60001325

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-92
AUTHOR	R. Grondin; N. Brewer; R. Tullar; J. Gaign M. Brady
DATE OF DOC(S)	1990 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; Coates Drilling; Lac Minerals (USA) Inc
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 1281'; handwritten notes; also referred to as RL-92C 59p.

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 5/19/08
Initials Date
DB: mah
Initials Date
SCANNED:
Initials Date

Revised: 1/22/08

DRILL LOGS RL-92

ROSEBUD

60001325 4010

60001325

LAC MINERALS (U.S.A.) INC.

DRILL LOG SUMMARY SHEET

PROJECT ROSEBUD

HOLE NUMBER RL-92 TOTAL DEPTH 1281 LOGGED BY R.C. DAM

Date started June 1, 1990

Date completed June 15, 1990

Initial bearing ~~S55E~~ S56E

Initial inclination ~~-50°~~ -47

Elevation 5275.6

Collar coordinates:

N 2205042

E 481750.6

Contractor: COATES

Drill Type: UDR

Hole Size:

Drilling Conditions: 300' Rc

Footage: Wet / Dry

Comments:

DOWN HOLE SURVEY INFORMATION

FROM	TO	SURVEY POINT	INCLINATION	BEARING	X (Northing)	Y (Easting)	Z (Elevation)
0	50		-47°	S 56E			
50	200	100	-48°	S54E			
200	400	300	-47°	S56E			
400	600	500	-47°	S56E			
600	806	700	-47°	S54E			
806	996	912'	-48°	S51E			
996	1190	1100	-47°	S52E			
1190	1281	1280	-47°	S55E			

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

CHOCOLATE TUFF
BUD BRECCIA
BUD TUFF
BUD EPICLASTIC
BUD TUFF BRECCIA
DT DOZER WELDED TUFF

ARGILLIC
XX SILICIFICATION
OX OXIDIZED
DRUZY QUARTZ
XC CHALCEDONIC QUARTZ
XK STOCKWORK QUARTZ
P P P PROPYLITIZATION
Ca CALCITE

DRILL HOLE RL-92

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LOGGED BY DAM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK	
													<1%					
05		~							YELLOW					5-45 BADGER FM.? FINE GR RED BROWN (MATRIX?) AND FINE GRAIN GREY TUFF CHIPS. MINOR CLAY ALTERATION.	.009	.25		
10									RED BROWN WHITE						<	.20		
15									RED BROWN						<	.28		
20									GREY						<	.20		
25															<	.28		
30															<	.22		
35															.003	.21		
40															.003	.20		
45		~							YELLOW WHITE					45-130 INTENSELY CLAY ALTERED FINE GRAIN TUFF? (CHOCOLATE?)	.001	.15		
50															.001	.22		
55															.003	.24		
60															.002	.23		
65															.004	.21		
70															.003	.17		
75									MAINLY WHITE						.002	.17		
80															.002	.22		
85															.002	.10		
90															.001	.11		
95															.002	.10		
100																		

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DRILL HOLE RL-92

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LOGGED BY DTM

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK
									ORANGE WHITE				<1%		.001	.14	
05															.001	.21	
10															.004	.21	
15									GREY WHITE						.002	.20	
20									GREY WHITE						.001	.15	
25															.006	.14	
30									PINK & LIGHT				1-2%	130-285 BLEACHED, LOCALLY SILICIFIED GRANULAR, POSSIBLY CRYSTAL TUFF. DRUZY Q AND Q-SULFIDE VEINING. COMMON FINE SULFIDES COMMON	.006	.22	
35															.002	.19	
40															.002	.19	
45															.001	.17	
50															.001	.22	
55															.001	.23	
60		Qvs												160-285 WEAK-MOD FINE Q-SULFIDE VEINING	.009	.14	
65		Qvs							LT GREEN						.003	.22	
70		Qvs													.002	.25	
75		Qvs													.015	.21	
80		Qvs													.003	.27	
85		Qvs													.001	.15	
90		Qvs													.011	.21	
95		Qvs													.004	.22	
200																	

▽ H_2O

LAC MINERALS (U.S.A.) INC.
ROSEBUD PROJECT

CHOCOLATE TUFF
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DRILL HOLE RL-92

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LOGGED BY Dan

	LITH.	ALT.	% ARG. ALT. W	M	S	% SIL'N W	M	S	COLOR	% FeOx W	M	S	% SULF.	COMMENTS	Au	Ag	CHECK
		Vqs XX XK							GREY WHITE				1-2%		.003	.18	
05		Vqs XX XK													.004	.14	
10		Vqs													.051	.27	.065
15		Vqs													.085	.25	.098
20		Vqs													.003	.26	
25		Vqs													.003	.17	
30		Vqs													.002	.12	
35		Vqs XX XK							WHITE						.001	<	
40		Vqs							LT GREEN MINOR PEACH						.007	.19	
45		Vqs XK													.002	.13	
50		Vqs XK													.004	.19	
55		Vqs XK													.003	.14	
60		Vqs XK													.005	.24	
65		Vqs XK													.005	.20	
70		Vqs XK													.010	<	
75		Vqs XK							PEACH					PEACH COLOR ALTERATION, MOD-STR QUARTZ SULFIDE VEINING	.023	<	
80		Vqs XK													.005	<	
85									GREEN					285-300 GREEN SLIGHTLY BLEACHED FG GR TUFF	.010	<	
90															<	<	
95																	
100														T.D. = 300'	.001	<	

