121-72
117-01

LABORATORY ITEM 450

MGG09005043

A SUMMARY OF SEDIMENT SIZE AND CHEMISTRY OF ONE CORE AND SEVEN GRABS FROM SAN FRANCISCO AND MAYPORT FLORIDA, RESPECTIVELY. NAVY DIVERS. FEBRUARY 1973 AND APRIL - MAY 1973.

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Prepared for: Code 6110

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Geological Laboratory
Nearshore Surveys Division
Oceanographic Surveys Department

U. S. NAVAL OCEANOGRAPHIC OFFICE
WASHINGTON, D. C. 20373

MGG09005043

The results of the sediment size and composition analyses are printed out in tabular form.

The following is an explanation of the terms encountered on the data printout sheet:

CRUISE	A number assigned to each cruise for identification purposes.
SAMPLE	A consecutive number applied to each core taken successively throughout the cruise.
LATITUDE	Expressed in degrees, minutes, and tenths of minutes.
LONGITUDE	Expressed in degrees, minutes and tenths of minutes.
TAKEN	Date in day, month, and year that core was taken.
CORER TYPE	Letters corresponding to sampling device code below.

Corers		Grabs	
HYP	Hydroplastic piston	SPK	Shipek Sediment Sampler
HYG	Hydroplastic gravity	HLP	Alpine Heavy Duty Grab
KUP	Kullenberg piston	SMS	Small Mud Snapper
KUG	Kullenberg gravity	VVS	Van Veen Grab
PHL	Phlegar gravity	BED	Birge-Ekman Dredge
MEG	Modified Ewing gravity	DLS	Dietz-LaFond Snapper
MEP	Modified Ewing piston	OPG	Orange Peel Grab
VIB	Vibrocorer	SBS	Scoopfish Bottom Sampler
BOM	Boomerang	PGS	Ponar Grab Sampler
EWP	Ewing piston	DOC	Diver Operated Corer
EWG	Ewing gravity		

LENGTH	Length of core recorded in centimeters as observed in the laboratory.
PENETRATION	Penetration of coring device recorded in centimeters as observed in the field.
DEPTH	The uncorrected sonic sounding in meters.
ANALYZED	Date in day, month, and year that core was analyzed in the laboratory.
I.D. No.	Three or four digit laboratory project number followed by consecutive number assigned to each subsample analyzed.
INTERVAL	Interval of subsample as measured in centimeters from the top of the core.
MM	Particle diameter size intervals based on Wentworth size grades in millimeters.
PER	Percent of total sample weight within the given size interval.

GRAVEL, SAND SILT, CLAY — Percent of the total sample weight within the four size classes.

Class ranges are:

MGG09005043

1. Gravel - coarser than 2 mm
2. Sand - 2 to 0.0625 mm
3. Silt - 0.0625 to 0.0039 mm
4. Clay - finer than 0.0039

MEAN (MM) — The geometric mean of the distribution expressed in millimeters.

MEAN (PHI) — The logarithmic mean of the distribution expressed in phi units ($-\log_2$) of the diameter in millimeters.

STAN DEV — Standard deviation. A measure of the degree of spread or dispersion of the distribution about the mean expressed in phi units.

$$s = \sqrt{\frac{\sum f \quad (X_i - \bar{X})^2}{100}}$$

SKEWNESS — A measure of the asymmetry of the distribution. Positive values denote skewness of the distribution toward the fine particles; negative values denote skewness toward the coarse particles. A normal distribution has a skewness of 0.

$$\text{Skewness} = \frac{2 \sum f \quad (X_i - X)^3}{100 \quad s^3}$$

KURTOSIS — A measure of the peakedness of the distribution. Positive values denote a "leptokurtic" distribution more "peaked" than normal. Negative values denote a "platykurtic" distribution, or a distribution more "flat" than normal. When using the following formula, a normal curve has a kurtosis of 0.

$$\text{Kurtosis} = \left[\frac{\sum f \quad (X_i - \bar{X})^4}{100 \quad s^4} \right] - 3$$

$CACO_3$ — Percent of the total sample weight soluble in 2 N HCL.

ORG CARBON — Percent organic carbon of the total sample weight as determined using a Leco carbon analyzer.

COLOR — Wet sediment color, based on the Geological Society of America Rock-Color Chart, as determined in the laboratory.

