

Vitrinite reflectance data of cuttings (3270' - 10760') from the Arco Alaska Inc. Delta State No. 2 well. See GMC Data Report No. 25.

Received 27 September 1990

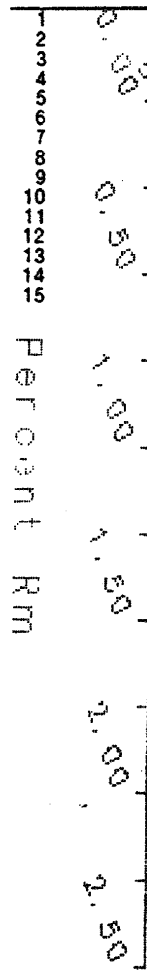
Total of 15 pages in report

Alaska Geologic Materials Center Data Report No. 171

File Name: DSTATE2 9000100
 Channel Name: Point 1 Frequency
 Description: dstate2 Arco Delta State 2 3270- 420 21190 mjp

Min: 0.26
 Max: 0.39
 Mean: 0.34
 StDev: 0.04

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.26			
2				0.34			
3				0.38			
4				0.36			
5				0.37			
6				0.33			
7				0.27			
8				0.39			
9				0.35			
10	0.50			0.29			
11	0.50			0.37			
12	0.50			0.29			
13	0.50			0.37			
14	0.50			0.33			
15	0.50			0.34			

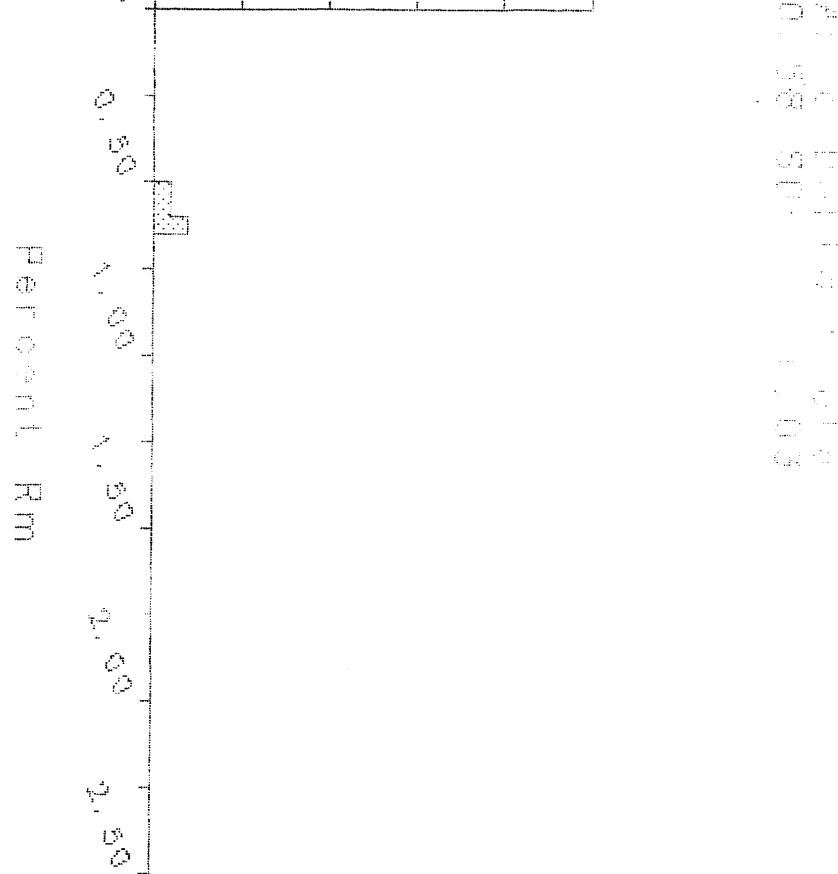


Arco Delta Stat
 0.34 SD: 0.04

File Name: DSTATE3 30016101
 Channel Name: POINT 1 Frequency
 Description: dstate3 Arco Delta State 2 3930- 4050 23I90 mjp