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
						* 290 - 1237.6 ALT. TO UNALT. RED BROWN UGLY						
290	100		±5° fract	≤1% diss +VN py	CALCITE	290 - CORE BEGAN						
						290 - 323.4 Bleached FINE GRAINED TUFF vs. INTRUSIVE lt sage green w/ weak argillic alt. → pervasive weak fine fracturing w/ hematite fill + local calcite + local blue green (chlorite?) mineral ± pyrite, approaching unaltered "red-brown ugly" fracture and breccia matrix become red brown, local brecciation to vein breccia to microbrecciation w/ in Δ zones, local hard white clay w/ weak goethite oxide plating	290-295			<.001	<.10
							295-300				<	<
300	113						300-304.2				<	<
	93		±5° fract				304.2-310				<	<
310	99		±5% sticks			293.5 - 294.5 calcite vein 310.5 - 313 sticks parallel to core axis w/ talc texture 316 - 323.4 brecciated to vein breccia - clast supported w/ same composition w/ hematitic matrix; weak calcite veining	310-315				<	<
		63 CaCO3 VN					315-320				<	<
320	102			NIL		BRECCIATED CONTACT	320-323.4				<	<
						323.4 - 1237.6 RED BROWN UGLY - Very fine grained intrusive vs. fine grained unaltered tuff, pervasive red brown coloration w/ local bleached - light green zones weakly to moderately fractured w/ hematitic fill; local calcite locally brecciated to crackle breccia to vein brecciation weak calcite veining, local micro brecciation	323.4-327			<	<
		Calcite VN 80°					327-332				<	<
330	98						332-337				<	<
		5° CaCO3 VN	56 CaCO3 VN				337-342				<	<
340	102						342-347				<	<
350							347-352				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
	102			TR PY IN VNS		350 - 1237.6 "RED BROWN UGLY" (CONTINUED)						
			40/			some description @ above ? massive	352-357				<	<
360					(Δ Δ)		357-362				<	<
	100					364-367 intermittent vesicularization w/ opaque clay fill (white); local calcite	362-367				<	<
		25/ banding					367-372				<	<
370	100				(Δ Δ) (Δ Δ)		372-377				<	<
380		70 banding 15° Δ VN	70 fract				377-382				<	<
	100						382-387				<	<
			35/ fract VNS				387-392				<	<
390	104				Δ Δ	396-397.2 bleached; brecciated zone lr green w/ vein brecciation w/ hematite + calcite matrix ± SiO_2	392-396				<	<
		60/ $CaCO_3$ VN			Δ Δ Δ Δ } bl		396-397.2				<	<
400	106	35° flo band	85 $CaCO_3$ VN		Δ Δ		397.2-402				<	<
					(Δ Δ)		402-407				<	<
410	100	85 $CaCO_3$ VN	55 $CaCO_3$ + FeOx fract VN		} bl	413.9-418.2 bleached fine grained mod calcite veining w/ pervasive lr sage green coloration weak fine fracturing w/ calcite ± pyrite ± chlorite fill	407-413.9				<	<
							413.9-418.5				<	<
420	102											

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION
	103	45 fract vns	40 50 fract vns	NIL		420 - 1237.6 "RED BROWN UGLY" (CONTINUED) same description @ above
430	85	±5° banding	±5° fract	TR VN PY	CaCO3	418.5 - 429.8 increased fracturing w/ hemitite + chlorite + calcite w/ selvage edge of FeOx — Bl
440	95	20 fract vns		NIL		429.8 - 437 Bleached zone w/ intermittent broken rubble; clay alt. (433.2 - 434.5 strong calcite veining) → mod to strong fracturing w/ white-soft clay + calcite + blue green mineral ± chlorite? + local pyrite, most fracture veining @ 5° to core axis
	103	55 CaCO3 vns	fract 10-15° vns			
450		68 CaCO3 vns	±5° graphite vn			
		35 hardness		≤1% diss + vn py		437 - 453.8 medium to dark gray - red brown ugly - unaltered mod strong fracturing w/ hemitite selvage weak fine calcite veinlets - max 2mm wide. FeOx selvages 1-2mm wide from fracture veins — Bl
460	102	80 CaCO3 + py vns	35 fract + band	NIL		
470	100	70° hard	40 fract	≤1% py NIL		453.8 - 461.5 Bleached zone - lt sage green weak fine hairline fracturing w/ calcite ± chlorite? ± hemitite + wh clay fill + local pyrite, local broken rubble — 3 bl
		80 CaCO3 py vn	70 fract vn	≤1% vn py		461.5 - 469.6 unaltered red brn ugly w/ hemitite fracture selvages + weak calcite veining — bl
480	90	83 FeOx fract	50 fract	NIL		469.6 - 470.6 weak bleached zone w/ mod fract w/ CaCO3 + py + chlorite? ± hemitite fill
490	92			≤1% vn py		470.6 - 474 unalt red brn ugly; 474 - 479.5 bleached red brn ugly - STRONG BROKEN RUBBLE — bl 488-495 Intermittent Rubble

