

Porosity and permeability core analysis results (13,064.0'-13,075.0') from the Pan American Redoubt Shoal State 29690 No. 1 well.



# Alaska Department of Natural Resources

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Alaska Geologic Materials Center Data Report No. 313



**CORE ANALYSIS RESULTS**

**FOREST OIL CORP.**

**REDOUBT SHOALS [REDACTED] #1**

**29690**

**CL FILE 57111-104020**

**Performed by:  
Core Laboratories  
3430 Unicorn Road  
Bakersfield, CA 93308  
(661) 392-8600**



**Petroleum Services Division**

3430 Unicorn Road  
Bakersfield, California 93308  
Tel: 661-392-8600  
Fax: 661-392-0824  
www.corelab.com

February 10, 2004

Forest Oil Corp.  
310 K Street Ste 700  
Anchorage, AK 99501

Attn: Mr. Art Saltmarsh

Subject: Transmittal of Analysis Results  
Redoubt Shoals 29692#1  
C L File No.: 57111-104020-FO

Dear Mr. Saltmarsh;

Five core samples were submitted to our Bakersfield facility for analysis. Two sample plugs were drilled from each of the submitted samples, one horizontally oriented, and the second vertically oriented. The plugs were "dried" in a humidity-controlled oven at 60° C and 45% relative humidity until stable weights had been attained. Following weight stabilization, a net stress of 800 psig was applied for porosity and permeability determinations. The CMS-300 automated core measurement system was utilized in performing these tests. Porosity was determined by Boyles' Law double-cell methods and permeability to air was determined using unsteady-state pressure decay methods. XRD mineral analysis and thin-section preparation were requested in addition to the poro-perm testing. Plug end clippings were forwarded to our Calgary, Canada laboratory for thin section preparation and to our Broussard, Louisiana laboratory for XRD analysis. The results of the porosity, permeability, and XRD analysis accompany this letter along with the prepared thin sections.

We appreciate this opportunity to be of service to you and to Forest Oil Corporation. Should you have any questions, or if we may be of further assistance in the future, please do not hesitate to contact us.

Very truly yours,

Jeffrey L. Smith  
Laboratory Supervisor - Rock Properties  
Core Laboratories - Bakersfield