Min: 0.54
 Max: 0.61
 Mean: 0.58
 StDev: 0.03

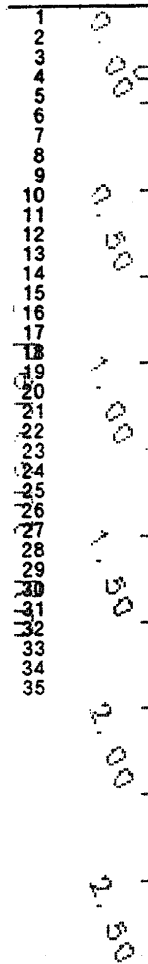
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1	0.00			0.54			
2	0.00			0.61			
3	0.00	1.0		0.60			
4	0.00	1.0		0.56			



File Name: DSTATE4 90010102
 Channel Name: POINT 1 Frequency
 Description: dstate4 Arco Delta State 2 4530- 710 23190 mjd

Min: 0.39
 Max: 0.59
 Mean: 0.50
 StDev: 0.06

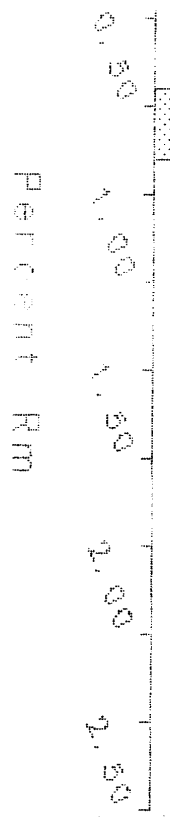
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.41			
2				0.55			
3				0.44			
4				0.57			
5				0.58			
6				0.49			
7				0.44			
8				0.58			
9				0.49			
10				0.41			
11				0.42			
12				0.44			
13				0.53			
14				0.57			
15				0.46			
16				0.53			
17				0.52			
18				0.54			
19				0.39			
20				0.42			
21				0.58			
22				0.53			
23				0.55			
24				0.55			
25				0.41			
26				0.53			
27				0.54			
28				0.47			
29				0.57			
30				0.52			
31				0.42			
32				0.58			
33				0.54			
34				0.50			
35				0.58			



Arco Delta State
 SD: 0.06

Min: 0.50
 Max: 0.62
 Mean: 0.56
 StDev: 0.05

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.53			
2				0.59			
3				0.61			
4				0.50			
5				0.62			
6				0.50			

