60001671

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud Drill Hole File - Hole No. RL-294C
AUTHOR	R. Stoeberi; V. Peterson; T. Kuhl H. McLachlan; Rowgowski
DATE OF DOC(S)	1992 - 1999 1997
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Lac Minerals (USA) Inc; East Dreamland; Barringer Laboratories, Inc
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 1310' handwritten notes; directional survey ~~75~~ p. 78 oversized p.

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: DD 6/3/08
Initials Date
DB: mah
Initials Date
SCANNED: NV Blue
Initials Date

Revised: 1/22/08

ROSEBUD RL-294
DRILL LOG East Dreamland

60001671 4010

60001671

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY RKS DATE 1/7/93 PAGE 1 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
1	10–15	1.7/15	Pebble Zone		OX		Strg Bl., m-s	Wht lt yllw Brn-org			
	15–20										
	20–25	3.6/10									
	25–30	1.7/5									
	30–35	1.7/2.5									
2	35–40	1.2/2.5									
	40–45	95			FeOx		Trace Grn	Brn-org org red			
3	45–50	79					m Bl m-s	Tan Peach lt Gray			
4	55–60	100			FeOx			Tan Brn Brn-org			
5	65–70	101					w-m Bl m		Ba 1-2mm	<.1	
									Ca <1mm	<.1	
6	75	100			.25%						

DESCRIPTION

0-832 C, Ct

Wht, lt yllw and Brn-org, poorly consolidated volcaniclastic with sub-angular to sub-rounded clasts ranging from 1mm to > 20mm; poorly cemented in a fine grain matrix of Ct tuff. Although clasts are strongly altered and bleached I believe the protolith may be of Chocolate origin also. They are fine grained with no relic phenos, flow banding or any other distinguishing features as well. FeOx is wk to mod overall with local strong pops. Redox boundary is at 84 ft.

From 63-67. trace Barite vn and wk Calc cement

67-72 - trace Calc vn

From 63-100 wk to mod Calc. cement

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
0-15	.0018	.0016	.012		
15-25	.0003		.015		
25-35	.0007		.015		
35-40	.0002		<.003		
40-45	.0004		<.003		
45-50	.0007		.003		
50-56	.0006		<.003		
56-62	.0001		<.003		
62-67	<.0001		.003		
67-72	<.0001		.003		
72-77	<.0001		.003		

ROSEBUD PROJECT

HOLE NO. RL 294C LOGGED BY RKS DATE PAGE 2 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∢ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
6	75–80	100			.25% Py; <		Strg = Very Strg Bleach; lm-strg	Brn-Grey Tan; Brn; lt Grey			
7	80–90	100			.25% Py; .75% Py			lt Grey; wht Grey			
8	90–100	99			Py mc		lt Grn		Kaolin/ Py, mc	1-2	
9	100–110	93	Rubble Zone	?			Grn wk	Flesh lt Grey Grn			
10	110–120	93			<.25% Py						
11	120–130	87						Flesh Green			
12	130–140	99									

DESCRIPTION

C, Ct –

oxidized ← Redox → sulfides

Trace wht Kaolin at 87 ft. and from 92–97

↑ Kaolin from 97 – 107'

Trace Green 96 - 97

110–133' clasts are becoming larger and more angular w/ some clasts containing relic phenos of chlorite (?) after Biot. (?) or possibly hornblende (?).

133 - 163' clasts size sharply reduced in avg size and quantity

105 – 150 sharp decr in sulfides and alteration. Flesh colored matrix is soft ∴ minor clay alt.

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
72-77	↓		↓		
77-82	.0001		.006		
82-87	.0001		.012		
87-92	<.0001		.015		
92-97	.0001		.026		
97-102	.0011		.073		
102-107	.0007	.0009	.035		
107-112	.0002		.015		
112-117	<.0001		.015		
117-122	.0001		.003		
122-128	<.0001		.003		
128-133.5	<.0001		.006		
133.5-138.5	<.0001		.003		
138.5-144	↓	↓	↓		

ROSEBUD PROJECT

ΔX silicified breccia X – rubble ~~~ → clays

HOLE NO. RL 294 c LOGGED BY _____ DATE _____ PAGE 3 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
↑	140										
13		99			.25 Py		Green wkn	Flesh Green			
	145				.50			Flesh lt Grey			
					.75		wk Bl	lt. Grey Peach	Kaolin 1mm	1	
	150	99			1. Py mc		w-m Bl				
14	155				.75		w ~~				
					.50			lt Grey Grey			
	160	99	vn 40°		.75		wk x		Qtz/Py mc 1-2mm	1-2	
15	165		vn. 7° vn 7° vn 10° 3 vns @ 50°	Fault? 30°		30°					
			vn 5° vn 3, 20° 10° vn				wk x				
	170	105									
16	175				1.		m-s Bl.	lt Grey Grey Flesh			
	180	100	Rubble zone				Strg clay		Qtz/Py mc 2mm-10mm	1	
17	185	47	vn 55°				x	lt. Grey			
		94	vn 60° Rubble				Strg clay				
	190										
18	195	103					Strong clay x	lt Grey lt Green			
	200										
19		80	vn 60°	60°	.75			Flesh Grey	Qtz Py mc 1-3mm	1	
	205										

DESCRIPTION

C, Ct –

149-150' Trace wht Kaolin vn.

148-150' Slight incr. sulf and trace wht Kaolin

Grad. incr alt.

150-152' wk Brecciation and ↑ sulf

159-176 Qtz/Py mc vn

168-176 ↑ vning and micro hairline vns

163-168 Breccia zone → Fault?

Influence of Fault zone (Buried up);

163 - 202'

Strong clay alt. intervals: 180-186'

lcl silica flood 189-192'

193 - 202'

189 - 202 - lt. sage Green (Dozer green)

epiclastic unit → strg clay

After 202 - on Rck becomes competent

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
138.5-144	<.001		.018		
144-149.5	.0006		.018		
149.5-154.5	.0003		.012		
154.5-159	.0008		.050		
159-163	.0022		.079		
163-167	.0018		.079		
167-171	.0025		.067		
171-175	.0017		.073		
175-179	.0030		.091		
179-182.5	.0066		.061		
182.5-187	.0151		.108		
187-192	.0050		.093		
192-197	.0018		.082		
197-202	.0023		.079		
202-207	.0029		.022		

ROSEBUD PROJECT

Arg Frax sets ? Flow Banding

HOLE NO. RL 294 c LOGGED BY _____ DATE _____ PAGE 4 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
19	205	80	Vn 60°; vns 0°-3°		.5 Py mc; .75 Py mc		X; m-s Bl	Flesh Grey; lt Grey	1-2 mm Qtz/Py mc < 1 mm; ↑ Kaolin	2-3	
20	210	94	Vn 85°; vn 65°; 0-3° vns; vn 25; vn 65°; Flo			75-85	X; m-s Bl	lt Grey; lt Grey Grey	↑ Kaolin vn	4-5; 1	
21	215						X			1-2	
	220	102	vn 20; 0-15° vn; vn 45°				X			1	
22	225						X			1.5-2	
	230	93	vn 35°; vn 90°; vn 35°; Vn Set 15°-45°		.5; .75		wk X; Strg Bl		wht Kaol	2-3	
23	235	102	Flo 60°-80°; Vn Set 15°-80°						Kaol	1	
	240										
24	245	103	2 vns @ 45°; 3 vns @ 15°; Flo 70°; Vn Set 0°-65°	Flow 60°-80°	.5				Kaol	2; 1; 2	
25	250										
	255	100	Vn set 0°-55°						Trace Qtz vn < 1 mm Kaolin	1	
26	260				.75						
	265	104	Vn Set 0°-80°	Flow 65°-75°						4; 1	
	270										

DESCRIPTION

Ct — relic phenos of chlorite after Biot or hornblend can be observed from this point on → down to past 335

207 - 230 micro vns < 1mm

208 - 240 ↑ wht Kaolin / Qtz vn

210 - 224 - Arg Frax set (?) may be related to Flow banding. range : 75° - 85°

227 - 239 ↑ wht Kaolin / Py mc vn.

237 - 241 - Flow banding range: 60° - 80°

244 - 247 Flow banding 60° - 80°

Note: Veins become thinner and with less silica (Qtz) down hole: more Kaolin & sulfides in place of Qtz.

261 - 271 Flow Banding & Arg Frax(?) Range 65° - 75°

From 269 - 271 minor Drk Grey Tuff w/ un-alt Biot phenos.

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
202-207	↓		↓		
207-212	.0021		.108		
212-217	.0003		.018		
217-222	.0029		.047		
222-227	.0024		.041		
227-232	.0025		.029		
232-237	.0008		.026		
237-242	.0008		.015		
242-247	.0006		.006		
247-252	.0003		.015		
252-257	.0007		.018		
257-262	.0010		.009		
262-267	.0011		.012		
267-272	.0009	.0008	.006		

ROSEBUD PROJECT

HOLE NO. RL 294 c LOGGED BY _____ DATE _____ PAGE 5 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
26	270	106	Flow Range 50°-70°		.25 Py	50-70°	Int-S Bl / St Bl.	lt Grey / Grey			
27	275	96									
28	280	98									
29	285	100	vn 60° / Vns 50° 25°					lt Grey	<1mm Qtz micro	1-2	
30	290	101	5 vns 45° / vn 10° / vn 3° / 2 vns @ 35° / 2 vns @ 55° / 15° vn / 0° vn / 0-50° vn set / vn 30° / 0° vn / 0° vn		.75 Py mc				+ trace Ca vn <1mm	<1	
30	295								Qtz/Kaol mc/Py 1-3mm	4-5	
31	300	101	vn 45° / vn 40° / vn 35° / vn 40° / vn 60°		.50				<1mm micro Qtz vn	1	
31	305									2	
32	310		vn 40° / vn 40° / vn 45° / vn 45°		.75					1	
32	315	98			.50 .75					.5	
33	320		vn 40° / vn 40° / vn 50° / vn 35°						<1mm-1mm	.5-1	
33	325	87	vn 35° / vn 15° / vn 35° / vn 25° / vn 45°								
	330										
	335										

DESCRIPTION

Ct → Still with Chloritized phenos and lcl Flow Banding

272-292' Flow Banding // Arg Frag sets
Range: 50° - 70°

Note: from 269 - 292 - v. wk. vning and wk sulfides.

299 ----> 308' ↑ Qtz/sulf./Kaolin vning

308-334' ↓ Qtz/sulf/Kaolin vning

334 - Slight ↑ Qtz & wk x

322-335' Flow banding
avg. 70°

332-337 wk silica flood & minor druzy Qtz

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
267-272	↓	↓	↓		
272-277	<.001		.003		
277-282	.001		.006		
282-287	.002		.003		
287-292	.002		.006		
292-	<.001		.003		
	.009		.047		
307	.024		.061		
307-312	.004		.020		
312-317	.004		.018		
317-322	.005		.020		
322-327	.007		.023		
327-332	.007		.029		
332-337	.007		.041		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 6 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN & + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
33	335	106	vn 15° vn 40° vn Set 0-85°		.75 Py		Strg Bl X Strg Bl	lt Grey	trace micro Vn Qtz/Kaolin 1mm	<.5 1-2	
34	340										
	345	102	vns 0-5°	Flb 20°-35°			X X X		Qtz/Kaolin Py mc 1-4mm		
35	350										
	355	103	vns 0-20°								
36	360								<1mm	1 .5	
	365	106	3 vns 0-30° vn 70°	micro Frax set 30-35° 7th chev Frax 35°	1. Py				1-2 mm Qtz/Py	1 4	
37	370										
	375	104	xK vn set 0-75°	Flow Banding, 55°-65°							
38	380										
39	385		vn 15°		.75 Py				<1mm Qtz Py	1-2 .5 <.5	
	390	97	vn 15° vn 75° vn 20°	Flow Banding 80°-85°	1. Py						
40	395	98	vn 30° vn 20° vn 20° vn 35°		.75 Py						
	400										

DESCRIPTION

Ct

350-359 Flow Banding
range: 70°-85°

wk silica Flood:
352-356'
361-362'

↓ vns after 362'

[minor Flow Banding
a) 365-367'
range: 80°-90°
b) 369-371 range 80°-80°]

(micro Frax set 368'-370'
range: 30-35°
micro chevron Frax at 371')

[↑ vning after 372', up to 384
(minor stockwork Qtz/Py)
Qtz/Py cemented Frax]

Flow Banding:
a) 377-386
range: 55°-65°
b) 388-400+
range: 80°-85°

↓ vning after 384'

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
332-337	↓		↓		
337-342	.0003		.015		
342-347	.0002		.012		
347-352	.0403	.0360	.088		
352-357	.0226	.0192	.128		
357-362	.041		.055		
362-367	.0004		.015		
367-372	.0011		.026		
372-377	.0004		.026		
377-382	.0007		.032		
382-387	.0027		.035		
387-392	.0008		.012		
392-397	.0011		.023		
397-402	.000		.012		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 7 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
41	400–405	98	vn 70°; vn 80°; vn 80°; vn 55°; vn 50°; vn 50°; vn 35°; vn 65°; vn 65°; vn 55°; vn 25°; vn 20°; Flow 60° – 85°		.75 py		Stg	lt Grey	Ca / Py ± micro-Qtz-Py; Imm/Kaol. <1mm	1	
42	405–415	99	vn 25°; vn 75°; vn 0°; Flo. 70°							1-2	
43	415–425	101	vn 80°; vn 80°; vn 85°; vn 80°; vn 45°; vn 3°; vn 45°; vn 5°								
44	425–435	103	vn 40°; vn 50°; vn 3°; vn 20°; vn 20°; vn 30°; vn 35°; vn 45°; vn 80°; vn 20°; vn 3°		1. py					1-2	
45	435–445	99	vn 70°; vn 80°; vn 70°; vn 70°; vn 85°		.75 py		W.			.5	
46	445–455	102	vn 60°; vn 75°; Ca vn 0-5°		.5 py					.1	
47	455–465	100	vn 50°				W.			<.1	

DESCRIPTION

Ct

Flow Banding
a) 400 – 412'
Rang 60°-85°
b) 415' = 70°
c) 418' – Past 465'
Range: 45° - 85°

wk. Arg. Alt. at
a) 443-445'
b) 460 - 473'

Slight incr. ↑ sulf
431' – 438'

↓ sulf 452 - 465'

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
397-402	↓		↓		
402-407	.0001		.009		
407-412	.0015		.032		
412-417	.0005		.012		
417-422	.0027		.047		
422-427	.0282	.0290	.117		
427-432	.0006		.023		
432-437	.011		.038		
437-442	.0004	.0004	.012		
442-447	.0003		.012		
447-452	.0001		.006		
452-457	.0001		.009		
457-462	<.0001		.006		
462-467	.0009		.012		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 8 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN & + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
48	465–470	99	Vn 90°; Vn 70°; Vn 70°; Vn 70°	Δ ▽ X 75°	.5; 1.5 Py; .75 Py	X	Strong Bl	lt Grey	Qtz/Py/Kaol 1-2mm; (5mm)	.5	
49	470–480	98	Vn 70°; Vn 70°; Vn 60°; Vn 55°; Vn 45°; Vn 70°; Vn 45°; Vn 45°; 90°; Vn 85			x		lt Grey; Grey		1	
50	480–490	102	Vn 65°; Vn 55°						Qtz/Py/Kaol 1mm	<.1	
51	490–500	100	Ca Vn 10°; 30°; Vn 46°; 15° Vn; 5-10° Ca/Py/Vn		.50 Py				calc/Py 1mm; calc/Py/Kaol 1mm	.1; .1	
52	500–510	98	Vn 20°; 75° Vn						2mm		
53	510–520	102	Vn 30°; Vn 90°; Vn 70°; Vn 70°; Vn 80°; Vn 80°; Vn 85°; Vn 85°	X X	.75; 1.0 Py; .75				3mm	1; <.1	
54	520–530	100	Vn 80°; Vn 85°; 45°; Vn 70°; 2 vns @ 45°; Vn 70°							1	

Ct

DESCRIPTION

Flow Banding

a) 465'-487', Range: 70°-90°

b) 487'-530', Range: 40°-85

Sharp ↑ sulf. (Py) 466'-473'

at 472', 110 mm of Breccia to ~472.5'.

5mm wide vn. and vn. Bx at 476'

Note: Flow banding steepen (angle) up after 487'-510'. Then back to 70°-90° after 510'

489' Trace lt Green clay on frax seam a) and at 492'

Rubble Zone 519'-520'

sharp ↑ sulf. at 516'-520'

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
462-467	↓	↓	↓		
467-472	.004	.006	.032		
472-477	.227	.254	.382		
477-482	.002		.018		
482-487	.006		.020		
487-492	.007		.020		
492-497	.001		.006		
497-502	<.001		.003		
502-507	.001		.003		
507-512	<.001		.006		
512-517	.012		.015		
517-522	.006		.032		
522-527	<.001	.001	.006		
527-532	<.001		.006		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 9 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
55	530–535	100	Flo 50°; Flo 85°		.50 py		Strg Bl.	lt Grey Grey			
56	535–545	102	vn 85°; vn 15°; vn 85°						Ca/Py/Kaol <1mm	.5	
57	545–555	88; 99	vn 60°; 2 vns @ 45°					lt Grey	Cal/Py/Kaolin	1	
58	555–565	99	vn 85°; vn 70°; vn 60°					lt Grey Gry			
59	565–575	105	vn 80°; vn 70°; vn 80°; vn 60°; 2 vns @ 60°; vn 45°				m-s Bl.		Cal/Py/Kaol 1mm	1-2	
60	575–585	99	vn 75°; vn 3°; 25°; 15°; vn 85°						Calc/Py Kaol. <1mm-1mm	1	
61	585–595	101	vn 30°; vn 60°; vn 60°		.25 py		W. Bl	Grey Lav.	Ca	<.5; <.1	

DESCRIPTION

Ct

Flow Banding

a) 530 – 595

1) Range: 50°-85°

a) 50° at 530-532, then levels off.

b) 50° at 539-541, then levels off.

c) 50° at 559-562', then levels off

d) 50° at 567-579', then levels off

↑ calc/Py/Kaolin vns from 565-577'

↓ " " " " " 577-595'

Very weak alt. from 586-596'

a) mostly un-alt fresh rock (~80%)

b) trace calc vn

c) bleaching only along:

1) micro Fractures

2) Flow bands

3) vns.

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
527-532	↓	↓	↓		
532-537	<.001		.003		
537-542	<.001		.006		
542-547	<.001		.003		
547-552	<.001		.003		
552-557	<.001		.003		
557-562	<.001		.003		
562-567	.006		.012		
567-572	.020		.047		
572-577	.004		.035		
577-582	<.001		.012		
582-587	<.001		.003		
587-592	<.001		.003		
592-597	<.001		.003		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 10 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
62	595–600	98			.25		wk Cel Bl; m Bl cel.	Grey Lav; Grey lt Grey			
63	605–610	99	Ca Vn 50°; Ca Vn 20°; Ca Vn 40°; 30° vn 85°; vn 40°	minor calc cement Frax at 614'			wk Bl.	Gray Lav	Ca <1mm	<.1	
64	615–620	102							Ca <1mm	.5	
65	625–630	97	2 vns 45° vn 15°; vn 60°				cel.; wk-m Bl	lt Gray Grey	Ca Vns 1mm & <1mm	.5	
66	635–640	101	vn 70°; vn 60°; vn 45°		trace		un-alt. minor calc vn	Lav Purp Purp-red	Ca <1mm	.1	
67	645–650	100	vn 25°; vn 70°								
68	650–655	100	vn 85°; vn 55°; vn 60°; vn 35°; vn 60°; 0-5° vn; vn 50°		.25		m Bl.; wk Bl	lt Gray purp		.5	
69	655–660	100			trace						

DESCRIPTION

Ct

Flow Banding

a) 595 - 660'
1) Range 50° - 85°

↑ Bl from 595 - 608'

607 - 610, Calc flood along Flow Bands

↓ Bl and alt. 608 - 628'

a) mostly un-alt Rck
b) trace calc. vn
c) bleaching only along:
1) micro Frax
2) Flow Bands
3) vns.