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
418.5-424				<	<
424-429.8				<	<
429.8-434.5				<	<
434.5-437				<	<
437-441.2				<	<
441.2-445				<	<
445-449				<	<
449-453.8				<	<
453.8-458				<	<
458-461.5				<	<
461.5-465.5				<	<
465.5-469.6				<	<
469.6-475				<	<
475-480				<	<
480-483				<	<
483-485				<	<
485-488				<	<
488-492				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION
	100	85 CaCO3 vn	65° CaCO3 vn	<1% VN py		490 - 1237.6 "RED BROWN UGLY" (continued)
				NIL	Blt broken rubble	
500	100	±5°	fract vns / 10 from fract		gouge rubble	487 - 496 Bleached zone w/ strong intermittent broken rubble w/ assoc mod to mod strong kaolinite alt weak local 1/2" calcite veins fracturing w/ chlorite ± calcite + kaolinite ± local pyrite.
	100	85 CaCO3 vn				
		75 CaCO3 vn		<1% VN py	CaCO3	
				NIL	Bl	496 - 505 unaltered red brown ugly w/ hemitite selvage fractures w/ chlorite ± calcite
510	100					500-501 clay (tan) + lt green gouge rubble questionable fault gouge
520	104	60 CaCO3 vn	55 fract vn w/ chlor		Bl	505-511 bleached "RBU" lt green (sage) weak fracturing w/ chlorite ± calcite fill 506.3 - 506.7 calcite vein
				<1% VN py	55	526.6 - 553.7 Bleached Red Brown Ugly moderatly to strongly fractured w/ green salvages; locally w/ hemitite ± calcite fill locally brecciated to vein breccia to crackle breccia
530	98	75 SiO2 fract vn	15 clay fract vns		WHITE CLAY	530-535 prominent fracturing parallel to core axis w/ strong white clay to clay gouge fill
540	104	±10° fract vn	45 fract vn		Bl	543.5 - 545 zone of strong soft white kaolinite gouge filling fractures
550	94	40 fract vn				
				NIL	80°	— CONTACT approx 80° to core axis
560						

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
488-493				<	<
493-495				<	<
495-500				<	<
500-501				<	<
501-506				<	<
506-510				<	<
510-515				<	<
515-520				<	<
520-522.2				<	.11
522.2-526.6				<	.11
526.6-530				<	<
530-535				<	<
535-538				<	<
538-542				<	<
542-545				<	<
545-550				<	<
550-551				<	<
551-553.7				<	<
553.7-559				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
	100	35 fract hem	±5° hem fract	NIL < 1% vn py		560 - 1237.6 "RED BROWN UGLY" (CONTINUED)	559-562.2				<	<
				NIL		553.7 - 629 Relatively unaltered - GRAY "Red Brown Ugly" w/ hematitic green chlorite (?) + calcite filled fractures w/ hematitic selvages ~ 1/4" from fracts.	562.2-565				<	<
570	98	25 hem fract					565-570				<	<
							570-575				<	<
						562.2-565 zone of prominent fracture veining @ ±5° to core axis w/ calcite + pyrite + hematite + green clay gouge ± SiO2?	575-580				<	<
580	100	70 CaCO3 vn					580-585				<	<
							585-590				<	<
590	95	40 fract	±5° CaCO3 vn				590-595				<	<
							595-600				<	<
600	103		±5° hem + CaCO3 vn				600-605				<	<
						613-618 weak ↑ fine hairline calcite + hematite veins	605-610				<	<
610	106	70 fract					610-615				<	<
		45 CaCO3 vn					615-620				<	<
620	104						620-625				<	<
		30 clay vn				629 - 632 weak bleaching w/ local white clay + green clay gouge	625-629				<	<
630	100					TBL						

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG
	103	35/ banding	±10°/ fract	NIL	
640	98	60 fract VNS		1-2% VN ±diss PY	
650	103	±5° fract VNS	80 PY+CaCO3 clay VN		
660	102	65 PY			
		75 CaCO3 VN		NIL	
670	94	5-15° hematite fract VNS			
680	86	25/ band ing		TR VN PY	
	107	60 PY+ CaCO3 VN		NIL	
690	98	30/ fract ofit	70 CaCO3 VN	<1% VN PY	
		65 CaCO3 VN		NIL	
700		65			

DESCRIPTION

630 - 1237.6 "RED BROWN UGLY" (continued)

630 - 642 weak intermittent bleaching w/ weak hematite + calcite + chlorite? fill - lt gray - relatively unaltered

642 - 665.5 Bleached "Red Brown Ugly" pervasively lt sage green, moderately strong fracturing throughout w/ blue green mineral + calcite + pyrite + local white clay + local drusy qtz. lining. Local crackle to thin brecciated w/ hematitic matrix local lt sage green clays + local apple green alt. weak pervasive bleaching, local silicification

Bl

665.8 - 677 unaltered Red Brown Ugly w/ hematitic selvaged fractures locally brecciated - pen. med. GRAY

677 - 684 Bleached Red brown ugly weak to mod fracturing w/ chlorite? + white clay ± local pyrite fill

bl

684 - 750 Relatively unalt Red brown ugly

690.5 - 693 zone of ↑ fracturing w/ lt green clay + calcite + white clay ± tr pyrite

