

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud thin section descriptions
AUTHOR	Paster T; Kortemeier C.
DATE OF DOC(S)	1996-1997
MULTI_DIST Y / <input checked="" type="radio"/> N?	
Additional Dist. Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Santa Fe Pacific Gold.
COMMODITY If not obvious	gold; silver
NOTES	Correspondence; handwritten notes; geology; petrographic descriptions 24p.

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

SS: DP 9/11/08
Initials Date

DB: _____
Initials Date

SCANNED: _____
Initials Date

THIN SECTION DESCRIPTIONS

60001946

4010

34-18

MICROSCOPE STUDY

MARCH 24, 1997

ALTERATION ZONE 2

CREAMY-WHITE FRIABLE, DENSELY-PACKED FRAGMENTS IN A SLIGHTLY ^{TAN} GRAYER MATRIX THAT IS MODERATELY SILICEOUS. A DENTAL PICK LEAVES STEEL ON IT WHEN SCRATCHING. NO CALCITE. BY MODERATELY SILICEOUS I MEANT THAT ALTHOUGH IT IS HARD, THE MATRIX IS ALSO FAIRLY POROUS.

WHAT LOOKS LIKE RELICT PYRITE CUBE CASTS CUT THE BRECCIATED ROCK, OVERPRINTING THE ORIGINAL TEXTURE. FAIRLY SPARSE. THESE CASTS ARE NOW FILLED WITH REDDISH-BLACK FeOx OPAQUES, & WAXY WHITE CLAY LIKE THAT WHICH HAS REPLACED

ALTERATION ZONE 3

VISUAL APPEARANCE SAME AS ABOVE, BUT THERE IS PARTIAL SILICIFICATION OF THE FRAGMENTS ALSO, & SILICA IN THE BEIGE MATRIX IS MORE PRONOUNCED. THE MATRIX HAS A SLIGHTLY SUGARY OR GRANULAR TEXTURE OF THE KIND MOST COMMONLY ASSOCIATED WITH SILICIFICATION. UNALTERED ^{A FEW} QUARTZ PHENOCRYSTS PRESENT.

THERE APPEARS TO BE ~~BE~~ ^{A FEW} LARGELY UNALTERED, CLEAR GLASSY-LUSTER FELDSPARS IN ~~ONE~~ OF THESE ~~SE~~ FRAGMENTS.

MORE SMALL LEACHED VUGS PRESENT THAN IN ALTERATION ZONE 2 SAMPLES.

NUMEROUS SMALL BROWN CLOTS IN FRAGMENTS - THEIR SIZE & DISTRIBUTION SUGGEST RELICT FeOx 'S AFTER DISSEMINATED PYRITE. NO GOOD CUBIC CASTS REMAIN.

THERE IS A MODEST INCREASE IN INTENSITY OF ALTERATION (ESPECIALLY SILICIFICATION) BETWEEN ZONE 2 & ZONE 3

PETROGRAPHIC ABBREVIATIONS

Ab	= albite	WM	= white mica
Act	= actinolite	xpl	= crossed polarized light
Ad	= adularia	Zr	= zircon
Amph	= amphibole		
An	= anorthite		
Ap	= apatite		
Aspy	= arsenopyrite		
Ba	= barite		
Bn	= bornite		
Bt	= biotite		
Cal	= calcite		
Car	= carrollite		
Carb	= carbonate		
Ch	= chrysocolla		
Chl	= chlorite		
Cv	= covellite		
Di	= diopside		
Dm	= dumortierite		
Dol	= dolomite		
Ep	= epidote		
F	= feldspar		
FM	= ferromagnesian		
Ga	= galena		
Gn	= gneiss		
Gp	= graphite		
Gr	= garnet		
Gt	= goethite		
Hb	= hornblende		
Ht	= hematite		
Il	= illite		
Ilm	= ilmenite		
K-spar	= potassium feldspar		
Lm	= limonite		
Lx	= leucoxene		
Mo	= molybdenite		
Mont	= montmorillonite		
Ms	= muscovite		
Mt	= magnetite		
pl	= plane polarized light		
Pl	= plagioclase		
Po	= pyrrhotite		
pts	= polished thin section		
Px	= pyroxene		
Py	= pyrite		
Q	= quartz		
Rt	= rutile		
Sp	= sphalerite		
Sph	= sphene		
Tm	= tourmaline		
ts	= thin section		
u	= micron		