↑ Bl & alt 628 - 637'

un-alt Rck 637' - 657'

↑ Bleach & alt 657' - 658.5'

very wk alt Rck 658.5' - 660'

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
592-597	↓	↓	↓		
597-602	<.001		.009		
602-607	<.001	.001	.003		
607-612	<.001		<.003		
612-617	<.001		<.003		
617-622	.0018		<.003		
622-627	.0023		<.003		
627-632	<.001		.003		
632-637	.0027		.023		
637-642	<.001		<.003		
642-647	<.001		<.003		
647-652	<.001		.003		
652-657	<.001		<.003		
657-662	<.001		.003		

ROSEBUD PROJECT

HOLE NO. RL 294 C LOGGED BY _____ DATE _____ PAGE 11 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
69	660	100	vn 30° Kaolin vn 30° vn 45°	x x	.25 Py		W-m Bl. m-s Bl	Grey lt gray	Ca/Kaol./Py <1mm	.5	
	665						wk Bl m-s Bl	Purp. lt Gray Grey			
70	670	100	Frax set 30° 35° vn	x 30° x x	trace		wk Bl	Lav Purp red	Kaolin clay	3	
	675		45° vn 40°		.25 Py .50 Py		m Bl	Grey lt Gray	Ca <1mm	.1	
71	680	98	Frax vn set 55°	55°			s Bl		Ca/Py 1mm	7	
	685	100	7-85° frax ∡	x Frax x 7-85°	.25 Py .50 .25				Kaolin	4	
72	690										
	695	101			trace			Lav Purp Purp-red			
73	700	100									
	705				.25 Py		m-s Bl	Grey lt Gray			
74	710	106	30°-55° Kaol vns	x x			cel		Kaolin 1mm	4	
75	715	101	vn 25° vn 80° vn 80° vn 75°				wk Bl	Lav.	Calc 2mm	.5	
	720						m-s Bl		Ca/Py		
76	725	100			Trace		wk Bl	Lav Purp Purp-red			

Ct

DESCRIPTION

[Flow Banding same as above]

½ foot of Rubble at 662-662.5'

2ft Rubble 667-669' with dark Black sulfides in Kaolinite filled Fracture seams and wk crackle Bx at 669'

Calc/Py cemented Frax set 678-681 avg ∡ 55°

Rubble zone 685.5'-687.5'
Kaolin and mnO filled Frax seams
Range of Frax angle: 7°-85°

Rubble zone 707-710'
Frax filled with Kaolin & cel
Range: 30°-55°

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
657-662	↓		↓		
662-667	<.0001		.015		
667-672	.0004		.035		
672-677	.001		<.003		
677-682	<.0001		.047		
682-687	.0012		.096		
687-692	<.0001	<.0001	.003		
692-697	.0004		<.003		
697-702	.0002		<.003		
702-707	.0001		<.003		
707-712	.0012		.003		
712-717	.0001		<.003		
717-722	.0001		.003		
722-727	<.0001		<.003		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 12 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
76	725		vn 60°		trace			Lav Porp-rd	Ca <1mm	.1	
		100	vn 35	vn Qx							
	730		vn 30° vn 20°						Ca vn, Bx 5-30mm Ca, <1mm	.5 .1	
77							cel				
	735				.25 Py		m-s Bl	Lt Gray Gray			
		101									
	740		vn 70° vn 50°						Ca, 1mm	.5	
78		73	vn 40°		trace		wk Bl	Lav Lt Gray			
	745										
79	750	98									
			2 vns @ 45°		.25 Py .50 Py		m-s Bl cel	Lt Gray Flesh	Ca <1mm	.1	
	755										
80	760	100									
	765										
81			vn 60°						Ca 1mm	.1	
	770	100	vn 30° vn 55° 70° 40° vns				S. Bl. cel	Lt Grey	Ca/Py 1mm Ca 10mm 2mm	.5	
	775				.25						
82			vn 70° vn 20°								
	780	103	vn 40 vn 60°	minor calc ∡ & cement Qx 790	.50 Py				Ca <1mm		
			vn 45°	Frax set 0-80°							
83	785						m-s Bl cel				
	790	100						Grey Grn Lt Grey			

DESCRIPTION

725 — Ct

Flow Banded as above

½ ft Calc vn Bx 726.5 - 727' in very wk alt Rck.

at 770' a small (30mm x 10mm) phoneritic clast in the Ct matrix

From 780 - 787 crackle Brecciation with Calc. Cement and ↑ Py

782' Rck type still looks like Ct but changes from a flow banded, tight ceramic like tuff to a pyroclastic choc clasts within Choc FG matrix. Contact is graded over 1 ft, 782 - 783'

From 783' - 790' Dnk Green Chlorite Blankets the Fracture Seams along with Flat anhedral Py

wk clay alt at 782 - 787

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
722-727	↓		↓		
727-732	.004		<.003		
732-737	.001		<.003		
737-742	.002		.012		
742-747	.016		<.003		
747-752	.006		<.003		
752-757	<.001		<.003		
757-762	.001		<.003		
762-767	.001		.003		
767-772	.001		.006		
772-777	.001	.0001	.003		
777-782	.002		.055		
782-787	.011		.016		
787-792	.004		.010		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 13 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
83	790			Crackle Bx, < ↓25-80				Grey, lt Grey, Flesh	Ca/Py 1mm	<.1	
		100	vn 80°		.25 py		m Bl				
84	795						(Prop m. Bl)				
	800	98						lt Grey, Flesh, lt Green, Sage			
			vn 40°						Ca 1mm	<.1	
85	805										
	810	100	vn 25						Ca 2mm	<.1	
86	815	98									
	820	93	vn 70°, vn 40°						Ca 1-3mm	.1	
87	825		vn 80°						Ca, 1mm	.1	
	830	97	vn 40°						Ca, <1mm	.1	
88	835		Bed 50°	contact 40°			40°	Drk Green, Grey, lt Grey			
	840	100		contact 75°			75°				
89	845							Grey, lt Grey, Sage Green			
		100		contact 65°			65°				
90	850							Drk Grn, Grey, lt Grey			
		95									
	855										

DESCRIPTION

Ct

Rck is a Volc Bx → Pyroclastic w/ Ct clasts ranging from 1mm to 80mm in size and angular to sub-angular within a fine grained Ct tuff matrix. In most of the core the rock is matrix supported but minor clast supported zones exist. Auto-Brecciated.

790-793' - Brn-red color to matrix and still crackle Brecciated up to 793'

797-855' Propyllitic Alt with Calc & chlorite

832' - 40° Contact with TC epi, Middle Ct

a) Bedding in TC epi is 50° and clasts range in size from 1mm to several 10's of mm and is clast supported in a dark green matrix

b) This unit is Polylithic but most (~80%) of the clasts are Ct. Note: maybe even closer to 90% Ct, and clasts are sub-rounded.

TC Epi

Ct

From 841-848' a small wedge of Ct Volc Bx as described above (this page)

TC Epi

848' → Next Page TC Epi as described above this page.

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
787-792	↓		↓		
792-797	.0074		.018		
797-802	.0011		.053		
802-807	.0001		.009		
807-812	.0002		.009		
812-817	.0005		.015		
817-822	.0077	.0074	.061		
822-827	.0008		.018		
827-832	<.0001		.003		
832-837	.0001		.009		
837-842	<.0001		.006		
842-847	<.0001		.003		
847-852	<.0001		<.003		
852-857	<.0001		.003		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 14 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
90	855				.25 Py		Prop Alt	Drk Green Grey lt Grey			
91	860	94									
	865										
92	870	101	Bed 65°								
	875		Bed 60°								
93	880	100		35° Shear		35°	m-s Bl.	lt Sage Grn			
	885										
94	890	99					S. Bl m. Bl	lt Grey Flesh lt Grey			
95	895										
	900	105									
96	905		10° vn 5° vn		.50 Py		St Bl.	lt Gray wht	Kolin 1mm	.5	
			10° vn		.25 Py				Kaolin/Py 3mm		
	910	100	15° vn		.50 Py .25						
97	915						s-m Bl	lt Gray flesh			
↓	920	98									

DESCRIPTION

TC Epi

Same as above (Described on last page at 832'

Shear Zone

882' - upper contact of shear zone, 35°
A Boudin of massive Py denotes the upper contact of the shear and Green Clay Gouge

889' - the F.G. Ct tuff denotes the lower contact of the shear zone: cannot measure <

Ct

Choc in Choc As described at 790 previous page

Slight ↑ Py 903 - 907'

↑ Arg Alt 910 - 915' and slight incr dissem Py

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
852-857	↓		↓		
857-862	.0001	.0001	<.003		
862-867	<.0001		.003		
867-872	<.0001		.003		
872-877	.0001		.003		
877-882	.0003		.003		
882-887	.0006		.003		
887-892	.0007		.009		
892-897	.0003		<.003		
897-902	.0004		<.003		
902-907	.0005		<.003		
907-912	.0014		<.003		
912-917	.0009		.009		
917-922	.002		.002		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 15 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
	920										
98	925	98			.25 Py		m-s Bl	lt Grey Grey			
99	930	100									
	935										
100	940	100			.50 Py						
	945										
101	950	102	Kaolin druzy Qtz/Py vein set Range 0-20°		.75 Py mc 1.0 Py .75 Py mc		m Bl Ba m-s Bl	Grey lt Grey Grey	Kaolin, Qtz/Py Mc 1-4mm	3-4	
	955	74			.50 Py						
102	960	43					St Bl.	lt Grey Wht			
	965	82									
103	970	74									
	975										
104	980	101									
	985	102									

DESCRIPTION

Ct

Same as previous page

941-942' Kaolin/Py filled on Frax seams

941-951' Grad incr in Sulf (Py, trace Mc) then Grad. decr in sulf.; and also minor druzy Qtz in this zone down to 957'

Trace Ba at 954'

Reduced @ 958.5'

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
917-922	↓		↓		
922-927	.0006		.006		
927-932	.0004		.009		
932-937	.0006		.006		
937-942	.0001		.032		
942-947	.0028	.027	.047		
947-952	.0028		.041		
952-957	.015		.032		
957-962	.013		.018		
962-967	.0001		<.003		
967-972	<.0001		<.003		
972-977	<.0001		<.003		
977-982	<.0001		<.003		
982-987	<.0001		<.003		

ROSEBUD PROJECT

HOLE NO. RL 294 c LOGGED BY _____ DATE _____ PAGE 16 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∢ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
104	985				.50 py		Strg Bl	lt Grey wht			
105	990	102	vn 60°						Ca, <1mm	.1	
			vn 40°						Ca, 1mm	.1	
	995				.25 py						
106	1000	103	vn 40°						Ca, 1mm	.5	
			vn 25°						Ca, 3mm		
			vn 30°						Ca, <1mm		
			vn 40°						Ca, 7mm		
	1005										
107	1010	100									
			40° vn						Ca, <1mm	.1	
	1015				.50 py						
108	1020	101									
	1025										
109	1030	99	vn 80° 50°		.25				Ca/Kaolin ± Py 1-5mm	<.1	
	1035										
110	1040	99	vn 45°						Ca, 1mm	<.1	
	1045				.50 py						
111		99									
	1050		vn 45°						1mm Ca/py	<.1	

DESCRIPTION

985

Ct

985-1037' Very strong Bleaching and minor Arg Alt.

↓ Arg Alt after 1037' but still strg Bl.

↓ in # of clasts in Ct from 1039 - 1055 : Ct becomes more massive w/ few clasts

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
982-987	↓		↓		
987-992	<.001		<.003		
992-997	<.001		<.003		
997-1002	<.001		<.003		
1002-1007	<.001		<.003		
1007-1012	<.001		<.003		
1012-1017	<.001		<.003		
1017-1022	.004		<.003		
1022-1027	.005		<.003		
1027-1032	.001	.001	<.003		
1032-1037	<.001		.003		
1037-1042	<.001		<.003		
1042-1047	.001		.003		
1047-1052	.002		.003		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 17 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∢ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
111	1050	99	vn 45°, vn 55°, vn 45°	trace Frax	.25 Py		S Bl.	lt Grey wht	Ca/Kaol 1mm	.5	
112	1055, 1060	100	vn 70°, vn 45°						Calc 2/1mm	.5	
113	1065, 1070	98	vn 85°, vn 70°, vn 85°						Py, 2mm	.1	
114	1075, 1080	102	vn set of Kaol filled Frax 45°-85°	minor Frax with Kaolin filled voids					Kaolin 1mm	1-2	
115	1085, 1090	102		Shear zone 50°	1.70 Py		m-s Bl	lt Grey Dk Grey			
116	1095, 1100	89					s Bl	lt Grey wht			
117	1105, 1110	97			.50 Py, .25						
118	1115	100, 102									

DESCRIPTION

Ct

same as above with not to many clasts (~5%

1050 - 1052' wk Frax with calc/Kaolin cemented Frax seams. Minor Arg alt (w-m) assoc. with Frax set.

1087'-1108' Shear zone, ∢ 50°, strg-mod Drk Green chlorite: start of a long Rubble zone. Is this "Bud"?

Incr Sulf & Arg. Alt in Shear zone.

Sheared Ct

Ct vs. WR ?

↓ sulf at 1108' still strg Bl & w-m Arg Alt.

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
1047-1052	↓		↓		
1052-1057	<.001		<.003		
1057-1062	<.001		.003		
1062-1067	.001		.003		
1067-1072	.005		.003		
1072-1077	.008		.009		
1077-1082	.016		.015		
1082-1087	.004		<.003		
1087-1092	.036		.035		
1092-1097	.051	.053	.055		
1097-1102	.018		.020		
1102-1107	.015		.018		
1107-1112	.011		.018		
1112-1117	.006	.006	.015		

ROSEBUD PROJECT

HOLE NO. RL 294 c LOGGED BY _____ DATE _____ PAGE 18 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
118	1115				.25 Py		~BI	H Gry Wh			
119	1120	102		∡?	.50 Py						
	1125	103		∡?	.25 .50 Py						
120	1130		Vn Set, Stck Wk micro-Qtz				x		Qtz <1mm-1mm	4.5	
	1135	101					x				
121	1140						x				
	1145	107	Calc & Kaolin Filled Fray		1.0 Py		m-s Bl	H Gry Olive Grn wh			
122	1150				.75 Py .50 Py						
	1155	100									
123	1160			70°							
124	1165	100									
	1170										
125	1175	99			.25						
	1180										

DESCRIPTION

Ct | vs WR ?

Sheared Ct

Ct

Sheared Ct

C, Ct

Ct

Shear Zone 1122 - 1127'

↑ Arg Alt, Slight mer Sulf

1130' - 1142' small (< 1mm - 1mm) micro Qtz vning and lcl silica flood

1144' - 1151.5' Shear Zone Then Crackle Brecciated to 1163'

minor crackle Brecciated 1163' - 1164'

1151'-1163' Clastic C, Ct Auto Bx as described at 790', Pg 13.

1163 - 1310' (TD) Ct with very few clasts within F.G. Tuff.

↑ Arg Alt 1173 - 1177

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
-1117	↓		↓		
1117-1122	.0006		.012		
1122-1127	.0045	.0069	.020		
1127-1132	.0023		.020		
1132-1137	.0015		.012		
1137-1142	.0018		.018		
1142-1147	.0032		.023		
1147-1152	.0011		.009		
1152-1157	.0009		.006		
1157-1162	.0015		.003		
1162-1167	.0018		.003		
1167-1172	.0001		.006		
1172-1177	.0008		.012		
1177-1182	.0001		.001		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE _____ PAGE 19 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∡ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
125	1180	99		60°	.25 py .50 py		m-s Bl	lt Gray Olive Wht			
126	1185	100									
	1190		5° vn		.25 .50 py				Ca 1-6mm	<1	
127	1195	102	35° vn 40° vn		.25 py				Ca 1mm	.5	
	1200		50° vn						<1mm <1mm <1mm		
128	1205	101	20° vn 40° vn 40° vn		.5 py						
	1210		20° vn					lt Gray lt Olive	Ca 1mm-12mm	1-2	
129	1215	100	vn set 0-40°								
	1220		Calc filled Frax Seams						Ca <1mm-3mm	1-4	
130	1225	102									
131	1230										
	1235	95					Sbl.	lt Gray Wht			
132	1240										
	1245	100			.75 py						

DESCRIPTION

1180

Ct | VS WR ?

F.G. Ct with very few clasts → more massive → looks like Dozer in color & texture

very slight ↑ sulf 1182 - 1191

1183 - 1197' m-s Crackle Brecciated with Calc, ± Py, & ± Kaolin filled frax ∡ at 1183' = 60°

1197 - 1213' -w minor (wk) Crackle Brecciation as described above

1213' - 1217' -m-s Crackle Brecciated

1217' - 1225' -wk Crackle Bx

1225 - 1228' - m Crackle Bx

1228' - 1234' - w. " "

Grad incr. ↑ Py from 1232' →

1185 1190 1195 1200 1205 1210 1215 1220 1225 1230 1235 1240 1245

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
1117-1182	↓		↓		
1182-1187	.001		.003		
1187-1192	.001		.009		
1192-1197	.001	.001	.003		
1197-1202	.001		.006		
1202-1207	.005		.015		
1207-1212	.001		.013		
1212-1217	.001		.009		
1217-1222	.001		.006		
1222-1227	.001		.003		
1227-1232	.001		.017		
1232-1237	.001		.009		
1237-1242	.001		.009		
1242-1247	.003		.006		

ROSEBUD PROJECT

HOLE NO. RL 294c LOGGED BY _____ DATE 1/18/93 PAGE 20 OF 20

BOX #	DEPTH (FT)	RECOVERY	STRUCTURE: FLOW + VEIN ∢ + BEDDING	STRUCTURE: FAULTS	% METALLICS	GRAPHIC LOG	ALTERATION	COLOR	VEIN TYPES /WIDTHS	VEINS PER FOOT	RQD
132	1245			Frax	.75 Py		S Bl	lt Gray wht			
	1250	100			.50						
133	1255		70° Calc						Ca 2mm	<.1	
	1260	102	25° vn						Ca, 10mm	.5	
134			15° vn						Ca 1mm		
	1265		40° vn				m-s Bl	lt Gray lt Olive	3mm		
135	1270	100	50° vn 40° vn						Ca, 1mm 1mm	.5	
	1275		Calc filled Frax		.75 Py						
136	1280	97						lt Gray Olive			
	1285	83		50° Slicks							
137	1290	71			.50 Py			lt Gray lt Olive			
	1295										
138	1300	100	40° vn				S. Bl.	lt Gray wht	Ca, 5mm	<.1	
	1305	102	40° vn 40° vn		.25				Ca, 1mm Ca 1mm	.1	
139	1310		40° vn 35° vn						Ca 2mm Ca, 4mm		

DESCRIPTION

Ct | vs WR?

minor Frax from 1245 - 1249'
Wht Kaolin/Py fills Frax seams.

1264' - 1277' - wk Crackle Bx w/ calc, ± Kaolin, ± Py cemented Frax seams.