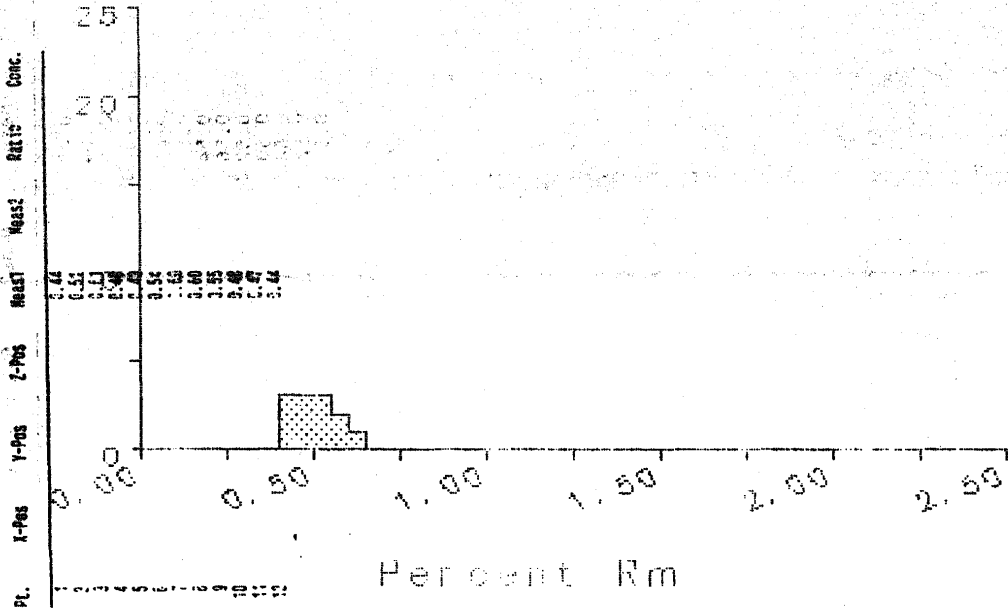


File Name: 90016104
 Channel Name: POINT 1
 Description: Area Delta State 2 5.850-6.100 2500 2500

FREQUENCY

Area Delta State 2 5.850
 Min: 0.51 SD: 0.07

Min: 0.43
 Max: 0.61
 Mean: 0.51
 SDev: 0.07



File Name: 90016105
 Channel Name: POINT 1
 Description: Arco Delta State 2 6,450- 560 9II90 mjp

Min: 0.45
 Max: 0.75
 Mean: 0.55
 StDev: 0.07

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.58			
2				0.49			
3				0.54			
4				0.75			
5				0.49			
6				0.45			
7				0.63			
8				0.55			
9				0.54			
10				0.56			
11				0.52			
12				0.50			
13				0.54			
14				0.52			
15				0.59			



File Name: 90016106
 Channel Name: POINT 1 Frequency
 Description: Arco Delta State 2 7,020- 240 8II90 mjp

Min: 0.56
 Max: 0.77
 Mean: 0.69
 StDev: 0.06

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.73			
2				0.70			
3		10		0.66			
4	0.00			0.59			
5				0.71			
6				0.77			
7				0.77			
8				0.70			
9				0.71			
10				0.68			
11	0.50			0.73			
12				0.66			
13				0.65			
14				0.77			
15				0.76			
16				0.64			
17				0.72			
18	1.00			0.56			
19				0.63			

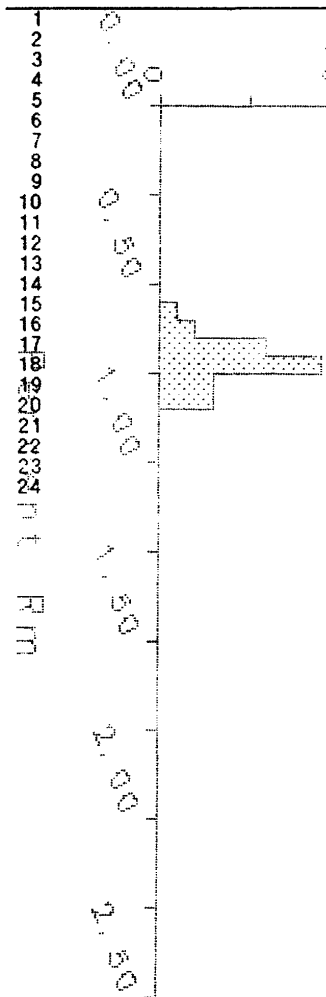


Arco Delta State 2
 Mean: 0.69
 SD: 0.06
 7.020

File Name: 90016107
 Channel Name: POINT 1
 Description: Arco Delta State 2 7,660- 720 81190 mjp

Min: 0.59
 Max: 0.84
 Mean: 0.71
 StDev: 0.06

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.60			
2				0.59			
3				0.67			
4				0.80			
5				0.65			
6				0.72			
7				0.71			
8				0.75			
9				0.67			
10				0.84			
11				0.82			
12				0.71			
13				0.67			
14				0.73			
15				0.73			
16				0.71			
17				0.72			
18				0.69			
19				0.77			
20				0.80			
21				0.74			
22				0.67			
23				0.65			
24				0.72			