1 bound report w/ CD, 1 bound report, and 2 copies rpt: addressee



Forest Oil Co.  
 Redoubt Shoals ST 29690 #1  
 Redoubt Shoals Field

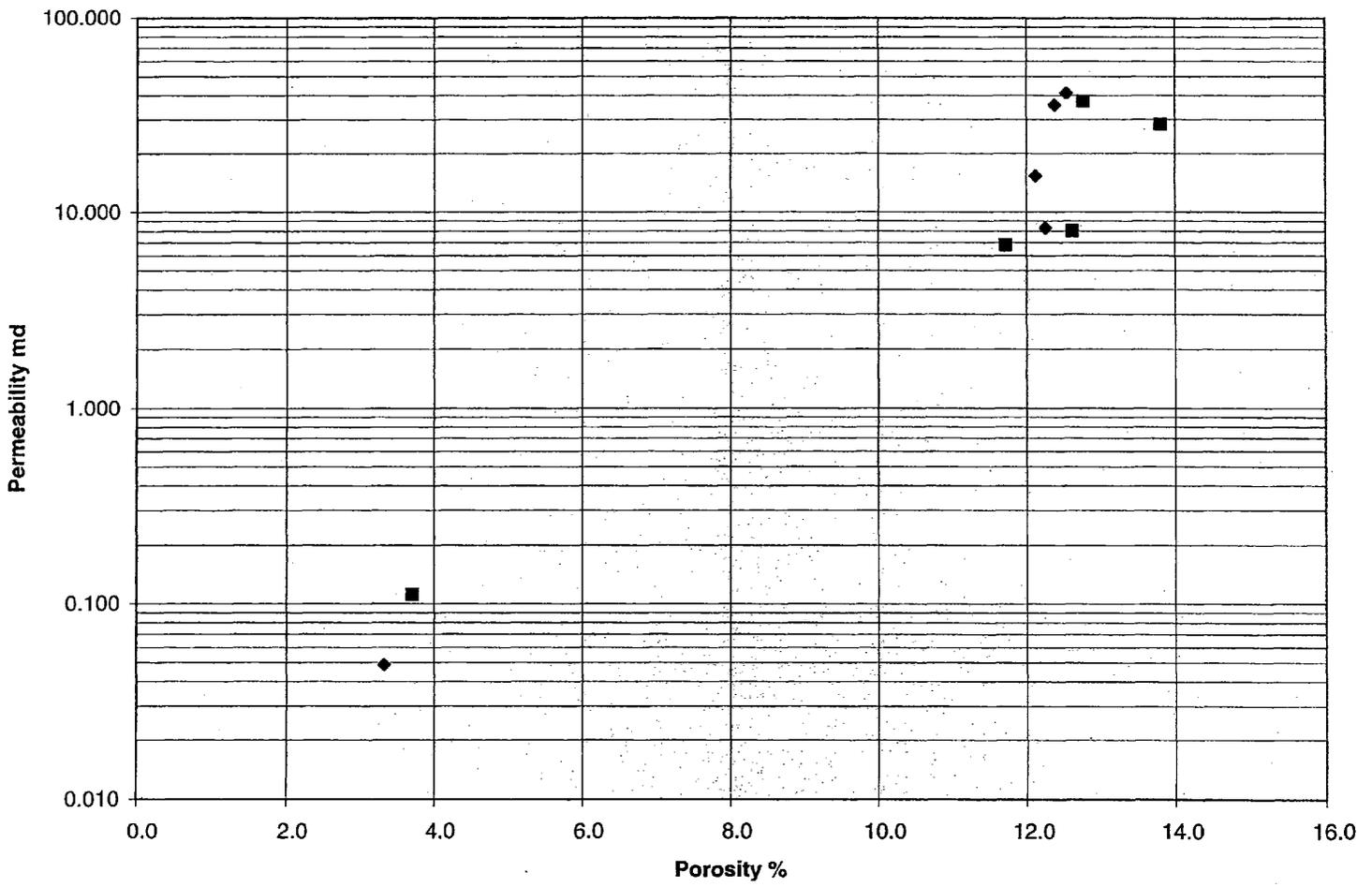
File No. : 57111-104020-FO

**Porosity and Permeability Values at 800 psi Net Stress**

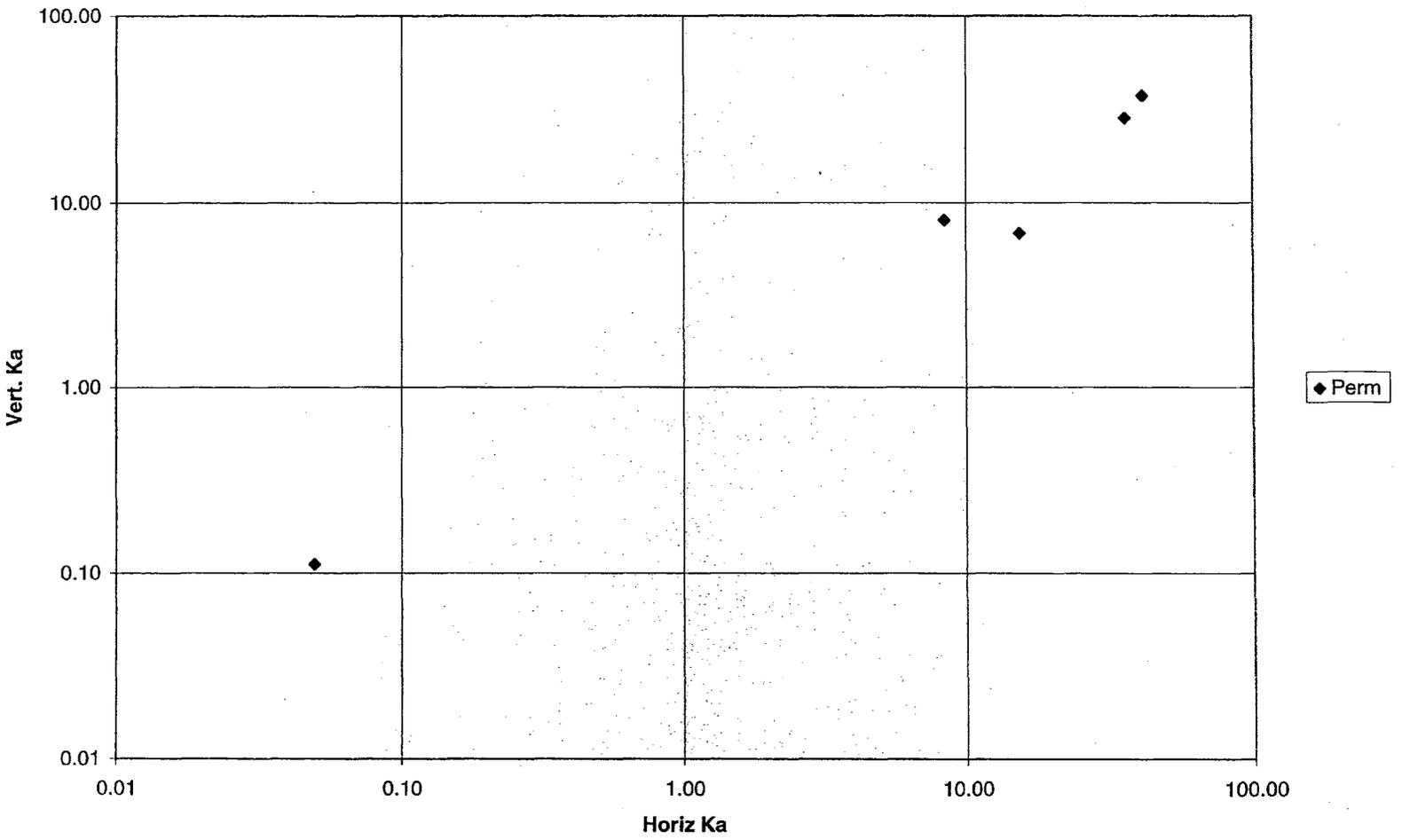
Sample No.	Sample Depth (ft)	Permeability		Porosity	Grain Density g/cc	Description	Method
		Kair md	Kkink md				
1H	13064.0	0.0492	0.0272	3.3	2.66	Sst gry vf-fgr vsity no stn no flor	CMS-300
2H	13065.5	41.3	37.1	12.5	2.61	Sst gry vf-gran sity no stn no flor	CMS-300
3H	13067.0	35.8	32.2	12.4	2.62	Sst gry vf-gran sity no stn no flor	CMS-300
4H	13073.0	15.4	13.7	12.1	2.62	Sst gry vf-fgr sity no stn no flor	CMS-300
5H	13075.0	8.36	7.08	12.3	2.62	Sst gry vf-mgr vsity no stn no flor	CMS-300
1V	13064.0	0.113	0.0642	3.7	2.66	Sst gry vf-fgr vsity no stn no flor	CMS-300
2V	13065.5	37.4	33.4	12.8	2.61	Sst gry vf-gran sity no stn no flor	CMS-300
3V	13067.0	28.4	25.0	13.8	2.62	Sst gry vf-gran sity no stn no flor	CMS-300
4V	13073.0	6.84	5.68	11.7	2.62	Sst gry vf-fgr sity no stn no flor	CMS-300
5V	13075.0	8.06	6.53	12.6	2.62	Sst gry vf-mgr vsity no stn no flor	CMS-300