1277 - 1287' - m-s crackle Bx

1287 - 1298 - wk-m " "

slight incr ↑ Py 1272 - 1288'

Fault: 50° slicks in Calc @ 1284

T.D. = 1310

ASSAYS

SAMPLE NO.	oz/t Au	✓ Au	oz/t Ag	✓ Ag	% Cu
1242-1247	↓		↓		
1247-1252	.008		.620		
1252-1257	.008		.009		
1257-1262	.001		<.003		
1262-1267	.001		.003		
1267-1272	<.001		<.003		
1272-1277	.001		<.003		
1277-1282	.007		.009		
1282-1287	.005		.009		
1287-1292	.004		.006		
1292-1298	.002		.003		
1298-1304	.001		.003		
1304-1310	.001		.003		

RL 294 C

Interval	Recovery	Description	Sample
0-15	1.7/15	0~64 Badger	0-15
15-25	3.6/10	Poorly consolidated, ~75%	15-25
25-30	1.7/~~10~~ 5	lt & dk gray sub ang	25-35
30-32.5	1.7/2.5	clasts (mostly of choc)	35-40
32.5-35	1.2/2.5	matrix supp in pink-	40-45
35-45	9.5/10 95	tan (bleached) f.gr.	45-50
45-55	7.9/10 79	matrix. Crumbly.	50-56
55-62	7/7 100	Md bleached	56-62
62-72	101		62-67
72-82	100		Page 1 67-72
82-92	100		72-77
~~92-102~~			77-82
			82-87
			87-92
			92-97
			97-102

64- 162

Volcanic breccia, prob Chocolate; gray & tan subang clasts < 1/4" > 2" 70-85%; in lt gray matrix

Md bleached, locally argillized 87-100 w/ minor vnlts Kaol + py/Mc

Becoming smaller clasts w/ depth - close between Choc vlc bxa & Choc TCb

RL294C

Interval	Recovery	Description	Sample
		64 - 162 cont	-102
92-102	99	Chocolate volcanic bxa &	102-107
102-112	93%	lit; flesh to grey tuff	107-112
112-122	93%	(silty clastic) matrix w/	112-117
122-133.5	10/11.5 = 87	<1/4" - >3" angular frag -	117-122
133.5-144	10.4/10.5 99	lt grey, green & tan, porphyritic	122-128
144-154.5	10.4/10.5 99	Locally argillized	128-133.5
154.5-165	10.2/10.5 99	(possible Tcb - BUD like)	133.5-138.5
165-175	10.5/10 105	in place	138.5-144
175-182.5	7.5/7.5 100	162 - 209	144-149.5
182.5-185.5	1.4/3 47% (rubble)	fault zone;	149.5-154.5
185.5-192	6.1/6.5 ~94	162-171 silic'd & crackle bx'd	154.5-159
192-202	10.3/10 103	w/ clay vns, Mc,	159-163
202-208	4.8/6 80	171-192 strongly broken up, str	163-167
208-215	6.7/7 94%	silic'd clasts w/ clay cement &	~~170-175~~
215-225	10.2/10 102%	clay vnlts, rubbly, Mc	167-171
225-231	5.6/6 93%	192-199 md blue-green fg	171-175
231-241	10.2/10 102	m-s silic'd, md fractd,	175-179
241-250	9.3/9 103	dissem Mc xtls	179-182.5
250-259	9/9 100	199-202 strongly broken up, str	182.5-187
259-269	10.4/10 104	silic'd clasts w/ clay cement	187-192
		202-209 m-s silic'd, locally	192-197
		bx'd, pink-purple-grey color	197-202
		f-g text	202-207
			207-212

6/4.8 .80 13/14 ~.96 6.5/6.10 ~.94

RL294C

Interval	Recovery	Description	Sample
[illegible]-277	8.5/8 106	209 – 500	
277-279.5	2.4/2.5 96	Chocolate f.gr. Ø,	212-217
279.5-289	9.3/9.5 98	3-6% wkly alt'd phenos	217-222
289-299	10/10 100	(1-3mm) md gray color	222-227
299-309	10.1/10 101	weak kaol + py vnlts 10-20° to c.a.	227-232
309-319	10.1/10 101	locally banded ~65° to core axis	232-237
319-329	9.8/10 98	overall md bleach ± w msilic	237-242
329-335	5.2/6 87		242-247
335-345	10.6/10 106		247-252
345-354	9.2/9 102		252-257
354-364	10.3/10 103		257-262
[illegible]			262-267
			267-272
			272-277
			277-282
			282-287
			287-292
			? 292-307
			307-312
			312-317
			317-322
			322-327
			327-332
			332-337
			337-342
			342-347
			347-352
			352-357

RL 294C

Interval	Recovery	Description	Sample
		209-500	
364-374	10.6/10 106	continued, gray ϕ choc,	S 357-362
374-384	10.4/10 104	md bleached	P 362-367
384-394.5	10.2/10.5 97	↑ veining 352-395	L 367-372
394.5-405	10.7 10.3/10.5 98	↓ bleach to w-md e ~ 412	T 372-377
405-415	9.9/10 99	↑ veining 464-493, kaol+py	377-382
415-425	10.1/10 101		382-387
425-435	10.3/10 102		387-392
435-445	9.9/10 99		392-397
445-455	10.2/10 102		397-402
455-465	10/10 100		402-407
465-475	9.9/10 99		407-417
475-483	7.8/8 98		417-422
483-493	10.2/10 102		422-427
493-503	8.0 100		427-432
503-513.5	10.3/10.5 = 98	500 — 607	432-437
~~513.5-524~~		similar to above, flow banded	437-442
~~524-534~~		fine grained ϕ Chocolate,	442-447
~~534-544~~		but with a flesh-gray to green-	447-452
~~544-550~~		gray color; flow banding	452-457
~~550-557~~		∠ 45-55° to core axis,	457-462
		3-6% 1-3mm phenos.	462-467
		Md bl ± w-m kaol+py vnlts	467-472
			472-477
			→ ? 477-502
			502-507
			507-512
			512-517

RL294C

Interval	Recovery
5[illegible]5-524	10.7/10.5 102
524-534	100 <-2
534-544	10.2/10 102
544-550	5.3/6 88
550-557	6.9/7 99
557-567	9.9/10 99
567-575	8.4/8 105
575-585	9.9/10 99
585-595	10.1/10 101
595-605	9.8/10 98
605-615	99
615-625	102
625-635	97
635-645	101
645-655	100
655-665	100 <-2
665-675	100
675-685	98
685-687	100
~~687-697~~	
687-697	101
697-705	100
705-712	7.4/7 106/42
712-722	101
~~722-732~~	5.5

Description

500 - 607 cont

flow banded ϕ Choc flesh + gray-green color mod bl

↓ bleaching 585-607; mod purple flesh color w/ lt gray bands

607 - 780

Mixed fr-wk bleached dk red-purple-gray fgv ϕ flow banded Choc w/ w-m bleached zones pink-green color. Rare kaol, calcite

↑ bleach + kaol 660-670,

684-692 ↑ bleach to mod gray

703-722 ↑ bleach to mod gray, wk kaol vnlts

Sample

Sfl T

517-522
522-527
527-532
532-537
537-542
542-547
547-552
552-557
557-562
562-567
567-572
572-577
577-582
582-587
587-592
~~592-597~~
597-602
602-607

Low priority - can wait to sample

607-612
612-617
617-622
622-627
627-632
632-637
637-642
642-647

RL294C

Interval	Recovery	Description	Sample
			Split 647-652
			Low 652-657
			Priority ~~657-662~~
			662-667
			667-672
			672-677
			677-682
			682-687
			687-692
			692-697
			697-702
			702-712
			712-717
			717-722
			722-727
			727-732

RL 294 C Quick Log

Interval	Recovery	Description	Sample
722-732	100%	607-780 cont	732-737
732-742	101%	lt-md purple-gray flowbanded	737-742
742-745	2.2/3 73	Chloc ϕ	742-747
745-755 1.2	9.8/10 98		747-752
755-765	10/100		752-757
765-775	100	780 - 833	757-762
775-785	103	Chloc volcanic breccia,	762-767
785-795	100	lt-md green & purple ϕ	767-772
795-805	98	clasts 1/2" - 6" in md	772-777
805-815	101	purple matrix. Abt fine	777-782
815-819	3.9/4/98	frags w/ purpl-red stain -	782 787
819-825	5.6/6 93	Md bleach mosaic pattern	787-792
825-835 4.2	97	805 - dominantly gray-	792-797
835-844	100	green color w/ dk green	797-802
844-849.5	100	frags	802-807
849.5-855	5.2/5.5/95		807-812
855-865	94	833 - 889	812-817
		Bxd lit & volc bxa	817-822
		80-95% clasts, <1/8"-	822-827
		>1" lt green, dk green	827-832
		tan subangular, an clast	832-837
		to barely matrix supp - green	837-842
		clay matrix, locally	842-847
		bedded 50° to core axis	847-852
		Gen Md bleached;	852-857
		833-840 calc + kaol vn/to	857-862
			862-867

RL 294C

Interval	Recovery	Description	Sample
8[illegible]5-875	101%	833 – 889	867-872
875-885	100	BUD cont	872-877
885-895	99	880-889 argillized &	877-882
895-905	105	sheared	882-887
905-915	100	~~889~~ –	887-892
915-925	98		892-897
925-935	100	889-1087.2	887-902
935-945	100	Tmb	902-907
945-955	1.8 102	lt gry & pink gray	907-912
955-958.5	2.6/3.5 74	fgr porphyritic and	912-917
958.5-961.5	1.3/3 43 reduce	volcaniz bxa w/clasts	917-922
961.5-971.5	8.2/10 82	same as matrix; plag &	922-927
[illegible]5-974	2.6/3.5 74	mafic phenos, wk silic?,	927-932
974-984	101	md-bleach, wk Kaol+py	932-937
984-994	102	vnlts, Q+py vnlts	937-942
994-1004	103		942-947
1004-1014	100	Reduce to N @ 958.5	947-952
1014-1024	101	continue in Tmb	952-957
1024-1034	99	volc bxa, gray & pink	957-962
1034-	.3	gray color, clasts same	962-967
		as matrix, porphyritic,	967-972
		md bleach, rare vnlts	972-977
		py ± Kaol ± duckbotter	977-982
			982-987
			987-992
			992-997
			997-1002
			1002-1007

RL294C

Interval	Recovery	Description	Sample
1034-1044	99		1007-1012
1044-1054	99%	889 - 1087.2 cont	1012-1017
1054-1064	100	Tmb vol bxa,	1017-1022
1064-1074	98	md bleached	1022-1027
1074-1084	102	1048-1052 - kaol vnlts,	1027-1032
1084-1094	102	3-6 / ft, 1/4"	1032-1037
1094-1102.5	7.6/8.5 89.0	1072-1080 ↑ vnlts as above	1037-1042
1102.5-1108.5	5.8/6 97		1042-1047
1108.5-1114	100		1047-1052
1114-1123.5	5.6 9.7/9.5 102	1087.2 — 1094 "BUD"	1052-1057
1123.5-1132.5	9.3/9.0 103	contact w/ above @ 50°	1057-1062
1132.5-1143	10.6/10.5 101	& core axis - sharp	1062-1067
1143-1151.5	9.1/8.5 107	lithologic contact;	1067-1072
1151.5-1162	100	Lhum matrix lit/vol bxa,	1072-1077
1162-1172	100	w/ tan & gran sub ang clasts	1077-1082
1172-1182	99 ← 2	<1/4"-1", md alt'd,	1082-1087
1182-1192	100	argillized/clayy matrix w/	1087-1092
1192-	9.2	some infilling qtz ~~Kaol~~	1092-1097
			1097-1102
		1094 - 1108.5	1102-1117
		fault zone? ? ↔ ?	1117-1122
		M-S argillized, clayey crumbly,	1122-1127
		lt gry color, orig fg.	1127-1132
		Abt fine vnlts kaol, qtz+py	1132-1137
			1137-1142
		1108.5 - ~1151.5	1142-1147
		probably Wild Rose Tuf,	1147-1152
		Very busted up, locally	1152-1157
		rubbly, abt vnlts	

8 7 102
54 4.5
5 8.5
66.5

RL 294C

Interval	Recovery	Description	Sample
~~Mont~~			1157-1162
		1108-1151.5 cont'd: Twr	1162-1167
		Lt gray-pink tan color fine grained	1167-1172
		m-s alt'd, argillized, abt	1172-1177
		crackle Δ'd fine stockwork & vnlts; kaol,	1177-1182
		kaol+py, Qtz+py, ...	1182-1187
			1187-1192
~~1192-1202~~		1151.5-1179	1192-1197
1192-1202	102%	Same Twr but somewhat	1197-1202
1202-1212	101	less altered; tan to pink gray	1202-~~1207~~
1212-1222	100	f. gr., fine crackle Δ-fine	~~1210~~ 1207-1212
1222-1232	102	stkwk vnlts kaol, ± py, Q+py, &	1212-1217
1[illegible]-1242.5	10/10.5 95	green kaol? Less argillized &	1217-1222
1242.5-1253	10.5/10.5 100 ←	crumbly than above.	1222-1227
1253-1263	102		1227-1232
1263-1273	100	1179-1200 Twr; fine grained,	1232-1237
1273-1283.5	10.2/10.5 97	further decrease in clay alteration	
1283.5-1287.5	3.3/4 83	lt-md gray-green color w/	
1287.5-1294	4.6/6.5 71	fine mosaic/crackle fractures w/	
1294-1300	100	dk green on fracture & wk-	
1300-1310	102	Q+py, kaol+py vnlts	
T.D.		(fine grained w/o phenos)	

17.99

Grand Junco

Slide 50

~~1200-10~~ 1200-1235 Twr

lt-md gray color, w-m silic'd?
Fine grained Twr, no phenos,
Thin crackle fractures as above
plus w-m kaol+py+qtz vnlts

RL 294C

Description	Sample
1235 - 1310 Twr	1237 - 1242
Md green-grey fine grained	1242 - 1247
(no phenos) Twr, fine	1247 - 1252
fractures w/ mottled	1252 - 1257
bleaching, W-M to Mod bleach	1257 - 1262
overall, minor kaol+py+q	1262 - 1267
vnlts	1267 - 1272
	1272 - 1277
	1277 - 1282
	1282 - 1287
	1287 - 1292
	1292 - 1298
	1298 - 1304
	1304 - 1310

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 1
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/18/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING: REC/CUT	DRILLING: RQD	LITHOLOGY: ALLUVIUM	LITHOLOGY: MUD CGL	LITHOLOGY: LITHTUF	LITHOLOGY: PUMTUF	LITHOLOGY: SURGE TUF	LITHOLOGY: ASHFALL	LITHOLOGY: ALAVA	LITHOLOGY: AUTOBX	LITHOLOGY: INTRUSIV	LITHOLOGY: BASALT	LITHOLOGY: ANDESITE	LITHOLOGY: RHYOLITE	STRUCT: TEC BXA	STRUCT: BROKEN	STRUCT: GOUGE	STRUCT: VOID	ALTERATION/MINLIZATION: Fe MIN: MNOX	ALTERATION/MINLIZATION: HEMTIT	ALTERATION/MINLIZATION: LIMONIT	ALTERATION/MINLIZATION: PYRITE	ALTERATION/MINLIZATION: PROP	ALTERATION/MINLIZATION: ARG	ALTERATION/MINLIZATION: ARG2	ALTERATION/MINLIZATION: ARGPL	ALTERATION/MINLIZATION: QTZVNS	ALTERATION/MINLIZATION: CALCITE	ALTERATION/MINLIZATION: METCLAS	STRAT: BAHDGER	STRAT: COLT	STRAT: BUD	STRAT: BRADY	STRAT: MKPOR	STRAT: LUD	STRAT: WILDROS	STRAT: DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCNT	COMMENTS	SAMPLINT
0			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	0				
5																																								5				
10																																								10				CORE POINT 10'
15			?														3	3				1			4															15				10'-144' BADGER PEBBLE CONGLOMERATE 10-32.5': VERY POOR RECOVERY OF APHANITIC, PALE TAN ROCK IN PALE TAN FRIABLE CLAY.
20			?																																					20				
25			?																																					25				
30			?																													?								30				BY 30': ROUNDED & SUB-ROUNDED PEBBLES & SMALL COBBLES OF HARD TAN-GREY ROCK IN A TAN, FRIABLE CLAY MATRIX LIKE ABOVE. BELOW ~33' THIS PEBBLE CONGLOMERATE WITH THE CLAY SHOT MATRIX IS PERVASIVELY RUDDY TAN DUE TO MODEST FeOx STAINING. HETEROLITHIC
35																						2																		35				ROUNDING OF THE PEBBLE FRAGMENTS DECREASES GRADUALLY DOWNHOLE. BELOW 90' THE FRAGMENT POPULATION IS DOMINANTLY ANGULAR TO SUB-ANGULAR, AND INCREASINGLY HETEROLITHIC.
40																																								40				THE FRAGMENT POPULATION IS DOMINATED BY APHANITIC, APHYRIC, PALE CLASTS OF POSSIBLE DOZER ORIGIN, WITH PLAGIOCLASE-BEARING CHOCOLATE PRESENT BY AT LEAST 48'.
45																	2																							45			75' RED	MINOR BEDDED, SEMI-INDURATED SANDY LENS ARE PRESENT WITHIN THE CONGLOMERATE. ~5" BED AT 46'.
50																																								50				

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 2
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING: DEPTH FT | REC/CUT | RQD

LITHOLOGY: 1 ALLUVIUM | 2 MUD CGL | 3 | 4 LITH TUFF | 5 PUM TUFF | 6 SURG TUFF | 7 ASH FLO | 8 LAVA | 9 AUTO BX | 10 INTRUS V | 11 BASALT | 12 ANDESIT | 13 RHYOLIT

STRUCT: 14 TEC. BXA | 15 BROKEN | 16 GOUGE | 17 VOID

ALTERATION/MINLIZATION: Fe MIN: 18 MNOX | 19 HEMTIT | 20 LIMONIT | 21 PYRITE | 22 PROP | 23 ARG | 24 ARG 2 | 25 RP SIL | 26 | 27 QTZ VNS | 28 CALCITE | 29 METCALS

STRAT: 30 BADGER | 31 CHOCOLT | 32 U BUD | 33 BRADY | 34 MKR POR | 35 L BUD | 36 WILDROS | 37 DOZER

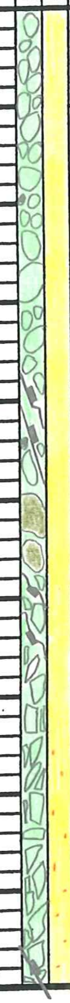
DEPTH FT | LITH GRAPH | ALT GRAPH | STRCT INT | SAMPL INT

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

Depth 50–100 ft. Col. 2 (MUD CGL) and col. 30 (BADGER) hatched 50–100. Col. 15: 2 (50–65), 1 (65–100). Col. 20: 2 (50–85), 1 (85–100). Col. 23: 3, 4, 3. Col. 28: 2, 3, 2.



STRCT INT: 20° JNT; 15° JNT; 45° FRAX; 30° FRAX; 30° JNT

COMMENTS

30-50': INDURATED ROUNDED TO SUB-ROUNDED, HETEROLITHIC FRAGMENTS IN A FRIABLE, STRONGLY ARGILLIZED SANDY MATRIX WITH SPARSE INTERVALS OF BEDDED SAND. SEMI-INDURATED. BLEACHING = STRONG IN MATRIX.

BELOW 50': INDURATION INCREASES, PROBABLY BECAUSE CLAY ALTERATION DECREASE TO MODERATE. BLEACHING IS PERVASIVE & CONTINUES AS WEAK TO MODERATE THRUOUT. NO CLEAN STRAIGHT JOINTING IN THIS INTERVAL, ALTHOUGH THRU GOING LmOx-STAINED FRAX ARE PRESENT (WK TO MOD.) NONCALCIC TO ~65'.

THE CONGLOMERATE IS HETEROLITHIC THROUGHOUT & APPEARS STRONGLY SO BY ~50', BUT IT IS ONLY NEAR ~85' WHERE THE FeOx OVERPRINT FADES THAT THE FRAGMENT PROTOLITHS ARE OBVIOUS: 1. DUSTY PURPLE CHOCOLATE WITH COMMON STUBBY PLAG, 2. FLOW ALIGNED APHANITIC AMPHIBOLE ANDESITE 3. APHANITIC APHYRIC RK OF POSSIBLE DOZER AFFINITY, 4. STRONGLY FLOW-BANDED RK.

~85': PERVASIVE RUDDY TAN LmOx DECREASES & GOES AWAY. CLOTS OF DULL-BRASSY BLADED MARCASITE IN MATRIX BEGIN TO BE SEEN.

BY ~90' FRAGMENTS ARE DOMINANTLY SUB-ANGULAR

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 3
LOGD BY:	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE:	SEC. T. N. E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING: DEPTH FT · REC/CUT · RQD

LITHOLOGY: 1 ALLUVIUM · 2 MUD CGL · 3 · 4 LITH TUF · 5 PUM TUF · 6 SURG TUF · 7 ASH FLO · 8 LAVA · 9 AUTO BX · 10 INTRUSV · 11 BASALT · 12 ANDESIT · 13 RHYOLITA

STRUCT: 14 TEC BXA · 15 BROKEN · 16 GOUGE · 17 VOID

ALTERATION/MINLIZATION: Fe MIN: 18 MNOX · 19 HEMMT · 20 LIMON · 21 PYRITE · 22 PROP · 23 ARG · 24 ARG 2 · 25 RPSIL · 26 · 27 QTZ VNS · 28 CALCITES · 29 METCLAS

STRAT: 30 BADGER · 31 CHOCOLT · 32 UBUD · 33 BRADY · 34 NKRPOR · 35 BUD · 36 WILDROS · 37 DOZER

DEPTH FT · LITHGRAPH · ALTGRAPH · STRCT INT · COMMENTS · SAMPL INT

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

Depth: 100 – 150 ft

85° BED?

65° BED?

