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Woods Hole Oceanographic Institution

Descriptions of W.H.O.I. Rock Dredge Samples, Volume IV

Edited by

P.B. Mills and P.J. Andrew

December 1990

Technical Report

Funding was provided by the National Science Foundation under Contract No. OCE 88-00693 and the Ocean Industry Program.

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Approved for Distribution:

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ABSTRACT

This report is Volume IV in the series of reports entitled "Descriptions of W.H.O.I. Rock Dredge Samples." This volume is dedicated to rock samples recovered by DSV Alvin between 1971 - 1982 and includes data for all rock samples beginning with Alvin 338 and ending with Alvin 1247.

The data contained in this volume is an accumulation and transcription of initial descriptions made at sea, along with post-cruise descriptions performed at the lab by the curatorial staff. Volumes I - III contain data from all W.H.O.I. dredging cruises up to 1986.

Volume IV presents a digitized listing of all station data for the entire W.H.O.I. dredge/rock collection through 1986. The data in this listing are sorted by Marsden Square and can thus serve as a regional index for all rock samples included in Volumes I - IV.

INTRODUCTION

A. Scope & Format of this Report

"Descriptions of W.H.O.I. Rock Dredge Samples" is an ongoing series of reports that present station data and detailed descriptions of rock samples in the W.H.O.I. Sea Floor Samples Collection.

The first three volumes in this series represent the completion of a major effort to describe the entire back-log of 790 dredge stations in the W.H.O.I. dredge collection as of 1986.

Volume IV is dedicated to rock samples recovered by DSV Alvin from 1971 - 1982. Included are detailed descriptions for samples recovered by the sub's manipulator during 122 dives at various sites in the Atlantic and Eastern Pacific Oceans (Table 3). Each group of dives completed in a specific region is accompanied by a map showing dive locations, a digitized summary of station locations and samples recovered, and finally the detailed descriptions. Notes on the descriptive format and abbreviations used are provided in Table 2 (Notes on Detailed Rock Descriptions).

Volume I includes a variety of cruises with a wide geographic distribution executed during the period 1960 to 1977 (Table 1). Many of the cruises in Volume I preceded the establishment of a central archiving facility in Woods Hole. The material in Volume I has been prepared by the W.H.O.I. curatorial staff who have painstakingly verified station locations and slabbed and described representative suites from each of these dredge hauls.

Volume III includes material collected from September 1978 -December 1980 and represents a new procedure where most of the descriptive work is executed onboard ship by participating scientists. As such, it represents a model for future dredging cruises and descriptive reports and, therefore, was prepared first (in May 1981). Volume II fills the gap and includes the years 1966 through 1986.

TABLE 1

CRUISE INDEX OF DESCRIPTIONS OF W.H.O.I. ROCK DREDGE

SAMPLES, VOLUMES I-IV

<u>Cruise No.</u>	<u>General Location</u>	<u>Date</u>	
<u>VOLUME I</u>			
<u>ATLANTIS</u>			
260	Hydrographer Canyon	Oct.	'60
266	Blake Plateau	June	'61
280	New England Seamounts	June	'62
281	New England Seamounts	June	'62
296	New England Seamounts	Aug	'63
<u>ATLANTIS II</u>			
1	Continental Slope off New York	Feb.	'63
11	Puerto Rico Trench	July	'64
13	Mid-Atlantic Ridge	Sept.	'64
15	Bitter Lakes Regions-Suez Canal/Continental Slope of Ethiopia	Feb.-Mar.	'65
42	Mid-Atlantic Ridge	July	'68
73	Mid-Atlantic Ridge	Nov.	'72
86	Continental Rise off Atlantis Canyon	Mar.	'75
92	Median Valley, Mid-Atlantic Ridge	Sept.	'75
Leg 6 93	Indian Ocean Triple Junction/Banda Sea	Feb., Oct	'76
96	Kane Fracture Zone	Nov.	'77
<u>CHAIN</u>			
7	New England Seamounts	May	'59
9	Plantagenet Bank (S. of Bermuda)	Oct.	'59
11	Caribbean Sea	Feb.	'60
13	Rockall Bank/Continental Slope of England	Sept.	'60
19	Puerto Rico Trench	June	'61
21	New England Seamounts/Mid-Atlantic Ridge	Aug.	'61
34	Puerto Rico Trench	Dec.	'62
36	Barracuda Fault	June	'63
39	Abyssal Hills S. E. of Bermuda	Sept.	'63
43	Seychelles (Indian Ocean)/Mid-Atlantic Ridge	May, Aug.	'64
46	Mona Canyon/Blake Plateau	Feb.	'65
52	Blake Plateau	Sept.	'65
57	Puerto Rico Trench	April	'66
58	Bermuda Rise	May	'66
61	Mediterranean/Red Seas	Aug.	'66
75	Caribbean-Aves Ridge, Mid-Atlantic Ridge	Oct.	'67

<u>Cruise No.</u>	<u>General Location</u>	<u>Date</u>	
<u>VOLUME I (Cont'd)</u>			
<u>CHAIN</u> (Cont'd)			
82	Mid-Atlantic Ridge	Aug.	'68
100	Samoa Passage, Ninety East Ridge, Slope off Australia	Apr., Sept.	'71
115	Bouvet Triple Junction	Feb.	'74
119	Eastern Mediterranean Sea	Apr.	'75
<u>GOSNOLD</u>			
73	Blake Plateau	July	'65
97	Off Jamaica	Mar.	'67
<u>KNORR</u>			
42	Mid-Atlantic Ridge	Aug.	'74
54	Cayman Trough	Dec.	'76
<u>VOLUME II</u>			
<u>ATLANTIS II</u>			
32	Mid-Atlantic Ridge 42° - 43°N	July	'67
42	Romanche Fracture Zone	June	'68
59	Mid-Atlantic Ridge	Dec.	'70
60	Romanche Fracture Zone	June	'71
78	Mid-Atlantic Ridge, Kane Fracture Zone	Oct.	'73
85	New England Seamounts	Sept.	'74
Leg 2 93	Walvis Ridge	Nov.	'75
<u>CHAIN</u>			
35	St. Paul's Rocks	Mar.	'63
44	Mid-Atlantic Ridge, 22°N	Oct.	'64
105	King's Trough	July	'72
<u>GILLIS</u>			
103	Mid-Atlantic Ridge	Aug.	'78
107	Tamayo Fracture Zone	Oct.	'79
<u>ISLAS ORCADAS</u>			
11/76	Far South Atlantic	Nov.	'76

TABLE 1 (Cont'd)

<u>Cruise No.</u>	<u>General Location</u>	<u>Date</u>
<u>VOLUME II</u> (Cont'd)		
<u>KNORR</u>		
61	New England Seamounts	Nov. '76
<u>OCEANUS</u>		
23	Cayman Trough	Apr. '77
<u>RESEARCHER</u>		
(Tag)	Mid-Atlantic Ridge	July '82

VOLUME III

ATLANTIS II

107-6	Deep South Atlantic	Mar., Apr. '80
107-7	Deep South Atlantic	May '80

GILLIS

104	Kane Fracture Zone	Sept. '78
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KNORR

79	Kane Fracture Zone	June '80
----	--------------------	----------

VULCAN

5	Far South Atlantic	Dec '80
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VOLUME IV

ALVIN

338	Cashes Ledge	July - Sept. '71
340	Sigsbee Knoll	
342	Harry Black Knoll	
349	Parkers Ridge	
371 - 374	Avtec Range	Nov. '71
410 - 415	Hudson Canyon	June '72
419 - 423	Gulf of Maine	July '72
427 - 447	Cashes Ledge	July '72
500 - 504	Tongue of the Ocean	Jan. - Feb. '74
518 - 534	FAMOUS Area	June - Aug. '74
537	Corner Rise	Aug. '74

TABLE 1 (Cont'd)

Cruise No.

General Location

Date

VOLUME IV (Cont'd)

ALVIN (Cont'd)

538 - 543	New England Seamounts	Aug - Sept.	'74
611 - 625	Cayman Trough	Jan - Feb	'76
660	Alvin Site D - Continental Rise	June	'76
737 - 742	Cayman Trough	Apr.	'77
818 - 832	Mid-Atlantic Ridge	Aug.	'78
889 - 895	Galapagos Rift	Feb.	'79
978 - 982	E. Pacific Rise	Nov.	'79
1008 - 1015	Kane Fracture Zone	June	'80
1054 - 1063	Blake Spur	Oct	'80
1148 - 1159	E. Pacific Rise 21° N	Nov.	'81
1240 - 1247	Kane Fracture Zone	July	'82

B. Archiving Procedures

The standard format for archiving W.H.O.I. rock dredge/dive samples is as follows: Each rock (and slabs derived from it) is labelled with the ship/submarine symbol, cruise/dive number, and station number of the dredge haul or dive station, followed by a unique number for every rock within the station. For example, ALV 742-3-2 refers to rock 2 from station 3 of dive Alvin 742. In the case of dredges, some samples are also labelled with their respective dredge numbers as well as with the information previously described. Thus AII 32-1-2-5 refers to rock number 5 from station number 1, dredge number 2 of cruise Atlantis II 32. The assignment of identification numbers for individual rocks from a given station was done on a random basis. Therefore, rocks numbered in order do not necessarily possess similar lithologies.

In describing a group of samples, all specimens of reasonable size were sorted, and many were slabbed to obtain a fresh surface for description. If the haul was very large and homogeneous, a representative suite of rocks was selected and described. All rock samples from this collection should be referenced in the literature by their Woods Hole identification number.

As a rule, the station positions listed in this report approximate the beginning of the station or the best estimate between several fixes of the sub or dredge location during the station. The quality of these fixes vary with the accuracy and precision in ship positioning capabilities. In recent years, the end depth or fix for dredges has been taken when the dredge leaves the sea floor, not where it actually arrives on deck. All depths included in this volume are given in corrected meters. More detailed navigation information such as additional fixes or length of wire-out during dredge stations is available from the curator's office. Detailed sampling records (including names of investigators, proposed analyses, and copies of published papers) are also kept at the curator's office.

C. Digitization of Dredge Sample Data

All logistical information about geological samples in the W.H.O.I. Sea Floor Samples collection is stored on disc and is accessible through a rapid retrieval computer program. This data can also be obtained through the NGDC by writing to the following address or by calling them directly:

NGDC - National Geophysical Data Center
NOAA Code E/GC3
325 Broadway
Boulder, CO 80303

Commercial Tel. (303) 497-6338
F.T.S. Tel 320-6338
Telex 45897 with answer back of SOLTERWARN BDR

These samples can be sorted and retrieved through a number of parameters such as Marsden Square, water depth interval, sampling device, lithology, physiographic province, as well as simply by cruise/dive number. A semi-coded listing of all the dredge/dive stations in the W.H.O.I. collection as of 1986, sorted by Marsden Square, is included in Table 3. In addition, Table 1 is an index of the cruises including dates and geographic areas which can be found in Volumes I-IV (Description of W.H.O.I. Rock Dredge Samples).

The following summary explains the coded terms used in the computer listings of samples in this report.

Ship Codes

ATL	-	Atlantis
AII	-	Atlantis II
ALV	-	DSV Alvin
CHN	-	Chain
GOS	-	Gosnold
GIL	-	Gillis
ISO	-	Islas Orcadas
KNR	-	Knorr
MEL	-	Melville - Vulcan Expedition
OCE	-	Oceanus
RES	-	Researcher

Sample Recovery Devices:

07	-	Pipe Dredge
08	-	Chain Bag Dredge
09	-	Anchor Dredge
10	-	Pipe Dredge, 3 in.
11	-	Pebble Dredge
12	-	Pierce Dredge
24	-	Alvin Manipulator

Fix Types:

Types of navigational equipment used to determine the sample location are as follows:

- 00 - Unspecified - (Comment in REMARKS or on COMMENT CARD)
- 01 - Dead Reckoning
- 02 - Visual Bearing
- 03 - Radar Fix
- 04 - Celestial
- 05 - Loran A
- 06 - Loran C
- 07 - VLF
- 08 - Omega
- 09 - Satellite
- 10 - Radar Transponder Buoy
- 11 - Bottom Transponder
- 12 - Final Navigation File *

* Satellite fixes updated by continuous monitoring of ship's speed and heading via gravity acquisition system.

Sample Weight (Recovery)

These are always quoted in kilograms unless the code specifically includes a G for grams (i.e. 010G = 10 grams).

Physiographic Province

A general physiographic location has been assigned to each of the samples listed, and can be decoded as follows:

- 01 - Insular Shelf
- 02 - Continental Shelf (along continental margin)
- 03 - Insular Slope
- 04 - Continental Slope
- 05 - Insular Rise
- 06 - Continental Rise
- 07 - Marginal Plateau or Borderland, deeper than 100 fms (e.g. Blake Plateau)
- 08 - unspecified
- 09 - Archipelagic Apron
- 10 - Abyssal Plain
- 11 - Abyssal Hills
- 12 - Seamount or Seamount Province
- 13 - Aseismic Oceanic Rise or Ridge (e.g., Rio Grande Rise, Walvis Ridge)

- 14 - Ridge Crest
- 15 - Ridge Flank
- 16 - Axial Valley
- 17 - Trench - Insular
- 18 - Trench - Continental Margin
- 19 - Fracture Zone
- 20 - Marginal Sea (e.g., Sea of Okhotsk, North Sea)
- 21 - Small Ocean Basin (e.g., Red Sea, Caribbean Sea)
- 22 - Inland Fresh Water Lake (e.g. African Lakes)
- 23 - Harbor, Shallow Bay (e.g., Buzzards Bay)
- 24 - Delta or Cone (e.g., Amazon Cone)
- 25 - Submarine Canyon (e.g., Hudson Canyon)
- 26 - Mid-Ocean Canyon or Channel (e.g. Maury Channel, N. Atlantic Mid-Ocean Canyon)
- 99 - Unspecified: (Comments in REMARKS or on a COMMENT CARD)

Rock Types and Vita Code

These columns have not been coded as they are undergoing some revision in order to be more descriptive of rock samples.

D. Sample Distribution Policy

The W.H.O.I. Sea Floor Samples Laboratory is prepared to furnish samples and data to interested researchers and students within the scientific community who express a legitimate interest and need.

Requests for samples may be sent to the Geological Sample Curator's Office, McLean Laboratory, W.H.O.I., Woods Hole, MA. 02543. These should include a summary of the intended research and the laboratory facilities available. Requests will be reviewed by the Principal Investigator responsible for collecting the samples, and may be approved if the proposed studies are not in conflict with concurrent laboratory studies. The Principal Investigator will retain authority to approve sample requests until expiration of the relevant research grant or until two years from the date of termination of the cruise. Following the period of proprietary access, sample requests will be approved by the Curator's office in consultation with the appropriate staff scientists.

Persons obtaining samples will also be given a statement explaining the "Responsibilities of Persons Receiving Samples" (Part E). Further documentation regarding this distribution policy may be found in W.H.O.I. Institutional Memorandum #3-75 ("Distribution Policy for Geological Samples").

E. Responsibilities of Persons Receiving Samples.

1. The original alpha-numeric samples label should be used in published papers, or any departure from this scheme should be clearly equated with the original labeling system in published papers or data summaries. This labeling system will be explained in the information supplied with the samples.
2. Published papers should acknowledge the source of samples and the appropriate grant or funding agency which supported the cruise recovering the samples. This information will be supplied at the time the samples are sent. These papers should also acknowledge the financial support responsible for maintaining the Woods Hole geological samples (NSF Grant OCE88-00693).
3. Copies of all published papers, reports or data summaries utilizing Woods Hole samples should be sent to the appropriate W.H.O.I. staff scientist and the W.H.O.I. curator.
4. The researcher should return all unused samples or portions of samples to the curator at the completion of his work.
5. Recipients of samples should not co-opt the services of other investigators or undertake research projects which differ substantially from work originally proposed, without obtaining the approval of the curator and the appropriate staff scientist.

ACKNOWLEDGEMENTS

The editors of this report would like to recognize all those persons contributing to the rock descriptions provided herein. We also wish to thank other members of the W.H.O.I. Curatorial Staff for their persistence in carrying out routine archival procedures which maintain the high quality of this collection. May Reed and Kaye Brown did a great job producing the complex forms. Support for the preparation of this report was provided by a grant to the Woods Hole Oceanographic Institution, Sea Floor Samples Laboratory (National Science Foundation Grant No. OCE88-00693). The petrologists on the staff at Woods Hole have been of continuing assistance to us in providing logistical and descriptive information from their respective shipboard programs, and in implementing an effective sample distribution policy.

TABLE 2

NOTES ON DETAILED ROCK DESCRIPTIONS

<u>Lithology:</u>	Rock name; i.e. Basalt, Gabbro, Greenstone, etc.
<u>Wt.:</u>	Weight in kilograms
<u>G. S.:</u>	Grain size: G = glassy A = aphanitic; individual grains not visible to the naked eye F = fine; <1mm M = medium; 1 to 5 mm C = coarse; >5 mm
<u>Mineralogy:</u>	Phases present in groundmass if apparent in hand specimen
<u>Phenocrysts:</u>	Type and estimated amount in %; use abbreviations: Pg - Plagioclase, Px - Pyroxene, Amph - Amphibole, Mt - Magnetite, Py - Pyrite, Ol - Olivine, Il - Ilmenite, Ep - Epidote, Pr - Prehnite, Mi - Mica, Hb or Hnbl - Hornblende, Fs -Feldspar, etc.
<u>Ve:</u>	Vesicles - give an estimate of the percent in the rock
<u>Am:</u>	Amygdules - filled vugs or vesicles; estimate abundance T = trace S = scattered C = common A = abundant
<u>Mn:</u>	Manganese coating - give thickness (in mm)
<u>We:</u>	Weathering: F - Fresh, no discoloration L - Light, discolored at edges M - Moderately discolored H - Heavy, clayey VH - Very Heavy, disaggregating
<u>Alteration:</u>	Metamorphism - facies and degrees i.e. Ze - Zeolite (prehnite - pumpellyite) Gr - Greenschist Amph - Amphibolite Gran - Granulite
<u>Remarks:</u>	Note if glass is present, indicate visible structures (internal or external), and describe distinct morphologies. for Example: "pillow rind fragments."

TABLE 3

COMPUTER LISTING OF DSV ALVIN ROCK SAMPLE STATIONS
ARRANGED BY MARSDEN SQUARES

MARSDEN SQUARE # 77

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YR	MODA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
ALV	0	0	1015	0000	24	80	6 9	23 31.0'N	45 58.0'W	11	77.35	0000	4012.	0.	0004	19		
ALV	0	0	1240	0000	24	82	714	26 8.0'N	44 47.0'W	11	77.64	0000	3122.	0.	0004	19		
ALV	0	0	1242	0000	24	82	715	26 8.0'N	44 47.0'W	11	77.64	0000	3216.	0.	0006	19		
ALV	0	0	1243	0000	24	82	717	26 8.0'N	44 47.0'W	11	77.64	0000	3084.	0.	0005	19		
ALV	0	0	1245	0000	24	82	719	26 8.0'N	44 47.0'W	11	77.64	0000	2661.	0.	0008	19		
ALV	0	0	1246	0000	24	82	7 2	26 8.0'N	44 47.0'W	11	77.64	0000	2674.	0.	0013	19		
ALV	0	0	1247	0000	24	82	721	26 8.0'N	44 47.0'W	11	77.64	0000	3004.	0.	0003	19		

MARSDEN SQUARE # 79

ALV	0	0	0500	0000	24	74	131	24	58.8'N	77	43.3'W	11	79.47	0000	2500.	0.	001K	26	
ALV	0	0	0502	0000	24	74	2	24	58.5'N	77	42.2'W	11	79.47	0000	2220.	0.	001K	26	
ALV	0	0	0503	0000	24	74	2	3	24	58.9'N	77	43.0'W	11	79.47	0000	2200.	0.	001K	26
ALV	0	0	0504	0000	24	72	2	4	24	58.5'N	77	43.3'W	11	79.47	0000	2350.	0.	001K	26

MARSDEN SQUARE # 80

ALV	0	0	0371	0000	24	711112	24	56.9'N	77	39.2'W	11	80.47	0000	1770.	0.	001K	3
ALV	0	0	0374	0000	24	711116	25	0.2'N	77	35.5'W	11	80.57	0000	1536.	0.	001K	3
ALV	0	0	1061	0000	24	801029	28	23.0'N	76	41.0'W	11	80.86	0000	4000.	0.	0014	13
ALV	0	0	1062	0000	24	801030	28	23.0'N	76	41.0'W	11	80.86	0000	3137.	0.	0008	13
ALV	0	0	1063	0000	24	801031	28	23.0'N	76	41.0'W	11	80.86	0000	2282.	0.	0012	13
ALV	0	0	1058	0000	24	801025	29	2.0'N	76	43.0'W	11	80.96	0000	4000.	0.	0001	13
ALV	0	0	1059	0000	24	801027	29	2.0'N	76	43.0'W	11	80.96	0000	3728.	0.	0010	13
ALV	0	0	1060	0000	24	801028	29	2.0'N	76	43.0'W	11	80.96	0000	3038.	0.	0009	13

MARSDEN SQUARE # 83

ALV	0	0	0978	0000	24	7911	2	20	50.0'N	109	6.0'W	11	83.09	0000	2622.	0.	0019	6
ALV	0	0	0979	0000	24	7911	3	30	50.0'N	109	6.0'W	11	83.09	0000	2627.	0.	0003	6
ALV	0	0	0980	0000	24	7911	4	20	50.0'N	109	6.0'W	11	83.09	0000	2630.	0.	0001	6
ALV	0	0	0981	0000	24	7911	5	20	50.0'N	109	6.0'W	11	83.09	0000	2615.	0.	0019	6
ALV	0	0	0982	0000	24	7911	6	20	50.1'N	109	6.0'W	11	83.09	0000	2615.	0.	0027	6
ALV	0	0	1148	0000	24	811111	20	51.0'N	109	4.0'W	11	83.09	0000	2611.	0.	0027	6	
ALV	0	0	1149	0000	24	811112	20	51.0'N	109	4.0'W	11	83.09	0000	2616.	0.	0024	6	
ALV	0	0	1150	0000	24	811113	20	51.0'N	109	4.0'W	11	83.09	0000	2617.	0.	0002	6	
ALV	0	0	1152	0000	24	811115	20	51.0'N	109	4.0'W	11	83.09	0000	2597.	0.	0002	6	
ALV	0	0	1154	0000	24	811117	20	51.0'N	109	4.0'W	11	83.09	0000	2596.	0.	0001	6	
ALV	0	0	1155	0000	24	811118	20	51.0'N	109	4.0'W	11	83.09	0000	2595.	0.	0001	6	
ALV	0	0	1156	0000	24	811119	20	51.0'N	109	4.0'W	11	83.09	0000	2597.	0.	0002	6	
ALV	0	0	1157	0000	24	811120	20	51.0'N	109	4.0'W	11	83.09	0000	2617.	0.	0003	6	
ALV	0	0	1158	0000	24	811121	20	51.0'N	109	4.0'W	11	83.09	0000	2606.	0.	0003	6	
ALV	0	0	1159	0000	24	811123	20	51.0'N	109	4.0'W	11	83.09	0000	2616.	0.	0009	6	

MARSDEN SQUARE #112

SHIP	CRUISE	LEG	STATION	SAMPLE	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN	CORE OR DREDGE	DEPTH	CORE LENGTH OR END	DREDGE OR SAMPLE WEIGHT	ROCK OR PHYSIO- GRAPHIC PROV.	SED. TYPE	VITA CODE
ALV	0	0	0819	0000	24	78 731	36 51.0'N	31 19.0'W	11	112.61	0000	1563.	0.	0011		14	
ALV	0	0	0823	0000	24	78 813	36 49.0'N	32 58.0'W	11	112.62	0000	1603.	0.	0005		14	
ALV	0	0	0828	0000	24	78 819	36 27.0'N	32 42.0'W	11	112.62	0000	2542.	0.	0010		14	
ALV	0	0	0518	0000	24	74 630	36 49.1'N	33 15.3'W	11	112.63	0000	2690.	0.	013K		16	
ALV	0	0	0519	0000	24	74 7 1	36 49.1'N	33 15.7'W	11	112.63	0000	2705.	0.	008K		16	
ALV	0	0	0520	0000	24	74 7 2	36 49.0'N	33 15.8'W	11	112.63	0000	2689.	0.	003K		16	
ALV	0	0	0521	0000	24	74 7 3	36 49.2'N	33 16.3'W	11	112.63	0000	2603.	0.	004K		16	
ALV	0	0	0522	0000	24	74 7 4	36 48.7'N	33 15.9'W	11	112.63	0000	2669.	0.	003K		16	
ALV	0	0	0523	0000	24	74 7 5	36 49.6'N	33 15.1'W	11	112.63	0000	2726.	0.	001K		16	
ALV	0	0	0524	0000	24	74 715	36 49.2'N	33 16.7'W	11	112.63	0000	2449.	0.	005K		16	
ALV	0	0	0525	0000	24	74 716	36 48.7'N	33 16.4'W	11	112.63	0000	2715.	0.	014K		16	
ALV	0	0	0526	0000	24	74 717	36 49.1'N	33 15.2'W	11	112.63	0000	2694.	0.	007K		16	
ALV	0	0	0527	0000	24	74 718	36 48.5'N	33 15.6'W	11	112.63	0000	2707.	0.	003K		16	
ALV	0	0	0528	0000	24	74 719	36 48.7'N	33 15.9'W	11	112.63	0000	2680.	0.	004K		16	
ALV	0	0	0529	0000	24	74 720	36 49.1'N	33 15.9'W	11	112.63	0000	2705.	0.	005K		16	
ALV	0	0	0530	0000	24	74 721	36 48.3'N	33 16.1'W	11	112.63	0000	2663.	0.	003K		16	
ALV	0	0	0532	0000	24	74 8 3	36 36.7'N	33 28.0'W	11	112.63	0000	2288.	0.	005K		16	
ALV	0	0	0533	0000	24	74 8 4	36 26.8'N	33 28.5'W	11	112.63	0000	2288.	0.	005K		16	
ALV	0	0	0534	0000	24	74 8 5	36 47.8'N	33 15.9'W	11	112.63	0000	2643.	0.	004K		16	
ALV	0	0	0818	0000	24	78 730	36 51.0'N	33 29.0'W	11	112.63	0000	2650.	0.	0010		14	
ALV	0	0	0820	0000	24	78 8 1	36 52.4'N	33 22.8'W	11	112.63	0000	2586.	0.	0006		14	
ALV	0	0	0821	0000	24	78 8 2	36 45.9'N	33 16.9'W	11	112.63	0000	2558.	0.	0006		14	
ALV	0	0	0822	0000	24	78 8 3	36 44.5'N	33 20.0'W	11	112.63	0000	2422.	0.	0010		14	
ALV	0	0	0824	0000	24	78 814	36 45.2'N	33 16.9'W	11	112.63	0000	2546.	0.	0002		14	
ALV	0	0	0825	0000	24	78 815	36 36.5'N	33 46.9'W	11	112.63	0000	2612.	0.	0002		14	
ALV	0	0	0826	0000	24	78 817	36 28.6'N	33 41.1'W	11	112.63	0000	2536.	0.	0001		14	
ALV	0	0	0827	0000	24	78 818	36 27.0'N	33 37.0'W	11	112.63	0000	2500.	0.	0010		14	
ALV	0	0	0829	0000	24	78 820	36 25.9'N	33 38.5'W	11	112.63	0000	2670.	0.	0011		14	
ALV	0	0	0830	0000	24	78 823	36 44.0'N	33 19.5'W	11	112.63	0000	2582.	0.	0005		14	
ALV	0	0	0831	0000	24	78 825	36 26.0'N	33 39.7'W	11	112.63	0000	2667.	0.	0017		14	
ALV	0	0	0832	0000	24	78 826	36 47.9'N	33 20.3'W	11	112.63	0000	2650.	0.	0003		14	

MARSDEN SQUARE #114

ALV	0	0	0538	0000	24	74 824	34 45.9'N	54 5.5'W	11	114.44	0000	2597.	0.	004K		12	
ALV	0	0	0539	0000	24	74 825	35 36.4'N	58 47.1'W	11	114.58	0000	2665.	0.	004K		12	
ALV	0	0	0540	0000	24	74 827	37 26.4'N	58 47.1'W	11	114.79	0000	2988.	0.	004K		12	

MARSDEN SQUARE #115

ALV	0	0	0541	0000	24	74 828	38 8.0'N	61 0.0'W	11	115.86	0000	2169.	0.	004K		12	
ALV	0	0	0542	0000	24	74 830	39 23.9'N	65 27.1'W	11	115.95	0000	2821.	0.	011K		12	
ALV	0	0	0543	0000	24	74 9 1	39 24.4'N	67 98.2'W	11	115.97	0000	3041.	0.	011K		12	

MARSDEN SQUARE #116

ALV	0	0	1054	0000	24	801020	30 12.0'N	76 6.0'W	11	116.06	0000	3900.	0.	0002		13	
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MARSDEN SQUARE #116

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
ALV	0	0	1055	0000	24	801021	30 12.0'N	76 6.0'W	11	116.06	0000	3792.	0.	0005	13		
ALV	0	0	1056	0000	24	801022	30 12.0'N	76 6.0'W	11	116.06	0000	3313.	0.	0001	13		
ALV	0	0	1057	0000	24	801023	30 12.0'N	76 6.0'W	11	116.06	0000	4000.	0.	0004	13		
ALV	0	0	0410	0000	24	72 625	39 31.0'N	72 21.0'W	11	116.97	0000	598.	0.	001K	26		
ALV	0	0	0415	0000	24	72 629	39 25.0'N	72 9.5'W	11	116.97	0000	1248.	0.	003K	26		

MARSDEN SQUARE #132

ALV	0	0	0537	0000	24	74 821	35 9.3'N	48 10.3'W	11	132.58	0000	2002.	0.	007K	15		
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MARSDEN SQUARE #151

ALV	0	0	0338	0000	24	71 718	42 51.0'N	68 52.0'W	11	151.28	0000	108.	0.	001K	6		
ALV	0	0	0349	0000	24	71 9 5	42 39.3'N	68 50.5'W	11	151.28	0000	115.	0.	002K	15		
ALV	0	0	0431	0000	24	72 727	42 46.0'N	68 54.0'W	11	151.28	0000	88.	0.	007K	15		
ALV	0	0	0445	0000	24	72 827	42 50.0'N	68 55.0'W	11	151.28	0000	122.	0.	018K	15		
ALV	0	0	0430	0000	24	72 725	43 1.0'N	68 59.0'W	11	151.38	0000	119.	0.	006K	15		
ALV	0	0	0340	0000	24	71 720	43 1.0'N	69 6.0'W	11	151.39	0000	74.	0.	003K	12		
ALV	0	0	0342	0000	24	71 722	43 4.0'N	69 15.0'W	11	151.39	0000	139.	0.	005K	12		
ALV	0	0	0419	0000	24	72 7 9	43 9.5'N	69 22.5'W	11	151.39	0000	130.	0.	003K	15		
ALV	0	0	0421	0000	24	72 711	43 11.0'N	69 21.0'W	11	151.39	0000	159.	0.	009K	15		
ALV	0	0	0423	0000	24	72 714	43 13.0'N	69 20.0'W	11	151.39	0000	136.	0.	005K	15		
ALV	0	0	0427	0000	24	72 722	43 23.0'N	69 10.0'W	11	151.39	0000	93.	0.	002K	2		
ALV	0	0	0429	0000	24	72 724	43 2.0'N	68 54.0'W	11	151.39	0000	124.	0.	005K	15		

TABLE 4

COMPUTER LISTING OF W.H.O.I. DREDGES
ARRANGED BY MARSDEN SQUARES

STATION DATA RETRIEVAL FILE

- 29 -

MARS DEN SQUARE # 3													
SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMDA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	ROCK OR PHYSIO-GRAPHIC SED. VITA TYPE CODE
AIH 20		2	0045	0000	8	66 324	1	0.2'N	29 26.6'W	2	3.19 0045	3380. 2560.	99 0000 0
AIH 20		2	0046	0000	8	66 324	1	2.7'N	29 21.9'W	2	3.19 0046	3490. 2620.	99 0000 0
MARS DEN SQUARE # 4													
AIH 20		2	0032	0000	8	66 320	0	49.5'N	30 7.0'W	9	4.00 0032	3570. 2455.	99 0000 0
AIH 20		2	0033	0000	8	66 320	0	54.0'N	30 6.5'W	9	4.00 0033	2720. 2300.	99 0000 0
AIH 20		2	0034	0000	8	66 321	0	55.0'N	30 17.0'W	9	4.00 0034	2815. 2470.	99 0000 0
CHN 35		2	0001	0000	8	63 3 5	0	33.0'N	32 47.0'W	1	4.02 0001	4291. 4291.	0000 0
CHN 35		2	0002	0000	8	63 3 5	0	34.0'N	32 55.0'W	1	4.02 0002	3929. 3929.	4.8K 15 0000 0
CHN 35		2	0019	0000	7	63 319	0	44.0'N	34 47.0'W	1	4.04 0019	4072. 4072.	037K 6 0000 0
MARS DEN SQUARE # 5													
CHN 35		3	0020	0000	12	63 4 0	7	33.0'N	44 59.0'W	1	5.74 0020	4663. 4663.	6 0000 0
AIH 20		3	0058	0000	8	66 419	9	36.0'N	40 35.5'W	9	5.90 0058	3340. 2475.	19 0000 0
MARS DEN SQUARE # 6													
CHN 35		3	0021	0000	12	63 4 0	5	33.0'N	51 21.0'W	1	6.51 0021	91. 91.	001K 2 0000 0
CHN 35		3	0022	0000	12	63 4 0	5	28.0'N	51 38.0'W	1	6.51 0022	72. 72.	0000 2 0000 0
CHN 35		3	0023	0000	12	63 4 0	5	32.2'N	51 33.0'W	1	6.51 0023	62. 62.	0000 2 0000 0
CHN 35		3	0024	0000	12	63 4 0	5	31.0'N	52 7.0'W	1	6.52 0024	57. 57.	004K 2 0000 0
CHN 35		3	0025	0000	12	63 4 0	5	28.0'N	52 19.0'W	1	6.52 0025	41. 41.	0000 2 0000 0
CHN 35		3	0026	0000	12	63 4 0	5	39.0'N	52 39.0'W	1	6.52 0026	38. 38.	0000 2 0000 0
CHN 35		3	0027	0000	12	63 4 0	6	6.0'N	55 12.5'W	1	6.55 0027	26. 26.	0000 2 0000 0
CHN 35		3	0030	0000	12	63 4 0	6	41.0'N	54 52.5'W	1	6.64 0030	38. 38.	0000 2 0000 0
CHN 35		3	0031	0000	12	63 4 0	6	52.0'N	54 46.0'W	1	6.64 0031	53. 53.	0000 2 0000 0
CHN 35		3	0028	0000	12	63 4 0	6	20.0'N	55 4.0'W	1	6.65 0028	20. 20.	0000 2 0000 0
CHN 35		3	0032	0000	12	63 4 0	7	4.0'N	54 39.0'W	1	6.74 0032	70. 70.	0000 2 0000 0
MARS DEN SQUARE # 31													
CHN 43		1	0008	0000	8	64 4 4	5	35.5'N	54 3.0'E	1	31.54 0004	4711. 3285.	5.4K 19 0000 0
AIH 15		4	0556	0000	10	65 228	9	0.0'N	51 5.0'E	9	31.91 0556	977. 0.	0 113G 4 0000 0
AIH 15		4	0557	0000	10	65 3 1	9	0.0'N	51 25.0'E	9	31.91 0557	2580. 0.	0 456G 4 0000 0
MARS DEN SQUARE # 41													
AIH 20		3	0059	0000	8	66 422	10	41.0'N	42 32.0'W	9	41.02 0059	4910. 4140.	19 0000 0
AIH 20		1	0001	0000	8	66 216	10	51.0'N	43 41.0'W	1	41.03 0001	5100. 3375.	19 0000 0
AIH 20		1	0007	0000	8	66 218	10	35.0'N	43 34.0'W	1	41.03 0007	3000. 2270.	19 0000 0
AIH 20		1	0009	0000	8	66 220	10	45.0'N	43 18.0'W	1	41.03 0009	4990. 3490.	19 0000 0
AIH 20		1	0003	0000	8	66 216	11	5.0'N	43 42.0'W	1	41.13 0003	4750. 3420.	19 0000 0
AIH 20		1	0004	0000	8	66 217	11	16.0'N	43 45.0'W	1	41.13 0004	4365. 3950.	19 0000 0

