Dredge 18

W Fayanget I

USGS DREDGE LOG

SHIP/LEG F7-91-WP

STATION # 26

DREDGE # D18

DEPTH INTERVAL(m) 2390-2230

DEPTH(m)corrected 2500-2230

DATE JD 210 LOCAL July 30, 1991

TIME GMT 1538 +0 LOCAL 1823 on bottom

LATITUDE 08° 12.71 TO 08° 12.96 N

LONGITUDE 134°58.09 TO 134° 57.84 E

TOTAL WEIGHT: DREDGE Rock 60kg MUD 120kg CRUST 2

PERCENTAGE OF ROCK COVERED BY CRUST 50

PERCENT BROKEN FROM: OUTCROP 80% TALUS 20%

THICKNESS OF MN CRUST: MAXIMUM low MINIMUM Patina AVERAGE 2 mm

DOMINANT SURFACE TEXTURE Granular

SUBSTRATE LITHOLOGY Basalt cobbles and breccia

All but 1 box contained Mud overboard.

NODULES PRESENT None

REMARKS: All basalt cobbles are Clasts from Breccia - phosph. cemented

USGS DREDGE LOG

Depth Interval 2590-2230 Julian Date 210

Cruise I.D. F7-91-WP Local Date (m/d/y) July 30, 1991

Station No. 26 Chief Scientist Hein / Ahn

Dredge No. D18 Tech on Watch Jon E.

	On Station	Dredge on Btm	Dredge off btm	Off Station
GMT	1434	1538	1823	1910
LATITUDE	08° 12.67	08° 12.71' N	08° 12.96'	08° 12.88
LONGITUDE	134° 58.16	134° 58.09'	134° 57.84'	134° 57.88
WATER DEPTH	2450	≈ 2590	2630	2845

Site Description and Target : Palau E Steep pinnicle 2500 - 1800

OPERATION*	GMT	DEPTH (m)	WIRE OUT (m)	TENSION	HDG/SPD	COMMENTS
ON BOT.	1538	~2600	2574		337	PAYING OUT SCOPE
	1550	24-2500	2900	1.4		ALL SCOPE OUT
	1610	2240	"			NO BITES YET
	1633	~2150	"	1.5-1.9		" " "
	1641	~2000		2.0		MUD-LICK SOFT BITE
	1642			2.2		TUG-FREE ENVIRONMENT SO
	1648			2.6-3.0		HIGHER TENSIONS
	1649		2900	3.4		1ST BITE
	1650	2000		5.1		GOOD ONE
	1655	1900-2000		5.6		BROKE OFF
	1703				330	BACK IN THE MUD
	1713	1800-1900	2900	3.1		MUD BITE
	1716	~1800				STOPPING SHIP/BRINGING IN WIRE
	1723	1820	2770	7.0		HUNG UP!
	1739		2680			STILL WELL HUNG
	1756	~2040				SHIP BEING PULLED BACK BY WI
	1804	2100-2200	2500			STILL HUNG STILL HUNG UP
	1814	2200	2400			"

*on/off bottom, bites, etc.

OTHER COMMENTS:

2500 - 2230

OPERATION*	GMT	DEPTH (m)	WIRE OUT (m)	TENSION	HDG/SPD	COMMENTS
ON	1821	2300	2415	2.8		PULLS OFF [illegible]
OFF	1822	2230	2325			COMES OFF BOTTOM

*on/off bottom, bites, etc.

OTHER COMMENTS:

W. Kayangel Island

Palau E

D18

Dredge Sample Summary Sheet

Sample ID	Bulk CC	Layer CC	Pt & Au	Ree	OC	DPTS/TS	XRD	35mm Photo	Paleo	Archive
D18-1							X		2x	
D18-2	X	[redacted]	½x	½x			2x			
D18-3						X	X			
D18-6						X	X			
D18-7						X				
D18-9						X	X			
D18-12					X		X			
D18-13										

To

SAMPLE DESCRIPTION

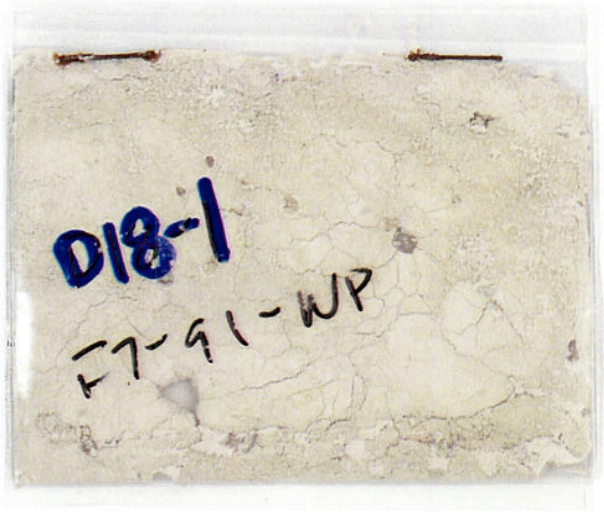
Cruise Id: FT-91-WP Size (cm): — Location: V3-91-NP Palau E

