M66B09005014

70-1009

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National Oceanographic Data Center
Washington, D. C. 20390

Laboratory Form No. 248

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MGG09005014

A SUMMARY OF SEDIMENT SIZE, COMPOSITION, AND ENGINEERING PROPERTIES ANALYSES OF CORES FROM SOLOMON'S ISLAND; MARCH 1965. (PROJECT SUTSCHE)

Sediment Size and Composition
Prepared by: Linda K. Glover
David S. Hill

Engineering Properties:
Prepared by: Newell T. Stiles
David S. Hill

Geological Laboratory Branch
Ocean Surveys Division
Oceanographic Surveys Dept.

116-86

M-09005014

SEDIMENT SIZE AND COMPOSITION DATA

CRUISE SUBSON 248 SAMPLE 1 LATITUDE 38 0.19N LONGITUDE 076 0.24W TAKEN 31/03/65
CORER TYPE 3 LENGTH 295.0 PENETRATION 370.8 DEPTH 24.4 ANALYZED 14/04/65

ID. NO.	248 9	248 10	248 11	248 12	248 13	248 14
INTERVAL	25.0- 32.0	87.0- 94.0	144.0-151.0	156.0-163.0	177.0-184.0	224.0-231.0
MM	PER	PER	PER	PER	PER	PER
4.0000	0.000	0.000	0.000	0.000	0.000	0.000
2.0000	0.251	0.000	0.385	0.653	0.000	0.000
1.0000	8.794	1.359	0.192	1.958	0.233	0.170
0.5000	6.281	2.446	1.346	6.527	1.400	2.126
0.2500	2.513	1.630	5.000	9.922	7.585	19.983
0.1250	1.256	2.717	13.077	13.185	14.469	26.446
0.0625	3.015	6.250	15.577	11.097	8.518	18.112
0.0312	0.000	0.000	0.000	0.000	0.000	0.000
0.0156	26.382	10.870	8.654	12.272	14.702	8.078
0.0078	0.000	0.000	0.000	0.000	0.000	0.000
0.0039	18.844	33.967	25.962	22.193	29.172	9.354
0.0020	0.000	0.000	0.000	0.000	0.000	0.000
0.0010	15.075	21.739	16.346	11.749	13.419	8.929
0.0005	15.075	14.946	5.769	6.527	4.084	3.401
0.0000-	2.513	4.076	7.692	3.916	6.418	3.401
GRAVEL	0.251	0.000	0.385	0.653	0.000	0.000
SAND	21.859	14.402	35.192	42.689	32.205	66.837
SILT	45.226	44.837	34.615	34.465	43.874	17.432
CLAY	32.663	40.761	29.808	22.193	23.921	15.731
MEAN (MM)	0.0125	0.0053	0.0117	0.0225	0.0134	0.0491
MEAN (PHI)	6.3266	7.5652	6.4135	5.4713	6.2176	4.3469
STAN DEV	3.5568	2.7625	3.1977	3.4181	3.0693	3.0729
SKEWNESS	-0.2930	-0.4800	-0.0579	0.0193	-0.0425	0.4800
KURTOSIS	-0.6907	0.4549	-1.1910	-1.2130	-1.0884	-0.3976
CACO3	9.800	8.500	6.800	5.400	7.600	2.600
ORG CARBON	3.820	3.240	2.460	2.140	2.110	0.860
COLOR	5GY2/1	5GY2/1	5GY2/1	5GY4/1	5GY4/1	5GY4/1
DOM MINERAL						
SEC MINERAL						

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ID. NO. 248 15
INTERVAL 283.0-290.0

MM	PER	PER	PER	PER	PER	PER
4.0000	0.000					
2.0000	0.041					
1.0000	0.405					
0.5000	4.864					
0.2500	30.847					
0.1250	45.602					
0.0625	3.851					
0.0312	0.000					
0.0156	1.013					
0.0078	0.000					
0.0039	3.040					
0.0020	0.000					
0.0010	5.270					
0.0005	1.824					
0.0000-	3.243					
GRAVEL	0.041					
SAND	85.570					
SILT	4.054					
CLAY	10.336					
MEAN (MM)	0.1160					
MEAN (PHI)	3.1080					
STAN DEV	2.7280					
SKEWNESS	0.9983					
KURTOSIS	2.7794					
CACO3	1.500					
ORG CARBON	1.070					
COLOR	5GY4/1					
DOM MINERAL						
SEC MINERAL						

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SEDIMENT SIZE AND COMPOSITION DATA

