

DREDGE 14
S. Johnston
Is Ridge

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 16 CD14-1

Location: S. Johnston

Size: — Weight: 12 kg

Ridge

Mn crust thickness:

Total: min: — max: — ave: 3.5 cm

Inner crust: min: — max: — ave: 1.2 massive

middle 1.3 2.1 1.5 porous

Outer crust: min: 1.0 max: 1.2 ave: 1.1 massive

Surface texture: —

Internal structure: —

- layered: X (3)
- laminated: —
- massive: X (out + inner)
- porous: X middle / sediment infillings
- dendritic: — (med, inner crust)
- other: —

Mineralogy (XRD): —

Associated alteration, phosphorite, or hydrothermal deposits: —

Substratum: —

Rock type: Basalt

Description: Gray vesicular basalt boulder

plone Taban

Mineralogy (XRD): —



CD14-1

F7-86-HW
Karin Ridge
Johnston Is

+ major mineral

Analyses and subsamples:

analysis:

CD14-1 bulk crust (2.7-3.9cm)

analyst:

Mn crust chem. pt group
+ Au + Ag (115.0g) REE
(59.3g); XRD

Took x-sections from 6 different large crust pieces for chem + XRD

DPDS (crustal)

KAU (May 1980)

slabbed 6 pieces of crust +
cut subsamples from each
for the bulk samples.



slabbed 6 pieces of crust +
sent subsamples from each
for the bulk sample

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 17 CD14-2

Location: S. Johnston I

16.5 x 12 x 6

Size: _____ Weight: 1.5 kg

Ridge

Mn crust thickness:

Total: min: 1.0 max: 2.0 ave: 1.5

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: smooth w/ voids

Internal structure:

layered: _____

laminated: _____

massive: _____

porous: X in areas w/ gray + tan mud infilling pores

dendritic: _____

other: _____

Mineralogy (XRD):

Associated alteration, pho hydrothermal deposits:

Substratum:

Rock type: V. altered Basalt? phosphorite?

Description: white porous rock w/ massive tan-colored sponges + porous w/ Mn dendrites

Doesn't fit. Grey clast (basalt?) imbedded adjacent to crust. (mud?)

Mineralogy (XRD):



CD14-2

F7-86-HW
Karin Ridge
Johnston Is

Phos
Study

Analyses and subsamples:

analysis:

bulk sample -

A - bulk crust (1.0-2.0cm)

B - substrate

C - gray mud (mud?) in substrate

analyst:

DPTS - w/ piece containing grey clast from top half, one is photo

Mn crust chem - Pt Group + Au (49.0g); RGE (US.SG); XRD

XRD

XRD

35mm slide 6/90

B - white porous w/ Mn dendrites

CD14-2B

G. Smith

DPTS

P. 80

P.C.



CD 14-2
F 7-86-HW

CD 14-2

F 7-86-HW

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 17-CD14-3

Location: S. Johnston I. Ridge

15x8x8

Size: _____ Weight: 0.4 kg

Mn crust thickness:

Total: min: 2.0 max: 3.2 ave: 2.8

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: Small botryoidal granular on sides

Internal structure:

- layered: _____
- laminated: _____
- massive: X (mostly)
- porous: X porous rock to near middle of H. zone
- dendritic: _____
- other: _____

Mineralogy (XRD):

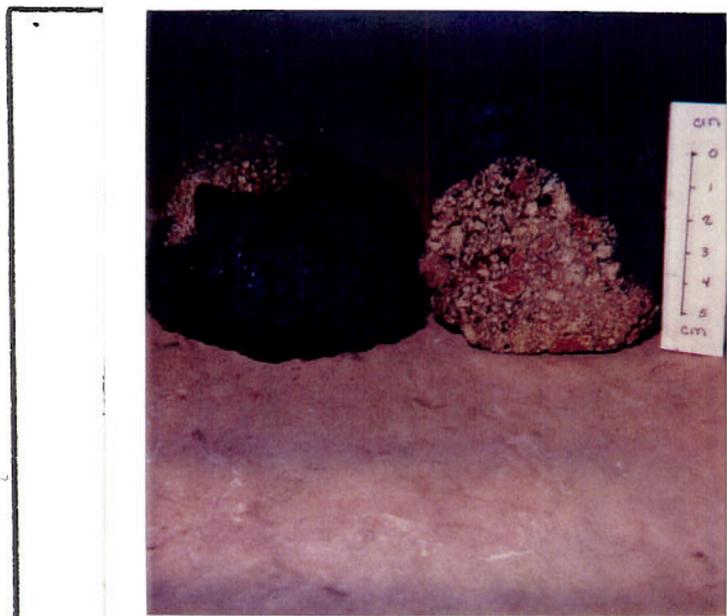
Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic Breccia

Description: yellowish-green brown altered basalt sand & pebbles in fine-grained clay matrix and sparse white druse on void walls

Mineralogy (XRD):



CD14-3

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

sample (thickness):
analysis:

CD14-3 - bulk crust (1.8-2.5 cm)

DPTG (Mn crust 2.5 cm)

Crust Removed for extractive metallurgy

analysis (wt. and)
analyst:

Mn crust chn (15.2g)

KADG (May-12/88)

Arno H. Kreyenstüber

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 17 CD14-5

Location: S. Johnston

12x11x9

Size: _____ Weight: 2.5 kg

Ridge

Mn crust thickness:

Total: min: 1.0 max: 2.6 ave: 2.2 top
0.1 0.6 0.3 sides
2.1 mm bottom

Inner crust: min: 0.4 max: 1.8 ave: 1.1

Outer crust: min: 0.3 max: 1.2 ave: 0.7

Surface texture: Smooth

Internal structure:

- layered: (2)
- laminated:
- massive: X slightly porous in places, much orange Fe-oxide in laminated (cores)
- porous: X much iron ore in porous (inner)
- dendritic:
- other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Basalt

Description: Gray basalt, vesicular
Many vesicles filled or lined w/ secondary white & clear min (zeol? qtz?) (don't fit?)
Some green clay min.