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
629-635				<	<
635-640				<	<
640-645				<	<
645-650				<	<
650-652.2				<	<
652.2-656				<	<
656-660.5				<	<
660.5-665.2				<	<
665.2-670				.002	<
670-675				<	<
675-680				<	<
680-685				<	<
685-690				.024	<
690-695				<	<
695-700				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
	102	60 CaCO3 VN		NIL		700 - 1237.6 "RED BROWN UGLY" (continued)	700-705				<	<
		65 Cal + Py VN				700-750 Red brown to gray very fine grained w/ moderate fracturing w/ hematite selvages + green chlorite + local calcite fill	705-710				<	.11
710	100	20 hem hematite fract					710-715				<	<
		30 CaCO3 VN					715-720				<	<
720	75	80 hem fract bands					720-725				.001	<
		47 hem fract band					725-730				<	<
730	98						730-735				<	<
		40 CaCO3 VN					735-740				<	<
740	100						740-745				<	<
		20 hem band		~1% VN Py		750 - 766 Bleached and weak pervasive clay alteration to a lt buff coloration to weak clay alt phases, mal to locally strong fracturing w/ white clay (Kaolinite?) + pyrite + calcite pods py replaced marcasite + chlorite? @ depth — 761' on down pervasive stockwork fracturing	745-750				<	.17
750	98			4% VN + diss Py		755 - 760 possible zone of shearing w/ v. strong white clay + pyrite fill + wk silicification	750-755				<	<
760	104	±5-7° fract		<1% VN Py		→ poss. wk silicification	755-760				.004	<
							760-763				.001	.21
		60 CaCO3 VN		NIL			763-766				<	.13
770							766-770				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION
	100	60 CaCO3 VN		NIL		770 - 1237.6 "RED BROWN UGLY" (CONTINUED)
						766 - 944.6 UNALTERED RED BROWN UGLY
780	102					
790	100	61 CaCO3 VN				
800	105	80 CaCO3 VN	±5° fault			
810	100					
820	100	85 CaCO3 VN				
830	100	85 CaCO3 VN				
840						

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
770-775				<	<
775-780				<	.18
780-785				<	<
785-790				<	<
790-795				<	<
795-800				<	<
800-805				<	<
805-810				<	<
810-815				<	.20
815-820				<	.23
820-825				<	<
825-830				<	<
830-835				.001	<
835-840				.001	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	DESCRIPTION
	100	85 CaCO3 vn	78 Banding	NIL		840 - 1237.6 "RED BROWN UGLY" (continued)
850	100	55 CaCO3 vn	53 Banding			
860	100					
870	100					876 - 884 finely vesicular w/ calcite ± white clay fill
880	100					
890	104					
900	100	80 CaCO3 vn				
910						908 - 912 finely vesicular w/ calcite ± white clay fill

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
840-845				<	<
845-850				.001	<
850-855				.001	.11
855-860				.001	.16
860-865				.001	<
865-870				<	<
870-875				.001	<
875-880				.001	<
880-885				.001	<
885-890				<	<
890-895				<	<
895-900				<	<
900-905				<	<
905-910				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
				NIL		910 - 1237.6 "RED BROWN UGLY" (continued)	910-915				<	<
	95						915-920				.001	<
920							920-925				<	<
	100	70 CaCO3 VN					925-930				<	<
930		43 CaCO3 VN					930-935				<	<
	100						935-938				<	<
940		88 CaCO3 VN		<1% VN py		939 - 941 Bleached w/ local vein brecciation, fractured w/ hematite ± chlorite + calcite fill	938-941				<	<
	109			NIL			941-944.6				<	<
		90 35	∆ cont 60 35 f-vack	tr diss py		941 - 944.6 UNALTERED RBU.	944.6-948.5				<	<
		82 CaCO3 VN		1-2% VN py		944.6 - 948.5 FAULT - GREEN-GRAY BRECCIA, predom finely clasted w/ fine tuffaceous matrix intermittent moderate silicification w/ weak argillic clay alteration - NOT bleached weak calcite veining, appearance of flow ∆ contact 60° to core axis, local ↑ clay alt	948.5-951				<	<
950	94	52 py VN	±5° py VN				951-955				.006	<
	80	70 CaCO3 VN					955-960				.001	<
960			70			948.5 - 994.1 BLEACHED FINE GRAINED TUFF - Bleached buff to weak flesh, locally crackle brecciated w/ weak rotation to nearly intense zones of fracturing, elsewhere brecciation w/ clasts up to 6" wide and averaging 1/4 - 1/2" wide clasts w/ ↑ bl, weak to moderate pervasive pyrite ± clay veining + local calcite veining perv. argillic alt w/ local moderate silicification, weak intermittent green alt of clasts	960-965				.004	<
	99	57 py VN					965-970				.001	<
		55 clay py VN		~1% VN + diss + buck shot py			970-975.3				<	<
970			±5° fract				975.3-977.7				.002	<
	100					975.3 - 978 CRACKLE BRECCIA	977.7-982				.003	<
980		80 42										