248

38° 19' N 076° 24' W

CRUISE SUBSOM SAMPLE 2 LATITUDE 0 0.0 N LONGITUDE 0 0.0 W TAKEN 31/03/65
CORER TYPE 3 LENGTH 230.0 PENETRATION 0.0 DEPTH 22.9 ANALYZED 20/04/65

ID. NO.	248 3	248 4	248 5	248 19	248 20	248 21
INTERVAL	2.0- 9.0	32.0- 44.0	89.0- 96.0	119.5-126.0	164.0-170.0	217.0-224.0
MM	PER	PER	PER	PER	PER	PER
4.0000	0.000	0.000	0.000	0.000	0.000	0.000
2.0000	3.525	2.669	19.474	5.468	1.093	21.247
1.0000	4.354	6.101	3.158	0.719	1.639	1.374
0.5000	8.431	7.912	1.579	3.022	3.097	2.114
0.2500	14.997	10.963	0.526	10.072	11.658	6.342
0.1250	32.066	12.297	1.053	11.655	15.118	9.197
0.0625	13.822	3.241	2.105	8.633	6.740	10.571
0.0312	0.000	0.000	0.000	0.000	0.000	0.000
0.0156	8.984	8.198	14.211	12.230	10.565	9.514
0.0078	0.000	0.000	0.000	0.000	0.000	0.000
0.0039	5.183	23.356	19.474	17.986	18.215	15.328
0.0020	0.000	0.000	0.000	0.000	0.000	0.000
0.0010	4.492	14.776	13.684	15.108	15.483	12.156
0.0005	2.764	4.290	5.263	7.914	9.107	7.400
0.0000-	1.382	6.196	19.474	7.194	7.286	4.757
GRAVEL	3.525	2.669	19.474	5.468	1.093	21.247
SAND	73.670	40.515	8.421	34.101	38.251	29.598
SILT	14.167	31.554	33.684	30.216	28.780	24.841
CLAY	8.639	25.262	38.421	30.216	31.876	24.313
MEAN (MM)	0.1061	0.0250	0.0142	0.0181	0.0157	0.0432
MEAN (PHI)	3.2367	5.3236	6.1421	5.7892	5.9918	4.5317
STAN DEV	2.8693	3.8786	4.7137	3.7843	3.6413	4.3454
SKEWNESS	0.5520	-0.0393	-0.2824	-0.0914	-0.0451	-0.0009
KURTOSIS	0.8241	-1.3673	-1.1526	-1.1644	-1.3421	-1.4050
CACO3	8.500	14.800	16.800	11.100	15.600	13.700
ORG CARBON	1.820	1.490	1.400	1.850	1.670	1.610
COLOR	5GY4/1	5GY4/1	5GY4/1	5GY6/1	5GY6/1	5GY6/1
DOM MINERAL						
SEC MINERAL						

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SEDIMENT SIZE AND COMPOSITION DATA

090050

248

CRUISE SUBSOM SAMPLE 3 LATITUDE 0 0.0 N (38°19N) LONGITUDE 0 0.0 W (076°24'W) TAKEN 11/03/65
CORER TYPE 3 LENGTH 223.0 PENETRATION 193.0 DEPTH 22.9 ANALYZED 13/04/65

ID. NO.	248 6	248 7	248 8	248 16	248 17	248 18
INTERVAL	2.0- 9.0	84.0- 91.0	134.0-140.0	190.0-197.0	197.0-204.0	206.0-213.0
MM	PER	PER	PER	PER	PER	PER
4.0000	0.000	0.000	0.000	0.000	0.000	0.000
2.0000	0.725	0.066	0.208	0.077	1.117	1.065
1.0000	1.347	2.593	2.456	3.585	5.087	12.071
0.5000	5.699	14.029	10.699	33.462	13.110	23.550
0.2500	11.399	30.386	45.629	43.755	28.081	24.083
0.1250	25.699	29.255	27.435	15.073	38.420	27.101
0.0625	21.969	2.726	2.040	0.925	2.481	2.071
0.0312	0.000	0.000	0.000	0.000	0.000	0.000
0.0156	7.254	5.984	2.789	0.617	3.019	1.775
0.0078	0.000	0.000	0.000	0.000	0.000	0.000
0.0039	12.953	7.979	3.955	1.349	3.309	3.846
0.0020	0.000	0.000	0.000	0.000	0.000	0.000
0.0010	8.808	3.657	2.914	0.386	2.481	1.775
0.0005	1.554	1.995	0.624	0.578	1.241	2.367
0.0000-	2.591	1.330	1.249	0.193	1.654	0.296
GRAVEL	0.725	0.066	0.208	0.077	1.117	1.065
SAND	66.114	78.989	88.260	96.800	87.179	88.876
SILT	20.207	13.963	6.744	1.966	6.328	5.621
CLAY	12.953	6.981	4.788	1.157	5.376	4.438
MEAN (MM)	0.0521	0.1271	0.1874	0.3614	0.1814	0.2517
MEAN (PHI)	4.2617	2.9761	2.4159	1.4684	2.4624	1.9899
STAN DEV	2.9993	2.7547	2.2872	1.4711	2.4318	2.4384
SKEWNESS	0.3904	0.7406	1.1387	1.7635	1.0165	0.9980
KURTOSIS	-0.4049	1.2870	4.9639	17.2144	4.2887	4.0622
CACO3	6.600	2.000	0.800	1.700	2.900	2.600
ORG CARBON	2.090	0.390	0.680	0.170	0.410	0.770
COLOR	5GY4/1	5GY4/1	5GY4/1	5GY2/1	5GY2/1	5GY2/1
OOM MINERAL						
SEC MINERAL						