Sent to Paster

9/25

RB-24

RB18013

choc. bxa? check for glomeroporphy

17

Brnd tuff mafic bldgs basement

RB18018

Dozer Autotxg

18b

silicified lava

intrusive textures

21

F.G lava in chocolate

26

Star porph w mafics

27

Star porph w out mafic

28

Dozer Hill Andesite



SANTA FE
PACIFIC
GOLD
CORPORATION

WINNEMUCCA EXPLORATION OFFICE
861 WEST SIXTH STREET
WINNEMUCCA, NV 89445
TEL 702-623-3493 / FAX 702-623-1052

Theodore P. Paster
11425 East Cimmaron Dr.
Englewood, CO 80111

Date: 9/25/96

Dear Ted:

Enclosed please find 8 rock samples for preparation as standard petrographic thin sections (with cover slips). The sample numbers are

RBR18013	RBR18021
RBR18017	RBR18026
RBR18018	RBR18027
RBR18018b	RBR18028

These are samples taken mainly from lavas in the Kamma Mtns (Rosebud JV) and augment the prior sampling and mapping of Mike Brady.

In addition to making the thin sections, I would like simple brief petrographic descriptions similar to those that you did for Mike.

The billing should signify Rosebud JV and be sent to:

Santa Fe Pacific Gold
250 S. Rock Blvd.
Suite 100
Reno, NV 89502

As mapping and evaluation are on going I am naturally anxious to see the results. Please call or drop me a note as to how much time will be required.

Thanks in advance

Curtis P. Kortemeier
Senior Geologist

Discount Printing and Copy Center

4950 S. Yosemite, Suite F-2

Englewood, CO 80111

Telephone 303-220-1888 • Fax 303-220-1891

SEND TO FAX NUMBER (702) 858-8011DATE 11/4/96Please deliver this message immediately to Carl KortemeierFROM T. PasterTELEPHONE (303) 771-8219Number of pages (including cover page) 8

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Gt	= goethite		
Hb	= hornblende		
Ht	= hematite		
Il	= illite		
Ilm	= ilmenite		
K-spar	= potassium feldspar		
Lm	= limonite		
Lx	= leucoxene		
Mo	= molybdenite		
Mont	= montmorillonite		
Ms	= muscovite		
Mt	= magnetite		
pl	= plane polarized light		
Pl	= plagioclase		
Po	= pyrrhotite		
pts	= polished thin section		
Px	= pyroxene		
Py	= pyrite		
Q	= quartz		
Rt	= rutile		
Sp	= sphalerite		
Sph	= sphene		
Tm	= tourmaline		
ts	= thin section		
u	= micron		

Petrography of 8 Thin Sections, Rosebud JV.: p. 1 of 6.

THEODORE P. PASTER, Ph.D.

Consultant
11425 East Cimarron Drive
Englewood, Colorado 80111
(303) 771-8219

November 4, 1996

Curtis P. Kortemeier
Santa Fe Pacific Gold Corp.
861 West 6th St.
Winnemucca, NV. 89445

RE: Petrography of 8 Thin Sections, RBR 18013 - 18028 Suite,
Rosebud JV, NV.

SUMMARY

Rock Types

Rock types include andesite (18013), volcanic conglomerate (18017), brecciated dacite (18018), dacite (18028), rhyolite (18018b and 18027), trachyte (18021) and basalt (18026).

The only sections that look remotely like those submitted by Mike Brady are 18018, 18021 and 18028.

Alterations

Most samples are propylitically altered where ferromags are replaced by Chl and feldspars are variably altered to dolomite.

Low grade argillic (or weathering) alteration is present in 18017, 18027 and 18028.

Respectfully submitted:



PETROGRAPHIC DESCRIPTIONS

RBR 18013; Flow(?) - Brecciated Andesite.

All fragments are of the same rock type. There are some variations in crystallinity and cooling history from fragment to fragment.

