Total organic Carbon, extractable organic matter, Rock-Eval parameters, Isoprenoid ratios, Carbon preference index, and isotopic data from cuttings of the AMOCO Cathedral River No. 1 well.

6 February 1986 Total of 23 pages in report

Geologic Materials Center Data Report 56

Table 1. Total organic carbon, extractable organic matter (EOM), and Rock-Eval parmeters determined in cutting from the Amoco Cathedral River #1 well. Cuttings were composited over the depth intervals indicated.

Sample No.	Depth ft	Formation	TOC %	EOM ppm	EOM/TOC %	S_1 mg/g rock	S_2 mg/g rock	S_3 mg/g rock	HI mg/gTOC	OI mg/gTOC	T_{max} °C	R_o
132109-1	5360-5630	Shelikof, m. mbr;	0.37	274	7.4	0.09	0.54	0.40	144	109	431	0.7
-2	6260-6530	Shelikof, m. mbr;	0.61	406	6.6	0.12	0.71	0.46	117	76	435	0.7
-3	7340-7610	Shelikof, m. mbr;	0.41	475	11.6	0.08	0.44	0.58	108	143	428	1.1
-4	8780-9230	Kialagvik, u. mbr;	0.85	856	10.1	0.23	1.04	0.59	122	70	432	1.3
-5	9950-10,400	Kialagvik, m. mbr;	0.77	571	7.4	0.20	0.92	0.68	119	88	430	1.8
-6	11030-11300	Kialagvik, m. mbr;	0.74	317	4.3	0.18	0.48	0.52	65	72	432	1.8
-7	11660-11930	Unnamed, L. Jur.	0.81	284	3.5	0.18	0.37	0.38	45	48	433	1.9
-8	12020-12110	Unnamed, L. Jur.	1.07	1134	10.6	0.32	1.29	0.82	121	76	425	2.0
-9	13820-14090	Unnamed, L. Jur.	1.07	295	2.8	0.22	0.51	0.46	48	43	428	2.4
-10	14090-1436	Unnamed, U. Triassic	0.74	405	5.5	0.14	0.58	0.50	78	68	429	2.4

Table 2. Bulk composition, isoprenoid ratios, carbon preference index, and isotopic data obtained from composite cuttings from the Amoco Cathedral River #1 well.

Sample No.	Depth ft	Pr/C17	Ph/C18	Pr/Ph	CPI
132109-1	5360-5630	0.48	0.38	1.76	1.07
-2	6260-6530	0.48	0.31	2.09	1.14
-3	7340-7610	0.47	0.36	1.44	1.00
-4	8780-9230	0.50	0.31	2.08	1.01
-5	9950-10,400	0.45	0.31	2.11	1.11
-6	11030-11300	0.43	0.31	2.15	1.01
-7	11660-11930	0.45	0.31	2.29	1.09
-8	12020-12110	0.51	0.32	2.01	1.03
-9	13820-14090	0.51	0.38	2.17	0.87
-10	14090-1436	0.48	0.36	2.05	0.90

FILE NO. 85111

Table 1

Mobil Geochemistry Job No. 1321-9

ROCK-EVAL PYROLYSIS

Sample Number	TOC	Mg/Gm Rock S1	S2	S3	Hydrogen Index	Oxygen Index	Oil or Gas Shows	Oil or Gas Potential	Trans Ratio	TMAX (Deg C)
1321-9- 1	0.39	0.09	0.58	0.37	148.7	94.9	0.09	0.67	0.13	431
1321-9- 1	0.35	0.09	0.49	0.43	140.0	122.9	0.09	0.58	0.16	431
1321-9- 2	0.64	0.11	0.68	0.43	106.3	67.2	0.11	0.79	0.14	436
1321-9- 2	0.58	0.12	0.74	0.49	127.6	84.5	0.12	0.86	0.14	434
1321-9- 3	0.41	0.08	0.44	0.66	107.3	161.0	0.08	0.52	0.15	428
1321-9- 3	0.40	0.09	0.44	0.50	110.0	125.0	0.09	0.53	0.17	428
1321-9- 4	0.87	0.23	1.05	0.53	120.7	60.9	0.23	1.28	0.18	432
1321-9- 4	0.83	0.23	1.03	0.66	124.1	79.5	0.23	1.26	0.18	432
1321-9- 5	0.80	0.20	0.92	0.74	115.0	92.5	0.20	1.12	0.18	432
1321-9- 5	0.74	0.20	0.91	0.62	123.0	83.8	0.20	1.11	0.18	428
1321-9- 6	0.73	0.18	0.50	0.57	68.5	78.1	0.18	0.68	0.26	432
1321-9- 6	0.74	0.18	0.47	0.47	63.5	63.5	0.18	0.65	0.28	431
1321-9- 7	0.83	0.18	0.37	0.42	44.6	50.6	0.18	0.55	0.33	433
1321-9- 7	0.79	0.18	0.37	0.35	46.8	44.3	0.18	0.55	0.33	433
1321-9- 8	1.07	0.28	1.28	0.83	119.6	77.6	0.28	1.56	0.18	426
1321-9- 8	1.06	0.36	1.30	0.80	122.6	75.5	0.36	1.66	0.22	423
1321-9- 9	1.06	0.21	0.52	0.47	49.1	44.3	0.21	0.73	0.29	428
1321-9- 9	1.07	0.23	0.50	0.45	46.7	42.1	0.23	0.73	0.32	427
1321-9-10	0.74	0.13	0.58	0.53	78.4	71.6	0.13	0.71	0.18	431
1321-9-10	0.74	0.16	0.58	0.48	78.4	64.9	0.16	0.74	0.22	427

TOC = Total Organic Carbon
Hydrogen Index = (S2/TOC)x100
Oxygen Index = (S3/TOC) x 100
Oil or Gas Shows = S1
Oil or Gas Potential = S1+S2
Transformation Ratio = S1/(S1+S2)

FILE'NO 1321-9
SAMP'ID 85/01541
SAMPTYPE CUTTINGS

SAMPLE 1321-9-1
LOCATION ALASKA
DEPTH 5360-5630 FT
GLC'F RA2564

ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 1.76
RATIO PRISTANE/NC17 .48
RATIO PHYTANE/NC18 .38