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SEDIMENT SIZE AND COMPOSITION DATA

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CRUISE SUBSOM 248 SAMPLE 4 LATITUDE 38° 19' N 0 0.0 N LONGITUDE 076° 24' W 0 0.0 W TAKEN 11/03/65
CORER TYPE 4 LENGTH 33.0 PENETRATION 218.4 DEPTH 22.9 ANALYZED 08/04/65

ID. NO.	248 1	248 2				
INTERVAL	0.0- 7.0	25.0- 32.0				
MM	PER	PER	PER	PER	PER	PER
4.0000	0.000	0.000				
2.0000	2.878	1.268				
1.0000	6.715	1.549				
0.5000	7.194	5.634				
0.2500	8.153	9.296				
0.1250	28.777	26.479				
0.0625	19.185	10.563				
0.0312	0.000	0.000				
0.0156	10.312	21.268				
0.0078	0.000	0.000				
0.0039	9.592	14.085				
0.0020	0.000	0.000				
0.0010	0.000	4.225				
0.0005	5.995	4.930				
0.0000-	1.199	0.704				
GRAVEL	2.878	1.268				
SAND	70.024	53.521				
SILT	19.904	35.352				
CLAY	7.194	9.859				
MEAN (MM)	0.0868	0.0474				
MEAN (PHI)	3.5264	4.3986				
STAN DEV	2.9507	2.8970				
SKEWNESS	0.4362	0.2466				
KURTOSIS	0.3836	-0.5301				
CACO3	8.400	4.900				
ORG CARBON	1.680	1.720				
COLOR	N1	5 Y2/1				
DOM MINERAL						
SEC MINERAL						

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA
PRNC-NHO-1365 (Rev. 8-58)

(248) MGG09005014

HYDROGRAPHIC OFFICE

VESSEL	~~CRUISE~~		CHECKED BY	DATE CHECKED
NOL BARGE	ITEM 248	SUBSOME	STiles	7 April 65

Sample ~~SERIAL~~ NO. Consec	DATE 65	SAMPLE POSITION * North ~~LATITUDE~~ Tower	South ~~LONGITUDE~~ Tower	DEPTH (~~Fathoms~~) ft	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF CORE	ROCK COLOR CHART CODE NUMBERS CORE TOP	CORE BOTTOM	FIELD DESCRIPTION	REMARKS	OBS. INIT.
(Site I) 1	31 Mar.	72.23°	130.45°	80'	150+	12'2"	10'2"			Kullenberg - piston	Penetration - mud line	
(Site II) 2	31 Mar.	72.02°	117.95°	75'	150+	-	8'6.5"			Kullenberg - piston	~~Penetration mud line~~	
(Site II) 3	31 Mar.	41.83° [redacted]°	118.70°	75'	150+	6'4"	10'2"			Kullenberg - piston	Used penetration device - bottom half of core sucked	
(Site II) 4	31 Mar.	41.67	118.30°	75'	150+	7'2"	1'1.5"			Kullenberg - free fall (Trip arm used)	Used penetration device - did not actuate	

* optical plotting chart Solomons Island Md.
HYDRO June 1961
HO 17,054-1

Use more than one line per sample if necessary.

MGG 09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY Stiles-Hill

DATE 14 April 1965

L.T. 248 116-80

1. CRUISE NO. Subsome	4. SAMPLE NO. BS-1* (Item 248)	7. TYPE CORER Kullenberg (Piston)
2. LATITUDE 38° 19' N	5. DATE TAKEN (Day, month, year) 31 Mar 1965	8. CORE LENGTH (cm) 295
3. LONGITUDE 076° 24' W	6. WATER DEPTH (m) 24.4	9. CORER PENETRATION (cm) 370.