The inter-fragmental area is also of the same rock type. There is essentially no difference between the fragments and groundmass except the groundmass had more hydrated glass, the magnetite is slightly oxidized and the groundmass is generally more vitric. From this it may be assumed that the groundmass is more permeable.

The fragments are generally angular but a few large fragments are rounded. Some fragments are fractures and only slightly offset. The open fractures are lined with Lm and partly filled with illite.

Andesite Fragments (90%):

Phenos (1%):

1% [Amphibole] 0.03-0.3mm
(Amph)

Relict prisms with Fe-oxide rims and typical Amph cross-sections. 100% replaced by clay.

tr Plagioclase 0.1-1.2mm
(Pl=An₄₅)

Predominately fresh subhedra. Occasionally aligned.

tr [Biotite] 0.1-0.6mm
(Bt)

Relict equant books 100% replaced by greenish Chl(?).

Groundmass (99%):

54% Glass

No structure nor color.

30% Feldspar 0.02-0.2mm
(F)

Skeletal, obscure subhedra. Generally equant and non-oriented with occasional alignment in some parts.

15% Clay

In ragged, <1u-0.1mm, patches in glass.

tr Opaques <0.01mm

Disseminated particles.

RBR 18017; Volcanic Conglomerate.

There is some questionable bedding visible in ts.

Clasts (70%):

0.07mm and up Clasts are composed of a variety of hydrated vitric volcanics, variously altered Pl, Bt crystals, and a schist. The volcanics include andesite, pumice and rhyolite. Several rhyolite fragments look like RBR 18018b. The Pl phenos contain patches of carbonate (Carb) alteration.

[] = Completely destroyed or replaced phase.

Matrix (30%):

The matrix is composed of volcanic glass dust and secondary clay. Some sub-parallel fractures through the matrix have a Carb-alteration halo. The matrix is structureless and therefore it contains no good clues as to origin. It is not a welded tuff or a flow.

This may be either a sediment or an ash fall. Final judgment is prescribed by field observation.

RBR 18018; Brecciated Dacite.

Fragments (90%):

2-16+mm

Angular fragments of one rock type.

Phenos (tr%);

tr Plagioclase 0.2mm long
> Sanidine

Stubby tabs aligned in individual fragments.

Groundmass (90%);

88% Feldspar <0.1mm
> Glass

Microcrystalline, skeletal tabs in glass which are locally aligned to flow.

0-
4% Chlorite(Chl)/ -
Limonite(Lm)

Indistinct brown, 0.01-0.1mm, patches contain minute flakes.

1% Opaques ≤0.03mm

Anhedral particles include magnetite(Mt) which are partly oxidized to Lm.

Cement (10%):

7% Quartz(Q) <0.01-0.2mm
> Feldspar

Coarser-grained crystals than in fragments. Q is generally anhedral but F is sometimes euhedral and zoned but not twinned.

2% Chlorite/
Limonite -

See description in fragments above.

1% Calcite 1-3mm
(Cal)

As amoeboid-shaped replacement patches centered on cement areas which are optically continuous though some patches are composed of numerous islands.

RBR 18018b; Silicified Rhyolite(?).

Rhyolite (99%):

Pheno (tr%);
tr Feldspar 2mm

Fractured crystal rotated in pinwheel of groundmass laminae. Q cements fractures.

Fragments (tr%);

0.4-2.0mm
long

Rounded fragments one of which appears to be a vein fragment of polycrystalline Q containing interstitial white mica (WM).

Vesicles (10%);

0.02-0.6mm Oval and irregular-shaped elongate structures filled with Q and concentrated in spherulitic zones between thin "shear" laminae.

Glass (89%);

Composed of <0.01-0.4mm thick shear laminae intercalated with vesicle-bearing grainy vitric zones which show spherulitic texture here and there.

Veinlets (1%);

0.02-0.2mm Meandering veinlets principally across bedding. Contain cockscomb Q along walls and voids in thicker segments of veinlets. Hematite(Ht) is occasionally, and clay is commonly, interstitial to Q in centers of veinlets.

RBR 18021; Trachyte(?).