MARSDEN SQUARE # 41

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AII 20		1	0005	0000	8	66 218	11 15.0'N	43 47.0'W	1	41.13	0005	3605.	3035.		19	0000	0
AII 20		1	0006	0000	8	66 218	11 19.0'N	43 41.0'W	1	41.13	0006	4460.	3095.		19	0000	0
AII 20		1	0008	0000	8	66 219	11 0.0'N	44 5.0'W	1	41.14	0008	4790.	3910.		19	0000	0
CHN 75		2	0021	0000	8	671121	12 50.3'N	44 42.2'W	10	41.24	0003	2126.	1585.	8.8K	14	0000	0
CHN 75		2	0022	0000	8	671121	12 52.7'N	44 50.9'W	10	41.24	0004	4630.	4438.	340G	16	0000	0
CHN 75		2	0027	0000	8	671122	12 58.0'N	44 41.1'W	10	41.24	0009	3256.	3049.	454G	14	0000	0
CHN 75		2	0026	0000	8	671122	12 55.8'N	44 59.8'W	10	41.25	0008	2784.	2841.	009K	14	0000	0
CHN 75		2	0023	0000	8	671121	12 58.4'N	44 51.3'W	10	41.34	0005	4581.	4515.	227G	16	0000	0
CHN 75		2	0025	0000	8	671122	12 58.8'N	44 58.5'W	10	41.34	0007	2333.	3162.	012K	14	0000	0
AII 42		1	0018	0000	8	68 713	19 27.8'N	46 5.6'W	3	41.96	0001	2861.	2861.	010K	16	0000	0
AII 42		1	0019	0000	8	68 713	19 32.3'N	46 6.1'W	1	41.96	0002	2278.	2278.	7.5K	16	0000	0

MARSDEN SQUARE # 42

CHN 36		1	0017	0000	8	63 630	16 43.0'N	58 6.0'W	1	42.68	0005	5065.	4274.	051K	17	0000	0
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MARSDEN SQUARE # 43

CHN 75		1	0005	0000	8	671030	14 42.5'N	63 36.5'W	4	43.43	0002	1239.	1454.	6.6K	13	0000	0
CHN 75		1	0003	0000	8	671029	15 29.0'N	64 5.0'W	4	43.53	0001	1086.	1215.	454G	13	0000	0
CHN 11		3	0038	0000	7	60 222	17 45.0'N	64 55.0'W	4	43.74	0038	755.	942.	2.1K	3	0000	0
CHN 46		1	0002	0000	8	65 222	18 49.9'N	67 19.3'W	5	43.87	0001	3572.	3288.	005K	25	0000	0
CHN 46		1	0003	0000	8	65 222	18 47.5'N	67 22.8'W	5	43.87	0002	4830.	4801.	004K	25	0000	0
CHN 46		1	0005	0000	8	65 223	18 49.2'N	67 28.6'W	5	43.87	0003	4318.	3723.	680G	25	0000	0
CHN 57		1	0027	0000	8	66 4 4	19 58.8'N	64 15.2'W	5	43.94	0002	6710.	6572.	227G	17	0000	0
AII 11		2	0026	0000	8	64 7 9	19 59.0'N	65 14.0'W	5	43.95	0005	7244.	7190.	027K	5	0000	0
AII 11		2	0028	0000	8	64 7 9	19 59.5'N	65 1.7'W	5	43.95	0006	7942.	7662.	5.9K	5	0000	0
AII 11		2	0032	0000	8	64 711	19 17.7'N	65 10.4'W	5	43.95	0010	7023.	6729.	030K	5	0000	0
AII 11		2	0033	0000	8	64 711	19 16.9'N	65 5.3'W	5	43.95	0011	6749.	6513.	007K	5	0000	0
AII 11		2	0034	0000	8	64 712	19 4.6'N	66 9.0'W	5	43.96	0012	4983.	4105.	2.9K	5	0000	0
CHN 19		1	0002	0000	8	61 628	19 58.4'N	66 25.2'W	5	43.96	0002	6987.	6594.	567G	17	0000	0
CHN 19		1	0003	0000	8	61 628	19 58.4'N	66 25.7'W	5	43.96	0003	6968.	6544.	020K	17	0000	0
CHN 34		1	0002	0000	8	6212 3	19 57.0'N	66 28.5'W	5	43.96	0002	7362.	7362.	001K	17	0000	0
CHN 57		1	0033	0000	8	66 4 7	19 47.8'N	67 8.7'W	5	43.97	0004	7912.	7667.	340G	17	0000	0
CHN 57		1	0034	0000	7	66 4 7	19 58.0'N	68 4.0'W	5	43.98	0003	5690.	5612.	004K	17	0000	0

MARSDEN SQUARE # 44

GOS 97		0	0006	0000	7	67 315	17 47.1'N	76 17.0'W	1	44.76	0006	738.	0.	450G	3	0000	0
GOS 97		0	0026	0000	7	67 317	17 43.0'N	76 54.0'W	1	44.76	0026	0.	0.	450G	1	0000	0
GOS 97		0	0038	0000	7	67 318	17 55.0'N	77 5.2'W	1	44.76	0038	460.	0.	790G	3	0000	0
GOS 97		0	0016	0000	7	67 316	17 51.6'N	77 4.5'W	1	44.77	0016	10.	0.	450G	1	0000	0
GOS 97		0	0018	0000	7	67 316	17 46.0'N	77 4.3'W	1	44.77	0018	20.	0.	500G	1	0000	0
GOS 97		0	0020	0000	7	67 316	17 36.8'N	77 4.0'W	1	44.77	0020	25.	0.	567G	1	0000	0
GOS 97		0	0021	0000	7	67 316	17 40.3'N	77 7.9'W	1	44.77	0021	0.	0.	254G	1	0000	0
GOS 97		0	0024	0000	7	67 317	17 38.1'N	76 50.1'W	1	44.77	0024	0.	0.	925G	1	0000	0
GOS 97		0	0047	0000	7	67 321	17 55.5'N	77 52.4'W	1	44.77	0047	0.	0.	001K	3	0000	0

MARSDEN SQUARE # 44

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
GOS 97	0	0048	0000	7	67 321	17 52.5'N	77 50.0'W	1	44.77	0048	0.	0.	1.6K	3	0000	0
GOS 97	0	0049	0000	7	67 321	17 52.1'N	77 48.1'W	1	44.77	0049	0.	0.	1.8K	3	0000	0
GOS 97	0	0050	0000	7	67 321	17 49.8'N	77 45.0'W	1	44.77	0050	0.	0.	900G	3	0000	0
GOS 97	0	0066	0000	7	67 322	17 50.0'N	77 39.8'W	1	44.77	0066	0.	0.	900G	3	0000	0
GOS 97	0	0030	0000	7	67 317	18 4.1'N	76 15.0'W	1	44.86	0030	698.	0.	908G	1	0000	0
GOS 97	0	0033	0000	7	67 317	18 1.7'N	76 16.1'W	1	44.86	0033	322.	0.	450G	3	0000	0
GOS 97	0	0042	0000	7	67 320	18 0.5'N	77 57.1'W	1	44.87	0042	18.	0.	340G	1	0000	0
GOS 97	0	0043	0000	7	67 321	18 0.6'N	77 58.0'W	1	44.87	0043	42.	0.	001K	1	0000	0
GOS 97	0	0044	0000	7	67 321	18 0.5'N	77 59.1'W	1	44.87	0044	597.	0.	675G	3	0000	0

MARSDEN SQUARE # 45

KNR 54	2	0042	0000	8	76 130	17 58.0'N	81 47.6'W	9	45.71	0020	4630.	4459.	195K	17	0000	0
KNR 54	2	0046	0000	8	76 131	17 59.8'N	81 45.5'W	9	45.71	0023	4623.	4397.	206K	17	0000	0
KNR 54	2	0054	0000	8	76 2 3	17 59.1'N	81 34.4'W	9	45.71	0029	2047.	1956.	002K	17	0000	0
OCE 23	1	0004	0000	8	77 4 9	17 56.5'N	81 45.0'W	1	45.71	0004	4846.	4943.	30K	16	0000	0
OCE 23	1	0005	0000	8	77 4 9	17 54.6'N	81 41.0'W	9	45.71	0005	5516.	4346.	39K	16	0000	0
OCE 23	1	0008	0000	8	77 410	17 51.0'N	81 52.0'W	1	45.71	0008	3268.	3268.	20K	16	0000	0
OCE 23	1	0009	0000	8	77 412	17 53.0'N	81 50.0'W	1	45.71	0016	4123.	3916.	15K	16	0000	0
OCE 23	2	0011	0000	8	76 115	18 2.6'N	81 43.1'W	9	45.81	0000	4795.	4824.	089K	17	0000	0
KNR 54	2	0012	0000	8	76 118	18 0.1'N	81 36.8'W	9	45.81	0003	2855.	2597.	042K	17	0000	0
KNR 54	2	0013	0000	8	76 119	18 3.6'N	81 37.3'W	9	45.81	0004	3484.	3728.	016K	17	0000	0
KNR 54	2	0014	0000	8	76 119	18 5.9'N	81 42.2'W	9	45.81	0005	4514.	4619.		17	0000	0
KNR 54	2	0023	0000	8	76 123	18 3.4'N	81 41.9'W	9	45.81	0006	4324.	4369.	1.8K	17	0000	0
KNR 54	2	0024	0000	8	76 123	18 7.0'N	81 47.8'W	9	45.81	0008	4892.	5103.	086K	17	0000	0
KNR 54	2	0026	0000	8	76 124	18 4.4'N	81 46.8'W	9	45.81	0009	5011.	5066.	061K	17	0000	0
KNR 54	2	0027	0000	8	76 124	18 1.2'N	81 48.6'W	9	45.81	0010	4401.	4459.	355K	17	0000	0
KNR 54	2	0029	0000	8	76 125	18 4.4'N	81 46.8'W	9	45.81	0012	4956.	4683.	084K	17	0000	0
KNR 54	2	0030	0000	8	76 125	18 3.6'N	81 46.8'W	9	45.81	0013	5411.	4892.	019K	17	0000	0
KNR 54	2	0033	0000	8	76 126	18 5.4'N	81 44.9'W	9	45.81	0014	4874.	4911.	026K	17	0000	0
KNR 54	2	0037	0000	8	76 128	18 5.8'N	81 42.6'W	9	45.81	0017	5157.	4403.	047K	17	0000	0
KNR 54	2	0039	0000	8	76 129	18 6.9'N	81 45.4'W	9	45.81	0018	5502.	5157.	034K	17	0000	0
KNR 54	2	0040	0000	8	76 129	18 1.6'N	81 46.3'W	9	45.81	0019	4828.	4892.	034K	17	0000	0
KNR 54	2	0044	0000	8	76 130	18 1.6'N	81 44.9'W	9	45.81	0022	4610.	4486.	136K	17	0000	0
KNR 54	2	0047	0000	8	76 131	18 6.0'N	81 47.6'W	9	45.81	0024	5075.	4499.	062K	17	0000	0
KNR 54	2	0048	0000	8	76 131	18 6.9'N	81 46.6'W	9	45.81	0025	5212.	4568.	022K	17	0000	0
KNR 54	2	0051	0000	8	76 2 2	18 7.3'N	81 43.0'W	9	45.81	0027	5684.	5575.	072K	17	0000	0
KNR 54	2	0052	0000	8	76 2 2	18 7.3'N	81 46.0'W	9	45.81	0028	5393.	5474.	007K	17	0000	0
KNR 54	2	0058	0000	8	76 2 3	18 7.6'N	81 43.8'W	9	45.81	0031	5329.	4965.	063K	17	0000	0
KNR 54	2	0062	0000	8	76 2 4	18 25.0'N	81 40.8'W	1	45.81	0033	5123.	3913.	048K	17	0000	0
KNR 54	2	0063	0000	8	76 210	18 38.7'N	81 12.6'W	9	45.81	0035	4118.	3438.	145K	17	0000	0
KNR 54	3	0067	0000	8	76 211	18 45.9'N	81 35.0'W	9	45.81	0037	5292.	4628.	4.3K	17	0000	0
KNR 54	3	0071	0000	8	76 212	18 56.6'N	81 31.3'W	9	45.81	0038	4701.	4568.	090K	17	0000	0
KNR 54	3	0073	0000	8	76 212	18 49.0'N	81 32.8'W	9	45.81	0039	5657.	3529.	036K	17	0000	0
KNR 54	3	0074	0000	8	76 216	18 37.0'N	81 44.0'W	1	45.81	0090	4755.	5283.	062K	17	0000	0
KNR 54	3	0090	0000	8	76 218	18 35.2'N	81 46.2'W	1	45.81	0043	5084.	5178.	072K	17	0000	0
KNR 54	3	0094	0000	8	76 218	18 35.2'N	81 46.2'W	1	45.81	0043	5084.	5178.	146K	17	0000	0

MARSDEN SQUARE # 45

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE-VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS-DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO-GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
KNR 54		3	0098	0000	8	76 219	18 25.9'N	81 41.2'W	9	45.81	0045	5084.	4373.	083K	17	0000	0
KNR 54		3	0102	0000	8	76 220	18 44.8'N	81 48.5'W	9	45.81	0046	6142.	6097.	2.4K	17	0000	0
KNR 54		3	0103	0000	8	76 220	18 37.6'N	81 44.8'W	9	45.81	0103	5176.	5100.	012K	17	0000	0
OCE 23		1	0001	0000	8	77 4 7	18 19.3'N	81 23.0'W	9	45.81	0001	4386.	4386.	30K	16	0000	0
OCE 23		1	0011	0000	8	77 411	18 10.7'N	81 46.0'W	9	45.81	0011	5640.	5420.	45K	16	0000	0
OCE 23		1	0012	0000	8	77 411	18 5.1'N	81 44.7'W	9	45.81	0012	5667.	5132.	50K	16	0000	0
OCE 23		1	0013	0000	8	77 412	18 10.4'N	81 37.2'W	9	45.81	0013	4495.	4495.	28K	16	0000	0
OCE 23		1	0014	0000	8	77 412	18 13.1'N	81 32.2'W	9	45.81	0014	3373.	3373.	20K	16	0000	0
OCE 23		1	0017	0000	8	77 413	18 16.9'N	81 51.3'W	9	45.81	0017	3989.	3445.	1K	16	0000	0
KNR 54		3	0091	0000	8	76 217	18 35.1'N	82 8.1'W	9	45.82	0042	4683.	4985.	075K	17	0000	0

MARSDEN SQUARE # 68

CHN 43		1	0070	0000	8	64 6 5	16 4.0'N	41 25.0'E	5	68.61	0025	1175.	1136.	707G	21	0000	0
CHN 43		1	0006	0000	8	64 326	17 38.0'N	40 8.0'E	5	68.70	0003	1378.	1194.	002G	16	0000	0
CHN 43		1	0073	0000	8	64 6 9	17 50.0'N	40 12.0'E	5	68.70	0028	1203.	1203.	227G	21	0000	0

MARSDEN SQUARE # 69

CHN 100		3	0006	0000	8	71 3 5	19 38.4'N	38 36.2'E	9	69.98	0001	1831.	1739.	227G	16	0000	0
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MARSDEN SQUARE # 75

CHN 21		1	0008	0000	8	61 9 8	29 49.0'N	28 40.0'W	1	75.98	0008	462.	462.	454G	12	0000	0
CHN 21		1	0010	0000	8	61 9 8	29 49.0'N	28 40.0'W	1	75.98	0010	349.	340.	113G	12	0000	0
CHN 21		1	0011	0000	8	61 9 8	29 49.0'N	28 40.0'W	1	75.98	0011	321.	317.	6.8K	12	0000	0
CHN 21		1	0013	0000	8	61 9 8	29 47.0'N	28 19.0'W	1	75.98	0013	589.	591.	3.6K	12	0000	0
CHN 21		1	0014	0000	8	61 9 8	29 47.0'N	28 20.0'W	1	75.98	0014	393.	358.	003K	12	0000	0
CHN 21		1	0015	0000	8	61 9 8	29 46.3'N	28 19.0'W	1	75.98	0015	871.	832.	3.3K	12	0000	0

MARSDEN SQUARE # 77

CHN 44		1	0002	0000	8	641014	22 38.0'N	44 58.0'W	1	77.24	0002	2440.	2100.	008K	15	0000	0
AII 78		2	0007	0000	8	731019	22 59.0'N	45 42.0'W	9	77.25	0007	3445.	3000.	016K	15	0000	0
AII 78		2	0008	0000	8	731019	22 58.0'N	45 51.0'W	9	77.25	0008	3570.	3200.	110K	15	0000	0
AII 78		2	0009	0000	8	731020	22 58.0'N	45 56.0'W	9	77.25	0009	3860.	2910.	023K	15	0000	0
CHN 44		1	0003	0000	8	641014	22 38.0'N	45 0.7'W	1	77.25	0003	3400.	2400.	111K	15	0000	0
CHN 44		1	0005	0000	8	641014	22 48.3'N	45 38.2'W	1	77.25	0005	3150.	3050.	011K	15	0000	0
CHN 44		1	0006	0000	7	641017	22 46.8'N	46 10.8'W	1	77.25	0006	4400.	4100.	010K	15	0000	0
CHN 44		1	0007	0000	7	641018	22 50.0'N	45 5.6'W	1	77.25	0007	3400.	3200.	010K	15	0000	0
CHN 44		1	0008	0000	7	641017	22 48.8'N	46 5.3'W	1	77.26	0007	4040.	3765.	001K	15	0000	0
CHN 44		1	0010	0000	7	641020	22 24.2'N	46 22.8'W	1	77.25	0010	3400.	3100.	010K	15	0000	0
CHN 44		3	0012	0000	8	771117	23 31.1'N	43 54.4'W	0	77.33	0012	4039.	3326.	088K	19	0000	0
AII 96		1	0019	0000	8	78 911	23 30.9'N	44 58.9'W	9	77.33	0019	4240.	3980.	245K	16	0000	0
GIL 104		1	0019	0000	8	78 911	23 30.9'N	44 58.9'W	9	77.33	0019	4240.	3980.	245K	16	0000	0
AII 78		2	0001	0000	8	731015	23 13.0'N	44 43.0'W	9	77.34	0001	3090.	2325.	027K	15	0000	0
AII 78		2	0002	0000	8	731015	23 14.0'N	44 42.0'W	9	77.34	0002	2965.	2360.	006K	15	0000	0

MARSDEN SQUARE # 77

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMODA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AI1 78	2	0003	0000	8	731015	23 13.0'N	44 55.0'W	9	77.34	0003	3990.	3380.	200K	15	0000	0	0
AI1 92	2	0030	0000	8	7510 6	23 2.4'N	44 53.4'W	12	77.34	0006	3231.	3554.	037K	16	0000	0	0
AI1 92	2	0031	0000	8	7510 6	23 1.8'N	44 55.4'W	12	77.34	0007	3589.	3516.	160K	16	0000	0	0
AI1 96	3	0009	0000	8	771116	23 36.5'N	44 28.7'W	0	77.34	0009	3982.	2737.	500G	19	0000	0	0
AI1 96	3	0010	0000	8	771117	23 36.3'N	44 29.2'W	0	77.34	0010	2578.	2287.	029K	19	0000	0	0
AI1 96	3	0013	0000	8	771118	23 36.0'N	44 57.9'W	0	77.34	0013	6180.	4049.	096K	19	0000	0	0
AI1 96	3	0018	0000	8	771124	23 31.5'N	44 49.1'W	0	77.34	0018	3686.	3573.	005K	19	0000	0	0
GIL 104	1	0017	0000	8	78 9 9	23 39.2'N	44 59.3'W	9	77.34	0017	4820.	4410.	143K	16	0000	0	0
GIL 104	1	0025	0000	8	78 910	23 37.2'N	45 2.1'W	9	77.34	0025	4560.	4300.	120K	19	0000	0	0
GIL 104	1	0027	0000	8	78 914	23 32.0'N	44 57.4'W	9	77.34	0027	3840.	2870.	015K	16	0000	0	0
GIL 104	1	0029	0000	8	78 915	23 34.7'N	44 59.9'W	9	77.34	0029	3880.	3620.	014K	16	0000	0	0
GIL 104	1	0029	0000	8	78 916	23 38.8'N	44 48.1'W	9	77.34	0029	4225.	4077.	117K	19	0000	0	0
KNR 79	2	0010	0000	8	80 531	23 37.4'N	44 44.3'W	9	77.34	0010	3890.	3640.	011K	16	0000	0	0
KNR 79	2	0017	0000	8	80 6 3	23 34.3'N	44 48.5'W	9	77.34	0017	5068.	4616.	120K	16	0000	0	0
KNR 79	2	0021	0000	8	80 6 5	23 33.4'N	44 55.5'W	9	77.34	0021	3671.	3910.	018K	16	0000	0	0
KNR 79	2	0025	0000	8	80 6 7	23 36.4'N	44 46.7'W	9	77.34	0025	3660.	3670.	010K	16	0000	0	0
KNR 79	2	0026	0000	8	80 6 8	23 36.7'N	44 47.3'W	9	77.34	0026	3930.	3743.	035K	16	0000	0	0
KNR 79	2	0027	0000	8	80 6 8	23 36.5'N	44 46.4'W	9	77.34	0027	3840.	3580.	073K	16	0000	0	0
KNR 79	2	0028	0000	8	80 6 8	23 37.0'N	44 49.0'W	9	77.34	0028	4770.	4770.	040K	16	0000	0	0
KNR 79	2	0034	0000	8	80 610	23 31.0'N	44 54.4'W	3	77.34	0034	3255.	2435.	013K	15	0000	0	0
KNR 79	2	0036	0000	8	731017	23 4.0'N	45 10.0'W	9	77.35	0036	2278.	1701.	065K	15	0000	0	0
AI1 78	2	0006	0000	8	7510 5	23 2.8'N	45 4.5'W	12	77.35	0006	2889.	2475.	100K	16	0000	0	0
AI1 92	2	0028	0000	8	7510 5	23 2.6'N	45 1.0'W	12	77.35	0028	3611.	2700.	134K	19	0000	0	0
AI1 92	2	0029	0000	8	771118	23 36.2'N	45 1.6'W	0	77.35	0029	2044.	1800.	031K	19	0000	0	0
AI1 96	3	0014	0000	8	771118	23 32.7'N	45 5.4'W	0	77.35	0014	4450.	3762.	079K	19	0000	0	0
AI1 96	3	0016	0000	8	771124	23 47.5'N	45 49.9'W	0	77.35	0016	3800.	3478.	009K	19	0000	0	0
AI1 96	3	0017	0000	8	771124	23 43.8'N	45 58.7'W	0	77.35	0017	4380.	3820.	075K	16	0000	0	0
GIL 104	1	0020	0000	8	78 912	23 37.7'N	45 2.8'W	9	77.35	0020	3682.	2430.	4.2K	19	0000	0	0
KNR 79	2	0015	0000	8	80 6 2	23 36.7'N	45 5.9'W	9	77.35	0015	3310.	2780.	009K	15	0000	0	0
AI1 78	2	0010	0000	8	731020	23 0.0'N	46 13.0'W	9	77.36	0010	4335.	3710.	001K	15	0000	0	0
AI1 78	2	0011	0000	8	731021	23 3.0'N	47 4.0'W	9	77.36	0011	3918.	2969.	106K	19	0000	0	0
AI1 96	3	0001	0000	8	7711 7	23 48.3'N	46 34.5'W	0	77.36	0001	4569.	3462.	003K	19	0000	0	0
AI1 96	3	0002	0000	8	7711 8	23 50.0'N	46 34.3'W	0	77.36	0002	5095.	3326.	063K	19	0000	0	0
AI1 96	3	0003	0000	8	7711 8	23 46.5'N	46 34.5'W	0	77.36	0003	4259.	3573.	046K	19	0000	0	0
AI1 96	3	0004	0000	8	7711 8	23 51.1'N	46 23.3'W	0	77.36	0004	5060.	4780.	012K	19	0000	0	0
AI1 96	3	0006	0000	8	7711 9	23 52.9'N	46 15.8'W	0	77.36	0006	4590.	4010.	021K	19	0000	0	0
AI1 96	3	0007	0000	8	7711 9	23 55.1'N	46 14.5'W	0	77.36	0007	4550.	4320.	4.2K	19	0000	0	0
GIL 104	1	0007	0000	8	78 9 7	23 51.2'N	46 20.0'W	9	77.36	0007	4580.	4470.	011K	16	0000	0	0
GIL 104	1	0035	0000	8	78 918	23 51.2'N	46 13.4'W	9	77.36	0035	4830.	3880.	015K	15	0000	0	0
GIL 104	1	0037	0000	8	78 919	23 50.5'N	46 8.3'W	9	77.36	0037	4995.	4140.	023K	15	0000	0	0
GIL 104	1	0040	0000	8	78 920	23 48.3'N	46 16.9'W	9	77.36	0040	2860.	2212.	173K	19	0000	0	0
GIL 104	1	0047	0000	8	78 922	23 56.7'N	46 18.0'W	9	77.36	0047	4910.	3705.	025K	15	0000	0	0
AI1 78	2	0012	0000	8	731022	23 15.0'N	48 46.0'W	9	77.39	0012	4830.	3880.	015K	15	0000	0	0
AI1 78	2	0013	0000	8	731023	23 16.0'N	49 11.0'W	9	77.39	0013	4995.	4140.	023K	15	0000	0	0
AI1 78	2	0014	0000	8	731023	23 16.0'N	49 13.0'W	9	77.39	0014	2860.	2212.	173K	19	0000	0	0
AI1 96	3	0008	0000	8	7711 9	24 0.7'N	46 11.2'W	9	77.46	0008	4090.	3910.	010K	16	0000	0	0
GIL 104	1	0001	0000	8	78 9 6	24 11.0'N	46 16.9'W	9	77.46	0001	3970.	3800.	051K	16	0000	0	0
GIL 104	1	0002	0000	8	78 9 6	24 9.4'N	46 16.1'W	9	77.46	0002	3500.	3390.	018K	16	0000	0	0
AI1 59	8	0003	0000	8	7012 4	26 59.0'N	42 40.0'W	1	77.62	0003	3235.	2910.	002K	16	0000	0	0
AI1 59	8	0004	0000	8	7012 4	27 10.0'N	43 28.0'W	1	77.73	0004							

MARSDEN SQUARE # 77

CRUISE SHIP	LEG	STATION	SAMPLE NUMBER	DE-VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS-DEN	CORE OR DREDGE	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO-GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AII 59	8	0005	0000	8	7012 4	27 12.0'N	43 36.0'W	1	77.73	0005	3670.	2885.	150K	16	0000	0
AII 59	8	0006	0000	8	7012 5	27 15.0'N	43 49.0'W	1	77.73	0006	2980.	2630.	004K	16	0000	0
AII 59	8	0007	0000	8	7012 5	27 14.0'N	43 58.0'W	1	77.73	0007	2785.	2140.	012K	16	0000	0
AII 59	8	0010	0000	8	7012 7	27 18.0'N	44 22.0'W	1	77.74	0010	2860.	2255.	001K	16	0000	0
AII 59	8	0011	0000	8	7012 7	27 29.0'N	44 44.0'W	1	77.74	0011	2745.	2535.	500G	16	0000	0
CHN 21	1	0020	0000	8	6112 9	28 54.5'N	43 18.3'W	5	77.83	0020	3692.	3701.	095K	14	0000	0
CHN 21	1	0006	0000	8	61 9 3	29 4.0'N	43 2.0'W	1	77.93	0006	2264.	2264.	3.4K	16	0000	0
CHN 21	1	0007	0000	7	61 9 3	29 4.0'N	43 3.0'W	1	77.93	0007	2264.	2264.	6.9K	16	0000	0
CHN 21	1	0004	0000	8	61 9 2	29 4.3'N	44 15.6'W	1	77.94	0004	3806.	3692.	907G	14	0000	0
CHN 21	1	0003	0000	8	61 829	29 0.0'N	47 26.8'W	1	77.97	0003	3795.	4706.	454G	15	0000	0

MARSDEN SQUARE # 78

AII 78	2	0015	0000	8	731024	23 24.0'N	50 45.0'W	9	78.30	0015	5420.	4680.	160K	15	0000	0
AII 78	2	0016	0000	8	731025	23 25.0'N	52 2.0'W	9	78.32	0016	5615.	4810.	100K	15	0000	0
CHN 39	2	0008	0000	8	63 912	23 58.0'N	55 0.0'W	5	78.35	0005	5820.	4935.	227G	11	0000	0
CHN 39	2	0006	0000	10	63 911	24 28.0'N	55 6.0'W	5	78.45	0004	6097.	5884.	1.1K	11	0000	0
CHN 39	2	0003	0000	8	63 9 9	25 14.0'N	54 51.0'W	5	78.54	0002	6228.	6177.	113G	11	0000	0
CHN 39	2	0005	0000	8	63 910	25 12.0'N	55 28.0'W	5	78.55	0003	5564.	4722.	227G	11	0000	0
CHN 39	2	0012	0000	8	63 916	29 14.0'N	59 47.0'W	5	78.99	0006	5578.	5537.	113G	11	0000	0
CHN 39	2	0013	0000	8	63 917	29 22.0'N	59 48.0'W	5	78.99	0007	5723.	5472.	454G	11	0000	0
CHN 39	2	0014	0000	8	63 918	29 47.0'N	59 39.0'W	5	78.99	0008	5647.	5076.	227G	11	0000	0

MARSDEN SQUARE # 79

AII 11	2	0021	0000	8	64 7 5	20 6.0'N	65 8.0'W	5	79.05	0001	7861.	6671.	107K	5	0000	0
AII 11	2	0022	0000	8	64 7 6	20 6.8'N	65 3.8'W	5	79.05	0002	7265.	6572.	200K	5	0000	0
AII 11	2	0024	0000	8	64 7 7	20 6.0'N	65 7.0'W	5	79.05	0003	7463.	6078.	046K	5	0000	0
AII 11	2	0025	0000	8	64 7 8	20 0.8'N	65 9.0'W	5	79.05	0004	8140.	7463.	073K	5	0000	0
AII 11	2	0030	0000	8	64 710	20 8.0'N	65 3.5'W	5	79.05	0008	7352.	7287.	118K	5	0000	0
CHN 34	1	0003	0000	8	6212 4	20 16.0'N	65 41.0'W	5	79.05	0003	7002.	6127.	126K	17	0000	0
CHN 34	1	0004	0000	8	6212 4	20 12.5'N	65 48.0'W	5	79.05	0004	6687.	6518.	3.6K	17	0000	0
CHN 57	1	0031	0000	7	66 4 7	20 3.9'N	65 51.0'W	4	79.05	0002	7457.	7145.	340G	17	0000	0
CHN 11	4	0039	0000	7	60 3 7	20 0.0'N	66 36.0'W	4	79.06	0039	5302.	5302.	700G	17	0000	0
CHN 19	1	0010	0000	8	61 630	20 0.0'N	66 32.5'W	5	79.06	0010	6563.	6436.	010K	17	0000	0
CHN 19	1	0011	0000	8	61 7 1	20 7.9'N	66 28.3'W	5	79.06	0011	3115.	3176.	454G	17	0000	0
CHN 19	1	0013	0000	8	61 7 2	20 10.0'N	66 19.0'W	5	79.06	0013	6264.	6178.	7.7K	17	0000	0
CHN 57	1	0019	0000	8	66 322	20 2.3'N	66 7.5'W	4	79.06	0001	7183.	6671.	002K	17	0000	0
CHN 57	1	0020	0000	7	66 322	20 1.5'N	66 10.0'W	5	79.06	0001	6807.	6671.	1.3K	17	0000	0

MARSDEN SQUARE # 83

GIL 107	1	0001	0000	8	791021	22 50.1'N	108 8.4'W	9	83.28	0001	3215.	3125.	041K	14	0000	0
GIL 107	1	0002	0000	8	791022	22 45.2'N	108 10.0'W	9	83.28	0002	3050.	3050.	034K	16	0000	0
GIL 107	1	0003	0000	8	791022	22 41.8'N	108 13.6'W	9	83.28	0003	3000.	3035.	010K	16	0000	0
GIL 107	1	0004	0000	8	791022	22 40.4'N	108 14.3'W	9	83.28	0004	2975.	3035.	2.3K	16	0000	0
GIL 107	1	0005	0000	8	791023	22 34.6'N	108 24.0'W	9	83.28	0005	2900.	2865.	4.5K	16	0000	0

MARSDEN SQUARE # 83

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMDA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
GIL 107		1	0006	0000	8	791023	22 35.5'N	108 19.7'W	9	83.28	0006	2975.	2875.	091K	16	0000	0
GIL 107		1	0007	0000	8	791024	22 25.9'N	108 24.6'W	9	83.28	0007	2630.	2630.	073K	16	0000	0
GIL 107		1	0008	0000	8	791024	22 29.4'N	108 25.2'W	9	83.28	0008	2650.	2720.	045K	16	0000	0
GIL 107		1	0009	0000	8	791024	22 54.1'N	108 24.3'W	9	83.28	0009	3195.	3195.	3.6K	16	0000	0
GIL 107		1	0010	0000	8	791024	22 50.7'N	108 7.1'W	9	83.28	0010	3200.	3100.	4.5K	16	0000	0
GIL 107		1	0011	0000	8	791025	22 31.0'N	108 22.9'W	9	83.28	0011	2900.	2835.	182K	16	0000	0
GIL 107		1	0012	0000	8	791025	22 33.5'N	108 24.2'W	9	83.28	0012	2880.	2780.	011K	16	0000	0
GIL 107		1	0013	0000	8	791025	22 58.5'N	108 9.5'W	9	83.28	0013	2780.	2850.	2.7K	16	0000	0
GIL 107		1	0014	0000	8	791026	22 27.0'N	108 23.4'W	9	83.28	0014	2630.	2630.	3.2K	16	0000	0
GIL 107		1	0015	0000	8	791026	22 31.1'N	108 19.5'W	9	83.28	0015	2770.	2750.	059K	16	0000	0
GIL 107		1	0016	0000	8	791026	22 51.9'N	108 10.4'W	9	83.28	0016	2720.	2895.	027K	16	0000	0
GIL 107		1	0017	0000	8	791027	22 37.2'N	108 14.6'W	9	83.28	0017	3000.	2950.	030K	16	0000	0
GIL 107		1	0018	0000	8	791027	22 39.3'N	108 14.5'W	9	83.28	0018	2995.	2978.	048K	16	0000	0