10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-15	15-22	22-25	25-32	32-39	39-46	46-53	53-60	60-67	67-73	73-80
11. WET UNIT WEIGHT (g/cm³)		NO	1.19	NO	1.17	1.18	1.20	1.19	1.21	1.19	NO	1.19
12. SPECIFIC GRAVITY OF SOLIDS					2.51							
13. WATER CONTENT (% dry weight)	251.55	TEST	277.56	TEST	269.35	258.75	250.79	208.80	218.14	235.73	TEST	238.20
14. VOID RATIO					6.92							
15. SATURATED VOID RATIO					6.76							
16. POROSITY (%)					87.4							
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)					—	10.6	—	7.9	11.8	17.4		14.2
REMOLD (g/cm²)					—	1.3	—	.9	5.9	16.4		2.7
24. SENSITIVITY					—	8.3	—	8.8	2.0	1.1		5.3
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS
* Site #1, Core #1
22-25 - large Shell
53-60 - shell Traces

MGG09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

116-86

1. CRUISE NO. 248
2. LATITUDE 38° N. N
3. LONGITUDE [redacted] 076°34'W
4. SAMPLE NO. BS-1
5. DATE TAKEN (Day, month, year)
6. WATER DEPTH (m)
7. TYPE CORER
8. CORE LENGTH (cm)
9. CORER PENETRATION (cm)

10. SUBSAMPLE DEPTH IN CORE (cm)	80-87	87-94	94-101	101-108	108-115	115-122	122-123	123-130	130-137	137-144	144-151	151-155
11. WET UNIT WEIGHT (g/cm³)	1.23	1.20	1.24	1.22	1.27	1.28	NO	1.31	1.32	1.34	1.38	NO
12. SPECIFIC GRAVITY OF SOLIDS						2.42						
13. WATER CONTENT (% dry weight)	221.05	226.44	205.83	207.56	184.36	171.10	TEST	160.64	148.66	140.29	128.78	TEST
14. VOID RATIO						4.12						
15. SATURATED VOID RATIO						4.14						
16. POROSITY (%)						80.5						
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)	11.0	23.8	18.9	16.8	15.1	29.3		18.6	20.2	34.7	26.1	
REMOLD (g/cm²)	3.4	9.1	3.4	3.5	3.8	13.7		6.2	8.4	19.2	6.8	
24. SENSITIVITY	3.2	2.6	5.6	4.8	4.0	2.1		3.0	2.4	1.9	3.9	
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

108-115 - Shell Traces

MGG 0 9 0 0 5 0 1 4

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

116-86

1. CRUISE NO. LI-248
2. LATITUDE 38° 19' N "
3. LONGITUDE 076° 24' W "
4. SAMPLE NO. BS-1
5. DATE TAKEN (Day, month, year)
6. WATER DEPTH (m)
7. TYPE CORER
8. CORE LENGTH (cm)
9. CORER PENETRATION (cm)

10. SUBSAMPLE DEPTH IN CORE (cm)	155-156	156-163	163-170	170-177	177-184	184-191	191-198	198-205	205-209	209-224	224-231	231-238
11. WET UNIT WEIGHT (g/cm³)	No	1.41	1.41	1.42	1.42	1.42	1.61	1.68	No		1.70	1.67
12. SPECIFIC GRAVITY OF SOLIDS								2.63				
13. WATER CONTENT (% dry weight)	TEST	117.76	113.75	94.63	113.67	111.86	62.92	53.50	TEST	60.81	50.50	48.80
14. VOID RATIO								1.40				
15. SATURATED VOID RATIO								1.41				
16. POROSITY (%)								58.3				
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)						26					60	39
23. COHESION NATURAL (g/cm²)		32.3	37.9	36.5	40.8		21.3	36.2				
REMOLD (g/cm²)		14.2	9.3	24.7	8.9		6.2	10.1				
24. SENSITIVITY		2.3	4.1	1.5	4.6		3.4	3.6				
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												
29. REMARKS												

MGS09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

116-86

ANALYZED BY _____

DATE _____

1. CRUISE NO. 248
2. LATITUDE 38° 19' N "
3. LONGITUDE 076° 24' W "
4. SAMPLE NO. BS-1
5. DATE TAKEN (Day, month, year)
6. WATER DEPTH (m)
7. TYPE CORER
8. CORE LENGTH (cm)
9. CORER PENETRATION (cm)