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
	99	78 py/vn		<1% diss + vn + buck shot py		980 - 994.1 Bleached Tuff (same @ above)	982-986.4				<	<
						984.5 - 989 CRACKLE BRECCIATED w/ rotation contact into unaltered tuff is semi gradational bleaching alteration	986.4-989				<	<
990	102		68 crack + py fill				989-994.1				<	<
				NIL		994.1 - 1032.8 UNALTERED RED BROWN - APHANITIC TUFF? moderatly fractured w/ hemititic selvages ; weak local calcite veining locally AUTObrecciated to CRACKLE brecciated	994.1-1000				<	.54
1000	98	55 CaCO3 VN	37 hemat fract				1000-1005				<	<
							1005-1010				<	<
1010	102	58 CaCO3 VN					1010-1015				<	<
1020	97	75 hemat fract					1015-1020				<	<
							1020-1025				<	<
1030	102	22 hem fract				1032.8 - 1111.2 BLEACHED RED BROWN TUFF - weak to moderate pervasive argillic clay alt. Intermittently brecciated : CRACKLE TO VEIN TO AUTO - locally milled to rotated clasts mottled buff to flesh to local weak lt sage green local weak to moderate silicification weak to moderate veining - various stages ① fine hairline pyrite ② lt sage green to white Kaolinite ③ silicified vein breccia w/ micro Δ matrix ④ local calcite veining ⑤ local moderate fine hairline fracture veining	1025-1029				<	<
		65 CaCO3 VN		≤1% diss + vn py			1029-1032.8				<	<
		77 CaCO3 VN					1032.8-1035				<	<
							1035-1036.7				<	<
1040	98		15 (AC)				1036.7-1040				<	<
		15				1048 - 1050 moderatly silicified w/ ~3" vein breccia w/ str. SiO2 + white clay	1040-1046				<	.22
1050		10 fract	43 fract py/vn	1-2% diss + vn + buck py			1046-1050				.038	.22

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	DESCRIPTION
1060	98	±5° ffo; 55/clay VN	±5° PY VN	±2% diss + VN + buck SHOT PY		1050 - 1111.2 Bleached Red Brown Tuff (continued) same description @ above w/ ↑ AUTO-CRACKLE BRECCIATION THROUGHOUT ENTIRE zone below 1050' w/ lt green to tan selvages around fracture vns
1070	100	45; SiO_2 + clay VN	±5° PY VN		45	1062.5 - 1062.7 VEIN - 2" SiO_2 + Kaolinite @ 45° to core axis
1080	100	55/ffo	15/ffo			BRECCIATION: CRACKLE TO AUTO w/ pervasive rotation of frags w/ local milling
1090	100	±5-10° PY fract		± 1% VN + diss PY		1078 - 1085 prominent post drilling OXIDATION - golden orange of fine 1/4" - 1/2" long pyrite CRACKLE veinlets
1100	80	40 $CaCO_3$ VN				
1110	97	60 fract VN	22/(GA)			
1120	102	30 $CaCO_3$ VN				1111.2 - 1168 RELATIVELY UNALTERED RED BROWN FINE GRAINED TUFF - moderatly finely fractured w/ hemititic selvages
	99	55 $CaCO_3$ + clay VN	~5° ffo	NIL		
		15/$CaCO_3$ VN				

ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
1050-1055				.11	<
1055-1060				.004	<
1060-1065				.005	<
1065-1070				.001	.19
1070-1075				.012	<
1075-1080				.003	<
1080-1085				<	<
1085-1090				.001	<
1090-1095				<	<
1095-1100				<	<
1100-1105				.009	.29
1105-1111.2				<	<
1111.2-1115				<	<
1115-1120				<	<

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
				NIL		1140 - 1168 UNALTERED RED BROWN FGT (CONTINUED) Same description @ all of above	1120-1125				<	<
	105	5% CaCO3 VN	fracts ±5°				1125-1130				<	<
1130							1130-1135				<	<
	94		5-10° fract				1135-1140				<	.17
1140							1140-1145				<	<
	99	33 CaCO3 VN	40°-50° w/ mt fract				1145-1150				<	<
1150							1150-1155				<	<
	100					1180-1190 prominent veining - moderate 1-2mm wide w/ dark gray sulfides + white clay w/ post drilling golden oxidation selvages OUT TO 1/2" from veins	1155-1160				<	<
1160		70 clay CaCO3 VN				1180-1182.3 intermittent silicified hydrothermal breccia veins w/ vuggy druzy qtz - py replac marcas ~2 stages Δ + poss dk gray silver mineral + fine xtal pyrite	1160-1165				<	<
	100		±30° fracts			*1168 - 1237.6 ALTERED FGT - pervasively bleached + clay altered - moderatly buff to lt flesh alteration coloration pervasive; banding prob due to fracture alter. selvages; preferrential clay alt weak veining w/ calcite + white clay fill + local pyrite, weak local CRACKLE + VEIN brecciation	1165-1168				<	.10
1170				< 1% diss + VN py			1168-1172				<	<
	100						1172-1175				.001	<
				2-3% diss + VN + buck shot py	FAULT	1175-1180.7 FAULT - Rehealed Breccia predom clast supported; locally matrix supported SiO2 rich to *white clay - Kaolinite rich 2 prominent stages of veining: 1) hairline pyrite + 2) ±1/4" clay veins + locally hydrothermally silicified breccia VNS up to 3 stages of brecciation	1175-1180				.003	<
1180		45° clay ±CaCO3 VN	56 py VN				1180-1184				.012	<
	99	23 py VN		±2% diss + VN + buck shot py			1184-1190				.039	.10
1190		24 py VN										