MARSDEN SQUARE #105

CHN 43		1	0003	0000	8	64 325	20 58.8'N	38 9.5'E	5	105.08	0001	2131.	1543.	456G	16	0000	0
CHN 61		7	0145	0000	8	6611 2	21 22.0'N	38 4.2'E	10	105.18	0002	2130.	2130.	680G	21	0000	0
CHN 43		1	0076	0000	8	64 6 9	28 53.0'N	32 58.0'E	5	105.82	0029	49.	49.	002K	21	0000	0

MARSDEN SQUARE #110

CHN 7		9	0021	0000	7	59 725	33 44.0'N	14 20.0'W	4	110.34	0021	199.	199.	085G	12	0000	0
CHN 7		9	0022	0000	7	59 725	33 44.0'N	14 20.0'W	4	110.34	0022	415.	274.	3.2K	12	0000	0
CHN 7		9	0023	0000	7	59 725	33 44.0'N	14 20.0'W	4	110.34	0023	772.	500.	567G	12	0000	0
CHN 7		9	0019	0000	7	59 725	35 5.0'N	12 13.0'W	4	110.52	0019	169.	199.	1.4K	12	0000	0
CHN 7		9	0020	0000	7	59 725	35 5.0'N	12 13.0'W	4	110.52	0020	208.	98.	4.5K	12	0000	0
CHN 7		1	0002	0000	7	59 510	36 13.0'N	12 15.0'W	4	110.62	0002	114.	114.	012K	12	0000	0
CHN 7		1	0003	0000	7	59 510	36 13.0'N	12 15.0'W	4	110.62	0003	85.	85.	227G	12	0000	0
CHN 7		1	0004	0000	7	59 510	36 12.0'N	12 15.0'W	4	110.62	0004	95.	123.	6.4K	12	0000	0

MARSDEN SQUARE #111

CHN 7		9	0001	0000	8	59 730	30 2.0'N	28 34.0'W	4	111.08	0001	640.	612.	020K	12	0000	0
CHN 7		9	0002	0000	8	59 730	30 2.0'N	28 33.0'W	4	111.08	0002	4988.	4988.	3.2K	12	0000	0
CHN 7		9	0024	0000	7	59 731	30 0.0'N	28 25.0'W	4	111.08	0024	295.	295.	340G	12	0000	0
CHN 7		9	0025	0000	7	59 731	30 0.0'N	28 23.0'W	4	111.08	0025	295.	295.	3.2K	12	0000	0
CHN 7		9	0026	0000	7	59 731	30 0.0'N	28 33.0'W	4	111.08	0026	1598.	1261.	113G	12	0000	0
CHN 7		9	0027	0000	7	59 8 1	30 0.0'N	28 30.0'W	4	111.08	0027	288.	288.	4.6K	12	0000	0
AII 13		1	0076	0000	8	64 924	37 51.0'N	25 52.0'W	1	111.75	0002	73.	73.	004K	1	0000	0

MARSDEN SQUARE #112

AII 73		1	0010	0000	8	721124	36 44.7'N	33 15.2'W	11	112.63	0002	2328.	2391.	016K	14	0000	0
AII 73		1	0012	0000	8	721125	36 44.4'N	33 16.7'W	11	112.63	0003	2476.	2426.	120G	16	0000	0
AII 73		1	0014	0000	8	721125	36 44.5'N	33 17.2'W	11	112.63	0004	2519.	2475.	060K	16	0000	0

MARSDEN SQUARE #112

SHIP	CRUISE	LEG	STATION	SAMPLE DE- VICE	DATE YRMDA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AI1	73	1	0016	0000	8	721126	36 42.0'N	33 17.6'W	11	112.63	0005	2627.	6.6K	16	0000	0
AI1	73	1	0018	0000	8	721126	36 44.5'N	33 17.1'W	11	112.63	0006	2589.	9.1K	16	0000	0
AI1	73	1	0024	0000	8	721127	36 45.5'N	33 21.2'W	11	112.63	0008	1745.	0.73G	16	0000	0
AI1	73	1	0038	0000	8	7212 6	36 29.7'N	33 23.9'W	11	112.63	0009	2626.	8.7K	16	0000	0
AI1	73	1	0047	0000	8	7212 9	36 30.6'N	33 25.3'W	11	112.63	0012	2781.	0.17K	16	0000	0
AI1	73	1	0050	0000	8	7212 9	36 29.3'N	33 39.0'W	11	112.63	0013	2589.	0.11K	16	0000	0
AI1	77	2	0019	0000	8	73 811	36 32.5'N	33 34.0'W	1	112.63	0002	2713.	6.8K	16	0000	0
AI1	77	2	0023	0000	8	73 813	36 34.5'N	33 37.0'W	1	112.63	0003	2913.	4.9K	16	0000	0
AI1	77	2	0026	0000	8	73 814	36 25.0'N	33 46.0'W	10	112.63	0004	2671.	0.16K	16	0000	0
AI1	77	2	0028	0000	8	73 814	36 34.0'N	33 37.0'W	11	112.63	0005	2738.	2.73K	16	0000	0
AI1	77	2	0037	0000	8	73 820	36 43.0'N	33 20.0'W	11	112.63	0006	2437.	2.43K	16	0000	0
AI1	77	2	0038	0000	8	73 820	36 43.0'N	33 20.5'W	11	112.63	0007	2443.	1.20K	16	0000	0
AI1	77	2	0045	0000	8	73 820	36 35.0'N	33 42.5'W	10	112.63	0008	2500.	5.70G	16	0000	0
AI1	77	2	0048	0000	8	73 821	36 37.0'N	33 31.0'W	11	112.63	0009	2437.	0.38K	19	0000	0
AI1	77	2	0052	0000	8	73 822	36 35.0'N	33 31.5'W	11	112.63	0010	2437.	1.20K	16	0000	0
AI1	77	2	0058	0000	8	73 823	36 27.5'N	33 35.0'W	11	112.63	0011	2231.	0.29K	16	0000	0
AI1	77	2	0062	0000	8	73 824	36 27.0'N	33 55.0'W	10	112.63	0012	1408.	0.13K	14	0000	0
AI1	77	2	0063	0000	8	73 824	36 27.0'N	33 53.5'W	10	112.63	0013	1876.	0.24K	14	0000	0
AI1	77	2	0067	0000	8	73 826	36 26.5'N	33 40.0'W	11	112.63	0014	2616.	0.35K	16	0000	0
AI1	77	2	0070	0000	8	73 826	36 26.5'N	33 40.0'W	11	112.63	0015	2437.	0.15K	16	0000	0
AI1	77	2	0071	0000	8	73 827	36 24.4'N	33 40.8'W	9	112.63	0016	2500.	0.18K	16	0000	0
AI1	77	2	0076	0000	8	73 828	36 26.5'N	33 38.5'W	11	112.63	0016	2518.	1.98K	16	0000	0
GIL	103	1	0001	0000	8	78 729	36 47.6'N	33 18.3'W	9	112.63	0001	1968.	6K	16	0000	0
GIL	103	1	0004	0000	8	78 8 1	36 26.6'N	33 37.6'W	11	112.63	0004	2616.	25K	16	0000	0
GIL	103	1	0005	0000	8	78 8 2	36 25.7'N	33 38.9'W	11	112.63	0005	2627.	35K	16	0000	0
GIL	103	1	0006	0000	8	78 8 2	36 26.5'N	33 41.0'W	11	112.63	0006	2400.	1K	16	0000	0
GIL	103	1	0008	0000	8	78 8 3	36 28.9'N	33 40.0'W	11	112.63	0008	2485.	4K	16	0000	0
GIL	103	1	0009	0000	8	78 8 4	36 27.8'N	33 37.8'W	11	112.63	0009	2590.	55K	16	0000	0
GIL	103	1	0016	0000	8	78 813	36 46.8'N	33 16.7'W	11	112.63	0016	2617.	2K	16	0000	0
GIL	103	1	0020	0000	8	78 815	36 46.4'N	33 17.3'W	11	112.63	0020	2694.	55K	16	0000	0
GIL	103	1	0021	0000	8	78 816	36 46.5'N	33 16.6'W	11	112.63	0021	2627.	10K	16	0000	0
GIL	103	1	0023	0000	8	78 816	36 45.5'N	33 17.5'W	11	112.63	0023	2532.	25K	16	0000	0
GIL	103	1	0024	0000	8	78 817	36 47.6'N	33 17.4'W	11	112.63	0024	2484.	12K	16	0000	0
GIL	103	1	0027	0000	8	78 817	36 27.1'N	33 40.9'W	11	112.63	0027	2231.	115K	16	0000	0
GIL	103	1	0029	0000	8	78 818	36 45.5'N	33 16.5'W	11	112.63	0029	2523.	15K	16	0000	0
GIL	103	1	0030	0000	8	78 818	36 45.5'N	33 15.7'W	11	112.63	0030	2100.	15K	16	0000	0
GIL	103	1	0032	0000	8	78 820	36 43.8'N	33 17.5'W	11	112.63	0032	2484.	160K	16	0000	0
GIL	103	1	0033	0000	8	78 820	36 46.8'N	33 15.8'W	11	112.63	0033	2674.	200K	16	0000	0
GIL	103	1	0035	0000	8	78 820	36 47.8'N	33 16.9'W	11	112.63	0035	2532.	80K	16	0000	0
GIL	103	1	0037	0000	8	78 821	36 27.2'N	33 38.6'W	11	112.63	0037	2579.	20K	16	0000	0
GIL	103	1	0038	0000	8	78 821	36 25.4'N	33 39.2'W	11	112.63	0038	2580.	30K	16	0000	0
GIL	103	1	0041	0000	8	78 823	36 26.6'N	33 95.2'W	11	112.63	0041	2532.	7K	16	0000	0
GIL	103	1	0043	0000	8	78 824	36 26.5'N	33 41.1'W	11	112.63	0043	2484.	4K	16	0000	0
GIL	103	1	0046	0000	8	78 824	36 26.5'N	33 41.1'W	11	112.63	0046	2484.	35K	16	0000	0
GIL	103	1	0047	0000	8	78 825	36 45.8'N	33 18.8'W	11	112.63	0047	2391.	210K	16	0000	0
KNR	42	2	0025	0000	8	74 629	36 56.7'N	33 9.1'W	9	112.63	0003	2993.	1.6K	19	0000	0
KNR	42	2	0028	0000	8	74 630	36 54.9'N	33 9.8'W	9	112.63	0004	2889.	0.41K	19	0000	0
KNR	42	2	0033	0000	8	74 7 2	36 57.0'N	33 7.9'W	9	112.63	0005	2908.	0.07K	19	0000	0
KNR	42	2	0035	0000	8	74 7 3	36 56.4'N	33 8.1'W	9	112.63	0006	3041.	3.5K	19	0000	0
KNR	42	3	0051	0000	8	74 715	36 36.1'N	33 24.8'W	9	112.63	0008	2599.	0.65K	19	0000	0

MARSDEN SQUARE #112

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMDA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
KNR 42	42	3	0068	0000	8	74 717	36 50.8'N	33 23.3'W	9	112.63	0009	1564.	1465.	015K	19	0000	0
KNR 42	42	3	0077	0000	8	74 718	36 36.9'N	33 27.6'W	9	112.63	0011	2137.	1763.	169K	19	0000	0
KNR 42	42	3	0086	0000	8	74 719	36 38.4'N	33 19.5'W	9	112.63	0012	2901.	2740.	178K	16	0000	0
KNR 42	42	3	0102	0000	8	74 722	36 50.8'N	33 19.7'W	9	112.63	0016	1603.	0.	005K	14	0000	0
KNR 42	42	3	0108	0000	8	74 723	36 50.6'N	33 21.4'W	9	112.63	0017	1763.	1762.	014K	14	0000	0
KNR 42	42	3	0110	0000	8	74 724	36 53.2'N	33 32.1'W	9	112.63	0018	1727.	1347.	2.4K	14	0000	0
KNR 42	42	3	0112	0000	8	74 724	36 52.8'N	33 31.7'W	9	112.63	0019	1623.	1732.	0.5K	14	0000	0
KNR 42	42	3	0117	0000	8	74 725	36 47.9'N	33 13.7'W	9	112.63	0020	1679.	1648.	1.8K	14	0000	0
KNR 42	42	4	0121	0000	8	74 8 3	36 37.5'N	33 28.1'W	9	112.63	0021	1838.	1801.	101K	19	0000	0
KNR 42	42	4	0122	0000	8	74 8 3	36 37.3'N	33 28.0'W	9	112.63	0022	1932.	1857.	064K	19	0000	0
KNR 42	42	4	0129	0000	8	74 8 3	36 36.4'N	33 28.5'W	9	112.63	0024	2118.	2025.	075K	19	0000	0
KNR 42	42	4	0130	0000	8	74 8 4	36 34.9'N	33 27.2'W	9	112.63	0025	2104.	2102.	073K	19	0000	0
KNR 42	42	4	0131	0000	8	74 8 4	36 36.4'N	33 29.3'W	9	112.63	0026	2062.	2034.	019K	19	0000	0
KNR 42	42	4	0137	0000	8	74 8 5	36 50.9'N	33 32.5'W	9	112.63	0027	1353.	1293.	069K	14	0000	0
KNR 42	42	4	0145	0000	8	74 8 6	36 33.4'N	33 28.2'W	9	112.63	0029	2141.	2161.	075K	19	0000	0
KNR 42	42	4	0146	0000	8	74 8 6	36 31.9'N	33 29.4'W	9	112.63	0030	2108.	1875.	172K	19	0000	0
KNR 42	42	5	0156	0000	8	74 816	36 50.8'N	33 32.2'W	9	112.63	0031	1587.	1279.	012K	14	0000	0
AI 13	13	1	0077	0000	8	64 926	39 35.0'N	31 12.0'W	1	112.91	0003	191.	191.	004K	1	0000	0

MARSDEN SQUARE #113

CHN 7	7	9	0028	0000	7	59 8 5	31 18.0'N	44 31.0'W	4	113.14	0028	3614.	3642.	3.7K	15	0000	0
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MARSDEN SQUARE #114

AI 85	85	1	0024	0000	8	74 910	34 28.1'N	56 47.8'W	9	114.46	0024	3050.	3000.	020K	12	0000	0
KNR 42	42	5	0161	0000	8	74 824	34 48.6'N	57 13.4'W	9	114.47	0033	3310.	3084.	007K	12	0000	0
KNR 42	42	5	0162	0000	8	74 824	34 53.3'N	57 11.2'W	9	114.47	0034	2706.	2436.	005K	12	0000	0
AI 85	85	1	0023	0000	8	74 9 9	35 17.5'N	57 38.5'W	9	114.57	0023	3600.	2450.	008K	12	0000	0
KNR 61	61	1	0023	0000	8	761111	35 18.5'N	57 30.5'W	6	114.57	0022	3200.	2250.	050K	12	0000	0
KNR 61	61	1	0023	0000	8	761111	35 18.4'N	57 31.5'W	6	114.57	0023	2625.	2650.	017K	12	0000	0
KNR 61	61	1	0024	0000	8	761112	35 18.2'N	57 32.3'W	9	114.57	0024	2725.	2125.	100K	12	0000	0
KNR 61	61	1	0027	0000	8	761113	35 6.2'N	57 25.2'W	6	114.57	0027	3500.	2325.	030K	12	0000	0
KNR 61	61	1	0028	0000	8	761113	35 5.7'N	57 25.2'W	9	114.57	0028	3200.	2550.	018K	12	0000	0
KNR 61	61	1	0029	0000	8	761113	35 5.2'N	57 24.6'W	6	114.57	0029	3025.	2425.	025K	12	0000	0
KNR 42	42	5	0166	0000	8	74 825	35 36.3'N	58 41.4'W	6	114.58	0036	4227.	3805.	5.2K	12	0000	0
AI 85	85	1	0017	0000	8	74 9 6	36 51.6'N	58 47.8'W	9	114.68	0017	2900.	2200.	114K	12	0000	0
AI 85	85	1	0021	0000	8	74 9 8	36 23.6'N	58 15.5'W	9	114.68	0021	3300.	2300.	011K	12	0000	0
AI 85	85	1	0022	0000	8	74 9 8	36 16.1'N	58 19.5'W	9	114.68	0022	3500.	2900.	010K	12	0000	0
KNR 61	61	1	0031	0000	8	761114	36 18.8'N	58 18.0'W	9	114.68	0031	3125.	1900.	110K	12	0000	0
KNR 61	61	1	0032	0000	8	761114	36 18.7'N	58 18.0'W	6	114.68	0032	3150.	2625.	008K	12	0000	0
KNR 61	61	1	0033	0000	8	761114	36 19.6'N	58 18.5'W	6	114.68	0033	2975.	2475.	045K	12	0000	0
AI 85	85	1	0018	0000	8	74 9 7	36 30.0'N	59 24.7'W	9	114.69	0018	3800.	2550.	100K	12	0000	0
AI 85	85	1	0019	0000	8	74 9 7	36 27.9'N	59 27.9'W	9	114.69	0019	2800.	2500.	095K	12	0000	0
AI 85	85	1	0020	0000	8	74 9 7	36 21.2'N	59 11.5'W	9	114.69	0020	3200.	2300.	050K	12	0000	0
KNR 42	42	5	0168	0000	8	74 826	36 31.6'N	59 25.7'W	9	114.69	0037	4025.	3796.	1.2K	12	0000	0
ATL 280	280	1	0012	0000	7	62 619	37 29.0'N	59 47.0'W	5	114.79	0012	1298.	1279.	4.5K	12	0000	0
ATL 280	280	1	0013	0000	7	62 619	37 33.0'N	59 48.0'W	5	114.79	0013	1295.	1295.	680G	12	0000	0

MARSDEN SQUARE #114

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FTX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
KNR 42	5	0171	0000	8	74	827	37 30.6'N	59 52.2'W	6	114.79	0039	1523.	1260.	143K	12	0000	0
KNR 61	1	0016	0000	8	7611	9	37 27.2'N	59 45.2'W	6	114.79	0016	2950.	2350.	005K	12	0000	0
KNR 61	1	0017	0000	8	7611	9	37 26.0'N	59 45.4'W	6	114.79	0017	3000.	3050.	080K	12	0000	0
KNR 61	1	0019	0000	8	761110		37 27.2'N	59 47.1'W	9	114.79	0019	2800.	2225.	031K	12	0000	0

MARSDEN SQUARE #115

CHN 9	6	0030	0000	7	591018	31 53.9'N	65 12.3'W	5	115.15	0002	1972.	1372.	028G	5	0000	0
CHN 9	6	0031	0000	7	591018	31 54.7'N	65 12.9'W	5	115.15	0003	1128.	1035.	003K	5	0000	0
CHN 9	7	0032	0000	7	591021	31 54.3'N	65 12.0'W	5	115.15	0005	1207.	1207.	340G	5	0000	0
CHN 9	7	0033	0000	7	591021	31 54.2'N	65 13.1'W	5	115.15	0006	1636.	1542.	227G	5	0000	0
CHN 9	7	0034	0000	7	591021	31 54.2'N	65 12.8'W	5	115.15	0007	1542.	1692.	002K	5	0000	0
CHN 9	7	0035	0000	7	591021	31 55.0'N	65 11.8'W	5	115.15	0008	885.	940.	002G	5	0000	0
CHN 9	7	0036	0000	7	591021	31 54.9'N	65 12.7'W	5	115.15	0009	1128.	997.	113G	5	0000	0
ATL 260	1	0007	0000	7	601018	33 34.0'N	62 26.0'W	5	115.32	0007	1542.	1497.	113G	12	0000	0
ATL 260	1	0008	0000	7	601018	33 36.0'N	62 25.5'W	5	115.32	0008	1422.	1422.	8.9K	12	0000	0
ATL 260	1	0009	0000	7	601020	33 36.5'N	62 24.5'W	5	115.32	0009	2553.	2630.	1.5K	12	0000	0
CHN 58	1	0100	0000	8	66 5 1	33 56.8'N	65 47.0'W	1	115.35	0009	4743.	4892.	035K	13	0000	0
AI 85	1	0016	0000	8	74 9 6	36 49.3'N	62 12.5'W	9	115.62	0016	3900.	3300.	041K	12	0000	0
CHN 21	1	0002	0000	8	61 818	36 40.0'N	67 56.5'W	5	115.67	0002	3292.	3283.	7.6K	12	0000	0
CHN 36	1	0018	0000	8	63 7 8	36 42.0'N	67 59.0'W	5	115.67	0006	4327.	4111.	051K	12	0000	0
ATL 280	1	0004	0000	7	62 616	38 57.0'N	60 58.0'W	5	115.80	0004	1150.	1114.	227G	12	0000	0
ATL 280	1	0005	0000	7	62 616	38 55.0'N	60 58.0'W	5	115.80	0005	1041.	1034.	010K	12	0000	0
ATL 280	1	0006	0000	7	62 616	38 58.0'N	60 57.0'W	5	115.80	0006	935.	944.	009K	12	0000	0
ATL 280	1	0009	0000	7	62 617	38 52.0'N	60 27.0'W	5	115.80	0009	1879.	1879.	227G	12	0000	0
ATL 280	1	0010	0000	7	62 618	38 13.0'N	60 26.0'W	5	115.80	0010	1785.	1785.	012K	12	0000	0
KNR 42	5	0174	0000	8	74 828	38 11.3'N	60 56.6'W	6	115.80	0040	3777.	3653.	250G	12	0000	0
KNR 61	1	0037	0000	8	761116	38 53.8'N	60 57.8'W	6	115.80	0037	2100.	1850.	034K	12	0000	0
KNR 61	1	0038	0000	8	761117	38 54.6'N	60 59.2'W	6	115.80	0038	1575.	1100.	040K	12	0000	0
KNR 61	1	0042	0000	8	761118	38 34.6'N	60 8.0'W	6	115.80	0042	3075.	2800.	020K	12	0000	0
KNR 61	1	0043	0000	8	761118	38 34.2'N	60 10.8'W	6	115.80	0043	2700.	2275.	3.4K	12	0000	0
ATL 280	1	0003	0000	7	62 620	38 54.0'N	61 1.0'W	5	115.81	0003	1298.	1241.	2.3K	12	0000	0
ATL 280	1	0014	0000	7	62 620	38 3.0'N	62 9.0'W	5	115.82	0014	1954.	1954.	011K	12	0000	0
KNR 61	1	0015	0000	7	62 620	38 4.0'N	62 8.0'W	5	115.82	0015	1474.	1474.	2.3K	12	0000	0
KNR 61	1	0015	0000	8	7611 8	38 26.0'N	62 51.0'W	6	115.82	0014	3125.	2550.	072K	12	0000	0
KNR 61	1	0015	0000	8	7611 8	38 26.3'N	62 50.5'W	9	115.82	0015	3300.	2400.	023K	12	0000	0
KNR 61	1	0044	0000	8	761118	38 18.4'N	62 56.0'W	9	115.82	0044	3925.	3150.	050K	12	0000	0
KNR 61	1	0045	0000	8	761119	38 18.0'N	62 56.4'W	6	115.82	0045	3700.	2575.	055K	12	0000	0
AI 85	1	0012	0000	8	74 9 2	38 24.6'N	63 14.7'W	9	115.83	0012	3300.	3100.	095K	12	0000	0
AI 85	1	0013	0000	8	74 9 3	38 25.3'N	63 13.9'W	9	115.83	0013	2500.	2200.	175K	12	0000	0
AI 85	1	0014	0000	8	74 9 3	38 6.8'N	62 11.6'W	9	115.83	0014	2900.	2100.	086K	12	0000	0
ATL 280	1	0016	0000	7	62 621	38 30.0'N	63 13.0'W	5	115.83	0016	1692.	1708.	011K	12	0000	0
ATL 296	0	0001	0000	8	63 8 8	38 16.0'N	63 5.0'W	5	115.83	0001	3691.	3254.	1.5K	12	0000	0
ATL 296	0	0002	0000	7	63 8 8	38 22.0'N	63 7.0'W	5	115.83	0002	3539.	3444.	010G	12	0000	0
KNR 61	1	0009	0000	8	7611 7	38 28.3'N	63 10.5'W	9	115.83	0009	2000.	1850.	059K	12	0000	0
KNR 61	1	0010	0000	8	7611 7	38 26.7'N	63 9.7'W	6	115.83	0010	2150.	2025.	0.5K	12	0000	0
KNR 61	1	0013	0000	8	7611 8	38 26.8'N	63 9.6'W	6	115.83	0013	2375.	2350.	005K	12	0000	0
AI 85	1	0009	0000	8	74 9 1	38 41.4'N	64 9.2'W	9	115.84	0009	4300.	3300.	170K	12	0000	0

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SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- OR PROV.	ROCK OR SED. TYPE	VITA CODE
ALL 85	1	0010	0000	8	74 9 1	38 44.0'N	64 8.1'W	9	115.84	0010	2600.	1850.	074K	12	0000	0	
ALL 85	1	0011	0000	8	74 9 1	28 50.0'N	64 3.8'W	9	115.84	0011	2300.	1800.	093K	12	0000	0	
KNR 61	1	0034	0000	8	761116	39 2.7'N	60 55.6'W	9	115.90	0034	2650.	2475.	002K	12	0000	0	
ALL 85	1	0008	0000	8	74 830	39 38.6'N	65 53.1'W	9	115.95	0008	3300.	2600.	148K	12	0000	0	
ATL 281	1	0017	0000	8	62 628	39 25.0'N	65 24.0'W	5	115.95	0017	1463.	0.	017K	12	0000	0	
ATL 296	0	0003	0000	8	63 8 9	39 31.0'N	65 21.0'W	5	115.95	0003	3382.	3307.	001K	12	0000	0	
ATL 296	0	0004	0000	8	63 8 9	39 31.0'N	65 21.0'W	5	115.95	0004	4143.	3961.	1.6K	12	0000	0	
ATL 296	0	0006	0000	8	63 810	39 37.0'N	65 57.0'W	5	115.95	0006	3004.	1961.	007K	12	0000	0	
ATL 296	0	0007	0000	8	63 810	39 37.0'N	65 59.0'W	5	115.95	0007	3476.	2437.	011K	12	0000	0	
ATL 296	0	0008	0000	8	63 811	39 29.0'N	65 26.0'W	5	115.95	0008	2617.	2947.	008K	12	0000	0	
KNR 42	5	0177	0000	8	74 830	39 29.6'N	65 24.1'W	6	115.95	0041	2798.	1887.	100G	12	0000	0	
KNR 42	5	0178	0000	8	74 830	39 27.0'N	65 27.3'W	6	115.95	0042	2240.	2531.	012K	12	0000	0	
ALL 85	1	0006	0000	8	74 830	39 36.9'N	66 3.7'W	9	115.96	0006	3750.	2250.	035K	12	0000	0	
ALL 85	1	0007	0000	8	74 830	39 40.0'N	66 3.0'W	9	115.96	0007	2800.	2225.	200K	12	0000	0	
KNR 42	5	0180	0000	8	74 831	39 50.2'N	66 12.6'W	6	115.96	0043	2354.	1885.	021K	12	0000	0	
KNR 42	5	0181	0000	8	74 831	39 51.0'N	66 52.8'W	6	115.96	0044	2825.	1885.	002K	12	0000	0	
KNR 61	1	0005	0000	8	7611 5	39 46.1'N	66 17.4'W	9	115.96	0005	2900.	3900.	071K	12	0000	0	
KNR 61	1	0008	0000	8	7611 5	39 48.0'N	66 18.8'W	6	115.96	0008	2800.	2700.	2.6K	12	0000	0	
KNR 61	1	0046	0000	8	761120	39 46.2'N	66 16.5'W	6	115.96	0046	3275.	2750.	7.4K	12	0000	0	
KNR 61	1	0047	0000	8	761122	39 47.2'N	66 16.8'W	9	115.96	0047	2725.	3000.	070K	12	0000	0	
ALL 85	1	0001	0000	8	74 828	39 47.3'N	67 28.0'W	9	115.97	0001	3100.	2400.	095K	12	0000	0	
ALL 85	1	0002	0000	9	74 828	39 51.6'N	67 22.4'W	9	115.97	0002	2000.	1700.	033K	12	0000	0	
ATL 281	1	0019	0000	8	62 629	39 23.0'N	67 11.0'W	5	115.97	0019	0.	0.	097G	12	0000	0	
ATL 281	1	0020	0000	8	62 630	39 52.5'N	67 28.0'W	5	115.97	0020	1401.	0.	6.6K	12	0000	0	
KNR 42	5	0182	0000	8	74 9 1	39 23.6'N	67 14.0'W	6	115.97	0045	3040.	3095.	100G	12	0000	0	

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CHN 52	1	0001	0000	7	65 927	30 1.0'N	76 43.2'W	5	116.06	0001	1269.	1267.	1.4K	7	0000	0	
CHN 46	1	0011	0000	7	65 4 6	30 12.2'N	77 50.0'W	5	116.07	0004	819.	818.	1.1K	7	0000	0	
CHN 46	1	0012	0000	7	65 4 6	30 25.9'N	77 52.0'W	5	116.07	0005	815.	815.	1.4K	7	0000	0	
ATL 266	1	0040	0000	8	61 713	30 53.0'N	78 47.0'W	5	116.08	0040	836.	836.	026K	7	0000	0	
ATL 266	1	0041	0000	8	61 715	30 59.0'N	78 14.0'W	5	116.08	0041	903.	903.	9.1K	7	0000	0	
ATL 266	1	0042	0000	7	61 715	30 59.0'N	78 13.0'W	5	116.08	0042	834.	834.	013K	7	0000	0	
ATL 266	1	0043	0000	7	61 717	30 57.0'N	78 21.0'W	5	116.08	0043	954.	954.	9.1K	7	0000	0	
ATL 266	1	0045	0000	8	61 718	30 58.0'N	78 30.0'W	5	116.08	0045	833.	833.	044K	7	0000	0	
ATL 266	1	0046	0000	8	61 718	30 58.5'N	78 30.0'W	5	116.08	0046	847.	847.	4.8K	7	0000	0	
ATL 266	1	0047	0000	8	61 719	30 55.0'N	78 39.0'W	5	116.08	0047	842.	842.	6.6K	7	0000	0	
ATL 266	1	0049	0000	7	61 719	30 54.0'N	78 41.0'W	5	116.08	0049	845.	845.	4.3K	7	0000	0	
CHN 46	1	0015	0000	7	65 4 7	30 43.8'N	78 5.0'W	5	116.08	0006	875.	875.	1.4K	7	0000	0	
CHN 46	1	0018	0000	7	65 4 7	30 50.0'N	78 11.0'W	5	116.08	0007	843.	843.	7.7K	7	0000	0	
GOS 73	1	0002	0000	7	65 718	30 13.0'N	78 37.6'W	5	116.08	0002	809.	0.	910G	7	0000	0	
GOS 73	1	0004	0000	7	65 718	30 15.2'N	78 39.5'W	5	116.08	0004	809.	0.	100G	7	0000	0	
GOS 73	1	0005	0000	7	65 718	30 14.8'N	78 39.6'W	5	116.08	0005	809.	0.	1.7K	7	0000	0	
GOS 73	1	0006	0000	7	65 718	30 15.8'N	78 41.7'W	5	116.08	0006	790.	0.	1.6K	7	0000	0	
GOS 73	1	0007	0000	7	65 719	30 41.5'N	78 52.6'W	5	116.08	0007	0.	0.	2.7K	7	0000	0	
GOS 73	1	0008	0000	7	65 719	30 38.7'N	78 51.5'W	5	116.08	0008	847.	0.	002K	7	0000	0	
ATL 266	1	0012	0000	7	61 630	31 49.0'N	76 49.0'W	5	116.16	0012	1320.	1320.	1.2K	7	0000	0	
ATL 266	1	0002	0000	8	61 625	31 58.0'N	77 18.5'W	5	116.17	0002	843.	843.	020K	7	0000	0	

MARSDEN SQUARE #116

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMODA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
ATL 266	1	0003	0000	7	61	626	31 56.5'N	77 26.0'W	5	116.17	0003	739.	739.	012K	7	0000	0
ATL 266	1	0004	0000	7	61	626	31 56.0'N	77 26.0'W	5	116.17	0004	815.	815.	012K	7	0000	0
ATL 266	1	0005	0000	7	61	627	31 53.0'N	77 27.2'W	5	116.17	0005	815.	815.	020K	7	0000	0
ATL 266	1	0006	0000	7	61	627	31 54.8'N	77 25.0'W	5	116.17	0006	739.	739.	014K	7	0000	0
ATL 266	1	0007	0000	7	61	628	31 53.0'N	77 22.5'W	5	116.17	0007	739.	739.	010K	7	0000	0
ATL 266	1	0008	0000	7	61	628	31 53.0'N	77 21.0'W	5	116.17	0008	834.	834.	7.9K	7	0000	0
ATL 266	1	0016	0000	7	61	7	31 51.0'N	77 28.0'W	5	116.17	0016	689.	689.	015K	7	0000	0
ATL 266	1	0017	0000	7	61	7	31 52.0'N	77 28.0'W	5	116.17	0017	676.	676.	017K	7	0000	0
ATL 266	1	0020	0000	8	61	7	31 49.0'N	77 38.0'W	5	116.17	0020	692.	692.	567G	7	0000	0
ATL 266	1	0021	0000	8	61	7	31 50.5'N	77 37.0'W	5	116.17	0021	696.	696.	016K	7	0000	0
ATL 266	1	0022	0000	8	61	7	31 49.5'N	77 37.0'W	5	116.17	0022	705.	705.	018K	7	0000	0
ATL 266	1	0025	0000	7	61	7	31 48.0'N	77 34.0'W	5	116.17	0025	668.	668.	1.4K	7	0000	0
ATL 266	1	0026	0000	7	61	7	31 49.5'N	77 34.5'W	5	116.17	0026	865.	865.	010K	7	0000	0
ATL 266	1	0050	0000	7	61	721	31 52.5'N	79 10.0'W	5	116.19	0050	489.	489.	3.9K	7	0000	0
CHN 52	1	0004	0000	7	65	929	31 45.2'N	79 8.7'W	5	116.19	0004	528.	528.	1.6K	7	0000	0
CHN 52	1	0005	0000	7	65	929	31 40.5'N	79 12.0'W	5	116.19	0005	509.	509.	1.8K	7	0000	0
CHN 52	1	0007	0000	7	65	929	31 35.1'N	79 13.9'W	5	116.19	0007	464.	464.	010G	7	0000	0
CHN 52	1	0008	0000	7	65	930	31 36.6'N	79 17.0'W	5	116.19	0008	453.	453.	2.3K	7	0000	0
CHN 52	1	0009	0000	7	65	930	31 38.5'N	79 21.7'W	5	116.19	0009	528.	528.	1.9K	7	0000	0
CHN 52	1	0012	0000	7	65	10	32 11.3'N	75 51.0'W	5	116.25	0012	2566.	2566.	1.5K	7	0000	0
ATL 266	1	0018	0000	7	61	7	32 0.5'N	77 35.0'W	5	116.27	0018	677.	677.	454G	7	0000	0
ATL 266	1	0019	0000	7	61	7	32 1.0'N	77 34.0'W	5	116.27	0019	684.	684.	567G	7	0000	0
CHN 52	1	0011	0000	8	65	10	32 5.3'N	78 50.0'W	5	116.28	0011	383.	383.	042K	7	0000	0
GOS 73	1	0001	0000	7	65	713	33 10.0'N	78 20.0'W	5	116.38	0001	28.	28.	1.5K	7	0000	0
ATL 266	1	0051	0000	7	61	723	34 1.2'N	75 50.5'W	5	116.45	0051	659.	659.	001K	7	0000	0
ATL 266	1	0052	0000	7	61	723	34 2.0'N	75 40.0'W	5	116.45	0052	1993.	1993.	1.3K	7	0000	0
AIH 1	1	0002	0000	7	63	3	39 43.0'N	70 42.6'W	5	116.90	0002	2027.	2027.	7.4K	4	0000	0
AIH 86	3	0417	0000	8	75	314	39 30.0'N	70 40.0'W	6	116.90	0417	2460.	2460.	014K	6	0000	0
AIH 86	3	0424	0000	8	75	316	39 27.0'N	70 28.0'W	6	116.90	0424	2505.	2505.	011K	6	0000	0
AIH 86	3	0432	0000	8	75	319	39 31.0'N	70 20.0'W	6	116.90	0432	2350.	2350.	015K	6	0000	0

