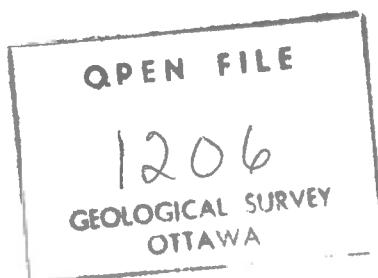


Report No. EPGS-DOM.12-85MPA

Vitrinite reflectance
(Ro) of dispersed organics
from
Esso Voyageur
GABRIEL C-60.



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Vitrinite Reflectance (Ro) of dispersed organics from Esso Voyageur
GABRIEL C-60.

"Quotation in full or in part from this report must be with the prior approval of the Eastern Petroleum Geology Subdivision of the Atlantic Geoscience Centre, Dartmouth, Nova Scotia".

G.S.C. Locality No: D179

Location: 47°19'08.84"N, 46°53'29.60"W

R.T. Elevation: 24.0m

Sample Interval: 1133 - 5165m

Total Depth: 5171m

Water Depth: 1108.5m

Release Date: December 12, 1981

Interval Studied: 1850 - 5160m

Depth Units: Meters referenced to R.T.

Vitrinite Reflectance has been determined on 22 (25 attempted) samples (Table II) from Esso Voyageur Gabriel C-60, which was classified as a wild-cat well and is located in the Flemish Pass Subbasin, approximately 445km (277mi) east of St.John's, Newfoundland.

Data acquisition and manipulation for this report utilized the Zeiss Photomultiplier III Zonax microcomputer system with improvements in software to provide a dynamic histogram display as readings are acquired. Sample preparation followed the procedures listed in Appendix I. The analysis of the well revealed the thermal maturation intervals given in Table I. Specific maturation levels as set out in this report were based on those of Dow (1977, Appendix II) with modified terminology.

Table I
Inferred Thermal Maturation Levels

Determined

Seafloor-3332m	0.17 - 0.4	% Ro	immature
3332 - 3942m	0.4 - 0.5	% Ro	immature approaching maturity
3942 - 4441m	0.5 - 0.6	% Ro	marginally mature
4441m	0.6	% Ro	onset of significant oil generation
5171m (T.D.)	0.78	% Ro	within oil window

Projected

5228m	0.8	% Ro	peak of oil generation
5838m	1.0	% Ro	onset of significant wet gas generation
6337m	1.2	% Ro	onset of significant dry gas generation
6659m	1.35	% Ro	oil floor

Remarks

The sample coverage of vitrinite reflectance data (Figure 1, Table II) was adequate over most of the well. The line through the data points represents the best fit established by the least squares method.

The upper section (above 3770m) of the profile is characterized by rather scattered data which is typical of determinations on such low rank vitrinite. Also, a number of the samples in this section yielded very few readings and these would not stand alone but do support nearby data points. The lower section (below 3770m) shows a much reduced spread in the data. Although a single straight line is plotted through the data, there could be an inflection point at 3840m. If real, this most likely represents dilution of the primary population by caved vitrinite from uphole (lowest casing point at 3639m).

An interesting aspect of this well profile is that the calculated line projects through the 0.2 Ro value at a depth of 1436m instead of the more typical intersection of the 0.2 value at surface. This is due to the significant depth of water (1108.5m) at this well location as compared to the water depths of wells situated on the shelf which generally have water depths of less than 200 meters. The effect of the water column is to maintain a surface temperature of 34°F (1°C) down to the seafloor (see temperature profile in Figure 2). From the seafloor down to T.D. the slope of the profile is similar to wells on the shelf.

A note is also made here of the presence of 'semi-coke' organic particles (Stach *et al.*, 1982, p361 & p440) in this well. A very minor amount was found in two samples at depths of 1860 and 1960m and significant amounts at depths of 2200 and 2340m. Small amounts occurred in all the samples between 2800 and 4600m. These particles are caused by the rapid heating of organic matter to very high temperatures. Possible sources are igneous intrusions, volcanism and frictional heat associated with fault planes. The small amount present throughout this well probably points to these particles being detrital and concentrated in these sediments, unless caving is responsible for the distribution throughout the the well.

These maturation data provide evidence that the thermal regime at Gabriel C-60 was suitable for the generation of oil within the drilled section.

References

Canada Oil and Gas Lands Administration (COGLA), 1983. Offshore schedule of wells. Department of Energy, Mines and Resources, Ottawa.

Dow, W.G., 1977. Kerogen studies and geological interpretations. Journal of Geochemical Exploration, no. 7, p. 79-99.

Esso Resources Canada Ltd., 1980. Well history report Esso Voyageur Gabriel C-60. Open file report, Department of Energy, Mine and Resources, Ottawa.

Stach, E., Mackowsky, M.Th., Teichmüller, M., Taylor, G.H., Chandra, D. and Teichmüller, R., 1982: Textbook of coal petrology, 3rd.Ed. Gebr. Borntraeger, Berlin, Stuttgart, 535p.

August 15, 1985

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Table II
Summary of kerogen - based vitrinite reflectance

Seq. #	Sample #	Depth in feet	Mean Ro (SD) non-rotated	Number of Total	readings Edited
1	K0546B	1850-1860	.22(+.04)	19	3
2	K0546C	1950-1960	.23(+.04)	52	18
3	K0547B	2190-2200	.25(+.00)	12	2
4	K0547C	2330-2340	.3 (+.05)	31	18
5	K0548A	2490-2500	.28(+.06)	34	25
6	K0548B	2650-2660	.34(+.07)	41	37
7	K0548C	2790-2800	.36(+.1)	26	25
8	K0549B	3090-3100	.33(+.04)	58	22
9	K0549C	3250-3260	.38(+.07)	45	41
10	K0550A	3370-3380	.38(+.07)	48	40
11	K0550B	3530-3540	.45(+.07)	63	53
12	K0550C	3690-3700	.47(+.04)	67	32
13	K0551A	3830-3840	.55(+.04)	52	24
14	K0551B	3990-4000	.55(+.05)	51	25
15	K0551C	4130-4140	.56(+.08)	78	72
16	K0552A	4290-4300	.59(+.06)	52	45
17	K0552B	4440-4450	.62(+.08)	54	47
18	K0552C	4590-4600	.62(+.07)	69	61
19	K0553A	4730-4740	.69(+.07)	92	39
20	K0553B	4890-4900	.67(+.09)	71	59
21	K0553C	5010-5020	.69(+.09)	99	80
22	K0561C	5150-5160	.72(+.1)	19	3

Note : All samples are Kerogen Type.

Table III
Formation Tops (Schedule of wells, 1983)

Depth	Formation
in casing	Banquereau
2469m	Paleocene Chalk
2505m	Dawson Canyon
2937m	Missisauga
4553m	Verrill Canyon
5171m	T.D.

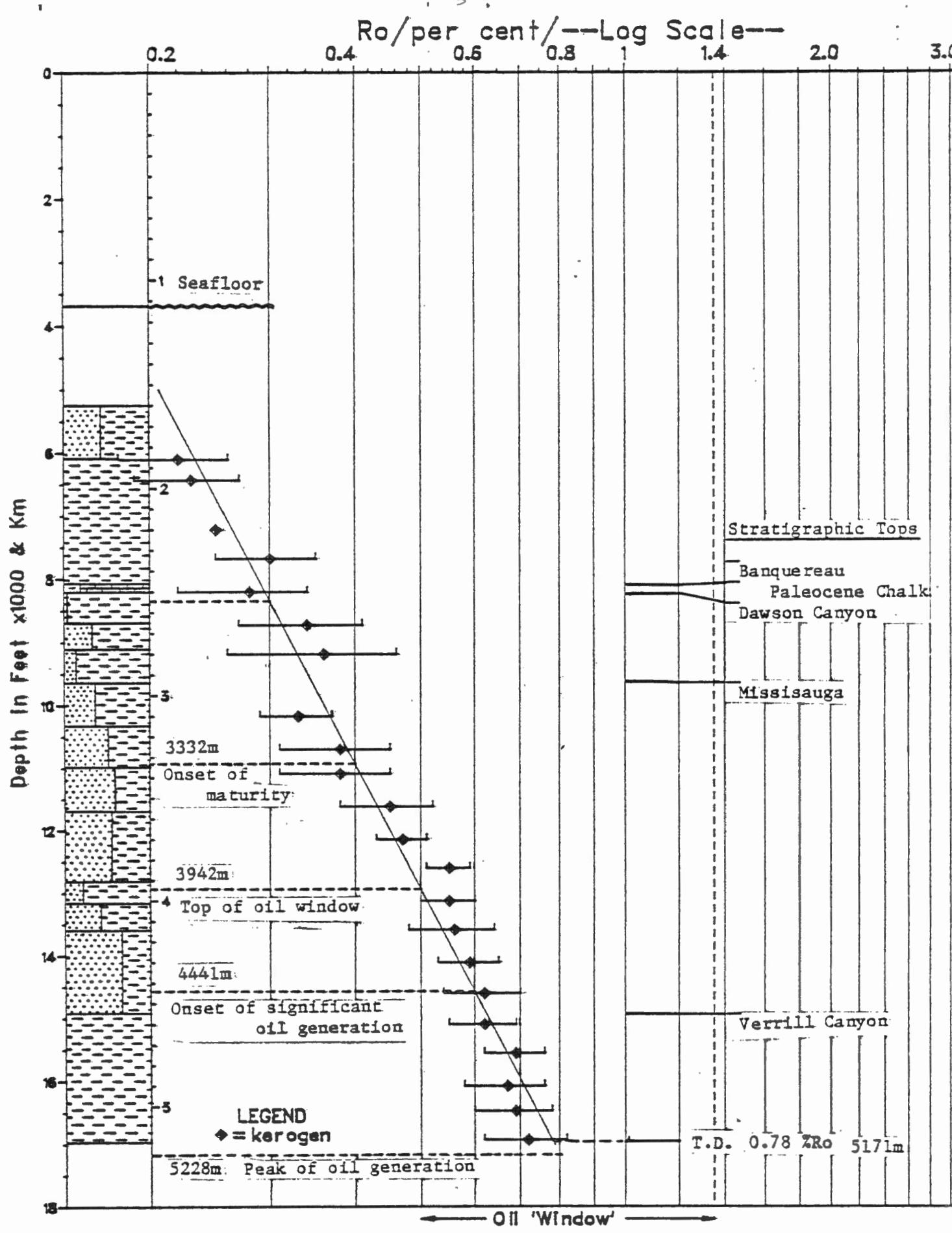


Fig. 1 Gabriel C-60

BOTTOMHOLE TEMPERATURE -vs- DEPTH PROFILE
Esso Voyageur Gabriel C-60

Depth in thousands of feet referenced to R.T.

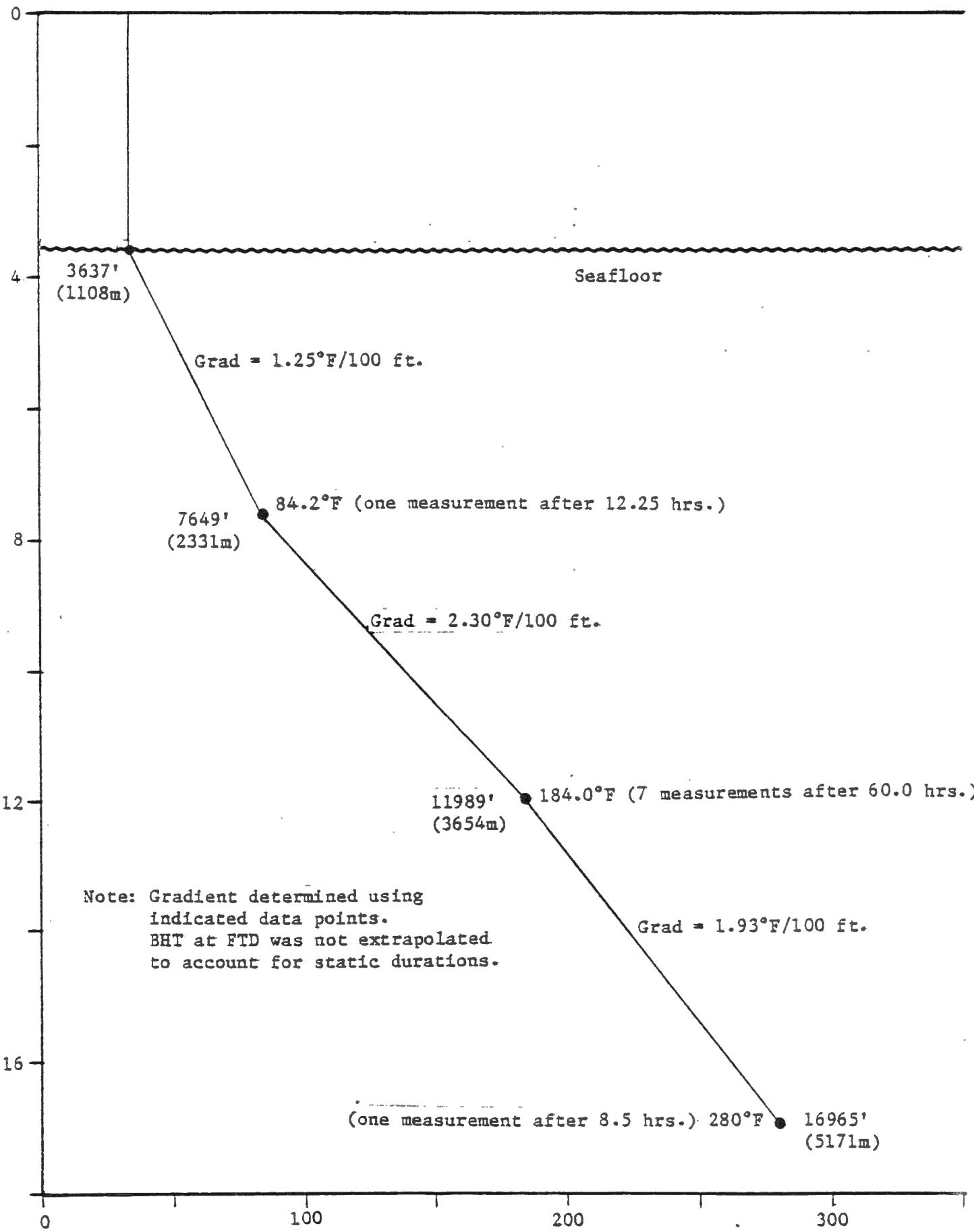


Fig. 2

- 7 -

APPENDIX I

Sample Preparation Method

COGLA Lab preparation

Preliminary Wash

Samples dried in oven

Split: a. all of coarse to Petrology Lab

b. $\frac{1}{2}$ medium to Palynology Lab

c. rest of medium and all of fine combined for Micropaleo Lab
Split "b" is delivered to Palynology Lab and treated as follows:

PALYNOLOGY Lab preparation

20-30 grams placed in 250ml plastic beaker.

Add 10% HCl till reaction ceases (removes carbonates).

Washed (rinsed) 3 times.

Conc. HF overnight (removes silicates).

Washed (rinsed) 3 times.

Heated (60-65°C) conc. HCl (remove fluorides caused by HF).

Washed 3 times.

Then put into 15ml test tube with 4-5ml 4% Alconox.

Differential centrifuge at 1500rpm for 90 sec.

Decant.

Wash 3 times with centrifuging.

Float off organic fraction using 2.0 S.G. ZnBr solution.

Centrifuge 1000rpm, 8 min.

Float fraction into second test tube.

Wash 3 times with centrifuging.

Kerogen smear slide made.

Remaining kerogen material delivered to Vitrinite Reflectance Lab.

VITRINITE REFLECTANCE Lab preparation

Excess water pipetted off.