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERALIZATION	GRAPHIC LOG	DESCRIPTION	ASSAYS: Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
		42	70 clay vn	~1% VN py diss?		1190 - 1237.6 ALTERED FGT (CONTINUED)	1190-1195				<	<
	100	10 banding	76 clay vn			same description @ above w/ prominent pervasive fracture-alteration banding, veining tends to be perpendicular to banding. veins: clay + $CaCO_3$ weak perv. silicification	1195-1200				<	<
1200		±5° banding	60 clay vn				1200-1205				<	<
	98					1202 - 1218 decrease in overall bleaching w/ ↑ perv. mod strong * silicification w/ medium brown coloration w/ weak fracture veining up to 1212 w/ ↑ veining w/ depth	1205-1210				<	<
1210		25 VN + banding					1210-1215				<	<
	97	65 py SiO2 vn		2-3% VN + diss + buck shot py			1215-1220				.029	.10
1220		20 primary	SiO2 5			1218 - 1237.6 FINE GRAINED TUFF bubb to weak flush alteration color, local fracture banding w/ 1/4" slivers of grn to be halos mod strong pervasive silicificat w/ intermittent strong clay alt zones ~3 stages of veining 1) fine hairline pyrite veinlets - stockwork 2) clay + SiO2 ± sulfides 3) hydrothermal breccia veins - well silicified w/ blades sulfides + white clay + local vuggy drusy qtz vns	1220-1225				.003	.60
	98		85 silicif				1225-1230				.005	<
		70 $CaCO_3$ vn	62	2 1% diss + VN py			1230-1235				.010	.20
1230	100	65	85	2-3% VN + diss + buck shot py			1235-1240				.018	<
			81			POSS ~90° CONTACT						
			70 SiO2 vn			FAULT SPP	1240-1245.4				.093	.72
1240	92		75 SiO2 py vn	4-5% diss ± VN py								
			85 SiO2 + py VN	1-2% VN ± diss py		~80° 1225 - 1229.5 - perv. brecciated + silicified 2-3 stages w/ fine mod stockwork-hair line veining 1229.5 - 1237.6 decrease in perv. silicification w/ ↑ argillic clay alt. w/ intermittent hydrothermal ▲ veins that are well silicified	1245.4-1250				.015	.24
1250	92	70 SiO2 py VN	75				1250-1255				.023	.30
		40 grn + $CaCO_3$ vn	55 SiO2 vn			1237.6-1245.4 FAULT · Intensely brecciated; v. strongly silicified → 3-4 stages of brecciation w/ strong silic. cement weak veining 1) chalcedony 2) pyrite 3) white clay 4) ▲ vns 1237.6 - 1239.6 fine clasted w/ lt sage green matrix 1239.6 - 1245.4 coarser ▲ w/ up to 1" clasts w/ dark gray w/ fide rich matrix	1255-1257.5				.107	.57
			82				1257.5-1265				.008	.60
1260		60		2-3% diss py		1245.4 - 1257.5 SEDIMENTS — DESCRIPTION NEXT PAGE						

DEPTH (ft)	RECOVERY	Structure: Bd. Fol.	Structure: Faults	MINERAL-IZATION	GRAPHIC LOG	DESCRIPTION
	103	70 / PY VN	60 / A VN	2-3% diss + VN PY	gouge	TRANSITIONAL - SANDSTONE SEDIMENTS - medium gray to grayish tan fine grained to ARKOSIC SANDSTONE moderatly to strongly silicified, interbedded giving laminated texture locally of dk gray, lt gray tan seds. 1256-1257 poss intrusive dikes locally jumbled into seds - due to poss pheno xtals texture weak local vein brecciation weak to weakly moderate veining predom: 1) SiO_2 ± local white clay 2) ± $CaCO_3$ 3) pyrite
1270	102	55 / INTERB				
		65 / PY VN				1255-1257.5 transitional contact zone of jumbled sediments; coarser seds or poss intrusive (poss xtals) perv. mod silicification; local brecciation w/ ↑ dark gray sulfide + pyrite veining
1281						1257.5-1281 Jz SEDIMENTS - DARK GRAY carbonaceous SHALES - BLACK - METAMORPHOSED SILICIFIED w/ local vein brecciation; local intrusive APALITE dikes vs sedimentary sandy beds up to 3"-4" wide mod to strongly veined w/ 1) pyrite ± SiO_2 (locally vuggy) ± clay 2) white clay 3) chalcedony
						1265-1265.4 breccia vein @ 60-65° to core axis well silicified; riddled w/ fine qtz + pyrite stockwork veins
						1260-1260.5 clay gouge w/ oxidized pyrite phenos

ASSAYS

Sample No.	% Cu	% Pb	% Zn	oz/t Au	oz/t Ag
1257.5-1265				.008	.60
1265-1270				.049	.21
1270-1275				.009	.42
1275-1278				.009	.40
1278-1281				.005	<

Filename: drbLOG.xls

PROJECT: ROSEBUD	STATE: Nevada	NORTHING:	TOTAL: Page 1/2
LOGD BY: MWB	COUNTY: Pershing	EASTING:	BEARING:
UTM#: NK 11-10-06	SEC. T. N., R.	ELEVATION:	ANGLE:

HOLE#: RL DRB 92

DRILLING NOTES		COLOR (WET)	STRATIGRAPHY/LITHOLOGY																STRCT		GRAPHIC	ALTERATION & MINERALIZATION										GRAPHIC	COMMENTS	SAMPLE No.
TIME	Dates, H2O, Casing, Bits, Hole C		ALLUVM	BADGER	CHOCOLT	BUD	BRADY	MKR POR	BUD	DOZER	WILDROS	SURGTUF	ASH FLO	LAVA	AUTOBXA	INTRUSV	BASALT	ANDESIT	RHYOLIT	BROKEN	GOUGE	OXD'T'N MANGAN	HEMAT	LIMON	PYRITE	UNALTRD	PROPYLT	ARG	RPL SIL	STKWKS	VEINS	CALCITE			Sample Recovery / Composite Geochem Intervals	
DEPTH in FEET			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					
10																																			5
20																																			10
30																																			15
40																																			20
50		WTE																4																	25
60																																			30
70																																			35
80		TAN																																	40
90																																			45
100																																		All clay – fault?	50
110		WTE+ORG BRN																				1													55
120		GRY+WTE																																	60
130																																			65
140		WTE																					1			2			1						70
150																																			75
160		WTE+																																	80
170		TAN																					2			1			2						85
180																																			90
190																																			95
200		WTE																																	100
210		+TAN																					2		1				2					equigranular w/ qtz+py vnlts	105
220																																			110
230																																			115
240																																			120
250																																			125
																																			130
																																			135
																																			140
																																			145
																																			150
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																																			215
																																			220
																																			225
																																			230
																																			235
																																			240
																																			245
																																			250

