

CORE ANALYSIS REPORT

FOR

KANSAS LAND INVESTMENT, INC.

VESECKY NO. 1 WELL

DOUGLAS COUNTY, KANSAS

CORE LABORATORIES, INC.  
*Petroleum Reservoir Engineering*  
TULSA, OKLAHOMA

October 9, 1984

REPLY TO  
7304 EAST 38TH STREET  
TULSA, OKLAHOMA  
74145

Kansas Land Investment, Inc.  
222 E. 3rd.  
Ottawa, Kansas 66067

Attn: Mr. Jim Mietchen

Subject: Core Analysis Data  
Vesecky No. 1 Well  
Douglas County, Kansas  
CLI File 3408-840256

Gentlemen:

Cores taken in the subject well in the Squirrel Sand formations were received in the Tulsa laboratory for special analytical testing described on the Procedure Page.

The accompanying Coregraph presents the binomially averaged core analysis data in graphical form to aid correlation with downhole electrical surveys.

Tabular presentation of the measured physical properties may be found on page one of this report.

Empirical estimates of stock tank oil in place may be found on page two of this report.

Core analysis data from the cored interval 665.0 and 675.6 feet exhibits excellent porosity and good matrix permeability development. This zone should be oil productive.

It is a pleasure to have this opportunity of serving you.

Very truly yours,

CORE LABORATORIES, INC.

*J. Michael Edwards*

J. Michael Edwards  
District Manager

JME:MCH:jeh  
5 cc: Addressee

Kansas Land Investment, Inc.  
Vesecky No. 1 Well  
CLI File 3408-840256

Procedure Page

#### Handling and Analytical Procedures

Diamond coring equipment was used to obtain 2 1/8-inch diameter cores between 665.0 and 675.6 feet.

The cores were preserved at the well site by client representative.

The cores were transported to Tulsa by motor freight.

Plug analysis was made in intervals requested.

Fluid removal was accomplished using high temperature retorts.

Porosity was determined by Summation of Fluids technique.

Horizontal air permeability on plugs measured without Klinkenberg correction.

Temporary storage of cores in Tulsa laboratory awaiting additional instructions.

**CORE LABORATORIES, INC.**  
*Petroleum Reservoir Engineering*  
 DALLAS, TEXAS

PAGE 1

KANSAS LAND INVESTMENT, INC.  
 VESECKY NO. 1 WELL  
 DOUGLAS COUNTY, KANSAS

DATE: 10-9-84  
 FORMATION: SQUIRREL SAND  
 DRLG. FLUID:  
 LOCATION:

FILE NO: 3408-840256  
 ENGINEER: HUDSON  
 ELEVATION:

SMP. NO.	DEPTH	PERM. TO AIR MD. PLUG	POROSITY PERCENT	FLUID SATS. OIL	WTR.	STB/AF	DESCRIPTION
ROUTINE PLUG SUMMATION OF FLUIDS							
1	665.0-66.0	18.0	19.7	28.0	44.4	817	SD, SHY, CALC, MICA
2	666.0-67.0	2.0	18.0	27.8	49.0	684	SD, SLTY, SHY, MICA
3	667.0-68.0	18.0	20.9	39.4	35.0	1014	SD, SL/CALC, MICA
	668.0-69.0						SH, SD/LAMS
4	669.0-70.0	0.4	15.3	9.6	72.0	320	SD, V/SHY, MICA
5	670.0-71.0	27.0	22.7	44.6	25.8	1258	SD, SHY, CALC, MICA
6	671.0-72.0	81.0	19.9	33.9	39.7	895	SD, SL/CALC, MICA
7	672.0-73.0	69.0	22.8	43.1	25.5	1265	SD, SL/CALC, MICA
8	673.0-74.0	42.0	20.2	35.3	36.4	956	SD, SL/CALC, MICA
9	674.0-75.0	10.0	19.9	30.0	39.2	902	SD, SHY, SL/CALC, MICA
10	675.0-75.6	13.0	16.9	15.6	61.0	490	SD, SHY, SL/CALC, MICA

666-675 9'  
 1 shot / 9"

h = 7.6  
 $\phi = .204$   
 $S_o = 33.7$   
 $S_w = 38.4$  (35)  
 $\bar{V} = .540$

## CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Page 2 of 2 File 3408-840256  
Well VESECKY NO. 1

## CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: SQUIRREL SAND 665.0-675.6			
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	10.6	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	42.8
FEET OF CORE INCLUDED IN AVERAGES	10	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	38.0 (e)
AVERAGE PERMEABILITY: MILLIDARCYS	28.0	OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	280	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	19.6	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	1.05 (c)
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	30.7	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	860

Calculated maximum solution gas drive recovery is 120(e) barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

## FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYS		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

(c) Calculated (e) Estimated (m) Measured (\*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc., and its officers and employees assume no responsibility and make no warranty or representation as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

**CORE LABORATORIES, INC.****Petroleum Reservoir Engineering**COMPANY KANSAS LAND INVESTMENT, INC.FILE NO. 3408-840256WELL VESECKY NO. 1DATE 10-9-84FIELD \_\_\_\_\_ FORMATION SQUIRREL SAND

ELEV. \_\_\_\_\_

COUNTY DOUGLAS STATE KANSAS

DRLG. FLD. \_\_\_\_\_

CORES \_\_\_\_\_

LOCATION \_\_\_\_\_

## CORRELATION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc., (all errors or omissions excepted); but Core Laboratories, Inc., and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

VERTICAL SCALE: 5" = 100'

**Gamma Ray**

RADIATION INCREASE →

**Permeability** \_\_\_\_\_

MILLIDARCIES

1000 100 10 1

**Porosity** \_\_\_\_\_

PERCENT

30 20 10 0

**Total Water** \_\_\_\_\_

PERCENT PORE SPAC

100 80 60 40 20

**Oil Saturation** \_\_\_\_\_

PERCENT PORE SPAC

0 20 40 60 80

Depth  
Feet

700