NITROGEN — Percent nitrogen of the total sample weight as determined by the Kjeldahl method.

LOG FOR CORE SAMPLES

Project No: 450
Location: San Francisco, CA.

MGG09005043

Logged By J.C. Bowman
Date Logged 17 June 1973

	La No.	Color	Calc. Mat.	Sediment Type	Remarks
Sample No: S.F.-7 Lat: 37° 56' N Long: 122° 04' W Date: FEB 73 Water depth:	450-1	Greenish black 5GY2/1	Yes	silty Sand	0-30cm
Sample No: S.F.-7 Lat: 37° 56' N Long: 122° 04' W Date: FEB 73 Water depth:	450-2	Dark greenish gray 5GY3/1	Yes	Silty Sand	30-76 cm methane odor
Sample No: S.F.-7 Lat: 37° 56' N Long: 122° 04' W Date: FEB 73 Water depth:	450-3	olive brown 5Y3/4	Yes	Sandy Silt	76-124 cm Shell fragments Decaying plant material odor
Sample No: Lat: Long: Date: Water depth:					Naval Weapons Station, Concord; Tugboat Pier at Seal Bluff Landing, half-way out Pier on West Side.
Sample No: Lat: Long: Date: Water depth:					
Sample No: Lat: Long: Date: Water depth:					
Sample No: Lat: Long: Date: Water depth:					
Sample No: Lat: Long: Date: Water depth:					
Sample No: Lat: Long: Date: Water depth:					

LOG FOR GRAB SAMPLES

MGG09005043

117-01

Project No: 450
Location: MayPort, Florida, III

Logged By J.C. Bowman
Date Logged 29 June 1973

	La No.	Color	Calc. Mat.	Sediment Type	Remarks
Sample No: 33A Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-4	Dusky olive gray 5Y6/2	Yes	Sand	Shell fragments
Sample No: 38A Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-5	Dusky olive gray 5Y6/2	Yes	Sand	Shell fragments
Sample No: 55A Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-6	moderate olive gray 5Y4/2	Yes	Sand	Shell fragments
Sample No: 58A Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-7	Dusky olive gray 5Y6/2	Yes	Sand	Shell fragments
Sample No: 36B Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-8	moderate olive gray 5Y4/2	Yes	Sand	Shell fragments
Sample No: 35C Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-9	Dusky olive gray 5Y6/2	Yes	Sand	Shell fragments
Sample No: 37C Lat: 30°21'N Long: 81°18'W Date: APR-MAY 73 Water depth:	450-10	Dusky olive gray 5Y6/2	Yes	Sand	Shell fragments.
Sample No: Lat: Long: Date: Water depth:					
Sample No: Lat: Long: Date: Water depth:					

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE S FRAN
SAMPLE SF-7

TAKEN FEB 1973
DEPTH ——

LATITUDE 37° 56' N
LONGITUDE 122° 04' W

MARSDEN SQUARE 121-72
CORER TYPE DOC

LENGTH ——
PENETRATION ——

ANALYZED JUN73

SUBSAMPLE ID.		450 1	450 2	450 3
DIAM (PHI)	DIAM (MM)	PERCENT	PERCENT	PERCENT
<-4	>16.000	.000	.000	9.290
-4 TO -3	16.000 TO 8.000	.000	.000	.000
-3 TO -2	8.000 TO 4.000	.369	.472	1.827
-2 TO -1	4.000 TO 2.000	1.513	.314	2.117
-1 TO 0	2.000 TO 1.000	2.141	.747	1.916
0 TO 1	1.000 TO .500	1.772	.550	1.972
1 TO 2	.500 TO .250	7.973	1.218	4.122
2 TO 3	.250 TO .125	12.625	4.479	23.727
3 TO 4	.125 TO .063	6.866	6.680	26.334
4 TO 5	.063 TO .031	7.087	10.491	5.525
5 TO 6	.031 TO .016	7.826	9.627	4.456
6 TO 7	.016 TO .008	10.114	10.806	4.901
7 TO 8	.008 TO .004	10.927	11.002	4.456
8 TO 9	.004 TO .002	5.906	11.788	2.562
9 TO 10	.002 TO .001	6.275	6.483	3.008
>10	<.001	18.605	25.344	3.787
	GRAVEL (>2.0 MM)	1.883	.786	13.234
	SAND (2.0-.063 MM)	31.377	13.674	58.071
	SILT (.063-.004 MM)	35.954	41.925	19.338
	CLAY (<.004 MM)	30.786	43.615	9.357
	MEAN (MM)	.0165	.0070	.1143
	MEAN (PHI)	5.920	7.155	3.129
	STANDARD DEVIATION	3.391	2.842	3.594
	SKEWNESS	-.100	-.284	-.161
	KURTOSIS	-1.019	-.234	.358
	CALCIUM CARBONATE	14.000	14.000	31.000
	ORGANIC CARBON	1.312	1.344	.496
	NITROGEN (KJELDAHL)	.142	.166	.056
	COLOR (GSA)	5GY2/1	5GY3/1	5Y3/4