COMMENTS

~105-118': GRADUAL TRANSITION THRU THIS STRETCH FROM LARGELY CLAST-SUPPORTED CONGLOMERATE TO MATRIX-SUPPORTED DEBRIS FLOW. COMPLETELY GRADATIONAL. FRAGMENTS RANGE FROM SUB-ROUNDED TO SUB-ANGULAR THROUGHOUT, BUT GROW INCREASINGLY ANGULAR BELOW 118'. BY ~120' ANGULAR CLASTS DOMINATE.

85' - ~120': ZONE OF MODERATE BLEACHING & ARGILLIZATION + MOD. TO WK DISSEMINATED SULFIDE IN BOTH MATRIX & FRAGMENTS. CONTINUES STRONGLY HETEROLITHIC TO ~110'.

~115-120': BLEACHING & PYRITE DISAPPEAR, & CLAY ALTERATION DECREASES TO WEAK. ORIGINAL DEPOSITIONAL TEXTURES BECOME MUCH MORE EVIDENT WITH LOSS OF BLEACHING.

NO TRUE JOINTING.

~120'-144': MATRIX-SUPPORTED, WKLY HETEROLITHIC TO MONOLITHIC BRECCIA OF POSSIBLE SEDIMENTARY ORIGIN. FRAGMENT ARE ANGULAR, APHANITIC, APPLE GREEN & WERE PROBABLY PHENOCRYSTIC ALTHOUGH PHENOCRYST SITES ARE NOW STRONGLY BLEACHED & CLAY SHOT.

MATRIX IS 30-40% OF THE ROCK BY VOLUME; IS UNIFORM RUDDY/FLESH-TAN, COARSE SAND-SIZED & LOCALLY BEDDED. IT IS WEAKLY CLAY ALTERED AT MOST & CONTRASTS STRONGLY WITH THE CHLORITIC (?) OR PROPYLLITIZED FRAGMENTS. BELOW 140' THIS MATRIX INCREASES TO >95%. LAST APHANITIC FRAGMENT IS SEEN AT 142'.

144' -171.5 CHOCOLATE

142-145': RUDDY TAN MATRIX GRADES INTO FAINT CRACKLE BRECCIA, WITH SLIGHTLY PALER FRAGMENTS OF THE SAME MATERIAL.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 4
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/19/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

DRILLING: DEPTH (FT); RECOVERY/CUT; RQD

LITHOLOGY: ALLUVIUM (1), MUD CGL (2), (3), LITH TUF (4), PUM TUF (5), SURGE TUF (6), ASH FLOW (7), ALAVA (8), AUTOBXX (9), INTRUSIV (10), BASALT (11), ANDESITE (12), RHYOLITE (13)

STRUCT: TEC BXA (14), BRECKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18), HEMTIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARG 2 (24), REPL SIL (25), (26), QTZ VNS (27), CALCITE (28), MECLAS (29)

STRAT: BCADOCEROL (30), CHOCOLAT (31), (32), BUD (33), BRADY (34), MKR POR (35), LBUD (36), WLDROS (37), DOZER

DEPTH (FT) 150 — 200

LITHOGRAPH / ALTGRAPH / STRCT

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

FROM 120- ~144': THE BRECCIA SANDY MATRIX IS DERIVED FROM UNDERLYING CHOCOLATE LITHOLOGY JUDGING FROM THE GRADATIONAL CONTACT.

COMMENTS

55° INT

144'-157': CHOCOLATE REGOLITHIC AUTOBRECCIA: RUDDY TAN SAND MATRIX MATERIAL, CLAY ALTERED, IDENTICAL TO THAT WHICH FORMS THE BADGER AGGLOMERATE MATRIX FROM 120'-144'. FRAGMENTS = ANGULAR & FAINT- LIKELY BECAUSE THEY WERE OF THE SAME PROTOLITH AS THE MATRIX; JUST SLIGHTLY LESS OXIDIZED & GREENISH-TAN.

60° BXA VNLT

CLAST-SUPPORTED CRACKLE BXA; POSSIBLY AN OLD REGOLITH LAYER.

~0° PYVN

157-171.5': ~~UNBROKEN~~ PORPHYRITIC, PALE GREENISH TAN 'TYPE' CHOCOLATE LAVA. WHITE CLAYSHOT STARBURSTS OF RELICT GLOMERO-PORPHYRITIC PLAGIOCLASE = 5-7% WITH A LESSER # OF STRONGLY ALTERED, SULFIDE-FILLED MAFIC SITES. GROUNDMASS ARGILLIZATION DECREASES DOWNHOLE.

~5° PYVN

75° FAULT & SHEAR

MOSAIC/CRACKLE MONOLITHIC ~~AUTO~~BRECCIA CONTINUES INTERMITTENTLY DOWN HOLE, & INCREASES TOWARDS THE FAULT CONTACT.

65° SH

~160-171.5': WIGGLY DULL BRASSY Py VNLTS.

171.5'-202.5' FAULT

171.5-175': STRONGLY CLAY ALTERED AND BLEACHED WEAKLY BOUDINAGED ZONE. MYLONITE VISIBLE ~ 175'. WELL-DEVELOPED SHEAR FOLIATN.

60° PYVN

175'-186': INCREASING FLESH-GRAY SILICIFIED ROCK, SPOTTED WITH DULL BRASSY PY BLEBS. POROUS & MECHANICALLY (?) MIXED WITH INTENSELY BLEACHED & ARGILLIZED ROCKS AS ABOVE. BRECCIATED, SHEARED & GENERALLY TECTONIZED.

65° PYVN 55° SHEAR

186-189': PERVASIVE MICROBRECCIATED SHEAR FABRIC IN PALE APPLE-GRN, BLEACHED, STRONGLY ARGILLIZED, NON-SILICIFIED MATERIAL.

~190'-202.5': FRIABLE, PALE BLUE-GRN, INTENSELY ARGILLIZED, STRONGLY BLEACHED, MODERATELY SHEARED, LOCALLY MILLED. COMPLETE DESTRUCTN OF ORIGINAL ROCK TEXTURE.

70° FRX

NO CALCITE THROUGH THIS INTERVAL.

SAMPLE INT

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 5
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION: * INCLUDES EXTENSIVE BASAL AUTOBRECCIA.

MUD CGL	Mud matrix conglomerate	
LITH TUF	Lithic clast dominant tuff	
PUM TUF	Pumice rich tuff	
SURGE TUF	Bedded matrix rich lithic tuff	

DRILLING: DEPTH FT; RECOVERY; RQD

LITHOLOGY: ALLUVIUM (1); MUD CGL (2); (3); LITH TUF (4); PUM TUF (5); SURGE TUF (6); ASH FLOW (7); ALAVA (8); AUTO BX (9); INTRUSIV (10); BASALT (11); ANDESITE (12); RHYOLITE (13)

STRUCT: TEC BXA (14); BRECCIA (15); GOUGE (16); VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18); HEMTIT (19); LIMONIN (20); PYRITE (21); PROP (22); ARG (23); ARG2 (24); RPLSIL (25); (26); QTZ VNS (27); CALCITE (28); METCLAS (29)

STRAT: BCHDGEROL (30); CHOCOLT (31); (32); BUD (33); BRADY (34); MKRPOR (35); LBUD (36); WILDROS (37); DOZER

DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT	COMMENTS	SAMPLE INT
200				PALE GREEN CLAY LOCALLY SHEARED & MILLED. TO 202.5' WHERE ARGILLIZATION & MOST BXAT'N END ABRUPTLY	
			40° FLT	202.5'-*232' AAA HARD, FLESHY- PALE PURPLE, AMPHIBOLE ANDESITE.	
205			~0° Si Py VN	202.5'-208': SHEARED/MYLONITIZED, BUT NOT ARGILLIZED TO ~ 203.5'. INTERMITTENT TRAINS OF HEALED ROCK FLOUR & WK MYLONITE BELOW THAT TO 208'. 210': WHT CLAY CEMENTED CRACKLE BXA.	
210			65 FLOW 10° Si Py	208'-225': PALE PURPLE, APHANITIC, AMPHIBOLE ANDESITE. STRONGLY SHEAR BANDED FROM 210' TO 225' WHERE THE ROCK BECOMES MASSIVE & SLIGHTLY LESS APHANITIC. ACICULAR AMPHIBOLE PHENOCRYSTS, 2-5 mm LONG, SUB-ALIGNED WITH FLOW FOLIATION. THEY ARE FILLED WITH WAXY TAN CLAY, (½ CHL) & SLIGHTLY DARKER THAN THE GROUNDMASS.	
215					
220			60° FLOW		
			25° 40° PYVN	202.5-210': BRASSY MARCASITE + DROSY QUARTZ VNLTS. ~~GIVE~~ LOOSE QUARTZ BY ~ 210' BUT BRASSY MARCASITE VNLTS CONTINUE MODERATE TO 270'. CHALKY CREAM CLAY HALOS ON MARCASITIC VNLTS, FIRST APPEAR ~ 209' & INCREASE DOWNHOLE. MARCASITE OR PY ALSO COMMON AS BLEBS IN GROUNDMASS & AS FINE DISSEMINATIONS.	
225			85 FLOW 40° PYVN		
230			30° PYVN 20° PYVN	225'-231': INCREASINGLY BUFF ANDESITE	
235			40 JNT		
240				MISSING CORE BOX	
245					
250			15° PYVN 40 PYVN	SAME LITHOLOGY AS ABOVE. MODEST GRADUAL INCREASE IN BLEACHING & ARGILLIZATION OF THE GROUNDMASS. FLOW/SHEAR BANDING PICKS UP AGAIN AT 253'	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 5
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DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING REC/CUT	DRILLING RQD	LITHOLOGY (1–13)	STRUCT (14–17)	ALTERATION/MINLIZATION (18–37)	STRAT (30–37)	DEPTH FT	LITH GRAPH	ALT GRAPH	STRUCT	COMMENTS	SAMPLE INT
250							250					
				1	1 2	2				10 PYVN 60° FLOW	237-270': CONTINUED APHANITIC AMPHIBOLE-RICH ANDESITE FROM THE PREVIOUS PAGE. ACICULAR AMPHIBOLES LINE UP WITH FLOW FOLIATION. MOD. DULL-BRASSY MARCASITE VNING & MOD. BLEACHING & ARGILLIZATION TO 270'. PYRITE VEINING IS INCREASINGLY WEAK & WISPY DOWNHOLE.	
255							255			20 PYVN		
260							260					
										60° FLOW 15° PYVN		
265							265					
270							270			70° PYVNS 55° FLOW	270-272': UNALTERED ZONE; PURPLE & FLOW BANDED, WITH DARK, EUHEDRAL, STILL XTLINE AMPHIBOLE PHENOCRYSTS.	
275					1		275			70° FLOW	272-292': SLIGHTLY DARKER BEIGE THAN ABOVE BUT STILL BLEACHED (WK). ORIGINAL RK TEXTURE IS FULLY PRESERVED. NO Py VNING TO 292'. DARKER BEIGE, CLAY ALTERED, RELICT AMPHIBOLE // FLOW FOLIATION.	
280							280					
										60° FLOW		
285							285					
290							290				290': XENOLITH. LOOKS LIKE A PUMICE LAPILLI	
					1	1				45° FLOW	292'– ?: PYRITIC VNLTS & BLEBS & DISSEMINATION IN GROUNDMASS RESUME AT 292' & REMAIN MODERATE TO .	
295							295					
										60 PYVN	297': GROUNDMASS BLEACHED FURTHER, TO TAN	
300							300				250-300': WELL-DEVELOPED FLOW BANDING & NO CALCITE TO 290'	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 6
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DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING: REC/CUT	DRILLING: RQD	LITHOLOGY: ALLUVIUM (1)	MUD CG (2)	(3)	LITH TUF (4)	PUM TUF (5)	SURGE TUF (6)	ASH FLO (7)	LAVA (8)	AUTO BX (9)	INTRUSIV (10)	BASALT (11)	ANDESITE (12)	RHYOLIT (13)	STRUCT: TEC BXA (14)	BROKEN (15)	GOUGE (16)	VOID (17)	ALTERATION/MINLIZATION: Fe MIN: MNOX (18)	HEMT IT (19)	LIMON (20)	PYRITE (21)	PROP (22)	ARG (23)	ARG 2 (24)	RPL SIL (25)	(26)	QTZ VNS (27)	CALCITE (28)	MELAS (29)	STRAT: BCADGER (30)	CHOCOLT (31)	UBUD (32)	BRADY (33)	MKRPOR (34)	LBUD (35)	WLDROS (36)	DOZER (37)	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT NT	COMMENTS	SAMPLINT
300																																								300					
																	1					1	3		1				2														40°10 PYVN	297-349': LT. GRAYISH TAN MODERATELY PY VEINED, MASSIVE AMPHIBOLE-RICH, APHANITIC ANDESITE. FLOW BANDED AGAIN BY 320'.	
305																																								305			5° PYVN	~302': DRUSY QUARTZ PICKS UP AGAIN IN PYRITIC VEINLETS, TO 309'.	
310																									2															310			0-5° PYVN		
315																									2															315			50° JNT 55° JNT		
320																							2																	320			30° FLOW 40,25 JNT		
325																																								325			40 FLOW		
330																																								330			25° PYVN		
335																																								335			70,30° FLOW	2 SETS OF FLOW BANDS ~ 333'. 70° CUTS 30°	
340																																								340			20° PYVN 50° FLOW		
345																									2															345			25° 45° PYVN	348-349': BEIGE, WKLY FLOW BANDED ANDESITE, SLIGHTLY LESS BLEACHING THAN ABOVE. 349'-358': MORE ARGILLIZED, STRONGLY BLEACHED, & MOTTLED GREYISH-FLESH & WHT. MOTTLING HIGHLIGHTS FLOW BANDING.	
350																									2															350			50° FLOW	300-350: NO CALCITE. HOMOGENEOUS	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 7
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DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH FT; REC/CUT; RQD

LITHOLOGY: ALLUVIUM (1), MUD CGL (2), (3), LITH TUF (4), PUM TUF (5), SURGE TUF (6), ASH FLO (7), ALAVA (8), AUTOBXX (9), INTRUSIV (10), BASALT (11), ANDESITE (12), RHYOLITE (13)

STRUCT: TEC BXA (14), BROKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18), HEMTIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARG2 (24), RPLSIL (25), (26), QTZVNS (27), CALCITE (28), MECLAS (29)

STRAT: ADGER (30), CHOCOLT (31), (32), BUD (33), BRADY (34), MKRPOR (35), LBUD (36), WILDROS (37), DOZER

DEPTH FT: 350, 355, 360, 365, 370, 375, 380, 385, 390, 395, 400

LITH GRAPH; ALT GRAPH; STRCT

DEPTH	STRCT	COMMENTS
350–355	0° Si-Py; 55° INT; 0-5° Si-Py	354': DRUSY QUARTZ PICKS UP IN PYRITIC VNS, & IS PRESENT TO 390'. FROM 393' WHT SPARRY CALCITE PICKS UP.
355–360	55° FLOW	358-458': BUFF BLEACHED, APHANITIC, AMPHIBOLE ~~AP~~ RICH ANDESITE, CONTINUES
360–365		
365–370	25° INT; 15° PyVN	
370–375	55° FLOW	373': RUDDY, FLOW BAND // STREAK.
375–380	10° Si-Py; 20° PyVN	375': FIRST SPARRY CALCITE SEEN IN PYRITIC VNS.
380–385	60° FLOW; 25°	378-384': 2 TYPES & GENERATIONS OF 'FLOW' FOLIATION. 25° CUTS 60°. SLIGHTLY MORE ARGILLIC & BLEACHED IN THIS INTERVAL.
385–390	15° Si-Py; 60° FLOW	
390–395	60°	
395–400	20° PyVN	398': VEIN-CONTROLLED CALCITE BECOMES COMMON. (WK TO MOD., V. LOCAL)

SAMPLE INT

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 8
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/22/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-394C

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING: REC/CUT	DRILLING: RQD	LITHOLOGY: ALLUVUM	MUD CGL		LITH TUF	PUM TUF	SURGE TUF	ASH FALL	LAVA	AUTOBXV	INTRUSIVE	BASALT	ANDESITE	RHYOLIT	STRUCT: TEC	BRX	GOUGE	VOID	ALTERATION/MINLIZATION: Fe MIN: MNOX	HEMTIT	LIMONIT	PYRITE	PROP	ARG	ARG2	RPL	SILIL	QTZVNS	CALCITE	METCLAS	STRAT: BADGER	CHOCOLT	UBUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCT	COMMENTS	SAMPLINT
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37						
400																																								400					
																	1						2		1					2														0-10° PYVN	CONTINUED LT. TAN-GREY, FLOW FOLIATED, APHANITIC AMPHIBOLE ANDESITE.	
																																										60° FLOW	404': PYRITIC VNING DECREASES TO WK, PYRITIC BLEBS IN GROUNDMASS REMAIN MODERATE, DISSEMINATION DECREASES.	
405																																								405		25° FLOW	408': 25° FOLIATION CUTS 60° FOLIATION, AS SEEN ELSEWHERE- (SHEAR? FLOW)	
																														1															
410																																								410		30° PYVN		
415																																								415					
																																										55° FLOW		
420																																								420					
																														2													0° PYVN		
425																																								425					
																														2													55° FLOW		
430																																								430		30° PYVN		
																																										10° PYVN		
435																																								435		35-45° JNTS		
																																										50° FLOW		
440																														2										440		0° PYVN		
																									2																	60° JNT		
445																																								445					
																														1															
450																																								450					

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 9
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (FT), RECOVERY/CUT, RQD

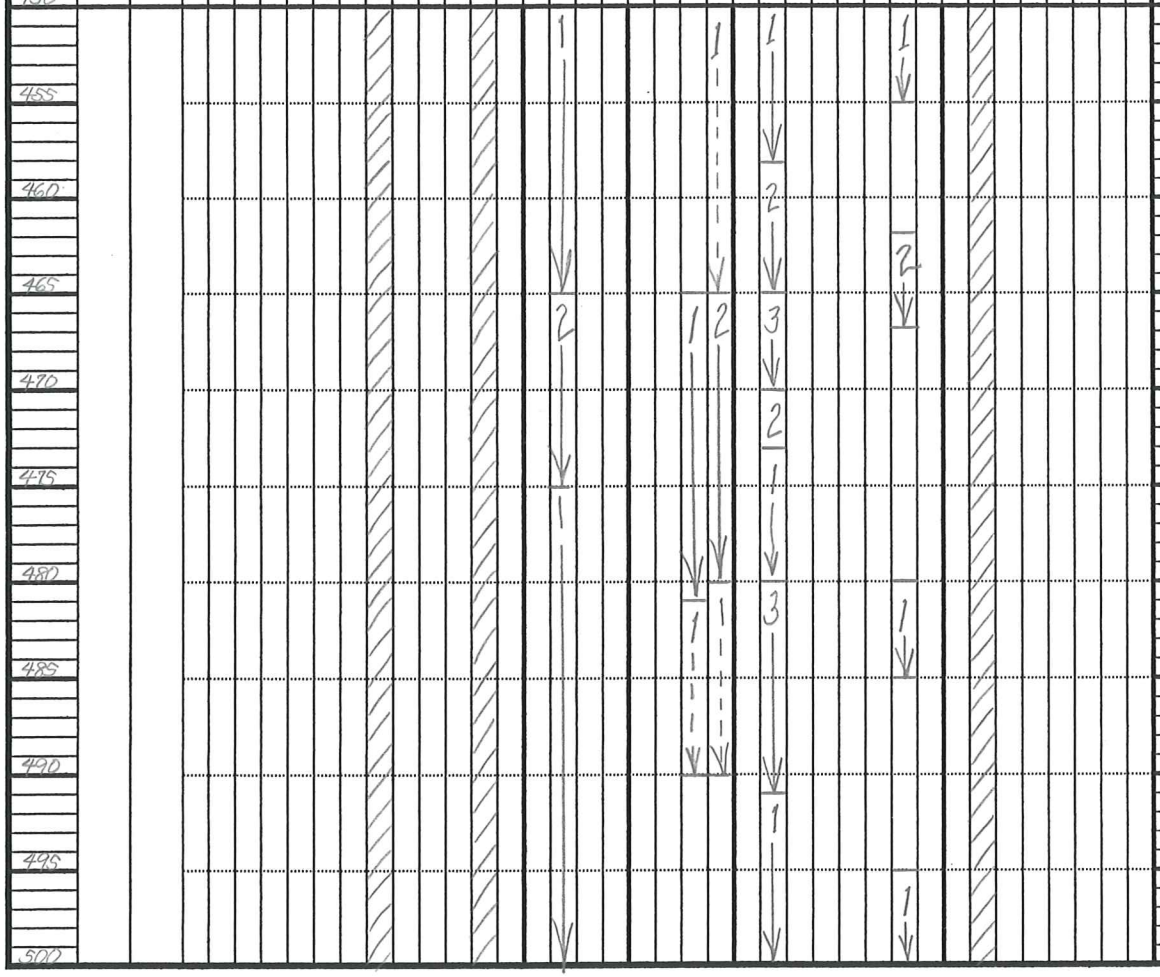
LITHOLOGY: ALLUVIUM, MUDCGL, LITHTUF, PUMTUF, SURGTUF, ASH FLO, LAVA, AUTOBXV, INTRUSV, BASALT, ANDESIT, RHYOLIT

STRUCT: TEC BXA, BROKEN, GOUGE, VOID

ALTERATION/MINLIZATION: Fe MIN (MNOX, HEMTIT, LIMONIN, PYRITE), PROP, ARG, ARG2, REPL SIL, QTZ VNS, CALCITE, METCILAS

STRAT: BADGEOR, CHOCOLT, UBUD, BRADY, MKRPOR, LBUD, WLDROS, DOZER

DEPTH (FT) 450–500



COMMENTS

457' = XENOLITH.

458': ARGILLIZATION AND BLEACHING INCREASE- ROCK BECOMES WHITE, GRAY EXCEPT WHERE WK Lm Ox STAINING BLEEDS OFF Py VNS INTO WALLROCK. THIS ZONE OF SLIGHTLY STRONGER ARGILLIZATION CONTINUES TO 490'. FLOW FOLIATION IS EITHER ABSENT OR OBSCURED THROUGH HERE.

404'-465': PYRITE VEINING AND DISSEMINATION REMAIN WEAK THROUGH THIS INTERVAL, BLEBS MODERATE & DISSEMINATN TRACE TO ABSENT.

465'-481': MODERATE PYRITE VEINING & SPOTTING.

473': BLADED MARCASITE ± GRN CHLORITE ON FRX

+ CHALKY WHT CLAY SELVAGES

481-490': WK PYRITE SPOTTING W/O VNING.

490'- : PYRITE ABSENT OR TR.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 10
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DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (FT) | REC/CUT | Q

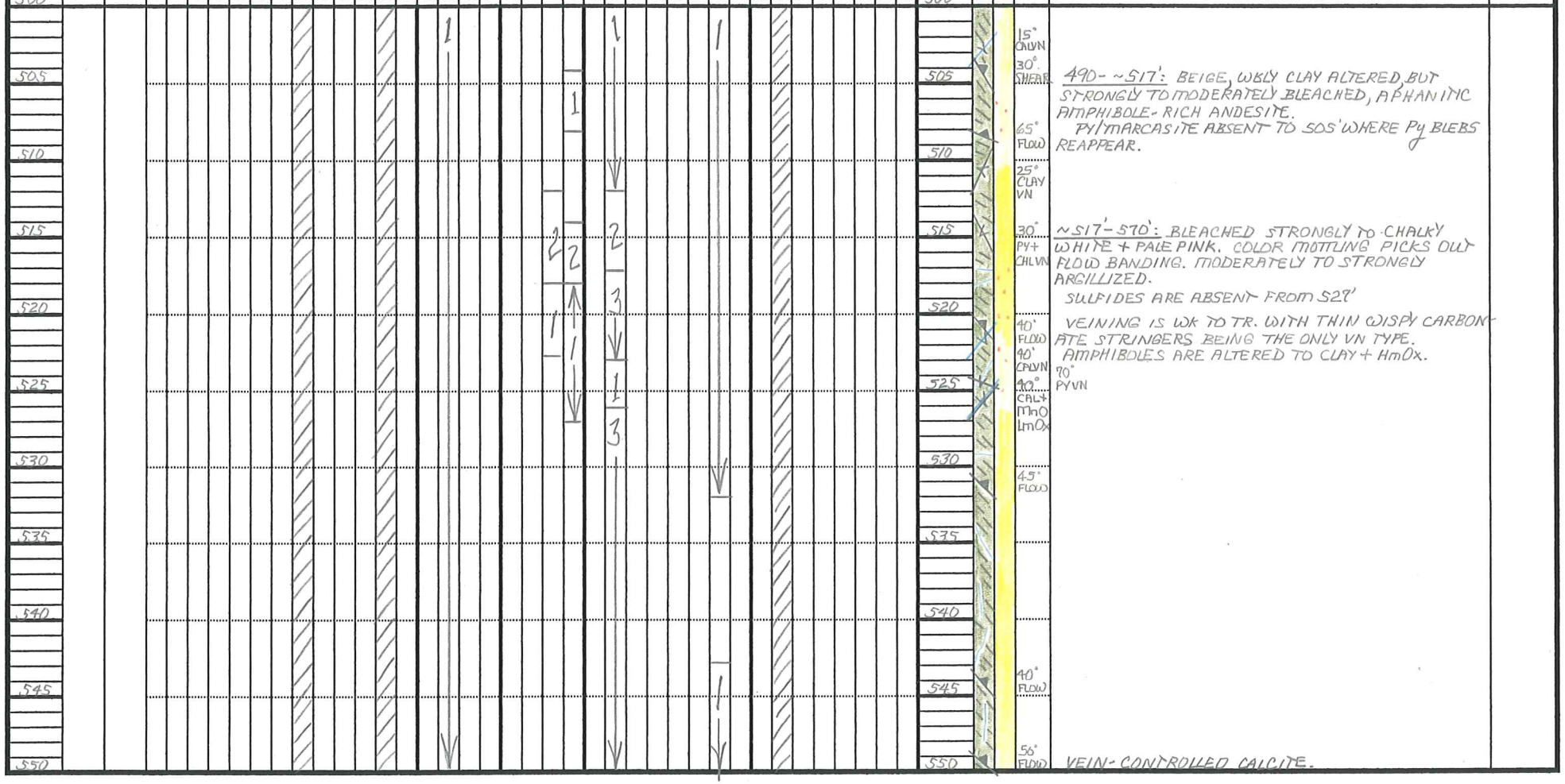
LITHOLOGY: ALLUVIUM (1) | MUD CGL (2) | (3) | LITHTUF (4) | PUMTUF (5) | SURGTUF (6) | ASH FLO (7) | LAVA (8) | AUTOBX (9) | INTRUSIV (10) | (11) | BASALT (12) | ANDESITE (13)

STRUCT: TEC (14) | BRKEN (15) | GOUGE (16) | VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18) | HEMTIT (19) | LIMONITE (20) | PYRITE (21) | PROP (22) | ARG (23) | ARG2 (24) | RPL SIL (25) | (26) | QTZ VNS (27) | CALCITE (28) | METCLAS (29)

STRAT: BADGER (30) | CHOCOLT (31) | (32) | BUD (33) | BRADY (34) | MKPOR (35) | LBUD (36) | WILDROS (37) | DOZER

DEPTH (FT) | LITHGRAPH | ALTGRAPH | STRCNT | SAMPLINT | COMMENTS



490- ~517': BEIGE, WBLY CLAY ALTERED BUT STRONGLY TO MODERATELY BLEACHED, APHANITIC AMPHIBOLE-RICH ANDESITE.
PY/MARCASITE ABSENT TO 505' WHERE Py BLEBS REAPPEAR.

~517'-570': BLEACHED STRONGLY TO CHALKY WHITE + PALE PINK. COLOR MOTTLING PICKS OUT FLOW BANDING. MODERATELY TO STRONGLY ARGILLIZED.
SULFIDES ARE ABSENT FROM 528'
VEINING IS WK TO TR. WITH THIN WISPY CARBONATE STRINGERS BEING THE ONLY VN TYPE.
AMPHIBOLES ARE ALTERED TO CLAY + HmOx.

VEIN-CONTROLLED CALCITE.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 11
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (550–600); RECOVERY/CUT; R; QD

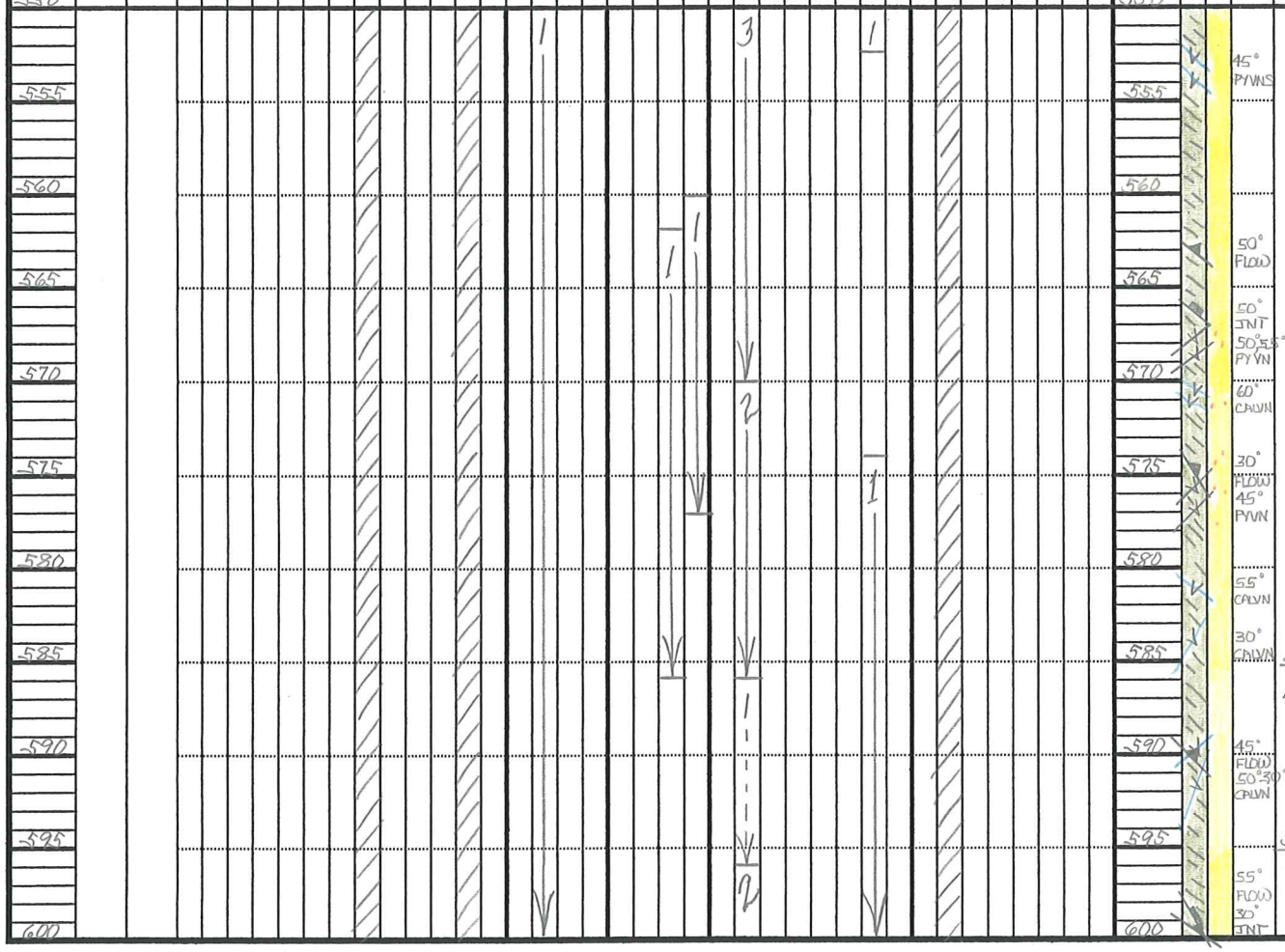
LITHOLOGY: ALUVUM (1), MUD CGL (2), (3), LITHUF (4), PUMTUF (5), SURGUF (6), ASHFLO (7), LAVA (8), AUTOBX (9), INTRUSV (10), BASALT (11), ANDESIT (12), RHYOLIT (13)

STRUCT: TEC BXA (14), BROKEN (15), GOUGE (16), VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18), HEMTIT (19), LIMONIT (20), PYRITE (21); PROP (22), ARG (23), ARGP (24), ARGL (25), (26), QTZVNS (27), CALCITE (28), METASIL (29)

STRAT: BACHOCOLAD (30), CHOCOLAT (31), (32), BRAUD (33), MKRBRAD (34), LBUD (35), WILDROS (36), DOZER (37)

DEPTH (550–600); LITHGRAPH; ALTGRAPH; STRCT



570–586': STILL STREAKED PINK & WHT, BUT DECREASINGLY BLEACHED & ARGILLIZED.

586–596': PALE DUSTED PURPLE w/ PINKISH FLOW FOLIATIONS & DARK MAROON AMPHIBOLE. HARD & ONLY WKLY BLEACHED.

596–609': STREAKED PALE GREY & PINK WITH MODERATE BLEACHING & ARGILLIZATION.

VEIN CONTROLLED CALCITE.

SAMPLE INT

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 12
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT								DEPTH	LITH GRAPH	ALT GRAPH	STRCT	SAMPLE INT
DEPTH FT	REC/CUT	R Q	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC. CBXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX	HEMIT	LIMON	PYRITE	PROP	ARG	ARG2	RPL SIL		QTZ VNS	CALCITES	MET CLAS	BADGER	HOCOLT		CUD	BRADY	MKR POR	LBUD	WILDROS	DOZER					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37					
600																																								600				
																	1								2					1															
605																																								605				
																																											50° FLOW	
610																																								610			35° FLOW	609-623': PALE PURPLE WITH PINK FLOW FOLIATION & DARK MAROON AMPHIBOLE. HARD & ONLY WKLY BLEACHED.
615																														2										615				
																																											20°50° CALVN SLICKS	25° 617': CALCITIC SLICKS ON JNT
620																																								620			60° FLOW	
																														1														
625																									?															625				
																														2													55° FLOW	627': GRN (CHLORITIC) XENOLITH.
630																																								630				623-636': STREAKED PALE GREY AND GRY-PINK.
																														1														
635																									1															635				
																																											50° JNT	636'-657': DUSKY PURPLE GROUNDMASS WITH PURPLE-GRY FLOW BANDS & DK MAROON AMPHIBOLES. TR. TO WK HmOx STAINING.
																														2													45° FLOW	
640																																								640				
																																											25° CALV HMVN	600-650':
645																																								645				~1 JOINT EVERY ~10-20'. V. SPARSE. WEAK SPARRY CALCITE ON FRX.
																																											50° FLOW	
650																																								650				

COMMENTS

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 13
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (650); RECOVERY; Q

LITHOLOGY: ALLUVIUM (1); MUDCGL (2); (3); LITHTUF (4); PUMTUF (5); SURGTUF (6); ASH FLO (7); LAVA (8); AUTOBXV (9); INTRUSV (10); BASALT (11); ANDESITE (12); RHYOLITE (13)

STRUCT: TEC BXA (14); BROKEN (15); GOUGE (16); VOID (17)

ALTERATION/MINLIZATION: Fe MIN: MNOX (18); HEMTIT (19); LIMONITE (20); PYRITE (21); PROP (22); ARG (23); ARG2 (24); RPLSIL (25); (26); QTZVNS (27); CALCITE (28); METCLAS (29)

STRAT: BADGER (30); CHOCOLT (31); UBUD (32); BRADY (33); MKRPOR (34); LBUD (35); WILDROS (36); DOZER (37)

DEPTH (650); LITHGRAPH; ALTGRAPH; STRCT; SAMPLINT

COMMENTS

- 30° JNT
- 55° FLDW — WK ALTERATION TO 657' DESCRIPTN: P.12.
- 0° CALT HMOX — 657-658.5', 660-665', 666.5-671': BLEACHED TAN ZONES IN HARD ROCK. WK TO MOD. ARGILLIZATION. 662-664 & 667-669': WHT CLAY ON FRX. ZONES SURROUNDED BY DUSKY PURPLE WKLY ALTERED ROCK. WKLY PYRITIC ONLY WHERE BLEACHED WITH PYRITE MOST CLOSELY ASSOCIATED WITH WHT CLAY VNING.
- 20° 15 CLAY VNS 50 FLDW
- 20° JNT
- 40° HMOX
- 60° JNT — 674-692': TAN BLEACHED. HARD. WK ARGILLIC
- 45° FLDW
- 40° CALVN
- 50° FLDW
- 685-688': WHT CLAY ON FRAX
- 15° JNT
- 65° FLDW
- 0° CALVN 40° JNT — 650-700': CONTINUED APHANITIC, AMPHIBOLE-RICH, ANDESITE WITH WEAK INTERMITTENT ALTERATION.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 14
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

DRILLING: DEPTH FT | REC / CUT | RQD

LITHOLOGY: 1 ALLUVIUM | 2 MUD CGL | 3 | 4 LITH TUFF | 5 PUM TUFF | 6 SURGE TUFF | 7 ASH FLO | 8 LAVA | 9 AUTO BX | 10 INTRUS V | 11 BASALT | 12 ANDESIT | 13 RHYOLIT

STRUCT: 14 TECT. BRECXA | 15 BROKEN | 16 GOUGE | 17 VOID

ALTERATION/MINLIZATION: Fe: 18 MNOX | 19 HEMMT | 20 LIMONT | 21 PYRITE | MIN: 22 PROP | 23 ARG | 24 ARG 2 | 25 RPL SIL | 26 | 27 QTZ VNS | 28 CALC ITE | 29 METCALS

STRAT: 30 BADGER | 31 CHOCOL | 32 UBCUD | 33 BRADY | 34 MKR PORR | 35 LBUD | 36 WILDROS | 37 DOZER

DEPTH FT | LITHGRAPH | ALTGRAPH | STRCT NT | COMMENTS | SAMPL INT

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

Depths: 700, 705, 710, 715, 720, 725, 730, 735, 740, 745, 750

Structure: 55° FLOW; 35° JNT; 40° FLOW; 35°; 20°; 20° CALVN; 45° JNT; 55° FLOW; 65° FLOW; 35° JNT; 50° CALVN; 55° FLOW

COMMENTS

692-703': DUSTY PURPLE + RUDDY PURPLE FLOW FOLIATIONS. HARD WITH DARK AMPHIBOLE EARTHY HmOX ON FRX.

703'-723': LARGELY BLEACHED TAN WITH MINOR INTERVALS OF HARD PURPLE ROCK.

707-711': WHT CLAY FRX.

723-735': DUSTY PURPLE + RUDDY PURPLE FLOW FOLIATIONS. HARD WITH DARK AMPHIBOLES. EARTHY HmOX ON FRX.

~727': MINOR CALCITE & ROCK FLOUR CEMENTED MOSAIC BXA. FULLY HEALED.

735-744.5': TAN & PINK-TAN, FLOW FOLIATED MOD'LY BLEACHED & ARGILLIZED ANDESITE.

744.5-753': DUSTY PURPLE + RUDDY PURPLE FLOW FOLIATIONS. HARD W/ DK MAROON AMPHIBOLES. EARTHY HmOX ON FRAX.

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DRILLING: DEPTH (750, 755, 760, 765, 770, 775, 780, 785, 790, 795, 800); RECOVERY; Q

LITHOLOGY: 1 ALLUVIUM; 2 MUD; 3 CGL; 4 LITHUF; 5 PUMTUF; 6 SURGTUF; 7 FILO; 8 ASHAVA; 9 LAUTOBX; 10 AIRINTUSV; 11 BASALT; 12 ANDESIT; 13 RHYOLIT

STRUCT: 14 TECBXA; 15 BROKEN; 16 GOUGE; 17 VOID

ALTERATION/MINLIZATION: Fe MIN: 18 MNOX; 19 HEMTIT; 20 LIMONIT; 21 PYRITE; 22 PROP; 23 ARG; 24 ARG2; 25 APL SILICA; 26 CHLORITE; 27 QTZVNS; 28 CALCITE; 29 METCLAS

STRAT: 30 BACDGERL; 31 CHOCOLT; 32 UBUD; 33 BRADY; 34 MKRPOR; 35 LBUD; 36 WILDROS; 37 DOZER

DEPTH FRAPH; ALTGRAPH; STRCNT

SCALE: 1" = 10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

SAMPLINT

COMMENTS

40° FLOW

753-770': MODERATELY BLEACHED & ARGILLIZED WHT & PINK FLOW FOLIATED ANDESITE. THERE IS A FAINT GRNISH TINGE TO THE ROCKS BY ~ 760' THAT INCREASES DOWNHOLE. BY 784' JOINTS ARE SLICKED WITH ULTRA-FINE, FOREST GREEN CHLORITE + MARCASITE.
TRACE TO MODERATE EARTHY RED HMOX ON FRAX THROUGHOUT THIS INTERVAL.