Phenos (tr%);

tr Biotite 0.4-0.8mm Sparse Fe-stained books aligned to foliation.

tr [Feldspar(?)] 0.2-0.5mm Nearly equant rounded crystals. 100% replaced by carbonate(Carb) > coarse white mica (WM).

Groundmass (99+%);

62% Cryptocrystalline Groundmass + Glass - Includes vitric groundmass with barely visible spherulites about 0.05-0.12mm in diameter.

21% Dolomite (Dol) 0.02-0.08mm Disseminated diffuse spherical patches which evidently replace vitric groundmass.

8% Chlorite(?) 0.03-0.1mm Greenish-brown smeared patches.

5% K-Spar 0.01-0.16mm long Tabs more or less aligned to produce foliation.

3% Opaques 2-8u Black-brown anhedral appear to be minute specks of limonite or leucoxene in addition to magnetite(Mt).

RBR 18026; Slight Propylitically-Altered Basalt, Lightly Oxidized.

Phenos (7%);

6% Plagioclase (An₆₅) 0.5-2.5mm Labradorite. Fresh tabs except for large patches of clay replacement along relatively coarse-spaced fractures. Commonly in clumps.

1% [Pyroxene] (Px) 0.1-0.9mm Relict euhedra rimmed with Fe-oxide. Replaced by Chl in one area of section and by Carb in another area of ts.

tr Magnetite (Mt)	0.1-0.4mm	Subhedra with alteration to Lx and Lm on edges.
Groundmass (93%):		
47% Glass	-	Non-descript groundmass.
30% Varioles	0.2-0.4mm	Nebulous, poikilitic anisotropic patches. Probably a mixture of Pl and Px.
20% Plagioclase	0.05-0.15mm	More or less fresh tabs not especially aligned.
3% Hematite (Ht)	<0.03mm	Disseminated stained patches and solid specks. Occur in area of Chl-replaced Px.
tr Magnetite	<0.01mm	Disseminated particles which are not altered to Ht.
RBR 18027; Rhyolite.		
Phenos (2%):		
1% Quartz	0.4-2.0mm	Rare euhedra. One is embayed.
1% Orthoclase	0.8-1.5mm	Sparse subhedra. Fractured with WM alteration.
tr [Plagioclase]	0.1-1.0mm	Relict subhedra 100% replaced with clay. Often in clumps.
tr Opaque	0.1-0.8mm	Predominately anhedral nonmagnetic grains that are composed of Lm/leucoxene(Lx).
Vesicles(?) (7%):		
	0.02-0.1mm	
7% Quartz	0.01-0.08mm	Anhedra in irregular-shaped polycrystalline aggregates.
Groundmass (91%):		
58% Glass	-	Hydrated groundmass interstitial to other disseminated phases.
40% Feldspar + Quartz	up to 0.03mm	Interstitial to glass.
2% [Plagioclase]	0.05-0.12mm	Relict diffuse patches 100% replaced by clay.
tr Opaque	<0.1mm	Disseminated specks of Lm + Lx.

Petrography of 8 Thin Sections, Rosebud JV.: p. 6 of 6.

RBR 18028 Dacite(?).

Phenos (2%):

1% [Amphibole]	0.1-1.0mm	Relict euhedra with typical amphibole cross-sections. Rimmed with Lm and centers replaced by fine-grained WM which may well be illite.
1% Biotite	0.17-0.4mm	Aligned brown books heavily Fe-stained.
tr [Feldspar]	0.03-0.2mm	Disseminated brown laths aligned to foliation. 100% replaced by illite or WM.

Groundmass (98%):

62% Glass	-	Grainy turbid groundmass. Appears to be hydrated.
35% Spherulites	0.05-0.2mm	Skeletal, poikilitic, spherical F with entrapped glass, etc.
1% Opaques	<0.03mm	Disseminated specks of Lm.
tr [Biotite]	<0.17mm	Laths stained by Lm.

November 4, 1996

THEODORE P. PASTER, Ph.D.

