Dredge

44

Start 22917-16215 176° 39 31 W DI 2063m

22°17.93'S 176°3878'W 1965m

These samples were numbered individually, but geouped together by whomever did the initial sampling and descriptions.

So, as I go back through these I am Regrouping some of them. The groupings start with DI-A on the description sheets are the individual rock numbers, The original description and chemists sheets are at the end of these group descriptions

of Tochococate onystais; stayais februs and can good the surface a "young"

POPERS - FIDROUS OVERS

DI-A These are grouped together, as the samples w/signifi x'tals in mud (Volcane Glass)

| C | Td:_ | 13-84-5 | (P) | _ Size: | Location:_ | Lau Basin | |
|--|---|--|--|----------------|---------------------|-----------|--------------------|
| Samp | pie Id:D | n - 69, 65,6 | , 50,51, b3,7 | Weight: | Depth: | | 2x200 US Podential |
| Surfa Mn (M Laye N 1 3 4 6 (| nts a This a the discharge of the | ture: Decorate the content of the co | Ave Ave Ave Ave Ave Ave Ave Ave | Ave: | ANALYSES DI-Axtal. | | s DI-A |
| | | Description | | uir Glane) | Cronan - | Parhia | |
| | | | | | - | | |
| 44 | ription: | | nettallic | to Submothalic | | | |
| Desc | ribed B | y: J5110 | Sul | osampled By: | | | |

D1-B igneous rock group

| ** IA: 13-84-5P | 11 × 4 × 10 Cm 7 × 6 × 2.5 cm Size: 6.5 × 6 × 50 × - | Location: |
|--|--|-------------------|
| 4 | | Depth: |
| An Crust Description surface Texture: | | Depth: |
| | | |
| nts and XRD Mineralogy: | | DI-B |
| | - | ANALYSES L3-84-SP |
| | | |
| | | |
| | | |
| | | |
| Substrate Description Rock Type: | | - |
| | | |
| Description: Basalt Samoles; residulae | à chambac | |
| One sample scouregrous will | | |
| jellow other mud coating | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Described By: 55M Sub | osampled By: | |

D1-C unnumbered small samples all hydrothermal

all hydrotherwal

| 1 | Size: | Location: |
|--|------------|--------------------------|
| ample Id: | Weight: | Depth: |
| In Crust Description ourface Texture: In Crust Thickness: Min: Max: ayers (Outer to Inner): | | |
| nts and XRD Minera | alogy: | |
| | | SEM Sample of langual Mn |
| | | Conan pashian |
| | | |
| Substrate Description Rock Type: | | |
| Description: Various amalloros Mydrothernal Min | conflagned | |

D1-D

SAMPLE DESCRIPTION

| td: 13-84-5P | Size: 7 / 2.5 × 4/cm | Location: |
|---|----------------------|---------------------|
| Sample Id: 01-62, 01-61 | Weight: | Depth: |
| Mn Crust Description Surface Texture: Mn Crust Thickness: Min: Max: A Layers (Outer to Inner): Min Max Ave 1 Ave | | |
| 2 | A | L3-84-3P DI-D LAU |
| Substrate Description Rock Type: Layered Hydrothern | al Mn | |
| Description: Thise two samples hold an unconformation of the hydrolands layering | | |

Described By: J5M

Subsampled By:

DIF

| | | 7×2 cm | | | |
|--|---------|-------------|--------------|-------------|----------------|
| Id: <u>13-34-59</u> | Size: | 10×1.56- | Location: | | _ |
| ample Id: DF-13 DF-168 | Weight: | - Lig- | Depth: | | _ |
| In Crust Description urface Texture: | | | | | |
| urface Texture: | | | | | |
| | | | 1000 | | 1 |
| In Crust Thickness: Min: Max: | Ave | | | | |
| | _ 11,0 | | | | 1760 |
| ayers (Outer to Inner): Min Max Ave | Texture | | | 100 | |
| | • | | | | |
| | | | | A 10 | 500 |
| | | | 460 | | 1 3 |
| | | | | | |
| | | | | | |
| | | | | EXT | |
| | | | | | |
| | | | DIE | | |
| nts and XRD Mineralogy: | | | DI-F | | |
| | | AN | ALYSES L3-8 | 14-5P | |
| | | | a management | | |
| | | | | | |
| | | | Coras o | Mereda | Panhin |
| | | | | | 100111100 |
| | | | | | |
| | | | | * | |
| Substrate Description Rock Type: <u>Language Hardell to a</u> | al Mn | | | | |
| | | | | | |
| Description: | | | | | |
| Several, were by layered | | no.(| | | |
| 11 some have "folded "laujain | 71.C | 7 | be Wong Ona | you took so | 1651male 10/a- |
| | | | | | to service of |
| | | | | | |
| | | | | | |
| · | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Samp | le Description | |
|---|---|--------------------|
| Cruise I.D: £5-83-HW Sample I.D | · S+2 - 2 1 1 7 | onti- |
| Size: Weight: | | ocation: _AU Zasla |
| | only mak in t | his sample. |
| Mn crust thickness: | took a tew | Charling! |
| Total: min: 1000 max: 2000 ave: | - 1 | |
| Inner | | |
| Inner min: max: ave: | _ | 7-161015 |
| Outer | | And -6- |
| crust: min: max: ave: | | VOL TANKS |
| Surface texture: acanolac | · Var | |
| Internal structure: | V_ 1 | |
| layered: | A 75 | |
| massive: | | |
| porous: | | - Tunderside ha |
| dendritic: | | Ma Como need e |
| other: | II) | la vie |
| Minoral - (VDD) | laminated Myn | |
| Mineralogy (XRD): | | |
| HIBI Richiesite in a fine a Con . | | |
| Associated alteration, phosphorite, or | | |
| hydrothermal deposits: | | |
| | | |
| | Analyses and subsamples: | |
| | analysis: | analyst: |
| Substratum: | S1-150 6707 | Hein - Ingraus |
| Rock type:Mn | DEXEN; | 0 2 2 7 |
| | D1-17-I gypeun 2xt 0-4/m- | C. Daniel |
| Description: Acqueblack laminated | DI-17-II MA 2 xHs. 11-13000 | 70000 |
| L M. BILLE WITTS D.C. PLAN LE S. SU JAN | D1-17 III : Man la minotens D1-15 | -III FOR Ha Chin |
| La massir, Naderwest ide of 100k | 1 - black are 1-5mm | |
| has love of brows needle like crystals of | b=graylayers-10m | |
| 10 Coronine | Polished thin Section | |
| | Chem: 5/2 | Mann Petrographic |
| | DI-17-I: Surface 0-41nm | U.S. G.S. Manlo Pa |
| 40 40 40 40 40 40 40 40 40 40 40 40 40 4 | 21-17-#: bottom crystals 11-12- | |
| Mineralogy(XRD): | DI-17-111A: 1st lager 1- 4pm | |
| I amorphous alsos. | 21-17-1118: 2nd layer 4-8ma | |
| = 0.00 | DI-17-III C: 3rd layer 2-1/mm | |
| ~ - · · · · · · · · · · · · · · · · · · | Plike Resampled for cham-pt-group DI-12 To balk of DI-17 | REE (Halain |
| | DI:12 to bulk of DI-17 | Region Floyd Brown |
| | #A 8.1C | Markein sackage |

DI-12-11 SCH for 4 Year.

SEM of white organis - Volcomer Glass



DI-IT Top of sample mystals (phenome glass)

| Cruise I.D: L5-83-HW | | Description | Kseeback |
|--|----------------|---|---|
| | | Sta: D - 18 A | Location: R |
| Size: Weight: | | 148 | |
| Mn crust thickness: | | | * |
| | | | |
| Total: min: max: | M | | |
| Inner min: max: | ave: | | |
| Outer | | | _ |
| crust: min: max: | ave: | | |
| Surface texture: Accouse 7 0 | ranolar | | Lorange crost |
| Internal structure: | | | |
| layered: | | 3 |) I - To deliver & |
| laminated: | | 1 | lamina tens |
| massive: | | _ | |
| dendritic: | | | |
| other: | | | |
| | | | 7 |
| Mineralogy (XRD): | | - Sample w | as we - |
| Birnessite | | | |
| & Mn Oz à Todemkite | | | |
| | | | |
| Associated alteration phosph | | | |
| Associated alteration, phosph hydrothermal deposits: | | | |
| Associated alteration phosph | | Analyses and sub | samples: |
| Associated alteration phosph | | Analyses and sub analysis: | samples: analyst: |
| Associated alteration, phosph hydrothermal deposits: | | | <u>analyst:</u> |
| Associated alteration, phosph hydrothermal deposits: Substratum: | | analysis: | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: | orite,or | analysis: Took Small siec | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: | orite, or | analysis: | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: | orite, or | analysis: Took smull plea from I long to | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amounted Management of the position of the positio | w/ arange (Fe) | analysis: Took small plea from I long to | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amicated Mon | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amounted Management of the position of the positio | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amorated Machine the covering rocks with a little covering rocks. | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amorated Machine the covering rocks with a little covering rocks. | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amore Associated A | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amorated Machine the covering rocks with a little covering rocks. | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amore Associated A | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amore Associated A | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |
| Associated alteration, phosph hydrothermal deposits: Substratum: Rock type: Description: amore Associated A | w/ orange (Fe) | analysis: Took simul piece From I hoad for Chem D1-18-I bulk. | analyst: Charle Mentology U.S. G.S. Mentology Refore Decrees |

Sample constituted something and see spectment are almost completely a small hard see cocks. The a hard see spectment are almost completely covered with prange due seatment is nave come pornos Mr (maybe covered with prange due seatment is nave come pornos Mr (maybe whole inside is Mr). The rest of the case are the same as the out described a front.

Sample consists of 3 small bags (each with several small pieces) and

| Cruise Id: <u>L3-84-SP</u> Size: | (cm) Location: |
|--|--|
| Sample Id: D1-18 Weight: | (kg) Depth:(m) |
| Mn Crust Description Surface Texture: | |
| Mn Crust Thickness (mm): Min: Max: Ave: Layers (Outer to Inner)(mm): | |
| Min Max Ave Texture & Color 1. | P |
| 2. | 23/ |
| 3. | . // |
| 4. | |
| 5. | |
| | L3-84-SP |
| Comments and VDD M | L3-87-0F |
| Comments and XRD Mineralogy: | ANALYSES D1-18 |
| A- Highorthermal Cargoned Mrs informing mudf | Subsample Number Analysis LayerThickness-Explanation |
| B- Occurse mud w/ Mn (layers?) and Ma | |
| one more alost and the south classe (maube | DI-18B XRD Mudicosalt from B" |
| C-Orange mude Si Hotone with many Utile Ma some coidence of purrous | DI-18C KRD Mud |
| Substrate Description Rock Type: | D1-18 Agicc, Ha Hydrothermal Mn |
| | D1-18 A Li isotomen 9 am Yeh |
| Description: The large & Strong II as hour all as has he work | - DI-18 A Moss bourer 16gm |
| and my south and larghter with the must | |
| 2 sering (see photo back). Actually thome | erbs. |
| basalt/gillaus thatis him alread. | |
| plogy ?: | |
| | |
| | |
| | |

Described By: JSM

Subsampled By:



DI-45-I : Smectite clange

* another rock from same drodge ie Group P DI-22 thru DI-45

* DI-28-I: Smectite

Kest of Samples from this dredge are similar to rock described on front. No Mn crost is not much Mn-just a couple of pockets or lenses of Mn. Lots of orange mud covering rocks

| Uruise Id: 13-84-38 Size: 11x 7.5 x 7 | 2.5 (cm) Location: |
|---|---|
| Sample Id: DI 7/ Weight: 4) | |
| Mn Crust Description Surface Texture: Mn Crust Thickness (mm): Min: Max: Ave: Layers (Outer to Inner)(mm): Min Max Ave Texture & Color | |
| 1. 2. 3. 4. | cm 2 1 2 3 4 5 cm |
| | L3-84-SP |
| Comments and XRD Mineralogy: Hudrothurmal lawed Mrs not conlike other Dieces in this dictal. This sam we does have excellent indoesn't Sugral development. Thereis Riso a was with several reveals (marks different forms of Mrs Mining it | Subsample Number Analysis LayerThickness-Explanation |
| | DI-71B years From Vug XRD } Glass |
| Substrate Description Rock Type: | DI-71A Accor of the SEM DI-71-C Bulk hydothernal layers TRD |
| Description: | |
| | . 35 mm photo trying to illustrate Fibrous todoro Kite anystals |
| "iology ?: | |
| | |

Described By: TSAN Subsampled By:

D1-71-A on n-plants XRD Mineralogy

01-71-C & MnO2 = Brenessia - Todoenkite

| L3-84-SP | Sample | Description | - O Lagar | |
|--|------------------------|------------------------------|----------------|------------------|
| Cruise I.D: L5-83-HW | Sample I.D: | Sta: D -03 | € J .4 | |
| Size: Weight: | | 10 # Cranged +0 # 46-72 6 | | ocation: |
| Mn crust thickness: | 30 | | | |
| Total: min: max: | ave: | | | |
| Inner min: max: | ave: | | | |
| Outer crust: min: max: | ave: | | P. | |
| Surface texture: 2mbo-h | | | | * |
| Internal structure: | | 1/1/ | 7100 D | 17. |
| layered: laminated: massive: porous: dendritic: | | 18 | | - N cm |
| other: | | | | |
| Mineralogy (XRD): - Burnesson C - Manager C Associated alternation of the companion of t | | | | |
| Associated alteration, phosph hydrothermal deposits: | orite,or | | | |
| | | Analyses and | Subcamples | |
| | | analysis | | _ |
| The second secon | 0. 2 8 4 | | | analyst: |
| Substratum: Rock type: Mn | | Took & Smo | DI-46x | <u>Deartaine</u> |
| 551 | | | ** ***** | |
| Description: aminated w/ 6 | lack granilar | | | |
| bus for sed next cost | One place. | | | |
| | *** | | 594 <u>222</u> | |
| | | | | |
| | TO SEC. THE WINDOWS IN | | · St. pressum | |
| | | · · · | | 100 mg - 1 |
| - | | 5 | | |
| | x 1 223 | - : | | |
| Mineralogy(XRD): | | | (* 1) ** | 3 |
| | | = ## | | |
| - | 40 3 <u>44</u> | 8.7 | * * | |
| | | | | 7.000 |

An with no substrate except two which are gray aprant vesico ar andeste? The major of are aminated gray a ack.

Dure as one described on front.

All the rocks (~30 small handsize) consist of dirty brown-black...