50° FLOW
40° JNT
10° JNT
0° CALVN
15° JNT
40° CALVN

770-780': MASSIVE, PALE FLESH PINK ANDESITE; MODERATELY CALCITE VEINED FROM ~ 773 TO 780'.

35° 50° JNTS
70° FLOW
10° CHL JNT
65°
55° JNT

784' - : CHLORITE + MARCASITE BLEBS ON JOINTS.

40° CALVN

780'-789' : FULLY HEALED FLESH-COLORED VEINLET STOCKWORK IN PALE GREENISH ROCK. FLOW BANDING REAPPEARS THE GROUNDMASS IS STREAKED GREY & WHT. THIS ~~IS~~ OVERPRINTS(?) ~~BY~~ THE STKWK/BRECCIA, WHICH DOES NOT DISRUPT THE BANDING.

789'-832' BXA

789-832': AUTOBRECCIATED ANDESITE CHILLED BASE. ANGULAR BLOCKS OF →

P16

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DATE: 02/21/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

789-794': MATRIX-SUPPORTED ANDESITE AUTOBXA.

DRILLING: DEPTH, RECOVERY, Q

LITHOLOGY: ALLUVIUM, MUD CGL, LITHTUF, PUMTUF, SURGTUF, FALL, AVA, AUTOBX, INTRUSIV, BALST, ANDESIT, ALTHY, OLIGD

STRUCT: TEC, BRO, GOUGE, VOID

ALTERATION/MINLIZATION: Fe MIN (MNOX, HEMT, LIMON, PYRITE), PROP, ARG, ARGL, SILNS, QTZVN, CALCITE, METALS

STRAT: BACHDOGEL, CHOCOLATE, BUD, BRADY, MKRPOR, BLUD, WLDROS, DOZER

DEPTH (FT)	COMMENTS
800	
	789': PERLITIC CRACKLE BRECCIA/STOCKWORK IN INTACT VERY APHANITIC ANDESITE GIVES WAY TO TRUE BRECCIA IN WHICH ANGULAR TO SUB-ROUNDED FRAGMENTS OF PERLITIC AMPHIBOLE-RICH ANDESITE. FRAGMENTS ARE PALE GREEN & THE ROCK FLOURY MATRIX IS DULL FLESH-COLORED. BOTH ARE WEAKLY TO MOD'LY PROPYLLITIZED.
805	75° JNT
	794-803': MATRIX-SUPPORTED ZONE WITH 40-60% RUDDY ROCK FLOUR MATRIX. 797': ROUNDED ULTRA-FINE-GRAINED PERLITIC ANDESITE FRAGMENT. CLASTS LIKE THESE ARE ALMOST CERTAINLY JUVENILE.
810	30° CALVN
815	
	803-819': CLAST-SUPPORTED CRACKLE TO MOSAIC BRECCIA. MATRIX-POOR. MONOLITHIC AS ABOVE, WITH PALER GRN PERLITIC FRAGMENTS THAT WERE LIKELY GLASSY AT THE TIME OF EMPLACEMENT. PROPYLLITIZED ANDESITE BASAL AUTOBRECCIA.
820	30° CALVN
825	
	INTERMITTENT CALCITE + BLADED MARCASITE VEINING IN THIS SUBUNIT. TRUE JOINTING IS SPARSE TO ABSENT. ~~V. WK~~ TR. DISS'D PY. CALCITE IS VEIN CONTROLLED TO 848'.
830	60° SHEAR
	CONTACT: BRECCIATED, GRADATIONAL OVER ~10'. CONFORMABLE.
835	~0° CALCY CLAY VNLTS
	832' - 888' UPPER BUD. BUD SURGE MATERIAL WAS POORLY INDURATED AT EMPLACEMENT.
	45° BED
	832': FIRST BUD SURGE TUFF MATERIAL SEEN. CONTAINS SLIGHTLY RUDDY, ANGULAR, PLAG + MAFIC-BEARING, 'TYPE' CHOCOLATE FRAGMENTS. MINGLED IN WITH THIS ARE V. PALE GREEN STRONGLY PERLITIC ROUND V. FINE-GRAIN ANDESITE BLOBS. THESE APPEAR TO BE JUVENILES INTRODUCED AFTER THE EMPLACEMENT OF THE BEDDED SURGE TUFF (834').
840	
845	
	~841-848': JUVENILE PALE GREEN ANDESITE? CAUGHT UP IN BUD SURGE BEDS, DOMINATES THIS INTERVAL.
	60° FLOW BED
850	848'-~880': VCG SAND TO FINE PEBBLE SURGE BEDS.

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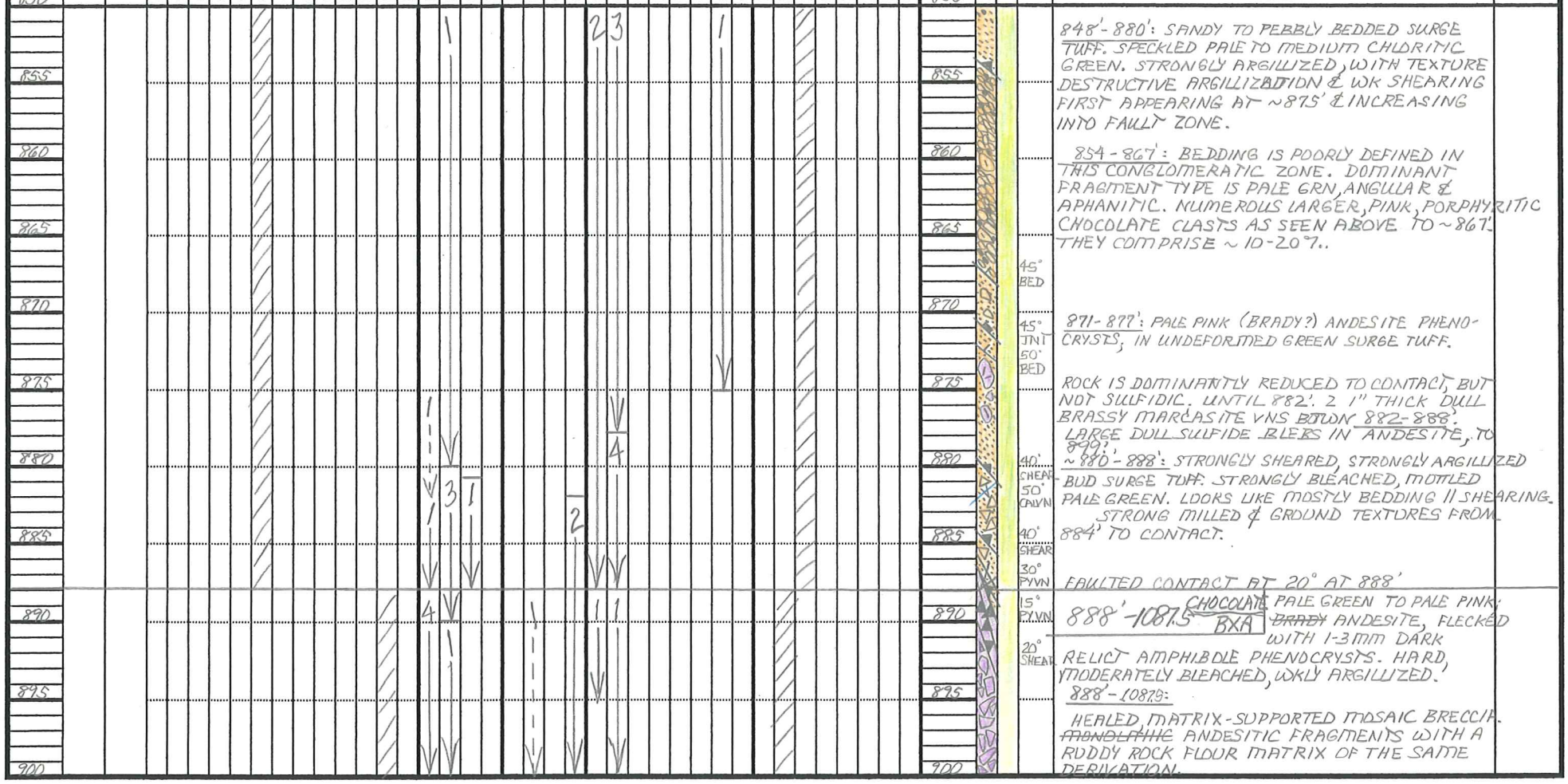
SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff



848'-880': SANDY TO PEBBLY BEDDED SURGE TUFF. SPECKLED PALE TO MEDIUM CHLORITIC GREEN. STRONGLY ARGILLIZED, WITH TEXTURE DESTRUCTIVE ARGILLIZATION & WK SHEARING FIRST APPEARING AT ~875' & INCREASING INTO FAULT ZONE.

854-867': BEDDING IS POORLY DEFINED IN THIS CONGLOMERATIC ZONE. DOMINANT FRAGMENT TYPE IS PALE GRN, ANGULAR & APHANITIC. NUMEROUS LARGER, PINK, PORPHYRITIC CHOCOLATE CLASTS AS SEEN ABOVE TO ~867'. THEY COMPRISE ~ 10-20%..

871-877': PALE PINK (BRADY?) ANDESITE PHENOCRYSTS, IN UNDEFORMED GREEN SURGE TUFF.

ROCK IS DOMINANTLY REDUCED TO CONTACT, BUT NOT SULFIDIC. UNTIL 882'. 2 1" THICK DULL BRASSY MARCASITE VNS BTWN 882-888'. LARGE DULL SULFIDE BLEBS IN ANDESITE, TO 899'.

~880'-888': STRONGLY SHEARED, STRONGLY ARGILLIZED BUD SURGE TUFF. STRONGLY BLEACHED, MOTTLED PALE GREEN. LOOKS LIKE MOSTLY BEDDING // SHEARING. STRONG MILLED & GROUND TEXTURES FROM 884' TO CONTACT.

FAULTED CONTACT AT 20° AT 888'

888'-1087.5 CHOCOLATE BXA ~~BRADY~~ PALE GREEN TO PALE PINK ANDESITE, FLECKED WITH 1-3mm DARK RELICT AMPHIBOLE PHENOCRYSTS. HARD, MODERATELY BLEACHED, WKLY ARGILLIZED.

888'-1087.5:

HEALED, MATRIX-SUPPORTED MOSAIC BRECCIA. ~~MONOLITHIC~~ ANDESITIC FRAGMENTS WITH A RUDDY ROCK FLOUR MATRIX OF THE SAME DERIVATION.

PROJECT: Rosebud JV	UTM: NK 11--10--06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 19
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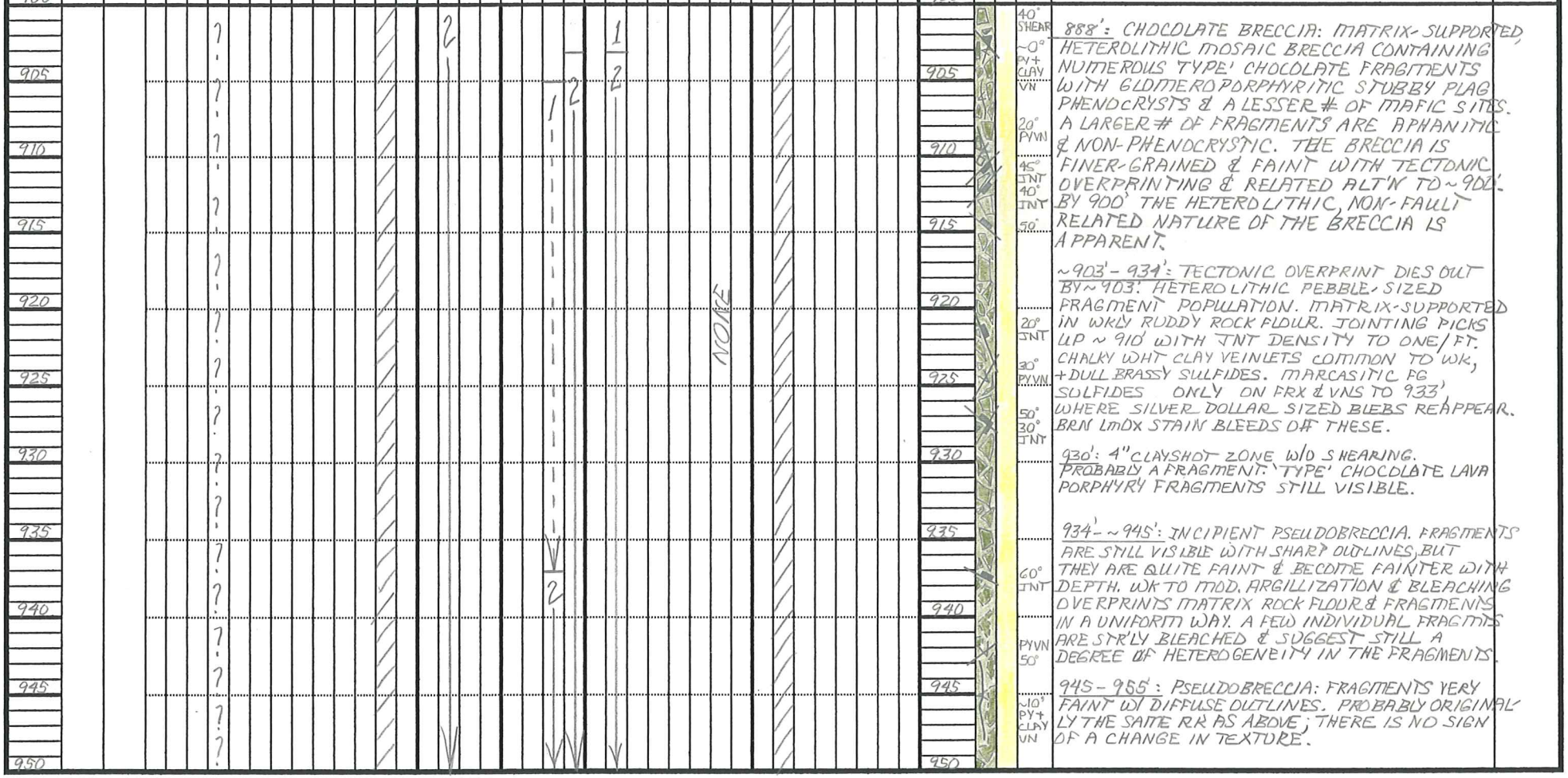
SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff



COMMENTS

888': CHOCOLATE BRECCIA: MATRIX-SUPPORTED, HETEROLITHIC MOSAIC BRECCIA CONTAINING NUMEROUS TYPE' CHOCOLATE FRAGMENTS WITH GLOMEROPORPHYRITIC STUBBY PLAG PHENOCRYSTS & A LESSER # OF MAFIC SITES. A LARGER # OF FRAGMENTS ARE APHANITIC & NON-PHENOCRYSTIC. THE BRECCIA IS FINER-GRAINED & FAINT WITH TECTONIC OVERPRINTING & RELATED ALT'N TO ~902'. BY 900' THE HETEROLITHIC, NON-FAULT RELATED NATURE OF THE BRECCIA IS APPARENT.

~903'-934': TECTONIC OVERPRINT DIES OUT BY ~903'. HETEROLITHIC PEBBLE-SIZED FRAGMENT POPULATION. MATRIX-SUPPORTED IN WKLY RUDDY ROCK FLOUR. JOINTING PICKS UP ~ 910' WITH JNT DENSITY TO ONE/FT. CHALKY WHT CLAY VEINLETS COMMON TO WK, + DULL BRASSY SULFIDES. MARCASITIC FG SULFIDES ONLY ON FRX & VNS TO 933' WHERE SILVER DOLLAR SIZED BLEBS REAPPEAR. BRN LmOx STAIN BLEEDS OFF THESE.

930': 4" CLAYSHOT ZONE W/O SHEARING. PROBABLY A FRAGMENT. 'TYPE' CHOCOLATE LAVA PORPHYRY FRAGMENTS STILL VISIBLE.

934'-~945': INCIPIENT PSEUDOBRECCIA. FRAGMENTS ARE STILL VISIBLE WITH SHARP OUTLINES, BUT THEY ARE QUITE FAINT & BECOME FAINTER WITH DEPTH. WK TO MOD. ARGILLIZATION & BLEACHING OVERPRINTS MATRIX ROCK FLOUR & FRAGMENTS IN A UNIFORM WAY. A FEW INDIVIDUAL FRAGMTS ARE STR'LY BLEACHED & SUGGEST STILL A DEGREE OF HETEROGENEITY IN THE FRAGMENTS.

945-955': PSEUDOBRECCIA: FRAGMENTS VERY FAINT W/ DIFFUSE OUTLINES. PROBABLY ORIGINALLY THE SAME RK AS ABOVE; THERE IS NO SIGN OF A CHANGE IN TEXTURE.

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DRILLING — DEPTH FT, REC/CUT, RQD

LITHOLOGY — 1 ALLUVIUM, 2 MUD CGL, 3, 4 LITH TUFF, 5 PUM TUFF, 6 SURG TUFF, 7 SHALFLO, 8 LAVA, 9 AUBX, 10 INTRUSV, 11 BASALT, 12 ANDESIT, 13 RHYOLIT

STRUCT — 14 TE.C BXA, 15 BROKEN, 16 GOUGE, 17 VOID

ALTERATION/MINLIZATION — Fe MIN: 18 MNOX, 19 HEMTIT, 20 LIMOIN, 21 PYRITE; 22 PROP, 23 ARG, 24 ARG 2, 25 RPSIL, 26, 27 QTZVNS, 28 CALCITE, 29 METALS

STRAT — 30 BADGER, 31 CHOCOLT, 32 UBUD, 33 BRADY, 34 MKPOR, 35 LBUD, 36 WILDROS, 37 DOZER

DEPTH FT: 950 – 1000 (955, 960, 965, 970, 975, 980, 985, 990, 995, 1000)

Column 4 (LITH TUF): ? (throughout 950–1000)

Column 12 (ANDESIT) and column 30 (BADGER): hatched 950–1000

Column 15 (BROKEN): 2 (950–1000)

Column 21 (PYRITE): 2 (950–957), 1 (958–972)

Column 23 (ARG): 2 (950–956), 1 (957–1000)

Column 28 (CALCITE): 2 (963–1000)

DEPTH	STRUCT
955	40° 35° PYVN
~963	30° JNT
~972	20° JNT
~981	40° JNT
~984	40° JNT
~990	45° JNT
~998	40° JNT

SCALE: 1" = 10 ft

LITH. EXPLANATION:

- MUD CGL — Mud matrix conglomerate
- LITH TUF — Lithic clast dominant tuff
- PUM TUF — Pumice rich tuff
- SURGE TUF — Bedded matrix rich lithic tuff

SAMPL INT

COMMENTS

~955': MARCASITE & LmOx DIES OUT TO TRACE. BASE ROCK COLOR IS PALE BUFF TAN. THE CHOCOLATE BRECCIA IS HETEROLITHIC WRT CHOCOLATE LITHOLOGIES THO IT CONTAINS FEW OTHERS. MATRIX-SUPPORTED WITH A MATRIX CONSISTING OF COMMINUTED CHOCOLATE & SMALL CHOCOLATE FRAGMTS.
LOOKS IDENTICAL TO MIXED LITHOLOGY CHOCOLATE BXA IN RL-110.
FRAGMENTS = SUB-ANGULAR TO SUB-ROUNDED & LARGE PEBBLE TO SMALL COBBLE.

FROM 963': DISSEMINATED CALCITE, +/- SPARRY VEIN CALCITE.

SOME FLESH-COLORED FRGMTS & LOCALLY A FAINT PINK TINGE TO THE MATRIX.