10. SUBSAMPLE DEPTH IN CORE (cm)	238-241	241-248	248-255	255-262	262-269	269-276	276-283	283-290	290-295	End		
11. WET UNIT WEIGHT (g/cm³)	NO	1.76	1.80	1.75	1.78	1.82	1.84	1.89	NO			
12. SPECIFIC GRAVITY OF SOLIDS							2.74					
13. WATER CONTENT (% dry weight)	TEST	48.93	41.22	49.43	40.59	36.82	39.33	32.88	TEST			
14. VOID RATIO							1.07					
15. SATURATED VOID RATIO							1.08					
16. POROSITY (%)							51.7					
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM CL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)		12										
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)			32.8	13.5	68.5	14.6	10.1	21.9				
REMOLD (g/cm²)			5.3	0.4	16.5	6.2	3.0	18.3				
24. SENSITIVITY			6.1	32.1	4.2	2.4	3.4	1.2				
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

116-86

ANALYZED BY Stiles-Hill

DATE 20 April '65

1. CRUISE NO. Sub Some 248
2. LATITUDE 38° 19' N "
3. LONGITUDE 076° 24' W "
4. SAMPLE NO. BS-2*
5. DATE TAKEN (Day, month, year) 31 Mar '65
6. WATER DEPTH (m) 22.9
7. TYPE CORER Kullenberg (Piston)
8. CORE LENGTH (cm) 230
9. CORER PENETRATION (cm) —

10. SUBSAMPLE DEPTH IN CORE (cm)	0-2	2-9	9-16	16-19	19-26	26-30	30-37	37-44	44-51	51-58	58-65	65-75
11. WET UNIT WEIGHT (g/cm³)	No	1.52	1.57	No	1.55	No	1.57	1.51	1.47	1.48	1.46	No
12. SPECIFIC GRAVITY OF SOLIDS		2.64										
13. WATER CONTENT (% dry weight)	TEST	80.84	75.48	TEST	73.48	TEST	71.84	85.96	90.66	86.68	92.64	TEST
14. VOID RATIO		2.14										
15. SATURATED VOID RATIO		2.13										
16. POROSITY (%)		68.15										
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)		x	x		20.2			21.4	14.2	11.8	x	
REMOLD (g/cm²)					8.3			—	—	—		
24. SENSITIVITY					2.4							
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

*Site II, core #2

water on Top

2-9 & 9-16 - full of large shells; impossible to obtain a reading

58-65 - Tube contained large shell

Shell Content decreasing with depth

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

116-86

1. CRUISE NO. 248	4. SAMPLE NO. BS-2	7. TYPE CORER	
2. LATITUDE 38 ° 19 ' N "	5. DATE TAKEN (Day, month, year)	8. CORE LENGTH (cm)	
3. LONGITUDE 076 ° 24 ' W "	6. WATER DEPTH (m)	9. CORER PENETRATION (cm)	

10. SUBSAMPLE DEPTH IN CORE (cm)	75-82	82-89	89-96	96-111	111-119.5	119.5-126	126-133	133-140	140-147	147-148	148-149	149-156
11. WET UNIT WEIGHT (g/cm³)	1.43	1.49	1.43	No		1.44	1.42	1.43	1.43	No	No	1.44
12. SPECIFIC GRAVITY OF SOLIDS			2.65									2.65
13. WATER CONTENT (% dry weight)	110.95	101.52	106.96	TEST	105.23	110.03	106.59	113.31	106.39	TEST	TEST	111.68
14. VOID RATIO			2.83									2.89
15. SATURATED VOID RATIO			2.83									2.96
16. POROSITY (%)			100									74.3
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)	3.8	8.9	7.6			5.3	7.6	15.5	5.8			8.0
REMOLD (g/cm²)	—	—	—			3.5	3.4	5.5	0.4			2.5
24. SENSITIVITY						1.5	2.2	2.8	14.5			3.2
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

MGG09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

1. CRUISE NO. 248	4. SAMPLE NO. 116-86 BS-2	7. TYPE CORER	
2. LATITUDE 38° 19' N	5. DATE TAKEN (Day, month, year)	8. CORE LENGTH (cm)	
3. LONGITUDE 076° 24' W	6. WATER DEPTH (m)	9. CORER PENETRATION (cm)	

10. SUBSAMPLE DEPTH IN CORE (cm)	156-157	157-164	164-171	171-178	178-179	179-186	186-193	193-200	200-207	207-208	208-215	215-217
11. WET UNIT WEIGHT (g/cm³)	NO	1.42	1.43	1.45	NO	1.46	1.45		1.44	NO	1.42	NO
12. SPECIFIC GRAVITY OF SOLIDS												
13. WATER CONTENT (% dry weight)	TEST	111.30	111.62	104.57	TEST	97.73	99.30	107.51	111.52	TEST	109.75	TEST
14. VOID RATIO												
15. SATURATED VOID RATIO												
16. POROSITY (%)												
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)		18.3	8.9	7.6		18.3	13.3		7.6		18.3	
REMOLD (g/cm²)		17.4	1.8	1.7		—	4.4		2.5		3.7	
24. SENSITIVITY		1.0	5.0	4.5			3.0		3.0		5.0	
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