Sample Id: D18-1 Weight (kg): 120 kg Depth (m): 2500-2220

1 kg kept

Mn Crust Description

Surface Texture:



Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
2 Palco D18-1	XRD		
1 in rose bengal			

Substrate Description

Rock Type: light brown foraminiferal-nannoplankton ooze. Generally massive, small amounts of white stiff mud included

Description: on top of foraminiferal.

Biology (?):

Described by: SSO

Subsampled by: SSO

SAMPLE DESCRIPTION

Cruise Id: [illegible] Size (cm): [illegible] Location: [redacted] palau E

Sample Id: D18-2 Weight (kg): [illegible] Depth (m): 2600 - 2250

Mn Crust Description

Surface Texture: Granular to small-scale botryoidal

Mn Crust Thickness (mm):

Min: 1 Max: 10 Ave: 4

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-2

Comments and XRD Mineralogy:

Su

D18-2A matrix XRD Check for phosphorite

D18-2B CC, XRD } Crust 0-5 mm

Pt, } - 20 gm

Ree 2.09 kg gm 0-5 mm

60% USGS

40% KR RIDP

Substrate Description

Rock Type: Mn-crusted volcaniclastic breccia

Description: fresh gray to dark gray colored basalts (some of them are completely altered to brown colored one or have a brown colored altered rim) with yellow to light yellow-brown colored altered hyaloclastite matrix and phosphorite(?) cement

Biology (?): Encrusting forams

Described by: J. W. [illegible]

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F9-91-WP Size (cm): 14 x 8.5 x 17 Location: Palau E ~~V3-91-NP~~

Sample Id: D18-3 Weight (kg): 1.5 kg Depth (m): 2500-2250

Mn Crust Description

Surface Texture:

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-3

Comments and XRD Mineralogy:

Sub

D18-3A XRD YELLOW MATRIX MATERIAL / Phosphorite Study

D18-3B DPTS WHOLE ROCK

Substrate Description

Rock Type: Volcanic Clastic Breccia

60% 4SGS

40% 4ORDS

Description: gray to black rel. Fresh basalt and yellow to pale brown completely altered. Basalt clasts in a phosphorite cement (clasts have brown to light brown colored altered rims). Fresh basalt

Biology (?): clasts are weakly magnetic no fresh glass, all full of microlites

Described by: J.W. Moore

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: FT-91-WP Size (cm): 2x2x1 ~ 10x6x5 Location: Palau E ~~[illegible]~~

Sample Id: D18-K Weight (kg): ~4 Depth (m): 2500-2230

Mn Crust Description

Surface Texture: Patina on sand pebbles

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-4

Comments and XRD Mineralogy:

Sub

Substrate Description

Rock Type: uncul breccia pebbles + cobbles

35% HORDI
65% USGS

Description: Lite D18-3

Biology (?):

Described by: ASD

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F7-91-WP Size (cm): 3x2x2 10x8x4 Location: ~~V2-91-CP~~ Palau E

Sample Id: D18-5 Weight (kg): ~20 Depth (m): 2500-2230

Mn Crust Description

Surface Texture: Patina — on Some

Mn Crust Thickness (mm):

Min:_____ Max: 0 Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-5

Comments and XRD Mineralogy:

Sub

Substrate Description

Rock Type: unsur basalt pebbles + cobbles

30% ROBDT
70% USGS

Description: Clasts from Breccia - matrix still adhering to most pebbles Phosphorite cemented?

Biology (?):

Described by: ASD

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: T7-91-WP Size (cm): ~3 Cobbles ~5 Pebbles Location: Palau E ~~[illegible]~~

Sample Id: D18-6 Weight (kg): ~6 Depth (m): 2500-2250

Mn Crust Description

Surface Texture:

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-6

Comments and XRD Mineralogy:

Sub

D18-6-1 DPTS, XRD – Phosphorite Study

Substrate Description

Rock Type: Volcaniclastic Breccia

40% KORDI
60% USGS

Description:
Same as Sample D18-3
large black vesicular basalt
Clast – Cobble in one

Biology (?):

Described by: Moon

Subsampled by: JSS

SAMPLE DESCRIPTION

Cruise Id: F7-91-WP Size (cm): 11x10x6 Location: Palau E [redacted]

Sample Id: D18-7 Weight (kg): 2 Depth (m): 2500-2230

Mn Crust Description

Surface Texture: Patina - spotty

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-7

Comments and XRD Mineralogy:

Su

D18-7 TS

Substrate Description

Rock Type: Basalt

Description: vesicular basalt
yellow wedge with fine grained
margin (but not good glass)
Margin fractured with small
amount of tan "phosphatized"?