~985': JOINTING DECREASES BELOW

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DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING: DEPTH FT | REC/CUT | RQD

LITHOLOGY: 1 ALLUVIUM | 2 MUD CGL | 3 | 4 LITH TUFF | 5 PUM TUFF | 6 SURG TUFF | 7 ASH FLO | 8 LAVA | 9 AUTO BX | 10 INTRUS V | 11 BASALT | 12 ANDESIT | 13 RHYOLIT

STRUCT: 14 TEC. BXA | 15 BROKEN | 16 GOUGE | 17 VOID

ALTERATION/MINLIZATION: Fe MIN: 18 MNOX | 19 HEMMIT | 20 LIMONIT | 21 PYRITE | 22 PROP | 23 ARG | 24 ARG 2 | 25 RPSIL | 26 | 27 QTZ VNS | 28 CALCITES | 29 METCLAS

STRAT: 30 BAHDGER | 31 CHOCOLT | 32 UBUDY | 33 BRADY | 34 MKRPOR | 35 LBUD | 36 WILDROS | 37 DOZER

DEPTH FT | LITH GRAPH | ALT GRAPH | STRCT NT | SCALE: 1" = 10 ft | SAMPL INT

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

COMMENTS

Depth: 1000, 1005, 1010, 1015, 1020, 1025, 1030, 1035, 1040, 1045, 1050

Lithology (col. 4): ? (1000–1050); col. 12: hatched (1000–1050)

Struct (col. 15): 1 (1000–1050)

Alteration: col. 20: 1 (1016.5–1050); col. 21: 1 (1016.5–1018), 2 (1018–1029), 1 (1029–1044), 2 (1044–1050); col. 23: 1 (1000–1050); col. 28: 2 (1000–1050)

Strat (col. 31): hatched (1000–1050)

STRCT	COMMENTS
35° CALVN	963'–1087.5 : BUFF CRM TO PALE PINK, HETERO-LITHIC BRECCIA. THE MATRIX CONTINUES TO BE ENTIRELY VOLCANIC, & PROBABLY VOLCANO-CLASTIC AS IN RL-110. SEE DESCRIPTION ON P.20. DISSEMINATE & VN CALCITE = MOD.
65° JNT	~1015': DULL BRASSY SULFIDE BLEB REAPPEAR. WK. NO DISSEMINATION, NO VEINING.
60°	
60°	
50° JNT	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 22
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	DRILLING REC/CUT	DRILLING RQD	LITHOLOGY 1 ALLUVUM	2 MUDCGL	3	4 LITHTUF	5 PUMTUF	6 SURGTUF	7 ASHFLO	8 LAVA	9 AUTOBX	10 INTRUSV	11 BASALT	12 ANDESIT	13 RHYOLIT	STRUCT 14 TECBXA	15 BROKEN	16 GOUGE	17 VOID	ALTERATION/MINLIZATION Fe MIN 18 MNOX	19 HEMTIT	20 LIMON	21 PYRITE	22 PROP	23 ARG	24 ARG2	25 RPLSIL	26	27 QTZVNS	28 CALCITES	29 METCLAS	STRAT 30 DGERCOL	31 CHOCOLT	32 BUD	33 BRADY	34 MKRPOR	35 LBUD	36 WLDROS	37 DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCT	SAMPLINT
1050																																								1050				
						?											1						1		1					2													30° PYVN 30° CLAY VN	
1055																																								1055				
						?																																							
1060																																								1060				
						?																								1															
1065																																								1065			80° PYVN	
						?																																					CA+ PYVN	
1070																																								1070			65° JNT	
						?																																							
1075																	2					1																		1075			50° CLAY VN 80° JNT	
						?																																							
1080																																								1080				
						?																																							
1085																																								1085				
						?																																				60° JNT	
						?										4	4	1							2					2													60° CNTCT	
1090																																								1090				
																							1																				60° JNT	
1095																6									4															1095			40° 30°	
																																											40° SHEAR	
1100																																								1100				

COMMENTS

963-1087.5': STRONGLY BLEACHED, BUT ONLY WEAKLY ARGILLIZED WKLY HETEROLITHIC CHOCOLATE BRECCIA (& POSSIBLE LITHIC TUFF). GLOMEROPORPHYRITIC PLAG ARE IN EVIDENCE TO THE BASE OF THE UNIT.

1050-1053 & 1072-1082': MOD. TO WK WHT CLAY VNING IN THESE INTERVALS ASSOCIATED WITH WK Py.

1081-1087': LARGE PINK PLAG-BEARING CHOCOLATE FRAGMENTS.

CONTACT:

60° RED-TAN ANNEALED MYLONITE ZONE ~~AT THE~~

1087.5'-1096 FAULT BXA — MILLED TO MOSAIC BXA'D ZONE OF MIXED CHOCOLATE AND STONY DOZER RHYOLITE. 1088'-1092': GRN GOUGY CLAY MATRIX / PLAG-BEARING CHOCOLATE LAVA FRAGMENTS. FIRST APHANITIC STONY GRN (SAGE) RHYOLITE AT ~1093. LARGELY UNHEALED BXA.

1096'-1310' DOZER — TECTONIZED ZONE CONTINUED IN ESSENTIALLY INTACT DOZER; MILLED ZONE CONT'D TO 1100'.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 23
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DEPTH FT	REC/CUT	RQD	ALLUVUM (1)	MUDCGL (2)	(3)	LITHTUF (4)	PUMTUF (5)	SURGTUF (6)	ASHFLO (7)	LAVA (8)	AUTOBX (9)	INTRUSV (10)	BASALT (11)	ANDESIT (12)	RHYOLIT (13)	TEC BXA (14)	BRECKEN (15)	GOUGE (16)	VOID (17)	Fe MIN: MNOX (18)	HEMTIT (19)	LIMON (20)	PYRITE (21)	PROP (22)	ARG (23)	ARG2 (24)	RPLSIL (25)	(26)	QTZVNS (27)	CALCITE (28)	METCLAS (29)	BADGEOR (30)	CHOCOLT (31)	(32)	BRADY (33)	MKRPOR (34)	LBUD (35)	WLDROS (36)	DOZER (37)	DEPTH FT	LITHGRAPH	ALTGRAP	STRCT	SAMPLINT
1100																																								1100				
																	3						1		2					1															
1105																																								1105				
1110																	?																							1110				
1115																																								1115				
1120																																								1120				
1125																																								1125				
1130																																								1130				
1135																																								1135				
1140																																								1140				
1145																																								1145				
																2																													
1150																																								1150				

BELOW 1100 TO ~ 1145' THE RHYOLITE IS MOD'LY BLEACHED WHT, MOD'LY ARGILLIZED AND AUTOBRECCIATED THROUGHOUT. THE BRECCIATION RANGES FROM STR. STRWKING TO CLAST-SUPPORTED MOSAIC BRECCIA WITH SUB-ROUNDED FRAGMENTS THAT SUGGEST WK LOCAL MILLING.

WHT CLAY IS FOUND AS COATINGS ON IRREGULAR DISCONTINUOUS VEINLETS WITHIN THIS ZONE.

TRACE TO WK SULFIDES AS DISCRETE, SMALL BLEBS (~1 CM) AND DISCONTINUOUS VEINLETS.

CALCITE IS VEIN & VUG CONTROLLED & IS PRESENT IN ASSOCIATION WITH WHT CLAY COATINGS & VEINLETS.

FRX ARE COMMON, BUT CLEAN JOINTING IS NONE EXISTENT.

1145'-1150': MILLED ZONE WITHIN WHITE, MOD'LY FRIABLE & ARGILLIZED STONY RHYOLITE.

50° SHEAR

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 24
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-294C

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH FT; REC/CUT; RQD
LITHOLOGY: 1 ALLUVIUM; 2 MUD CGL; 3; 4 LITH TUF; 5 PUM TUF; 6 SURGE TUF; 7 ASH FLO; 8 LAVA; 9 AUTOBX; 10 INTRUSV; 11 BASALT; 12 ANDESIT; 13 RHYOLIT
STRUCT: 14 TECTBXA; 15 BROKEN; 16 GOUGE; 17 VOID
ALTERATION/MINLIZATION: Fe MIN: 18 MNOX; 19 HEMTIT; 20 LIMONIT; 21 PYRITE; 22 PROP; 23 ARG; 24 ARG 2; 25 RPSIL; 26; 27 QTZ VNS; 28 CALCITES; 29 METALS
STRAT: 30 BADGER; 31 CHOCOLT; 32 CUBUD; 33 BRADY; 34 MKRPOR; 35 LBUD; 36 WILDROS; 37 DOZER

DEPTH FT; LITH GRAPH; ALT GRAPH; STRCT ANGLE; COMMENTS; SAMPL INT

Depth 1150–1200 (marks at 1155, 1160, 1165, 1170, 1175, 1180, 1185, 1190, 1195, 1200).

Column	Interval	Value
15 BROKEN	1150–1190	2
15 BROKEN	1190–1200	1
22 PROP	~1182–1190	1
22 PROP	1190–1200	2
23 ARG	1150–1190	2
23 ARG	1190–1200	1
28 CALCITES	1150–1156	2
28 CALCITES	1156–1175	1
28 CALCITES	1175–1181	2
28 CALCITES	1181–1200	1

Struct angle at ~1175: 30° CLAY VN

COMMENTS

1150' - 1177': DOZER MONOLITHIC AUTO-BRECCIA CONTINUES DOWNHOLE TO 1177', WITH A SECOND INTERVAL BTWN 1185'-1189' THAT GRADES DOWN INTO CRACKLE BRECCIA. THIS GRADES INTO STKWK & UNBROKEN ROCK BY 1195'.

FROM ~1190' THE GRAYISH-WHT MOD'LY BLEACHED & ARGILLIZED RHYOLITE TURNS GRADUALLY TO PALE GRN, & APPEARS HARDER & LESS GRAINY. THE ~~HOMOGENEOUS~~ PALE GREEN APHANITIC GROUNDMASS IS STOCKWORKED WITH GRAY MICROVEINLETS & IS DIFFUSELY STREAKED WITH DARKER GRY-GRN COLOR.

WK TO MOD. WHT CLAY ON FRX & IN VUGS CONTINUES TO →

1150-1160': WKLY MILLED TIGHT CLAST-SUPPORTED MONOLITHIC AUTOBXA WITH SUB-ROUNDED CLASTS; RUBBLE BXA

~1164': MOTTLING PSEUDOBXA OR METASOMAT-BXA. APPARENT MATRIX IS PALER THAN FRAGMENTS. ALL MAT'L APPEARS TO BE RHYOLITE & IS FULLY HEALED.
THIS IS OVERPRINTED BY UNHEALED BXATN OF THE TYPE DESCRIBED ABOVE BUT WEAKER.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 25
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

DRILLING: DEPTH (FT), RECOVERY, QUALITY

LITHOLOGY: 1 ALLUVIUM, 2 MUDCGL, 3, 4 LITHTUF, 5 PUMTUF, 6 SURGTUF, 7 ASH FLO, 8 ALAVA, 9 AUTOBX, 10 INTRUSV, 11 BASALT, 12 ANDESIT, 13 RHYOLIT

STRUCT: 14 TEC BXA, 15 BROKEN, 16 GOUGE, 17 VOID

ALTERATION/MINLIZATION: Fe MIN: 18 MNOX, 19 HEMTIT, 20 LIMONIT, 21 PYRITE; 22 PROP, 23 ARG, 24 ARG2, 25 RPLSIL, 26, 27 QTZVNS, 28 CALCITE, 29 METCLAS

STRAT: 30 BAGDOL, 31 CHOCOLT, 32 UBUD, 33 BRADY, 34 MKRPOR, 35 LBUD, 36 WILDROS, 37 DOZER

ALT GRAPH, ALT GRAP, STRCNT

SAMPLINT

Depth (ft)	Lith	Alt	Strcnt	Comments
1200				1200'- : STREAKED PALE SAGE GREEN & GRY-GRN INTACT DOZER RHYOLITE.
1205				FROM ~ 1201':
1210				
1215			~0 CALVN & PY	1212-1228': COARSE SPARRY WHT CALCITE VNS & VUG FILLING, WK TO MOD.
				1228- : WK WHT CLAY VNS & VUG FILLING.
1220			~0° FLOW	STREAKING OF PALE & MED. SAGE GRN IS FAIRLY COARSE & MAY BE METASOMATIC BANDING UNRELATED TO FLOW FOLIATION.
1225				1224-1230': INTERMITTENT MOSAIC TEXTURED PSEUDOBRECCIA OF THE PALE & DKER GRN RHYOLITE.
1230			20° FLOW	
1235			30° FLOW	
1240				~ 1240-1249': MOD. TO STR. WHT CLAY COATING FRACTURES. (+/- FG CALCITE)
1245				
1250				

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH: 1310'	STARTED:	PAGE: 26
LOGD BY: HSM	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-294C
DATE: 02/24/97	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT								
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUD CGL		LITHTUFF	PUMTUFF	SURGTUFO	ASH FLO	LAVA	AUTO BX	INTRUSV	BASALT	ANDSIT	RHYOLT	TEC. BXA	BROKEN	GOUGE	VOID	Fe MIN MNOX	HEMATIT	LIMONIT	PYRITE	PROP	ARG	ARG 2	RP SIL		QTZ VNS	CALCITE	METCLAS	BADGER	CHOCOLT	U BUD	BRADY	MKR POR	L BUD	WILDROS	DOZER
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

DEPTH FT | LITHGRAPH | ALTGRAPH | STRCT N T

SCALE: 1" =10 ft

LITH. EXPLANATION:

MUD CGL	Mud matrix conglomerate
LITH TUF	Lithic clast dominant tuff
PUM TUF	Pumice rich tuff
SURGE TUF	Bedded matrix rich lithic tuff

CLASSIC SAGE GRN RHYOLITE.

SAMPL INT

COMMENTS

1250, 1255, 1260, 1265, 1270, 1275, 1280, 1285, 1290, 1295, 1300

1260: 20° CALVN

1264'-1271': MONOLITHIC CRACKLE BRECCIA/ & INTENSE STOCKWORK. POSSIBLY METASOMATIC, BUT LOCALLY REAL, WITH EVIDENT CLAST ROTATION. PALE GRN-WHT MATRIX, MEDIUM SAGE GREEN CLASTS.

1272: 20° FLOW

1275: 75°; 20° JNT

1273'-?ABOVE 1297': METASOMATIC PSEUDO-BRECCIA GRADING INTO AN INTENSE STOCKWORKED/MONOLITHIC CRACKLE BXA ZONE.

1285.5-1297': MISSING ~80% OF THE CORE.

1299: 40° CALVN

1299-1307': WHT PSEUDOSTOCKWORK OVERPRINTS COLOR BANDING W/O DISRUPTING IT.

20° FLOW

TD. 1310'

BARRINGER LABORATORIES INC.

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5301 LONGLEY LANE
BUILDING E, SUITE 178
RENO, NEVADA 89511
PHONE: (702) 828-1158

31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Page: 6
Copy: 1 of 2
Set : 2

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Abbreviations:

Parameters:

Au	: Gold
Ag	: Silver

Methods:

FA/AA/AAS	: Fire Assay/AA Finish
FA/AA	: Fire Assay with AA finish
AA	: Atomic Absorption

Units:

oz/ton	: ounces per ton

Quality codes:

<	: less than
NA	: Not Analyzed

Job approved by:

Signed: .....

Vernon K. Peterson
Laboratory Manager

BARRINGER LABORATORIES INC.

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PHONE: (702) 828-1158

8-Jan-93

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project: 350

Received: 31-Dec-92 15:18
PO #:

Job: 923599R

Status: Final

Abbreviations:

Parameters:

Au	: Gold
Ag	: Silver

Methods:

FA/AA/AAS	: Fire Assay/AA Finish
FA/AA	: Fire Assay with AA finish
AA	: Atomic Absorption

Units:

oz/ton	: ounces per ton

Quality codes:

<	: less than
NA	: Not Analyzed

Job approved by:

Signed: .....

Vernon K. Peterson
Laboratory Manager

cc: KRISTEN KENNER, LAC MINERALS

BARRINGER LABORATORIES INC.

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GOLDEN, COLORADO 80401
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5301 LONGLEY LANE
BUILDING E, SUITE 178
RENO, NEVADA 89511
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31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 10:46

PO #:

Job: 923551R

Status: Final

Abbreviations:

Parameters:

Au	: Gold
Ag	: Silver

Methods:

FA/AA/AAS	: Fire Assay/AA Finish
FA/AA	: Fire Assay with AA finish
AA	: Atomic Absorption

Units:

oz/ton	: ounces per ton

Quality codes:

<	: less than
NA	: Not Analyzed

Job approved by:

Signed: .....

Vernon K. Peterson
Laboratory Manager

File

BARRINGER LABORATORIES INC.

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8-Jan-93

LAC MINERALS
P O BOX 21390
RENO NV 89515

Page: 1
Copy: 1 of 3
Set : 1

Attn: Tim Kuhl
Project: 350

Received: 31-Dec-92 15:18

PO #:

Job: 923599R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294C 0-15	0.0018	0.0016	0.012
BL 190	0.0258	NA	NA
RL 294C 15-25	0.0003	NA	0.015
RL 294C 25-35	0.0007	NA	0.015
RL 294C 35-40	0.0002	NA	<0.003
RL 294C 40-45	0.0004	NA	<0.003
RL 294C 45-50	0.0007	NA	0.003
RL 294C 50-56	0.0006	NA	<0.003
RL 294C 56-62	0.0001	NA	<0.003
RL 294C 62-67	<0.0001	NA	0.003
RL 294C 67-72	<0.0001	NA	0.003
RL 294C 72-77	<0.0001	NA	0.003
RL 294C 77-82	0.0001	NA	0.006
RL 294C 82-87	0.0001	NA	0.012
RL 294C 87-92	<0.0001	NA	0.015
RL 294C 92-97	0.0001	NA	0.026
RL 294C 97-102	0.0011	NA	0.073
RL 294C 1187-1192	0.0004	NA	0.009
RL 294C 1192-1197	0.0001	0.0001	0.003
BL 191	0.0219	NA	NA
RL 294C 1197-1202	0.0001	NA	0.006
RL 294C 1202-1207	0.0005	NA	0.015
RL 294C 1207-1212	0.0007	NA	0.013
RL 294C 1212-1217	0.0007	NA	0.009
RL 294C 1217-1222	0.0004	NA	0.006
RL 294C 1222-1227	0.0001	NA	0.003
RL 294C 1227-1232	0.0006	NA	0.012
RL 294C 1232-1237	0.0006	NA	0.009
RL 294C 1237-1242	0.0004	NA	0.009
RL 294C 1242-1247	0.0003	NA	0.006

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31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 10:46

PO #:

Job: 923551R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294 C 102 107	0.0007	0.0009	0.035
BL 177	<0.0001	NA	NA
RL 294 C 107 112	0.0002	NA	0.015
RL 294 C 112 117	<0.0001	NA	0.015
RL 294 C 117 122	0.0001	NA	0.003
RL 294 C 122 128	<0.0001	NA	0.003
RL 294 C 128 133.5	<0.0001	NA	0.006
RL 294 C 133.5 138.5	<0.0001	NA	0.003
RL 294 C 138.5 144	<0.0001	NA	0.018
RL 294 C 144 149.5	0.0006	NA	0.018
RL 294 C 149.5 154.5	0.0003	NA	0.012
RL 294 C 154.5 159	0.0008	NA	0.050
RL 294 C 159 163	0.0022	NA	0.079
RL 294 C 163 167	0.0018	NA	0.079
RL 294 C 167 171	0.0025	NA	0.067
RL 294 C 171 175	0.0017	NA	0.073
RL 294 C 175 179	0.0030	NA	0.091
RL 294 C 179 182.5	0.0066	NA	0.061
RL 294 C 182.5 187	0.0151	NA	0.108
BL 178	0.0490	NA	NA
RL 294 C 187 192	0.0050	NA	0.093
RL 294 C 192 197	0.0018	NA	0.082
RL 294 C 197 202	0.0023	NA	0.079
RL 294 C 202 207	0.0029	NA	0.222
RL 294 C 207 212	0.0021	NA	0.108
RL 294 C 212 217	0.0003	NA	0.018
RL 294 C 217 222	0.0029	NA	0.047
RL 294 C 222 227	0.0024	NA	0.041
RL 294 C 227 232	0.0025	NA	0.029
RL 294 C 232 237	0.0008	NA	0.026

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31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 10:46

PO #:

Job: 923551R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294 C 237 242	0.0008	NA	0.015
RL 294 C 242 247	0.0006	NA	0.006
RL 294 C 247 252	0.0003	NA	0.015
RL 294 C 252 257	0.0007	NA	0.018
RL 294 C 257 262	0.0002	NA	0.009
RL 294 C 262 267	0.0011	NA	0.012
RL 294 C 267 272	0.0009	0.0008	0.006
BL 179	0.0212	NA	NA
RL 294 C 272 277	<0.0001	NA	0.003
RL 294 C 277282	0.0001	NA	0.006
RL 294 C 282 287	0.0002	NA	0.003
RL 294 C 287 292	0.0002	NA	0.006
RL 294 C 292 297	<0.0001	NA	0.003
RL 294 C 297 302	0.0096	NA	0.047
RL 294 C 302 307	0.0024	NA	0.061
RL 294 C 307 312	0.0004	NA	0.020
RL 294 C 312 317	0.0004	NA	0.018
RL 294 C 317 322	0.0005	NA	0.020
RL 294 C 322 327	0.0007	NA	0.023
RL 294 C 327 332	0.0007	NA	0.029
RL 294 C 332 337	0.0007	NA	0.041
RL 294 C 337 342	0.0003	NA	0.015
RL 294 C 342 347	0.0002	NA	0.012
RL 294 C 347 352	0.0403	0.0360	0.088
RL 294 C 352 357	0.0226	0.0192	0.128
BL 180	0.0213	NA	NA
RL 294 C 357 362	0.0041	NA	0.055
RL 294 C 362 367	0.0004	NA	0.015
RL 294 C 367 372	0.0011	NA	0.026
RL 294 C 372 377	0.0004	NA	0.026

BARRINGER LABORATORIES INC.