09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE: MYPT-3 TAKEN APR-MAY '73 LATITUDE 30°21' N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 33A DEPTH —— LONGITUDE 81° 18' W CORER TYPE PGS PENETRATION ——

SUBSAMPLE ID. 450 4

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.517
-2 TO -1	4.000 TO 2.000	.924
-1 TO 0	2.000 TO 1.000	1.612
0 TO 1	1.000 TO .500	12.679
1 TO 2	.500 TO .250	57.179
2 TO 3	.250 TO .125	25.936
3 TO 4	.125 TO .063	1.143
4 TO 5	.063 TO .031	.011
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	1.440
SAND (2.0-.063 MM)	98.549
SILT (.063-.004 MM)	.011
CLAY (<.004 MM)	.000
MEAN (MM)	.3356
MEAN (PHI)	1.575
STANDARD DEVIATION	.811
SKEWNESS	-.591
KURTOSIS	4.111
CALCIUM CARBONATE	38.000
ORGANIC CARBON	.038
NITROGEN (KJELDAHL)	.008
COLOR (GSA)	5Y6/2

M 09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE mVPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21' N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 35C DEPTH —— LONGITUDE 81° 18' W CORER TYPE PGS PENETRATION ——

SUBSAMPLE ID. 450 9

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.507
-2 TO -1	4.000 TO 2.000	.280
-1 TO 0	2.000 TO 1.000	.856
0 TO 1	1.000 TO .500	17.106
1 TO 2	.500 TO .250	50.550
2 TO 3	.250 TO .125	28.936
3 TO 4	.125 TO .063	1.747
4 TO 5	.063 TO .031	.017
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	.786
SAND (2.0-.063 MM)	99.196
SILT (.063-.004 MM)	.017
CLAY (<.004 MM)	.000
MEAN (MM)	.3281
MEAN (PHI)	1.608
STANDARD DEVIATION	.813
SKEWNESS	-.392
KURTOSIS	2.842
CALCIUM CARBONATE	66.000
ORGANIC CARBON	.043
NITROGEN (KJELDAHL)	.009
COLOR (GSA)	5Y6/2

09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE MYPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21' N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 368 DEPTH —— LONGITUDE 81° 18' W CORER TYPE PGS PENETRATION ——

SUBSAMPLE ID. 450 8

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.688
-2 TO -1	4.000 TO 2.000	1.188
-1 TO 0	2.000 TO 1.000	1.710
0 TO 1	1.000 TO .500	10.279
1 TO 2	.500 TO .250	36.152
2 TO 3	.250 TO .125	48.151
3 TO 4	.125 TO .063	1.814
4 TO 5	.063 TO .031	.008
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	1.876
SAND (2.0-.063 MM)	98.115
SILT (.063-.004 MM)	.008
CLAY (<.004 MM)	.000
MEAN (MM)	.2836
MEAN (PHI)	1.818
STANDARD DEVIATION	.918
SKEWNESS	-.781
KURTOSIS	3.902
CALCIUM CARBONATE	59.000
ORGANIC CARBON	.041
NITROGEN (KJELDAHL)	.008
COLOR (GSA)	5Y4/2

MGG09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE MYPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21' N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 37C DEPTH —— LONGITUDE 81° 18' W CORER TYPE PGS, PENETRATION ——