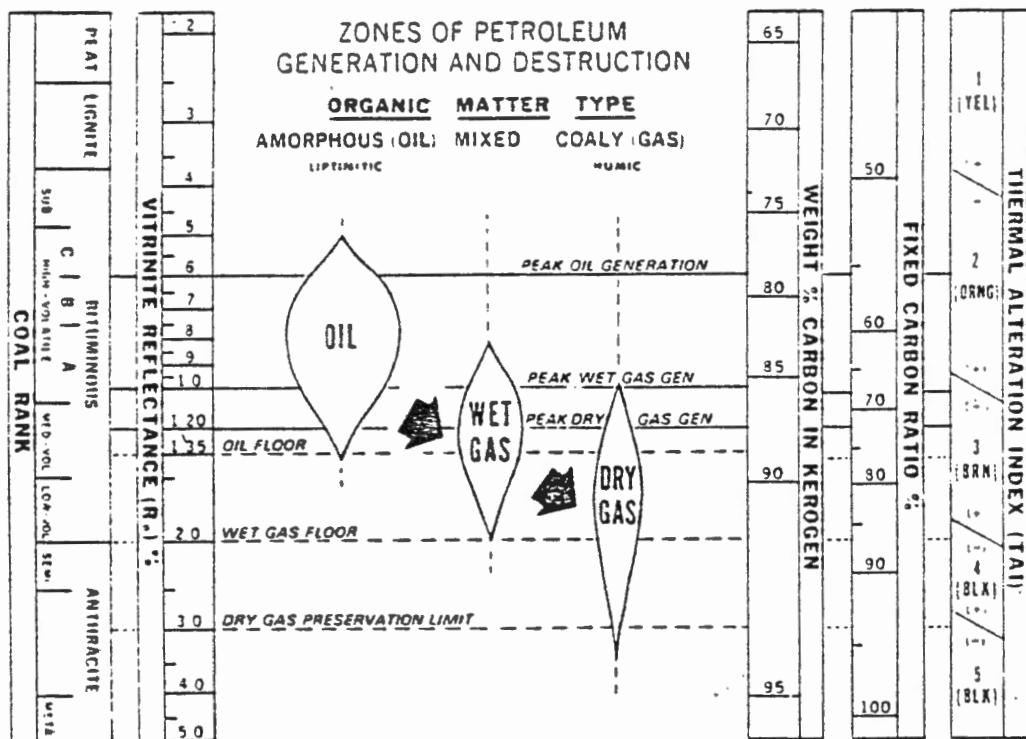
Freeze dried.

Mounted using epoxy resin (EPO-TEK 301) in predrilled plastic stubs.

Polished using modified coal petrology polishing methods.

Examined under oil lens at approximately 800x mag'n.

8
Appendix II (Dow, 1977)



Note that the terminology describing the various maturation levels has been modified. The 'peak' designation has been changed to 'onset of significant' and 0.8 Ro is now used as the 'peak of oil generation'.

Vitrinite Reflectance Histograms

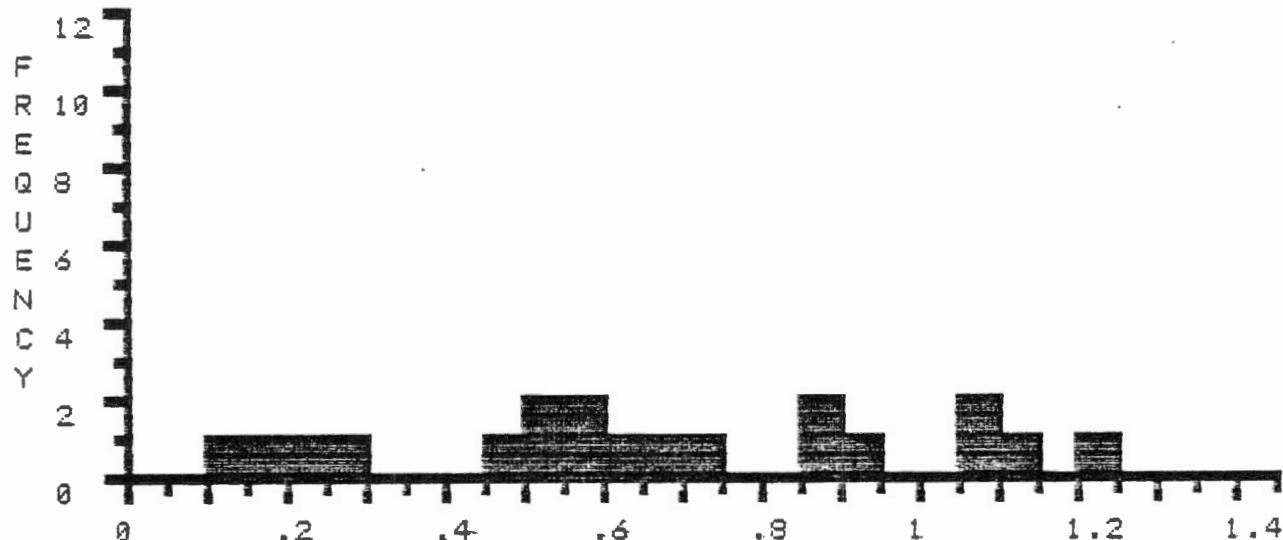
FILE >> K0546B DESCRIPTION FOLLOWS :
DEPTH 1850-1860M, GABRIEL C-60, MIKE AVERY, JULY-12-85

COL> 0 1 2 3 4 5 6 7 8 9

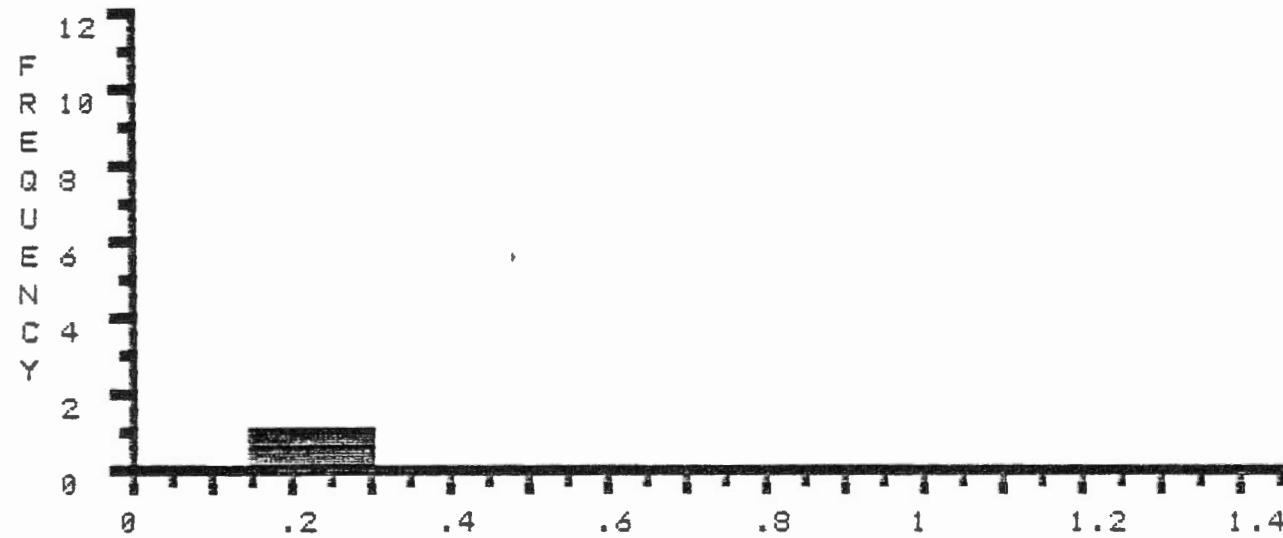
ROW .14 *.19 *.21 *.27 .45 .5 .53 .56 .57
1 .6 .67 .71 .85 .85 .9 1.06 1.08 1.1 1.2

SUM NUMBER MIN MAX MEAN STAND.DEV.
TOTAL > 12.44 19 .14 1.2 .65 .33
*EDIT > .67 3 .19 .27 .22 .04

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

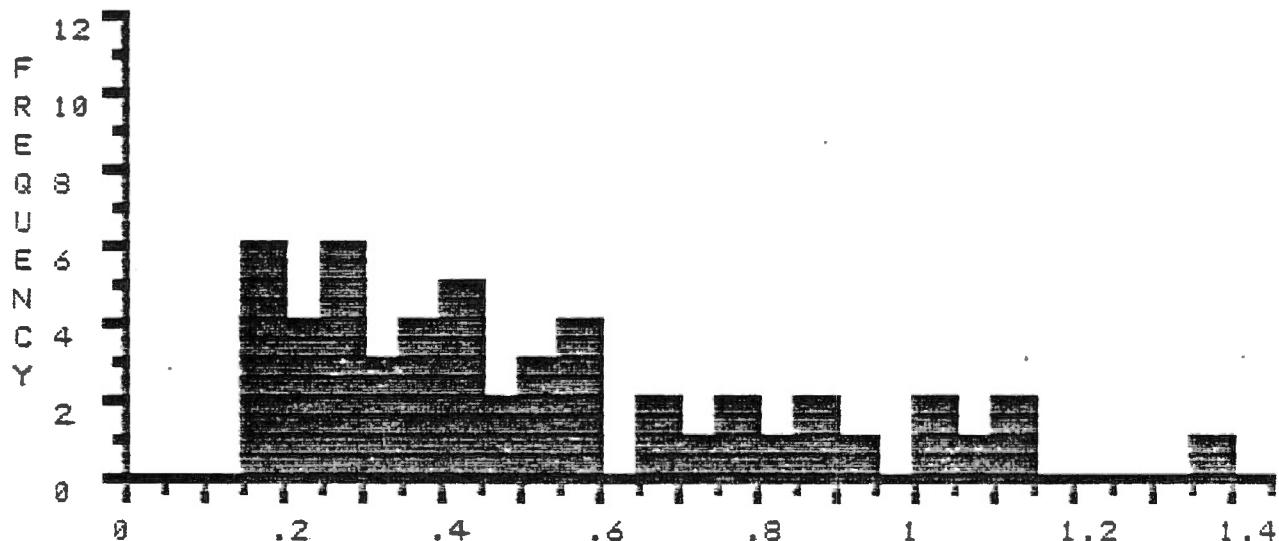


FILE >> K0546C DESCRIPTION FOLLOWS :
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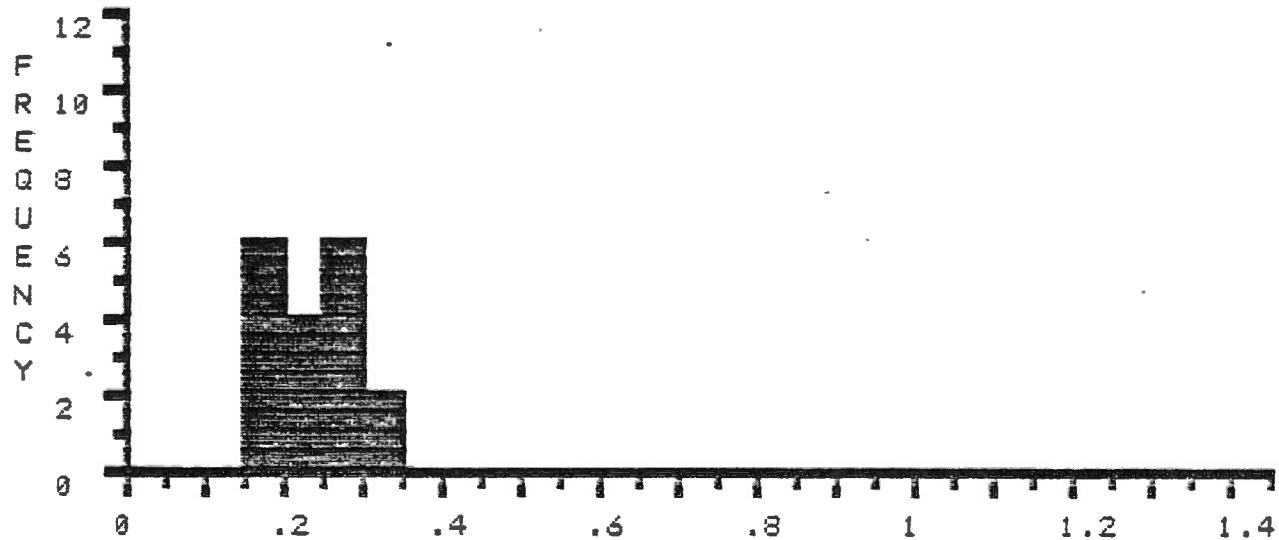
COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.17	*.18	*.18	*.18	*.19	*.19	*.21	*.21	*.21
1	*.22	*.25	*.25	*.25	*.26	*.28	*.28	*.3	*.3	.34
2	.35	.36	.37	.39	.4	.4	.41	.42	.43	.47
3	.48	.51	.53	.54	.55	.55	.56	.57	.65	.67
4	.72	.76	.79	.83	.88	.89	.93	1.02	1.03	1.05
5	1.1	1.11	1.36							

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	26.53	52	.17	1.36	.51	.3
*EDIT >	4.11	18	.17	.3	.23	.04

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

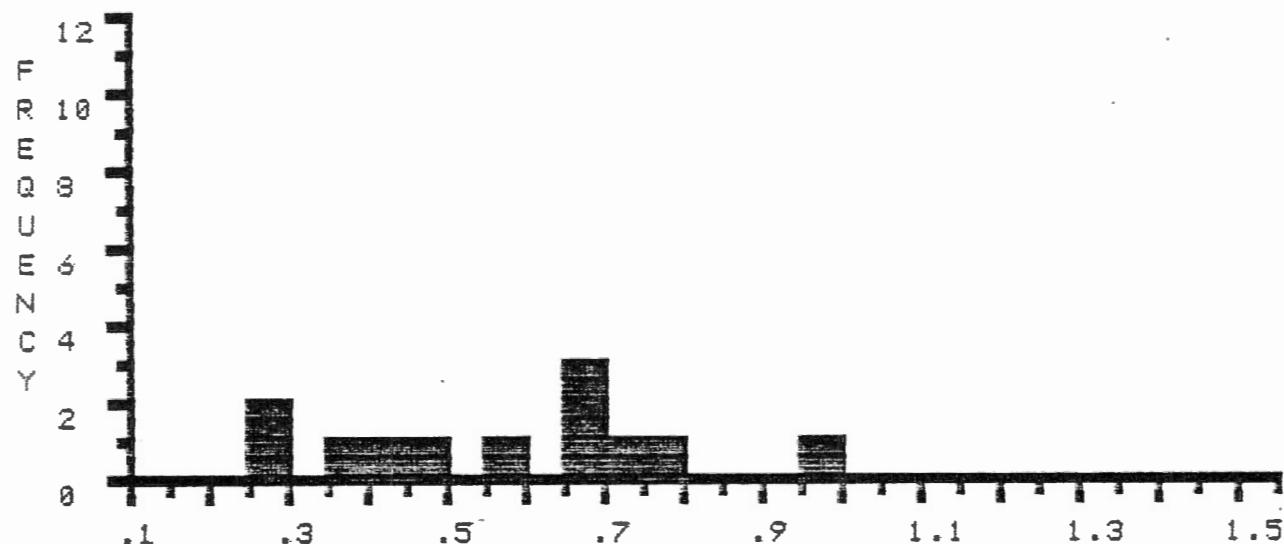


FILE >> K0547B DESCRIPTION FOLLOWS :
 DEPTH 2190-2200M, GABRIEL C-60, MIKE AVERY, JULY-12-85

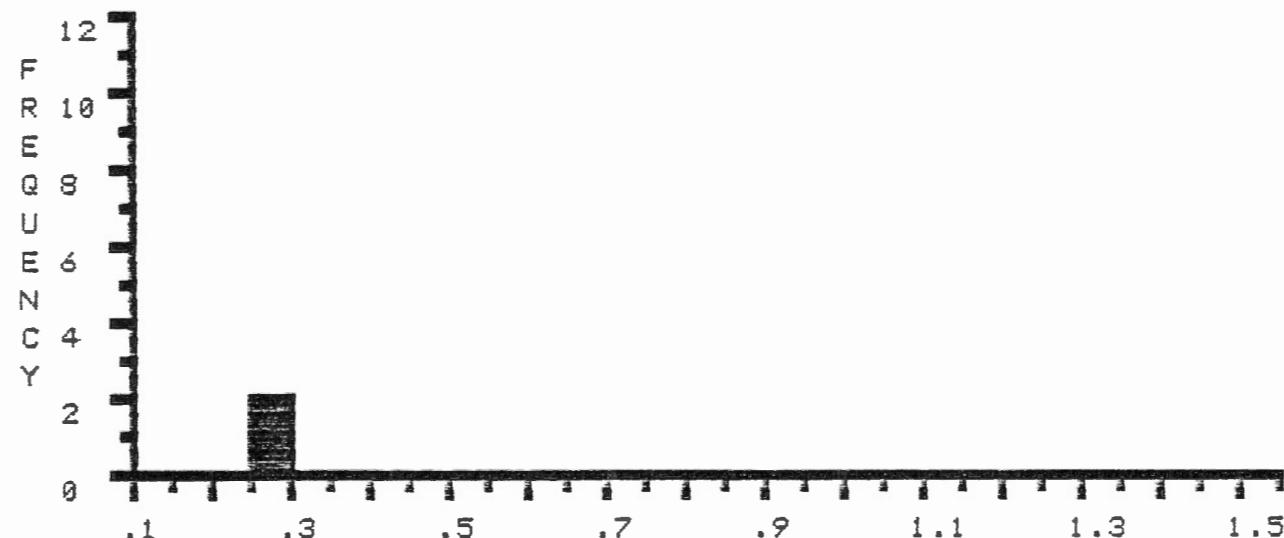
COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.25	*.25	.39	.42	.45	.59	.65	.67	.69
1	.7	.78	.95							