Filename: drbLOG.xls

PROJECT: ROSEBUD	STATE: Nevada	NORTHING:	TOTAL Page 2/2
LOGD BY: MWB	COUNTY: Pershing	EASTING:	BEARING:
UTM#: NK 11-10-06	SEC. T. N., R.	ELEVATION:	ANGLE:

HOLE#: RL
DRB 92

DEPTH in FEET	DRILLING NOTES (TIME, Dates, H20, Casing, Bits, Hole C)	COLOR (WET)	STRATIGRAPHY/LITHOLOGY: 1 ALUVM, 2 ADGER, 3 CHOCOLT, 4 UBUD, 5 BRADY, 6 MKRPOR, 7 LBUD, 8 OZER, 9 WILDROS, 10 SURGTUF, 11 ASHOFLO, 12 LAVA0, 13 AUTOBXA, 11 INTRUSV, 12 BASALT, 13 ANDESIT, 14 RHYOLIT, 15 BROKEN, 16 GOUGE	GRAPHIC	ALTERATION & MINERALIZATION: OXD'T'N 17 MANGAN, 18 HEMAT, 19 LIMON, 20 PYRITE	GRAPHIC	21 UNALTRD, 22 PROPYLT, 22 ARG, 23 RPLSIL, 24 STKWKS, 25 VEINS, 26 CALCITE, 27	GRAPHIC	COMMENTS: Sample Recovery; Composite Geochem Intervals	SAMPLE No
260		WTE	12		2		1	2	equigranular w/ diss py + qtz+py vnlts 1-3mm wide	255, 260
270			12							265, 270
280			12							275, 280
290		LT GRN	12		1		2		4 green chlorite veinlets cut fine-med grained	285, 290
300	RC CORE		13						and altered hnbl→ch.	295, 300
310										305, 310
320										315, 320
330										325, 330
340										335, 340
350										345, 350
360										355, 360
370										365, 370
380										375, 380
390										385, 390
400										395, 400
410										405, 410
420										415, 420
430										425, 430
440										435, 440
450										445, 450
460										455, 460
470										465, 470
480										475, 480
490										485, 490
500										495, 500

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 1/20
LOGD BY: mwb	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL 92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION										STRAT								DEPTH	LITH GRAPH	ALT GRAPH	STRCT	SCALE:	SAMPLE
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITES	METCLAS	BADGER	CHOCOLT		BUD	BRADY	MKROR	L BUD	WILDROS	DOZER	DEPTH FT				
			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					

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

fine equigranular flow
gradational contact at base

10mm wide Ca veinlet

316-323 flow breccia; Lt green angular clasts w/minor red brn matrix

5mm wide Ca veinlet

323-338
Autobreccia; Lt gray angular clasts w/purple matrix

5mm Ca veinlet

338-343 flow foliated

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 2/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-92

DEPTH FT	RECOVERY	Q	D	ALLUVIUM (1)	MUDCGL (2)	(3)	LITHTUFF (4)	PUMTUFF (5)	SURGTUFF (6)	ASHFALL (7)	LAVA (8)	AUTOBX (9)	INTRUSIV (10)	BASALT (11)	ANDESITE (12)	RHYOLITE (13)	TEC BXA (14)	BROKEN (15)	GOUGE (16)	VOID (17)	Fe MIN: MNOX (18)	HEMATITE (19)	LIMONITE (20)	PYRITE (21)	PROP (22)	ARG (23)	ARG2 (24)	RPLSIL (25)	(26)	QTZVNS (27)	CALCITE (28)	METALS (29)	BAD GEER (30)	CHOCOLT (31)	UBUD (32)	BRADY (33)	MKRPOR (34)	LBUD (35)	WILDROS (36)	DOZER (37)	DEPTH FT	LITH GRAPH	ALTGRAPH	STRCT NT
355																																												
360																																												
365																																												
370																																												
375																																												
380																																												
385																																												
390																																												
395																																												
400																																												

SCALE:

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

flow breccia - red brn + Lt purple mostly matrix supported - fragments angular, monolithilogic and variable in size 0.5 up to +3.0 inches. Basically unaltered.

0.5 inch wide calcite veinlet 80° CA

10mm wide calcite veinlet 10° CA

increasing prop. alt, no fracture control

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 3/20
LOGD BY: [illegible]	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION											STRAT												
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOLT	BUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCNT
			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				
405																	1				1																						
410																								1						2													
415																	1				1			3						3													
420																	2				2									2													
425																							1	1																			
430																	3							3	2					2													
435																	4													4													
																	2							2						2													
440																					2																						
																	1							1																			
445																																											
450																																											

SCALE:

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

Autobreccia, decreasing fragments with depth.