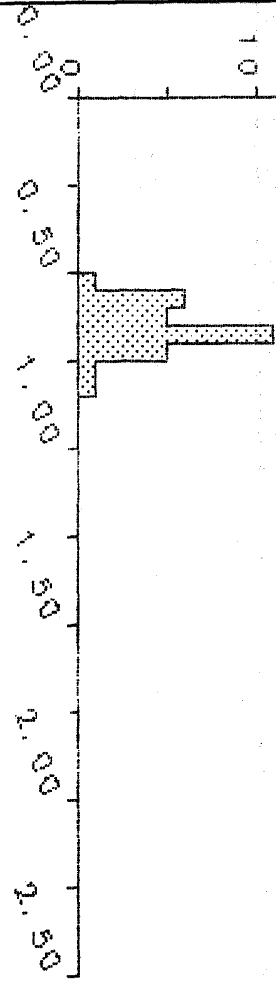


Arco
 Delta State 2
 7,660- 720
 81190
 mjp

File Name: 90016108
 Channel Name: POINT 1 Frequency
 Description: Arco Delta State 2 8,110 -,170 91190 mjp

Min: 0.54
 Max: 0.80
 Mean: 0.66
 StDev: 0.07

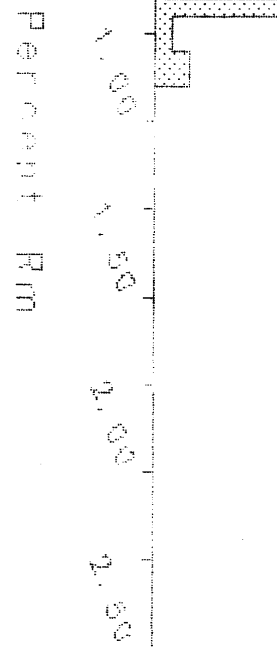
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.68			
2				0.64			
3				0.72			
4				0.69			
5				0.79			
6				0.72			
7				0.67			
8							
9				0.80			
10				0.56			
11				0.71			
12				0.61			
13				0.69			
14				0.70			
15				0.68			
16				0.67			
17				0.56			
18				0.73			
19				0.59			
20				0.66			
21				0.57			
22				0.69			
23				0.59			
24				0.63			
25				0.70			
26				0.56			
27				0.54			
28				0.66			
29				0.65			
30				0.67			
31				0.63			



File Name: 90016109
 Channel Name: POINT 1 Frequency
 Description: Arco Delta State 2 8,580 -,630 9II90 mjp

Min: 0.66
 Max: 0.89
 Mean: 0.74
 StDev: 0.09

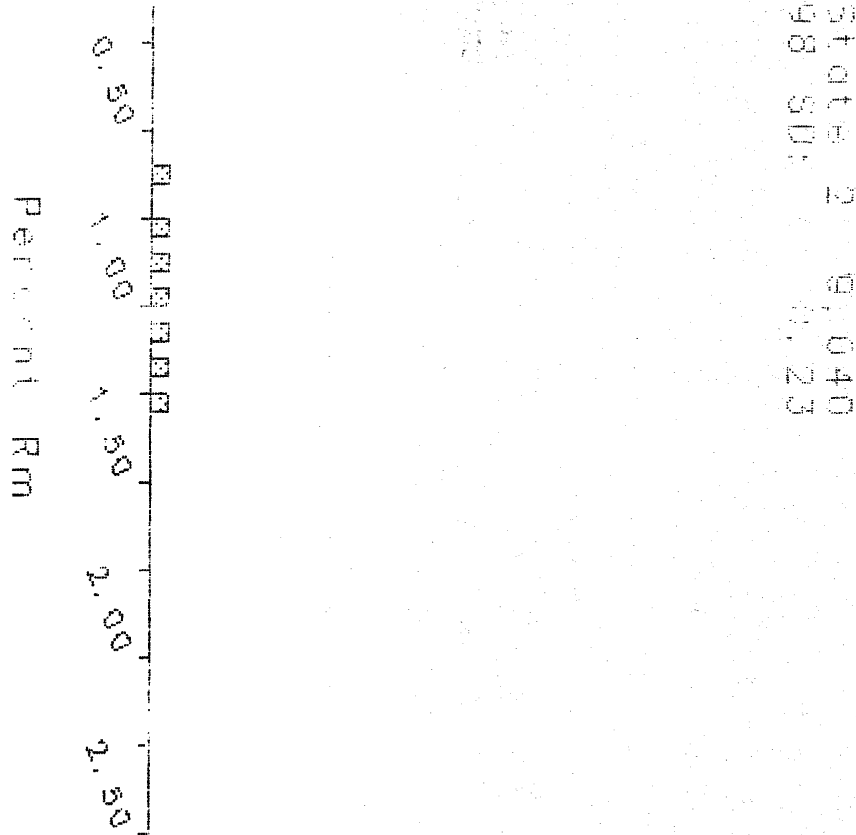
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.66			
2				0.72			
3				0.66			
4				0.68			
5				0.89			
6				0.80			
7				0.69			
8				0.66			
9				0.86			
10				0.81			
11				0.84			
12				0.69			
13				0.66			