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	6.79	12	.25	.95	.57	.22
*EDIT >	.5	2	.25	.25	.25	0

% R E F L E C T A N C E



.% R E F L E C T A N C E * * E D I T E D * *



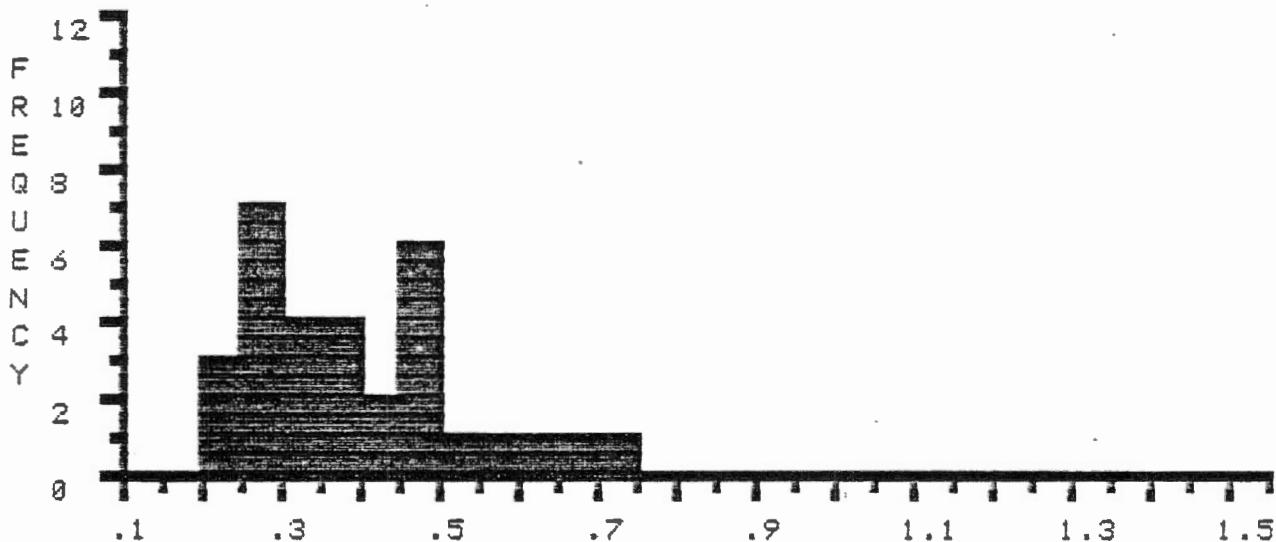
13

FILE >> K0547C DESCRIPTION FOLLOWS :
DEPTH 2330-2340M, GABRIEL C-60, MIKE AVERY, JULY-12-85

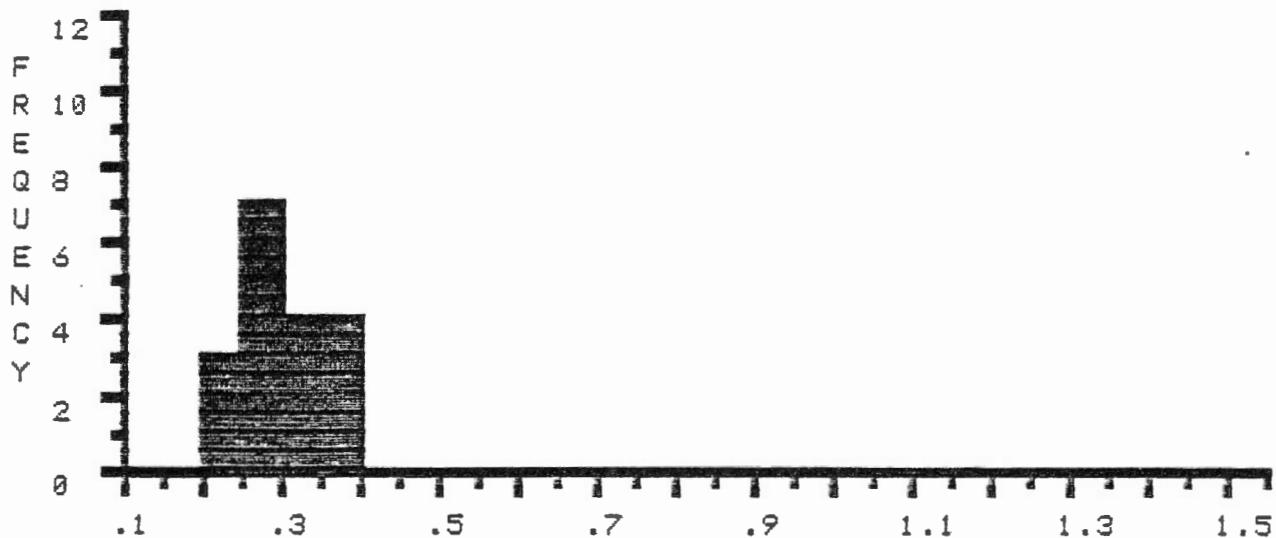
COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.21	*.24	*.24	*.25	*.27	*.27	*.28	*.29	*.29
1	*.29	*.3	*.32	*.33	*.33	*.35	*.36	*.36	*.39	.42
2	.43	.46	.47	.47	.48	.49	.49	.53	.56	.6
3	.66	.7								

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	12.13	31	.21	.7	.39	.13
*EDIT >	5.37	18	.21	.39	.3	.05

X R E F L E C T A N C E



X R E F L E C T A N C E * * E D I T E D * *

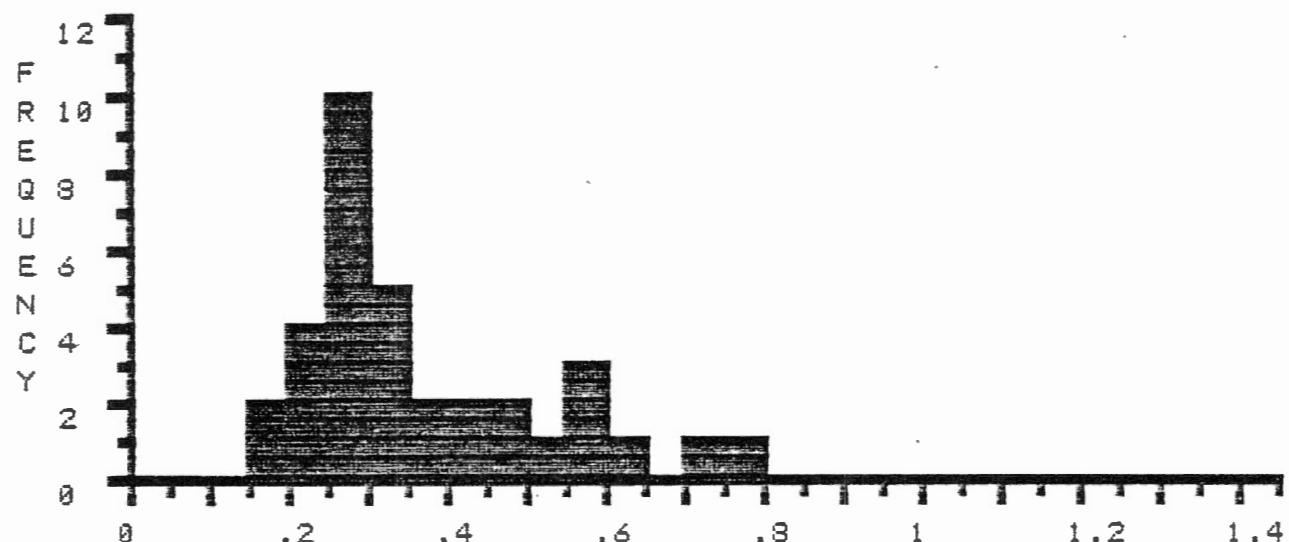


FILE >> K0548A DESCRIPTION FOLLOWS :
 DEPTH 2490-2500M, GABRIEL C-60, MIKE AVERY, JULY-26-85

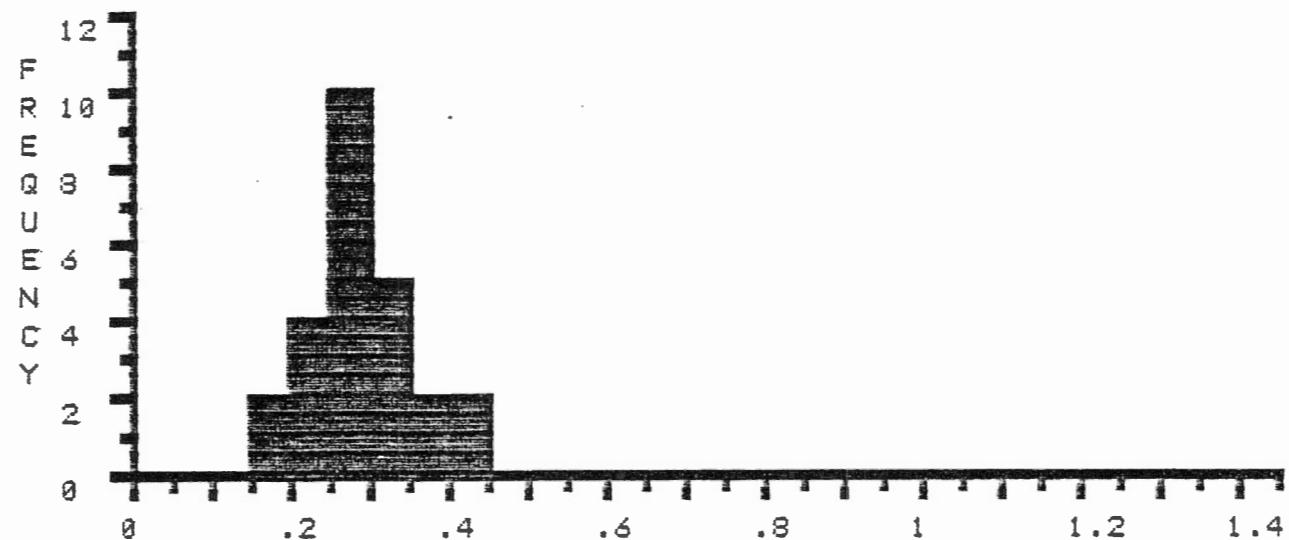
COL>	0	1	2	3	4	5	6	7	8	9	
ROW		*.19	*.19	*.21	*.21	*.22	*.24	*.25	*.25	*.25	
1		*.26	*.26	*.26	*.27	*.28	*.28	*.28	*.3	*.31	*.33
2		*.34	*.34	*.35	*.39	*.4	*.42	.48	.49	.5	.56
3		.56	.59	.63	.72	.78					

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	12.39	34	.19	.78	.36	.16
*EDIT >	7.08	25	.19	.42	.28	.06

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *



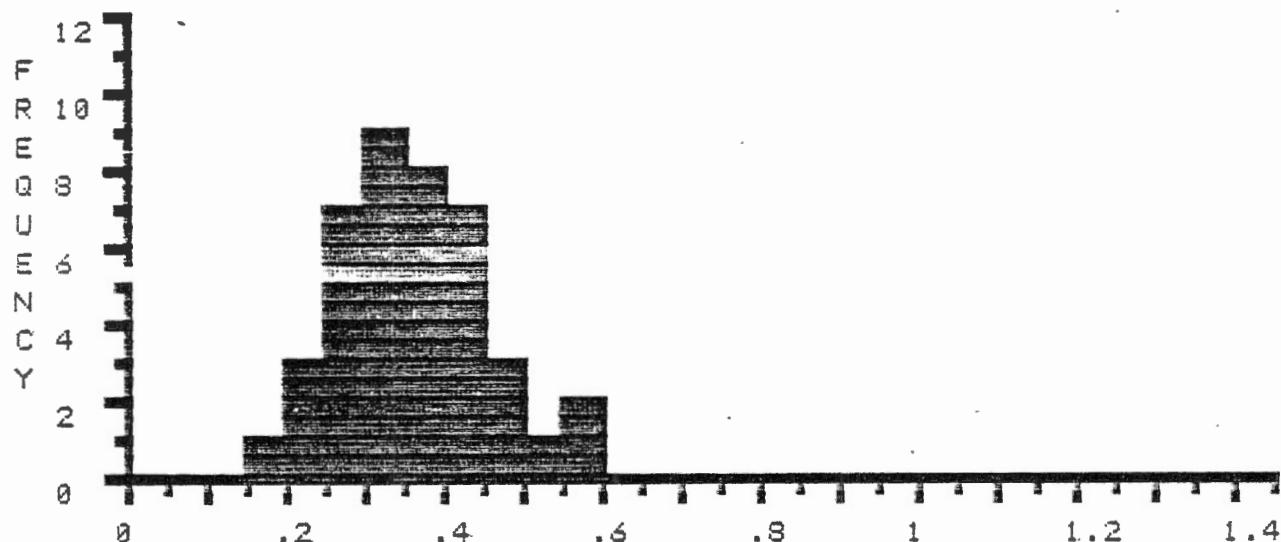
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 DEPTH 2650-2660M, GABRIEL C-60, MIKE AVERY, JULY-26-85

COL>	0	1	2	3	4	5	6	7	8	9
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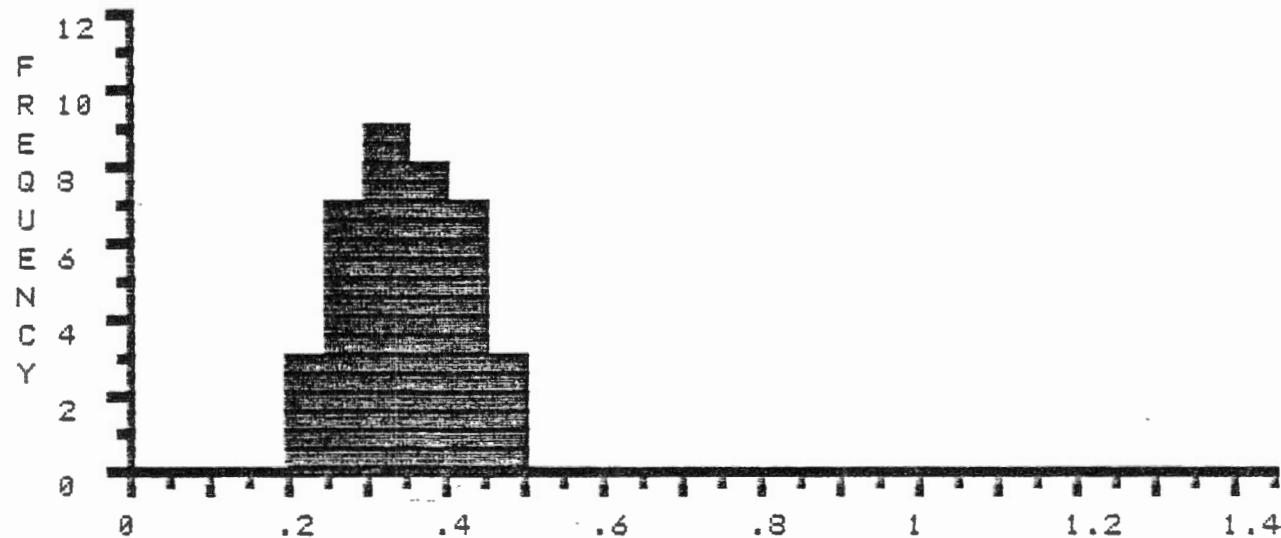
ROW		.18	*.22	*.23	*.24	*.25	*.26	*.26	*.27	*.27
1	*	.27	*.29	*.3	*.31	*.32	*.32	*.32	*.33	*.34
2	*	.34	*.35	*.35	*.36	*.36	*.36	*.37	*.38	*.38
3	*	.4	*.41	*.41	*.41	*.42	*.42	*.45	*.46	*.47
4		.57	.57							.53

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	14.49	41	.18	.57	.35	.09
*EDIT >	12.64	37	.22	.47	.34	.07