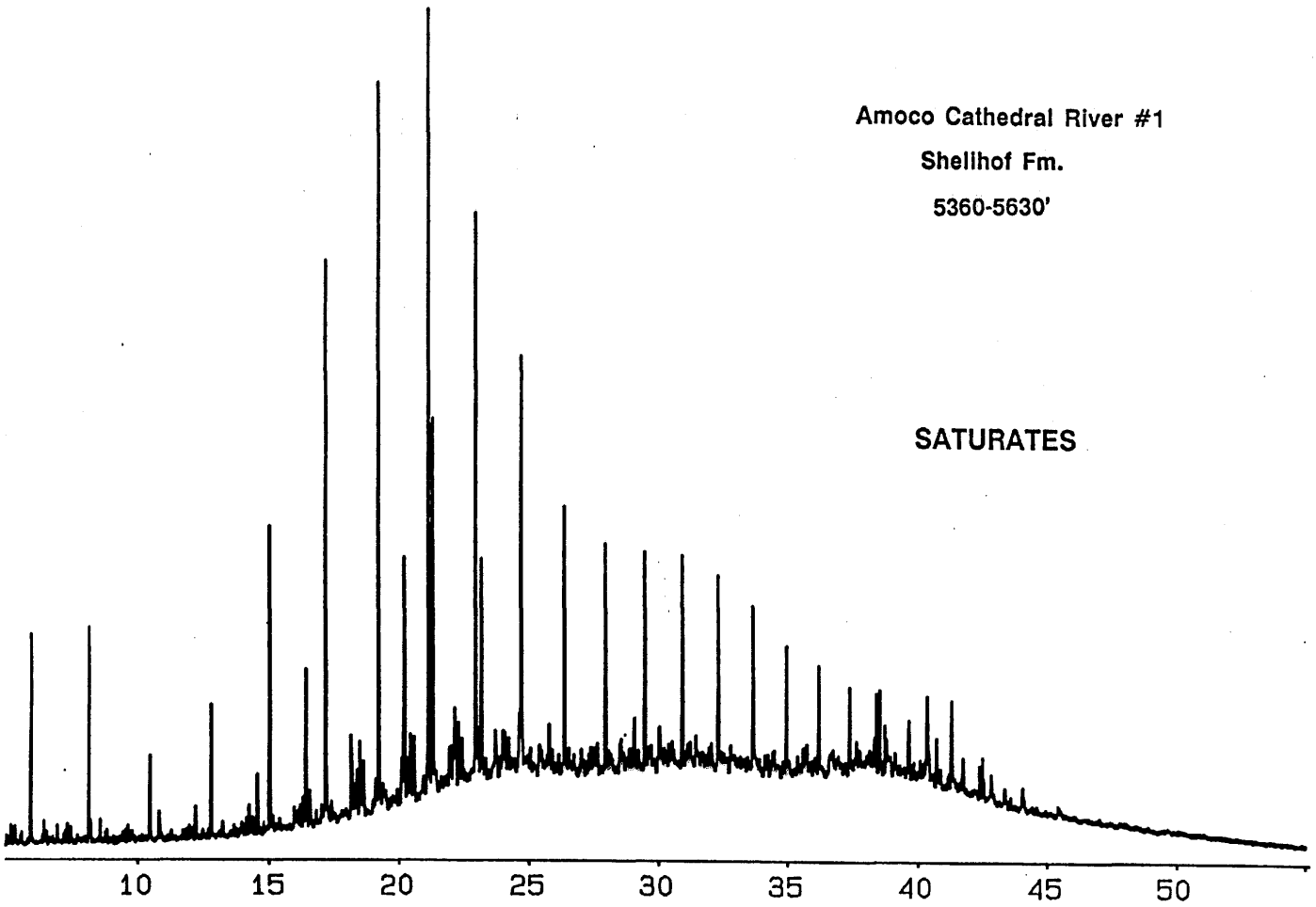
CARBON PREFERENCE INDEX 1.07

	% of Total
NC10	1.432
NC11	1.464
NC12	.574
NC13	.907
NC14	2.065
NC15	3.832
NC16	4.961
NC17	5.358
NC18	3.796
NC19	2.798
NC20	1.822
NC21	1.562
NC22	1.500
NC23	1.437

	% of Total
NC24	1.327
NC25	1.128
NC26	.883
NC27	.714
NC28	.590
NC29	.607
NC30	.422
NC31	.327
NC32	.236
NC33	.174
NC34	.148
NC35	.064
NC36	.017

Isoprenoids	
C15IP	.401
C16IP	1.068
C18IP	1.658
PRISTANE	2.560
PHYTANE	1.457

1321-9-1 RA2564 Y max. = 8175.



X = retention time (minutes)

