



SURFACE & OIL AND GAS OWNERS
LEWIS C. LOWTHER, et ux
LEOPOLD, W.VA.

DESIGNATED AGENT
TERRY BONNETT
TROY, W.VA.

Minimum Error of Closure 0.05 PART IN 200

Source of Elevation USGS SPOT ELEVATION IN STRAUTEIR AT INTER-SECTION OF FARM ROAD 1050' SOUTH OF LOCATION, ELEV. = 828'

Fracture.....
New Location..... GAS-DRILL-SHALLOW DEVONIAN SHALE TR EST. DEPTH-5200'
Drill Deeper.....
Abandonment.....

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.

Signed: mark c. Echard

Map No. _____ Squares: N S E W

WELL OPERATOR/
Company PALEO, INC.
SUITE 205 - MAY - BLDG 3022 N.W. EXPRESSWAY
Address OKLAHOMA CITY, OKLAHOMA 73112
Farm LEWIS C. LOWTHER
Tract _____ Acres 105 Lease No. _____
Well (Farm) No. 005 Serial No. _____
Elevation (Spirit Level) 871' *WC*
Quadrangle VADIS 7.5, 15'
County RODDRIDGE District COVE
Surveyor MARK C. ECHARD
Surveyor's Registration No. 490
File No. _____ Drawing No. _____
Date NOVEMBER, 25, 1978 Scale 1" = 500'

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

WELL LOCATION MAP
FILE NO. 47-017-2504

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000, latitude and longitude lines being represented by border lines as shown. *62,500*
OCT 25 1979

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

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

Date November 15, 19 79

FORM IV-35
(Obverse)

Operator's
Well No. Lowther #1

[08-78]

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

API Well No. 47 - 017 - 2504
State County Permit

WELL TYPE: Oil ___ / Gas X / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas", Production X / Underground storage ___ / Deep ___ / Shallow X /)
LOCATION: Elevation: 871' Watershed: Cove Creek
District: Cove County: Doddridge Quadrangle: Vadis

WELL OPERATOR Paleo, Inc. DESIGNATED AGENT Terry Bonnett
Address Suite 205, May-Ex Building Address Troy, WV
3022 N.W. Expressway
Oklahoma City, OK 73112

PLANNED WORK: Drill X / Convert ___ / Drill deeper ___ / Redrill ___ / Fracture or stimulate ___
Plug off old formation ___ / Perforate new formation ___ /
Other physical change in well (specify) _____

PERMIT ISSUED ON October 12, 19 79

OIL & GAS INSPECTOR FOR THIS WORK:

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

Name Paul Garrett
Address Clarksburg, WV 26301
622-3871

GEOLOGICAL TARGET FORMATION: Devonian Shale Depth 5113 feet

Depth of completed well, 5240 feet Rotary X / Cable Tools ___

Water strata depth: Fresh, 96 feet; salt, ___ feet.

Coal seam depths: None Is coal being mined in the area? No

Work was commenced October 12, 19 79, and completed October 18, 1979

HOUSING AND TUBING PROGRAM

HOUSING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	<u>8 5/8</u>					<u>1156</u>	<u>1156</u>	<u>To surface</u>	
Coal									Sizes
Intermediate									
Production	<u>4 1/2</u>						<u>5167</u>	<u>635 sks</u>	Depths set
Tubing									
Liners									Perforations:
									Top Bottom

RECEIVED
NOV 29 1979

OPEN FLOW DATA

Producing formation Elk & Benson DEPT. OF MINES Depth 5113 feet

Gas: Initial open flow, ___ Mcf/d Oil: Initial open flow, ___ Bbl/d
Final open flow, 380 Mcf/d Final open flow, ___ Bbl/d

Time of open flow between initial and final tests, 4 hours

Static rock pressure, 1700 psig (surface measurement) after 48 hours shut in

[If applicable due to multiple completion--]

Second producing formation _____ Pay zone depth _____ 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 shut in

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

Fractured November 5, 1979

ALEX
Elk & Benson - 50,000 lb. 20/40 sand
30,000 lb. 80/100 sand
766 bbls water
Injection rate - 37.3 BPM at 1874 lb.
1950 lb. breakdown