% R E F L E C T A N C E



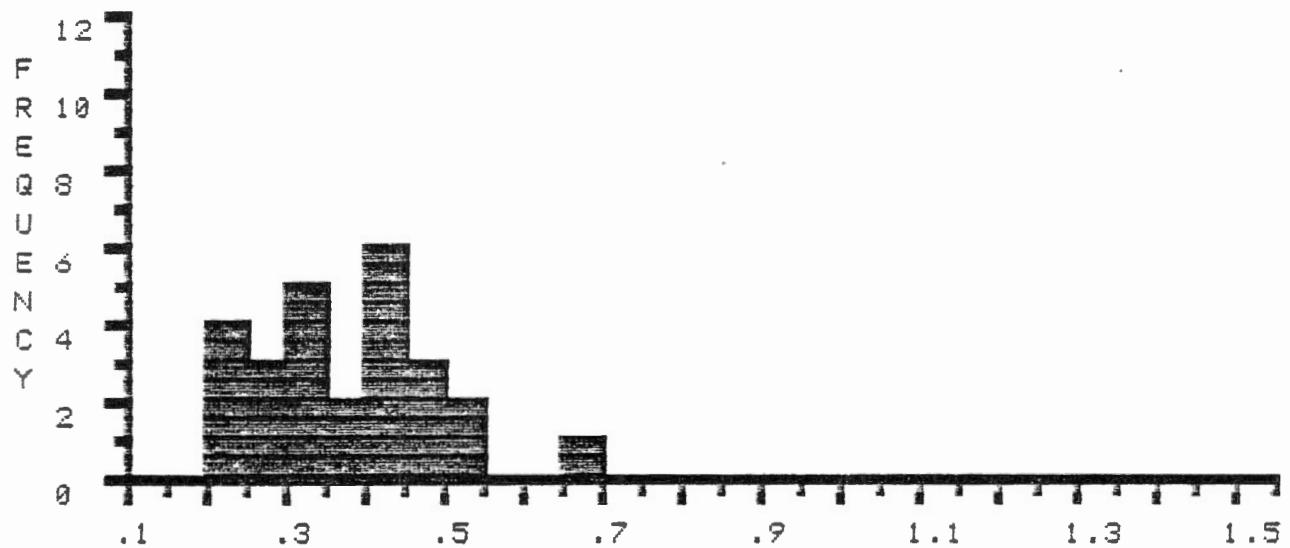
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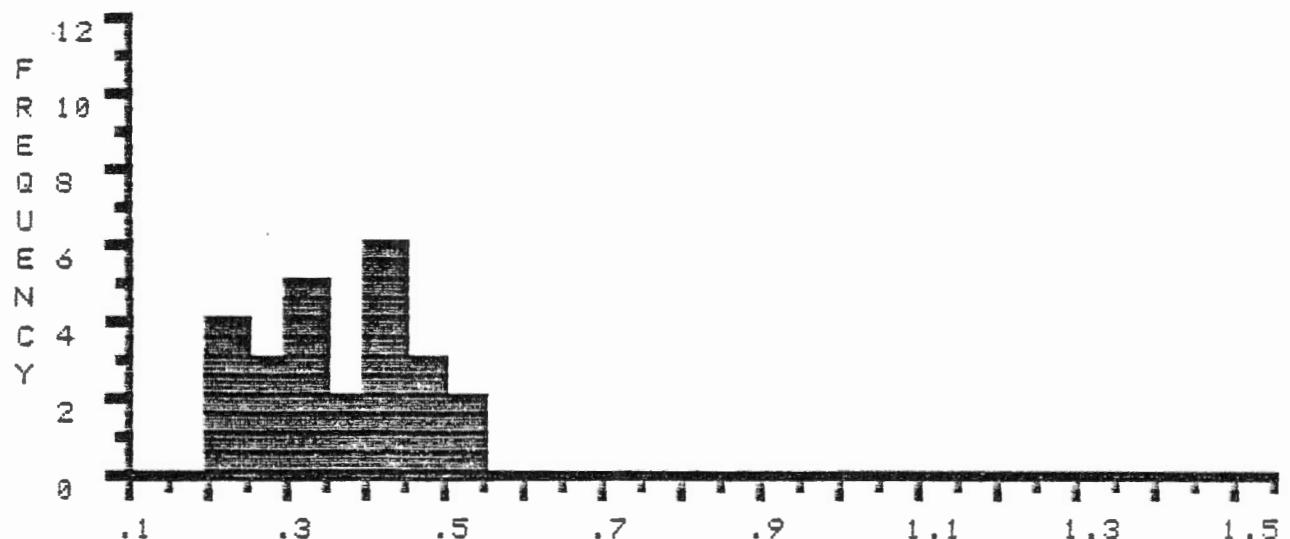
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 DEPTH 2790-2800M, GABRIEL C-60, MIKE AVERY, JULY-26-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.2	*.22	*.22	*.23	*.25	*.27	*.28	*.3	*.31
1	*.32	*.33	*.33	*.35	*.39	*.4	*.41	*.42	*.43	*.43
2	*.44	*.45	*.47	*.49	*.5	*.53	.66			
	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.				
TOTAL >	9.63	26	.2	.66	.37	.11				
*EDIT >	8.97	25	.2	.53	.36	.1				

% R E F L E C T A N C E



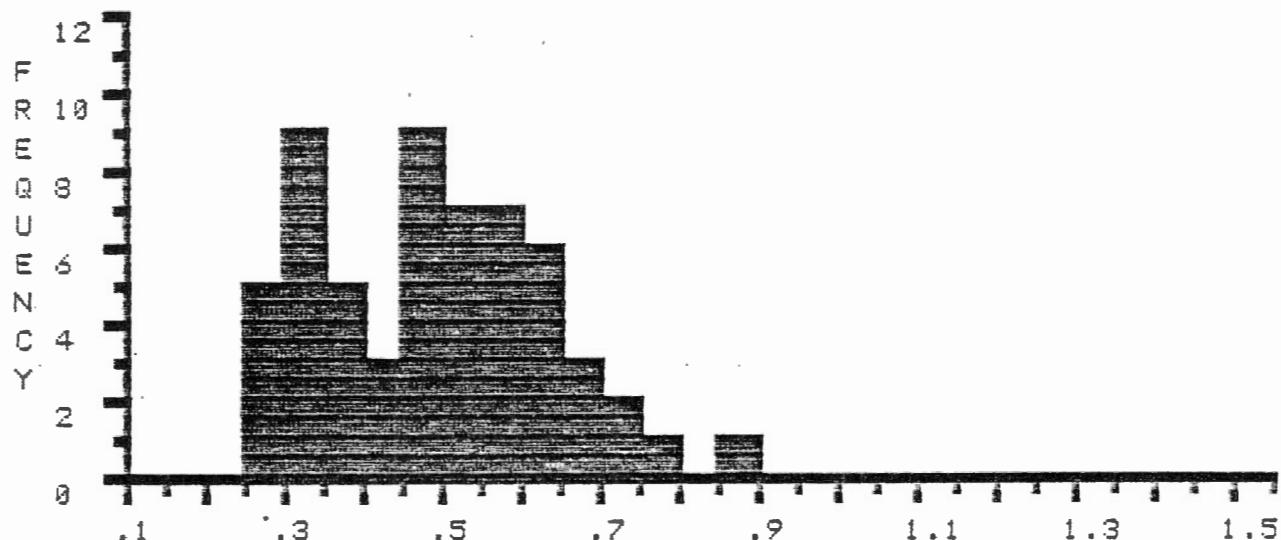
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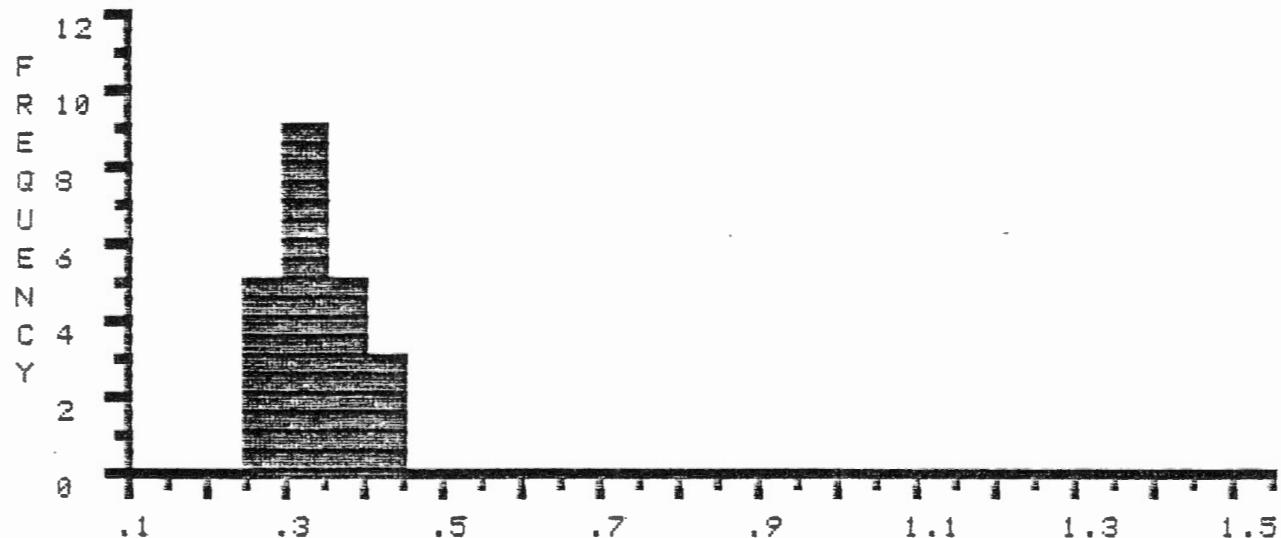
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DEPTH 3090-3100M, GABRIEL C-60, MIKE AVERY, JULY-29-85

COL> 0 1 2 3 4 5 6 7 8 9
ROW
1 *.27 *.28 *.28 *.28 *.28 *.3 *.3 *.31 *.32
2 *.32 *.33 *.33 *.34 *.34 *.36 *.36 *.37 *.37 *.37
3 *.4 *.41 *.42 .45 .46 .46 .47 .47 .48 .48
4 .48 .49 .5 .51 .52 .52 .54 .54 .54 .55
5 .56 .56 .58 .58 .59 .59 .6 .61 .61 .62
TOTAL > 28.03 SUM NUMBER MIN MAX MEAN STAND. DEV.
*EDIT > 7.34 22 .27 .42 .33 .04

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *



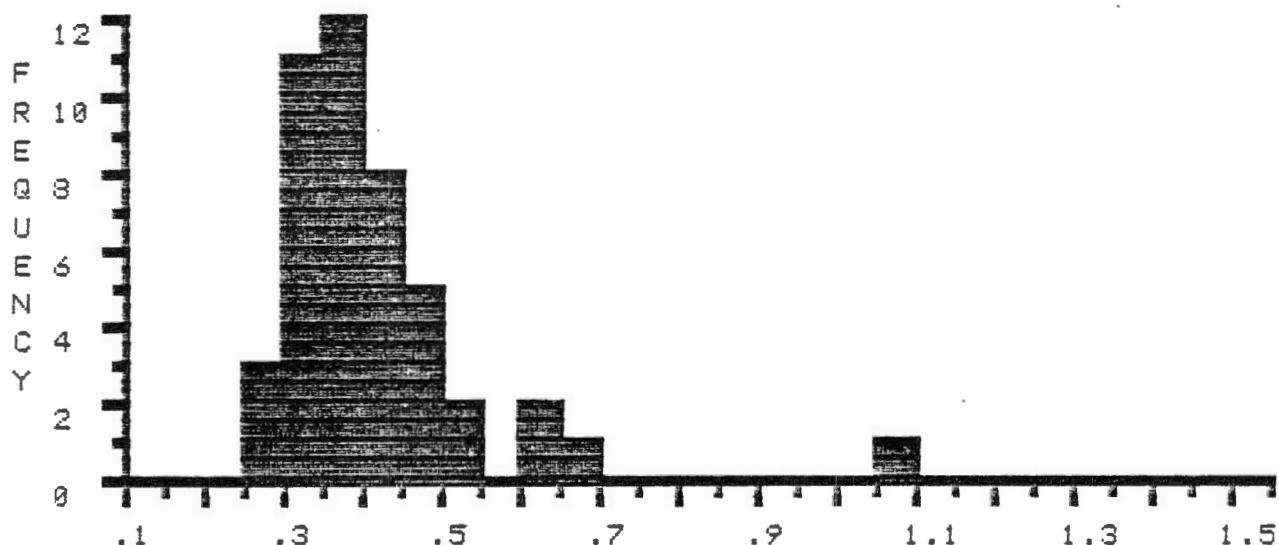
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 DEPTH 3250-3260M, GABRIEL C-60, MIKE AVERY, JULY-29-85

COL>	0	1	2	3	4	5	6	7	8	9
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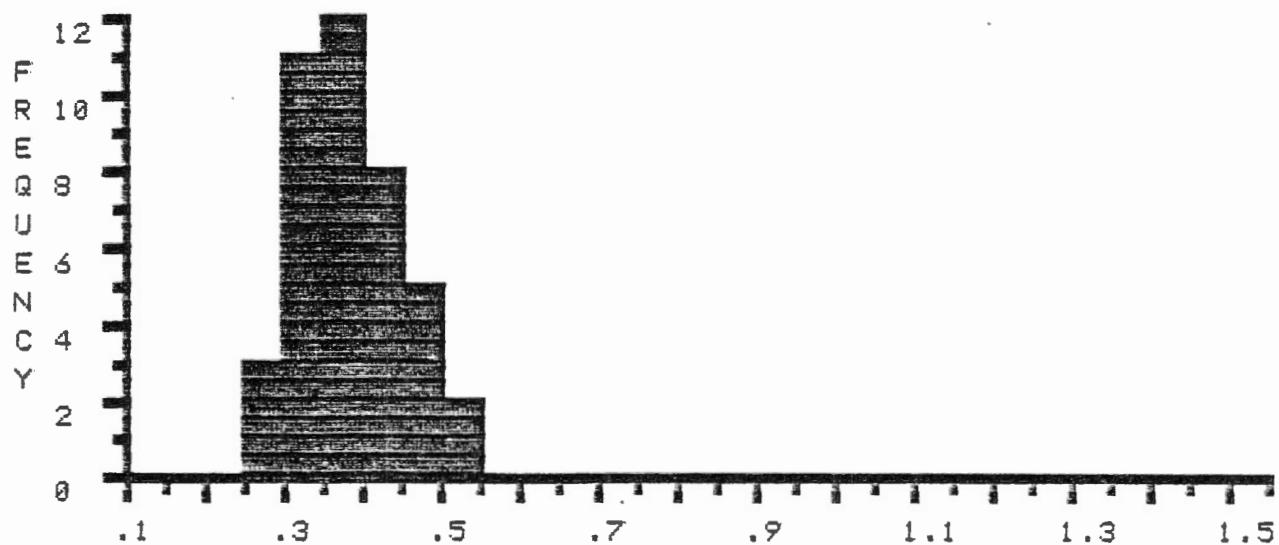
ROW		*.28	*.28	*.29	*.3	*.3	*.31	*.32	*.32	*.32
1		*.33	*.33	*.33	*.34	*.34	*.35	*.35	*.35	*.36
2		*.36	*.37	*.37	*.38	*.38	*.38	*.39	*.4	*.4
3		*.41	*.42	*.43	*.44	*.44	*.47	*.47	*.47	*.48
4		*.5	*.54	.6	.61	.65	1.07			

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	18.48	45	.28	1.07	.41	.13
*EDIT >	15.55	41	.28	.54	.38	.07