Consultant

11425 East Cimarron Drive
Englewood, Colorado 80111
(303) 771-8219

November 4, 1996

Curtis P. Kortemeier
Santa Fe Pacific Gold Corp.
861 West 6th St.
Winnemucca, NV. 89445

**RE: Petrography of 8 Thin Sections, RBR 18013 - 18028 Suite,
Rosebud JV, NV.**

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Andesite Fragments (90%):

Phenos (1%):

1% [Amphibole] (Amph)	0.03-0.3mm	Relict prisms with Fe-oxide rims and typical Amph cross-sections. 100% replaced by clay.
tr Plagioclase (Pl=An ₄₅)	0.1-1.2mm	Predominately fresh subhedra. Occasionally aligned.
tr [Biotite] (Bt)	0.1-0.6mm	Relict equant books 100% replaced by greenish Chl(?).

Groundmass (99%):

54% Glass	-	No structure nor color.
30% Feldspar (F)	0.02-0.2mm	Skeletal, obscure subhedra. Generally equant and non-oriented with occasional alignment in some parts.
15% Clay	-	In ragged, <1u-0.1mm, patches in glass.
tr Opaques	<0.01mm	Disseminated particles.

RBR 18017; Volcanic Conglomerate.

There is some questionable bedding visible in ts.

Clasts (70%):

0.07mm and up Clasts are composed of a variety of hydrated vitric volcanics, variously altered Pl, Bt crystals, and a schist. The volcanics include andesite, pumice and rhyolite. Several rhyolite fragments look like RBR 18018b. The Pl phenos contain patches of carbonate (Carb) alteration.

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This may be either a sediment or an ash fall. Final judgment is prescribed by field observation.

RBR 18018; Brecciated Dacite.

Fragments (90%):

2-16+mm	Angular fragments of one rock type.
---------	-------------------------------------

Phenos (tr%);

tr Plagioclase	0.2mm long	Stubby tabs aligned in individual fragments.
> Sanidine		

Groundmass (90%);

88% Feldspar	<0.1mm	Microcrystalline, skeletal tabs in glass which are locally aligned to flow.
> Glass		

0-

4% Chlorite(Chl)/	-	Indistinct brown, 0.01-0.1mm, patches contain minute flakes.
Limonite(Lm)		

1% Opaques	≤0.03mm	Anhedral particles include magnetite(Mt) which are partly oxidized to Lm.
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Cement (10%):

7% Quartz(Q)	<0.01-0.2mm	Coarser-grained crystals than in fragments. Q is generally anhedral but F is sometimes euhedral and zoned but not twinned.
> Feldspar		

2% Chlorite/ Limonite	-	See description in fragments above.
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1% Calcite (Cal)	1-3mm	As amoeboid-shaped replacement patches centered on cement areas which are optically continuous though some patches are composed of numerous islands.
---------------------	-------	--

RBR 18018b; Silicified Rhyolite(?).

Rhyolite (99%):

Pheno (tr%);

tr Feldspar	2mm	Fractured crystal rotated in pinwheel of groundmass laminae. Q cements fractures.
-------------	-----	---

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RBR 18021; Trachyte(?)

Phenos (tr%):

tr Biotite 0.4-0.8mm Sparse Fe-stained books aligned to foliation.

tr [Feldspar(?)] 0.2-0.5mm Nearly equant rounded crystals. 100% replaced by carbonate(Carb) > coarse white mica (WM).

Groundmass (99+%):

62% Cryptocrystalline — Includes vitric groundmass with barely visible Groundmass + Glass spherulites about 0.05-0.12mm in diameter.

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RBR 18026; Slight Propylitically-Altered Basalt, Lightly Oxidized.

Phenos (7%):

6% Plagioclase 0.5-2.5mm Labradorite. Fresh tabs except for large (An₆₅) patches of clay replacement along relatively coarse-spaced fractures. Commonly in clumps.

1% [Pyroxene] 0.1-0.9mm Relict euhedra rimmed with Fe-oxide. Replaced (Px) by Chl in one area of section and by Carb in another area of ts.

tr Magnetite (Mt)	0.1-0.4mm	Subhedra with alteration to Lx and Lm on edges.
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Groundmass (93%):

47% Glass	-	Non-descript groundmass.
30% Varioles	0.2-0.4mm	Nebulous, poikilitic anisotropic patches. Probably a mixture of Pl and Px.
20% Plagioclase	0.05-0.15mm	More or less fresh tabs not especially aligned.
3% Hematite (Ht)	<0.03mm	Disseminated stained patches and solid specks. Occur in area of Chl-replaced Px.
tr Magnetite	<0.01mm	Disseminated particles which are not altered to Ht.