He : Boyles Law grain and pore volume w/ Helium USS : Unsteady-state (pressure-decay) permeability to air	Sleeve Seating Pressure : NA Confining (OB) Pressure : 800 psig
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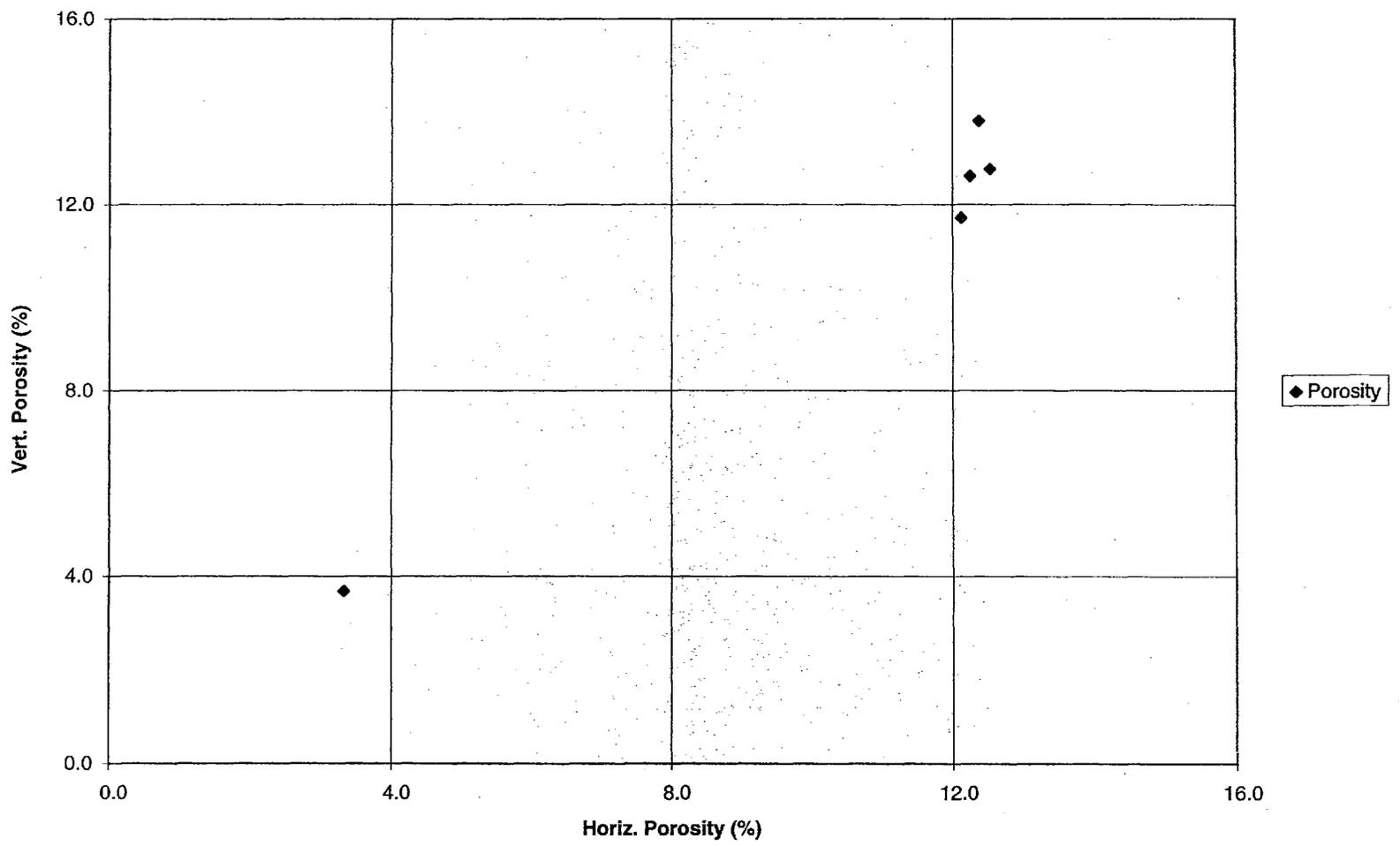
### Perm vs Porosity



### Horiz. vs Vert Ka



### Porosity





Forest Oil Co.  
 Redoubt Shoals 29690#1  
 Redoubt Shoals Field

CL Bak.: 57111-0104020-FO  
 CL Brou. : 50511-040130-1

### X-Ray Diffraction Data

Depth (ft)	Bulk Mineralogy (%)															Clay Mineralogy (%)					
	Quartz	Plagioclase	K-Feldspars	Calcite	Dolomite	Siderite	Ankerite	Clinoptilolite	Analcime	Gypsum	Anhydrite	Barite**	Halite	Pyrite	Hematite	Total Clay	Kaolinite	Chlorite	Illite	Smectite	MXL IS*
13064	49	9	10	23	0	0	0	0	0	0	0	0	0	0	9	2	1	2	0	4	50-60
13065	66	13	4	1	0	0	0	0	0	0	0	0	0	0	17	4	3	4	0	6	70-80
13067	76	7	6	0	Tr	0	0	0	0	0	0	0	0	0	12	3	2	2	0	5	60-70
13,074-75	74	6	8	Tr	1	0	0	0	0	0	0	0	0	0	11	3	2	2	0	4	>90
13,075-76	73	8	7	0	0	0	0	0	0	0	0	0	0	0	12	3	2	2	0	5	80-90

Tr = Trace (<1%)

\*MXL IS = Mixed-layer illite-smectite

\*\*Drilling mud contamination