193-200 - disturbed by separation (3 cm gaps at 3 places)

M 0 9 0 0 5 0 1 4

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

116-86

ANALYZED BY _____

DATE _____

1. CRUISE NO. 248	4. SAMPLE NO. BS-2						7. TYPE CORER						
2. LATITUDE 38° 19' N	5. DATE TAKEN (Day, month, year)						8. CORE LENGTH (cm)						
3. LONGITUDE 076° 24' W	6. WATER DEPTH (m)						9. CORER PENETRATION (cm)						
10. SUBSAMPLE DEPTH IN CORE (cm)	217-224	224-230	End										
11. WET UNIT WEIGHT (g/cm³)	1.42												
12. SPECIFIC GRAVITY OF SOLIDS	2.65												
13. WATER CONTENT (% dry weight)	115.56	108.53											
14. VOID RATIO	3.02												
15. SATURATED VOID RATIO	3.06												
16. POROSITY (%)	75.1												
17. LIQUID LIMIT													
18. PLASTIC LIMIT													
19. PLASTICITY INDEX													
20. LIQUIDITY INDEX													
21. COMPRESSION INDEX FROM LL													
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)													
REMOLD (g/cm²)													
23. COHESION NATURAL (g/cm²)	6.2												
REMOLD (g/cm²)	0.9												
24. SENSITIVITY	6.7												
25. ANGLE OF INTERNAL FRICTION (°)													
26. ACTIVITY													
27. MODULUS OF ELASTICITY													
28. SLUMP (%)													
29. REMARKS													

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PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY Stiles - Hill

DATE 13 APr. '65

116-86

1. CRUISE NO. Subsome 248	4. SAMPLE NO. BS-3*	7. TYPE CORER Kullenberg (Piston)
2. LATITUDE 38° 19' N	5. DATE TAKEN (Day, month, year) 31 March '65	8. CORE LENGTH (cm) 223
3. LONGITUDE 076° 24' W	6. WATER DEPTH (m) 22.9	9. CORER PENETRATION (cm) 193

10. SUBSAMPLE DEPTH IN CORE (cm)	0-2	2-9	9-16	16-23	23-25	25-32	32-39	39-46	46-53	53-60	60-67	67-74
11. WET UNIT WEIGHT (g/cm³)	No	1.47	1.49	1.57	No	1.54		1.55	1.68	1.84	1.87	1.88
12. SPECIFIC GRAVITY OF SOLIDS												
13. WATER CONTENT (% dry weight)	T	105.58	73.75	68.98	T	80.25	86.25	85.97	64.12	42.48	40.30	36.18
14. VOID RATIO	E				E							
15. SATURATED VOID RATIO	S T				S T							
16. POROSITY (%)												
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)										17.3	11.8	42.0
REMOLD (g/cm²)										2.7	4.2	15.5
24. SENSITIVITY										6.4	2.8	2.7
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

* Site #II, core #3

2-53 - large shells, No chance For Vane Shear Test

0 9 0 0 5 0 1 4

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

116-86

1. CRUISE NO. 248	4. SAMPLE NO. BS-3	7. TYPE CORER
2. LATITUDE 38° 19' N "	5. DATE TAKEN (Day, month, year)	8. CORE LENGTH (cm)
3. LONGITUDE 076° 24' W "	6. WATER DEPTH (m)	9. CORER PENETRATION (cm)

10. SUBSAMPLE DEPTH IN CORE (cm)	74-77	77-84	84-91	91-98	98-105	105-112	112-113	113-120	120-127	127-134	134-140	140-160
11. WET UNIT WEIGHT (g/cm³)	No	1.89	1.88	1.88	1.86	1.91	No	1.84	1.89	1.87		
12. SPECIFIC GRAVITY OF SOLIDS												
13. WATER CONTENT (% dry weight)	TEST	31.62	33.87	33.03	31.84	31.39	TEST	33.03	32.26	32.01	27.22	44.90
14. VOID RATIO												
15. SATURATED VOID RATIO												
16. POROSITY (%)												
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)		—	34.6	33.7	31.0	35.4		27.8	32.8	64.3	—	—
REMOLD (g/cm²)		—	7.9	8.0	17.4	12.0		7.2	10.1	10.2	—	—
24. SENSITIVITY		—	4.4	4.2	1.8	3.0		3.9	3.2	6.3	—	—
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