FILE'NO 1321-9
SAMP'ID 85/01542
SAMPTYPE CUTTINGS

SAMPLE 1321-9-2
LOCATION ALASKA
DEPTH 6260-6530 FT
GLC'F RA2565

ALKANE SUMMARY DATA

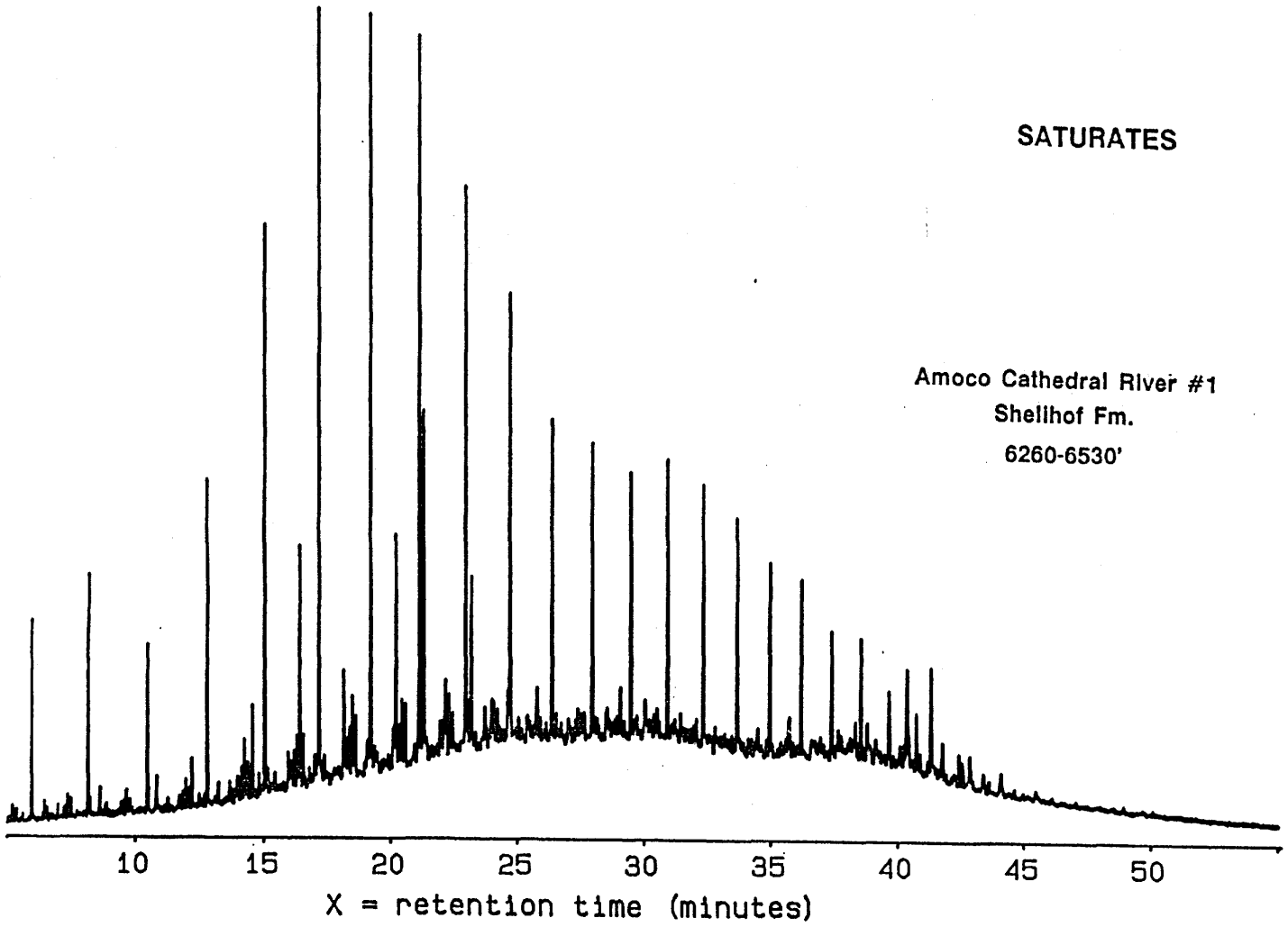
RATIO PRISTANE/PHYTANE 2.09
RATIO PRISTANE/NC17 .48
RATIO PHYTANE/NC18 .31

CARBON PREFERENCE INDEX 1.14

% of Total		% of Total	
NC10	1.286	NC24	1.652
NC11	1.557	NC25	1.508
NC12	1.086	NC26	1.251
NC13	2.096	NC27	1.140
NC14	3.650	NC28	.822
NC15	4.967	NC29	.778
NC16	4.864	NC30	.472
NC17	4.656	NC31	.366
NC18	3.521	NC32	.220
NC19	2.872	NC33	.198
NC20	2.069	NC34	.132
NC21	1.918	NC35	.037
NC22	1.716	NC36	.011
NC23	1.786		

Isoprenoids	
C15IP	.593
C16IP	1.550
C18IP	1.486
PRISTANE	2.257
PHYTANE	1.081

1321-9-2 RA2066 Y max. = 7130.



FILE'NO 1321-9
SAMP'ID 85/01543
SAMPTYPE CUTTINGS

SAMPLE 1321-9-3
LOCATION ALASKA
DEPTH 7340-7610 FT
GLC'F RA2566

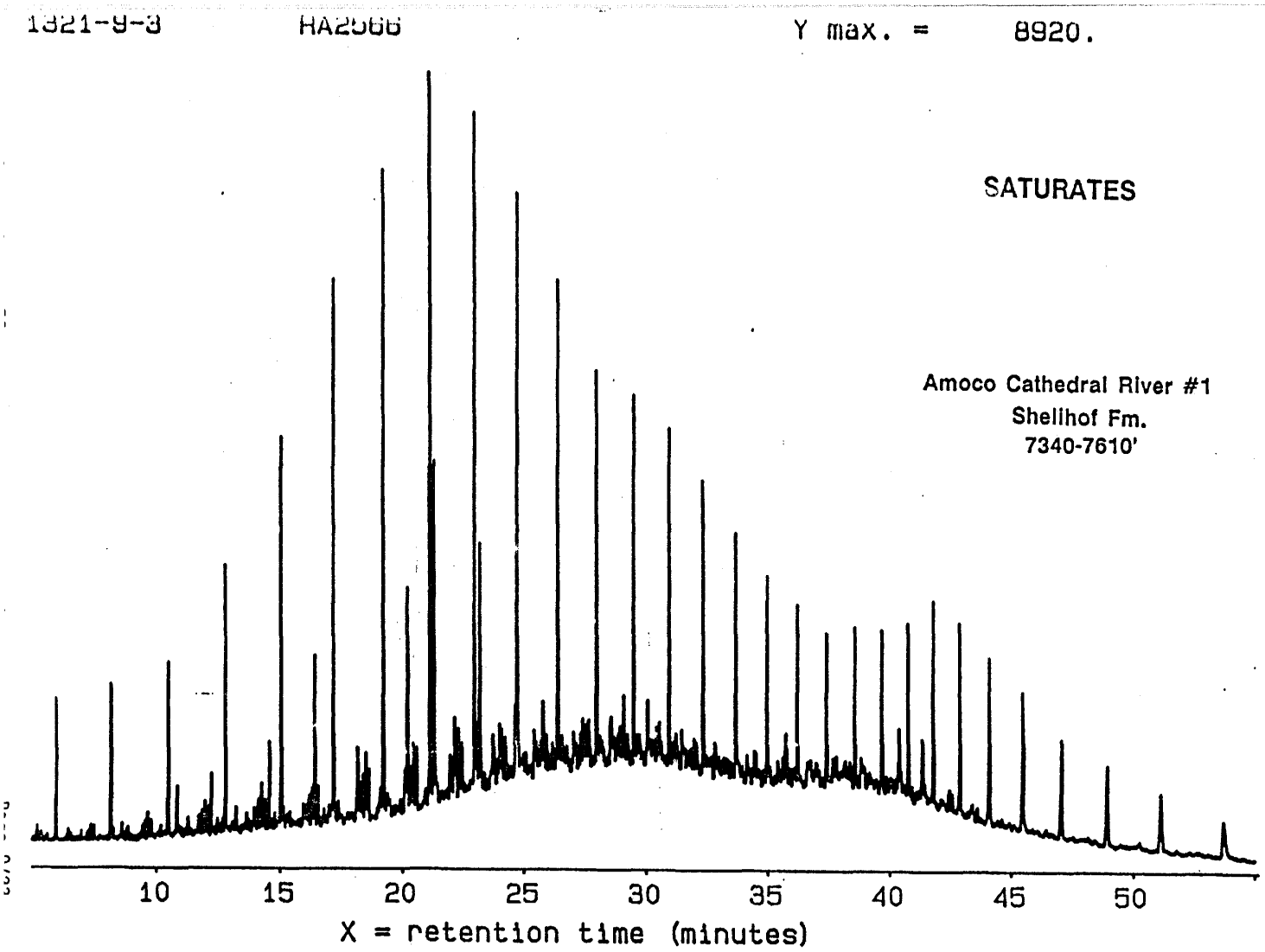
ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 1.44
RATIO PRISTANE/NC17 .47
RATIO PHYTANE/NC18 .36

CARBON PREFERENCE INDEX 1.00

	% of Total		% of Total
NC10	.767	NC24	1.586
NC11	.842	NC25	1.337
NC12	.935	NC26	1.126
NC13	1.436	NC27	.979
NC14	2.113	NC28	.818
NC15	2.945	NC29	.865
NC16	3.497	NC30	.880
NC17	3.956	NC31	.958
NC18	3.570	NC32	1.116
NC19	3.161	NC33	1.042
NC20	2.638	NC34	.902
NC21	2.133	NC35	.750
NC22	2.001	NC36	.021
NC23	1.814		

Isoprenoids	
C15IP	.473
C16IP	.919
C18IP	1.200
PRISTANE	1.858
PHYTANE	1.288


1321-9-3
HA2566
Y max. = 8920.
SATURATES
Amoco Cathedral River #1
Shellhof Fm.
7340-7610'
10
15
20
25
30
35
40
45
50
X = retention time (minutes)