~~Biology (?)~~: matrix

Described by: ASD

Subsampled by: ASD

SAMPLE DESCRIPTION

Cruise Id: [illegible] Size (cm): 12 x 7 x 14 Location: Palau E ~~[illegible]~~

Sample Id: D18-8 Weight (kg): ~1.5 Depth (m): 2500-2230

Mn Crust Description

Surface Texture: [illegible] a few small spots

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-8

Comments and XRD Mineralogy:

Subs

Substrate Description

Rock Type: Basalt

50% HORDI
50% USGS

Description: Vesicular basalt with small amount of breccia matrix [illegible] [illegible] [illegible] samples

combine samples for [illegible] w/ D18-7, 9, 12, 11, etc

Biology (?): Breccia cement adhering

Described by: RSD

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: [illegible] Size (cm): 12 x 12 x 10 Location: [redacted] Palau [illegible]

Sample Id: D18-9 Weight (kg): ~10 Depth (m): 2500 - [illegible]

D18-9

Mn Crust Description

Surface Texture: Patina-eroded

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

Subs

D18-9 T.S., XRD

Substrate Description

Rock Type: Basalt

50% KORDI
50% USGS

Description: Vesicular, mod. porphyritic basalt with plagioclase microphenocrysts. Vesicles elongated, some partly filled with zeolites?

K/Ar dating?
(Looks better than D18-10)

Biology (?): Breccia, adhearing matrix CFA vein

Described by: ASD

Subsampled by: ASD

SAMPLE DESCRIPTION

Cruise Id: F7-91WP Size (cm): 13x9x7 Location: ~~V3-91WP~~ Palau E

Sample Id: D18-10 Weight (kg): 1.2 kg Depth (m): 2500-2230

Mn Crust Description

Surface Texture: Pa[illegible] - eroded

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-10

Comments and XRD Mineralogy:

Subsam

Substrate Description

Rock Type: Basalt

40% 40RDC
60% 45GS

Description: Gray, vesicular basalt, vesicles round becoming elongated "pipe" vesicles toward margin, small phenocrystal microphenocryst in serrate?

K/Ar dating ? may be possible

Biology (?): textured groundmass. [illegible] alignment - flow direction?

Described by: ASD

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F7-91-WP Size (cm): [illegible] Location: [redacted] Palau E

Sample Id: D18-11 Weight (kg): 2 Depth (m): 2600 - 3230

Mn Crust Description

Surface Texture: Patina - eroded

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-11

Comments and XRD Mineralogy:

Subsa

Substrate Description

Rock Type: Basalt

HORDE 25%
USGS 75%

Description: Vesicular basalt with small plagioclase microphenocrysts, similar to D18-9 but vesicles less elongated and more random

~~Biology~~ (?): not alignment. Small amount of breccia matrix

Described by: [illegible]

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F9-91-WP Size (cm): 9x8x7 (≈ 10 [illegible]) Location: [redacted] Dolan E

Sample Id: D18-12 Weight (kg): 5 Depth (m): 2500-2250

Mn Crust Description

Surface Texture:

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-12

Comments and XRD Mineralogy:

Sub

D18-12-1 OC, XRD 33 gm

Typical Basalt from this (Medy?)

Substrate Description

Rock Type: Basalt

Description: gray to black colored, porous (vesicles developed), weakly magnetic. Same lithology as other samples.

KORDI 30%

USGS 70%

Combine for [illegible]

~~Biology (?)~~: Matrix of breccia attached

Described by: J. W. Moon

Subsampled by: HEIN

SAMPLE DESCRIPTION

Cruise Id: EW-91WP Size (cm): 2 pebbles ~10 × 5 × 3 Location: Palau E V3-91-MP

Sample Id: D18-13 Weight (kg): 0.5 kg Depth (m): 2500-2250

Mn Crust Description

Surface Texture:

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1				
2				
3				
4				
5				
6				

D18-13

Comments and XRD Mineralogy:

Subsar

50% HORDI
50% USGS

Substrate Description

Rock Type: Basalt

Description: similar vesicular basalt as other samples but more altered with red-brown oxidized basalt rims & colloform

Biology (?):

Described by: ASD

Subsampled by: