

SITE SUMMARIES

Site: HE-1A (Site 192)

Priority: 2 (alternate) Position: 53°0.57'N, 164°42.81'E Water Depth: 3000 m Sediment Thickness: 1044 m Target Drilling Depth: 1150 m Approved Maximum Penetration: 1150 mbsf Seismic Coverage: *Glomar Challenger* Leg 19 0400 UTC

Objectives: The objectives of Site HE-1A are to:

- 1. Determine the paleolatitude and age of the oldest part of the Hawaiian-Emperor chain
- 2. Determine the geochemical signature of the oldest part of the Hawaiian-Emperor chain
- 3. Determine the nature of the Late Cretaceous time-averaged geomagnetic field
- 4. Determine the Late Cretaceous paleointensity of the geomagnetic field
- 5. Recover a North Pacific Paleogene paleoceanographic record

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS

Nature of Rock Anticipated: Silty clay, diatom ooze, volcanic ash beds, claystone, minor calcareous layers, chalk, minor sand beds, and basalt

Site: HE-1B

Priority: 1 (primary) Position: 52°53'N, 164°35'E Water Depth: 3200 m Sediment Thickness: 1000 m Target Drilling Depth: 950 m Approved Maximum Penetration: 950 mbsf Seismic Coverage: *Glomar Challenger* Leg 19 0500 UTC

Objectives: The objectives of Site HE-1B are to:

1. Determine the paleolatitude and age of the oldest part of the Hawaiian-Emperor chain

2. Determine the geochemical signature of the oldest part of the Hawaiian-Emperor chain

3. Determine the nature of the Late Cretaceous time-averaged geomagnetic field

4. Determine the Late Cretaceous paleointensity of the geomagnetic field

5. Recover a North Pacific Paleogene paleoceanographic record

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS

Nature of Rock Anticipated: Silty clay, diatom ooze, volcanic ash beds, claystone, minor calcareous layers, chalk, minor sand beds, and basalt

See seismic line for Site HE-1A

Site: HE-2

Priority: 2 (alternate) Position: 50°24'N, 167°34'E Water Depth: 3200 m Sediment Thickness: 750 m Target Drilling Depth: >900 m Approved Maximum Penetration: 1050 mbsf Seismic Coverage: *Roundabout* 6 Aug 13 0030 UTC

Objectives: The objectives of Site HE-2 are to:

- 1. Obtain a paleolatitude and age estimate for Detroit Seamount with enough independent time units (>15) to provide increased resolution in tests of the fixed-hotspot hypothesis
- 2. Determine the geochemical signature of the Detroit Seamount
- 3. Determine the nature of the time-averaged geomagnetic field
- 4. Determine the paleointensity of the geomagnetic field
- 5. Constrain downhole magnetic structure through borehole magnetic logging

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS, third-party magnetic tool

Nature of Rock Anticipated: Diatom ooze and alkali and trachy basalt flows



Roundabout 6

Site: HE-2A

Priority: 2 (alternate) Position: 50°41.98'N, 167°9.26'E Water Depth: 2617 m Sediment Thickness: 360 m Target Drilling Depth: >510 m Approved Maximum Penetration: 660 mbsf Seismic Coverage: F2AA87 (*Faranella*) CDP 3600

Objectives: The objectives of Site HE-2A are to:

- 1. Obtain a paleolatitude and age estimate for Detroit Seamount with enough independent time units (> 15) to provide increased resolution in tests of the fixed-hotspot hypothesis
- 2. Determine the geochemical signature of the Detroit Seamount
- 3. Determine the nature of the geomagnetic field
- 4. Determine the paleointensity of the time-averaged geomagnetic field
- 5. Constrain downhole magnetic structure through borehole magnetic logging

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS, third-party magnetic tool

Nature of Rock Anticipated: diatom ooze and alkali and trachy basalt flows



Site: HE-3

Priority: 2 (alternate) Position: 51°11.9'N, 167°46.1'E Water Depth: 2400 m Sediment Thickness: 840 m Target Drilling Depth: 980 m Approved Maximum Penetration: 1140 mbsf Seismic Coverage: *Roundabout* 6 Aug 14 0435 UTC

Objectives: The objectives of Site HE-3 are to:

- 1. Obtain a paleolatitude and age estimate for Detroit Seamount with enough independent time units (>15) to provide increased resolution in tests of the fixed hotspot hypothesis
- 2. Determine the geochemical signature of the Detroit Seamount
- 3. Determine the nature of the time-averaged geomagnetic field
- 4. Determine the paleointensity of the geomagnetic field
- 5. Constrain downhole magnetic structure through borehole magnetic logging

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS, third-party magnetic tool

Nature of Rock Anticipated: quartz/diatom clay, diatom clay/ooze, diatom ooze with calcareous diatom ooze, volcanic ash, chalk, altered ash and claystone, and tholeiitic olivine basalt



Site: HE-3A

Priority: 2 (alternate) Position: 50°57'N, 167°44.4'E Water Depth: 2773 m Sediment Thickness: 500 m Target Drilling Depth: >650 m Approved Maximum Penetration: 800 mbsf Seismic Coverage: *Thomas Washington*, 88, JD 226, 1627 UTC

Objectives: The objectives of Site HE-3A are to:

- 1. Obtain a paleolatitude and age estimate for Detroit Seamount with enough independent time units (>15) to provide increased resolution in tests of the fixed-hotspot hypothesis
- 2. Determine the geochemical signature of the Detroit Seamount
- 3. Determine the nature of the time-averaged geomagnetic field
- 4. Determine the paleointensity of the geomagnetic field
- 5. Constrain downhole magnetic structure through borehole magnetic logging

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS, third-party magnetic tool

Nature of Rock Anticipated: Quartz/diatom clay, diatom clay/ooze, diatom ooze with calcareous diatom ooze, volcanic ash, chalk, altered ash and claystone, and tholeiitic olivine basalt

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Site: HE-3B

Priority: 1 (primary) Position: 50°48.6'N, 167°33'E Water Depth: 2740 m Sediment Thickness: 450 m Target Drilling Depth: >600 m Approved Maximum Penetration: 750 mbsf Seismic Coverage: *Thomas Washington*, 88, JD 226, 1225 UTC

Objectives: The objectives of Site HE-3B are to:

- 1. Obtain a paleolatitude and age estimate for Detroit Seamount with enough independent time units (>15) to provide increased resolution in tests of the fixed-hotspot hypothesis
- 2. Determine the geochemical signature of the Detroit Seamount
- 3. Determine the nature of the time-averaged geomagnetic field
- 4. Determine the paleointensity of the geomagnetic field
- 5. Constrain downhole magnetic structure through borehole magnetic logging

Drilling Program: RCB

Logging and Downhole: Triple combo, FMS, third-party magnetic tool

Nature of Rock Anticipated: Quartz/diatom clay, diatom clay/ooze, diatom ooze with calcareous diatom ooze, volcanic ash, chalk, altered ash and claystone, and tholeiitic olivine basalt

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