FILE'NO 1321-9
SAMP'ID 85/01544
SAMPTYPE CUTTINGS

SAMPLE 1321-9-4
LOCATION ALASKA
DEPTH 8780-9230 FT
GLC'F RA2567

ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 2.08
RATIO PRISTANE/NC17 .50
RATIO PHYTANE/NC18 .31

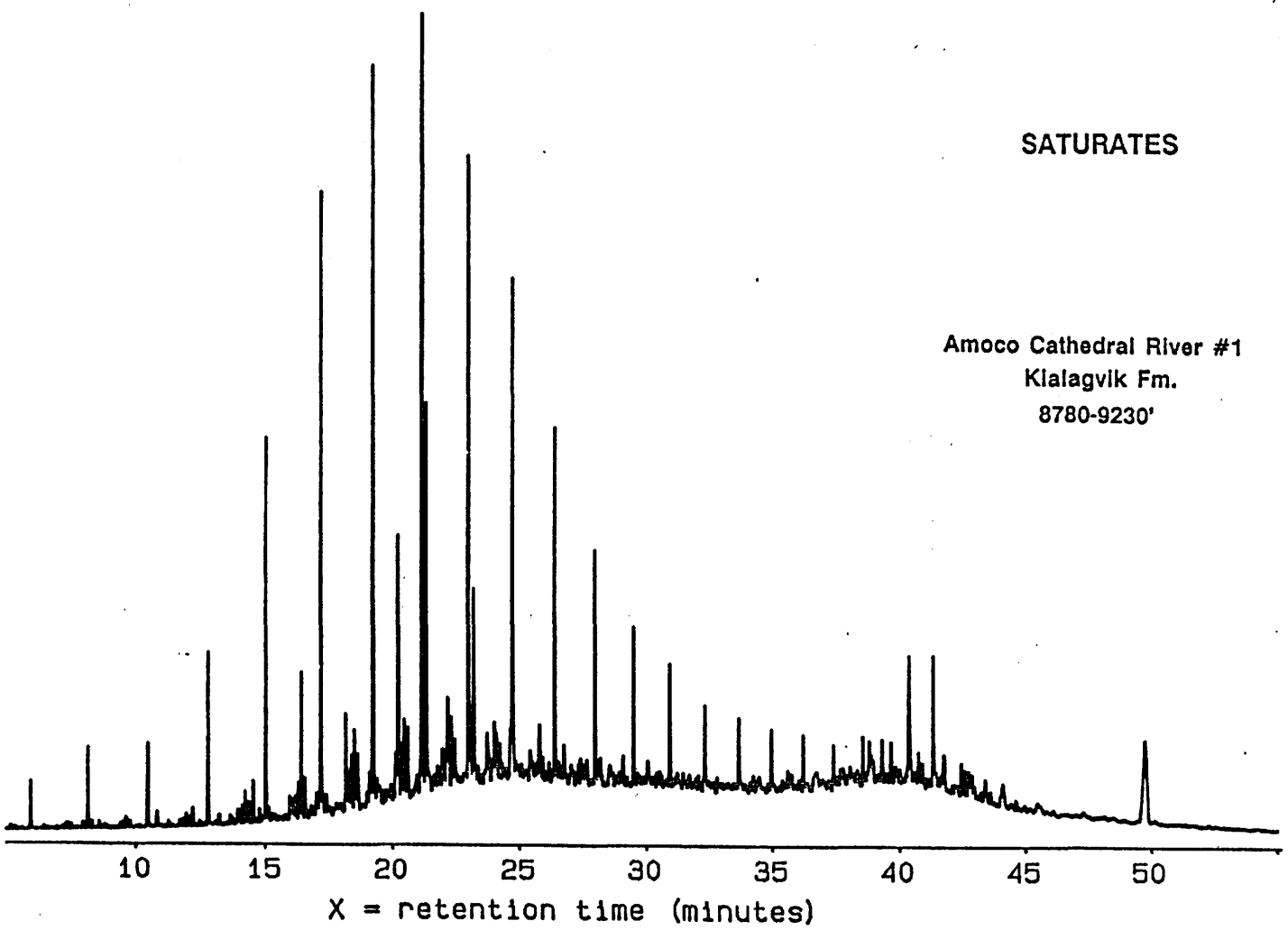
CARBON PREFERENCE INDEX 1.01

	% of Total
NC10	.390
NC11	.666
NC12	.680
NC13	1.415
NC14	3.152
NC15	5.132
NC16	6.094
NC17	6.420
NC18	5.047
NC19	4.122
NC20	2.916
NC21	1.914
NC22	1.304
NC23	1.000

	% of Total
NC24	.695
NC25	.578
NC26	.504
NC27	.462
NC28	.394
NC29	.479
NC30	.454
NC31	.392
NC32	.392
NC33	.280
NC34	.200
NC35	.080
NC36	.005

Isoprenoids	
C15IP	.333
C16IP	1.192
C18IP	2.146
PRISTANE	3.210
PHYTANE	1.543

1321-9-4 RA2567 Y max. = 24071.



FILE'NO 1321-9
SAMP'ID 85/01545
SAMPTYPE CUTTINGS

SAMPLE 1321-9-5
LOCATION ALASKA
DEPTH 9950-10400 FT
GLC'F RA2568

ALKANE SUMMARY DATA

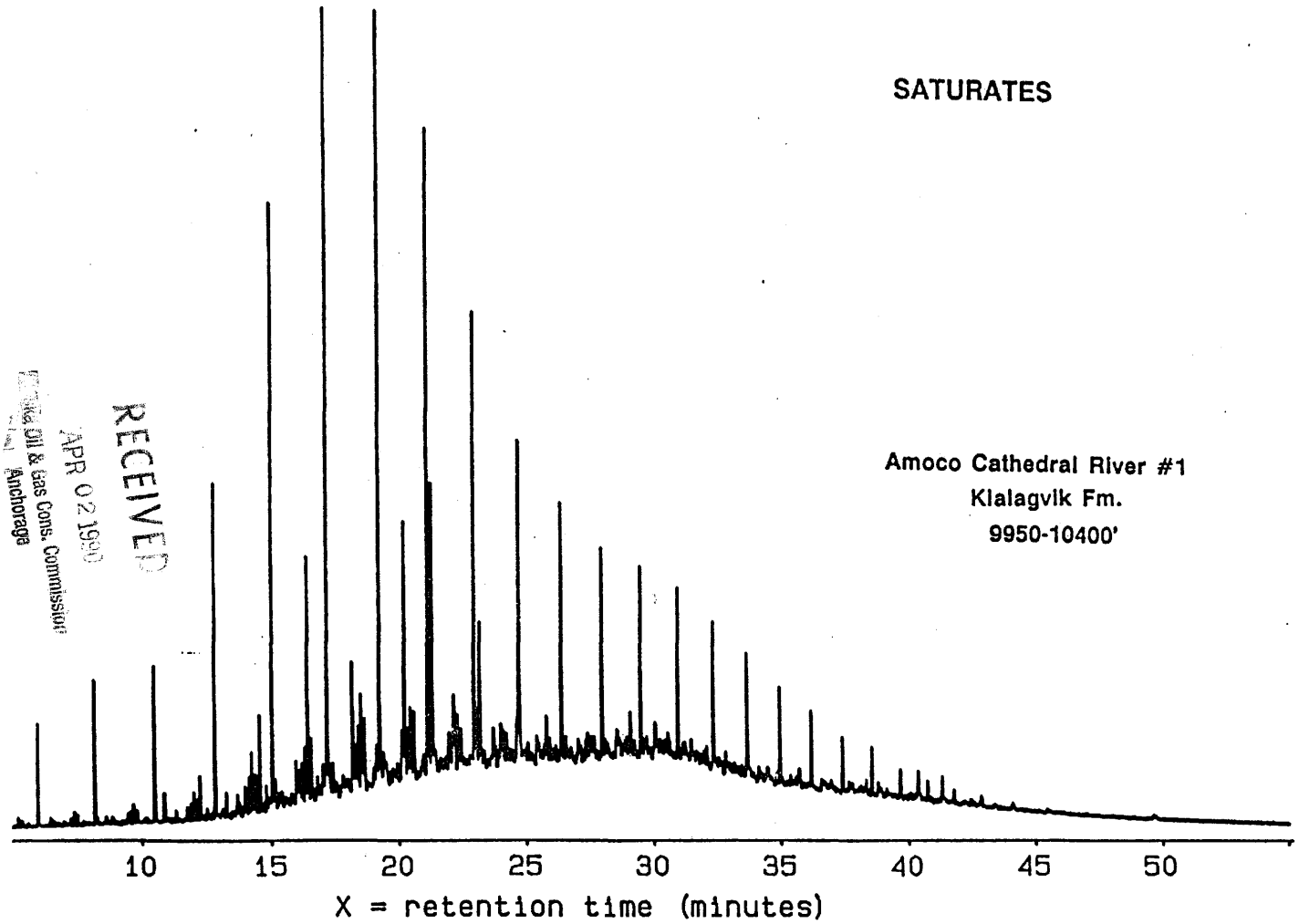
RATIO PRISTANE/PHYTANE 2.11
RATIO PRISTANE/NC17 .45
RATIO PHYTANE/NC18 .31

CARBON PREFERENCE INDEX 1.11

	% of Total		% of Total
NC10	.828	NC24	1.188
NC11	1.163	NC25	1.008
NC12	1.263	NC26	.783
NC13	2.703	NC27	.626
NC14	4.879	NC28	.452
NC15	6.370	NC29	.390
NC16	6.255	NC30	.234
NC17	5.211	NC31	.165
NC18	3.572	NC32	.110
NC19	2.601	NC33	.081
NC20	2.082	NC34	.053
NC21	1.688	NC35	.025
NC22	1.529	NC36	.004
NC23	1.371		

Isoprenoids	
C15IP	.774
C16IP	1.961
C18IP	2.056
PRISTANE	2.348
PHYTANE	1.113

1321-9-5 HA2568 Y max. = 16926.



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Anchorage

FILE'NO 1321-9
SAMP'ID 85/01546
SAMPTYPE CUTTINGS

SAMPLE 1321-9-6
LOCATION ALASKA
DEPTH 11030-11300 FT
GLC'F RA2569

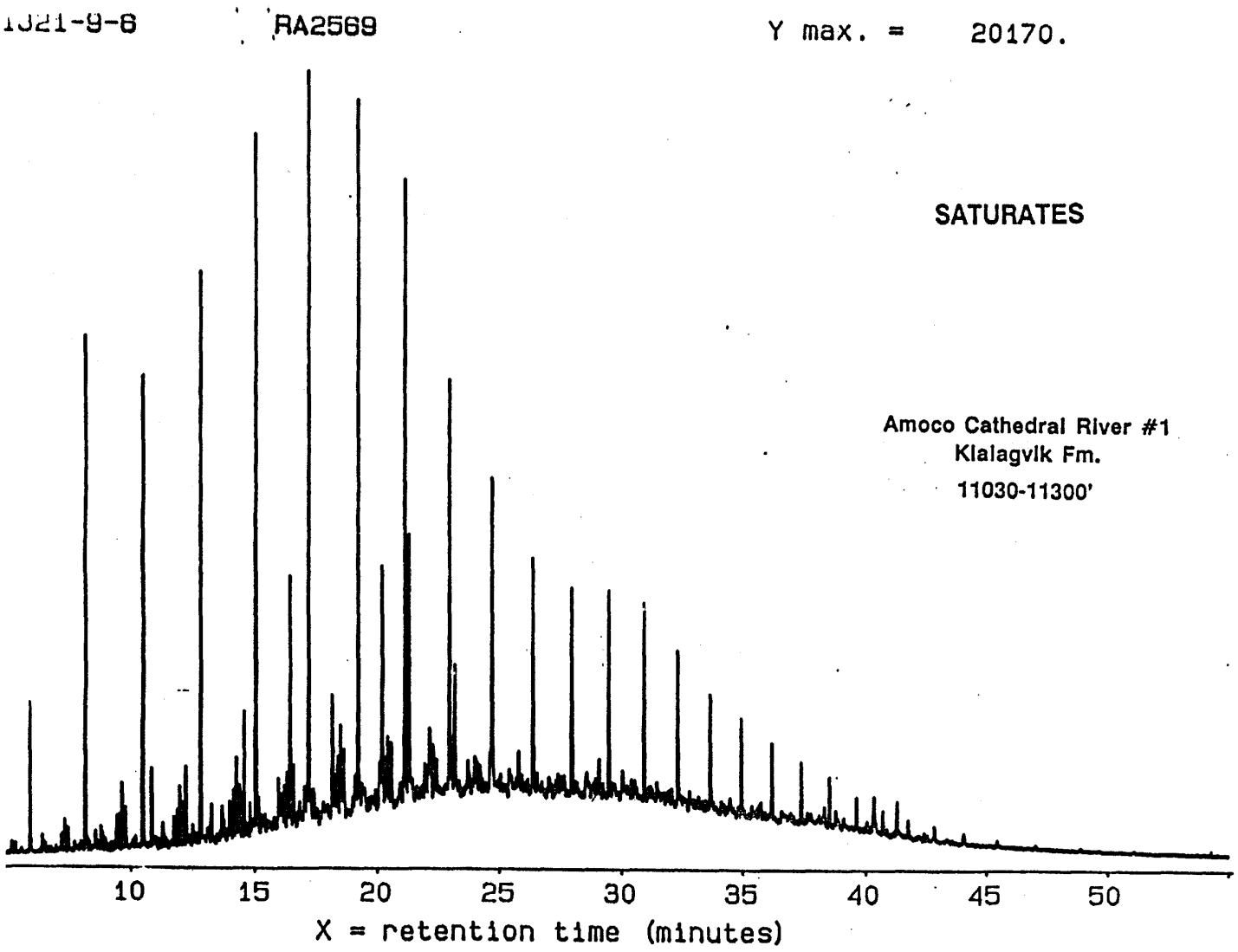
ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 2.15
RATIO PRISTANE/NC17 .43
RATIO PHYTANE/NC18 .31