RBR 18027; Rhyolite.

Phenos (2%):

1% Quartz	0.4-2.0mm	Rare euhedra. One is embayed.
1% Orthoclase	0.8-1.5mm	Sparse subhedra. Fractured with WM alteration.
tr [Plagioclase]	0.1-1.0mm	Relict subhedra 100% replaced with clay. Often in clumps.
tr Opaque	0.1-0.8mm	Predominately anhedral nonmagnetic grains that are composed of Lm/leucoxene(Lx).

Vesicles(?) (7%):

	0.02-0.1mm	
7% Quartz	0.01-0.08mm	Anhedra in irregular-shaped polycrystalline aggregates.

Groundmass (91%):

58% Glass	-	Hydrated groundmass interstitial to other disseminated phases.
40% Feldspar + Quartz	up to 0.03mm	Interstitial to glass.
2% [Plagioclase]	0.05-0.12mm	Relict diffuse patches 100% replaced by clay.
tr Opaque	<0.1mm	Disseminated specks of Lm + Lx.

RBR 18028 Dacite(?).

Phenos (2%):

1% [Amphibole]	0.1-1.0mm	Relict euhedra with typical amphibole cross-sections. Rimmed with Lm and centers replaced by fine-grained WM which may well be illite.
1% Biotite	0.17-0.4mm	Aligned brown books heavily Fe-stained.
tr [Feldspar]	0.03-0.2mm	Disseminated brown laths aligned to foliation. 100% replaced by illite or WM.

Groundmass (98%):

62% Glass	-	Grainy turbid groundmass. Appears to be hydrated.
35% Spherulites	0.05-0.2mm	Skeletal, poikilitic, spherical F with entrapped glass, etc.
1% Opaques	<0.03mm	Disseminated specks of Lm.
tr [Biotite]	<0.17mm	Laths stained by Lm.

November 4, 1996

RB-5: Same monolithologic bxa as RB-4
clasts vly similar to RB-3

RB-6: Mapped as MBA: Mike Brady Andesite:

10% Fine grained phenos

90% vly Fine grained vly felted flow foliated
g-mass of plag xtals w opaques

Phenos

1:5:1 H.B to Plag Rock is moderately argillized
Plag → Clay

RB-7 Mapped as Dozer intrusive: fine grained rhyolitic
lava. Euhedral xtals (plag) no lithics no ^{crystals} ~~argill~~
pretty badly altered

RB-8 Not located on map

vly fine grained well flow foliated intermediate
lava: MBA equivalent

Hornblende

zoned plag

in g-mass plag + mt or Fe-opaque

RB-9: Mapped as Tri:

Felted, pilitaxitic holoxtn gmass w plag

Fe-Ox? Textural equivalent to Tri

HB porphyritic phenos → Chlorite

Abundant high (-) relict minerals clear w

cubic X-C isotropic abundant Flincs Fluorite

late stage
more likely
bante

RB-10: Mapped as ^{upper} Bud tuff

lithic xtal tuff: lithics 2-4 mm in size
broken plag 2mm max length.

embayed, numerous poly xln aggregates
of "eichelberger" plag

lithics locally contain HB phenos

tuffaceous texture not overly obvious due to alteration
color greenish very celadonic

Could be top of Bud following Hecla U.G. criteria

RB-11 Mapped as Chocolate Tuff:

~~fine-grained~~ intermediate lava flow w
holo xln fine-grained g-mass & 2 populations
of porphyritic phenocrysts:

G-mass 75% of that the g-mass contains

plag
H.B.
opaque } microclites

1st population phenos

~~10%~~ 10% stubby nearly equant laths of plag.

approximately 0.2-0.3 mm in length.

~~7%~~ 7% 0.2 mm black altered mafics H.B.?

