		5269'	5213'	690 sks.	leather set
logging									
packers									Bottom

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MAY - 7 1980

OIL & GAS DIVISION
DEPT. OF MINES

OPEN FLOW DATA
Producing formation Cedar Creek Pay zone depth 5132 feet
Gas: Initial open flow, Mcf/d Oil: Initial open flow, Bbl/d
Final open flow, 1,905 Mcf/d Final open flow, Bbl/d
Time of open flow between initial and final tests, 48 hours
Static rock pressure, 1600 psig (surface measurement) after 48 hours and ft.
[If applicable due to multiple completion--]
Second producing formation Benson Pay zone depth 4864 feet
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 measurement) after hours and ft.
Third producing formation: Bradford Pay zone depth: 4472 feet

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TAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Cedar Creek	385 bbl	10,000# 80/100	40,000# 20/40	500 gal. 15% acid	5132'-5185'
Benson	325 bbl	10,000# 80/100	30,000# 20/40	500 gal. 15% acid	4864'-4868'
Bradford	325 bbl	10,000# 80/100	30,000# 20/40	500 gal. 15% acid	4472'-4481'
Balltown	415 bbl	10,000# 80/100	45,000# 20/40	500 gal. 15% acid	4074'-4245'

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
K.B. - G.L. shale			0	12	
sand			12	17	
sand, shale			17	45	Damp @ 40'
big lime			45	1885	
big injun			- 1885	1980	
sand, shale			1980	2047	
weir			2047	2218	
sand, shale			2218	2291	
warren			2291	3292	
sand, shale			3292	3377	
balltown			3377	4042	gas check @ 3664' 30/10 thru 1" H ₂ O
sand, shale			4042	4249	
bradford			4249	4470	
sand, shale			4470	4495	
benson			4495	4860	
sand, shale			- 4860	4872	
cedar creek			4872	5114	gas check @ 4949' 30/10 thru 1" H ₂ O
sand, shale			5114	5187	
			5187	5269 TD	gas check @ TD 20/10 thru 1" H ₂ O

(Attach separate sheets to complete as necessary)

Petroleum Development Corporation
Well Operator

By Charles W. ...

Its Company ...

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 coal, encountered in the drilling of a well."



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

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Oil and Gas Division

OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

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

DATE JANUARY 23, 1980

Surface Owner LEONA BROADWATER ETAL
Address RFD 1, WEST UNION, WV
Mineral Owner LEONA BROADWATER etal
Address RFD 1, WEST UNION, WV 26456
Coal Owner NO COAL OWNER
Address _____
Coal Operator _____
Address _____

Company PETROLEUM DEVELOPMENT CORPORATION
Address P.O. BOX 26 BRIDGEPORT WV 26330
Farm LEONA BROADWATER etal Acres 160
Location (waters) HUGHES RIVER
Well No. ONE Elevation 983'
District SOUTHWEST County DODDRIDGE
Quadrangle OXFORD

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 9-25-80

INSPECTOR
TO BE NOTIFIED PAUL GARRETT
ADDRESS CLARKSBURG, WV 26301
PHONE 622-3871

Robert L. [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 AUGUST 1 1979 by CLARENCE W. MUTSCHELKNUS made to PETROLEUM DEVELOPMENT CORP. and recorded on the 17 th day of DECEMBRE 1979 in DODDRIDGE County, Book 112 Page 664

XX 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, [Signature]
(Sign Name) PETROLEUM DEVELOPMENT CORP.
Well Operator

P.O. BOX 26
Street
BRIDGEPORT, WV 26330
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.

47-017-2585

PERMIT NUMBER

BLANKET BOND

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

Signed by _____

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 UNKNOWN _____ NAME PETROLEUM DEVELOPMENT CORPORATION _____
 ADDRESS _____ ADDRESS P.O. BOX 26 BRIDGEPORT WV _____
 TELEPHONE _____ TELEPHONE 842-6256 _____
 ESTIMATED DEPTH OF COMPLETED WELL: 5300' _____ ROTARY xxx _____ CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: CEDAR CREEK _____
 TYPE OF WELL: OIL _____ GAS XX _____ COMB. _____ STORAGE _____ DISPOSAL _____
 _____ RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LIFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10 13 3/8	40'	40'	
9 - 5.8			
8 - 5.8	300'	300'	CIRCULATE
7			
5 1/2			
4 1/2		5250'	
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 70' FEET _____ SALT WATER 150' FEET _____
 APPROXIMATE COAL DEPTHS NO COAL _____
 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