Mineralogy (XRD):



CD14-5

photo 1

F7-86-HW
Karin Ridge
Johnston IS

Analyses and subsamples:

sample (thick) analysis:

A- outer crust (0.7-0.9cm)

B- inner crust (1.2-1.4cm)

C- bulk crust (1.9-2.2cm)

Bulk sample

Chemistry + XPS samples from Half 1

REE Not - Done
Subsample

CD14-5C submitted for Hg Chem

is (wt. cont) analyse:

Min crust chem. + Pt accept

Au (34.3g); REE (16.4g); XRD

Min crust chem. + Pt accept

Au (28.0g); REE (15.8g); XRD

Min crust chem + Pt accept

Au (35.3); REE (7.8g)

DPTS



CD14-5

photo 2

Backside of slab cut
from Half 2,

F7-86-HW
Karin Ridge
Johnston Is

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 16 CD14-7

Location: S. Johnston I

13x7x6

Size: _____ Weight: 0.2 kg

Ridge

Mn crust thickness:

Total: min: 0.1 max: 0.8 ave: 0.4 top: do

0.3 0.7 0.5 bottom

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: smooth w/ vesicles

Internal structure: _____

layered: _____

laminated: _____

massive: X top

porous: X bottom, sides, sediment infilling

dendritic: _____

other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: basalt

Description: Grey basalt vesicular

Vesicles often containing 2° minerals (zeol(?) phos(?)). Subtrachytic flow texture.

Mineralogy (XRD): _____



CD14-7

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

analysis:

analyst:

Multiple horizontal lines for recording analysis and analyst information.

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 16 CD14-8

Location: S. Johnston Ridge

Size: 11x7x4 Weight: 0.084g

Mn crust thickness:

Total: min: 1.1cm max: 1.4 ave: 1.3

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture: Perfectly smooth granular on side

Internal structure:

- layered:
laminated:
massive: X
porous:
dendritic:
other:

Mineralogy (XRD):

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcanic breccia

Description: brown volc. clasts, coarse sand to pebble size, subangular to subrounded, in cream colored (phos?) and gray clay matrix

Mineralogy (XRD):



CD14-8

F7-86-HW
Karin Ridge
Johnston Is

Analyses and subsamples:

analysis:

analyst:

Grid of lines for recording analysis and analyst information.

Sample Description

Cruise I.D: F7-86-HW

Sample I.D: Sta: 16 CD14-11

Location: S Johnston Ridge

07 x 29 x 20

Size: _____ Weight: 20 kg

Mn crust thickness:

Total: min: 0.2 max: 0.8 ave: 2.4 mm

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: Smooth

Black velvet - bottom

Internal structure:

- layered: _____
- laminated: _____
- massive: _____
- porous: _____
- dendritic: _____
- other: _____

Mineralogy (XRD):

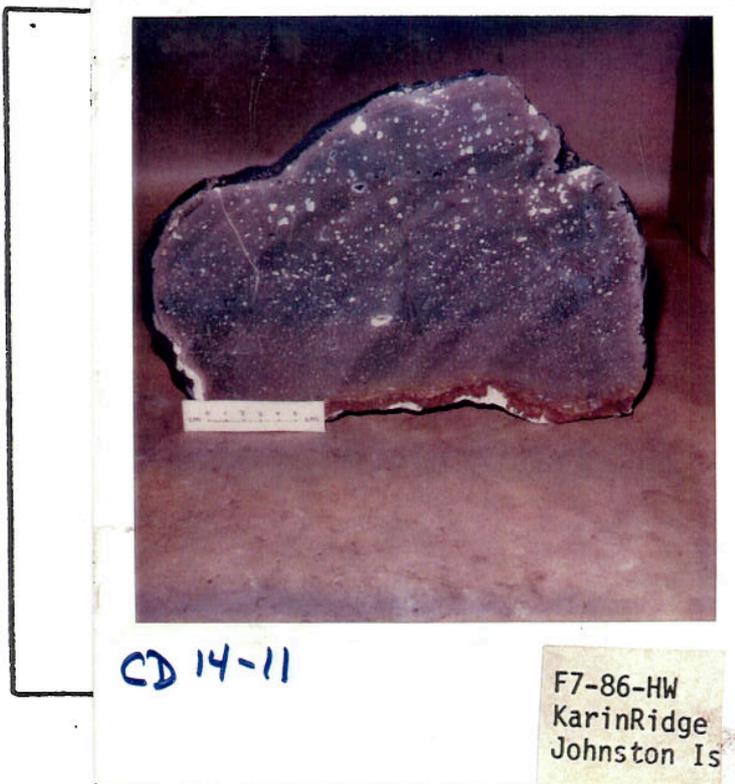
Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Basalt

Description: Grey basalt, vesicular, trachytic texture. Many vesicles filled with minerals, including Ag- tooth spar, calcite, zeol. Brown glassy (?) rim along bottom. Layer of zeol? or phosphite? in places between basalt and crust. Strongly resembles BmDS3

Mineralogy (XRD):



Analyses and subsamples:

subsample (thick crust) analysis:

A = bulk crust (4.8 mm)

B = white lower basalt crust and basalt

↳ Phosphite

analysis: is (with sand)

Mn crust elem + Pt group Au (37.1g); REE (7.3g) XRD

↑ chem

submitted

4.8 mm



CD 14-11

outline
of area sampled
for chem, xrd

F7-86-HW
Karin Ridge
Johnston Is