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AIH 15	3	0008	0000	8	65	213	30 21.5'N	32 19.0'E	1	141.02	0001	7.	0.	227G	99	0000	0
AIH 15	3	0009	0000	8	65	213	30 19.5'N	32 19.7'E	1	141.02	0002	9.	0.	227G	99	0000	0
AIH 15	3	0015	0000	8	65	214	30 20.9'N	32 25.7'E	1	141.02	0003	9.	0.	227G	99	0000	0
AIH 15	3	0016	0000	8	65	214	30 23.0'N	32 24.0'E	1	141.02	0004	4.	0.	227G	99	0000	0
AIH 15	3	0017	0000	8	65	214	30 23.8'N	32 21.5'E	1	141.02	0005	5.	0.	227G	99	0000	0
AIH 15	3	0018	0000	8	65	214	30 23.4'N	32 18.8'E	1	141.02	0006	4.	0.	113G	99	0000	0
AIH 15	3	0019	0000	8	65	214	30 21.5'N	32 19.0'E	1	141.02	0007	7.	0.	113G	99	0000	0
CHN 119	2	0044	0000	8	75	328	31 41.2'N	30 30.3'E	1	141.10	0001	29.	33.	570G	24	0000	0
CHN 119	2	0060	0000	8	75	329	31 36.9'N	30 7.0'E	3	141.10	0002	219.	63.	254G	25	0000	0
CHN 119	2	0092	0000	8	75	4	31 40.7'N	30 41.3'E	3	141.10	0003	17.	17.	425G	24	0000	0
CHN 119	2	0105	0000	8	75	4	31 38.2'N	30 57.9'E	3	141.10	0004	6.	9.	176G	24	0000	0
CHN 119	2	0181	0000	8	75	410	32 1.8'N	31 24.0'E	9	141.21	0008	97.	105.	025K	24	0000	0
CHN 119	2	0124	0000	8	75	4	33 46.1'N	32 42.1'E	9	141.32	0005	917.	917.	1.5K	12	0000	0
CHN 43	1	0078	0000	8	64	617	33 24.5'N	35 12.0'E	5	141.35	0030	49.	49.	005K	2	0000	0
CHN 43	1	0079	0000	8	64	617	33 23.0'N	35 7.0'E	5	141.35	0031	577.	577.	113G	4	0000	0

MARSDEN SQUARE #143

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FTX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED.	VITA CODE
CHN 61	61	2	0021	0000	8	66 8 9	36 13.5'N	13 24.6'E	6	143.63	0001	1268.	1268.	113G	21	0000	0
CHN 7	7	3	0009	0000	7	59 526	36 11.0'N	15 29.5'E	4	143.65	0009	1136.	1136.	454G	21	0000	0
CHN 7	7	3	0011	0000	7	59 526	36 10.9'N	15 32.0'E	4	143.65	0011	2104.	2104.	454G	21	0000	0
CHN 7	7	3	0005	0000	7	59 524	37 32.0'N	11 10.0'E	4	143.71	0005	358.	358.	004K	21	0000	0
CHN 7	7	3	0006	0000	7	59 524	37 32.0'N	11 10.0'E	4	143.71	0006	453.	453.	005K	21	0000	0
CHN 7	7	3	0007	0000	7	59 525	37 32.0'N	11 10.0'E	4	143.71	0007	453.	453.	9.3K	21	0000	0
CHN 7	7	4	0013	0000	7	59 6 8	37 39.0'N	16 37.5'E	4	143.76	0013	2296.	2296.	680G	21	0000	0

MARSDEN SQUARE #146

CHN 13	13	7	0008	0000	8	60 925	48 46.0'N	10 2.0'W	5	146.80	0008	334.	334.	113G	4	0000	0
CHN 13	13	7	0009	0000	8	60 925	48 47.0'N	10 1.5'W	5	146.80	0009	814.	814.	029K	4	0000	0

MARSDEN SQUARE #147

CHN 82	82	6	0029	0000	8	68 811	41 55.0'N	29 13.0'W	8	147.19	0001	3112.	3065.	227G	16	0000	0
AI 32	32	3	0001	0000	8	67 7 8	42 59.5'N	27 42.2'W	9	147.27	0001	3041.	2778.	TR	15	0000	0
AI 32	32	3	0002	0000	8	67 7 8	42 57.5'N	27 40.7'W	9	147.27	0002	2853.	2532.	TR	15	0000	0
AI 13	13	1	0075	0000	8	64 919	42 29.0'N	28 56.0'W	1	147.28	0001	1159.	1159.	031K	15	0000	0
CHN 43	43	1	0112	0000	8	64 812	42 39.3'N	28 59.1'W	10	147.28	0040	1628.	1628.	095G	16	0000	0
CHN 82	82	7	0034	0000	8	68 823	42 28.5'N	28 41.1'W	8	147.28	0002	1642.	1282.	011K	14	0000	0
CHN 82	82	8	0048	0000	8	68 9 2	42 55.4'N	28 55.0'W	8	147.28	0006	1189.	1610.	050K	16	0000	0
AI 32	32	3	0011	0000	8	67 712	42 57.3'N	29 15.5'W	9	147.29	0011	2174.	1988.	156K	16	0000	0
AI 32	32	3	0012	0000	8	67 712	42 57.6'N	29 12.1'W	9	147.29	0012	1820.	1440.	15K	16	0000	0
AI 32	32	3	0013	0000	8	67 712	42 55.5'N	29 7.8'W	9	147.29	0013	1279.	1054.	6K	16	0000	0
AI 32	32	3	0014	0000	8	67 713	42 59.5'N	29 16.6'W	9	147.29	0014	2910.	2703.	TR	16	0000	0
CHN 43	43	1	0113	0000	8	64 812	42 42.4'N	29 1.5'W	10	147.29	0041	1829.	1684.	024K	16	0000	0
CHN 82	82	7	0035	0000	8	68 823	42 31.0'N	29 15.0'W	8	147.29	0003	2489.	2471.	5.9K	16	0000	0
CHN 105	105	2	0008	0000	8	72 727	43 21.0'N	21 19.1'W	9	147.31	0008	4299.	3953.	0012	17	0000	0
CHN 105	105	2	0009	0000	8	72 729	43 18.1'N	21 38.1'W	9	147.31	0009	4278.	3457.	0002	17	0000	0
CHN 105	105	2	0010	0000	8	72 728	43 17.2'N	21 46.9'W	9	147.31	0010	2967.	2626.	0004	17	0000	0
CHN 105	105	2	0001	0000	8	72 726	43 52.0'N	22 13.6'W	9	147.32	0001	4528.	4106.	0010	17	0000	0
CHN 105	105	2	0003	0000	8	72 726	43 58.2'N	22 11.7'W	9	147.32	0003	3118.	2625.	0021	17	0000	0
CHN 105	105	2	0005	0000	8	72 727	43 38.8'N	22 6.0'W	9	147.32	0005	4528.	3764.	0013	17	0000	0
CHN 105	105	2	0006	0000	8	72 727	43 39.0'N	22 13.0'W	9	147.32	0006	3080.	2630.	0044	17	0000	0
CHN 105	105	2	0007	0000	8	72 727	43 35.7'N	22 27.2'W	9	147.32	0007	1727.	1316.	0005	17	0000	0
CHN 105	105	2	0011	0000	8	72 729	43 36.7'N	22 28.2'W	9	147.32	0011	1614.	1129.	0008	17	0000	0
AI 32	32	3	0003	0000	8	67 7 9	43 1.8'N	28 13.5'W	9	147.38	0003	1465.	1315.	11K	15	0000	0
AI 32	32	3	0004	0000	8	67 7 9	43 3.2'N	28 15.2'W	9	147.38	0004	1353.	1129.	TR	15	0000	0
AI 32	32	3	0005	0000	8	67 710	43 6.4'N	28 31.0'W	9	147.38	0005	1483.	1371.	4K	15	0000	0
AI 32	32	3	0006	0000	8	67 710	43 7.4'N	28 25.6'W	9	147.38	0006	2344.	1689.	TR	15	0000	0
AI 32	32	3	0007	0000	8	67 711	43 11.4'N	28 58.7'W	9	147.38	0007	3193.	2532.	TR	16	0000	0
AI 32	32	3	0008	0000	8	67 711	43 12.6'N	28 56.0'W	9	147.38	0008	2532.	2250.	138K	16	0000	0
AI 32	32	3	0009	0000	8	67 711	43 12.4'N	28 54.7'W	9	147.38	0009	1847.	1557.	TR	16	0000	0
AI 32	32	3	0010	0000	8	67 711	43 13.5'N	29 9.6'W	9	147.39	0010	2268.	1913.	.7K	16	0000	0
AI 32	32	3	0015	0000	8	67 713	43 1.0'N	29 18.2'W	9	147.39	0015	2344.	2118.	85G	16	0000	0
AI 32	32	3	0016	0000	8	67 714	43 14.8'N	29 21.3'W	9	147.39	0016	2778.	2325.	TR	15	0000	0
AI 32	32	3	0017	0000	8	67 714	43 19.8'N	29 14.2'W	9	147.39	0017	1913.	1596.	TR	15	0000	0

MARSDEN SQUARE #147													
SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX DEN	MARS- DEN	CORE OR DREDGE	DEPTH	CORE LENGTH OR END DEPTH
											DREDGE OR SAMPLE WEIGHT	PROV. TYPE	ROCK OR SED. VITA CODE
CHN 43	1	0107	0000	8	64 8 9	44 34.0'N	28 9.2'W	4	147.48	0038	3264.	3264.	0
CHN 43	1	0104	0000	8	64 8 8	45 11.0'N	27 56.0'W	4	147.57	0037	2697.	2527.	0
MARS DEN SQUARE #151													
ATL 260	1	0003	0000	7	601012	40 4.0'N	69 1.5'W	5	151.09	0003	760.	722.	0
ATL 260	1	0004	0000	7	601012	40 3.6'N	69 2.0'W	5	151.09	0004	555.	333.	0
MARS DEN SQUARE #180													
CHN 43	1	0093	0000	8	64 718	42 46.6'N	7 37.5'E	5	180.27	0035	2674.	2674.	0
CHN 43	1	0094	0000	8	64 718	42 46.5'N	7 37.5'E	5	180.27	0036	2674.	2674.	0
CHN 43	1	0088	0000	8	64 711	43 22.0'N	8 37.2'E	5	180.38	0033	2478.	2478.	0
CHN 43	1	0086	0000	8	64 7 8	43 36.0'N	9 24.0'E	5	180.39	0032	946.	946.	0
MARS DEN SQUARE #182													
CHN 13	2	0041	0000	7	60 725	57 35.2'N	13 32.0'W	5	182.73	0041	147.	147.	0
CHN 13	2	0042	0000	7	60 725	57 35.2'N	13 32.0'W	1	182.73	0042	162.	162.	0
MARS DEN SQUARE #183													
CHN 13	2	0040	0000	7	60 721	50 44.0'N	29 52.0'W	5	183.09	0040	3897.	3556.	0
CHN 13	2	0007	0000	8	60 723	51 28.0'N	29 45.0'W	1	183.19	0007	1301.	1301.	0
MARS DEN SQUARE #301													
AII 20	2	0017	0000	8	66 311	0 3.0'S	17 35.0'W	1	301.07	0017	5145.	4490.	0
AII 20	2	0018	0000	8	66 311	0 5.5'S	17 36.0'W	1	301.07	0018	3870.	3650.	0
AII 20	2	0011	0000	8	66 3 8	0 12.0'S	18 27.0'W	1	301.08	0011	7100.	5840.	0
AII 20	2	0012	0000	8	66 3 9	0 11.0'S	18 26.0'W	1	301.08	0012	5400.	4235.	0
AII 20	2	0020	0000	8	66 313	0 15.0'S	18 33.0'W	1	301.08	0020	7620.	5300.	0
AII 60	6	0015	0000	8	71 624	0 4.0'S	18 18.0'W	9	301.08	0015	4512.	3500.	0
AII 60	6	0017	0000	8	71 624	0 9.0'S	18 22.0'W	9	301.08	0017	6387.	5675.	0
AII 42	5	0002	0000	8	68 611	3 49.0'S	11 3.0'W	1	301.31	0002	3468.	3231.	0
AII 42	5	0001	0000	8	68 610	4 8.0'S	12 7.0'W	1	301.42	0001	3061.	2871.	0
MARS DEN SQUARE #302													
AII 20	2	0021	0000	8	66 314	0 28.5'S	20 31.0'W	1	302.00	0021	5760.	5390.	0
AII 20	2	0022	0000	8	66 314	0 40.0'S	20 28.5'W	1	302.00	0022	6600.	6600.	0
AII 20	2	0023	0000	8	66 315	0 43.6'S	20 25.0'W	1	302.00	0023	3843.	2815.	0
CHN 35	2	0011	0000	8	63 3 9	1 27.0'S	29 14.0'W	1	302.19	0011	4353.	4353.	0

MARSDEN SQUARE #303

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE-VICE	DATE	LATITUDE	LONGITUDE	FIX	MARS-DEN	CORE OR DREDGE	DEPTH	CORE LENGTH OR END	DREDGE OR SAMPLE WEIGHT	PHYSIO-GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
CHN 35	35	2	0003	0000	8	63 3 6	0 50.5'S	30 6.5'W	1	303.00	0003	4408.	4408.	097K	15	0000	0
CHN 35	35	2	0004	0000	8	63 3 7	0 57.0'S	30 8.0'W	1	303.00	0004	4320.	4320.	026K	15	0000	0
CHN 115	115	8	0155	0000	7	74 6 3	3 19.0'S	37 34.0'W	1	303.37	0015	285.	344.	030G	4	0000	0
CHN 115	115	8	0156	0000	8	74 6 3	3 20.3'S	37 22.8'W	1	303.37	0016	806.	284.	6.6K	4	0000	0
CHN 115	115	8	0157	0000	8	74 6 3	3 20.4'S	37 27.7'W	1	303.37	0017	266.	272.	043K	4	0000	0
CHN 115	115	7	0154	0000	8	74 528	4 43.5'S	35 2.0'W	1	303.45	0014	1085.	905.	5.9K	4	0000	0
CHN 35	35	2	0012	0000	11	63 313	7 38.5'S	34 37.0'W	1	303.74	0012	28.	28.	0000	14	0000	0
CHN 115	115	7	0151	0000	8	74 524	8 5.8'S	33 54.5'W	1	303.83	0011	2052.	1774.	103K	4	0000	0

MARSDEN SQUARE #322

AI 93	93	12	0044	0000	8	76 919	5 20.6'S	131 54.4'E	2	322.51	0018	1551.	695.	500G	3	0000	0
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MARSDEN SQUARE #326

CHN 100	100	6	0060	0000	8	71 531	4 0.2'S	90 46.9'E	9	326.40	0005	4881.	3960.	011K	15	0000	0
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MARSDEN SQUARE #329

CHN 43	43	1	0052	0000	8	64 517	7 36.3'S	60 12.3'E	1	329.70	0021	3286.	3286.	010G	13	0000	0
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MARSDEN SQUARE #330

CHN 43	43	1	0011	0000	8	64 4 9	1 37.0'S	53 21.0'E	1	330.13	0005	4784.	4088.	006K	10	0000	0
CHN 43	43	1	0017	0000	7	64 412	3 37.0'S	55 42.0'E	1	330.35	0001	2618.	2618.	3.8K	3	0000	0
CHN 43	43	1	0063	0000	8	64 521	5 14.0'S	55 19.5'E	1	330.55	0023	1497.	1497.	3.9K	13	0000	0
CHN 43	43	1	0018	0000	8	64 416	6 49.0'S	57 22.0'E	1	330.67	0007	2776.	2826.	025G	13	0000	0
CHN 43	43	1	0060	0000	7	64 520	6 4.0'S	57 7.0'E	1	330.67	0004	1913.	1913.	007G	13	0000	0
CHN 43	43	1	0061	0000	8	64 520	6 0.0'S	57 5.0'E	1	330.67	0022	1763.	1763.	075G	13	0000	0
CHN 43	43	1	0020	0000	8	64 417	7 2.0'S	59 22.0'E	1	330.79	0008	3127.	2984.	004G	13	0000	0

MARSDEN SQUARE #355

CHN 100	100	9	0090	0000	8	71 816	13 17.5'S	166 6.8'E	9	355.36	0016	7094.	6485.	5.9K	21	0000	0
CHN 100	100	9	0086	0000	8	71 813	14 47.1'S	168 9.2'E	9	355.48	0015	2671.	2291.	045K	21	0000	0
CHN 100	100	9	0081	0000	8	71 8 9	17 52.4'S	167 20.6'E	9	355.77	0014	4815.	4746.	044K	17	0000	0

MARSDEN SQUARE #356

CHN 100	100	8	0066	0000	8	71 723	10 43.8'S	152 8.4'E	9	356.02	0010	3271.	3215.	1.8K	21	0000	0
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MARSDEN SQUARE #359										CORE				ROCK			
SHIP	CRUISE	LEG	STATION	SAMPLE	DE- VICE	DATE	LATITUDE	LONGITUDE	FIX	MARS- DEN	CORE OR DREDGE	DEPTH	CORE OR END	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	VITA SED. TYPE	CODE
CHN 100		7	0061	0000	8	71 711	12 40.2'S	123 33.4'E	9	359.23	0006	127.	238.	3.9K	2	0000	0
CHN 100		7	0064	0000	8	71 712	12 39.6'S	123 33.0'E	9	359.23	0009	239.	242.	012K	2	0000	0
MARSDEN SQUARE #365																	
CHN 43		1	0044	0000	8	64 514	10 50.5'S	60 8.8'E	1	365.00	0016	1320.	1320.	680G	13	0000	0
CHN 43		1	0039	0000	8	64 512	13 22.5'S	60 57.0'E	1	365.30	0014	1455.	1455.	340G	13	0000	0
CHN 43		1	0037	0000	8	64 511	13 35.0'S	61 12.0'E	1	365.31	0013	2131.	2131.	1.6K	13	0000	0
CHN 43		1	0035	0000	8	64 510	14 34.0'S	60 21.0'E	1	365.40	0012	55.	55.	4.5K	13	0000	0
MARSDEN SQUARE #366																	
CHN 43		1	0026	0000	8	64 424	17 22.5'S	59 10.0'E	1	366.79	0011	830.	792.	454G	13	0000	0
MARSDEN SQUARE #400																	
AII 93		6	0011	0000	8	76 317	24 58.8'S	70 0.7'E	9	400.40	0010	3512.	3522.	104K	16	0000	0
AII 93		6	0012	0000	8	76 317	24 40.5'S	70 2.7'E	9	400.50	0011	3445.	3323.	043K	14	0000	0
AII 93		6	0015	0000	8	76 328	25 46.8'S	70 11.0'E	9	400.50	0014	3521.	3097.	024K	16	0000	0
MARSDEN SQUARE #401																	
AII 93		6	0014	0000	8	76 328	25 42.6'S	69 33.5'E	9	401.59	0013	3609.	3256.	086K	14	0000	0
AII 93		6	0018	0000	8	76 330	25 35.5'S	69 55.8'E	9	401.59	0016	3865.	3079.	040K	16	0000	0
MARSDEN SQUARE #407																	
AII 93		2	0020	0000	8	751213	24 43.2'S	6 34.2'E	9	407.46	0020	1800.	1190.	035K	15	0000	0
AII 93		2	0021	0000	8	751214	25 26.0'S	6 42.2'E	9	407.56	0021	3160.	2625.	004K	15	0000	0
AII 93		2	0019	0000	8	751212	26 28.7'S	6 15.3'E	9	407.66	0019	2450.	2400.	033K	15	0000	0
AII 93		2	0017	0000	8	751210	29 32.8'S	3 5.7'E	9	407.93	0017	2787.	1850.	072K	15	0000	0
MARSDEN SQUARE #408																	
AII 93		2	0009	0000	8	7512 5	34 10.6'S	1 29.7'W	9	408.41	0009	1925.	1765.	022K	15	0000	0
AII 93		2	0010	0000	8	7512 5	34 20.5'S	1 34.6'W	9	408.41	0010	2284.	1935.	056K	15	0000	0
AII 93		2	0011	0000	8	7512 6	32 58.2'S	0 1.1'W	9	408.41	0011	3109.	2367.	088K	15	0000	0
AII 93		2	0007	0000	8	7512 4	34 30.0'S	3 27.9'W	9	408.43	0007	2220.	2130.	001K	15	0000	0
AII 93		2	0008	0000	8	7512 4	34 30.0'S	3 28.4'W	9	408.43	0008	1984.	1488.	058K	15	0000	0
AII 93		2	0006	0000	8	7512 3	34 21.0'S	4 59.0'W	9	408.44	0006	2460.	2360.	037K	15	0000	0
AII 93		2	0005	0000	8	7512 3	34 17.3'S	5 2.1'W	9	408.45	0005	3101.	3012.	051K	15	0000	0
AII 93		2	0004	0000	8	7512 1	36 22.7'S	7 30.7'W	9	408.67	0004	2184.	1925.	013K	15	0000	0
AII 93		2	0003	0000	8	7512 1	37 8.3'S	7 49.5'W	9	408.77	0003	2650.	1940.	034K	15	0000	0

MARSDEN SQUARE #409

SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YRMDA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AII 107		7	0025	0000	8	80 5 9	31 50.0'S	13 34.7'W	9	409.13	0025	2984.	2364.	044K	16	0000	0
AII 107		7	0023	0000	8	80 5 8	32 40.6'S	14 1.1'W	9	409.24	0023	2634.	2087.	007K	16	0000	0
AII 107		7	0020	0000	8	80 5 6	33 42.8'S	14 15.0'W	9	409.34	0020	2283.	1489.	031K	16	0000	0
AII 107		7	0018	0000	8	80 5 5	34 33.2'S	15 8.8'W	9	409.45	0018	2824.	2464.	400K	16	0000	0
AII 93		2	0001	0000	8	751128	34 59.0'S	16 8.0'W	9	409.46	0001	3576.	2283.	015K	15	0000	0
AII 107		7	0017	0000	8	80 5 5	35 16.7'S	15 44.1'W	9	409.55	0017	3638.	3135.	300K	16	0000	0
AII 107		7	0015	0000	8	80 5 3	36 33.5'S	17 35.2'W	9	409.67	0015	2683.	2434.	237K	16	0000	0
AII 107		7	0016	0000	8	80 5 4	36 4.4'S	18 5.0'W	9	409.68	0016	2623.	2284.	025K	16	0000	0
AII 107		7	0013	0000	8	80 5 2	37 50.0'S	17 8.5'W	9	409.77	0013	2723.	1885.	013K	16	0000	0
AII 107		7	0014	0000	8	80 5 2	37 11.2'S	17 30.9'W	9	409.77	0014	2454.	2224.	350K	16	0000	0
AII 107		7	0010	0000	8	80 430	38 52.9'S	16 14.4'W	9	409.86	0010	2384.	1954.	020K	16	0000	0
AII 107		7	0011	0000	8	80 430	38 10.9'S	16 33.7'W	9	409.86	0011	2490.	2209.	1.6K	16	0000	0
AII 107		7	0009	0000	8	80 429	39 41.8'S	16 3.2'W	9	409.96	0009	2314.	2633.	101K	16	0000	0

MARSDEN SQUARE #411

CHN 115	6	0146	0000	8	74 511	30 12.8'S	39 21.5'W	1	411.09	0009	4789.	4139.	133K	13	0000	0
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MARSDEN SQUARE #443

AII 93	2	0014	0000	8	7512 8	31 59.5'S	2 24.2'E	9	443.12	0014	2304.	1587.	175K	15	0000	0
AII 93	2	0012	0000	8	7512 7	32 39.9'S	1 35.3'E	9	443.20	0012	3090.	2827.	001K	15	0000	0
AII 93	2	0013	0000	8	7512 7	32 39.1'S	1 36.0'E	9	443.21	0013	2307.	2215.	014K	15	0000	0

MARSDEN SQUARE #445

AII 107	7	0007	0000	8	80 428	40 26.3'S	16 45.0'W	9	445.06	0007	2627.	2597.	390K	16	0000	0
AII 107	7	0006	0000	8	80 427	41 14.9'S	16 36.2'W	9	445.16	0006	2614.	2175.	114K	16	0000	0
AII 107	7	0004	0000	8	80 426	42 54.9'S	16 22.2'W	9	445.26	0004	3085.	2519.	183K	16	0000	0
AII 107	7	0002	0000	8	80 422	46 12.7'S	14 4.4'W	9	445.64	0002	2485.	2913.	170K	16	0000	0

MARSDEN SQUARE #480

AII 107	6	0031	0000	8	80 320	54 41.4'S	0 2.3'W	12	480.40	0031	829.	884.	046K	14	0000	0
AII 107	6	0032	0000	8	80 320	54 39.7'S	0 0.8'W	12	480.40	0032	891.	900.	010K	14	0000	0
AII 107	6	0033	0000	8	80 321	54 39.0'S	0 4.1'W	12	480.40	0033	937.	987.	050K	14	0000	0
AII 107	6	0034	0000	8	80 321	54 38.1'S	0 7.6'W	12	480.40	0034	1060.	1082.	017K	14	0000	0
CHN 115	4	0037	0000	8	74 225	54 35.9'S	0 58.1'W	9	480.40	0001	2522.	2328.	093K	14	0000	0
CHN 115	4	0044	0000	8	74 3 6	54 40.2'S	0 1.2'W	9	480.40	0005	861.	818.	091K	16	0000	0
CHN 115	4	0038	0000	8	74 227	55 20.2'S	1 42.6'W	9	480.51	0003	3509.	3419.	9.5K	14	0000	0
CHN 115	4	0042	0000	8	74 3 4	55 22.5'S	2 1.9'W	9	480.52	0004	2540.	2461.	1.8K	15	0000	0
ISO 1	1	0045	0000	8	761120	55 37.5'S	3 48.9'W	9	480.53	0045	3600.	3050.	100K	19	0000	0
ISO 1	1	0047	0000	8	761121	55 36.2'S	3 43.7'W	9	480.53	0047	2150.	1450.	035K	19	0000	0
ISO 1	1	0048	0000	8	761121	55 41.2'S	3 49.1'W	9	480.53	0048	4390.	3700.	0.1K	19	0000	0
MEL 1	5	0023	0000	8	8012 0	55 47.1'S	3 55.7'W	9	480.53	0023	5378.	3321.	256K	19	0000	0
MEL 1	5	0018	0000	8	8012 0	55 51.9'S	4 17.4'W	9	480.54	0018	2488.	2032.	135K	19	0000	0

MARS DEN SQUARE #480																			
SHIP	CRUISE	LEG	STATION	SAMPLE NUMBER	DE-VICE	DATE	YR	MODA	LATITUDE	LONGITUDE	FIX TYPE	MARS-DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO-GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
MEL	1	5	0019	0000	8	8012	0	55	51.1'S	4 19.3'W	9	480.54	0019	2835.	2835.	100K	19	0000	0
MEL	1	5	0020	0000	8	8012	0	55	50.0'S	4 25.3'W	9	480.54	0020	4782.	3221.	123K	19	0000	0
MEL	1	5	0021	0000	8	8012	0	55	50.7'S	4 25.3'W	9	480.54	0021	4456.	3490.	283K	19	0000	0
MEL	1	5	0022	0000	8	8012	0	55	46.9'S	4 39.2'W	9	480.54	0022	4560.	4361.	025K	19	0000	0
MEL	1	5	0024	0000	8	8012	0	56	2.6'S	4 42.1'W	9	480.64	0024	3295.	3227.	046K	16	0000	0
MEL	1	5	0025	0000	8	8012	0	56	17.0'S	4 39.2'W	9	480.64	0025	3294.	3095.	002K	16	0000	0
MEL	1	5	0026	0000	8	8012	0	56	36.8'S	4 26.8'W	9	480.64	0026	3984.	3523.	020K	19	0000	0
MEL	1	5	0027	0000	8	8012	0	56	53.6'S	6 2.6'W	9	480.66	0027	2379.	2495.	047K	16	0000	0
MEL	1	5	0028	0000	8	8012	0	56	57.6'S	6 7.5'W	9	480.66	0028	3098.	2822.	017K	16	0000	0
MEL	1	5	0029	0000	8	8012	0	57	3.3'S	6 4.0'W	9	480.76	0029	3589.	3648.	017K	16	0000	0
MEL	1	5	0031	0000	8	8012	0	57	34.4'S	6 59.1'W	9	480.76	0031	3808.	3500.	097K	16	0000	0
MEL	1	5	0030	0000	8	8012	0	57	28.1'S	7 0.6'W	9	480.77	0030	4074.	3794.	122K	16	0000	0
MEL	1	5	0032	0000	8	8012	0	57	42.6'S	7 39.5'W	9	480.77	0032	3152.	2543.	031K	19	0000	0
MEL	1	5	0033	0000	8	8012	0	57	46.3'S	7 40.6'W	9	480.77	0033	3944.	2797.	088K	19	0000	0
MEL	1	5	0034	0000	8	8012	0	57	46.9'S	7 40.3'W	9	480.77	0034	3983.	3684.	047K	19	0000	0
MEL	1	5	0035	0000	8	8012	0	57	57.0'S	7 48.7'W	9	480.77	0035	3479.	2920.	317K	14	0000	0
MEL	1	5	0036	0000	8	8012	0	58	8.9'S	9 45.8'W	9	480.89	0036	3414.	2779.	084K	14	0000	0
MARS DEN SQUARE #481																			
MEL	1	5	0037	0000	8	8012	0	58	25.8'S	15 39.7'W	9	481.85	0037	4104.	3319.	108K	19	0000	0
MEL	1	5	0038	0000	8	8012	0	58	27.2'S	15 29.2'W	9	481.85	0038	3233.	2966.	075K	19	0000	0
MEL	1	5	0039	0000	8	8012	0	58	39.1'S	16 12.7'W	9	481.86	0039	3958.	3822.	195K	16	0000	0
MEL	1	5	0040	0000	8	8012	0	58	59.4'S	16 19.0'W	9	481.86	0040	4476.	4372.	075K	16	0000	0
MEL	1	5	0041	0000	8	8012	0	59	5.2'S	16 48.5'W	9	481.94	0041	4645.	4379.	064K	19	0000	0
MEL	1	5	0043	0000	8	81 2	0	59	44.9'S	17 58.4'W	9	481.97	0043	2594.	2502.	015K	16	0000	0
MEL	1	5	0042	0000	8	8012	0	58	21.8'S	18 3.6'W	9	481.98	0042	3984.	3832.	044K	16	0000	0
MARS DEN SQUARE #484																			
AI 107		6	0001	0000	8	80 3	9	56	10.2'S	41 48.0'W	12	484.61	0001	3809.	3402.	068K	12	0000	0
AI 107		6	0002	0000	8	80 3	9	56	7.3'S	41 41.1'W	12	484.61	0002	2438.	2959.	1.4K	12	0000	0
MARS DEN SQUARE #514																			
ISO	1	1	0075	0000	8	7612	9	52	54.0'S	11 23.3'E	9	514.21	0075	1940.	1760.	010K	19	0000	0
MARS DEN SQUARE #515																			
AI 107		6	0046	0000	8	80 323	53	58.9'S	3 35.6'E	12	515.33	0046	2176.	2252.	0.2K	16	0000	0	
ISO	1	1	0061	0000	8	7612	1	53	59.7'S	6 25.0'E	9	515.36	0061	4720.	4570.	003K	19	0000	0
ISO	1	1	0062	0000	8	7612	2	53	54.2'S	6 20.5'E	9	515.36	0062	2835.	2300.	054K	19	0000	0
ISO	1	1	0063	0000	8	7612	2	53	51.5'S	6 24.1'E	9	515.36	0063	3110.	2560.	004K	19	0000	0
AI 107		6	0058	0000	8	80 326	53	58.8'S	7 20.4'E	12	515.37	0058	1507.	1316.	071K	12	0000	0	
AI 107		6	0060	0000	8	80 327	53	25.7'S	9 9.1'E	12	515.39	0060	5899.	4207.	070K	19	0000	0	
AI 107		6	0061	0000	8	80 328	53	25.1'S	9 11.9'E	12	515.39	0061	5073.	4063.	060K	19	0000	0	

MARSDEN SQUARE #515

CRUISE	SHIP	LEG	STATION	SAMPLE NUMBER	DE- VICE	DATE YR	DATE MODA	LATITUDE	LONGITUDE	FIX TYPE	MARS- DEN SQUARE	CORE OR DREDGE NUMBER	DEPTH	CORE LENGTH OR END DEPTH	DREDGE OR SAMPLE WEIGHT	PHYSIO- GRAPHIC PROV.	ROCK OR SED. TYPE	VITA CODE
AI1	107	6	0063	0000	8	80	328	53 23.3'S	9 20.3'E	12	515.39	0063	4051.	4180.	012K	19	0000	0
AI1	107	6	0064	0000	8	80	328	53 19.2'S	9 8.4'E	12	515.39	0064	5024.	3874.	003K	19	0000	0
AI1	107	6	0065	0000	8	80	328	53 14.3'S	9 11.6'E	12	515.39	0065	4729.	2692.	022K	19	0000	0
AI1	107	6	0066	0000	8	80	328	53 8.8'S	9 11.5'E	12	515.39	0066	2619.	2214.	068K	19	0000	0
AI1	107	6	0067	0000	8	80	329	53 14.4'S	9 27.6'E	12	515.39	0067	5311.	4025.	024K	19	0000	0
AI1	107	6	0035	0000	8	80	321	54 43.4'S	0 48.2'E	12	515.40	0035	584.	651.	048K	14	0000	0
AI1	107	6	0036	0000	8	80	321	54 42.9'S	0 49.4'E	12	515.40	0036	745.	941.	028K	14	0000	0
AI1	107	6	0037	0000	8	80	322	54 44.2'S	0 50.3'E	12	515.40	0037	1196.	789.	009K	14	0000	0
AI1	107	6	0039	0000	8	80	322	54 26.5'S	1 37.3'E	12	515.41	0039	5022.	4436.	025K	19	0000	0
AI1	107	6	0040	0000	8	80	322	54 25.4'S	1 34.2'E	12	515.41	0040	3701.	2724.	068K	19	0000	0
AI1	107	6	0041	0000	8	80	322	54 25.1'S	1 28.4'E	12	515.41	0041	1907.	1983.	1.4K	19	0000	0
AI1	107	6	0043	0000	8	80	323	54 24.4'S	0 19.8'E	12	515.41	0043	2095.	2272.	0.4K	19	0000	0
AI1	107	6	0047	0000	8	80	324	54 0.7'S	3 33.1'E	12	515.43	0047	2069.	1895.	043K	16	0000	0
AI1	107	6	0048	0000	8	80	324	54 1.8'S	3 31.3'E	12	515.43	0048	1901.	2178.	016K	16	0000	0
AI1	107	6	0051	0000	8	80	325	54 11.9'S	4 35.6'E	12	515.44	0051	3142.	2536.	006K	19	0000	0
AI1	107	6	0052	0000	8	80	325	54 25.5'S	4 43.9'E	12	515.44	0052	973.	1001.	064K	12	0000	0
CHN	115	4	0050	0000	8	74	3 8	54 13.7'S	4 3.1'E	9	515.44	0008	1806.	1938.	9.2K	19	0000	0
AI1	107	6	0053	0000	8	80	325	54 13.5'S	5 10.5'E	12	515.45	0053	2810.	2364.	018K	16	0000	0
AI1	107	6	0055	0000	8	80	326	54 17.6'S	5 18.5'E	12	515.45	0055	2355.	2010.	033K	16	0000	0
AI1	107	6	0056	0000	8	80	326	54 23.8'S	5 8.2'E	12	515.45	0056	3664.	3122.	036K	16	0000	0
ISO	1	1	0056	0000	8	7611	30	54 5.5'S	6 17.1'E	9	515.46	0056	4390.	3650.	045K	19	0000	0
ISO	1	1	0057	0000	8	7612	1	54 8.3'S	6 29.3'E	9	515.46	0057	3100.	2830.	001K	19	0000	0
ISO	1	1	0058	0000	8	7612	1	54 4.3'S	6 23.9'E	9	515.46	0058	3580.	2960.	112K	19	0000	0
ISO	1	1	0059	0000	8	7612	1	54 3.4'S	6 30.0'E	9	515.46	0059	2520.	2340.	150K	19	0000	0
ISO	1	1	0060	0000	8	7612	1	54 2.7'S	6 29.2'E	9	515.46	0060	2780.	2500.	159K	19	0000	0
AI1	107	6	0057	0000	8	80	326	54 2.7'S	7 13.4'E	12	515.47	0057	3648.	1920.	034K	16	0000	0
AI1	107	6	0059	0000	8	80	327	54 1.1'S	7 14.1'E	12	515.47	0059	3501.	2520.	011K	16	0000	0

MAPS OF ALVIN DIVE LOCATIONS

**ALVIN 338-342 CASHES LEDGE
JULY 1971**

Depth Contour : 200m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

ALVIN 371 - 374 AVTEC RANGE - BAHAMAS
NOV. 1971

Projection: Universal Transverse Mercator

ALVIN 410 - 415 HUDSON CANYON
JUNE 1972

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 419 - 423 GULF OF MAINE
JULY 1972**

Depth Contour : 200m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 427 - 447 CASHES LEDGE
JULY 1972**

Depth Contour : 200m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 500 - 504 TONGUE OF THE OCEAN
JAN. - FEB. 1974**

Projection: Universal Transverse Mercator

**ALVIN 518 - 534 FAMOUS AREA
JUNE - AUG. 1974**

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

ALVIN 537 CORNER RISE
AUGUST 1974

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

NEW ENGLAND SEAMOUNTS AUG. - SEPT. 1974

Depth Contour : 2000m
 Projection: Universal Transverse Mercator
 Bathymetry from Uchupi

ALVIN 611 - 625 CAYMAN TROUGH
JAN. - FEB. 1976

Depth Contour : 2000m
 Projection: Universal Transverse Mercator
 Bathymetry from Uchupi

ALVIN 660 SITE "D" CONTINENTAL RISE
JUNE 1976

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

ALVIN 737 - 742 CAYMAN TROUGH
APRIL 1977

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 818 - 832 MID-ATLANTIC RIDGE
AUGUST 1978**

Depth Contour : 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

ALVIN 889 - 893 GALAPAGOS RIFT
FEB. 1979

Projection: Universal Transverse Mercator

ALVIN 978 - 982, 1148 - 1159 E. PACIFIC RISE
NOV. 1979, NOV. 1981

Projection: Universal Transverse Mercator

**ALVIN 1008 - 1015 KANE FRACTURE ZONE
JUNE 1980**

Depth Contour: 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 1054 - 1063 BLAKE SPUR
OCT. 1980**

Depth Contour: 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**ALVIN 1240 - 1247 KANE FRACTURE ZONE
JULY 1982**

Depth Contour: 2000m
Projection: Universal Transverse Mercator
Bathymetry from Uchupi

**DESCRIPTIONS OF W.H.O.I. ROCK SAMPLES
VOLUME**

WHOI Rock Sample Description

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 338

Described By: Paul Andrew Date: 9/3/85

1-1?	Granite		C								Very small chip. Drilled bedrock fragment.
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Alvin 340

Described By: Paul Andrew Date: 9/3/85

1-1	Granite	4.3	M	1-5 mm Alkali Feldspar, Qtz					F		Angular bedrock fragment some very fresh surfaces.
1-2	Glacial Erratic	2.7	F	Mafic, igneous composition	30% PG				L		Rounded Fragment, Diorite?
1-3	Glacial Erratic	0.9	M	Qtz, biotite TR-Px					L		Rounded fragment, biotite gneiss?
1-4	Glacial Erratic	1.0	M	5 mm - PG, banded, native					L		Felsic gneiss?
1-5	Glacial Erratic	5.9	M	1-5 mm Alkali Feldspar, Qtz					L		Rounded fragment, granite composition.
1-6	Granite	6.6	M	1-5 mm Alkali Feldspar, Qtz					F		Angular bedrock fragment, some very fresh surfaces.
1-7	Granite	6.7	M	1-5 mm Feldspar, Qtz					F		Angular bedrock fragment, some very fresh surfaces.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 342

Described By: Paul Andrew Date: 9/3/85

1-1, 4-4 2-1 & 2, 3-1 & 2 4-1 & 2, 5-1 & 3	Rhyolite	36.6	F	Banded feldspars mostly felsic	2 mm Qtz approx. 3%	TR		TR	L		Angular bedrock fragment, veined, Pink "stain-like" zones notable (tectonized Alkali feldspar?).
1-5	Glacial Erratic	3.5	F	Feldspars & Qtz				TR	L		Rounded fragment. Arkose?
5-2	Glacial Erratic	3.0	M	PG & Qtz	Biotite			TR	L		Igneous, leucocratic diorite.

Alvin 349

Described By: Paul Andrew Date: 9/4/85

1-1	Granite	2.5	C	Granitic	Hornblende & Biotite			1 mm	L		Very coarse bedrock fragment. Hornblende and biotite notable. Feldspars are often rimmed and compositionally zoned.
2-1	Granite	3.0	C	Granitic	Hornblende & Biotite			TR	L		Very coarse bedrock fragment. Hornblende and biotite notable. Feldspars are often rimmed and compositionally zoned.

Alvin 371

Described By: Paul Andrew Date: 9/9/85

1	Slightly Silty Calcareous Clay	1.0	A	Clay, Silt & calcareous tests.							$\frac{1}{2}$ pint jar of white sediment.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 374

Described By: Paul Andrew Date: 9/9/85

1	Coral	0.4									Complete coral test.
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Alvin 410

Described By: Paul Andrew Date: 9/9/85

2	Slightly Silty Calcareous Sediment	0.2	A								Greyish green sediment, worm burrows noted.
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Alvin 415

Described By: Paul Andrew Date: 9/9/85

3-1 3 & 5	Limestone	13.5	A					TR	L		Attached worm tubes and sediment. Some burrows.
3-2 & 4	Slightly Silty Calcareous Sediment		A								Greyish-green sediment $\frac{1}{4}$ - 1 pint jar.

Alvin 419

Described By: Paul Andrew Date: 9/4/85

1-1	Granite	7.8	C	Granitic	2% Hornblende				L		Very coarse bedrock fragment. Hornblende notable.
1-2	Granite	6.1	C	Granitic	2% Hornblende				M	A 1 cm weathering rind noted 1 cm from edge	Very coarse bedrock fragment. Hornblende notable.
1-3	Granite	2.7	C	Granitic	2% Hornblende				M	$\frac{1}{2}$ cm weathering rind noted	Very coarse bedrock fragment. Hornblende notable.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 421

Described By: Paul Andrew Date: 9/4/85

1-1 & 2	Granite	1.0	C	Granitic					L	Thin weathering rind noted	Fresh bedrock fragment.
1-3	Granite	1.0	C	Granitic				1 mm	M	1 cm weathering rind noted	Bedrock fragment Mn-oxides and biological tests noted.

Alvin 423

Described By: Paul Andrew Date: 9/4/85

1-1	Granite	0.1	C	Granitic					M	Thick weathering rind noted	2 small chips remain.
1-2	Glacial Erratic?	5.7	A					1-15 mm	M		Phyllite. Large (3 cm) Qtz vein noted.

Alvin 427

Described By: Paul Andrew Date: 9/4/85

	Granite	4.7	F	Granitic	TR-Mafic minerals			TR	M	Weathering rinds noted	"Dike-like" texture.
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Alvin 429

Described By: Paul Andrew Date: 9/4/85

1-1	Granite	0.1	M	Granitic	5% biotite				L		2 small chips remaining. Notable biotite, bedrock sample.
1-2	Granite	12.0	M	Granitic	5% biotite. 1% - 1 cm labradorite				L		Notable biotite, bedrock sample.
1-3	Granite	11.0	M	Granitic	5-7% biotite. 1% greater than 1 cm PG				L		Notable biotite, bedrock sample.
2-1	Granite		F	Granitic	3% biotite. TR - large feldspars				L		Notable biotite, bedrock sample.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 430

Described By: Paul Andrew Date: 9/4/85

1-1	Granite	2.5	C	Granitic	TR - Biotite			TR	M		Bedrock sample.
2-1 & 2	Granite	1.1	C	Granitic	1 - 3% Biotite				L		
Scuba - 1	Granite	2.7	C	Pink-Alkali feldspar abundant					L		Bedrock sample, very pink in color.

Alvin 431

Described By: Paul Andrew Date: 9/4/85

1-1, 2-1, 2, 3 & 4	Granite	48.7	C	Granitic	1-3% Biotite			TR	L		Coarsely crystalline bedrock granite.
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Alvin 445

Described By: Paul Andrew Date: 9/4/85

1-2 & 6	Granite	7.4	M-C	Granitic	3-5% Amph. (Hornblende?)			TR	M		Samples completely stained on outer surface.
1-3, 5 & 8	Granite	11.0	M-C	Granitic	1-3% Amph. (Hornblende?)				L		Good bedrock samples, fresh broken surface contrast stained, exposed surfaces.
1-9	Granite	2.0	C	Granitic	TR-Mafic				M		Very large (greater than 1 cm) Feldspar phenocrysts with notable reaction rims.
2-1, 2 & 3	Granite	18.0	C	Granitic	TR-Mafic			TR	M	1 cm weathering rinds	Large, angular, Mn-stained boulders.
2-4 thru 9	Granite	6.8	C	Granitic	TR-Mafic			TR	L		Flat hand sized fragments weathered on all sides.

Alvin 447

Described By: Paul Andrew Date: 9/5/85

1	Granite	10.8	C	Granitic	1%-Mafic			TR	L		One very fresh surface. Good bedrock sample.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 500 Described By: Paul Andrew Date: 9/7/85											
1	Consolidated Calc Ooze	3.8	A					1 mm			White, "chalk-like" sediment. Burrows and Fe/Mn - oxides noted.
Alvin 502 Described By: Paul Andrew Date: 9/7/85											
1, 2, & 4	Consolidated Calc Ooze	2.5	A					TR			White, "chalk-like" sediment. Worm burrows noted.
Alvin 503 Described By: Paul Andrew Date: 9/7/85											
1	Consolidated Calc Ooze	3.6	A					1			White, "chalk-like" sediment. Burrow & Fe/Mn - oxides noted.
Alvin 504 Described By: Paul Andrew Date: 9/7/85											
1	Consolidated Calc Ooze	0.5	A								White, "chalk-like" sediment. Core sample.
Alvin 518 Described By: Bryan/Andrew Date: 9/10/85											
1-1a-c	Basalt	3.2	A		2.5% OL, common euhedral spinel	4.1%		0.1 mm	M	0.16 mm of palagonite	Collected from outcrop. All glass intact initially.
1-2a-b	Basalt	2.7	A		2.4% OL, common euhedral spinel	2.8%		0.08 mm	M	0.2 mm of palagonite	Collected from outcrop. All glass intact initially.
?	Basalt Glass	0.2	G					TR	L	Palagonitized	518-1-? Glass fragments.
2-1	Aphyric Pillow Basalt	4.5	A		Approx. 3% OL common euhedral spinel	2%		0.08	L	0.2 mm of palagonite	Talus fragment, some partially altered glass remains.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-2	Aphyric Pillow Basalt	4.8	A		Approx. 3% OL common euhedral spinel	2%		0.08	L	0.2 mm of palagonite	Talus fragment, some partially altered glass remains.
2-3	Aphyric Pillow Basalt	2.6	A		Approx. 3% OL common euhedral spinel	2%		0.08	L	0.2 mm of palagonite	Talus fragment, some partially altered glass remains.
3-1	Basalt	20.0	A		5.6% PG, 2.1% OL, 0.9% PX, common euhedral spinel	2.2%		0.03 mm	L	0.03 mm of palagonite	Collected from outcrop. All glass intact initially.
3-2	Basalt	6.0	A		5.8% PG, 2.8% OL, 1.0% PX, common euhedral spinel	3.5%		0.05 mm	L	0.02 mm of palagonite	Collected from outcrop. All glass intact initially. Sheet flow?
3-3a & b	Plag-Phyric Pillow Basalt	2.3	G		9.1% PG, 3.0% OL, 0.5% PX, common spinel	2.2%		0.2 mm	L	0.05 mm of palagonite	Collected from outcrop. All glass intact initially.
3-4	Plag-Phyric Basalt	1.5	G		10% PG, 3% OL	2%		0.05 mm	L	0.05 mm of palagonite	Sheet flow morphology, altered on both sides
3-5	Plag-Phyric	1.1	G		10% PG, 3% OL	2%		0.05 mm	L	0.05 mm of palagonite	Sheet flow morphology, altered on both sides.
3-6	Plag-Phyric Basalt	3.4	A		8% PG, 2% OL	2%		0.1	L	TR-Palagonite	Sheet flow morphology, mostly holocrystalline, some glass noted.
3-?	Plag-Phyric Basalt	1.2	G		8% PG, 2% OL	2%		TR	L	Palagonitized	Loose fragments. Pillow morphology.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 519 Described By: Bryan/Andrew Date: 9/10/85											
1-1	Basalt	8.4	A		3.9 % OL	4.1%		0.16 mm	M	0.1 mm of palagonite	Talus fragment, all glass intact initially. Large tube shaped chambers, sediment coated.
2-1a & b	Basalt	0.7	G		4.2% OL common, corroded spinels	1.0%		0.03 mm		0.04 mm of palagonite	Collected from outcrops. All glass intact initially.
2-3a & b	Pillow Basalt	3.0	A		3.1% OL common, corroded spinels	1.6%		0.04 mm		0.07 mm of palagonite	Collected from outcrops. All glass intact initially.
3-1	Pillow Basalt	2.0	A		Approx. 3-5% OL, TR-PG, common corroded spinels	2%		0.05 mm	L	0.06 mm of palagonite	Talus fragment, all glass intact initially.
3-2	Basalt	2.0	A		Approx. 3-5% OL, TR-PG, common corroded spinels	1%		0.05 mm	L	0.06 mm of palagonite	Talus fragment, all glass intact initially.
3-3 a-c	Pillow Basalt	4.1	A		Approx. 3-5% OL, TR-PG, common corroded spinels	1%		0.05 mm	L	0.06 mm of palagonite	Talus fragment, all glass intact initially.
4-1 ?	Pillow Basalt	2.7	A		2% OL, TR-PG, common corroded spinels	1%		TR	L	Palagonitized	Talus fragment, all glass intact initially. The large fragment is not clearly labeled.
4-2 a 1-3, 2 b 1-3, and 4-2 a & b and 4-2 ?	Basalt	3.8	A		2.1% OL, TR-PG, common corroded spinels	1.5%		0.02 mm		0.02 mm of palagonite	Collected from outcrop, all glass intact initially. All one sample initially.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
5-1a & b	Basalt	2.3	A		2.9% OL common corroded spinel	1.2%		0.05 mm	L	0.04 mm of palagonite	Collected from outcrop, some glass spalled off upon recovery.

Alvin 520

Described By: Bryan/Andrew Date: 9/10/85

1	Basalt	0.1	A								A few small chips remain, similar to 520-(1a-c).
1a-c	Basalt	3.8	A		2.6% OL, 0.3% PG, common corroded spinel	1.0%		0.03 mm	L	0.03 mm of palagonite	Collected from outcrop, all glass intact initially. Sheet flow morphology. Some attached sediment.
2a	Pillow Basalt	0.2	G		5.5% OL, common corroded spinel	1.7%		0.04 mm	L	0.08 mm of palagonite	Talus fragment. All glass intact. Glassy pillow tube.
2B	Pillow Basalt	1.0	A		5.5% OL, common corroded spinel	1.7%		0.04 mm	L	0.08 mm of palagonite	Talus fragment. All glass intact. Glassy pillow tube. All palagonite spalled off.

Alvin 521

Described By: Bryan/Andrew Date: 9/11/85

1-1	Pillow Basalt	4.0	A		Approx. 1.5% OL, approx. 15% PG, approx. 1.5% PX	1.5%		0.05 mm	M	0.12% palagonite much spalled off	Collected from outcrop, all glass intact initially. Phenocrysts concentrated at rim and core.
1-1b + a	Pillow Basalt	0.3	A		Approx. 1.5% OL, approx. 15% PG, approx. 1.5% PX	1.5%		0.05 mm	M	0.12% palagonite much spalled off	Pieces of sample, 521-(1-1).
1-2	Basalt	4.5	A			2%		0.13 mm	L		Sample #521-2 in paper? Talus fragment? Holocrystalline

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
4-1	Plag-Phyric Basalt	2.5	A		Approx. 2% OL, approx. 20% PG	4%		0.1 mm	L		Some attached sediment. Many large PG phenocrysts.
4-2	Plag-Phyric Basalt	5.0	A		2.9% OL, 19.3% PG, 2.1% PX	4.3%		0.03 mm	L	TR-Palagonite	Talus fragment. Holocrystalline. Some altered glass remains.
4-3	Plag-Phyric Basalt	8.8	A		TR-OL, 20% PG	2%		TR	L	TR-Palagonite	Some altered glass remains.
4-4	Aphyric Basalt	12.0	A		1%PG	TR		TR	L	TR-Palagonite	Some altered glass remains.

Alvin 522

Described By: Bryan/Andrew Date: 9/11/85

1-1	Glassy Basalt Fragments	0.1	G		0.9% OL, common corroded spinel	0.6%		0.03 mm	L	0.07 mm of palagonite	Collected from outcrop. All glass intact initially.
1.2	Glassy Pillow Basalt	0.5	G			TR		TR	L	Lightly palagonitized	Glass spalling off. Two small bags of fragments, fragments already exist.
1-3	Basalt Glass Fragments	TR	G							Lightly palagonitized	Small bag of glass chips.
2-1a & b	Basalt Glass	0.1	G					TR	L	Lightly palagonitized	A few small glassy chips remain.
2	Pillow Basalt	4.0	A		3.3% OL	2%		0.04 mm	L	0.05 mm of palagonite	Collected from outcrop. All glass intact initially. Two bags of spalled glass now exist.

Alvin 523

Described By: Bryan/Andrew Date: 9/11/85

1	No sample remains										
2	Pillow Basalt	3.2	A		2.3% OL, rare corroded spinels	8.2%		0.09 mm	L	0.2 mm of palagonite	Collected from outcrop. Only a few chips remain.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
3	Glassy Basalt Fragments	0.2	G-A		0.2% OL	3.3%		0.06 mm	L	0.18 mm of palagonite	Collected from outcrop. Only a few chips remain.
4	Basalt	0.1	A		0.2%	4.7		0.05 mm	L	0.14 mm of palagonite	Talus fragment. Some glass spalled off.

Alvin 524

Described By: Bryan/Andrew Date: 9/12/85

2	Plag-Phyric Basalt	6.6	A		1.4% OL, 5.5% PG, 0.3% PX	4.5		0.02 mm	L	0.04 mm of palagonite	Some glass spalled off.
3	Aphyric Basalt	0.3	A			1%		TR	L		Collected from outcrop. Holocrystalline.
4	Plag-Olivine Phyric Basalt	4.5	A		34.6% PG, 9.8% OL, 0.8% PX	1.2%		0.08 mm	M		Holocrystalline. Talus fragment. Approx. 1 cm PG phenocrysts.
5	Aphyric Basalt	3.0	A		TR-PG & OL	1%		0.19 mm	M		Weathering rind noted on cut face. Holocrystalline talus fragment.
6	Plag-Phyric Basalt	3.8	A		36.8% PG, 1.1% OL, 3.3% PX	1.7%		0.16 mm	M		Collected from outcrop. Holocrystalline. Less than or equal to 1 cm PG phenocrysts.

Alvin 525

Described By: Bryan/Andrew Date: 9/12/85

2	Plag-Olivine Phyric Basalt	10.0	A		Approx 3% OL, approx. 9% PG, 1.2% PX, TR-Spinel	2.0%		0.01 mm	L	0.03 mm of palagonite	Talus fragment. All glass intact initially.
4a-b	Basalt	1.0	A		7.7% OL, 9.5% PG, 0.3% PX, common spinel	4.9%		0.04 mm	L		Holocrystalline talus fragment
5-1	Aphyric Pillow Basalt	2.9	A		0.2% OL	2.5%		0.07 mm	L	0.1 mm of palagonite	Talus fragment. Some glass spalled off.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
5-2	Aphyric Pillow Basalt	8.0	A		4.0% OL, 1.1% PG, common euhedral spinel	1.1%		0.05 mm	L	0.04 mm of palagonite	Talus fragment. All glass intact initially.
5-3	Aphyric Pillow Basalt	8.0	A		2.5% OL, common euhedral spinel	2.3%		0.04 mm	L	0.01 mm of palagonite	Talus fragment. All glass intact initially.

Alvin 526

Described By: Bryan/Andrew Date: 9/12/85

1	Basalt	0.1	A		31.9% OL, 0.5% PG, common euhedral spinel	1.1		0.04 mm	L	0.06 mm of palagonite	Collected from outcrop. All glass intact initially. Only fragments remaining.
2a	Basalt	0.3	A		4.4% OL, rare euhedral spinel	1.9%		0.09 mm	M		Collected from outcrop. Some glass spalled off. Sheet flow morphology.
2b	Basalt	0.3	A		2.1% OL	4.2%		0.16 mm	M		Collected from outcrop. Some glass spalled off. Sheet flow morphology.
3	Pillow Basalt	6.0	A		1.9% OL, 4.1% PG, common rounded spinels	2.7%		0.05 mm	L	0.02 mm of palagonite	Talus fragment. All glass intact initially.
4	Aphyric Pillow Basalt	1.6	A		0.5% OL	2.7%		0.1 mm	L		Talus fragments.
5	Basalt	0.2	A		1.2% OL, 0.1% PG	2.2%		0.08 mm	L	0.17 mm of palagonite	Collected from outcrop. All glass intact initially. Only a few chips now remain.
6	Plag-Phyric Pillow Basalt	3.2	A		3.1% OL, 11.5% PG, 1.6% PX	4%		0.1 mm	M	0.06 mm of palagonite	Collected from outcrop. All glass in place initially, 2 bags of spalled chips now exist.
7	Aphyric Basalt	1.1	A		1.6% OL, 1.3% PG	2.6%		0.1 mm	L		Holocrystalline talus fragment. Sheet flow morphology.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Bryan/Andrew Date: 9/13/85											
1-1a	Basalt Fragments	0.3	A		2.4% OL, TR-PG, common corroded spinel	1.4%		0.04 mm	L	0.04 mm of palagonite	Collected from outcrop. All glass intact initially.
1-1b ?	Pillow Basalt	1.4	A		2.4% OL, TR-PG, common corroded spinel	1.4%		0.04 mm	L	0.04 mm of palagonite	Collected from outcrop. All glass intact initially. Possibly mis-labeled
1-1	Basalt Fragments and Coral	0.2	A		2.4% OL, TR-PG, common corroded spinel	1.4%		0.004 mm	L	0.04 mm of palagonite	Collected from outcrop. All glass intact initially. 1-1a, b and 1-1, all one sample.
1-2a	Pillow Basalt	9.1	A		4.2% OL, 0.6% PG, common corroded spinel	1.1%		0.06 mm	L	0.07 mm of palagonite	Collected from outcrop. All glass intact initially.
2	Basalt	0.2	A		1.9% OL, common euhedral spinel	0.6%		0.06 mm	L	0.17 mm of palagonite	Collected from outcrop. Some glass spalled off upon recovery.
4	Aphyric Basalt	4.5	A		2.2% OL, common euhedral spinel	2.1%		0.04 mm	L	0.05 mm of palagonite	Talus fragment. All glass intact initially.
5	Aphyric Basalt	2.3	A		0.04% OL	5.6%		0.05 mm	L	0.05 mm of palagonite	Collected from outcrop. Some glass spalled off upon recovery.
6-1	Aphyric Basalt	1.8	A		0.03% OL	2.6%		0.04 mm	L	0.01 mm of palagonite	Talus fragment. All glass intact initially.
6.2	Aphyric Basalt	10.8	A			1.9%		0.06 mm	L	0.08 mm of palagonite	Talus fragment. All glass intact initially.
6-3	Aphyric Basalt	0.7	A		0.3% OL, 0.2% PG	4.8%			L		Talus fragment. Some glass spalled off upon recovery.

Alvin 527

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 528 Described By: Bryan/Andrew Date: 9/16/85											
1-1	Pillow Basalt	0.6	A		2.9% OL, 0.7% PG, common corroded spinels	1%		0.04 mm	L	0.06 mm of palagonite	Collected from outcrop. All glass intact initially plus large display sample?
1-2	Pillow Basalt	0.6	A		Approx. 3% OL, approx. 1% PG	1%			L	TR-Palagonite	Lava tube morphology.
1-3	Pillow Basalt	0.6	A		Approx. 3% OL, approx. 1% PG	1%		TR	M	Palagonitized	Lava tube morphology. Palagonitized glass spalling off.
1-4	Pillow Basalt	0.3	A		Approx 3% OL, approx. 1% PG	1%		TR	M	Palagonitized	Bud from pillow? Palagonitized glass spalling off.
2	Pillow Basalt	0.1	A		3.2% OL common euhedral spinels	1.7%		0.05 mm	L	0.04 mm of palagonite	Collected from outcrop. All glass intact initially. Now mostly fragments.
3-1	Pillow Basalt	1.2	A		4.3% OL, 1.2% PG, common euhedral spinel	1.6%		0.04 mm	L	0.02 mm of palagonite	Lava tube morphology. Collected from outcrop. All glass intact initially.
3-2	Basalt Fragments	0.5	A		4.6% OL, 0.6% PG, common euhedral spinel	2.5%		0.03 mm	L	0.05 mm of palagonite	Collected from outcrop. All glass intact initially.
4	Basalt Fragment	0.2	A		Approx. 5% OL, TR PG, common euhedral spinels	1.2%		0.04 mm	L	0.03 mm of palagonite	Collected from outcrop. All glass intact initially plus large display sample?

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 529 Described By: Bryan/Andrew Date: 9/16/85											
3-1	Pillow Basalt	2.5	A			TR			L	TR-Palagonite	Like sample 3-2?
3-2, a-c	Pillow Basalt	12.7	A		5.2% OL, 0.8% PG, common euhedral spinels	2.5%			L	Approx 0.01 mm of palagonite	Talus fragment. All glass intact initially.
4-4, 4b, 4c	Aphyric Basalt	2.7	A		0.9% OL	6.0%		0.08 mm	L	0.09 mm of palagonite	Collected from outcrop. All glass intact initially.
Unknown	Basalt Fragments	0.5	A					TR	L	Palagonitized	
Alvin 530 Described By: Bryan/Andrew Date: 9/16/85											
2-1	Plag-Olivine Phyrlic Pillow Basalt	1.8	A		5.6% OL, 7.4% PG, 0.3% PX, TR-spinel	2.6%		0.05 mm	L	0.04 mm of palagonite	Talus fragment. All glass intact initially.
2-2	Plag-Phyrlic Basalt	0.2	A		2.1% OL, 8.7% PG, 1.3% PX	2.2%		0.04 mm	L	0.03 mm of palagonite	Talus fragment. Some glass spalled off upon recovery.
3	Aphyric Basalt	4.1	A		3.7% OL, common euhedral spinel	1%		0.03 mm	L	0.08 mm of palagonite	Talus fragment. Some glass spalled off upon recovery.
Alvin 532 Described By: Bryan/Andrew Date: 9/16/85											
1	Chalk	2.3	A	CaCO ₃					0.1		Worm burrows noted.
2	Aphyric Basalt	1.6	A			TR		3 mm	M		Talus fragment. Completely coated with Mn - Fe oxides.
4	Aphyric Basalt	1.8	A			TR		3 mm	M		Talus fragment. Completely coated with Mn - Fe oxides.
5	Aphyric Basalt	12.6	A					1 mm	M		Talus fragment. Partially coated with Mn - Fe oxides.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
7	Basalt Breccia	3.5	A	Chalk matrix	Basalt clasts			1-2 mm	M		Completely coated with Mn - crust - worm burrows noted.
8	Chalk	0.3	A	CaCO ₃				0.1 mm			Worm burrows noted.
9	Basalt	5.0	F					2-3 mm	M		Talus fragment. Completely coated with Mn. Attached worm tubes?

Alvin 533

Described By: Bryan/Andrew Date: 9/16/85

2-1	Basalt	3.5	F					1.0 mm	M		Completely encrusted with Fe-Mn oxides. Keystone shaped talus fragment.
2-2	Basalt Breccia	4.0	A	Basalt clay?	Aphyric, glassy rimmed basalt clasts	TR		1.0 mm	VH	Most glass totally palagonitized	Pebble sized angular basalt clasts cemented in basalt clay.
2-3	Basalt Breccia	3.9	A	Basalt clay?	Aphyric, basalt clasts	TR		1.0 mm	H	Most glass totally palagonitized	Pebble-sized angular basalt clasts cemented in basalt clay.
5-1	Aphyric Basalt	9.1	A					1-2 mm	M		Angular talus fragment. Completely coated with Mn - crust
6-1	Basalt Breccia	3.7	A	Basalt clay?	Aphyric, glassy basalt clasts.			1-2 mm	VH	Most glass totally palagonitized	Pebble-sized angular basalt clasts cemented in basalt clay.

Alvin 534

Described By: Bryan/Andrew Date: 9/16/85

1-1a-d	Aphyric Pillow Basalt	17.4	A		1.9% OL, 0.3% PG, common euhedral spinel	2.6%		0.15 mm	M	0.11 mm of palagonite	Collected from outcrop. All glass intact initially.
1-2a-c	Aphyric Pillow Basalt	5.0	A			4%		0.1 mm	L		

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-1a-c	Aphyric Basalt	8.5	G-A		2.9% OL, common euhedral spinel	1.6%		0.03 mm	L	0.02 mm of palagonite	Sheet "flow-like" morphology, collected from outcrop. All glass intact initially.
2-3a-b	Basalt Fragments	1.5	G-A		3.5% OL, TR-PG, common euhedral spinel	2.0%		0.04 mm	L	0.05 mm of palagonite	Collected from outcrop. All glass intact initially.
3-1	Pillow Basalt	3.4	A		2.8% OL, 4.3% PG, 1.0% PX			0.02 mm	L		Talus fragment. Holocrystalline.
3-2a & b	Pillow Basalt	14.5	A		3.8% OL, 5.3% PG, 1.2% PX	2.9%		0.05 mm	L	Approx. 0.03 mm of palagonite	Talus fragment. Some glass spalled off initially.

Alvin 537

Described By: Paul Andrew Date: 9/17/85

1-1	Worm burrowed limestone	19.0	A	Nannofossils & calc-clay				1-2 mm	L		Mn - Fe stained. Worm burrows noted throughout.
1-2 & 2-1											Completely encrusted with Mn - Fe oxides.
3-1, 2, 3 & 5	Coral Fragments and Shell Hash	0.4									
3-4	Shells (named)										Lima (Acesta) & Cuipidaris (Halonympha).
3-7, 8 & 9	Calcareous Sediment	0.5									Grayish calc-ooze

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 538

Described By: Paul Andrew Date: 9/17/85

1-1	Mn-Crust	2.3	A					All			Botryoidal crust. Approx. 9 cm thick.
3-1	Coral Stem	0.9						TR			Sponge spicules attached to top.
4-2 & 4	Calcareous Ooze	0.2									Mostly Forams. Grayish in color.
8-?	Coral Fragments	0.1						TR			

Alvin 539

Described By: Paul Andrew Date: 9/16/85

1-1	Basalt	3.0	A				TR	1-3 mm	H		Completely coated with Mn - Fe oxides. Some filled vesicles.
1-2, 2-1 & 2	Mn-Crust	7.0						All			Crust approx. 10 cm thick. Encrusting altered basalt.
3	Very Highly Altered Basalt	1.4	A		5% PX. Zeolitic amygdules		5%	1-3 mm	UH	Whole rock altered to clay	Vesicles filled with zeolites.

Alvin 540

Described By: Paul Andrew Date: 9/16/85

1-1	Diabase	4.3	M		3% less than 1 mm plag.			1-3 mm	L		Rounded cobble, completely coated in Mn.
2-3	Mn-Crust	0.1						15 mm			Attached corals. Encrusting highly weathered basalt?
3	Mn Coated Clay Fragments	TR	A					0.1 mm			Mn - coated basalt (?) clay.
4-1	Highly Altered Basalt	2.4	A		Calcareous spherules noted. Filled vesicles		5%	TR	VH	Basalt to clay	

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
4-2	Limestone	1.8	A					1-3 mm			Attached sponge and Mn stained worm burrows noted.
Unknown-1	Very Highly Altered Basalt?	1.6	A		Calcareous spherules noted. Filled vesicles?		2%	0.1-1 mm	VH	Basalt altered to clay?	Most probably the same sample as 540-(3)
Unknown-2	Fragments of Samples Above	0.3	A								Found loose in storage box.

Alvin 541

Described By: Paul Andrew Date: 9/17/85

1-1	Mn-Coated Calcareous Crud	0.2	A					1-3 mm	VH		Calcareous, clayey, crumbly crud. Limestone? Basalt?
1-2	Thickly Mn-Encrusted Basalt?	7.1			TR-PX? Calcareous spherules. Filled vesicles?			1-10 mm	VH		Mostly calcareous spherules and veins. Could be totally altered basalt.
1-3	Heavily Weathered Basalt	1.0	A		8% PX			1 mm	H	Basalt to clay	Rusty, clayey matrix. Fairly fresh PX-phenocrysts.
2-1	Limestone	9.0	A					1-3 mm			Mn - stained, worm burrows noted. Attached corals.
3-1	Basalt Breccia	11.0	C	Calcite matrix	Angular basalt clasts			1-3 mm	H	Basalt clasts to clay	Completely coated Mn-Fe oxides. Attached coral stems noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 542 Described By: Paul Andrew Date: 9/17/85											
1-1a & b	Basalt Breccia	1.8	C		Amygdule rich basalt clasts	TR	5%	1-3 mm	H	Basalt to clay	Calcite amygdules. Coral stems noted. TR-PX phenocrysts.
1-2a & b	Hydro-thermally Precipitated? Iron Ore	2.9	A			2%		1-2 mm		Calcite veins noted	Very dense. Rust colored yet metallic in appearance.
3-1	Aphyric Basalt	2.5	A					TR	L		Rounded cobble. Glacial erratic?
3-2	Quartzite	2.1	F	Qtz plus micaceous minerals				TR	L		Glacial erratic? Some attached corals. Slightly schistose.
3-3	Mn-Crust	0.2						All			Some attached sediment noted.
3-4	Brecciated Basalt	0.2	M		Calcite amygdules		3%	1-2 mm	VH	Basalt to clay	
3-5	Brecciated Basalt	2.0	M		Calcite amygdules		3%	1-2 mm	VH	Basalt to clay	Coral hold fast noted. Completely encrusted with Mn-oxide
3-6	Mn-Crust	0.3									Finely laminated.
3-7	Mn-Crust	1.8									Finely laminated. Attached sponge noted.
3-8	Basalt Breccia	4.1	C		Calcite amygdules		8%	1-10 mm	VH	Basalt to clay	Totally altered basalt. Completely encrusted with MnO.
3-9	Mn-Crust	0.1						All			Finely laminated
3-10	Glacial Erratic	0.7	M	Qtz and PG	"Rolled" feldspars			TR	L		Banded. Could be a contact. Gabbro & Felsic gneiss.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
3-11	Quartzite	1.0	A	Aphanitic Qtz-grain				TR	L		Sub-angular. Glacial erratic?
3-13	Mn-Crust	2.5						All			Layered. Botryoidal character. 10 cm thick.
3-14	Iron Ore	2.0	A			2%		1-10 mm			Very similar to samples (1-2a & b).
3-15	Quartzite	10.0	A	Aphanitic Qtz-grain				TR	L		Glacial erratic?
Unlabeled Fragments	Mixtures of Samples Above	1-4							L-VH		One bag of just Mn-crust.

Alvin 543

Described By: Paul Andrew Date: 9/18/85

1-1	Mn-Crust	2.3						All			Pebble sized fragments of Mn crust.
1-2a, b, e, f & k	Fossiliferous Limestone	1.4	A					1-3 mm	L		Very compact limestone. Fossil outlines can be seen.
1-3	Finely Laminated Limestone	4.4	F	Calcite				TR	L		Some silty layers are fissile. Glacial erratic?
1-4	Quartz	1.2		Mostly massive quartz. (Qtz-vein?)				TR	L		Rounded cobble. Glacial erratic?
1-5	Quartzite?	3.2	A						L		Rounded cobble. Glacial erratic? (Bluish-green in color.)
1-6	Mn-Crust	0.7						All			
1-7	Mn-Crust	2.3	A								10 cm thick fragment.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
1-8	Compact Limestone	0.7	A					1-2 mm	L		Worm burrows noted. Dog-tooth calcite seen in VUGS
3-1	Sandstone	2.7	F	Sand sized particles of Qtz & Feldspar				TR	M		"Immature" sample. Glacial erratic?
3-2a-c	Quartz	1.1		Mostly massive Quartz. (Qtz-vein?)				TR	L		Black micaceous mineral noted (talc?). Glacial erratic.
4	Compact Limestone	0.1	A	Calcite				TR	L		Rounded. Glacial erratic? Part of 4-3?
4-2	Quartzite?	0.7	A					TR	L		Rounded. Glacial erratic?
4-3	Compact Limestone	5.0	A	Calcite				TR	L		Re-labeled. Could be same sample as (4). Glacial erratic.
Scoop	Calcareous Ooze	4.0	F								Foram rich, grayish calc ooze.
Chips	Saved Chips	0.1	A					TR	L		Basalt & limestone.

Alvin 611

Described By: Fox/Andrew Date: 9/23/85

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
1-1	Cumulate? OL-Gabbro	1.3	C	Bands of PG noted				0.1 mm	L	Yellow-brown oxidation noted	Color index approx. 60%-90%. Overall dark green color.
3-1a	Diabase	0.2	F-M		M-grained PG			TR	L		Only slabbed materials remain.
4-1a & b	OPX-Gabbro	1.8	C	PG & PX (bronzite)				0.1 mm	L	Orange-brown alteration	F-M grained mafics.
5-1, 5-2(A-I)	OL-Gabbro	5.4	F		PG and PX (bronzite) C-grained			0.1-2 mm	L	Orange-brown alteration	All one sample. color index approx. 30%-60%.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
5-1 chips	Mn-Crust	0.1						All			Spalled off Mn from 611-5- (1&2).
6-1	Anorthositic OL-Gabbro	0.9	Very C		3 cm - PG laths			1 mm	M	Orange brown alteration	Mn crust is patchy.
7-1	Serpentinized Ultra-Mafic Breccia	0.2	F		Clasts are M-grained ultra-mafic rock frags.			1 mm	M		Clasts are rounded (relic spinel Lherzovite).
7-2	Amphibolite	0.1		PG and Amph.				0.1 mm	L	Amph.	Deformed and discontinuous alternating layers of Amph. and PG-foliated.

Alvin 612

Described By: Fox/Andrew Date: 9/19/85

1-1	Meta? - Gabbro, (Amphibolite)	0.3	C	PG and Amph. Brecciated Hb.					F	Amph.	Color index approx. 30 - 60%. amphibole rimming PX.
1-2	Meta? - Gabbro (Amphibolite)	1.0	C	PG and Amph. Brecciated Hb.					F	Amph.	Color index approx. 30 - 60%. amphibole rimming PX.
1 chips	Meta? - Gabbro (Amphibolite)	0.1	C	PG and Amph. Brecciated Hb.					F	Amph.	Unlabeled fragments of 1-1 and 1-2.
2-1	Talus Fragments. Blastomylonite?	0.9	F	Relic spinel harzburgite	Deformed PX				M	Gr.	Fine grained recrystallized matrix. Semi-parallel (iddingsite?) layers noted.
2-2	Talus Fragments. Blastomylonite?	1.4	F	Relic spinel harzburgite	Deformed PX				M	Gr	Fine grained recrystallized matrix. Semi-parallel (iddingsite?) layers noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2 chips	Talus Fragments. Blastomylonite?	0.1	F	Relic spinel harzburgite	Deformed PX				M	Gr	Unlabeled fragments of samples 2-1 and 2-2.
3-1	Meta-Gabbro	3.4	F-C	PG & PX					L	Gr.	Color index approx. 30%-60%. Zones of shearing & recrystallization noted.
3-2	Meta-Gabbro (OPX Gabbro)	1.9	F-C	PG & PX					L	Metamorphosed	Color index approx. 30%-60%. Zones of shearing & recrystallization noted.
3 chips	Meta-Gabbro (OPX Gabbro)	0.2	F-C	PG & PX					L	Metamorphosed	Unlabeled fragments of 3-1 and 3-2.
4-1	Gneissic Meta-Gabbro	1.8	M	PG & Amph.				1-7	M	Amph.	Appears sheared and recrystallized gneissic texture. Foliated.
4-2	Gneissic Meta-Gabbro	1.6	M	PG & Amph.				1-7	M	Amph.	Appears sheared and recrystallized gneissic texture. Foliated.
4?A	Gneissic Meta-Gabbro	0.5	M	PG & Amph.				1-7	M	Amph.	Appears sheared and recrystallized gneissic texture. Foliated.
4 chips	Gneissic Meta-Gabbro	0.5	M	PG & Amph.				1-7	M	Amph.	Unlabeled fragments of 4-1 and 4-2.

Alvin 613

Described By: Fox/Andrew Date: 9/22/85

1-1	OPX-Gabbro	0.1	F-M	PG, Amph. & PX (?)				0.1	L	TR-orange alteration noted.	Primary PG & Amph. Angular fragments.
1-2	Gabbro	0.6	F-M	PG, Amph. & PX (?)				0.1	F	TR-orange alteration noted.	Primary PG and Amph. Angular fragments.
1-3	OPX-Gabbro	0.3	F-M	PG, Amph. & PX (?)				0.1	L	TR-orange alteration noted.	Primary PG & Amph. Angular fragments.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-1	OL-Gabbro	1.8	F-M	PG, Amph. & PX (?)				0.1	F	TR-orange alteration noted	Primary PG & Amph. Angular fragments. Attached sediment and worm tubes noted.
3-1	Gneissic Meta-Gabbro	0.2	F-C	Secondary Qtz & PG	Relic PX? rimmed by Amph.			TR	M	Recrystallized metamorphosed, and foliated	Color index approx. 0-30%. Gneissic texture.
3-2	Blasto-Mylonite	0.3	F	Serpentine & Talc	Relic PX & iddingsite?				M		Deformed, schistose and lineated. Relic spinel harzburgite.
3 chips	Fragments of 3-1 & 3-2	TR	F-C						M		See samples above.
4-1	Blasto-Mylonite	0.2	F	Black Serpentine	Stretched-relic PX			0.1	M	Orange alteration noted	Pyroxenes are stretched and lineated. Relic spinel harzburgite.
4-2	Blasto-Mylonite	TR	F	Black Serpentine	Stretched-relic PX			0.1	M	Orange alteration noted	Pyroxenes are stretched and lineated. Relic spinel harzburgite.
4-3	Blasto-Mylonite	0.4	F	Black Serpentine	Stretched-relic PX			0.1	M	Orange alteration noted	Pyroxenes are stretched and lineated. Relic spinel harzburgite.
4-4	Blasto-Mylonite	0.1	F	Black Serpentine	Stretched-relic PX			0.1	M	Orange alteration noted	Pyroxenes are stretched and lineated. Relic spinel harzburgite.

Alvin 614

Described By: Fox/Andrew Date: 9/22/85

2-1	Gabbro	1.1	F	PG & Qtz, Massive	Stringers of fibrous serp.(?), chlorite (?)		1	L		Banded character. Gneissic texture.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 9/24/85											
1-1 + Chips	Melanocratic OL-Gabbro	3.00	C		6 cm & 3 cm PX crystals noted			TR	M		Color index approx. 60%-90%. No apparent deformation.
2-1	Melanocratic OL-Gabbro	10.0	M	PG,PX & OL				0.1	L	Gr.	
2-2	Amphibolite	0.4	F	PG-brecciated	Poikilitic, brecciated hornblende				L	Amph.	Subtle lineated appearance. Color index 60 - 90%.
2-3	Banded Amphibolite	0.5	F	Lineated Amph. and PG					M	Amph.	Scattered PX (?) grains noted. Foliated. (Gneissic Meta-Gabbro).
3-1	Greenschist Melange (?)	0.1	F	3-1 described as a Gabbro by Fox in J of G, Vol 89 #4				0.1	M		Most probably a mislabeled fragment of 3-2
3-2	Gneissic Meta-Gabbro	1.4	M-C					TR	M		Sheared and metamorphosed. White, calcareous layer on top.
3 chips	Fragments of 3-1 and 3-2	0.1	F-C					TR	M		See Samples above.
4-1 + chips	Meta-OL-Gabbro	4.8	M-C	PG & PX in equal amounts				0.1	L	Gr. & Amph.?	Isotropic texture.
5-1	(Amphibolite) Greenstone	3.2	F	Qtz, PG, EP, and chlorite	10% PG				L	Gr.	Slickensides noted. Foliated.

Alvin 615

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 9/24/85											
1-1	Blasto-Mylonite	1.5	F	Relic spinel Lherzolite				0.1	M	Recrystallized matrix to Serp.	Blasto-porphyritic texture. May have initially been #1-2.
1-2	Gabbro (Troctolite)	1.0	M	PG & PX				TR	L		Color index approx. 60%-75%. May have initially been #1-1.
2-1	Meta-OL- Gabbro	3.3	C	PG & Amph., Actinolite & Hornblende				TR	M	Slickensides	Cataclastic texture. Carbonate and chlorite noted along shear zones.
2-2	Meta-OL- Gabbro	1.2	C	PG & Amph., Actinolite & Hornblende				TR	M	Slickensides	Cataclastic texture. Carbonate and chlorite noted along shear zones.
2-3	Meta-OL- Gabbro	0.1	C	PG & Amph., Actinolite & Hornblende				TR	M	Slickensides	Cataclastic texture. Carbonate and chlorite noted along shear zones.
3-1	Blasto- Mylonite	0.3	F	Recrystallized matrix to Serp.	Scattered relic PX			TR	M	Fine serpentine bands noted	Blastoporphyritic texture. Relic spinel harzburgite.
4-1	(OL-Meta- Gabbro) Anorthositic Gabbro	3.0	M-C	PG & Amph.				0.1	L	Gr.	Isotropic character. Amphibole bearing rock.
5-1	OL-Gabbro	1.0	M-C	M-grained PG C-grained, euhedral CPX				1	L	Approx. 3% rust-colored grains	Melanocratic. Isotropic character.
5-2	OL-Gabbro	0.4	M-C	M-grained PG C-grained, euhedral CPX				1	L	Approx. 3% rust-colored grains	Melanocratic. Isotropic character.

Alvin 616

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
6-1	(Gneissic Meta-Gabbro) Banded Amphibolite	0.4	F	Bands of PG and Amph.				1	L	Amph.	Parallel but discontinuous banding noted.
6-2	Meta-OL-Gabbro	1.0	M-C	PG, Qtz, Amph. & Ep				1	L	Metamorphosed	Subtle evidence of banded Amph.
7-2	Meta-Gabbro (Amphibolite)	4.7	F-M	PG, Amph. & altered PX (?)				1	L	Amph.	

Alvin 617

Described By: Fox/Andrew Date: 9/25/85

1-1	Limestone	1.5	A	CaCO ₃ & fossils				1	L		Miocene bioclastic micrite (biomicrite).
2-1	Iron-rich Ash	0.9	A								"clinker" - remains of burned coal from a ship boiler.
4-1	Limestone	1.6	A					0.1	L		Some weathered parts are "chalk-like."
5-1	Calcareous Ooze	1.1	F								Sediment sample.

Alvin 619

Described By: Fox/Andrew Date: 9/26/85

1-1	Greenstone Fragments	0.6	A-F	Chlorite					M	Gr-totally recrystallized	Mostly sand- to pebble-sized fragments.
2-1 & 2 & frags	Greenstone	2.0	A-F	Chlorite, Ep and Qtz				0.1	L	Gr-totally recrystallized	Veins and vugs of Quartz noted.
3-1 & 2 & frags.	Greenstones	2.3	A-F	Chlorite matrix	Round & angular clasts of greenstone			TR	M	Gr-totally recrystallized	Crumbly. Cut by Quartz veins.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
4-1 & 2 & frags	Greenstone	2.7	F	Chlorite, Ep and Qtz.				1	M	Gr-totally recrystallized	Veins and vugs of Quartz noted
5-1 & 2	Breccia	0.2	F	Light buff-colored matrix	M - grained angular clasts			1	H	Gr(?)	
6-1 & 2	Cataclastic Greenstone	0.7	F	Chlorite, actinolite, Ep. & Qtz	M - grained angular clasts			1	M	Gr-totally recrystallized	Veined by Quartz
7-1 & 2	Greenstone	0.1	A	Chlorite?				0.1	L	Gr?	Subtle layered appearance.
7-3	Breccia	TR	A	Chlorite?	Pebble-sized clasts			TR	M	Gr?	
Misc. frags.	Mixture of Dive	0.7	A-F					1	L-H		Unknown sample fragments

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 620 Described By: Fox/Andrew Date: 9/26/85											
1-1	(Serpentinized Ultra-Mafic) Troctolite	1.0	A-F	Recrystallized matrix to serpentine	15% relic grains (PX?)			1	M		Blastoporphyratic texture. (relic spinel-PG dunite).
3A-1	(Gneissic Meta-Gabbro) Amphibolite	3.9	F-M	Amph. & PG recrystallized				1	L	Amph.	The Amphibole is hornblende. Slightly foliated character.
3B-1	Serpentinized Ultra-mafic	1.9	A-F	Recrystallized matrix - to serpentine	15% relic grains (PX?)			1	M	Serpentinized	Relic spinel-PG dunite
3C-1	(Gneissic Meta-Gabbro) Amphibolite	1.2	F-M					1	L	Amph.	Foliated. Part of sample 3A-1? See description above.
5-1	Meta-OL-Gabbro	0.5	C	PG, PX & actinolite	Mega-crystals of OPX			TR	L	Gr.	
5-2	(Serpentinized Ultra-mafic) Troctolite	3.9	F	Serpentinized matrix				TR	M		Calcite veins noted. PG - Wehrlic.
6-1	(Gneissic Meta-Gabbro) Serpentinized Mylonite	0.3	F					1	L	Serpentinized	Mega-crystal of OPX noted. Foliated.
7-1	Meta-Gabbro	1.9	C	Mega-crystals of PG & PX				1	L		Alteration products of EP, chlorite and actinolite noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 9/27/85 Alvin 621											
1-1	(OL-Gabbro) Serpentinite	0.1	A	Serpentine	"White-mineral" clasts			1	M	Serpentinized	Mn-coated worm tubes noted.
2-1	OL-Gabbro	2.0	M-C	PG & mega-crystals of OPX				1	L	TR-green alteration	Melanocratic. Isotropic character.
3-1	Gabbro (Troctolite)	14.5	M-C	Calcic PG & lesser PX				TR	L	TR-alteration products-GR	Isotropic.
3-2	Gabbro (Troctolite)	1.1	M	Calcic PG & lesser PX				1	L	Grass-green alteration product	Mn-coated worm tubes. Isotropic character.
3-Unlabeled Fragments	3-1 & 3-2 Fragments	0.5	M-C					1	L		Fragments of 3-1 and 3-2. See samples above.
4-1, 2 & 3	Cataclastic Meta-OL-Gabbro	1.2	M-C	Calcic PG & PX				1	L	Serpentine (?) Chlorite (?)	Mn-coated worm tubes. Sheared & metamorphosed.
5-1	Gabbro (Troctolite)	5.0	M	Calcic PG				1	M	Altered, reddish mafic phase-GR	Mn-coated worm tubes.
6-1	Gabbro (Troctolite)	0.6	M-C	Calcic PG, PX & OL (to Iddingsite?)				1	L	Green alteration product-GR	Mn-coated worm tubes. Isotropic character
7-1	OL-Gabbro	0.7	M-C	Calcic PG & PX				1	L	unaltered	Mn-coated worm tubes. Isotropic character.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 9/27/85											
Alvin 622											
1-1	Meta-OL-Gabbro	0.1	M-C	PG & (chlorite EP & actinolite-replacing PX)				1	L	Gr.	Sheared character.
1-2	Meta-OL-Gabbro	0.1	M	PG & (chlorite EP & actinolite-replacing PX)				1	L	Gr.	
1-3	Brecciated Greenstone	1.2	F	Recrystallized matrix - to chlorite actinolite & EP	3% PG			1	L	Gr.	Worm tubes noted. Overall greenish color.
2-1	Gneissic Meta-Gabbro	2.5	A-F	Recrystallized matrix - to chlorite actinolite & EP	Relic PX (bronzite?)			0.1	L	Gr.	Zone of banded PG noted. Overall foliated character.
2-2	Gneissic Meta-Gabbro	1.0	F	Recrystallized matrix to chlorite actinolite & EP	PX?			1	L	Gr.	Coral holdfasts noted. Banded PG noted.
2-Fragments	Gneissic Meta-Gabbro Fragments	0.2	A-F					1	L	Gr.	Fragments of 2-1 & 2-2. See samples above.
3-1	Consolidated Sediment	2.1	A-F	Carbonate (?) and Silica				1	L		Layering noted. Doesn't appear to react with HCL? Highly metasomatized.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 9/30/85											
1-1	Meta-OL-Gabbro	0.8	M-C	PG, green Amph., chlorite & Qtz				TR	M	Gr.	Greenish in color.
1-2	Meta-OL-Gabbro (Troctolite)	2.5	F	Qtz, chlorite, CPX, PG, and EP				0.1	M	Gr.	Recrystallized.
1-3	Meta-OL-Gabbro (Troctolite)	3.0	M-C	Qtz, chlorite, PG, actinolite, & green Amph.?				1	M	Gr.	Greenish in color
1-4	Meta-OL-Gabbro (Troctolite)	1.2	M	Chlorite, PG, actinolite & green Amph.?				0.1	M	Gr.	
2-1	Meta-OL-Gabbro	7.7	C	PG, Amph., EP, and serpentine				0.1	M	Gr.	Greenish in color, slickensides noted.
3-1	Meta-OL-Gabbro	1.5	M	PG, Qtz, chlorite, EP, and actinolite				TR	M	Gr.	Veined. Greenish in color.
3-2	Meta-OL-Gabbro (Troctolite)	5.7	M	PG, chlorite and actinolite.				0.1	M	Gr. (F)	Actinolite after primary phase.
4-1	Meta-OL-Gabbro	0.7	M-C	PC, relic-PX actinolite & chlorite				0.1	M	Gr.	Sheared texture. Greenish in color.
4-2	Meta-OL-Gabbro	0.5	M-C	PG, relic-PX actinolite & chlorite				TR	M	Gr.	Greenish in color.

Alvin 623

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
4-3	Meta-OL-Gabbro (Troctolite)	0.2	M-C	PG, relic-PX actinolite & chlorite				TR	M	Gr.	Greenish in color.
4-Unlabeled Fragments	4-(1-3) Fragments	0.1	M-C	PG, relic-PX actinolite & chlorite				TR	M	Gr.	Fragments of 4-(1-3). See samples above.
5-1	Meta-Gabbro	1.5	M-C	Actinolite, chlorite, PG, Qz and Green Amph.				TR	M	Gr.-Amph.	Cataclastic, recrystallized and greenish in color.
6-1	Meta-Gabbro	1.2	M-C	PG, relic-PX, actinolite, chlorite				1	M	Gr.	Greenish in color. Intensely altered.

Alvin 624

Described By: Fox/Andrew Date: 10/1/85

2-2	Talc & Chlorite	0.2	F					TR	H		Rounded talus fragment of the two named minerals.
2-3	Serpentinized Ultramafic	0.1	A	Serpentine replacing PG-wehrlite	2% white (PG?) clasts			1	M	Serpentinized	Fine serpentine veins noted. Talus fragment.
2 - Unlabeled Fragments	Serpentinized Ultramafic (?)	0.1	F					1	M		Probably fragments of the missing #2-1.
3-1	Basalt	2.6	F					1	L	Gr.	Greenstone? PG-veins.
3-2	Highly Metasomatized Rock	1.0	F	Serpentine, talc and calcite				1	M	Recrystallized	Cataclastic
3-3	Serpentinized Peridotite	1.1	F	Serpentine-replacing spinel harzburgite	Relic-PX			1	M	Serpentinized	Veined. Attached corals noted. Cataclastic.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
3 - Unlabeled Fragments	Fragments of 3-(1-3)	0.5	F					1	M		Fragments of STA-3. See samples above.
4-1	Aphyric Basalt	1.9	F					1	L	Recrystallized	Attached worm tubes. Slight greenish tinge noted.
5-1	Anorthosite (Gabbro)	0.7	C	Calcic-PG				1	M	Slightly metamorphosed	Rusty embayed crystals noted. Sheared and layered.
6-1	Carbonate (?) Breccia	1.0	F	Carbonate?	Angular clasts noted			1	L	Metasomatized	Does <u>not</u> react violently with acid.
6-2	Serpentinized Peridotite	0.6	M	Serpentine replacing spinel-lherzolite	Relic-PX porphyroblastic texture			TR	M	Serpentinized	Calcite veins noted. Sheared, cataclastic.
6 - Unlabeled Fragments	Serpentinized Peridotite	0.2	F-M	Serpentine replacing spinel-lherzolite				TR	M		Mostly fragments of #6-2.
7-1	Diabasic Greenstone	1.8	M	Actinolite, chlorite, PG & Amph.				1	M	Gr.	Veined-(PG?). Recrystallized. Metasomatized.
8-1	Vesicular-Aphyric Pillow Basalt	0.9	A			3%		TR	M		Notably weathered
8-2	Vesicular-Aphyric Pillow Basalt	2.7	A			7%		1	L		Fairly fresh.
8-3	Semi-consolidated carbonate clay	2.6	A					TR			Contains pods of palagonite. Worm burrows noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Wright/Emery/Andrew Date: 10/1/85											
1-1A	Pillow Basalt Breccia	2.7	F		Totally altered Basalt clasts?			2	VH	Basalt to serpentine and Talc?	Brecciated. Layers of calcite (shell hash?) noted. Odd yellow alteration.
1-1B	Breccia	3.0	F		Sand-sized clasts, totally altered Basalt?			2	VH		Altered in place?
1-1C	Greenstone Breccia	4.4	F		Pebble-sized clasts of serpentine			2	VH		Altered in place?
2	Serpentine Breccia	7.8	F		Pebble-sized clasts of serpentine			2	VH	Serpentinized	Talc? Formerly Pillow Basalt.
3-1	Pillow Basalt	1.3	F		2% - PG			1	M	Weathering rind noted	Completely coated with Mn. Talus fragment? Coral & worm tubes noted.
3-2	Pillow Basalt	0.5	F		2% - PG			1	M	Weathering rind noted	Completely coated with Mn. Talus fragment? Coral & worm tubes noted.
3-3	Aphyric Basalt	1.5	A					1	L	1 cm weathering rind noted	Completely coated with Mn. Talus fragment? Coral & worm tubes noted.
3-4	Basalt	1.7	F		5% PG			1	M		Completely coated with Mn. Talus fragment? Coral & worm tubes noted.
3 - Unlabeled Fragments	Basalt	0.2	F					1	M		Fragments of STA #3. See samples above.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 660

Described By: Paul Andrew Date: 10/2/85

1-1	Chalk	6.0	S	CaCO ₃				TR			Worm burrows noted. Unindurated.
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Alvin 737

Described By: Fox/Andrew Date: 10/2/85

1-1	Meta-Gabbro (Amphibolite)	2.0	M-C	PG, Amph. & minor Qtz & relic PX - (rimmed by Amph.)				TR	L	Amph.	Porphyroclastic texture. Talus fragment. Color index approx. 40 - 50%. Foliated.
1-2	Meta-Gabbro (OPX-OL-Gabbro)	5.5	M-C	PG, Amph. (to chlorite?) relic PX & minor Qtz				TR	M	Gr.	Sheared texture. Color index approx. 40%. Talus fragment.
2-1	Meta-Gabbro (Amphibolite)	2.8	C	PG, Amph.				TR	L	Amph.	Color index approx. 70%. No foliation noted.

Alvin 738

Described By: Fox/Andrew Date: 10/3/85

1-1	(OL-Gabbro) Meta-Gabbro	8.4	M	Amph., PG (concentrated in veins) and relic-PX				1	L	Metamorphosed	Attached worm tubes. Color index approx. 90%.
1-2	Meta-Gabbro	0.4	M	Amph., Pg. and relic-PX				1	M	Metamorphosed	Color index approx. 40%.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Fox/Andrew Date: 10/3/85											
1-1	OL-Gabbro	2.8	C	25 - 30% embayed PX - ophitic texture & PG				1	L	PX grains at edges to limonite	Coated with Mn. Attached worm tubes noted. Talus fragment.
2-1	Meta-Gabbro	1.8	C	Mega-crysts of relic-PX (to Tale) & PG				1	M	Gr.	Coated with Mn. Attached worm tubes noted. Veined.
2-2	(Troctolite) Gabbro	6.6	M-C	PG, PX & OL				1	L	PX grains at edges to limonite	Completely coated with Mn. Talus?
3-1	OL-Gabbro	4.3	C	30% embayed PX-ophitic texture & PG				0.1	L	PX grains at edges to limonite	Talus fragment.
4-1	Gabbro	3.4	Very C	3 cm mega-crysts of PG, PX & Mt				0.1	M		Large blebs of interstitial Mt noted. Dike-rock?
4-2	(OPX-Gabbro) Pyroxenite?	2.3	Very C	6 cm mega-crysts of PX, PG & Mt approx. 10%				0.1	M		Some fragments have more than 10% leucocratic minerals.
4-3	(Troctolite) Gabbro	0.2	M-C	30% embayed PX - ophitic texture & PG				0.1	L	PX grains at edges to limonite	PX grains more altered than most other samples.
4-4	(Troctolite?) OL-Gabbro	0.3	C	30% embayed PX - ophitic texture & PG				0.1	L	PX grains at edges to limonite, GR	PX grains more altered than most other samples.
5-1	(OPX-Gabbro) Pyroxenite?	1.1	Very C	Mega-crysts (1-3 cm) of PX & PG				0.1	M		May contain many leucocratic minerals

Alvin 739

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
6-1	Meta?-OL-Gabbro	1.8	C	25 - 30% embayed PX - ophitic texture & PG				0.1	L	Some PX altered to limonite	Slightly sheared appearance.
7-1	Meta?-OL-Gabbro	2.3	C	30% embayed PX - ophitic texture & PG				1	L	Some PX altered to limonite	Some light green recrystallization of PX (to Amph.?)

Alvin 740

Described By: Fox/Andrew Date: 10/4/85

1-1	Gabbro	0.1	M	PG & PX				0.1	F		Talus fragment. Small chip remains.
2-1	Gabbro	18.2	M-C	Color index approx. 35% & PG				0.1	M		Attached sediment noted. Talus fragment. Embayed PX.
3-1	OPX-Gabbro (Amphibolite?)	15.7	M-C	PG	5 cm long megacrysts of PX			0.1	M	Gr.	Coral & worm tubes noted. Banded PG. Foliated.
4-1	Olivine Gabbro	0.4	C	Embayed PX & PG				0.1	M		Rusty PX grains? Talus fragment.
5-1	Breccia	2.7	F	CaCO ₃	C-grained gabbroic clasts			1	L		Talus fragment.
6-1	Gabbro	25	M-C	Color index approx. 50% & PG				1	L	Gr.	Large boulder-sized sample. Veined. Ophitic texture.
7-1	Meta-Gabbro	2.5	M-C	Approx. 35% PX & PG				0.1	F	Gr.	Worm tubes noted. Ophitic texture.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 741

Described By: Fox/Andrew Date: 10/9/85

1-1	(Meta-Gabbro) OL-Gabbro	1.0	M-C	PG, PX & OL				1	L	Gr?	Some rusty PX.
1-2	(Meta-Gabbro) OL-Gabbro	1.1	M-C	PG, PX & OL				1	L	Gr?	Mn-coated worm tubes. Cataclastic texture.
2-1	(Meta-Gabbro) Gabbro	0.5	M-C	PG & PX (Approx. 20%)				1	L	Gr?	Some rusty PX. Color index approx. 20%.
2-2	OL-Gabbro	4.1	M-C	PG, PX & OL				1	L		Color index approx. 80% Mn-coated worm tubes and coral.
3-1	OL-Gabbro	2.0	M-C	PG, PX & OL				1	L		Altered vein (rusty PX & Amphibole facies minerals.)
5-1	(Amphibolite?)	16.4	M-C	PG & PX				1	L		Color index approx. 50%.
6-1	(Gneissic Meta-Gabbro) Amphibolite	1.5	M-C	PG & PX				1-2	L	Gr?	Cataclastic texture. Foliated. Augen PG.

Alvin 742

Described By: Fox/Andrew Date: 10/9/85

1-1	OPX Meta(?) OL-Gabbro	3.9	C	Color index approx. 25%				TR	M		Ophitic texture with altered embayed PX
2-1	Meta-Gabbro	0.4	C	Color index approx. 15%				0.1	L		Cataclastic texture. Attached sediment saved.
3-1	OL-Gabbro (Meta)	4.4	M-C	Color index approx. 20%				0.1	L	Gr?	Sub-ophitic texture. Talus fragment.
3-2	Basalt	6.9	A		1% PG			TR	L	Gr?	Green color. Contact noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
3-3	Meta-Gabbro	4.8	M-C	Color index approx. 50%				TR	L	Gr.?	Sub-ophitic texture. Talus fragment.
4-1	Meta-Gabbro	2.3	C	Bronzite? PX approx. 25% color index				1	M	Gr.?	Sub-ophitic texture. Talus fragment.
4-2	Meta-Gabbro	4.4	M	Color index approx. 40%, PX to chlorite?				0.1	L	Gr.?	Slickensides noted: Very green appearance.
5-1	Meta-OL-Gabbro	0.8	M	Color index approx. 40%				0.1	L		Rusty OL? Sheared appearance.
5-2	Meta-OL-Gabbro	7.3	M	Color index approx. 50%				TR	L		Rusty OL? Sheared appearance.

Alvin 818

Described By: AMAR Team/Andrew Date: 10/10/85

R2	Aphyric Basalt	0.6	A		PG & OL micro-phenocrysts	3%		TR	L		Hollow pillow shelf from within collapsed pillow blister.
R3	Aphyric Basalt	1.6	A		TR OL, PG micro-phenocrysts	3%		0.1	L	Same location as 818-2	Stalagites on underside of this collapsed pillow blister.
R4	Aphyric Basalt	0.9	A		TR - 3 mm PG			TR	M	Lightly palagonitized	Glassy pillow rim.
R5	Aphyric Basalt	0.9	A			TR		2 mm	L	Lightly palagonitized	Approx. 4 mm of glass.
R6	PG-OL Phyrlic Basalt	2.5	F		Large OL & PG on cut surface	1%			L		Massive.
R7	Aphyric Basalt	4.7	A		TR micro-phenocrysts	TR			L		Massive.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R8	Aphyric Basalt	4.2	A			5%		1	L		Approx. 4 mm of glass. Very fine vesicles.
R9	Aphyric Basalt	11.00	A		TR micro-phenocrysts	X			L		Zonation of vesicles noted.
R11	Aphyric Basalt	0.9	A		Micro-phenocrysts?	X		TR	L	Lightly palagonitized	5 mm of altered glass.
R12	Pahoehoe Basalt	2.9	A			X		1	M	Palagonitized glass	Pahoehoe texture. 4 mm altered glass.

Alvin 819

Described By: AMAR Team/Andrew Date: 11/1/85

R2	Limestone	20.0	F	Baked? Inter-pillow/flow calc-ooze with clastic basalt				1	M		Tan-foram/clastic basalt-bearing limestone.
B3	Mn-Encrusted Coral	0.5						1			Fan-shaped. Initially attached to pillow.
B4	Mn-Encrusted Coral	1.4						1			Talus fragments. Branching corals.
R5	Altered Aphyric Basalt	10.0	A					1-2	H	Clayey (to smectite?)	Samples now in parts A-F
B6	Mn-Encrusted Coral	0.5						1			Talus fragments. Branching corals.
B7	Mn-Encrusted and Live Coral	0.6		Two samples taken: 1 live coral & Mn - encrusted dead coral substrate							Sampled when still alive. Attached to dead coral.
B8	Mn-Encrusted Coral	0.2						1			Talus fragment.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 820

Described By: AMAR Team/Andrew Date: 11/1/85

R1 (A-C)	PG-OL Phyric Basalt	8.6	A		PG & OL	X		X	M	Palagonitized	1 cm thick glassy margin. Hollow center.
R2	PG-OL Phyric Basalt	7.7	A		PG & OL	X		X	L	Palagonitized	1½ cm thick glassy margin. Two coalesced glassy margins.
R3	PG-OL Phyric Basalt	4.1	A		Large PG (20%) & OL	X		X	L	Palagonitized	1½ cm thick glassy margin. Two coalesced glassy margins.
R4	PG-OL Phyric Basalt	0.2	A		PG & OL	X		X	L	Palagonitized	Spalled off glass.
R5	PG-OL Phyric Basalt	0.4	A		PG & OL	X		X	L		Fresh glass noted. Highly vesicular.

Alvin 821

Described By: AMAR Team/Andrew Date: 11/1/85

R1	PG-Phyric Basalt	4.1	A		15% PG & TR OL	3%		TR	L	Glass to palagonite	Pillow Basalt with attached sediment and approx. 5 mm of glass.
R2	PG-Phyric Basalt	0.2	A		Abundant PG (30%)	TR		X	L	Palagonitized	5-7 mm of glass. Pillow fragment.
RB3	PG-Phyric Basalt with Coral Stem	0.2	A		Abundant PG (30%)	TR		X	L	Glass to palagonite	Mn-coated coral stem - 15 cm long.
R4	PG-Phyric Basalt	9.4	A		Abundant PG (30%)	TR		X	L	Glass to palagonite	Taken from same pillow as 821- R2.
RB5	PG-Phyric Basalt & Coral Stems	3.9	A		30% PG & OL	TR		X	L		Two attached corals 2½ cm-thick basalt slab.
R6	Aphyric Basalt	2.9	A			2%		0.1	M		Fragment of collapsed follow pillow. Drip structures noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R7	Aphyric Basalt	2.0	A			5%		TR	L	Glass to palagonite	Pillow fragment 1-2 mm of glass noted.
R8 (1-3)	Aphyric Basalt	16.5	A			5%		1-2	M	Glass to palagonite	3-4 mm of altered glass. Pillow fragment with attached worm tubes.
R9	Aphyric Basalt	3.4	A			1%		0.1	M	Glass to palagonite	Moderately weathered basalt talus with keystone morphology.
R11	PG-Phyric Basalt	4.1	A		15% large PG	X		X	M	Glass to palagonite	Altered glass noted.

Alvin 822

Described By: AMAR Team/Andrew Date: 11/3/85

R1 (A&B)	PG-OL Phyric Basalt	1.7	A		15% PG & TR OL	5%		TR	L	Glass to palagonite	
R3	Sparsely PG-OL Phyric Basalt	1.4	A		1% PG & OL	5%		0.1	L	Glass to palagonite	Remnant pillow form. Talus fragment.
R4	Aphyric Basalt	3.4	A		PG-OL microclitics	TR		X	M		All glass spalled off?
R5	Consolidated Calc-Ooze	0.4	A					1			Mn & corals noted.
R6	Aphyric Basalt	3.6	A			1%		1-2	M		Talus fragment
R7 (A&B)	PG-OL Phyric Basalt	1.0	A		3% PG & TR OL	5%		TR	L	Glass to palagonite	Original pillow rind surface noted but mostly all altered.
R8	PG-Phyric Basalt	2.3	A		7% large PG	5%		1-2	M	Glass to palagonite	5 mm palagonite rind. Most glass completely altered.
R9	Aphyric Basalt	4.3	A			TR		TR	L	Palagonitized	

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 823

Described By: AMAR Team/Andrew Date: 11/3/85

R2	PG & OL Phyric Basalt	2.7	A		PG & OL	X		1-5	M-H	Glass to palagonite	3 mm of glass - all palagonitized.
R5	Fossiliferous Limestone	4.8	A		Mostly coral clasts			1-3	L		Completely coated with Mn. Talus fragment?
R6	Felsic-Gneiss	3.5	M	Biotite Qtz & Feldspar				1-2	L		Glacial erratic, rounded.
R7	Fossiliferous Limestone	4.1	A		Mostly coral clasts			1-3	L		Very similar to sample 823-R5.
R8	PG-OL Phyric Basalt	12.0	A		Approx. 40% PG & 1% OL	3%		1-5	M	Glass to palagonite	6 mm of altered glass? 1-2 cm weathering rind noted.

Alvin 824

Described By: AMAR Team/Andrew Date: 11/3/85

R1	PG-OL Phyric Pillow Basalt	7.7	A		PG approx. 30%, OL approx. 2%	2%			L	Glass slightly altered	Thin veneer of glass noted. Very fresh.
R2 (A&B)	PG & OL Phyric Pillow Basalt Stalagite	3.6	G		PG approx. 20%, TR OL	TR		TR	M	Glass to palagonite	Unique morphology, used for display sample.
R-3B	PG & OL Phyric Pillow Basalt	9.5	A		10% PG, TR OL	1%		TR	L	Glass to palagonite	Elongate pillow with well preserved pillow form.
R4	PG-Phyric Pillow Basalt	1.4	G		15% PG, TR OL	TR		TR	L	Glass to palagonite	Much glass spalled off. Approx. 2-3 mm remains.
R5 (A-C)	Basalt	1.9	A		PG noted	TR		1-2	M	Glass to palagonite	Sampled in place. Taken from flow front. Ropey texture.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R6	Basalt Breccia	1.4	A		Pebble- to sand-sized basalt clasts			X	H	Glass chips palagonitized	Very crumbly.
R7	Missing										
R8	PG-OL Phyrlic Basalt	5.0	A		approx. 40 - 50% PG, TR OL	2%		1-2	L	Glass to palagonite	Pillow rind still notable. Abundant, less than 1 cm thick, PG rind.
R9 (A&B)	Aphyric Basalt	5.0	A			5%		TR	M	Glass to palagonite	Lined vesicles. Rind of drained pillow?
R10	Aphyric Basalt	0.7	A		TR PG in vein	1%		1-5	M		Angular fragment.
R11	Aphyric Basalt	3.7	A			TR		X	M		Ropey texture with broken and healed crust.

Alvin 825

Described By: AMAR Team/Andrew Date: 11/3/85

R1	PG-Phyrlic Basalt	0.9	G		15% PG, TR OL			TR	L	Glass to palagonite	Overall glassy matrix with defined glassy margin.
R4	PG-Phyrlic Basalt	0.7	G-A		10 - 20% PG (mostly in margin)	X		TR	M	Glass to palagonite	1.5 cm of partially altered glass which exhibits "flow textures."
R5	PG-Phyrlic Pillow Rind Basalt	0.7	A		30% Large PG	TR		1-2	M	Glass to palagonite	1-2 mm of altered glass.
R6	Aphyric Basalt	9.9	A		TR Large PG			1-2	L-M	Glass to palagonite	1-3 mm altered glassy rind. Talus?
R7	PG-Phyrlic Basalt	5.5	A		20% red oxidized PG, & OL	7%		1-2	L		Talus fragment?

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 826

Described By: AMAR Team/Andrew Date: 11/4/85

R1	Sparsely PG-Phyric Basalt	10.0	A		Sparse PG noted	X		X	M-H	Glass to palagonite	Ropey pahoehoe sheet flow. Attached sediment.
R2	Missing										
R3	Sparsely PG-OL Phyric Basalt	2.3	A		Tr PG, & OL			3-5	L-M		Talus fragment. Weathering rinds noted at margins & fractures.
R4	Missing										
R5 (A&B)	Sparsely PG-Phyric Basalt	4.1	A		1% PG	2%		1-2	L-M	Glass to palagonite	Glassy rind nearly totally altered.
R6	Aphyric Basalt	0.6	A			TR		TR	L		Micro-vesicular. Weathering rind noted on cut face.

Alvin 827

Described By: AMAR Team/Andrew Date: 11/4/85

R2	Aphyric Basalt	1.1	A		TR PG, & OL	1%		1	L	Glassy to palagonite	Glassy margin noted but nearly all altered.
R3	Missing										
R4	PG-Phyric Basalt	5.0	A		25 - 30% PG, 1% OL	TR		1	L	Glass to palagonite	Euhedral PG. Altered glassy rind.
R5	Aphanitic Basalt	3.0	A		1% PG & TR OL	2%		1-3	L	Glass to palagonite	Pillow and weathering rinds noted.
R6	OL-Phyric Basalt	1.5	A		2% OL & 1% PG	3%		1-2	L	Glass to palagonite	Thin altered glassy rind.
R7	PG-Phyric Basalt	0.3	A		25% PG & TR OL	TR		1-3	L-M	Glass to palagonite	1 cm altered glass. Concentrically lineated PG.

Sample	Lithology	Wt:	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R8	PG-Phyric Basalt	8.5	A		25% PG & TR OL	2%		1-3	L-M	Glass to palagonite	Pillow wedge with ropey glassy rind (altered).
R10	Micro OL-Phyric Basalt	8.3	A		OL & PG micro-phenocrysts	1%		1-3	L-M	Glass to palagonite	Pillow Basalt talus.
R11	PG-Phyric Basalt	0.7	A	-	10% PG	1%		1-3	L	Plass to palagonite	Very thin altered glassy rind.
R12	PG-Phyric Basalt	1.1	A		20% PG, TR OL	2%		1-2	L	Glass to palagonite	TR palagonite noted.
R13	Sparsely PG & OL-Phyric Basalt	3.3	A		1% PG & OL micro-phenocrysts	2%		1-3	L-M	Glass to palagonite	Thin altered glassy rind.
R14	PG & OL-Phyric Basalt	9.7	A		PG & OL	TR		1-10	L-M	Glass to palagonite	4 mm of palagonitized glass. Gas cavity noted.

Alvin 828

Described By: AMAR Team/Andrew Date: 11/4/85

R1	PG-Phyric Basalt	3.4	A		10% PG	X		TR	M	Glass to palagonite	Approx. 3 mm of glass. Pahoehoe surface texture.
R2	PG & OL-Phyric Basalt	1.8	A		20% PG, TR OL	TR		TR	L	Glass to palagonite	1-2 mm of palagonitized glass exhibiting flow structure.
R3	PG-Phyric Basalt	3.0	A		Abundant PG	X		X	M	Glass to palagonite	Pillow fragment. Talus.
R4	PG-Phyric Basalt	0.9	A		Abundant PG			X	M	Glass to palagonite	Sediment coated talus fragment.
R5	PG-OL-Phyric Basalt	4.8	A		15-20% PG, TR OL	X		X	M	Glass to palagonite	1 cm palagonitized glass, sheet flow morphology.
R6	PG-OL-Phyric Basalt	2.8	A		15-20% PG, TR OL	TR		X	M	Glass to palagonite	Talus fragment.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R7	PG-Phyric Basalt	3.8	A		10-15% PG, Euhedral	TR		1	L-M	Glass to palagonite	Weathered, lumpy surface noted.
R8	PG-Phyric Basalt	3.2	A		Abundant PG	TR		1	L-M	Glass to palagonite	Gas cavity in center.
R9	PG-Phyric Basalt	1.3	A		Abundant PG	TR		1	M		Thick weathering rind, massive fragment.
R10	PG-OL Phyric Basalt	2.3	A		20% PG, TR OL	X		1	L	Glass to palagonite	5 mm of partially altered glass.
R11	PG-OL-Phyric Basalt	1.4	G-A		20% PG, 1% OL	TR		TR	L-H	Glass to palagonite	PG phenocrysts are concentrically lined.
Unknown loose Fragments	Dive Mixture	0.1	G-A		PG noted	X		X	M	Glass to palagonite	Glassy chips, mixture of dive from accumulated unknown.

Alvin 829

Described By: AMAR Team/Andrew Date: 12/16/85

R1	PG-Phyric Pillow Basalt	1.4	A		Greater than or equal to 20% PG, TR OL			X	M	Glass to palagonite	2-3 mm of palagonite noted along w/ Mn coated coral.
R2	PG-Phyric Pillow Basalt	1.9	A		Greater than or equal to 20% PG, TR OL			X	M	Glass to palagonite	Sampled approx .3 m from #829-R1.
R3	Aphyric Pillow Basalt	2.0	A		TR micro-phenocrysts, PG + OL(?)	X		X	L	Glass to palagonite	5 mm of altered glass noted.
R4	Aphyric Pillow Basalt	4.8	A		Less than 1% PG + OL Micro-phenocrysts	X		X	L	Glass to palagonite	Much of the glass has spalled off. Hollow center noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R5	Aphyric Pillow Basalt Talus	1.6	A		TR PG + OL micro- phenocrysts	X		X	L-M	Glass to palagonite	1 mm of altered glass remains. Much has spalled off.
R6	PG-Phyric Pillow Basalt	2.7	A		Greater than 15% PG, less than 2% PX / OL	X		X	L-M	Glass to palagonite	1 mm of altered glass remains. Much has spalled off.
R7	PG-OL- Phyric Pillow Basalt	3.9	A		PG greater than OL	X		X	L-M	Glass to palagonite	Very similar to 829-R6. Collected 1 m away.
R8	PG-Phyric Pillow Basalt	0.5	A		Greater than 15% PG	TR		X	L-M	Glass to palagonite	5-6 mm of altered glass. Orientable sample.
R9	PG- Microphyric Basalt	11.3	A		Less than 5% micro- phenocrysts	X		X	L-M	Glass to palagonite	1 mm of altered glass noted.
R10	PG-OL- Phyric Basalt	0.7	A		PG greater than OL	X		X	M		
R11	PG-OL- Phyric Pillow Basalt	1.9	A		PG approx. 20%, 1% OL + CPX	X		X	L-M	Glass to palagonite	Approx. 2-3 mm of altered glass noted.
R12	PG-OL- Phyric Pillow Basalt	1.2	A		PG + OL	X		X	L-M	Glass to palagonite	Approx. 2-3 mm of altered glass noted.
R13	Aphyric Pillow Basalt	2.1	A		PG micro- phenocrysts	X		X	L-M	Glass to palagonite	4-5 mm of altered glass noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 830

Described By: AMAR Team/Andrew Date: 12/16/85

R1	PG-(CPX, OL)-Phyric Basalt	6.9	A		Approx. 20% PG, PX + OL noted	1%		1-2	L-M		Elongate lumpy morphology.
R2	PG-OL-Phyric Basalt	0.5	A		15% PG, OL + CPX	TR		X	L-M	Glass to palagonite	2-3 mm of altered glass noted.
R4	PG-Phyric Lava Tube	3.5	A		PG + TR OL	X		X	L-M	Glass to palagonite	8mm of partially altered glass. Tube morphology.
R5	PG-Phyric Lava Tube	0.2	G-A		PG noted	X		X	L-M	Glass to palagonite	Only glassy fragments remain. Like R4 & R6.
R6	PG-Phyric Lava Tube	0.2	G-A		PG Noted	X		X	L-M	Glass to palagonite	Only glass fragments remain. Like R4 & R5.
R7	PG-Phyric Pillow Basalt	2.5	A		PG noted	X		X	L	Glass to palagonite	5-7 mm of glass. Palagonite rind approx. 1 mm thick.
R8	PG-Phyric Basalt	1.9	A		PG noted	X		X	M	Glass to palagonite	Very similar to R7.

Alvin 831

Described By: AMAR Team/Andrew Date: 12/16/85

R1	PG-Phyric Pillow Basalt	5.3	A		15-20% PG + TR OL	1%		1-2	L	Glass to palagonite	Talus fragment. 1-3 mm of altered glass noted.
R2	Aphyric Pillow Basalt	4.5	A		1% PG, TR OL micropheno-crysts	TR		1-2	L	Glass to palagonite	1 mm of altered glass. Talus fragment.
R3	PG-Phyric Basalt	6.6	A		15-20% PG, less than 1% OL	TR		1-2	L		Large (less than 1 cm) euhedral PG. Sheet flow morphology.
R4	Aphyric Basalt	10.4	A		Rare PG + OL micro-phenocrysts	TR		X	M	Glass to palagonite	Approx. 3 mm. of totally altered glass. Pillow flow fragment.

Sample	Lithology	Wt.	G. S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R5	PG-Phyric Pillow Basalt	0.1	A		15-20% PG	TR		TR	L	Glass to palagonite	1 cm of partially altered glass. Pahoehoe texture.
R6	PG-Phyric Basalt	2.3	A		Approx. 25% PG, 1% OL	TR		X	L		Ropey surface. Sheet flow morphology.
R7	PG-Phyric Basalt	0.1	A		Approx. 25% PG, 1% OL	X		X	L	Glass to palagonite	Approx. 5 mm. of partially altered glass. Only chips remain.
R8	Aphyric Pillow Basalt	1.5	A		TR OL micro- phenocrysts	X		X	M	Glass to palagonite	1-5 mm of altered glass. Pillow flow fragment.
R9	Basalt fragments	0.1	A		PG noted			X	L	Glass to palagonite	Fairly fresh glass.
R10	PG-Phyric Basalt	5.0	A		15-20% PG, TR OL	TR		X	L	Glass to palagonite	7-8 mm of slightly altered glass. Pillow flow.
R11	PG-Phyric Basalt	0.8	A		15% PG, TR OL	TR		X	M	Glass to palagonite	7-8 mm of partially altered glass noted.
R13	PG-Phyric Basalt	1.8	A		15% PG	TR		X	L-M	Glass to palagonite	2 mm of altered glass. Pillow flow.
R14	PG-Phyric Basalt	9.1	A		15-20% PG, less than 1% OL	TR		1-2	L-M	Glass to palagonite	1-3 mm of partially altered glass. Slab from drained pillow.
R15	PG-Phyric Basalt	0.7	A		Approx. 20% PG	X		1	L	Glass to palagonite	Pahoehoe texture noted. 3-4 mm of partially altered glass.
R16	PG-Phyric Basalt	1.0	A		Large PG noted	X		X	L-M	Glass to palagonite	1-4 mm of altered glass. Sheet flow morphology.
R17	PG-Phyric Basalt	1.9	A		10% PG	X		X	L-M	Glass to palagonite	1-2 mm highly altered glass. Pahoehoe texture noted.
R18	PG-OL- Phyric Basalt	11.3	A		PG greater than OL	TR		X	L-M	Glass to palagonite	1-3 mm of palagonite remains.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 832

Described By: AMAR Team/Andrew Date: 12/16/85

R1	PG-Phyric Basalt	3.8	A		Approx. 25% PG			TR	L	Glass to palagonite	5 mm of slightly altered glass. Hollow flow sheet.
R2	Basalt	12.0	A		2-3 mm PG CRYSTALS, TR OL	X		X	L	Glass to palagonite	5 mm of partially altered glass. Folded glassy crust.
R3	Aphyric Pillow Basalt	6.8	A		Sparse PG, OL	X		X	L-M	Glass to palagonite	5 mm of partially altered glass. Radial jointing noted.

Alvin 889

Described By: Paul Andrew Date: 10/15/85

A & B	Glassy Pillow Basalt	9.5	A	Much fresh glass on rind	TR PG				L	Some light rusty stain on glass	Drained pillow with remnant "shelf" of internal quench surface noted.
5 + Chips	Glassy Pillow Basalt	15	A	Much fresh glass on rind	TR PG				L	Some light rusty stain on glass	Same observations as sample above but with 4 quench surfaces noted along with a possible variability in composition of the individual layers.
?	Glassy Chips + Pillow Fragments	1.6	A-G								Two samples of confused origin.
1 + Chips	Glassy Pillow Basalt	6.0	A	Much fresh glass on rind	TR PG				F		Fresh glass on inner surface with convolute glassy outer surface.

Alvin 891

Described By: Paul Andrew Date: 10/15/85

1A & B	Glassy Aphyric Basalt	13	A	Approx. 5 mm of sampleable glass					L	Some light rusty stain on glass	Pillow sheet flow? Evidence for hollow interior & coalescing.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 892

Described By: Paul Andrew Date: 10/16/85

1	Glassy Lava Tube	1.5	G		1% PG				F		All glass, very young basalt.
2	Glassy Basalt	1.0	G-A		TR PG				L		Glassy pahoehoe outer rind w/ glassy hollow interior exhibiting drip structures.
3	Glassy Basalt	3.2	G-A		1% PG				F		Same as sample above but interior is aphanitic.

Alvin 893

Described By: Paul Andrew Date: 10/16/85

1	Aphyric-Glassy Pillow Basalt	9.7	G-A		Hollow core = TR				F		3.8 kg of material is spalled, fresh glass fragments.
1A	Glassy-Aphyric Basalt	2.0	G-A						L		Multiple sheet flow morphology w/ glass on all sides & pahoehoe texture.
Liftoff	Glassy-Aphyric Pillow Basalt	2.0	G-A						L	Glass slightly altered	Stored in 3 bags, all one sample?
1-Vent B	Vent Clam	TR							M	Very much like chalk	One clam shell from vent B.
1	Glassy Pillow Basalt	4.8	G						F		Much thick, fresh, convoluted glass.
Mussel Beds	Pillow Basalt	2.3	A		TR PG			TR	L		Approx. 1 cm. of fresh glass from rind.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 978

Described By: Paul Andrew Date: 10/28/85

R-1	Sulfide Chimney Fragment	TR	F	FeS ₂ , ZnS, Anhydrite (?)					L	Oxidized	
R-2	Sulfide Chimney Fragment	TR	F-M	Calcopryrite, FeS ₂ , ZnS and anhydrite.					L	Oxidized	Well zoned fragment with tube worm remnants noted.
R-4-1	Sulfide Chimney Fragment	TR	F-M	ZnS. Remnant tube worm casings noted.					L	Oxidized	M-grained sphalerite, euhedral crystals aligned perpendicularly to chimney wall.
R-4-2	"Chimney Sediment"	TR	F	Consolidated sulfides and anhydrite (?)					L	Oxidized	Appears clastic.
R-4-3	"Chimney Sediment"	TR	F	Consolidated sulfides and anhydrite (?)					L	Oxidized	Appears clastic.
R-5	Sulfide and Tube Worm Casing Dust	TR	F							Oxidized	
R-8	Sulfide Chimney Fragment	0.6	F	ZnS crystals noted					H	Very heavily oxidized	Samples exhibit an odd glassy luster through weathering.
R-9	Sulfide Chimney Fragment	0.1	F	ZnS. Minor pyrite?					M	Heavily oxidized	Remnant tube worm casts noted. Well developed chimney form.
R-10-1	Sulfide Chimney Fragment	0.1	F	ZnS core, FeS ₂ rim					M	Heavily oxidized	Remnant tube worm casts noted. Well developed chimney form.
R-10-2	Sulfide Dust	TR	F	ZnS crystals noted					M	Heavily oxidized	A few small chips and dust remain.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-10-3	Sulfide Dust	TR	F						M	Heavily oxidized	A few small chips and dust remain.
R-11	Sulfide Chimney Fragment	0.3	F	ZnS and anhydrite					L	Oxidized	Well developed sphalerite crystals.
R-12-1	Remnant Tube Worm Tests	TR		Amorphous silics					L	Oxidized	Worm tubes intermixed with minor sulfides.
R-12-2	Sulfide Chimney Fragments	TR	F	ZnS					L	Oxidized	Well developed sphalerite crystals.
R-13-2	Large Sulfide Chimney	12.2	F	Mostly massive Zn-Sulfide with well developed tube worm casts and remnant worm casings noted					L	Oxidized	Two bags - all one sample.
R-14	Sulfide Chimney Fragment	1.1	F	ZnS, anhydrite, and FeS ₂					M	Heavily oxidized	Exposed surfaces are heavily oxidized. Post recovery mineralization noted.
R-16	Sulfide Chimney Fragment	0.2	F-M	ZnS in well developed crystals + anhydrite					F		Well developed chimney form. Hollow, "young" chimney.
R-17	Sulfide Chimney Fragment	0.4	F-M	Well developed ZnS crystals and anhydrite					L	Lightly oxidized	Wall fragment of hollow chimney.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-18-1	Sulfide Chimney Fragment	0.6	F-M	Well developed ZnS crystals and anhydrite					M	Heavily oxidized	Very similar to sample 978-(R-14)
R-19	Sulfide Chimney Fragment	0.1	F	ZnS + FeS ₂					L	Oxidized	
Unknown	Sulfide Chimney Fragment	0.9	F	ZnS + other minor sulfides					L	Oxidized	Over-all yellow-green color due to post recovery formation of native sulfur. Worm casts and casing abundant.

Alvin 979

Described By: Paul Andrew Date: 10/28/85

R-1	Sulfide Chimney Fragments	2.0	F	Pyrite, chalcopyrite core + ZnS and anhydrite rim					L	Lightly oxidized	Many small chips remain.
R-2	Sulfide Chimney Fragments	0.3	F-M	Chalcopyrite core with thin skin of chalcocite (?) and anhydrite					L	Lightly oxidized	Crystal growth elongated perpendicularly to chimney wall.
R-4	Sulfide Sediment	0.3	F	Sulfur mud with small green gem quality cuprite?					H	Oxidized. Crumbly	Over-all yellow-brown color. Heavy sulfur smell.
R-5	Sulfide Chimney Fragments	0.1	F	Pyrite + FeMn oxides?					H	Heavily oxidized	

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 980 Described By: Paul Andrew Date: 10/28/85											
R-2	Sulfide Chimney Fragments	1.0	M	Anhydrite, ZnS and pyrite					L	Lightly oxidized	1/2 of well formed chimney.
R-3	Sulfide Chimney Fragments	0.3	F	Massive, Euhedral ZnS Anhydrite + pyrite (TR)					L	Lightly oxidized	Massive chimney.
R-4	Sulfide Chimney Fragments	1.0	C	C-grained anhydrite laths stained with sulfide dust					F		Well formed chimney.
R-5	Sulfide Chimney Fragments	1.5	F-M	M-grained anhydrite with massive to f-grained ZnS + TR calcopyrite					L	Lightly oxidized	Well developed chimney form. "Old" infilled chimney.
R-6	Sulfide Chimney Fragments	0.1	F-C	Mostly C-grained anhydrite laths with ZnS and pyrite coating							Much like sample 980- (R-4).
R-7	Missing										
R-8	Sulfide Chimney Fragments	0.1	F-M	M-grained anhydrite laths with ZnS and chalcopyrite / pyrite (TR)					L		Only a few chips remain.
R-9	Sulfide Chimney Fragments	TR	F	Anhydrite laths and ZnS "dust"							Mostly ZnS dust remains.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-10	Sulfide Chimney Fragments	0.1	F-C	C-grained anhydrite laths coated with ZnS + TR pyrite					L		
R-11	Sulfide Fragments	0.1	C	C-grained anhydrite with ZnS coatings					L		
R-12	Sulfide Chimney Fragment	0.5	F-M	Chalcopyrite core with ZnS + anhydrite					L	Lightly ordered	Cleanly zoned.

Alvin 981

Described By: Paul Andrew Date: 10/28/85

R-1-2	Sulfide Chimney Fragment	1.7	A-C	Mostly white massive altered anhydrite (?) pyrite, ZnS					H	Crumbly	1 cm wide vein of chalcopyrite noted. Some fresh anhydrite seen.
R-2	Sulfide Chimney Fragment	3.2	F-C	FeS ₂ , chalcopyrite, anhydrite and sphalerite noted					L		Tube worm casts noted. Beautifully zoned sample.
R-3	Sulfide Chimney Fragment	1.8	F-C	Mostly white massive altered anhydrite (?), FeS ₂ , chalcopyrite + ZnS					H	Crumbly	Very similar to 981- (R-1-2).
R-6	Sulfide Chimney Fragment	0.3	F	Anhydrite + chalcopyrite					M		Much of the sample is massive.

Sample	Lithology	Wt.	G. S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-7	Sulfide Chimney Fragment	0.2	M-C	M-grained chalcopyrite + ZnS. C-grained anhydrite					L		Well developed crystals.
R-8	Sulfide Chimney Fragment	0.2	M	M-grained chalcopyrite + ZnS. Massive anhydrite					M	Anhydrite altered	Well developed crystals.
R-9	Sulfide Fragment	0.2	F	Pyrite + altered anhydrite. TR chalcopyrite					M-H	Crumbly	
R-10	Sulfide Chimney Fragment	0.2	M	Chalcopyrite, pyrite, anhydrite and ZnS					L		Well developed crystals.
R-13-1	Sulfide Chimney Fragment	0.1	M	Chalcopyrite, pyrite, anhydrite and ZnS					L		Small chip remains.
R-14	Sulfide Fragments	0.3	F-M	Anhydrite (altered) + minor sulfides					M		Small chips remain.
R-15	Sulfide Chimney	2.5	F	Mostly ZnS + tube worm casings					M	Oxidized	Surface morphology due to tube worm casings.
R-17	Sulfide Chimney Fragment	0.3	F	FeS ₂ , chalcopyrite anhydrite + ZnS					L	Oxidized	Secondary formation of anhydrite noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-18	Sulfide Chimney Fragments	0.2	F-M	Chalcopyrite/ pyrite core. Anhydrite, ZnS (?) rim					L		Pyrite crystals coated. Well developed crystals.
R-19	Sulfide Chimney Wall	0.1	F	ZnS, anhydrite + chalcopyrite					L	Oxidized	0.5 cm thick.
R-20	Sulfide Chimney Wall	0.1	F	ZnS, anhydrite + chalcopyrite					L	Oxidized	Very similar to 981 - (R-19).
R-21	Sulfide Chimney Wall	0.1	F	ZnS, anhydrite + chalcopyrite					L	Oxidized	Similar to 981 - (R-19 & 20)
R-22	Sulfide Chimney Fragment	0.4	M-C	Anhydrite rim with chalcopyrite / pyrite core					L		Well developed crystals.
R-27	"Sulfide sediment"	0.3	F						H	Oxidized	Sulfide rich semiconsolidated mud.
Unknown	Smoker Fragments	0.2	F	Mostly ZnS + FeS ₂					L		

Alvin 982

Described By: Paul Andrew Date: 10/28/85

R-1	Expo? Missing										
R-2	Sulfide Chimney Fragments	0.4	F-M	Chalcopyrite / FeS ₂ with anhydrite + (ZnS?) rim					L	Oxidized rind	Two lithologies. Includes "sulfide sediment" and chimney fragment.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-2-2	Sulfide Chimney Fragments	0.1	F-M	Chalcopyrite / FeS ₂ with anhydrite and (ZnS?)					M	Rusty oxidized rind.	Crystals grew elongated perpendicularly to rind.
R-2-3	Sulfide Chimney Fragments	0.1	F-M	Chalcopyrite / FeS ₂ with anhydrite and (ZnS?)					M	Oxidized rind.	Crystals grew elongated perpendicularly to rind.
R-3	Sulfide Chimney Fragment	4.0	F-M	Well developed sulfide zonation. Chalcopyrite /pyrite to sphalerite/ anhydrite						Oxidized rind	1/2 smoker
R-4	Coalesced Sulfide Chimney	0.9	F-M	Well developed sulfide zonation. Chalcopyrite /pyrite to sphalerite/ anhydrite					L	Oxidized rind	Large chimney, obviously zoned with bulbous crystal interior.
R-4-1	Sulfide Chimney Chip	TR	F	Anhydrite with chalcopyrite / FeS ₂					L	Oxidized rind	
R-4-3	Sulfide Chimney Fragment	0.1	F-C	FeS ₂ / chalcopyrite with anhydrite and ZnS (?) rim					L	Oxidized rim	Well zoned.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-4-1	Sulfide Chimney Fragment	TR	F-M	FeS ₂ / chalcopyrite with anhydrite and ZnS (?) rim					M	Oxidized rim	Corner of chimney.
R-4-7	Sulfide Chip	TR	F-M	FeS ₂ / chalcopyrite, ZnS (?)					L	Oxidized rim	
R-4-8	Altered Anhydrite?	TR	F						M	Crumbly	
R-8	Sulfide Chimney Fragment	0.2	F-C	FeS ₂ / chalcopyrite with anhydrite and ZnS rim					M	Oxidized rim	Well developed chimney form.
R-9	Sulfide Chimney Fragment	0.2	F-C	FeS ₂ / chalcopyrite with anhydrite and ZnS rim					M	Oxidized rim	Well developed chimney form.
R-11	Sulfide Chimney Fragment	0.3	F-C	FeS ₂ / chalcopyrite with anhydrite and ZnS rim					M	Oxidized rim	Well developed chimney form.
R-12	Sulfide Chimney Fragment	TR	F-M	FeS ₂ / chalcopyrite with anhydrite and (ZnS?)					M	Oxidized rim	Outer rind completely oxidized.
R-13	Sulfide Chimney Interior Fragment	TR	M	FeS ₂ / chalcopyrite and anhydrite					L	Oxidized	Well developed crystal form throughout.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-14	Sulfide Chimney Fragment	0.1	F-M	FeS ₂ / chalcopyrite and anhydrite with (ZnS?)					M	Oxidized rim	
R-15	Sulfide Chimney Fragment	0.2	F-M	FeS ₂ / chalcopyrite and anhydrite with (ZnS?)					L	Oxidized rim	
R-16	Sulfide Chimney Fragment	0.2	F-M	FeS ₂ / chalcopyrite and anhydrite with (ZnS?)					M	Oxidized rim	
R-17	Sulfide Chimney Fragment	0.1	F	FeS ₂ / chalcopyrite and anhydrite with (ZnS?)					L	Oxidized rim	Very thin walled samples (approx. 3-10 mm).
R-18	"Sulfide Sediment"	0.2	F						H	Crumbly	Mostly consolidated anhydrite with inter-mixed sulfides.
R-19	Sulfide Chimney Fragment	1.8	F-M	ZnS (euhedral), anhydrite and FeS ₂					M	Heavily oxidized	Tube worm casts noted. Large sample.
R-20	Sulfide Chimney Fragment	3.8	F-C	ZnS (euhedral), anhydrite and FeS ₂					M-H	Heavily oxidized	Tube worm casts noted. Overall rusty appearance.
R-21	Sulfide Chimney Fragment	3.4	F-C	Massive anhydrite, pyrite and ZnS					M-H	Heavily oxidized	Overall rusty appearance. Altered Pyrite?
R-22	Sulfide Chimney Fragment	0.1	F-M	Anhydrite, pyrite and ZnS (?)					M	Heavily oxidized	Overall rusty appearance. Altered Pyrite?

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
R-23	Sulfide Chimney Fragment	1.4	F-M	Anhydrite, ZnS, and pyrite					M	Heavily oxidized	Oxidation notable.
R-24	Sulfide Chimney Fragment	TR	F-M	Anhydrite, ZnS, and pyrite					L	Oxidized	Slabbed.
R-25	Heavily Oxidized Sulfide Fragments	0.1	F	Pyrite?					M	Heavily oxidized	Many small rusty chips.
R-26	Heavily Oxidized Sulfide Fragments	0.1	F	Pyrite?					M	Heavily oxidized	Many small rusty chips.
R-27	Sulfide Chips	0.1	F-M	ZnS					L	Oxidized	Many small chips.

Alvin 1008

Described By: HJBD / Andrew Date: 10/16/85

1-1	Meta-Gabbro	2.5	C					1	L	Heavily chloritized	Probable layering. Penetratively weak deformation. High strain zones noted.
2-1	Cumulate Gabbro	2.9	C	PG + PX				0.1	L	Light Gr.	Closely spaced parallel fractures noted.
3-1	Gabbro	0.1	C	OL, PG + PX				0.1	L	Very light	Pyroxene poikilitic about PG & OL
5-1a-D	Meta-Gabbro	2.3	M-C	PG-sauseritized. Hornblende				1	L	Amph?	Slicken sides and localized high strain zones noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 1010 Described By: HJBD / Andrew Date: 10/17/85											
1-1	Meta-Basalt	2.3	A	Green clastic meta-Basalt with patches of Amph. bearing gabbro noted				0.1	M	Gr. Sausuritized PG	Inter-veined (medium grained) meta-gabbro. Meta-basalt highly fractured.
2-1	Meta-Gabbro	2.7	M-C	Hornblende bearing				0.1	M	Gr. Along fractures	Cross cutting fractures with OL-gabbro away from these.
3-1	Greenstone	1.5	M-C					TR	M	Gr.	Penetratively deformed. Locally cataclastized meta-gabbro?
4-1	Greenstone	4.7	M		Cataclastic texture			1	M	Gr.	Meta-diabase with pegmatite patches and epidote veins.
5-1	Greenstone	1.0	F					TR	M	Gr.	Schistose mylonite with a few rounded augen noted.
6-1	Greenstone	4.1	F					1	M	Gr.	Meta-basalt with calcite infilled micro-fractures.
7-1	Aphyric Basalt	2.9	F					0.1	M		
8-1	Aphyric Basalt	1.4	A					1	M		Spherulitic.
9	Serpentinite Breccia	9.3	F		Pebble sized clasts of Serpentine			1	M	Contact meta-morphosed?	Fault breccia? Pale yellow-green color.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1011

Described By: HJBD / Andrew Date: 10/16/85

1	Hornblende Meta-Gabbro	2.0	C					TR	M	Chloritized. Gr.	Crescumulate texture. Basalt gabbro contact noted.
2	Meta-Diabase	3.6	F					1	M	TR chloritized fractures	Undeformed. A few OL pseudomorphs noted.
3-1 & 2	Mylonitic Greenstone	4.8	F	PG + PX clasts?				TR	M	Gr.	Very green color. Clastic texture.
4	Greenstone Breccia	1.1	F					TR	M	Gr.	Very oddly altered. Banded.
5											
6	Calc-Ooze Push Core	1.1	M								Pteropod sand mixed with calc ooze.
7	Cataclastic Greenstone	1.9	F					0.1	M	Gr.	
8	Basalt Breccia	3.6	F		Sand to pebble sized basalt clasts			1	M	Palagonitized	Angular clasts of aphanitic basalt and glass chips.
9	Aphanitic- Vesicular Basalt	0.3	A			3%		0.1	L		A few chips now remain.