CARBON PREFERENCE INDEX 1.01

	% of Total		% of Total
NC10	1.102	NC24	1.151
NC11	3.792	NC25	.858
NC12	3.479	NC26	.720
NC13	4.199	NC27	.543
NC14	5.153	NC28	.449
NC15	5.555	NC29	.362
NC16	5.269	NC30	.234
NC17	4.608	NC31	.168
NC18	2.975	NC32	.129
NC19	2.309	NC33	.100
NC20	1.740	NC34	.068
NC21	1.543	NC35	.038
NC22	1.535	NC36	.024
NC23	1.462		

Isoprenoids	
C15IP	.917
C16IP	1.840
C18IP	1.761
PRISTANE	1.977
PHYTANE	.919


1321-9-6
RA2569
Y max. = 20170.
SATURATES
Amoco Cathedral River #1
Kialagvik Fm.
11030-11300'
10
15
20
25
30
35
40
45
50
X = retention time (minutes)

FILE'NO 1321-9
SAMP'ID 85/01547
SAMPTYPE CUTTINGS

SAMPLE 1321-9-7
LOCATION ALASKA
DEPTH 11660-11930 FT
GLC'F RA2570

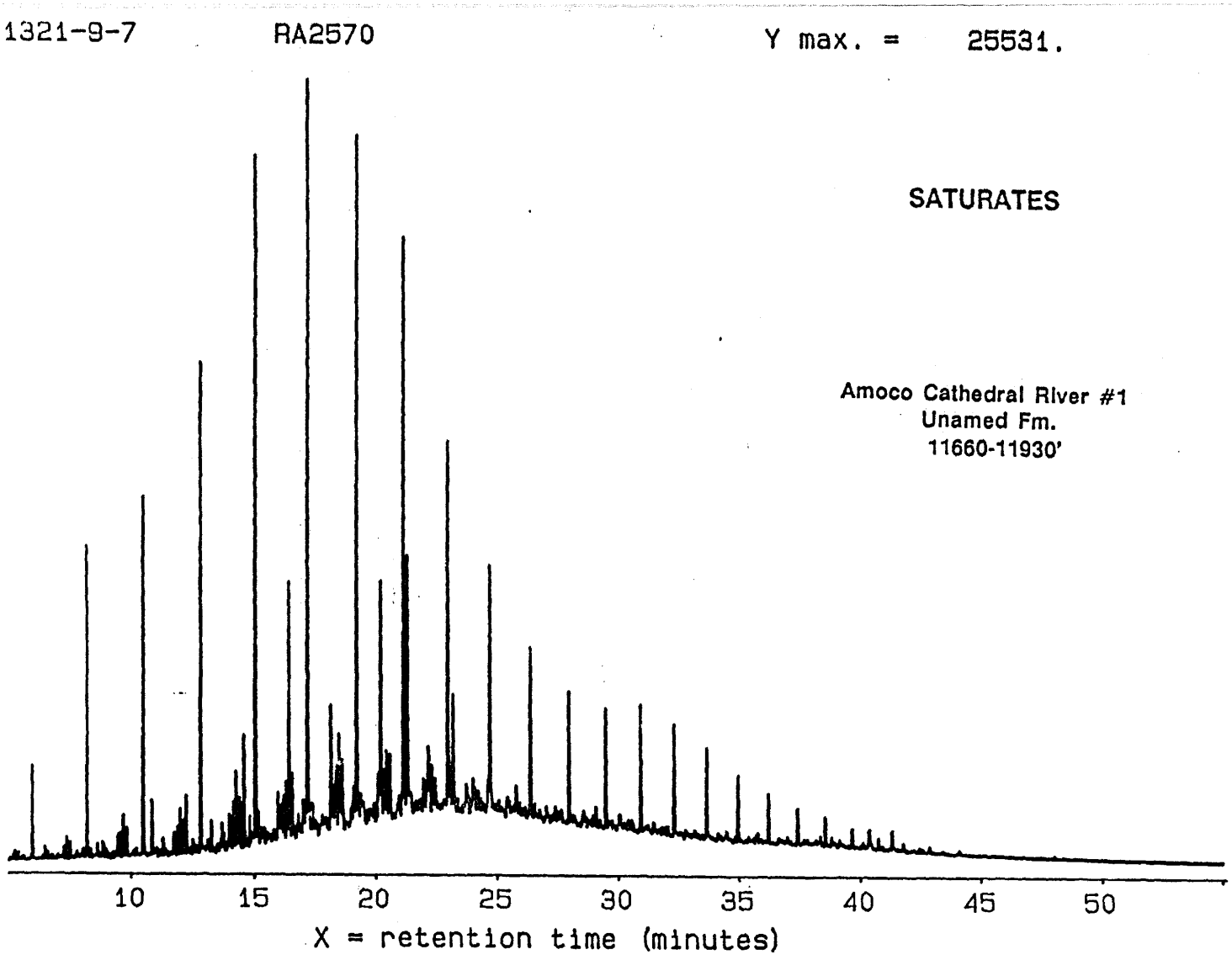
ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 2.29
RATIO PRISTANE/NC17 .45
RATIO PHYTANE/NC18 .31

CARBON PREFERENCE INDEX 1.09

	% of Total		% of Total
NC10	.840	NC24	1.013
NC11	2.803	NC25	.818
NC12	3.233	NC26	.596
NC13	4.430	NC27	.433
NC14	6.225	NC28	.320
NC15	6.820	NC29	.257
NC16	6.231	NC30	.161
NC17	5.219	NC31	.098
NC18	3.252	NC32	.064
NC19	2.205	NC33	.049
NC20	1.551	NC34	.033
NC21	1.199	NC35	.009
NC22	1.091	NC36	.004
NC23	1.145		

Isoprenoids	
C15IP	1.002
C16IP	2.303
C18IP	2.130
PRISTANE	2.334
PHYTANE	1.019


1321-9-7
RA2570
Y max. = 25531.
SATURATES
Amoco Cathedral River #1
Unamed Fm.
11660-11930'
10
15
20
25
30
35
40
45
50
X = retention time (minutes)