File Name: 90016110
 Channel Name: POINT 1 Frequency
 Description: Arco Delta State 2 9,040 ,090 91190 mjp

Min: 0.63
 Max: 1.28
 Mean: 0.98
 StDev: 0.23

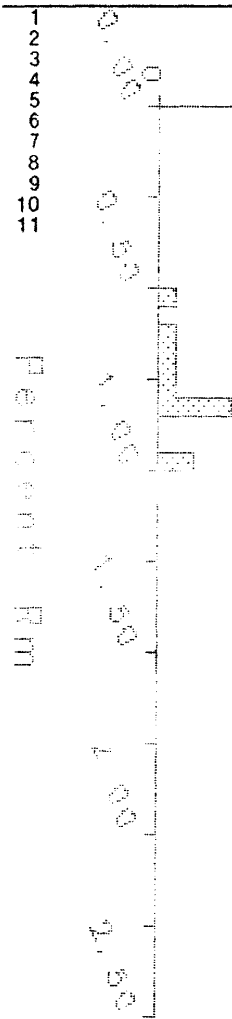
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.77			
2				1.10			
3				1.28			
4	0.00	1.0		0.90			
5				0.63			
6				1.19			
7				0.99			



File Name: 90016111
 Channel Name: POINT 1
 Description: Arco Delta State 2 9,490- ,530 9II90 mjp

Min: 0.54
 Max: 0.99
 Mean: 0.79
 StDev: 0.13

Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.54			
2				0.64			
3				0.81			
4				0.72			
5				0.70			
6				0.84			
7				0.98			
8				0.83			
9				0.81			
10				0.78			
11				0.99			



File Name: 90016112
 Channel Name: POINT 1
 Description: Arco Delta State 2 9,900- 940 8II90 mjp