X R E F L E C T A N C E



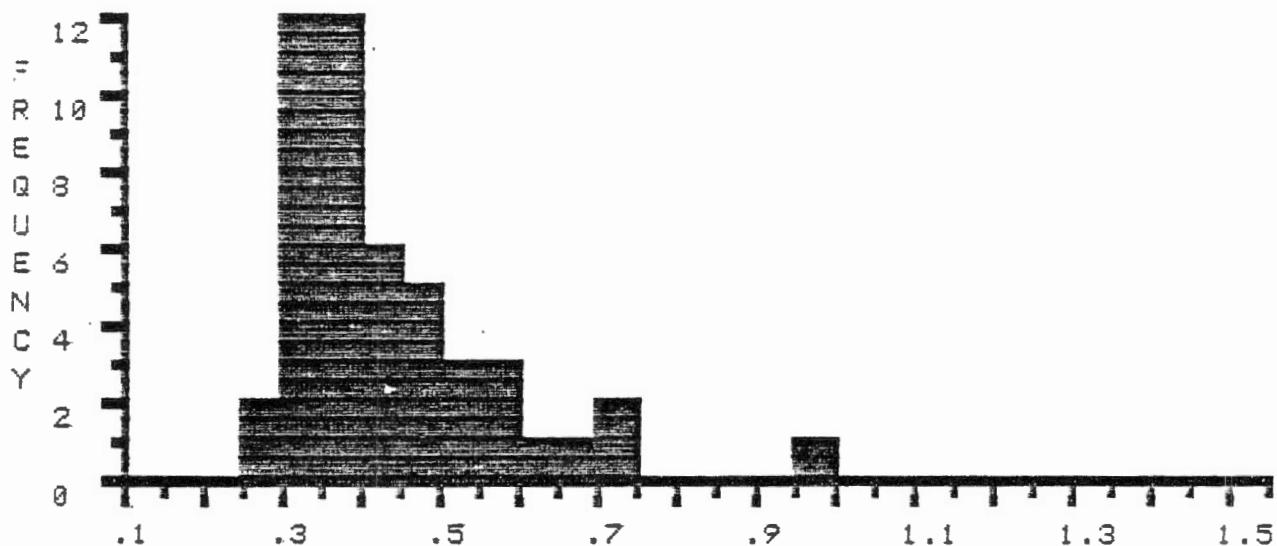
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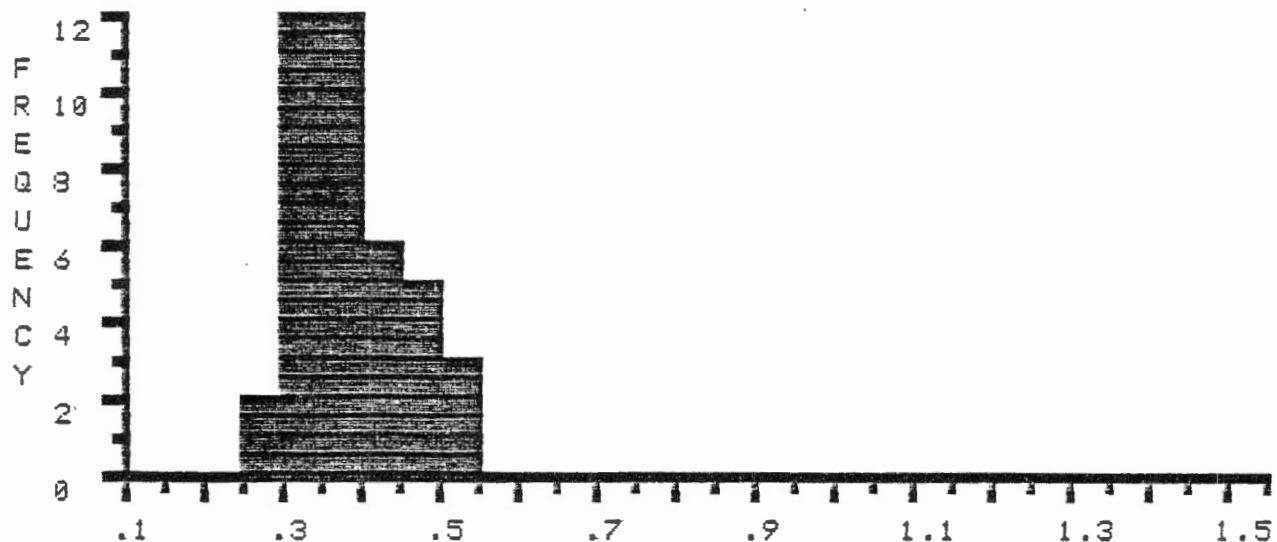
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 DEPTH 3370-3380M, GABRIEL C-60, MIKE AVERY, JULY-30-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.28	*.29	*.3	*.31	*.31	*.31	*.31	*.32	*.32
1	*.33	*.33	*.34	*.34	*.34	*.35	*.35	*.35	*.36	*.36
2	*.36	*.37	*.37	*.38	*.38	*.39	*.39	*.4	*.41	*.42
3	*.43	*.43	*.43	*.45	*.47	*.47	*.49	*.49	*.52	*.53
4	*.53	.58	.58	.59	.63	.66	.73	.74	.78	
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.				
TOTAL >	20.8	48	.28	.98	.43	.14				
*EDIT >	15.31	40	.28	.53	.38	.07				

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

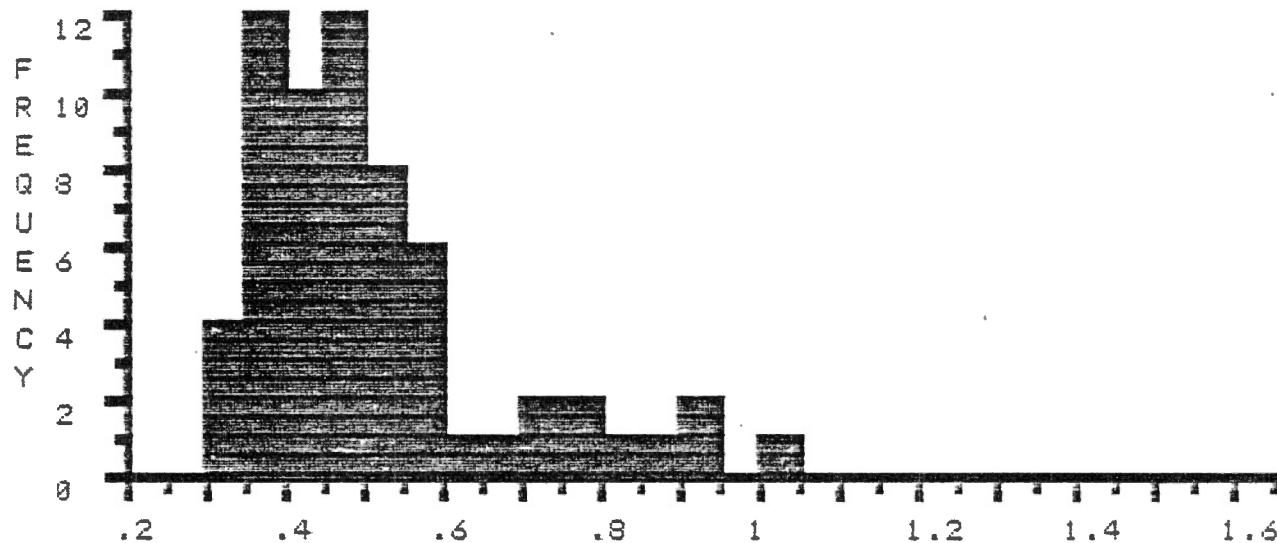


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DEPTH 3530-3540M, GABRIEL C-60, MIKE AVERY, JULY-30-85

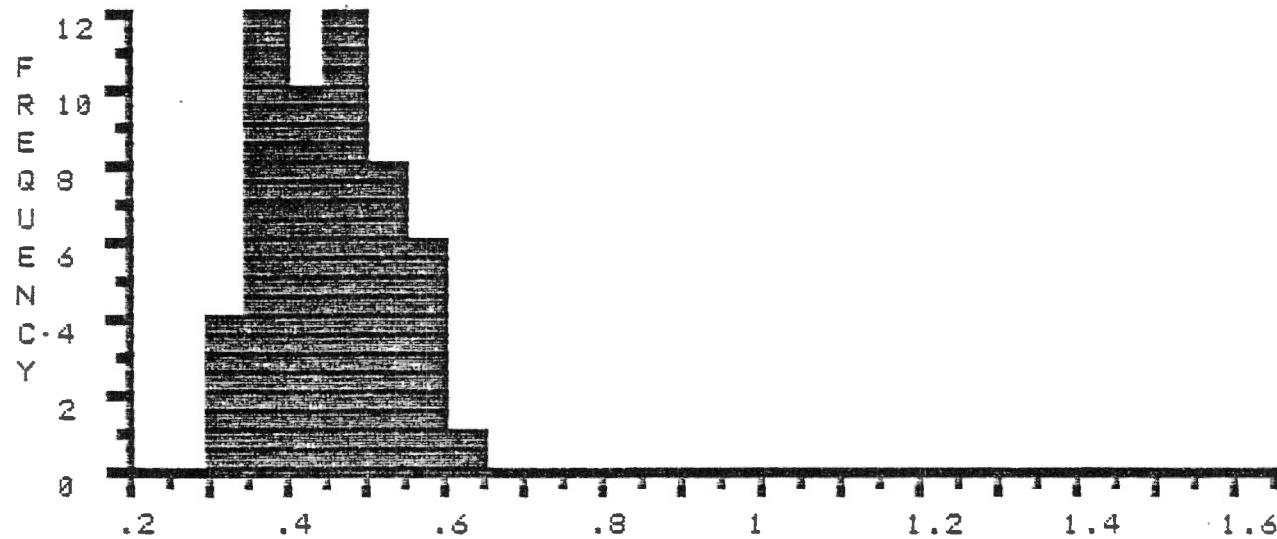
COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.33	*.33	*.34	*.34	*.36	*.36	*.36	*.37	*.38
1	*.36	*.38	*.38	*.39	*.39	*.39	*.39	*.4	*.41	*.41
2	*.41	*.41	*.42	*.42	*.43	*.43	*.44	*.45	*.45	*.45
3	*.45	*.45	*.46	*.47	*.47	*.47	*.48	*.48	*.48	*.5
4	*.51	*.51	*.52	*.52	*.53	*.53	*.54	*.55	*.56	*.57
5	*.57	*.57	*.59	*.62	.67	.73	.73	.75	.79	.81
6	.89	.9	.93	1.01						

SUM NUMBER MIN MAX MEAN STAND. DEV.
TOTAL > 32.01 63 .33 1.01 .51 .16
*EDIT > 23.8 53 .33 .62 .45 .07

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *



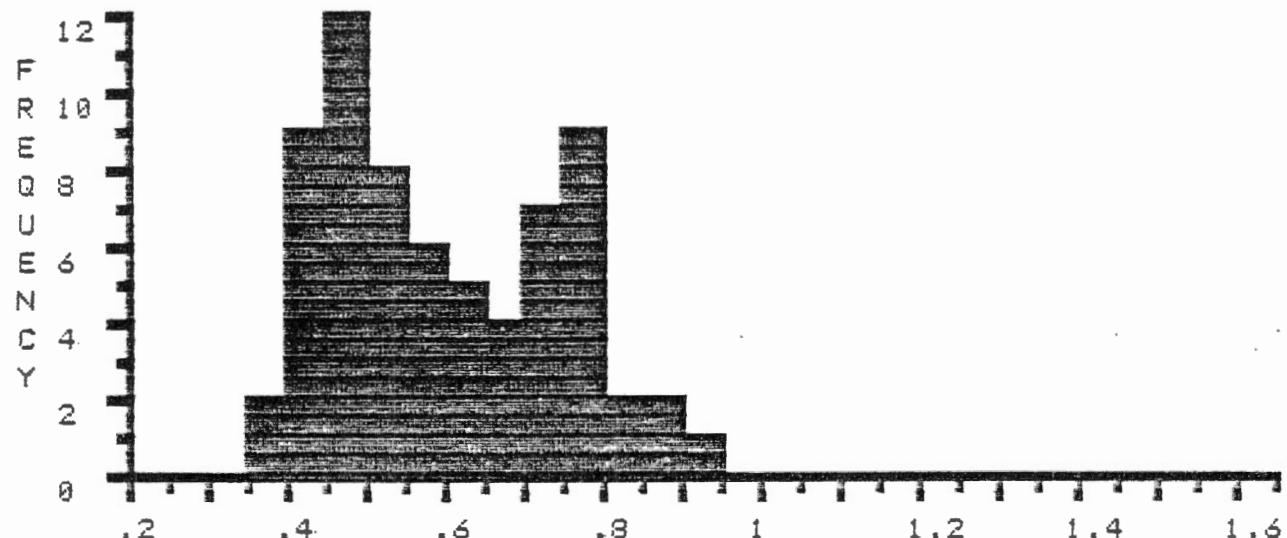
FILE >> K0550C DESCRIPTION FOLLOWS :
 DEPTH 3690-3700M, GABRIEL C-60, MIKE AVERY, JULY-30-85

COL>	0	1	2	3	4	5	6	7	8	9
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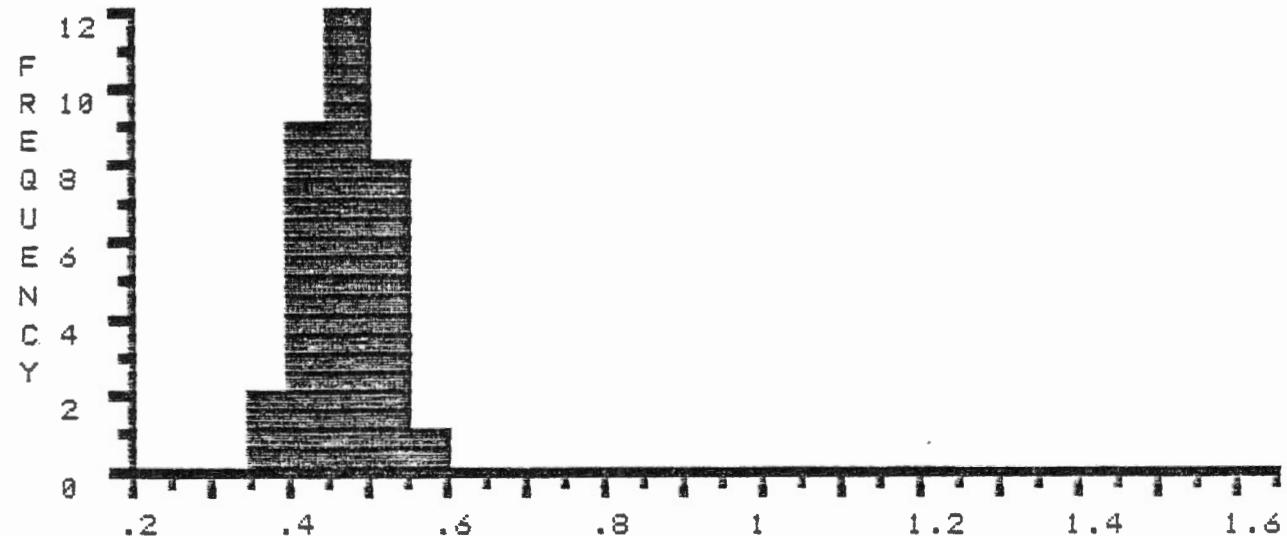
ROW		*.39	*.39	*.4	*.42	*.43	*.43	*.43	*.43	*.43
1	*.44	*.44	*.45	*.45	*.46	*.46	*.46	*.47	*.47	*.47
2	*.48	*.49	*.49	*.49	*.5	*.51	*.51	*.52	*.52	*.52
3	*.52	*.54	*.55	.57	.58	.58	.59	.59	.61	.62
4	.63	.63	.63	.65	.65	.66	.66	.7	.71	.71
5	.72	.73	.73	.73	.75	.75	.75	.76	.76	.76
6	.77	.78	.79	.83	.84	.86	.88	.93		

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	39.85	67	.39	.93	.59	.14
*EDIT >	14.96	32	.39	.55	.47	.04