5% 0.3 mm clear subhedral pthly resorbed Qtz

2nd population phenos

plagioclase mega glomerocrysts to > 4mm

classic eichelberger dis eqm textures w glass blebs
(machine gun holes)

locally nucleated on mafic (cpx? \rightarrow cly + FeOx?)

holo xln not tuffaceous G-mass

RB-12 Mapped as Dozer.

vy fine grained texturally destructive altered
volcanic. Prob correlative Dozer.

No tuffaceous texture seen (strongly altered)

No lithics

No broken xtals

1 strongly resorbed plag xtal noted.

3-5 % FeOx clots after mels??

RB-13 Mapped as Chocolate vent txa.

DK reddish brown heterolithic txa in hand spec.

Some lithic clasts themselves appear to be txa

Matrix is FeOx rich; locally appears to have
rounded fluidized component (or microspherulitic)
in texture

Dominant lithic type has abundant flow aligned
h.b. xtals

Qtz

Few megacrysts of plag.

Unit has affinities to RB-11 tuffaceous texture
difficult to discern. Majority of xtals in g-mass
appear broken

Chocolate pyroclastic txa?

RB-14 Pyritic hydrothermal txa developed in

Chocolate? like rock? HB Plag Qtz bearing rock
but with a more uniform texture than RB-11

RB-16 - Hydrothermal txa strongly altered qtz
veined. Lesser altered clasts are
strongly - poxtaxia holo x/n rocks Fe-rich
more similar an intermediate lava?

RB-17: Bxa derived from strongly felted
MISA lithology comparable to RB-8
but breccia.

Breccia is in part rotational, other
clasts form narrowly separated "jig-saw"
txa; non rotational. Apparent pyroclastic
matrix

RB-18 RB-18 Mapped as: Oscar.
xtal rich porphyritic hornblende andesite

RB-19 Mapped as ~~Chocolate~~: Tré
glassy flow banded lava? Strongly altered
and bleached. Phenos are locally rolled but ^{no shards} visible
^{in pressure} shadows
Coarsely porphyritic plag → clay
HB → sericite / chlorite Biotite phytic.

Definitely not equivalent to dozen also

not texturally equivalent to RB-16, RB-9

Coarseness of crystals seems typical
of strongly flow banded rocks that RLD &
CPK visited & photographed

RB-20 Mapped as ~~Osc~~ TS on Oscar Hill
bleached strongly clay altered volcanic
conglomerate

RB-21: Not found on map: \leftarrow Ta MBA on N side Rosebud Cyn

VY FN GRND HOLD XT LN STRONGLY FLOW FOLIATED
LAVA? Rhombic X-C of relict H.B. No clay + Fe Ox
Rock is holocrn but distinctly non-porphyrific
G-mass is
30% clay (Hydrothermal)
60% foliated, aligned elongate plag laths $\sim 0.1 - 0.2$ mm
10% relict H.B. of twice diameter \sim same length
as plag.

Possible correlative to RB-6 Plag's in RB-21
are approximately twice the size as in RB-6

~~RB-22~~: RB-6 & RB-8 are closer than RB 8 & RB-21 or 6 & 21
~~It~~ RB-21 is more similar to 6 & 8 than to other
rocks seen thus far such as RB-11

RB-22: Pale Tan bleached, strongly argillized volcanic
local relict biotite or biotite after hornblende
large + 4 mm replaced plag glomerocrysts?
1.5 mm long chlorite after H.B.

Although the groundmass texture is destroyed,
it is possible to pick out "ghosty" phenos.

Based on textural similarities, this rock is
most similar to RB-11: Highly altered!!

RB-23: Porphyritic intermediate lava flow.

85% Holocryst fine grained g-mass

5:1 plag: elongate FeOx blebs (after H.R.?)
+ squarish FeOx blebs (mt?)

15% Phenos in two populations

(1) 5% simple elongate intermediate plag
0.6 to 1 mm in length.

(2) 10% disegun Eichelberger plags and
plag glomerocrysts to > 3mm
larger plags are always complex clusters

Mafics not found as porphyrocrysts only in g-mass

∴ Not ≠ RB-11

RB-23 Not dissimilar RB-¹⁷~~21~~ ⁽²³⁾ But is coarser

RB-24: Mapped as