Min: 0.63
 Max: 0.95
 Mean: 0.77
 StDev: 0.10

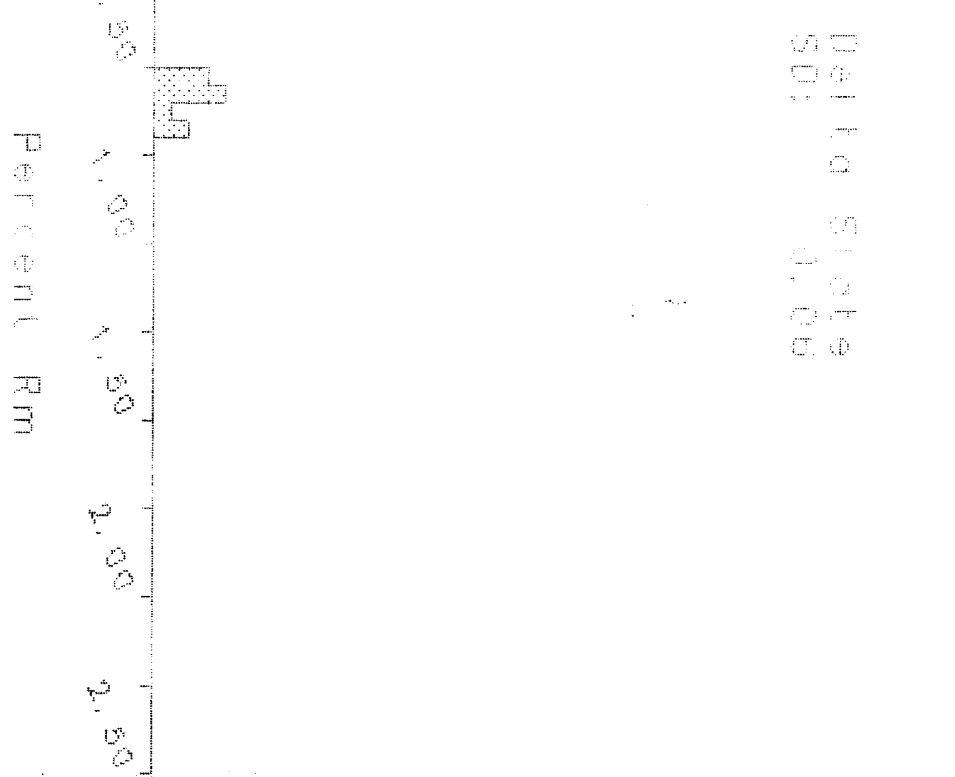
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.63			
2				0.68			
3				0.95			
4				0.79			
5				0.75			
6				0.75			
7				0.83			
8				0.81			



File Name: DSTATE1
 Channel Name: POINT J
 Description: dstate1 Arco Delta State 10/30/00 1100 A.D.

Min: 0.50
 Max: 0.68
 Mean: 0.58
 StDev: 0.06

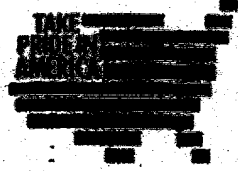
Pt.	X-Pos	Y-Pos	Z-Pos	Meas1	Meas2	Ratio	Conc.
1				0.55			
2				0.68			
3				0.50			
4				0.52			
5				0.56			
6				0.59			
7				0.59			
8				0.65			
9				0.68			
10				0.55			





United States Department of the Interior

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IN REPLY REFER TO:

17 September, 1990

John Reeder
P.O. Box 772116
Eagle River, AK
99577-2116

John:

I am returning the prepared samples I borrowed from the state back in January. Enclosed, also, you will find data and histogram sheets for almost all the samples.

Some samples did have organic material I deemed good enough to measure. For the most part, the samples were good and the results are evident, at least individually. Taken on a well-by-well basis several were difficult to make good sense out of from an organic petrology point of view. The shape of the histograms is a good general indicator of consistency of the organics contained within and in the confidence I had while examining the samples. My technique was to measure at least 50 organic grains, while trying to stay within a narrow range. This becomes difficult with increased vitrinite reflectance, and the histogram spread increases. With adequate material and consistent rank (contamination from uphole cavings can introduce diverse groups of organics) the histogram will have some kind of a bell curve shape. Gaps in the histogram, relating to multiple populations of organics, are a problem and dilute the strength of the mean value as a good measure of the thermal maturity. These gaps are more common at the higher ranks, (> 1.5% reflectance), but occur at lower ranks when insufficient material exists or there is contamination in the sample. I admit to certain biases against samples prepared by people other than myself, and these samples were made by several different companies. I feel I lose too much control over the processing of the cuttings and do not have the confidence in other people's dedication to the work.

I hope these data can be of some use to you. If I can help by providing additional information, please let me know.

Thank you for providing the samples, and for your assistance while I was visiting.

Mark Pawlewicz
Mark Pawlewicz