15000 W. 6TH AVE., SUITE 300
GOLDEN, COLORADO 80401
PHONE: (303) 277-1687

5301 LONGLEY LANE
BUILDING E, SUITE 178
RENO, NEVADA 89511
PHONE: (702) 828-1158

31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 10:46

PO #:

Job: 923551R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294 C 377 382	0.0007	NA	0.032
RL 294 C 382 387	0.0027	NA	0.035
RL 294 C 387 392	0.0008	NA	0.012
RL 294 C 392 397	0.0011	NA	0.023
RL 294 C 397 402	0.0005	NA	0.012
RL 294 C 402 407	0.0001	NA	0.009
RL 294 C 407 412	0.0015	NA	0.032
RL 294 C 412 417	0.0005	NA	0.012
RL 294 C 417 422	0.0027	NA	0.047
RL 294 C 422 427	0.0282	0.0290	0.117
RL 294 C 427 432	0.0006	NA	0.023
RL 294 C 432 437	0.0011	NA	0.038
RL 294 C 437 442	0.0004	0.0004	0.012
BL 181	0.0550	NA	NA
RL 294 C 442 447	0.0003	NA	0.012
RL 294 C 447 452	0.0001	NA	0.006
RL 294 C 452 457	0.0001	NA	0.009
RL 294 C 457 462	<0.0001	NA	0.006
RL 294 C 462 467	0.0009	NA	0.012
RL 294 C 467 472	0.0004	0.0006	0.032
RL 294 C 472 477	0.0227	0.0254	0.382
RL 294 C 477 482	0.0002	NA	0.018
RL 294 C 482 487	0.0006	NA	0.020
RL 294 C 487 492	0.0007	NA	0.020
RL 294 C 492 497	0.0001	NA	0.006
RL 294 C 497 502	<0.0001	NA	0.003
RL 294 C 502 507	0.0001	NA	0.003
RL 294 C 507 512	<0.0001	NA	0.006
RL 294 C 512 517	0.0012	NA	0.015
RL 294 C 517 522	0.0006	NA	0.032

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RENO NV 89515

Attn: Tim Kuhl
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Received: 22-Dec-92 10:46

PO #:

Job: 923551R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294 C 522 527	<0.0001	0.0001	0.006
BL 182	0.0208	NA	NA
RL 294 C 527 532	<0.0001	NA	0.006
RL 294 C 532 537	<0.0001	NA	0.003
RL 294 C 537 542	<0.0001	NA	0.006
RL 294 C 542 547	<0.0001	NA	0.003
RL 294 C 547 552	<0.0001	NA	0.003
RL 294 C 552 557	<0.0001	NA	0.003
RL 294 C 557 562	<0.0001	NA	0.003
RL 294 C 562 567	0.0006	NA	0.012
RL 294 C 567 572	0.0020	NA	0.047
RL 294 C 572 577	0.0004	NA	0.035
RL 294 C 577 582	<0.0001	NA	0.012
RL 294 C 582 587	<0.0001	NA	0.003
RL 294 C 587 592	<0.0001	NA	0.003
RL 294 C 592 597	<0.0001	NA	0.003
RL 294 C 597 602	<0.0001	NA	0.009

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31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL294C 602 607	0.0001	0.0001	0.003
BL 183	0.0220	NA	NA
RL294C 607 612	<0.0001	NA	<0.003
RL294C 612 617	0.0001	NA	<0.003
RL294C 617 622	0.0018	NA	<0.003
RL294C 622 627	0.0023	NA	<0.003
RL294C 627 632	0.0001	NA	0.003
RL294C 632 637	0.0007	NA	0.023
RL294C 637 642	<0.0001	NA	<0.003
RL294C 642 647	<0.0001	NA	<0.003
RL294C 647 652	<0.0001	NA	<0.003
RL294C 652 657	<0.0001	NA	<0.003
RL294C 657 662	<0.0001	NA	0.003
RL294C 662 667	<0.0001	NA	0.015
RL294C 667 672	0.0004	NA	0.035
RL294C 672 677	0.0001	NA	<0.003
RL294C 677 682	<0.0001	NA	0.047
RL294C 682 687	0.0012	NA	0.096
RL294C 687 692	<0.0001	<0.0001	0.003
BL 184	0.0513	NA	NA
RL294C 692 697	0.0004	NA	<0.003
RL294C 697 702	0.0002	NA	<0.003
RL294C 702 707	0.0001	NA	<0.003
RL294C 707 712	0.0012	NA	0.003
RL294C 712 717	0.0002	NA	<0.003
RL294C 717 722	0.0002	NA	0.003
RL294C 722 727	<0.0001	NA	<0.003
RL294C 727 732	0.0004	NA	<0.003
RL294C 732 737	0.0011	NA	<0.003
RL294C 737 742	0.0002	NA	0.012

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P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL294C 742 747	0.0016	NA	<0.003
RL294C 747 752	0.0006	NA	<0.003
RL294C 752 757	<0.0001	NA	<0.003
RL294C 757 762	0.0001	NA	<0.003
RL294C 762 767	0.0001	NA	0.003
RL294C 767 772	0.0001	NA	0.006
RL294C 772 777	0.0001	0.0001	0.003
BL 185	0.0214	NA	NA
RL294C 777 782	0.0022	NA	0.055
RL294C 782 787	0.0011	NA	0.026
RL294C 787 792	0.0002	NA	0.012
RL294C 792 797	0.0004	NA	0.018
RL294C 797 802	0.0011	NA	0.053
RL294C 802 807	0.0001	NA	0.009
RL294C 807 812	0.0002	NA	0.009
RL294C 812 817	0.0005	NA	0.015
RL294C 817 822	0.0077	0.0074	0.061
RL294C 822 827	0.0008	NA	0.018
RL294C 827 832	<0.0001	NA	0.003
RL294C 832 837	0.0001	NA	0.009
RL294C 837 842	<0.0001	NA	0.006
RL294C 842 847	<0.0001	NA	0.003
RL294C 847 852	<0.0001	NA	<0.003
RL294C 852 857	<0.0001	NA	0.003
RL294C 857 862	0.0001	0.0001	<0.003
BL 186	<0.0001	NA	NA
RL294C 862 867	<0.0001	NA	0.003
RL294C 867 872	<0.0001	NA	0.003
RL294C 872 877	0.0002	NA	0.003
RL294C 877 882	0.0003	NA	0.003

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RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL294C 882 887	0.0006	NA	0.003
RL294C 887 892	0.0007	NA	0.009
RL294C 892 897	0.0003	NA	<0.003
RL294C 897 902	0.0004	NA	<0.003
RL294C 902 907	0.0005	NA	<0.003
RL294C 907 912	0.0014	NA	<0.003
RL294C 912 917	0.0009	NA	0.009
RL294C 917 922	0.0020	NA	0.020
RL294C 922 927	0.0006	NA	0.006
RL294C 927 932	0.0004	NA	0.009
RL294C 932 937	0.0006	NA	0.006
RL294C 937 942	0.0001	NA	0.032
RL294C 942 947	0.0028	0.0027	0.047
BL 187	0.0215	NA	NA
RL294C 947 952	0.0028	NA	0.041
RL294C 952 957	0.0015	NA	0.032
RL294C 957 962	0.0013	NA	0.018
RL294C 962 967	0.0001	NA	<0.003
RL294C 967 972	<0.0001	NA	<0.003
RL294C 972 977	<0.0001	NA	<0.003
RL294C 977 982	<0.0001	NA	<0.003
RL294C 982 987	<0.0001	NA	<0.003
RL294C 987 992	<0.0001	NA	<0.003
RL294C 992 997	<0.0001	NA	<0.003
RL294C 997 1002	<0.0001	NA	<0.003
RL294C 1002 1007	<0.0001	NA	<0.003
RL294C 1007 1012	<0.0001	NA	<0.003
RL294C 1012 1017	<0.0001	NA	<0.003
RL294C 1017 1022	0.0004	NA	<0.003
RL294C 1022 1027	0.0005	NA	<0.003

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P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL294C 1027 1032	0.0001	0.0001	<0.003
BL 188	0.0210	NA	NA
RL294C 1032 1037	<0.0001	NA	0.003
RL294C 1037 1042	<0.0001	NA	<0.003
RL294C 1042 1047	0.0001	NA	0.003
RL294C 1047 1052	0.0002	NA	0.003
RL294C 1052 1057	<0.0001	NA	<0.003
RL294C 1057 1062	<0.0001	NA	0.003
RL294C 1062 1067	0.0001	NA	0.003
RL294C 1067 1072	0.0005	NA	0.003
RL294C 1072 1077	0.0008	NA	0.009
RL294C 1077 1082	0.0016	NA	0.015
RL294C 1082 1087	0.0004	NA	<0.003
RL294C 1087 1092	0.0036	NA	0.035
RL294C 1092 1097	0.0051	0.0053	0.055
RL294C 1097 1102	0.0018	NA	0.020
RL294C 1102 1107	0.0015	NA	0.018
RL294C 1107 1112	0.0011	NA	0.018
RL294C 1112 1117	0.0006	0.0006	0.015
BL 189	0.0461	NA	NA
RL294C 1117 1122	0.0006	NA	0.012
RL294C 1122 1127	0.0065	0.0069	0.020
RL294C 1127 1132	0.0023	NA	0.020
RL294C 1132 1137	0.0015	NA	0.012
RL294C 1137 1142	0.0018	NA	0.018
RL294C 1142 1147	0.0032	NA	0.023
RL294C 1147 1152	0.0011	NA	0.009
RL294C 1152 1157	0.0009	NA	0.006
RL294C 1157 1162	0.0015	NA	0.003
RL294C 1162 1167	0.0018	NA	0.003

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31-Dec-92

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project:

Received: 22-Dec-92 15:42

PO #:

Job: 923552R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL294C 1167 1172	0.0001	NA	0.006
RL294C 1172 1177	0.0008	NA	0.012
RL294C 1177 1182	0.0001	NA	0.009
RL294C 1182 1187	0.0001	NA	0.003

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RENO, NEVADA 89511
PHONE: (702) 828-1158

8-Jan-93

LAC MINERALS
P O BOX 21390
RENO NV 89515

Attn: Tim Kuhl
Project: 350

Received: 31-Dec-92 15:18

PO #:

Job: 923599R

Status: Final

Drill Core

Sample Id	Au FA/AA/AAS oz/ton	Au FA/AA oz/ton	Ag AA oz/ton
RL 294C 1247-1252	0.0008	NA	0.020
RL 294C 1252-1257	0.0008	NA	0.009
RL 294C 1257-1262	0.0001	NA	<0.003
RL 294C 1262-1267	0.0001	NA	0.003
RL 294C 1267-1272	<0.0001	NA	<0.003
RL 294C 1272-1277	0.0001	NA	<0.003
BL 192	0.0493	NA	NA
RL 294C 1277-1282	0.0007	NA	0.009
RL 294C 1282-1287	0.0005	NA	0.009
RL 294C 1287-1292	0.0004	NA	0.006
RL 294C 1292-1298	0.0002	NA	0.003
RL 294C 1298-1304	0.0001	NA	0.003
RL 294C 1304-1310	0.0001	NA	0.003

219

HOLE# FROM TO

SURVEYS OF DRILL HOLES, ROSEBUD PROJECT

HOLE#	FROM	TO	AZIMUTH	DIP
RL289C	737.0	937.0	39.0	-61.0
RL289C	937.0	1037.0	37.0	-62.0
RL290	0.0	547.0	348.0	-45.0
RL291	0.0	400.0	135.0	-50.0
RL292	0.0	305.0	135.0	-50.0
RL293	0.0	607.0	45.0	-50.0
RL294C	0.0	50.0	45.0	-75.0
RL294C	50.0	200.0	9.0	-76.0
RL294C	200.0	400.0	219.0	-76.5
RL294C	400.0	600.0	198.0	-78.5
RL294C	600.0	800.0	175.0	-78.5
RL294C	800.0	1000.0	5.0	-78.5
RL294C	1000.0	1200.0	24.0	-79.0
RL294C	1200.0	1310.0	18.0	-80.0

N +9.0 E +9.0
N +21.5 E +11.5
N +26.0 E -1.0
N -13.5 E -22
-5.6 -27.5
-5.6 -24
-18 -14
+16 -1.0

SW

RL-294

NE

5327'

0-144': BADGER CONGLOMERATE

118': MATRIX-SUPPORTED DEBRIS FLOW TEXTURE BELOW THIS POINT

144'

157': REGOLITH CHOCOLATE

144-171.5': CHOCOLATE PORPHYRY WITH GLOMEROPORPHYRITIC PLAG + MAFICS.

171.5-202.5': FAULT

202.5-832.0': DUSTY PURPLE APHANITIC AMPHIBOLE ANDESITE

CHOCOLATE, ASSUMED
N20E STRIKE
30° DIP

789: AUTOBRECCIATED ANDESITE CHILL BASE

832-888': BEDDED SURGE TUFF CONTAINING PLAG-BEARING CHOCOLATE LITHICS

888': FAULTED CONTACT?

888'-1087.5': CHOCOLATE LITHIC TUFF BXA

1087.5-1096': FAULT BXA CONTACT.

1096-1310': DOZER RHYOLITE

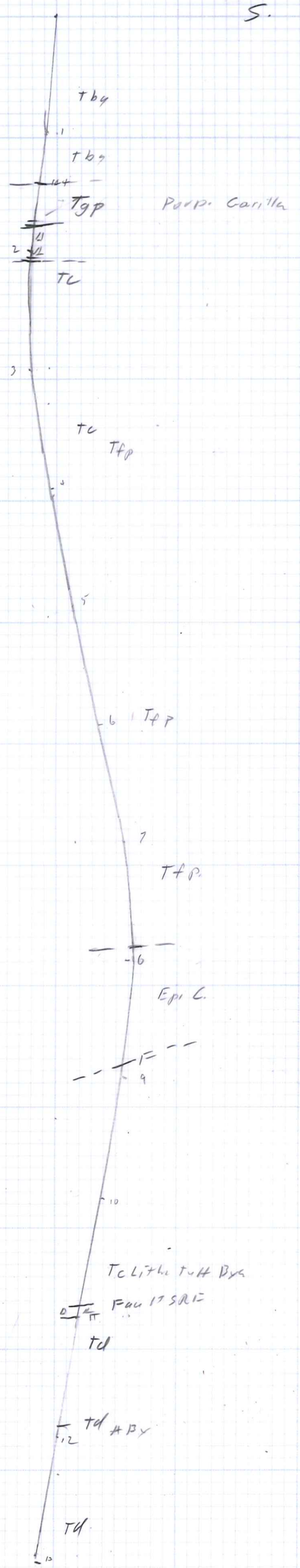
AUTOBRECCIA TO 1190'

BEARING: N45E
AZIMUTH: -75E

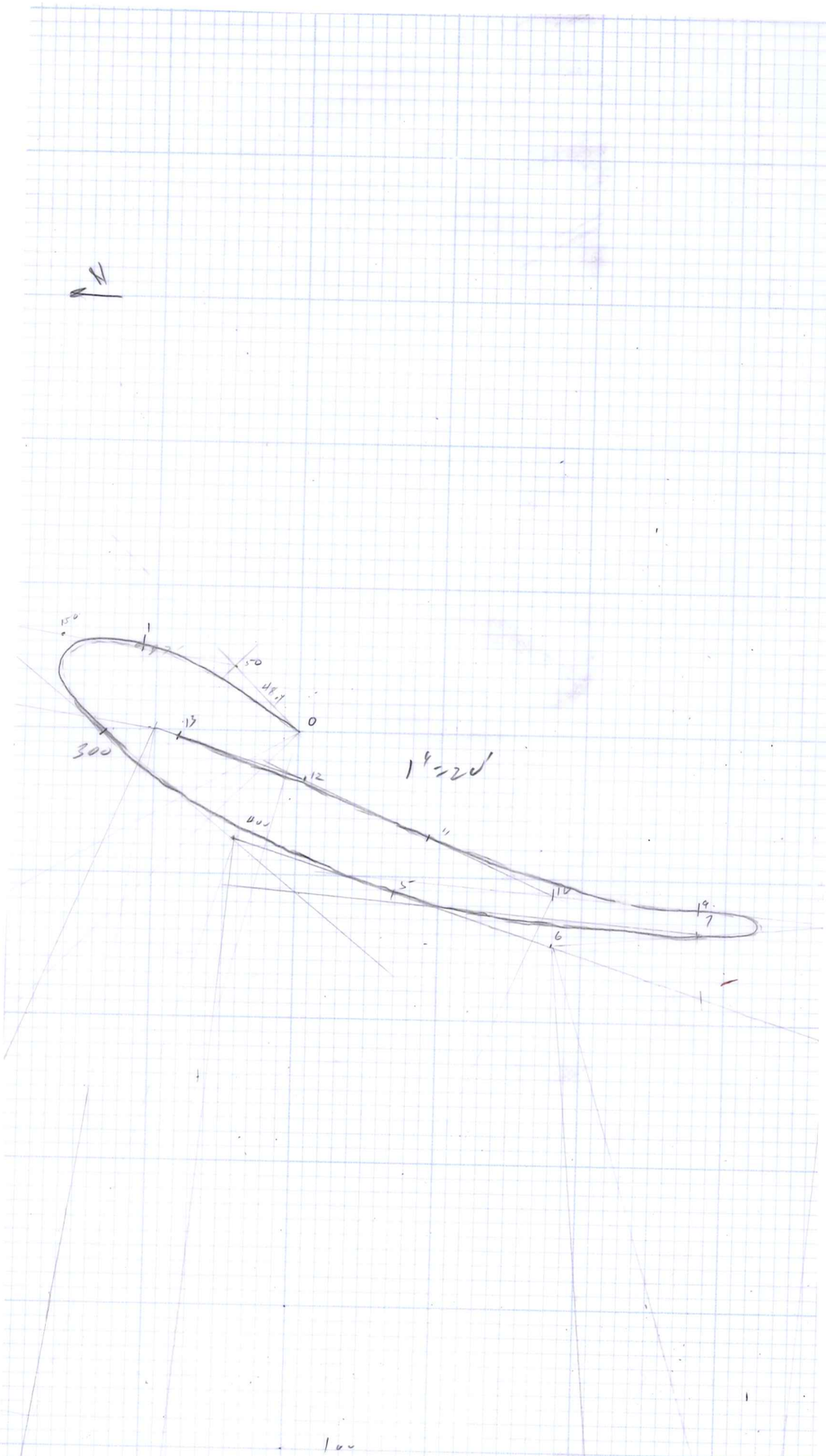
T.D. 1310'

1" = 100'

N — S. N-S section



Rosebud
RL-294c
1" = 100'
Rogowski - May 1999



Plan
Rosebud
RL- 294 C.
1" = 20'
Rogowski - mar 1999