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

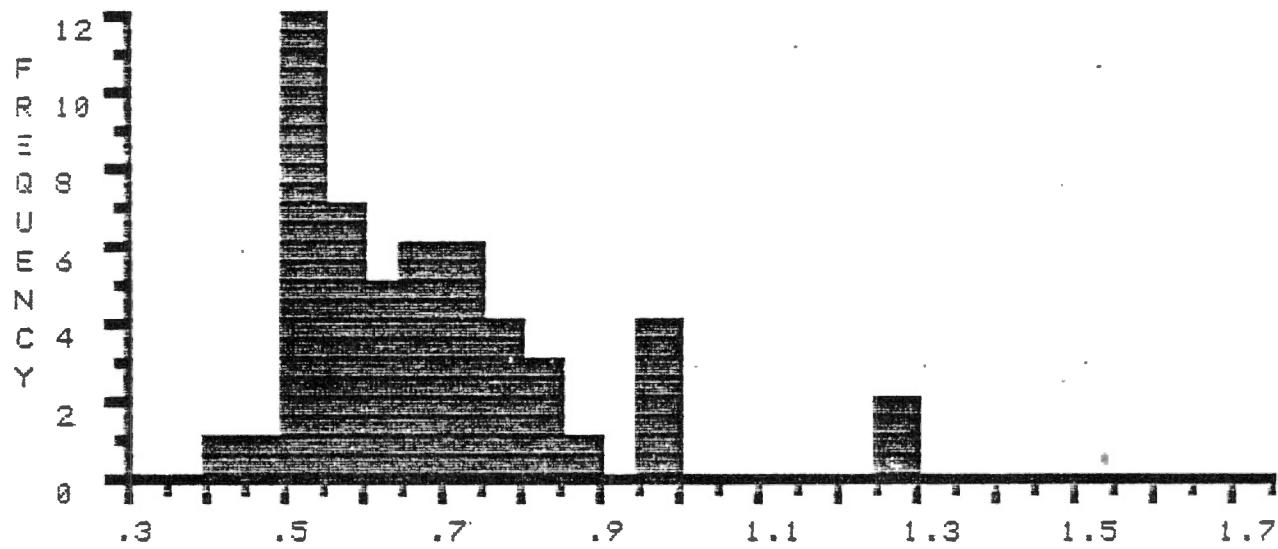


FILE >> K0551A DESCRIPTION FOLLOWS :
 DEPTH 3830-3840M, GABRIEL C-60, MIKE AVERY, JULY-30-85

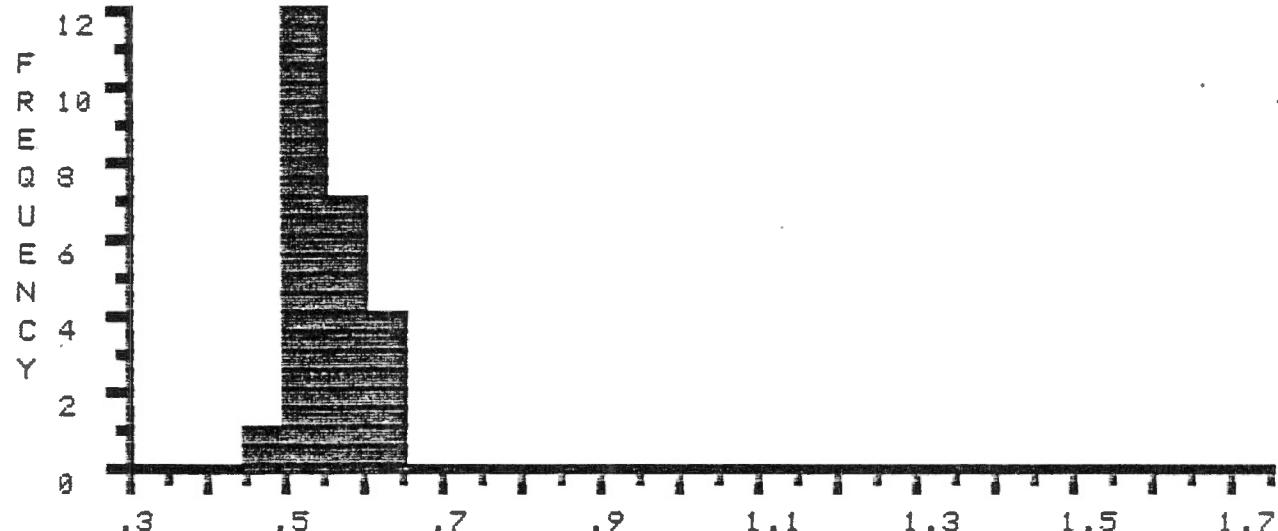
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.42	*.48	.5	*.5	*.51	*.52	*.52	*.52	*.52
1	*.53	*.53	*.53	*.53	*.54	*.55	*.56	*.57	*.58	*.58
2	*.58	*.58	*.61	*.61	*.62	*.62	.64	.65	.66	.66
3	.67	.68	.68	.7	.71	.71	.71	.71	.71	.75
4	.77	.78	.79	.8	.81	.82	.85	.95	.95	.96
5	.99	1.26	1.29							

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	35.27	52	.42	1.29	.68	.18
*EDIT >	13.19	24	.48	.62	.55	.04

% REFLECTANCE



% REFLECTANCE ** EDITED **

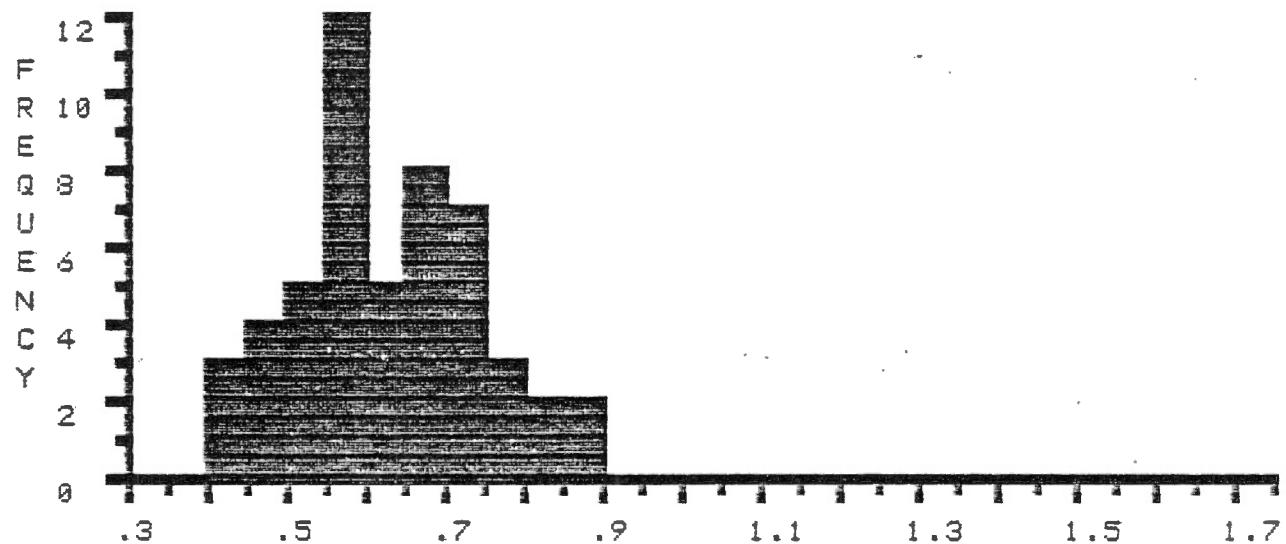


FILE >> K0551B DESCRIPTION FOLLOWS :
 DEPTH 3990-4000M, GABRIEL C-60, MIKE AVERY, JULY-30-85

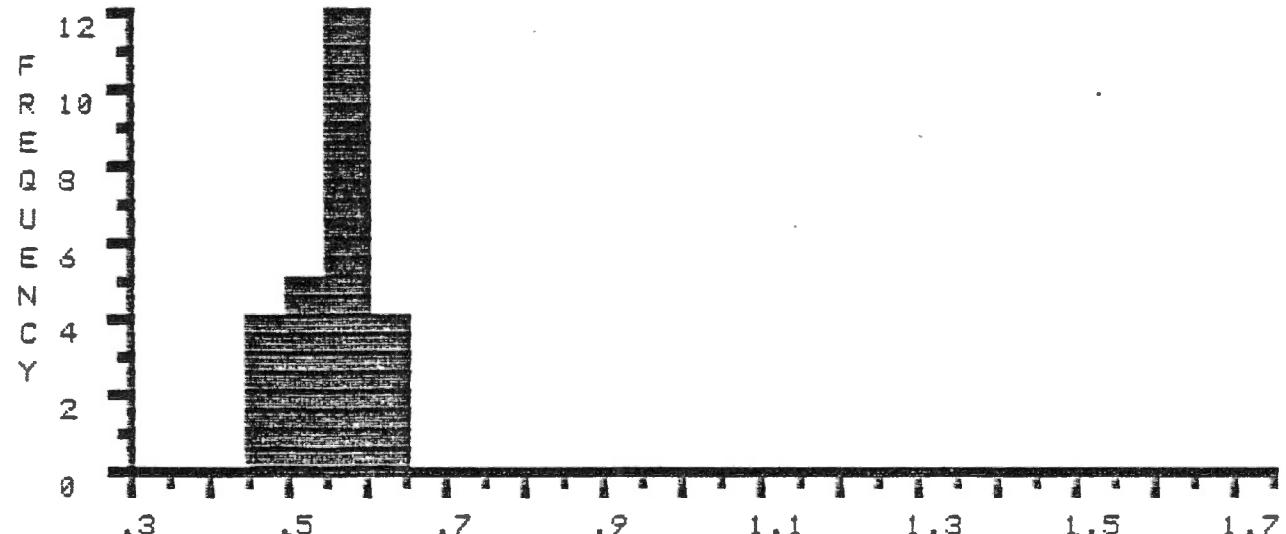
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.41	.42	.42	*.45	*.46	*.47	*.48	*.5	*.52
1	*.52	*.54	*.54	*.55	*.55	*.56	*.56	*.56	*.57	*.58
2	*.58	*.58	*.59	*.59	*.59	*.6	*.6	*.61	*.62	.64
3	.65	.66	.66	.67	.67	.68	.68	.68	.7	.7
4	.71	.73	.74	.74	.74	.75	.75	.76	.83	.84
5	.86	.86								

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	31.72	51	.41	.86	.62	.11
*EDIT >	13.77	25	.45	.62	.55	.05

% R E F L E C T A N C E



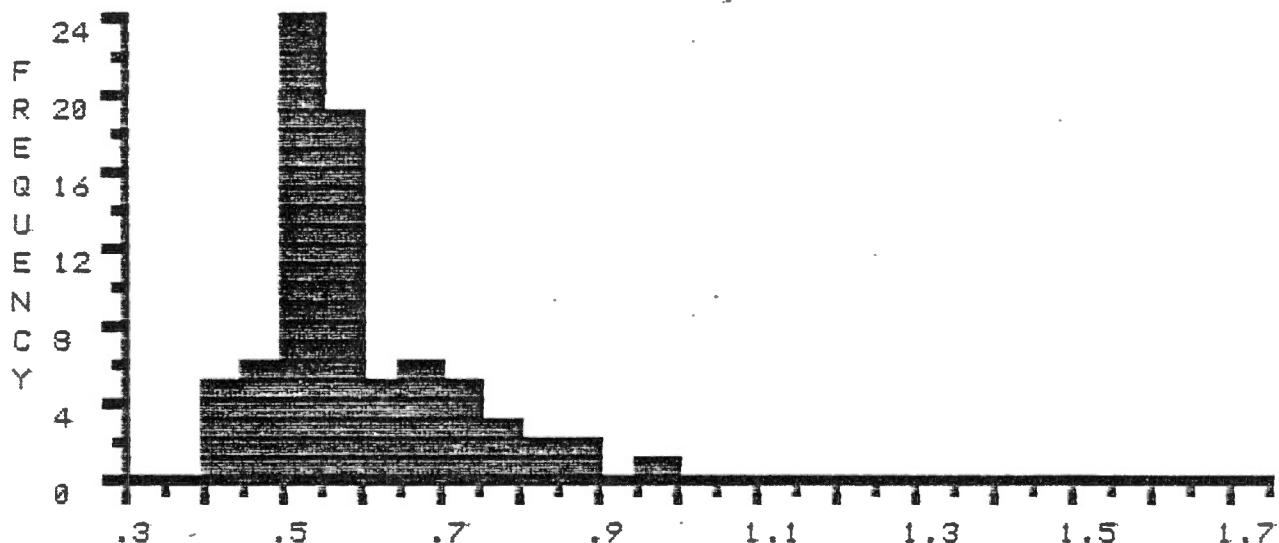
% R E F L E C T A N C E * * E D I T E D * *



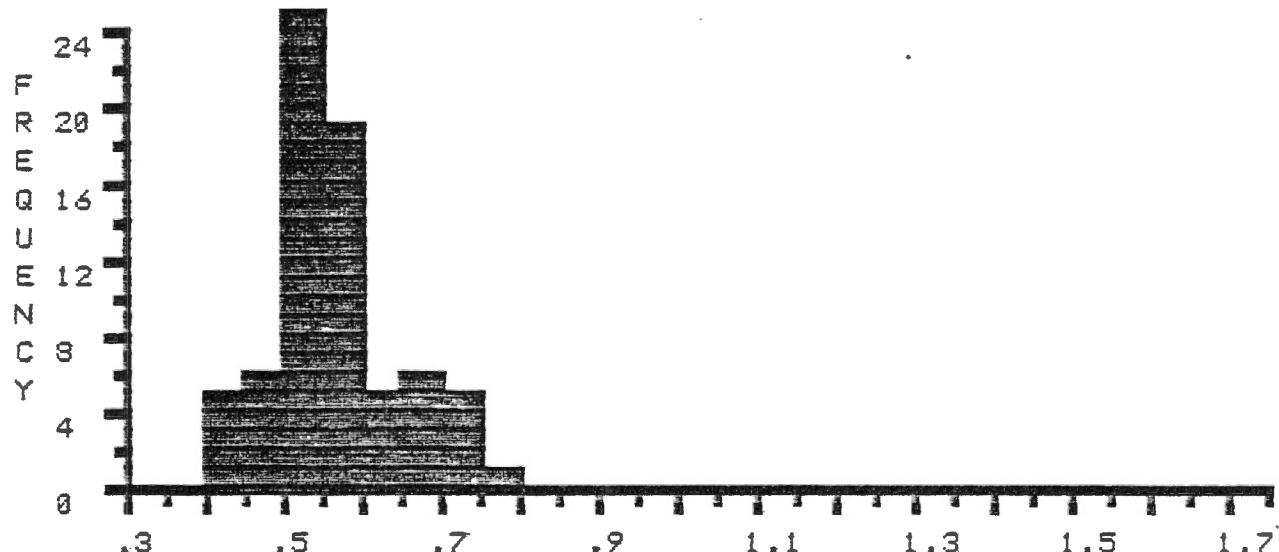
FILE >> K0551C DESCRIPTION FOLLOWS :
 DEPTH 4130-4140M, GABRIEL C-60, MIKE AVERY, JULY-30-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.4	*.4	*.42	*.42	*.44	*.45	*.45	*.46	*.46
1	*.47	*.47	*.5	*.5	*.5	*.51	*.51	*.51	*.51	*.51
2	*.51	*.51	*.52	*.53	*.53	*.53	*.53	*.53	*.53	*.53
3	*.54	*.54	*.54	*.54	*.54	*.54	*.54	*.55	*.55	*.55
4	*.55	*.55	*.56	*.56	*.56	*.56	*.57	*.57	*.57	*.57
5	*.58	*.58	*.58	*.58	*.59	*.59	*.61	*.61	*.62	*.63
6	*.63	*.65	*.65	*.66	*.66	*.68	*.69	*.7	*.71	*.73
7	*.73	*.74	*.75	.79	.79	.8	.81	.86	.87	
	SUM	NUMBER		MIN		MAX		MEAN		STAND.DEV.
TOTAL >	45.54	78		.4		.99		.58		.11
*EDIT >	40.13	72		.4		.75		.56		.08

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *



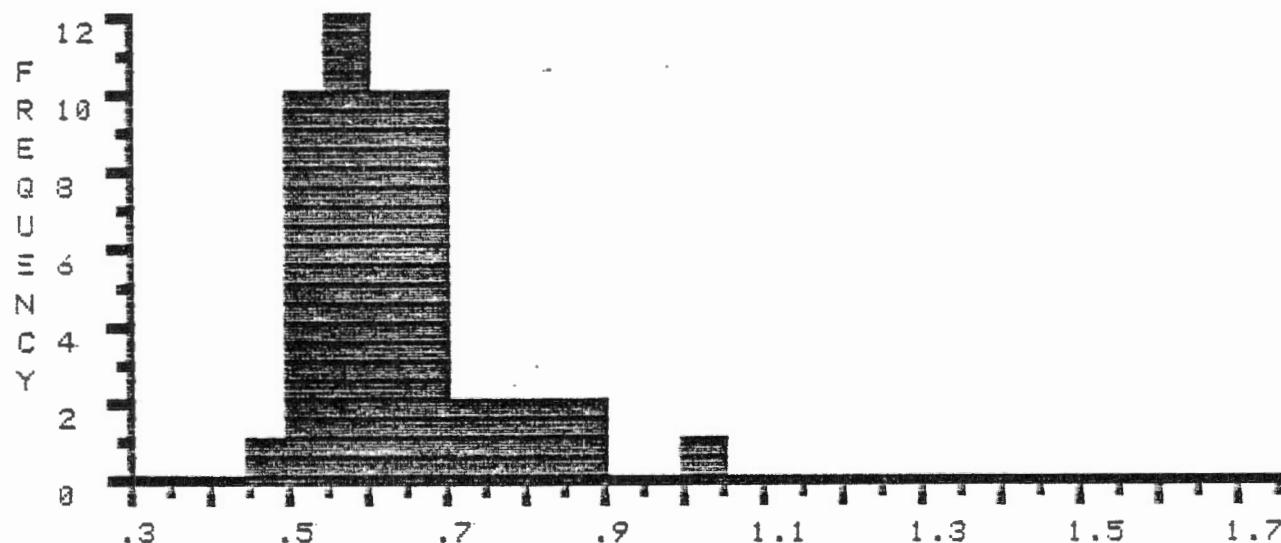
FILE >> K0552A DESCRIPTION FOLLOWS :
 DEPTH 4290-4300M, GABRIEL C-60, MIKE AVERY, JULY-31-85