FILE'NO 1321-9
SAMP'ID 85/01548
SAMPTYPE CUTTINGS

SAMPLE 1321-9-8
LOCATION ALASKA
DEPTH 12020-12470 FT
GLC'F RA2571

ALKANE SUMMARY DATA

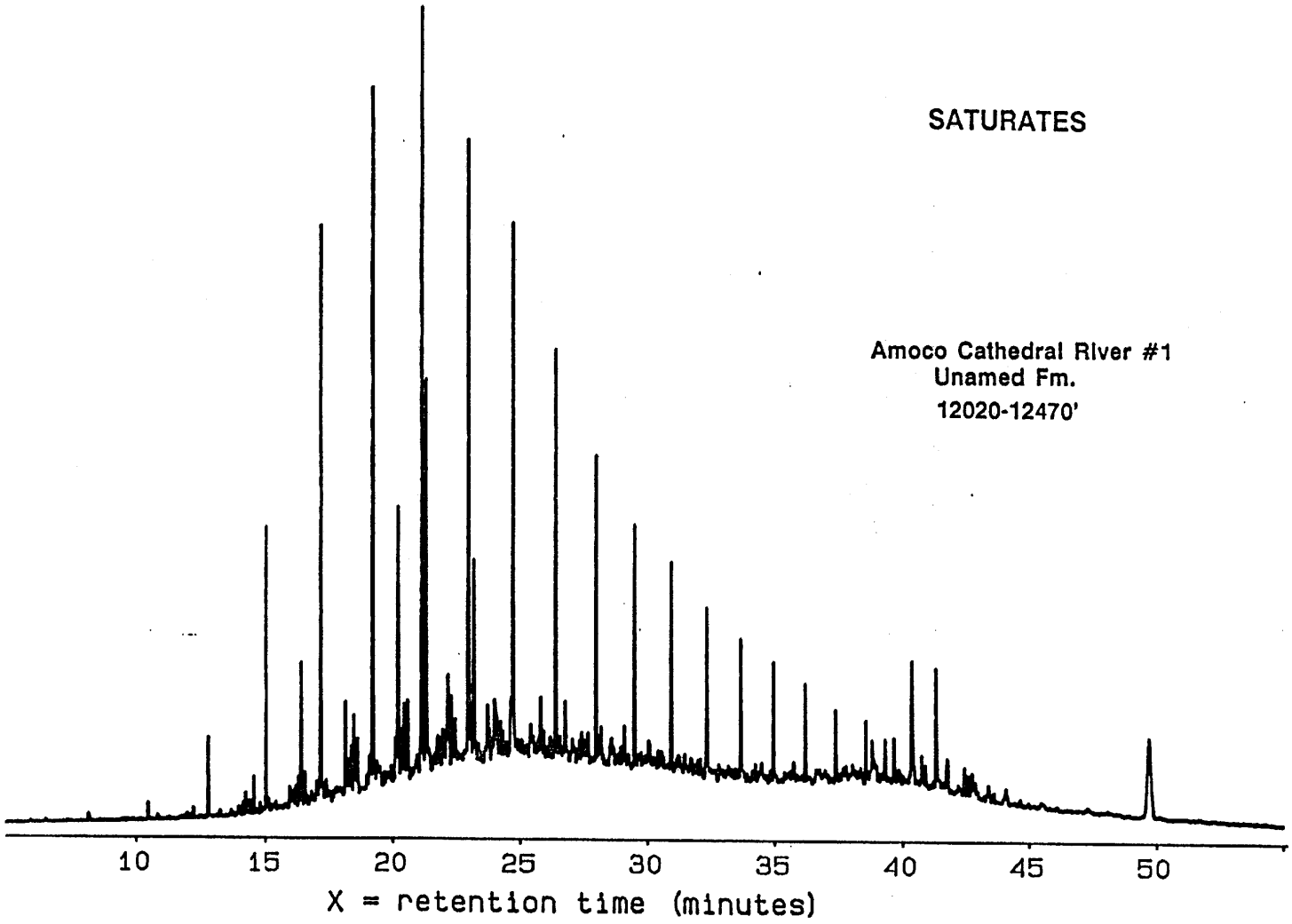
RATIO PRISTANE/PHYTANE 2.01
RATIO PRISTANE/NC17 .51
RATIO PHYTANE/NC18 .32

CARBON PREFERENCE INDEX 1.03

	% of Total		% of Total
NC10	.017	NC24	1.531
NC11	.060	NC25	1.278
NC12	.146	NC26	1.076
NC13	.728	NC27	.862
NC14	2.560	NC28	.648
NC15	5.172	NC29	.547
NC16	6.270	NC30	.401
NC17	6.866	NC31	.286
NC18	5.422	NC32	.294
NC19	4.775	NC33	.203
NC20	3.651	NC34	.127
NC21	2.758	NC35	.018
NC22	2.181	NC36	.015
NC23	1.878		

Isoprenoids	
C15IP	.326
C16IP	1.281
C18IP	2.420
PRISTANE	3.529
PHYTANE	1.756

1321-9-8 RA2571 Y max. = 16546.



FILE'NO 1321-9
SAMP'ID 85/01549
SAMPTYPE CUTTINGS

SAMPLE 1321-9-9
LOCATION ALASKA
DEPTH 13820-14090 FT
GLC'F RA2572

ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 2.17
RATIO PRISTANE/NC17 .51
RATIO PHYTANE/NC18 .38