Alvin 1012

Described By: HJBD / Andrew Date: 10/85

1-1	Greenstone Breccia	3.2	F					1-5	M-H	Gr.	Cross cutting qtz. and sulfide veins noted.
1-2	Greenstone	2.3	F					1-2	L	Gr.	Numerous qtz. veinlets throughout. Foliated.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2	Gabbro	4.5	C	2-PX(?), PG and OL?				1	M	Light Gr.	Parallel fractures noted, infilled with epidote and chlorite.
3	Pegmatitic Ferro-Gabbro	8.2	Very C	2-5 cm PG, PX, 4-5% Mt, + OL(?)				1	L		Cross cutting, altered, fractures noted.
4	Basalt Breccia	4.5	F	Indurated clay and palagonite matrix	Angular basalt clasts (0.5-2 cm)			TR	H	Palagonitized	Poorly sorted basalt and glass fragments.
5	Brecciated Meta-Diabase /Gabbro	2.9	F-C		Gabbro and diabase clasts			1-2	M	Gr.	Contact between both lithologies noted.
6	Meta-Gabbro	5.9	M-C					1-2	M	Gr.	Pervasive cataclasts. Small cross cutting mineralized fractures throughout.
7	Meta-Gabbro	10.0	M					1	L	Gr.	Foliated. Chloritized fractures noted. Deformed.
8	Calc-Ooze Push Core	0.7	M	CaCO ₃							Many pteropods noted.
9	OL-Gabbro	1.8	C	Sub-poikilitic PX, PG, + OL				1	M	Gr.?	OL serpentinized at one end of sample.
10	Layered OL-Cumulate Slab	1.5	M	OL + PX				1	L		C-grained bronzite layer with PX poikilitically enclosing spinel.
11	Layered Gabbro Slab	5.0	M-C	CPX, PG + OL				1	L	Albitized fracture(?)	Grades from pegmatitic to M-grained over 25 cm interval.
12-1	Pegmatitic Meta-Gabbro	0.3	M-C	PG + PX				0.1	M	Gr.	Fractured and brecciated.
12-2	Meta-Gabbro	2.5	M	PG + PX hornblende?				0.1	M	Gr.	Totally recrystallized.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
13	Calc-Ooze Push Core	2.0	M	CaCO ₃							Many pteropods throughout.
14	Chloritized Meta-Gabbro	9.0	M		Deformed & kinked porphyro- clasts present			1	M	Gr.	Very green color. soft white mineral and calcopyrite noted.
15	Meta-Ferro Gabbro	2.7	C	Sauseritized PG, 5% Mt.	Large, relic, kinked PX					Heavily chloritized-Gr.	Appears totally recrystallized.
16?											

Alvin 1013

Described By: HJBD / Andrew Date: 10/20/85

1	Meta-Gabbro	1.0	M	PG + OPX? + OL to iddingsite?				1	M	Gr.	Recrystallized?
2-1	Leucocratic Meta-Gabbro	0.2	M	PG + PX				1-2	L	Gr.	Mylonized outer margin. Primary texture preserved.
2-2	Meta-Gabbro	1.0	M					1	M	Gr.	Well developed lineations on mylonized & slickensided surface.
3	Meta-Gabbro	3.8	M-C	PG poikilitically enclosed by PX. TR OL (to iddingsite)				1	L	Light Gr.	Micro-fractures.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: HJBD / Andrew Date: 10/20/85											
Alvin 1014											
1	Meta-Gabbro	7.0	C	Poikilitic pseudo-morphed PX enclosing PG				1-5	M	Gr.	Micro-fractures.
2	Brecciated Greenstone	4.7	F	Greenstone with sulfide patches.	Sand to pebble sized greenstone clasts			1	M	Gr.	Weakly foliated. Anastomosing mineralized fractures.
3	Meta-Gabbro	12.3	C	PX, PG, + OL				1	L	Localized Gr.	Poikilitic PX. Partially recrystallized.
4-1	Gabbro	3.4	M-C	PX, PG, + OL				1-3	L-M		Parallel fractures noted. Poikilitic PX.
4-2	Meta-Gabbro	2.0	M	Poikilitic PX about PG				1	M	Gr.	Slickensides noted. Relatively undeformed.
4-3	Pteropod Sand	0.1	C								
4-4	Calc-Ooze	0.8	M								Pteropods & forams noted.
5	OL-Gabbro	1.0	C	PG + PX + OL				1-3	M		Micro-fractured.
6	Meta-Gabbro	2.5	C	PG + PX + greenschist facies minerals				1-5	L	Gr.	Fractures altered to greenstone. Cataclastic zone noted.
7	Meta-Gabbro	0.4	M-C	PG + PX					M	Gr.	Zones of localized cataclasts noted.
8-2	Meta-Diabase	0.6	F					1	L	Light Gr.	Infilled fractures noted.
9	Greenstone Breccia	3.8	F-C		Sand to pebble sized greenstone clasts			1-3	M	Gr.	Highly deformed and cut by later fractures.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
10	Meta-Gabbro	2.0	F-M	PG + PX + greenschist facies minerals				1-3	M	Gr.	Cut by numerous subparallel fractures (chloritized).
11	Basalt	2.3	A		Very sparse PG and OL noted	1%		1-2	L	Glass to palagonite	Pillow fragment.
12	Aphyric Basalt	1.5	A					1-3	M	Glass to palagonite	Thick weathering rind noted. Pillow fragment.
13	Pillow Basalt	25	A-F		Very sparsely phytic (PG)			1-5	L	Glass to palagonite	Very large pillow basalt fragment.
14	Aphyric Pillow Basalt	10.0	A			TR		1-5	M	Glass to palagonite	Thick weathering rind noted.
UNKNOWN	Meta-Gabbro Breccia	0.4	F					105	H		Mn-cemented meta-gabbro clasts.

Alvin 1015

Described By: HJBD/Andrew Date:10/20/85

1	PG-OL phytic Pillow Basalt	4.5	F		5% PG. TR-OL	TR		1	L	Glass to palagonite	
2-1	Aphyric Pillow Basalt	2.0	A					1	M	Glass to palagonite	Thick weathering rind noted.
2-2	Aphyric Pillow Basalt	1.3	A					1	M	Glass to palagonite	
3	Plag-Phytic Pillow Basalt	1.1	A		1% PG	1%		1-2	M	Glass to palagonite	

Alvin 1054

Described By: Paul Andrew Date:10/14/85

2-A	Limestone	0.4	A	CaCO ₃				1	L		Massive Limestone/mudstone.
3-A	Limestone	0.4	A	CaCO ₃				0.1	L		Massive Limestone/mudstone.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1055

Described By: Paul Andrew Date:10/14/85

4-A	Limestone	0.3	A	CaCO ₃ /pellets /mud		8%	x	0.1			Relic? Worm burrows noted. Some sediment filled.
5-A	Limestone	0.6	A	CaCO ₃				1	L		(Vertically?) - lineated, sediment-filled worm burrows noted.
6-A	Limestone	2.5	A	CaCO ₃				1	L		Riddled with 1 cm-dia., sediment-filled worm burrows (Swiss-cheese-like).
6-A	Limestone	0.3	A	CaCO ₃ /mud pellets		20%	x				Very porous — some chambers may be worm burrows.

Alvin 1057

Described By: Paul Andrew Date:10/14/85

1-A	Limestone	1.0	F	CaCO ₃	Pebble-sized limestone clasts			1-2	L		Clastic limestone/grainstone.
2-A	Limestone	2.0	F	CaCO ₃	Sand-sized limestone clasts			1-2	L		Grainstone. Large sponge noted in vug. Burrows noted.
4-A	Limestone	0.7	F	CaCO ₃				1-2	L		Worm burrows noted.
5-A	Fossiliferous Limestone	0.5	F	CaCO ₃	Sand-sized limestone clasts			1	L		Fossilized shells noted. Grainstone.

Alvin 1058

Described By: Paul Andrew Date:10/14/85

5-A	Clastic Limestone	3.6	A-F		Limestone and fossil clasts noted			2	L		Massive limestone with sand-sized clastic zones noted. Intercalated grainstone/lime-mudstone.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Paul Andrew Date:10/14/85											
Alvin 1059											
1-A	Limestone	0.9	A	CaCO ₃				2	L		Massive limestone. Burrows noted.
2-A	Clastic Limestone	3.8	F	CaCO ₃	Sand-sized limestone clasts	1%		2	L		Large burrows noted.
2-B	Clastic Limestone	2.3	F	CaCO ₃	Sand-sized limestone clasts	1%		3	L		Large burrows noted.
4-A	Limestone	0.4	A	CaCO ₃				2	L		Massive limestone. Attached worm tubes.
4-B	Argillaceous Limestone	1.6	A	CaCO ₃				2	L		Massive limestone. Higher clay content than other samples.
5-A	Clastic Limestone	1.5	F	CaCO ₃	Sand-sized limestone clasts	1%		2	L		
6-A	Limestone	3.2	A	CaCO ₃				TR	L		Massive limestone. Soft, slightly chalky.
8	Argillaceous Limestone	7.5	A	CaCO ₃				3	L		Completely coated with Mn. Burrowed. Massive. Higher clay content noted.
9-A	Clastic Limestone	2.0	F	CaCO ₃ & some fossils	Pebble-sized limestone clasts	TR		1	L		
9-B	Clastic Limestone	2.0	F	CaCO ₃	Pebble-sized limestone clasts	TR		1-2	L		

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Described By: Paul Andrew Date:10/14/85											
Alvin 1060											
1-A	Limestone	2.3	A	CaCO ₃				0.1	L		A few large fossil casts noted. (Nautiloid?)
1-B	Laminated Limestone	6.4	A	CaCO ₃				0.1	L		Finely laminated. Large slab coated with MnO.
2-A	Laminated Limestone	4.5	A	CaCO ₃				1-2	L	Burrowed	Finely laminated. Variable clay concentration noted in layers.
3-B	Laminated Limestone	5.2	A	CaCO ₃	Clasts of claystone noted			1-2	L		Finely laminated.
4-A	Laminated Limestone	5.0	A	CaCO ₃				1-2	L	Burrowed	Small infilled borrows (?) noted. Well developed bedding cleavage.
4-B	Limestone	4.5	A	CaCO ₃				1	L	Deformed	Massive. Bedding noted.
5-A	Limestone	2.0	A	CaCO ₃				1-2	L		Infilled burrows? Massive.
7-A	Laminated Limestone	1.1	A	CaCO ₃				1	L		Well developed bedding cleavage. Infilled burrows.
8-A	Laminated Limestone	0.7	A	CaCO ₃				0.1	L		Higher clay content than other samples.
10-A	Laminated Limestone	1.4	A	CaCO ₃				5	L		Massive. Laminated.

Described By: Paul Andrew Date:10/14/85											
Alvin 1061											
1-A	Silty Limestone	2.0	F					TR	L		Deformed laminations noted.
1-B	Limestone	5.2	A	CaCO ₃				1	L		Massive character.
2-A	Limestone	1.1	A	CaCO ₃				1	L		Massive. A few small fossils noted along with burrows.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-B	Limestone	5.0	A	CaCO ₃				1	L		Massive. Infilled cracks noted.
3-A	Clastic Limestone	4.1	F	CaCO ₃	Large-sand- to small-pebble-sized limestone clasts			1	L		Semi-parallel cracks noted. Matrix is pale green in color.
3-B	Clastic Limestone	3.8	F	CaCO ₃				1	L		Part of sample 3-A (see above).
4-A	Limestone	3.8	A	CaCO ₃				1	L		Massive character. Some primary sedimentary structures seen.
5-A	Limestone	1.1	F	CaCO ₃				1	L		Massive character with a few fossils noted.
6-A	Limestone	7.5	F	CaCO ₃				1	L		Mostly massive. But clastic zones noted. "Marble-like."
6-B	Limestone	1.5	A	CaCO ₃				1	L		Massive character.
7-A	Argillaceous? Limestone	3.9	A	CaCO ₃				1-2	L		Massive, soft limestone.
8-A	Limestone	2.3	F	CaCO ₃				1	L		Massive character.
9-A	Limestone	8.7	A	CaCO ₃				1			Massive character.
9-B	Limestone	6.3	A	CaCO ₃				1			Part of sample 9-a. See above.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1062

Described By: Paul Andrew Date:10/14/85

1-A	Limestone	2.0	A	CaCO ₃				0.1	L		Massive character. Worm burrows noted.
2-A	Limestone	2.5	A	CaCO ₃				0.1	L		Massive character
3-A	Limestone	1.4	F	CaCO ₃				0.1	L		Pale white limestone with clay-rich pods "marbled" in graded beds? One margin is composed of fine sand grading up to clay.
3-B	Limestone	1.4	A-F	CaCO ₃				1	L		
4-A	Clastic Limestone	2.5	F	CaCO ₃	Sand-sized clasts of sparry limestone			1	L		
5-A	Limestone	1.9	A	CaCO ₃				0.1	L		Massive character.
6-A	Limestone	1.9	A	CaCO ₃				1	L		Massive character.
7-A	Fossiliferous Limestone	3.2	F	Sparry calcite	Large re-crystallized fossils throughout			TR	L		Biosparite?
8-A	Clastic Limestone	11.0	F		Some sand-sized limestone clasts			1-5	L		Large limestone boulder.

Alvin 1063

Described By: Paul Andrew Date:10/15/85

2-A	Argillaceous (?) Limestone	1.1	A	CaCO ₃				TR	L		Worm burrows noted. Soft limestone. massive.
3-A	Argillaceous (?) Limestone	6.0	A	CaCO ₃				TR	L		Mn-coated worm burrows noted. Soft, massive.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
3-B	Argillaceous (?) Limestone	2.5	A	CaCO ₃				TR	L		Burrowed, massive character.
4-A & B	Argillaceous (?) Limestone	1.1	A	CaCO ₃				TR	L		More compact than previous samples. Massive. Burrowed.
5-A	Limestone	1.4	A	CaCO ₃				TR	L		
5-B	Clastic Limestone	2.7	A	Sparry calcite	Sand-sized limestone clasts noted.			1	L		Pumice-like outer surface (burrowed (?)) - dissolution (?).
6-A	Fossiliferous Limestone	2.7	A-F	Sparry calcite	Many large, well preserved fossils			1	L		Biosparite (?). Some infilling noted.
7-A	Semi-Consolidated Calc-Ooze	6.2	A					TR			Gray, infilled worm burrows noted.
9-A	Compact Limestone	1.0	A	Sparry (?) calcite				1			
10-A	Clastic Limestone	1.9	F	Sparry (?) calcite	Sand-sized limestone clasts & fossil			1	L		
11-A	Clastic Limestone	1-7	F	CaCO ₃	A few clasts noted			1	L		Coral holdfasts occur on surface.
11-B	Clastic Limestone	1.4	A	CaCO ₃	A few clasts noted			1	L		
12-A	Compact Limestone	1.1	A	CaCO ₃				1	L		Dendrites noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Alvin 1148 Described By: EPR TEAM/Andrew Date 12/20/85											
1-1	Sulfide Chimney Fragments	0.5	F	"Standard" anhydrite to chalcopyrite zonation noted					M	Highly oxidized (limonite)	Completely honey-combed with tube worm casings
2-1	Sulfide Chimney Fragments	0.1	F	Anhydrite & chalcopyrite					M	Highly oxidized	Black anhydrite crystals dominant.
2-2	"Sulfide Sediment"	0.1	F-M	Black acicular anhydrite, F-grained pyrite					M	Oxidized	Loose crystals are all that remains of chimney.
2-3	Sulfide Chimney Fragment	0.2	F-M	Zoned, acicular-black anhydrite, white anhydrite to chalcopyrite					L	Oxidized	Anhydrite oriented perpendicular to chimney wall.
2-7	Sulfide Chimney Fragment	0.1	F-M	Zoned, acicular-black anhydrite, white anhydrite to chalcopyrite					M	Oxidized	Anhydrite oriented perpendicular to chimney wall.
2-8	"Sulfide Sediment"	0.1	F-M	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remains of smoker.
2-9	"Sulfide Sediment"	0.1	F-M	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remains of smoker.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-10	"Sulfide Sediment"	0.1	F	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remains of smoker.
2-11	"Sulfide Sediment"	0.1	F	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remains of smoker.
2-12	"Sulfide Sediment"	TR	F	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remains of smoker.
2-13	"Sulfide Sediment"	0.1	F	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remain of smoker.
2-15	"Sulfide Sediment"	0.2	F	Acicular-black anhydrite & chalcopyrite crystals					M	Oxidized	Loose crystals are all that remain of smoker.
2-17	Sulfide Chimney Fragment	0.1	F-M	Zoned, acicular-black anhydrite, white anhydrite, & chalcopyrite					L-M	Oxidized	Radially oriented anhydrite crystals.
2-19	Sulfide Chimney Fragment	0.1	F-M	Zoned, acicular-black anhydrite, white anhydrite, & chalcopyrite					L-M	Oxidized	
2-20	Sulfide Sediment	0.1	F	Anhydrite laths & chalcopyrite					M	Oxidized	Loose crystals are all that remains of smoker.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-21	Sulfide Chimney Fragment	0.1	F	Zoned, acicular-black anhydrite, white anhydrite, & chalcopyrite					L-M	Oxidized	Radially oriented anhydrite laths.
2-22	Sulfide Chimney Fragment	0.1	F	Zoned, acicular-black anhydrite, white anhydrite, & chalcopyrite					L-M	Oxidized	Radially oriented anhydrite laths.
2-23	"Sulfide Sediment"	0.1	F	Mostly anhydrite laths with inter-mixed sulfides					M	Oxidized	Loose crystals are all that remains of smoker.
2-25	Sulfide Chimney Fragment	0.1	F	Zoned, black anhydrite to white anhydrite to chalcopyrite					L-M	Oxidized	Sample from top of vent.
2-26	Sulfide Chimney Fragment	0.1	F	Zoned, black anhydrite to white anhydrite to chalcopyrite					L-M	Oxidized	
2-27	"Sulfide Sediment"	0.3	F	Crystals of anhydrite & chalcopyrite					M	Oxidized	Loose crystals are all that remains of smoker.
2-28	Sulfide Chimney Fragments	0.1	F	Zones, acicular-black anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Sample from top of vent.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-29	Sulfide Chimney Fragments	0.1	F	Zoned, black-acicular anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Sampled from top of vent.
2-31	"Sulfide Sediment"	0.1	F	Crystals of anhydrite & chalcopyrite					M	Oxidized	Loose crystals are all that remains of smoker.
2-32	Sulfide Chimney Fragment	TR	F	Zoned, black anhydrite white anhydrite & chalcopyrite					L-M	Oxidized	Radial growth rings noted.
2-33	"Sulfide Sediment"	0.1	F	Crystals of anhydrite & chalcopyrite					M	Oxidized	Loose crystals are all that remains of chimney
2-40	Sulfide Chimney Fragments	0.1	F-M	Black-acicular anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Sample from top of vent.

Alvin 1149

Described By: EPR TEAM/Andrew Date: 12/23/85

1-1	Sulfide Chimney	1.0	F-M	Zoned, black-acicular anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Well preserved chimney.
1-3	Sulfide Chimney Fragments	0.1	F-M	Wurtzite, black anhydrite, chalcopyrite & pyrite					L-M	Oxidized	Mostly massive, some vugs noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
1-4	Sulfide Chimney Fragments	TR	F	Chalcopyrite exhibiting radial growth					L-M	Oxidized	Only a small chip of the original sample remains.
1-6	Sulfide Chimney Fragments	0.1	F	Anhydrite, chalcopyrite					L-M	Oxidized	Small wall fragment.
1-7	Sulfide Chimney Fragments	0.1	F-M	Banded, black anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Vugs in anhydrite layers noted.
1-9	Sulfide Chimney Fragments	0.2	F	Chalcopyrite & pyrite interior. Anhydrite & wurtzite noted					L-M	Oxidized	Tube worm casts noted.
1-10	Sulfide Chimney	4.0	F	Anhydrite, pyrite & chalcopyrite					M	Oxidized	Intact chimney.
1-11	"Sulfide Sediment"	0.1	F	Crystals of anhydrite & chalcopyrite					M	Oxidized	Only loose crystals now remain.
2-2	Sulfide Chimney Fragment	0.2	F	Pyrite, wurtzite, chalcopyrite & anhydrite					L-M	Oxidized	Concentric banding noted.
2-3	Sulfide Chimney Fragment	1.5	F-C	Banded, black anhydrite & chalcopyrite & pyrite					L-M	Oxidized	Longitudinal half chimney section.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-4	Sulfide Chimney Fragment	1.0	F-C	Zoned, fibrous-black anhydrite, white anhydrite & chalcopyrite					L-M	Oxidized	Longitudinal half chimney section.
2-5	Sulfide Chimney Fragment	0.1	F-C	Acicular-black & white anhydrite with patchy pyrite					L-M	Oxidized	Anhydrite crystals oriented perpendicular to wall.
2-6	Sulfide Chimney Fragment	0.1	F-M	Arborescent pyrite, wurtzite, TR-chalcopyrite & anhydrite					L-M	Oxidized	Concentric banding noted.
2-7	Sulfide Chimney Fragment	TR	M-C	1-2 cm long chalcopyrite laths with minor anhydrite					L-M	Oxidized	Largely a chalcopyrite crust.
2-8	Sulfide Chimney Fragments	TR	F	Porous white anhydrite					L-M	Oxidized	Some chalcopyrite noted.
2-9	Sulfide Chimney Fragments	TR	F-M	Mixture of chalcopyrite & anhydrite					L-M	Oxidized	
2-10	Sulfide Chimney Fragments	TR	F	Anhydrite, chalcopyrite/pyrite & wurtzite					L-M	Oxidized	
2-12	Sulfide Chimney Fragments	0.1	F	Anhydrite, chalcopyrite/pyrite & wurtzite					L-M	Oxidized	Anhydrite appears banded.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
2-13	Sulfide Chimney Fragment	1.6	M-C	Black & white anhydrite, chalcopyrite, pyrite and wurtzite					L-M	Oxidized	Chimney wall fragments.
2-14	Sulfide Chimney Fragment	0.5	M-C	Black-acicular anhydrite, white anhydrite and chalcopyrite					L-M	Oxidized	Anhydrite laths oriented perpendicular to walls.
2-15	Sulfide Chimney Fragment	2.0	C	Black-acicular anhydrite, white anhydrite and chalcopyrite					L-M	Oxidized	Large chimney fragment.
2-16	Sulfide Chimney Fragment	1.0	F-M	Banded, white and black anhydrite, chalcopyrite/pyrite and wurtzite					L-M	Oxidized	Tube worm casings noted.
2-17	Sulfide Chimney Fragments	0.1	F	Black and white anhydrite & chalcopyrite/pyrite					L-M	Oxidized	
2-18	Sulfide Chimney Fragments	5.2	F-M	Chalcopyrite, wurtzite, anhydrite & Fe - oxides.					L-M	Oxidized	Large talus fragment. Tube-worm casts noted.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1150

Described By: EPR TEAM/Andrew Date: 12/23/85

1-1	Sulfide Chimney Fragment	2.9	F-M	Pyrite, wurtzite, chalcopyrite and white anhydrite					L	Oxidized	Surface morphology dominated by worm casts.
1-3	Sulfide Chimney Fragment	0.5	F	Wurtzite & pyrite					L	Oxidized	Worm casts very notable. Vuggy.

Alvin 1151

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	?										
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Alvin 1152

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	Sulfide Chimney Fragments	0.2	F	Black-acicular anhydrite, pyrite, chalcopyrite and white anhydrite					L-M	Oxidized	Pyrite & chalcopyrite are dominant. Tube worm casts noted.
1-2	Sulfide Chimney	7.0	F	ZnS dominant, other sulfides & anhydrite present					M	Oxidized	Well formed chimney.

Alvin 1154

Described By: EPR TEAM/Andrew Date: 12/24/85

1-2	Sulfide Chimney Fragments	0.9	F-M	Pyrite, chalcopyrite, wurtzite and anhydrite					L-M	Oxidized	Wurtzite and limonite notable.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1155

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	Heavily Oxidized Chimney Fragments	0.5	F	Limonite, wurtzite, chalcopyrite and pyrite					H	Heavily oxidized	Cross-cut by several tube worm casts.
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Alvin 1156

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	Sulfide Chimney	3.6	F-M	Pyrite, wurtzite, amorphous silica and TR-anhydrite					H	Heavily Oxidized	Completely honey-combed by tube worm casts.
2-1	Sulfide Chimney Fragments	8.9	F-M	Zoned, black-acicular anhydrite, white anhydrite, chalcopyrite & pyrite					L-M	Oxidized	Large chimney section. Outer-most rind is limonite.
2-2	Sulfide Chimney Fragments	0.2	F	Pyrite, anhydrite and chalcopyrite					H	Heavily oxidized	Very soft. Many Fe-oxides noted.
2-3	Sulfide Chimney Fragments	0.1	F-M	Pyrite, anhydrite and chalcopyrite					L-M	Oxidized	

Alvin 1157

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	Sulfide Chimney Fragments	4.0	F-M	Pyrite, wurtzite & minor chalcopyrite					L-M	Oxidized	Tube worm casts noted along with euhedral wurtzite in vugs.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
1-2	Sulfide Chimney Fragments	0.5	F-M	Pyrite, wurtzite & minor chalcopyrite & acicular anhydrite					L-M	Oxidized	Tube worm casts noted along with euhedral wurtzite in vugs
2-1	"Sulfide & Tube Worm Sediment"	0.3	F-M	Wurtzite/pyrite "sand" and "tube worm shell hash"					L-M	Oxidized	Fragments of remains of tube-worm coated smoker.

Alvin 1158

Described By: EPR TEAM/Andrew Date: 12/24/85

1-2	Sulfide Chimney Fragments	0.2	F-M	Anhydrite chalcopyrite and pyrite					L-M	Oxidized	Oxidized to limonite.
1-3	"Sulfide Chimney" Fragments	0.3	F-M	Anhydrite and chalcopyrite					L-M	Oxidized	Oxidized to limonite.
1-6	"Sulfide Sediment"	0.5	F	Mud & small fragments sampled from base of mound					H	Heavily oxidized	Scoop sample.

Alvin 1159

Described By: EPR TEAM/Andrew Date: 12/24/85

1-1	Sulfide Chimney	25 KG	F-C	Pyrite, wurtzite, anhydrite & chalcopyrite					L	Oxidized	Tube worm casts noted. Mostly massive Zn-sulfide. Very large sample.
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Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1240

Described By: Thompson/Graham Date: 7/16/82

1	Basalt Breccia	5	F					1 mm	M	Mn cemented (?), low-temp. weathering	Large fragments of basalt breccia, heavily Mn-stained.
2A	Lithified Sediment	1.5						1 mm			Mn-stained, lithified, brown-colored sediment.
2B	Lithified Sediment	200									As 1040A-2A, smaller, rounded fragment.
3	Basalt	2	F	Plag				1 mm	M	Low-temp. weathering	Approx. 1 cm weath. rind and along cracks.
4	8 Basalt Breccia Fragments	20-100 ea.	F					1 mm	M		Small Mn-covered breccia fragments left in basket.

Alvin 1242

Described By: Thompson/Graham Date: 7/16/82

1	Basalt	4.5	M	Olivine-plag	Olivine-plag	0	0	1 mm	L		Large basalt cobble. Mn coating. Coarse grained.
2	Basalt	2.5	F	Plag	Plag (large)	0	0	1 mm	M		More Mn than 1041-1. No visible OL.
3	2 Pieces - Manganese Crust	0.25		Mn							Hydrothermal Mn crust 1-2 cm thick, platy appearance.
4	Basalt	1	F					1 mm	M		Some coarse sediment on 1 side.
5	Basalt	1.75	F		Plag			1 mm	M		Glassy surface. Mn coating on opposite side.
6	Basalt	2 KG	A			10%		1 mm	M		Flat, platy slab of basalt, smooth on one side.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
Scoop-1	Mn crust	0.25									3-cm-thick, platy Mn crust.
Scoop	Sediment	5	C	Foram & Mn							Scoop sample of "stained" sediment in vicinity of Mn pavement.
Location Unknown	Basalt Fragment	200						1 mm	L		Small fragment found in basket before dive #1242. Probably picked up on ski of Alvin accidentally.

Alvin 1243

Described By: Thompson/Graham Date: 7/17/82

	Mn Crust	2 KG		Mn -black, reddish & green hues				X		Oxidation?	
1											Thick, friable Mn crust. Peculiar hues and textures.
2	Basalt	11 KG	F	Plag	Plag			1 mm	M		Angular basalt fragment, Mn-stained, weathered zones.
3	Lithified Sediment	2		Carbonate ooze				2 mm			Large piece brownish, lithified sediment, botryoidal Mn cover.
4	Basalt	13	M					1 mm	M		Basalt fragment, angular weathering zones seen.
5	Basalt	1	F			5%		1 mm	L		Glassy pillow basalt fragment. Mn-stained.

Alvin 1244

Described By: Thompson/Graham Date: 7/18/82

	Mn Slab	250						X			
1A											Layered Mn with botryoidal surface. Inner portion friable.
1B	Mn Slab	200						X			Flat-layered Mn slab. Outer surface botryoidal. Inner surface very shiny.
1C	Mn Slab	200						X			Similar to 1B but less shiny inner surface.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
1D	Mn Slab	200						X			Similar to 1B.
1E	Mn Slab	100									As 1B.

Alvin 1245

Described By: Thompson/Graham Date: 7/19/82

1	Basalt	1.8	F			5%		1 mm	M		Mn layering on one side, some external discoloration.
2	Basalt (diabase?)	0.4	C	Olivine-hydrated olivine, zeolite external (?)		5%	S	X	M		Light zeolitic coating in external portions, olivine & hydrated olivine internally, discolored, stained.
3	Basalt	1.7	M-C			2%	S	2 mm	M		Mn-coated over $\frac{1}{2}$ surface; some hydrated internal areas; stained
4	Basalt	0.5	F					1-5 mm			Friable Mn-coated basalt.
5	Basalt Breccia	9	C	Wide size range. Basalt fragments welded into sedimentary matrix				2 mm	M		2 samples in separate bags (one very big).
6	Basalt	3.4	F			5%		2 mm	M		1 cm, hydrated zone around outer portion; Mn coat, stained.
7	Basalt	1.2	F	Flow surface of feldspar crystals present					M		Mild staining external; band of feldspar crystals near outer portion of rock.
8	Basalt	4.2	F		Feldspars	5%		1-5 mm	M		Mn coating near complete; small coral growth.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
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Alvin 1246

Described By: Thompson/Graham Date: 7/21/82

1	Basalt	1.6	M		Olivine, plag?	5-10%		1-2 mm	M		Partially Mn-encrusted basalts (2 pieces). Also sponge frags., hydrothermal Mn oxides, and rock frags in separate bags.
2	Basalt	1.5	F	Feldspar banding, hydrated outer zone		2-5%		1-5	M		Mn-encrusted basalt.
3	Basalt (diabase?)	1.4	M-C	Olivine, feldspars (some hydrated)	Olivine, feldspars	5%		1-5	M		Mn-encrusted basalt.
4	Basalt Breccia	1.3	C					1-5	M		Mn-encrusted basalt breccia in sedimentary matrix (lithified).
5	Basalt breccia (2 pieces)	6.0	C					1-10	M		Heavily Mn-encrusted as 4, with distinct layer of CaCO ₃ on top with forams and pteropods distinguishable.
6	Basalt	1.1	M-F	Feldspar banding	Feldspars	2%		1-5	M		As 2.
7	Basalt Breccia	0.8	C					1-10	M		As 4.
8	Basalt Breccia	5.6	C					1-10	M		As 4.
9	Basalt	0.2	F			1-2%		1 mm	M		Some small amount of glass, palagonite stain.
10	Basalt Breccias (2 slabs & 7 pieces)	2.0	C					1-5	M		As 4.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
11	Basalt Breccia	3.8	C					1.10	M		As 4, maybe more oxidized, some red stain.
12	Basalt	1.7	M-F	Feldspars, olivine		5-10		1 mm	M		Mn-encrusted (in portions) basalt.
13	Sponge sample										
14	2 Misc. Mn-coated basalts in Alvin basket after dive.							X	M		

Alvin 1247

Described By: Thompson/Graham Date: 7/21/82

1-1	Ferromanganese Deposit	0.45						X		Oxidized? Some bright orange layers & patches; mostly black	2 pieces: 4x9x6 cm, V. friable 5x6x6 cm. Little internal structure obvious. some laminae: black, grey, orange.
1-2	Ferromanganese Crust	0.1								Oxidized? Orange layers	Highly laminated: Orange, black, steel gray mm layers (very shiny surface).
2-1	Ferromanganese Deposit	0.3						X		Oxidized? Orange layers & patches	Similar to 1-1: Little internal structure. V. friable.
2-2	Ferromanganese Deposit	0.45						X		Oxidized? Orange layers & patches	Black with orange patches: Bulbous internal structure. V. friable.
3	Diabase	2.7	C	Plag-PX				V. thin	H	1 cm-thick weath. rind on margins	Heavily weathered.
4	Chalk Slab	2.8						X	L	Rusty-colored	7 cm thick slab of medium brown chalk. V. friable.

Sample	Lithology	Wt.	G.S.	Mineralogy	Phenocrysts	Ve	Am	Mn	We	Alteration	Remarks
5	Basalt Breccia	0.75	A					X	M	Some oxide in matrix: Rusty	2 pieces: Basalt in matrix of dark green, black, & rusty sediment; poss. some glass fragments (1 mm) in matrix.

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16. Abstract (Limit: 200 words) This report is Volume IV in the series of reports entitled "Descriptions of W.H.O.I. Rock Dredge Samples." This volume is dedicated to rock samples recovered by DSV <i>Alvin</i> between 1971 - 1982 and includes data for all rock samples beginning with <i>Alvin</i> 338 and ending with <i>Alvin</i> 1247. The data contained in this volume is an accumulation and transcription of initial descriptions made at sea, along with post-cruise descriptions performed at the lab by the curatorial staff. Volumes I - III contain data from all W.H.O.I. dredging cruises up to 1986. Volume IV presents a digitized listing of all station data for the entire W.H.O.I. dredge/rock collection through 1986. The data in this listing are sorted by Marsden Square and can thus serve as a regional index for all rock samples included in Volumes I - IV.			
17. Document Analysis a. Descriptors Alvin rocks rock descriptions b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement Approved for public release; distribution unlimited.		19. Security Class (This Report)	21. No. of Pages 163
		20. Security Class (This Page)	22. Price