SUBSAMPLE ID. 450 10

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.501
-2 TO -1	4.000 TO 2.000	.501
-1 TO 0	2.000 TO 1.000	1.169
0 TO 1	1.000 TO .500	7.910
1 TO 2	.500 TO .250	39.294
2 TO 3	.250 TO .125	48.131
3 TO 4	.125 TO .063	2.475
4 TO 5	.063 TO .031	.018
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	1.002
SAND (2.0-.063 MM)	98.980
SILT (.063-.004 MM)	.018
CLAY (<.004 MM)	.000
MEAN (MM)	.2691
MEAN (PHI)	1.894
STANDARD DEVIATION	.823
SKEWNESS	-.722
KURTOSIS	4.531
CALCIUM CARBONATE	73.000
ORGANIC CARBON	.045
NITROGEN (KJELDAHL)	.009
COLOR (GSA)	5Y6/2

MGG09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE MYPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21'N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 38A DEPTH —— LONGITUDE 81° 18'W CORER TYPE PGS PENETRATION ——

SUBSAMPLE ID. 450 S

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.000
-2 TO -1	4.000 TO 2.000	.126
-1 TO 0	2.000 TO 1.000	.378
0 TO 1	1.000 TO .500	1.578
1 TO 2	.500 TO .250	14.516
2 TO 3	.250 TO .125	77.891
3 TO 4	.125 TO .063	5.475
4 TO 5	.063 TO .031	.036
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	.126
SAND (2.0-.063 MM)	99.838
SILT (.063-.004 MM)	.036
CLAY (<.004 MM)	.000
MEAN (MM)	.1945
MEAN (PHI)	2.362
STANDARD DEVIATION	.547
SKEWNESS	-.823
KURTOSIS	7.063
CALCIUM CARBONATE	43.000
ORGANIC CARBON	.047
NITROGEN (KJELDAHL)	.009
COLOR (GSA)	5Y6/2

MGG09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE MYPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21' N MARSDEN SQUARE 117-01 LENGTH —— ANALYZED JUN73
SAMPLE 55A DEPTH —— LONGITUDE 81° 18' W CORER TYPE PGS. PENETRATION ——

SUBSAMPLE ID. 450 6

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.000
-2 TO -1	4.000 TO 2.000	.147
-1 TO 0	2.000 TO 1.000	.460
0 TO 1	1.000 TO .500	.919
1 TO 2	.500 TO .250	25.074
2 TO 3	.250 TO .125	54.688
3 TO 4	.125 TO .063	18.640
4 TO 5	.063 TO .031	.074
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	.147
SAND (2.0-.063 MM)	99.779
SILT (.063-.004 MM)	.074
CLAY (<.004 MM)	.000
MEAN (MM)	.1896
MEAN (PHI)	2.399
STANDARD DEVIATION	.729
SKEWNESS	-.243
KURTOSIS	1.375
CALCIUM CARBONATE	46.000
ORGANIC CARBON	.051
NITROGEN (KJELDAHL)	.011
COLOR (GSA)	5Y4/2

MGG09005043

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE MYPT-3 TAKEN APR-MAY '73 LATITUDE 30° 21' N MARSDEN SQUARE 117-01 LENGTH — ANALYZED JUN73
SAMPLE 58A DEPTH — LONGITUDE 81° 18' W CORER TYPE PGS. PENETRATION —

SUBSAMPLE ID. 450 7

DIAM (PHI)	DIAM (MM)	PERCENT
<-4	>16.000	.000
-4 TO -3	16.000 TO 8.000	.000
-3 TO -2	8.000 TO 4.000	.624
-2 TO -1	4.000 TO 2.000	1.589
-1 TO 0	2.000 TO 1.000	4.304
0 TO 1	1.000 TO .500	1.608
1 TO 2	.500 TO .250	87.202
2 TO 3	.250 TO .125	4.654
3 TO 4	.125 TO .063	.015
4 TO 5	.063 TO .031	.002
5 TO 6	.031 TO .016	.000
6 TO 7	.016 TO .008	.000
7 TO 8	.008 TO .004	.000
8 TO 9	.004 TO .002	.000
9 TO 10	.002 TO .001	.000
>10	<.001	.000

GRAVEL (>2.0 MM)	2.214
SAND (2.0-.063 MM)	97.784
SILT (.063-.004 MM)	.002
CLAY (<.004 MM)	.000
MEAN (MM)	.3863
MEAN (PHI)	1.372
STANDARD DEVIATION	.680
SKEWNESS	-1.530
KURTOSIS	11.531
CALCIUM CARBONATE	55.000
ORGANIC CARBON	.049
NITROGEN (KJELDAHL)	.007
COLOR (GSA)	5Y6/2

MGG09005043