77-84- large shells

MGG09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY _____

DATE _____

116-86

1. CRUISE NO. 248	4. SAMPLE NO. BS-3
2. LATITUDE 38 ° 19 ' N "	5. DATE TAKEN (Day, month, year)
3. LONGITUDE 76 ° 24 ' W "	6. WATER DEPTH (m)
	7. TYPE CORER
	8. CORE LENGTH (cm)
	9. CORER PENETRATION (cm)

10. SUBSAMPLE DEPTH IN CORE (cm)	160-173	173-183	183-190	190-197	197-204	204-206	206-213	213-220	220-223			
11. WET UNIT WEIGHT (g/cm³)				1.88	1.91	NO	1.94		NO			
12. SPECIFIC GRAVITY OF SOLIDS												
13. WATER CONTENT (% dry weight)	34.19	28.91	24.63	19.09	29.65	TEST	28.54	27.02	TEST			
14. VOID RATIO												
15. SATURATED VOID RATIO												
16. POROSITY (%)												
17. LIQUID LIMIT												
18. PLASTIC LIMIT	X											
19. PLASTICITY INDEX	X											
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL	X											
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
22. COMPRESSIVE STRENGTH REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)					41.2		33.7	—				
23. COHESION REMOLD (g/cm²)					6.7		18.3	—				
24. SENSITIVITY					6.1		1.8	—				
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

160-197 - Too Soupy

M...09005014

PRNC-NAVOCEANO-3167/18 B (4-63)

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY Stiles - Hill

DATE 8 APr. 1965

116-86

1. CRUISE NO. Subsome 248
2. LATITUDE 38° 19' N "
3. LONGITUDE 76° 24' W "
4. SAMPLE NO. Bs-4*
5. DATE TAKEN (Day, month, year) 31 March '65
6. WATER DEPTH (m) 22.9
7. TYPE CORER Kullenberg (gravity)
8. CORE LENGTH (cm) 33
9. CORER PENETRATION (cm) 218

10. SUBSAMPLE DEPTH IN CORE (cm)	0-7	7-11	11-18	18-25	25-32	32-33	End					
11. WET UNIT WEIGHT (g/cm³)	1.44	No	1.46			No						
12. SPECIFIC GRAVITY OF SOLIDS												
13. WATER CONTENT (% dry weight)	95.44	Test	111.90	84.87	100.80	Test						
14. VOID RATIO												
15. SATURATED VOID RATIO												
16. POROSITY (%)												
17. LIQUID LIMIT												
18. PLASTIC LIMIT												
19. PLASTICITY INDEX												
20. LIQUIDITY INDEX												
21. COMPRESSION INDEX FROM LL												
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)												
REMOLD (g/cm²)												
23. COHESION NATURAL (g/cm²)	15.0											
REMOLD (g/cm²)	2.7											
24. SENSITIVITY	5.6											
25. ANGLE OF INTERNAL FRICTION (°)												
26. ACTIVITY												
27. MODULUS OF ELASTICITY												
28. SLUMP (%)												

29. REMARKS

*Site II, core 4

MGG09005014

EXPLANATION OF DATA PAGES
CORE ANALYSIS SUMMARY SHEET
Engineering Properties
NAVOCEANO (EXP) 3167/18B (Rev. 1-63)

Results of engineering properties, core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are recorded on Core Analysis Summary Sheet Engineering Properties.

The following is a description of the terms employed on the Core Analysis Summary Sheet:

1. Cruise Number. A number assigned to each cruise for identification purposes.

2. Latitude. Expressed in degrees, minutes, and seconds.

3. Longitude. Expressed in degrees, minutes, and seconds.

4. Sample Number. A consecutive number, commencing with 1, applied to each core taken successively throughout the cruise.

5. Date Taken. Day (GMT), month, and year.

6. Water Depth (m). The uncorrected sonic sounding recorded in meters.

7. Type Corer. Identified by the name of device employed.

8. Core Length(cm). Recorded in centimeters as observed in the laboratory.

9. Core Penetration (cm). Recorded in centimeters as observed in the field.

10. Subsample Depth in Core (cm). Interval of subsample as measured in centimeters from the top of the core.

11. Wet Unit Weight (g/cm^3). The weight (solids plus water) per unit volume of the sediment mass.

12. Specific Gravity of Solids. The ratio of weight in air of a given volume of a sediment at 20°C to the weight in air of an equal volume of distilled water at 20°C.