COL>	0	1	2	3	4	5	6	7	8	9
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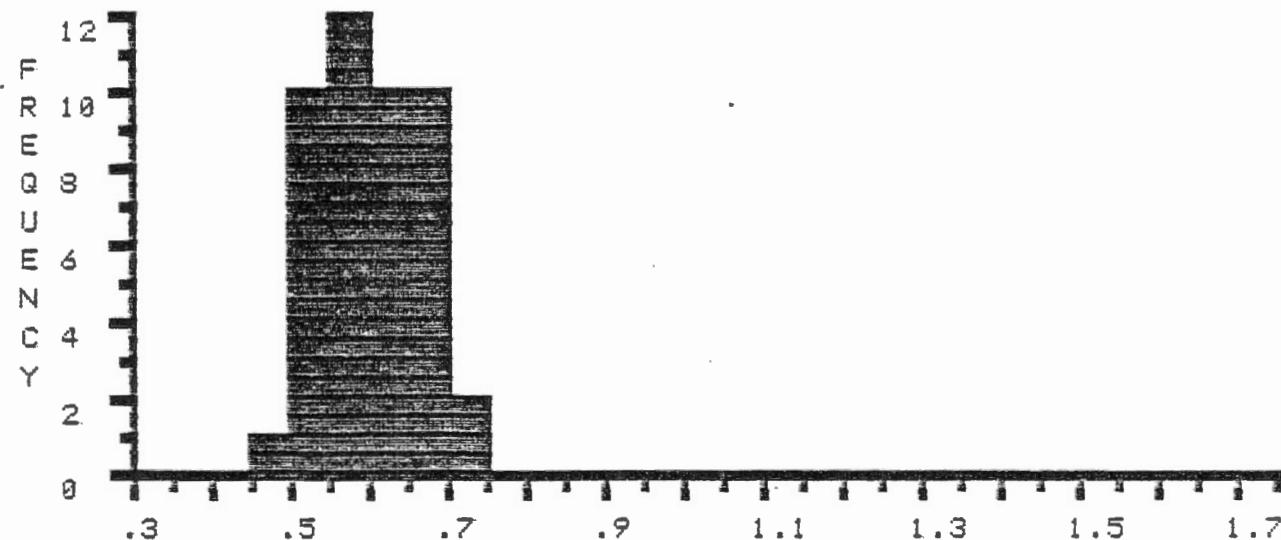
ROW		*.47	*.5	*.5	*.5	*.51	*.52	*.52	*.53	*.53
1	*.54	*.54	*.55	*.55	*.55	*.56	*.56	*.57	*.58	*.58
2	*.58	*.58	*.59	*.59	*.6	*.6	*.61	*.61	*.61	*.61
3	*.62	*.63	*.63	*.64	*.65	*.65	*.66	*.66	*.66	*.67
4	*.67	*.68	*.69	*.69	*.71	*.71	.76	.78	.81	.83
5	.85	.86	1							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	32.65	52	.47	1	.63	.11
*EDIT >	26.76	45	.47	.71	.59	.06

% REFLECTANCE



% REFLECTANCE ** EDITED **



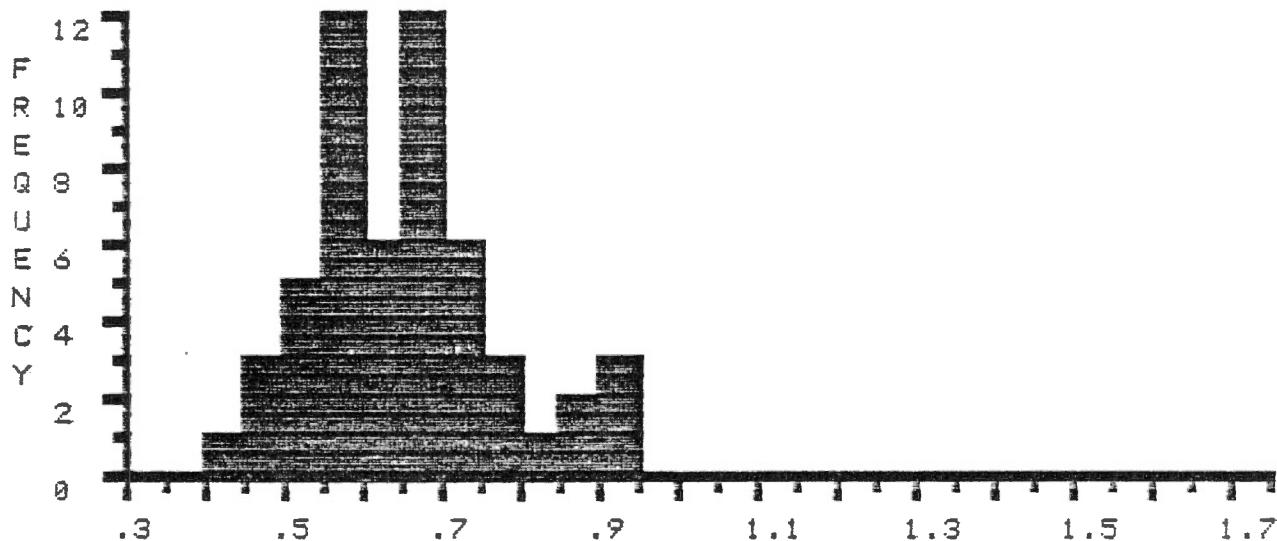
FILE >> K0552B DESCRIPTION FOLLOWS :
 DEPTH 4440-4450M, GABRIEL C-60, MIKE AVERY, JULY-31-85

COL>	0	1	2	3	4	5	6	7	8	9
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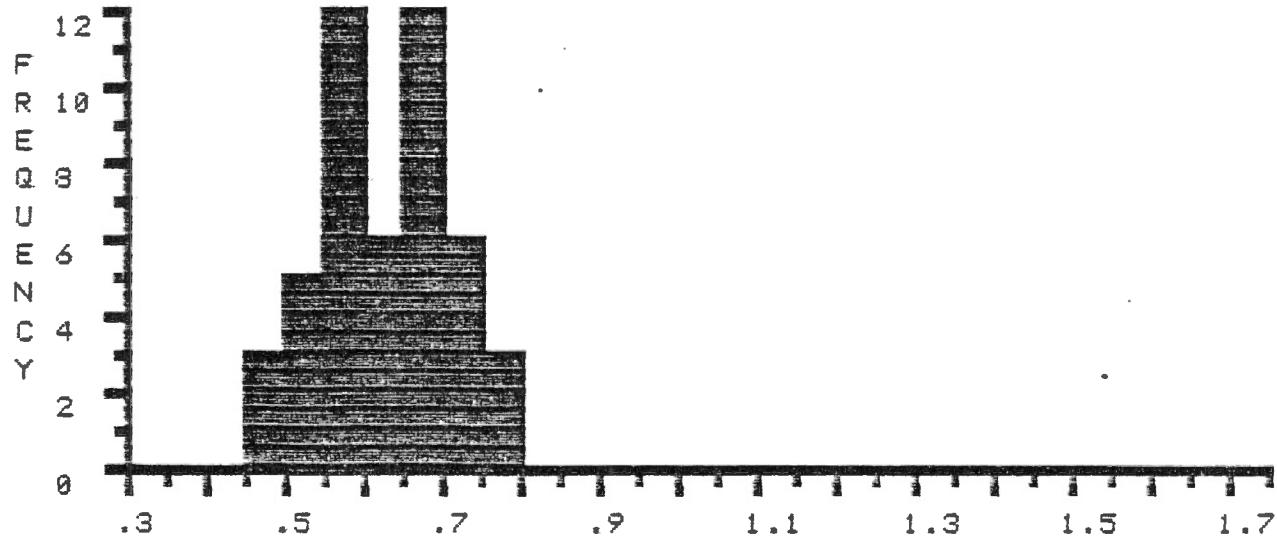
ROW		.44	*.48	*.48	*.49	*.5	*.5	*.52	*.54	*.54
1	*.56	*.56	*.56	*.57	*.57	*.58	*.58	*.58	*.59	*.59
2	*.59	*.59	*.61	*.63	*.63	*.63	*.64	*.64	*.65	*.65
3	*.66	*.66	*.66	*.66	*.68	*.68	*.68	*.68	*.68	*.69
4	*.7	*.71	*.71	*.71	*.71	*.72	*.75	*.75	*.77	.8
5	.87	.89	.9	.91	.92					

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	35.04	54	.44	.92	.65	.11
*EDIT >	29.31	47	.48	.77	.62	.08

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

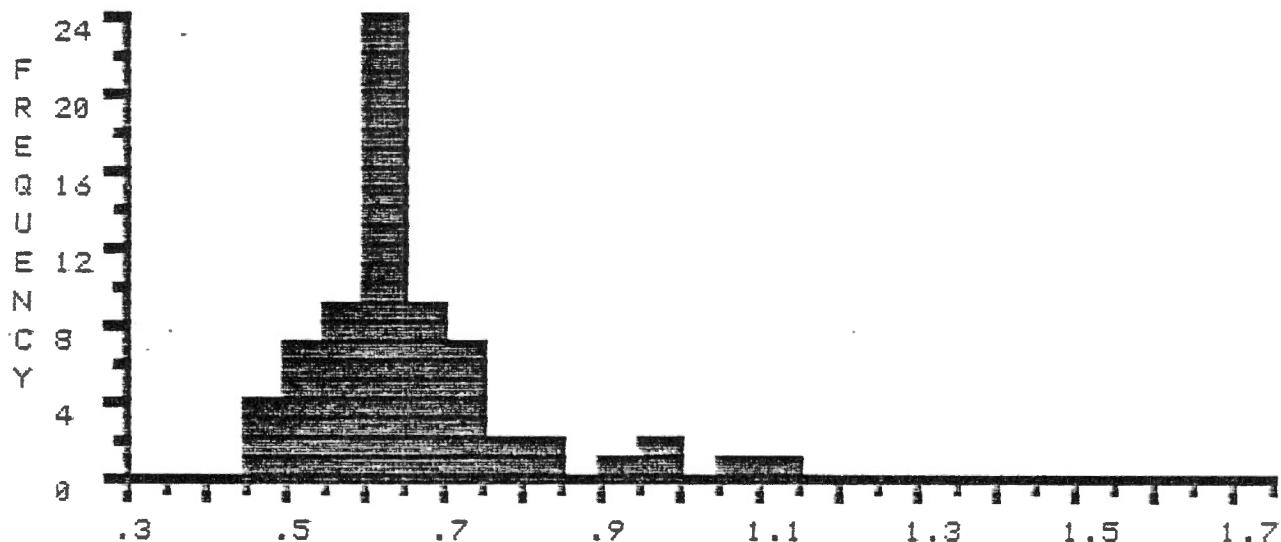


FILE >> K0552C DESCRIPTION FOLLOWS :
 DEPTH 4590-4600M, GABRIEL C-60, MIKE AVERY, JULY-31-85

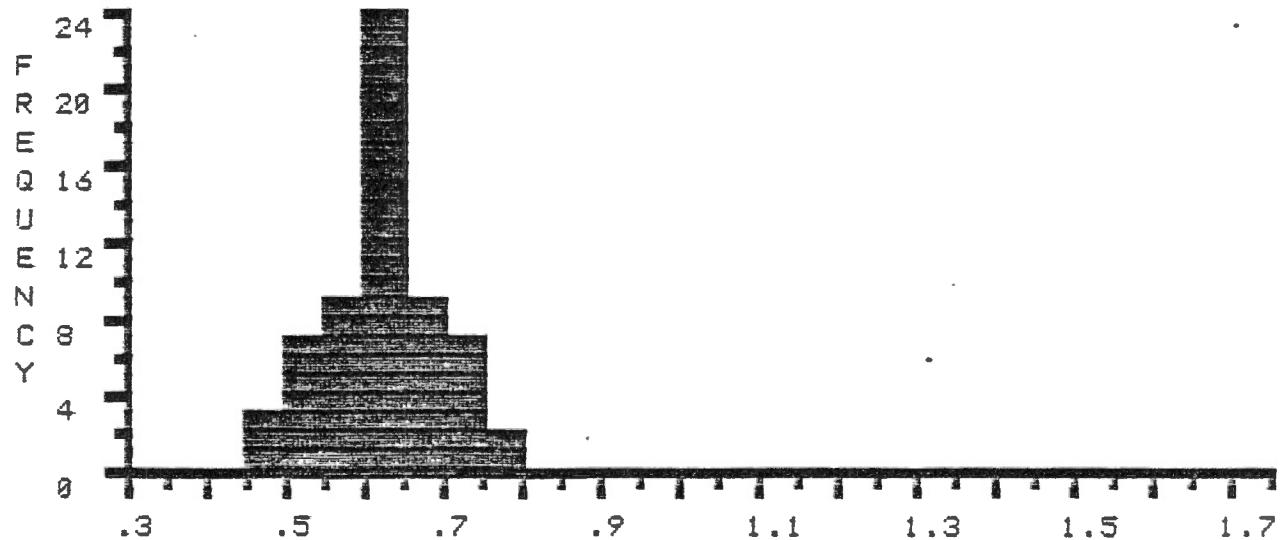
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.45	*.47	*.49	*.49	*.5	*.51	*.52	*.52	*.53
1	*.53	*.53	*.55	*.56	*.56	*.57	*.57	*.57	*.58	*.58
2	*.59	*.6	*.6	*.6	*.6	*.6	*.6	*.6	*.61	*.61
3	*.61	*.61	*.62	*.62	*.62	*.62	*.62	*.62	*.62	*.63
4	*.63	*.63	*.63	*.64	*.64	*.65	*.66	*.67	*.67	*.67
5	*.68	*.68	*.69	*.69	*.7	*.71	*.71	*.72	*.72	*.73
6	*.74	*.75	*.77	.81	.84	.93	.95	.95	1.07	1.13

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	44.74	69	.45	1.13	.65	.13
*EDIT >	37.61	61	.47	.77	.62	.07

% R E F L E C T A N C E



% R E F L E C T A N C E * * E D I T E D * *

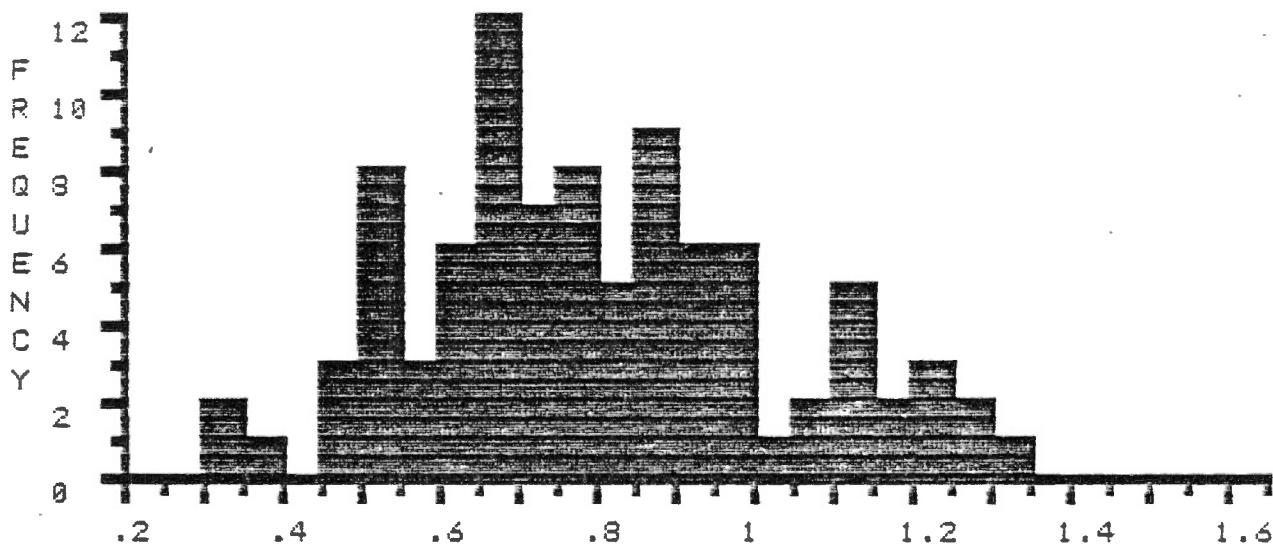


FILE >> K0553A DESCRIPTION FOLLOWS :
 DEPTH 4730-4740M, GABRIEL C-60, MIKE AVERY, JULY-31-85

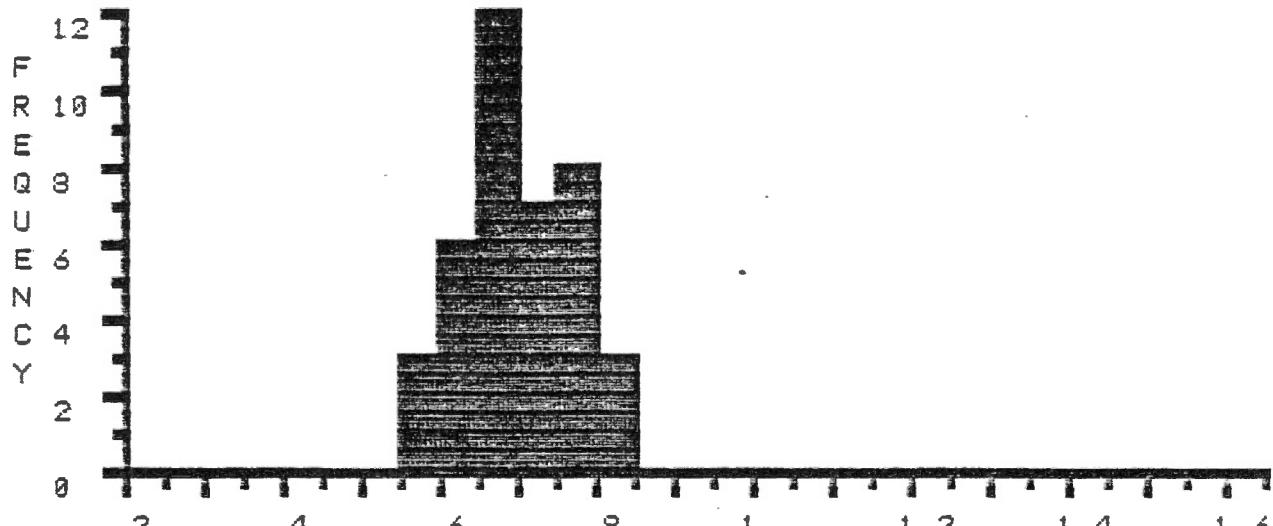
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.3	.34	.37	.46	.47	.48	.5	.5	.51
1	.51	.51	.53	.54	.54	*.56	*.56	*.56	*.6	*.61
2	*.63	*.63	*.64	*.64	*.65	*.65	*.66	*.66	*.66	*.66
3	*.67	*.67	*.68	*.68	*.69	*.69	*.7	*.7	*.71	*.71
4	*.72	*.72	*.74	*.75	*.75	*.75	*.76	*.77	*.77	*.78
5	*.79	*.8	*.8	*.81	.83	.84	.85	.86	.87	.87
6	.88	.88	.88	.89	.89	.9	.9	.91	.92	.93
7	.94	.95	.96	.97	.97	.98	.99	1	1.08	1.09
8	1.1	1.1	1.11	1.12	1.14	1.15	1.17	1.21	1.21	1.22
9	1.26	1.26	1.33							