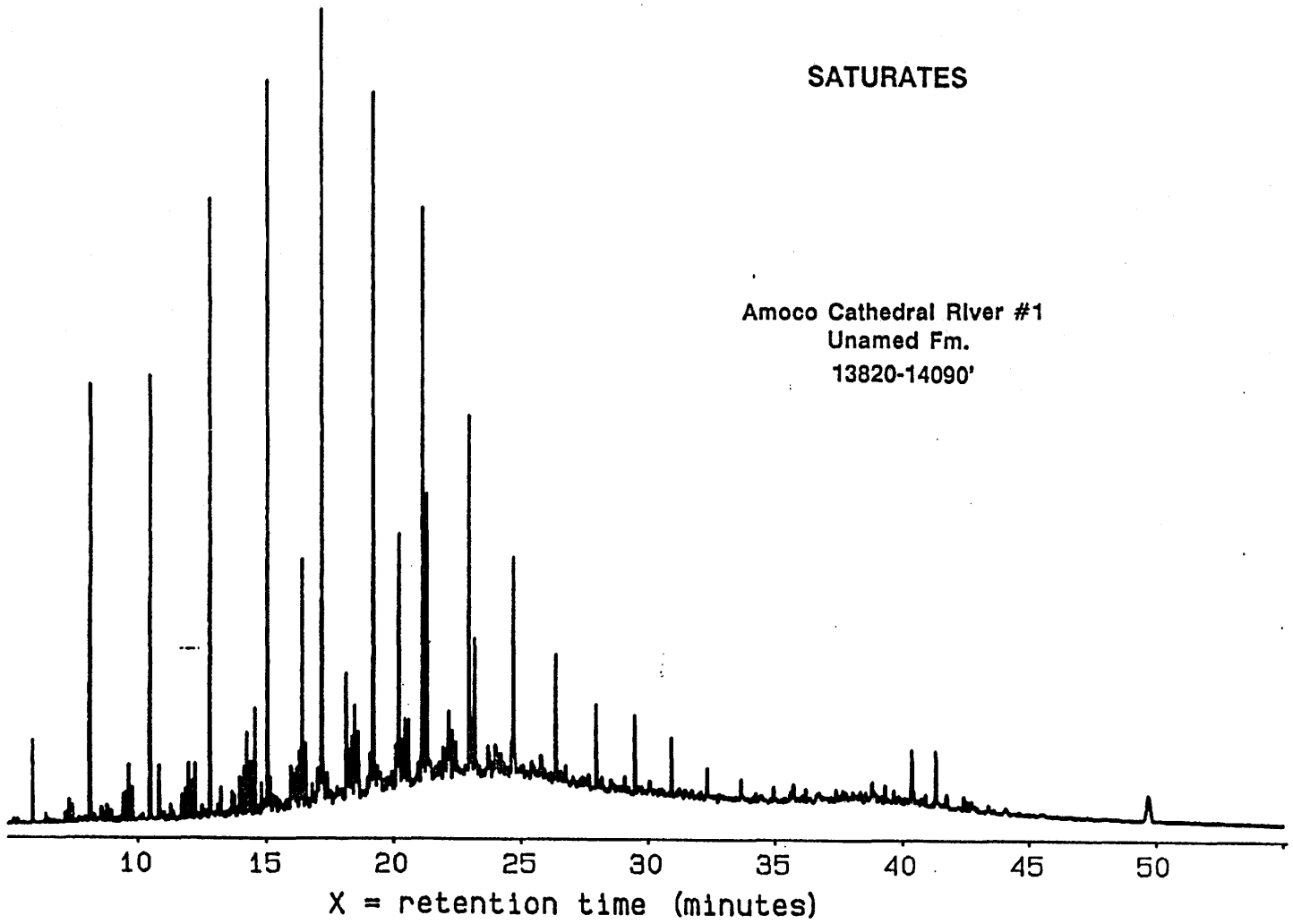
CARBON PREFERENCE INDEX .87

	% of Total
NC10	.772
NC11	4.045
NC12	4.108
NC13	5.714
NC14	6.761
NC15	7.348
NC16	6.484
NC17	5.323
NC18	3.258
NC19	2.042
NC20	1.194
NC21	.792
NC22	.730
NC23	.538

	% of Total
NC24	.291
NC25	.178
NC26	.130
NC27	.110
NC28	.096
NC29	.077
NC30	.106
NC31	.066
NC32	.112
NC33	.084
NC34	.055
NC35	.022
NC36	.003

Isoprenoids	
C15IP	.972
C16IP	2.302
C18IP	2.334
PRISTANE	2.690
PHYTANE	1.240

1321-9-9 RA2572 Y max. = 25531.



FILE'NO 1321-9
SAMP'ID 85/01550
SAMPTYPE CUTTINGS

SAMPLE 1321-9-10
LOCATION ALASKA
DEPTH 14090-14360 FT
GLC'F RA2573

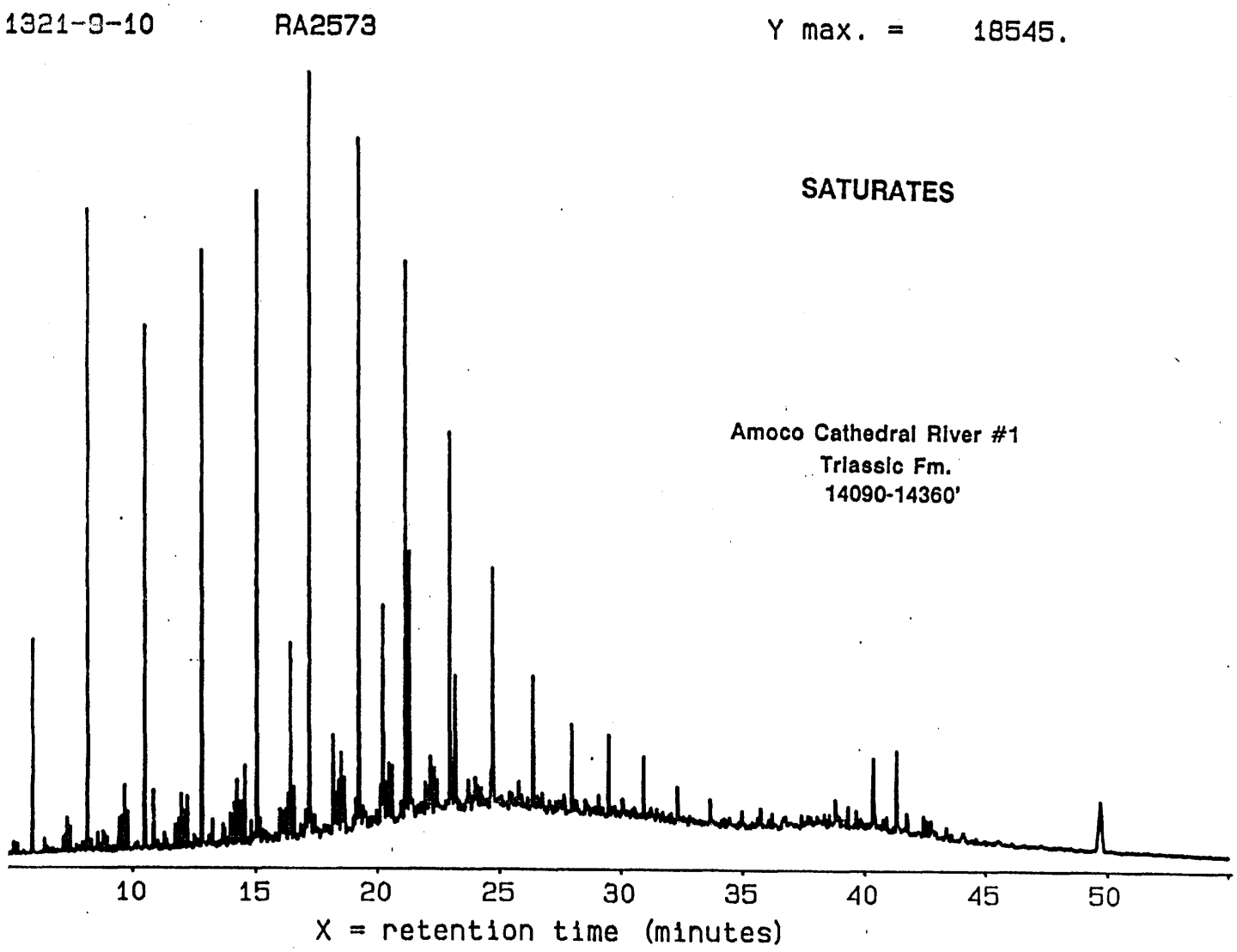
ALKANE SUMMARY DATA

RATIO PRISTANE/PHYTANE 2.05
RATIO PRISTANE/NC17 .48
RATIO PHYTANE/NC18 .36

CARBON PREFERENCE INDEX .90

% of Total		% of Total	
NC10	1.803	NC24	.298
NC11	5.392	NC25	.210
NC12	4.401	NC26	.134
NC13	5.012	NC27	.071
NC14	5.481	NC28	.095
NC15	6.439	NC29	.098
NC16	5.806	NC30	.135
NC17	4.698	NC31	.112
NC18	3.099	NC32	.165
NC19	2.022	NC33	.131
NC20	1.134	NC34	.069
NC21	.743	NC35	.010
NC22	.685	NC36	.007
NC23	.513		

Isoprenoids	
C15IP	.655
C16IP	1.652
C18IP	1.823
PRISTANE	2.256
PHYTANE	1.102


1321-9-10
RA2573
Y max. = 18545.
SATURATES
Amoco Cathedral River #1
Triassic Fm.
14090-14360'
10
15
20
25
30
35
40
45
50
X = retention time (minutes)