13. Water Content (% dry weight). The ratio, in percent, of the weight of water in a given mass of the sediment sample to the weight of the solid particles.

14. Void Ratio. The ratio of the volume of void spaces to the volume of solid particles in the sediment sample as computed from Wet Unit Weight, Specific Gravity of Solids, and Water Content.

15. Saturated Void Ratio. The Void Ratio at 100 percent saturation as computed from Water Content and Specific Gravity of Solids.

$$\text{Saturated Void Ratio} = \frac{\text{Water Content X Specific Gravity of Solids}}{100}$$

16. Porosity (%). The ratio, usually expressed as a percentage, of the volume of voids of a sediment mass to the total volume of the sediment mass.

17. Liquid Limit. Water Content, in percent, at which a pat of sediment cut by a groove of standard dimension will flow together for a distance of 1/2 inch under the impact of 25 blows in a standard liquid limit apparatus.

18. Plastic Limit. Water Content, in percent, at which a sediment will just begin to crumble when rolled into a thread approximately 1/8 inch in diameter.

19. Plasticity Index. The numerical difference between the Liquid Limit and Plastic Limit of the sediment mass.

20. Liquidity Index. The ratio, expressed in percentage, of (1) the natural water content of the sediment sample minus its Plastic Limit to (2) its Plasticity Index.

21. Compression Index. The slope of the linear portion of the Pressure-Void Ratio curve on a semi-log plot.

22. Compressive Strength. The load per unit area required to shear an unconfined, natural or remolded, sediment mass.

23. Cohesion. The shearing strength per unit area under zero externally applied load.

24. Sensitivity. The ratio of the natural to the remolded strength. It is a measure of the loss of strength due to remolding the sediment mass.

25. Angle of Internal Friction (°). The angle between the abscissa and the tangent of the curve representing the relationship of "shearing resistance" to "normal stress" acting within a sediment mass.

26. Activity. The ratio of the Plasticity Index to the clay fraction percentage (< .002 mm) of the sediment mass.

27. Modulus of Elasticity. The ratio of stress to strain of the sediment mass.

28. Slump (%). The ratio, in percent, of the amount of height change immediately before the compressive strength test to the original height of a cylinder of sediment.

13. MM. Particle diameter size intervals based on Wentworth size grades in millimeters.

14. PER. Percent of total sample weight within the given size interval.

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

Class ranges are:	Gravel	-	coarser than 2 mm
	Sand	-	2 to 0.0625 mm
	Silt	-	0.0625 to 0.0039 mm
	Clay	-	finer than 0.0039 mm

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

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

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

$$\sigma = \sqrt{\sum f (X_i - \bar{X})^2 / 100}$$

19. 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.

$$\alpha_3 = \frac{1}{100} \sigma^{-3} \sum f (X_i - \bar{X})^3$$

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

$$\alpha_4 = \frac{1}{100} \sigma^{-4} \sum f (X_i - \bar{X})^4 - 3$$

21. $CACO_3$. Percent calcium carbonate of the total sample weight as determined by the insoluble residue method.

22. ORG CARBON. Percent organic carbon of the total sample weight as determined by the Allison method.

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

24. DOM MINERAL. Dominant mineral (s) comprising the sample assemblage.

25. SEC MINERAL. Secondary mineral (s) comprising the sample assemblage.

Special Instructions

MGG09005014

GENERAL:

1) MGGB ID: 090014
2) VESSEL (S): UNKNOWN
3) CRUISE (S): Subsome
4) BEGIN DATE: 65-03-31
5) END DATE: 65-03-31
6) SENIOR SCIENTIST: L.K. Glover
7) INVESTIGATOR & INSTITUTION: Navoceano
8) WATER DEPTH: C (U) BLANK
9) SALINITY: C U (BLANK)
10) TEXT RECORD COMMENTS AFTER FILE HEADER:
11)

STATION NO.	SAMPLE NO.	SEDIMENT SIZE DATA	SAMPLER TYPE	TEXT RECORD COM. AFTER 1st SAMPLE UNDER STATION
Site 1	BS-1	✓	501 Kullenberg-piston	22-25 cm - large shell, 53-60 cm shell traces 108-115 cm shell traces
Site 1	BS-2	✓	" 501 "	Water on top. 2-9cm, 9-16 cm - large shells, 58-65 - tube contained large shell shell content decreases downward. 193-200cm disturbed, separation - 3 cm gaps in 3 places.
Site 1	BS-3	✓	501 Kullenberg, piston	2-53 cm large shells - no vane shear test. 77-84 cm, large shells, 160-197 cm. too soupy
Site 1	BS-4	✓	400 Kullenberg, gravity	