Perforations - 4741 - 5113, 14 holes

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fresh and salt water, coal, oil and gas
Clay			0	10	
Slate			10	91	
Sand			91	96	Water
Shale			96	900	
Sandy Shale			900	1038	
Sand			1038	1110	
Shale			1110	1420	
Sand			1420	1480	
Shale			1480	1810	
Lime			1810	1840	
Sand			1840	1852	Show of gas
Slate			1852	1864	
Lime			1864	1984	
Sandy Lime			1984	2000	Show of gas
Lime			2000	2006	
Shale			2006	2090	
Sandy Shale			2090	2200	
Shale			2200	2410	
Sand			2410	2420	Show of gas
Shale			2420	2496	
Sand			2496	2510	
Shale			2510	2822	
Sand			2822	2838	Show of gas
Shale			2838	4736	
Sandy Shale <i>BENSON</i>			4736	4747	Show of gas
Shale			4747	4970	
Sandy Shale <i>ALEX.</i>			4970	5120	Show of gas
Shale			5120	5240	
Total Depth			5240		

(Attach separate sheets to complete as necessary.)

Paleo, Inc.

Well Operator

By

Mark R. Work

Its

Agent

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."

[08-78]

COPY

OIL AND GAS WELL PERMIT APPLICATION

Operator's Well No. Lowther #1
API Well No. 47 - 017 - 2504
State County Permit

WELL TYPE: Oil / Gas X /
(If "Gas", Production X / Underground storage / Deep / Shallow X /)

LOCATION: Elevation: 871' Watershed: Cove Creek
District: Cove County: Doddridge Quadrangle: Vadis

WELL OPERATOR Paleo, Inc.
Address Suite 205, May-Ex Building
3022 N.W. Expressway
Oklahoma City, OK 73112

DESIGNATED AGENT Terry Bonnett
Address Troy, WV

OIL & GAS ROYALTY OWNER Lewis C. Lowther, et ux
Address Leopold, WV

COAL OPERATOR None
Address

Acreage 105

COAL OWNER(S) WITH DECLARATION ON RECORD:

SURFACE OWNER Lewis C. Lowther
Address Leopold, WV

Name None
Address

Acreage 105

Name None
Address

FIELD SALE (IF MADE) TO:
Name N/A
Address

COAL LESSEE WITH DECLARATION ON RECORD:
Name None
Address
RECEIVED
OCT 2 1979

OIL & GAS INSPECTOR TO BE NOTIFIED
Name Paul Garrett
Address Clarksburg, WV 26301
622-3871

**OIL & GAS DIVISION
DEPT. OF MINES**

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed / lease X / other contract / dated June 27, 1978, to the undersigned well operator from Lewis & Marie Lowther

[If said deed, lease, or other contract has been recorded:]

Recorded on October 19, 1978, in the office of the Clerk of the County Commission of Doddridge County, West Virginia, in Lease Book 105 at page 87. A permit is requested as follows:

PROPOSED WORK: Drill X / Drill deeper / Redrill / Fracture or stimulate /
Plug off old formation / Perforate new formation /
Other physical change in well (specify)

--planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code § 22-4-3 must be filed with the Department of Mines within fifteen (15) days after the receipt of this Application by the Department.

Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:
WEST VIRGINIA OIL AND GAS
CONSERVATION COMMISSION
2614 WASHINGTON STREET EAST
CHARLESTON, WV 25311
TELEPHONE: 344-3092-3092

BLANKET BOND

Paleo, Inc.
Well Operator

By M. A. R. Wolf

[08-78]

COPY

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Union Drilling, Inc.
Address Drawer 40
Buckhannon, WV 26201

GEOLOGICAL TARGET FORMATION, Devonian Shale

Estimated depth of completed well, 5200 feet Rotary X / Cable tools /
Approximate water strata depths: Fresh, 140 feet; salt, feet.
Approximate coal seam depths: None **Is coal being mined in the area?** Yes / No X /

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling	Left in well		
Conductor									Kinds
Fresh water	8 5/8					1150	1150	To surface	
Coal									Sizes
Intermediate									
Production	4 1/2						5200	160 sks	Depths set
Tubing									
Liners									Perforations:
									Top Bottom:

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

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 6-12-80.

[Signature]
Deputy Director - Oil & Gas Division

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code § 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof:

W A I V E R

The undersigned coal operator / owner / lessee / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: , 19

By
Its