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	72.95	92	.3	1.33	.79	.23
*EDIT >	26.98	39	.56	.81	.69	.07

% REFLECTANCE



% REFLECTANCE ** EDITED **

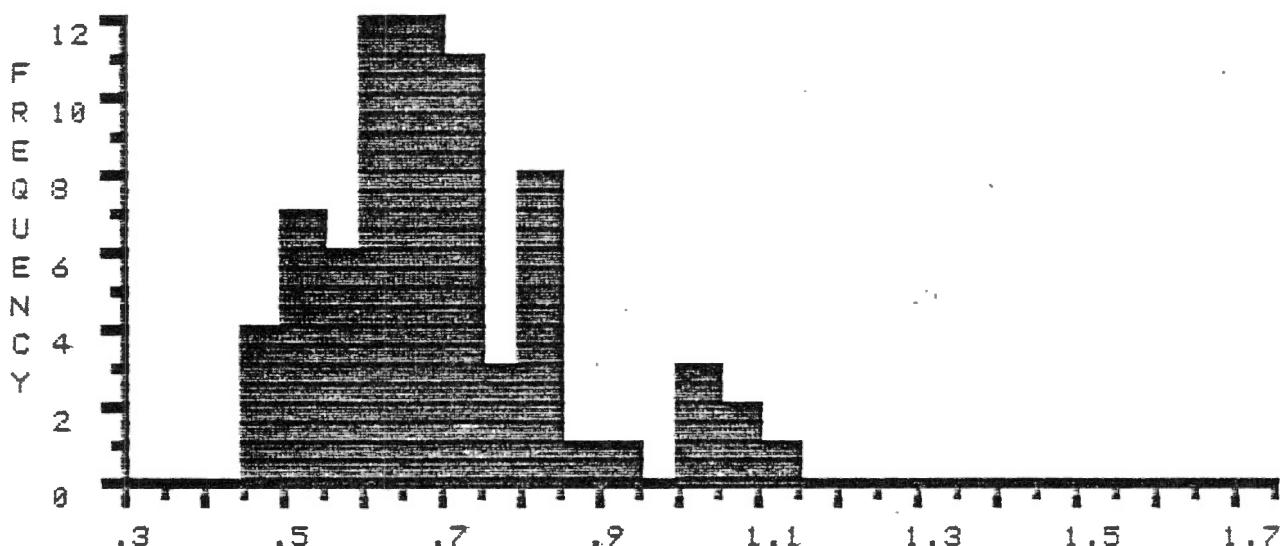


FILE >> K05538 DESCRIPTION FOLLOWS :
 DEPTH 4890-4900M, GABRIEL C-60, MIKE AVERY, JULY-31-85

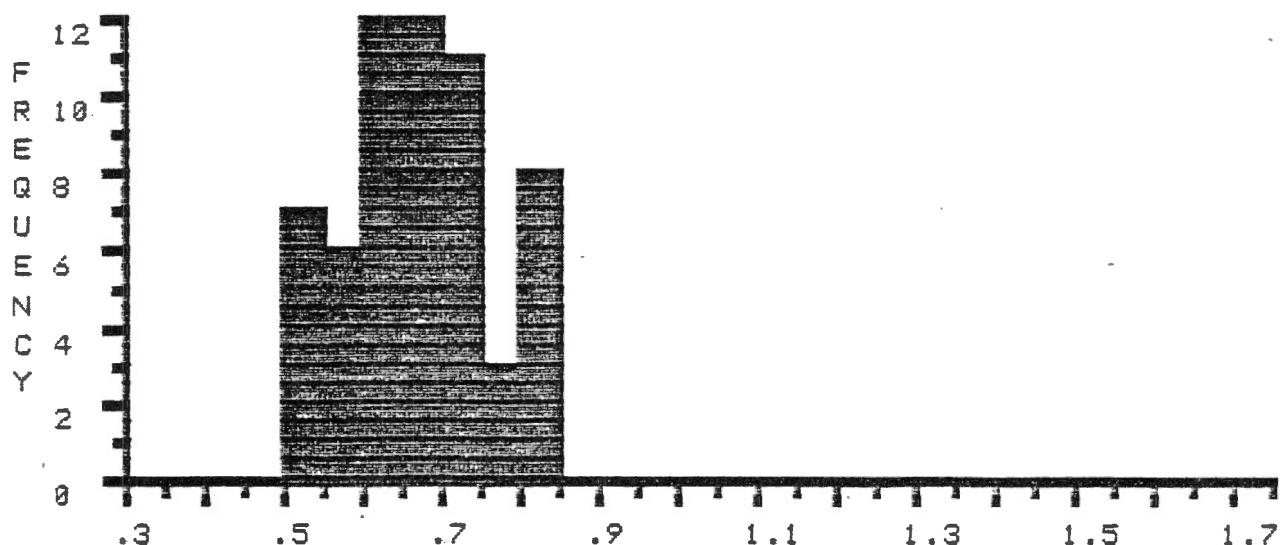
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.46	.46	.48	.48	*.52	*.52	*.52	*.52	*.53
1	*.53	*.54	*.57	*.57	*.58	*.59	*.59	*.59	*.6	*.61
2	*.62	*.62	*.62	*.63	*.63	*.63	*.63	*.63	*.64	*.64
3	*.65	*.65	*.65	*.66	*.66	*.67	*.67	*.67	*.67	*.68
4	*.69	*.69	*.7	*.7	*.71	*.71	*.71	*.71	*.72	*.73
5	*.73	*.73	*.74	*.76	*.76	*.77	*.81	*.81	*.82	*.83
6	*.83	*.84	*.84	*.84	.88	.91	1.02	1.03	1.04	1.07
7	1.08	1.14								

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	49.53	71	.46	1.14	.7	.15
*EDIT >	39.48	59	.52	.84	.67	.09

% REFLECTANCE



X REFLECTANCE ** EDITED **

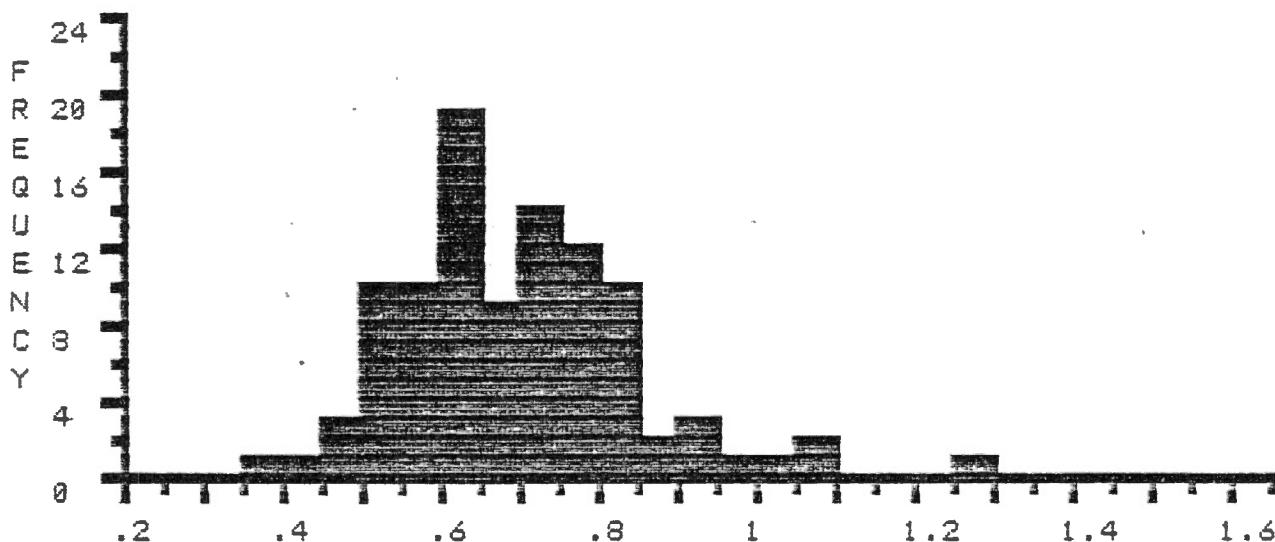


FILE >> K0553C DESCRIPTION FOLLOWS :
 DEPTH 5010-5020M, GABRIEL C-60, MIKE AVERY, AUG-1-85

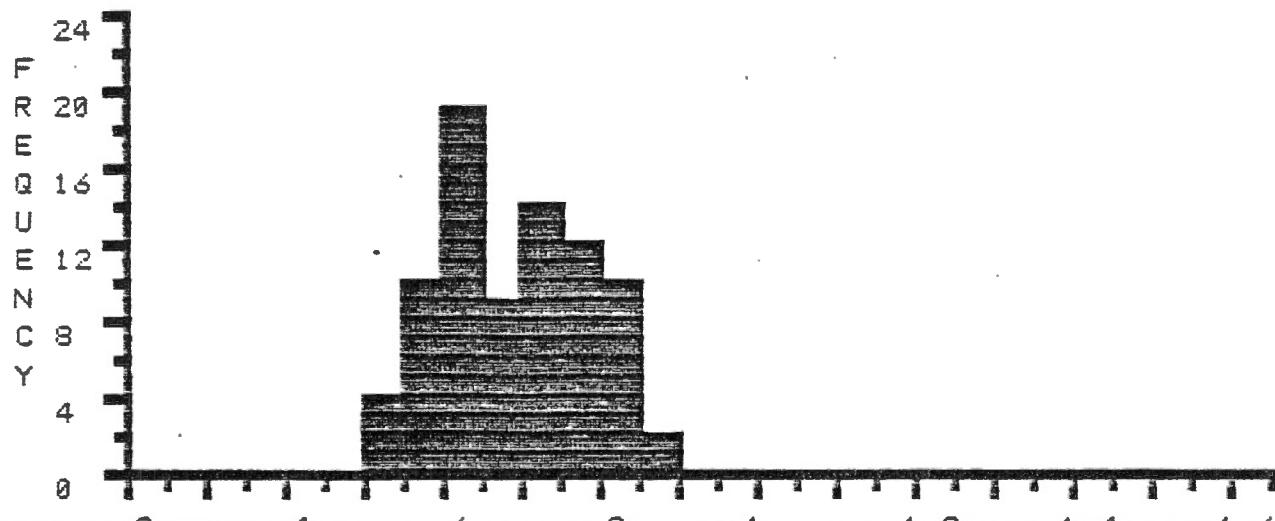
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.36	.42	.49	.49	.49	.5	.5	.5	.51
1	.52	.52	*.54	*.54	*.54	*.54	*.55	*.55	*.56	*.56
2	*.57	*.57	*.58	*.58	*.58	*.59	*.6	*.61	*.61	*.61
3	*.62	*.62	*.62	*.63	*.63	*.63	*.64	*.64	*.64	*.64
4	*.64	*.64	*.64	*.64	*.64	*.66	*.67	*.67	*.67	*.67
5	*.68	*.69	*.69	*.69	*.7	*.7	*.7	*.7	*.71	*.71
6	*.71	*.72	*.72	*.73	*.73	*.73	*.74	*.74	*.75	*.75
7	*.75	*.76	*.77	*.77	*.77	*.78	*.78	*.78	*.78	*.79
8	*.8	*.81	*.81	*.82	*.82	*.82	*.83	*.83	*.83	*.84
9	*.85	*.87	.93	.94	.94	.95	1	1.05	1.05	1.27

	SUM	NUMBER	MIN	MAX	MEAN	STAND. DEV.
TOTAL >	68.51	99	.36	1.27	.69	.15
*EDIT >	55.08	80	.54	.87	.69	.09

% R E F L E C T A N C E



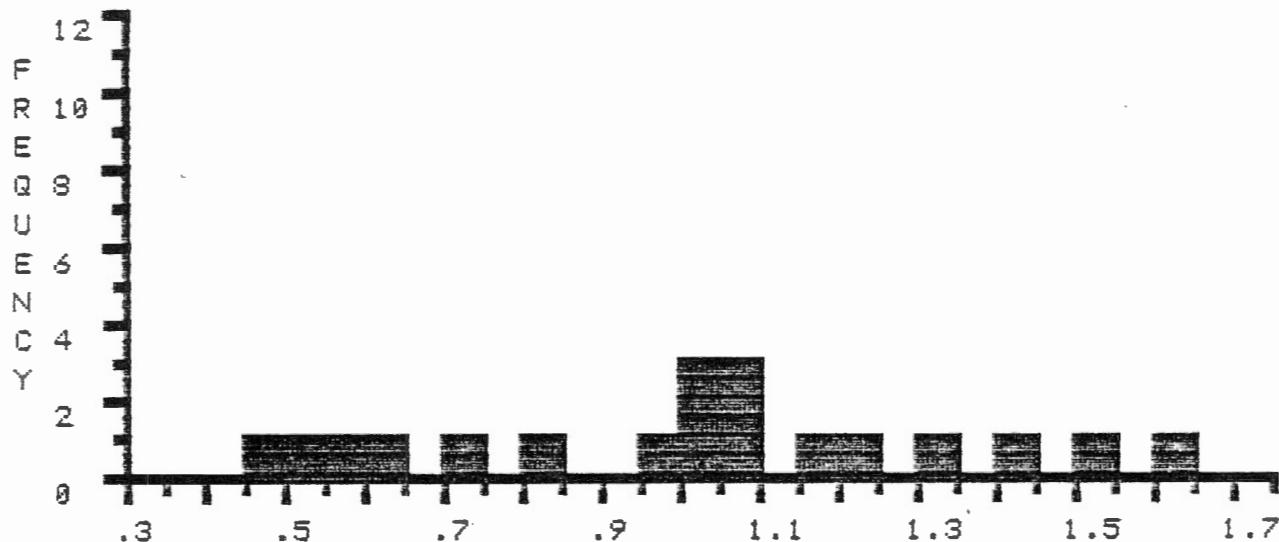
% R E F L E C T A N C E * * E D I T E D * *



FILE >> K0561C DESCRIPTION FOLLOWS :
 DEPTH 5150-5160M, GABRIEL C-60, MIKE AVERY, AUG-13-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.47	.52	.57	*.63	*.72	*.82	.96	1.01	1.03
1	1.03	1.08	1.09	1.09	1.17	1.23	1.33	1.4	1.51	1.6
TOTAL >	19.26		NUMBER		MIN	MAX	MEAN		STAND.DEV.	
*EDIT >	2.17		3		.47	1.6	1.01		.33	
					.63	.82	.72		.1	

X R E F L E C T A N C E



X R E F L E C T A N C E * * E D I T E D * *