2' thick crush zone 416-418
55° to CA

418-434 flow foliated andesite fine grained. sparce hnbl+plag phenos → LBT
fracturing on the foliation plans
@ 80° CA

1'w crush zone w/calcite filling
75° CA

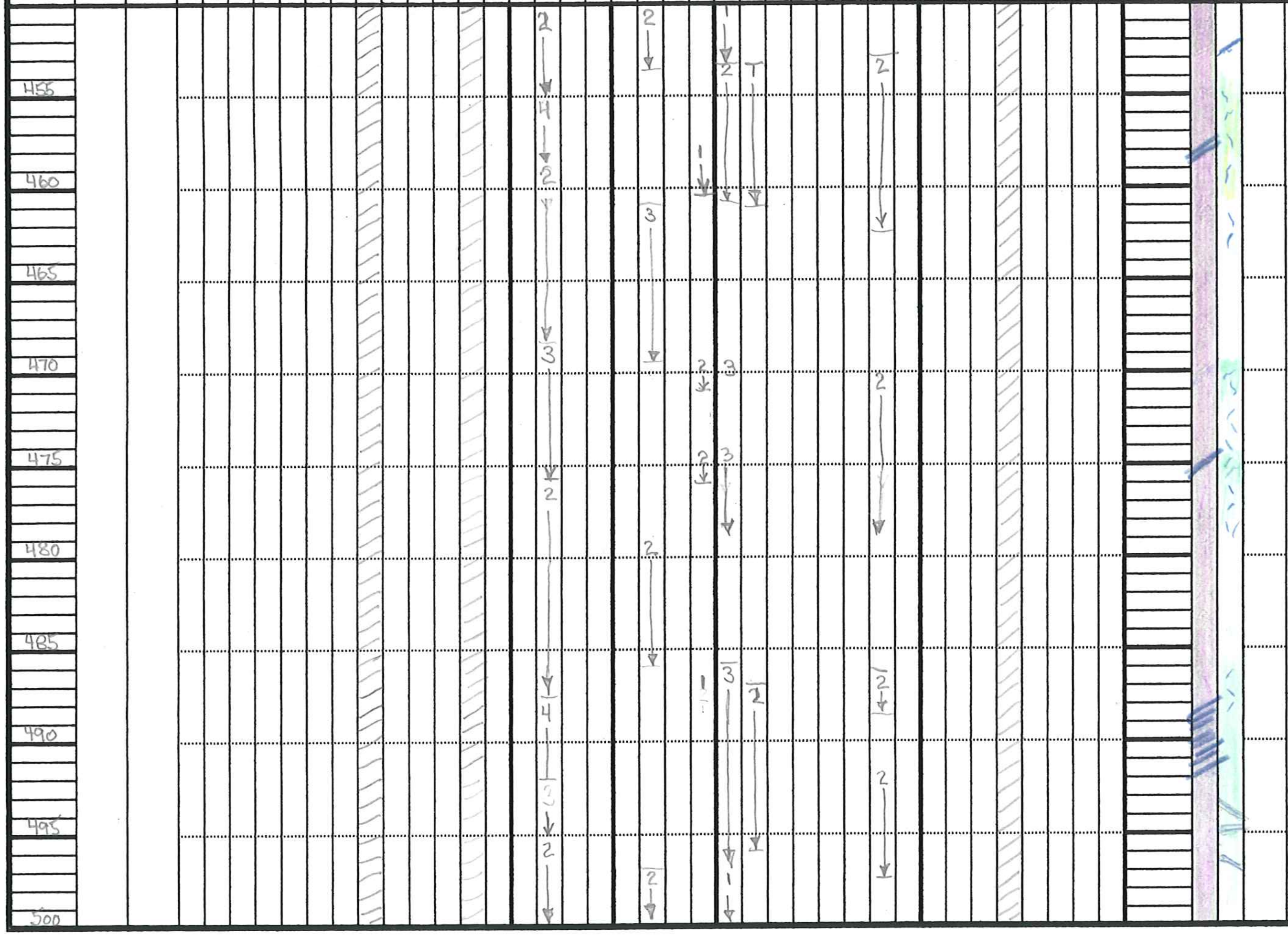
1"w crushed zone w/calcite

1"w calcite veinlet prop alt focused on fracts.

SAMPLE INT

PROJECT: Rosebud JV UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 4/20
LOGD BY: mub STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE: SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT									DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT INT	SCALE: 1" =10 ft	SAMPL INT
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUD CGL		LITH TUF	PUM TUF	SURG TUF	ASH FLO	LAVA	AUTO BX	INTRUS V	BASALT	ANDESIT	RHYOLIT	TEC. BXA	BROKEN	GOUGE	VOID	Fe MIN MNOX	HEMTIT	LIMONIT	PYRITE	PROP	ARG	ARG 2	RP SIL		QTZ VNS	CALCITES	METCALS	BADCGER	CHOCOLT	UBUD	BRBDY	MKR POR	LBUD	WILDROS	DOZER					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	
			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					COMMENTS	



flow foliated andesite fine grained.
sparce hnbl + plag pheno
0.25 inch wide calcite veinlet LBT
55°CA

Poor recovery, very broken poss fault @ 458-59

crush + calcite + Pyrite 1" wide ; strong chlorite
in peripheral 6"-1.0 ft.

1" crush zne w/calcite + py

488-492 crush zone, poor recovery → fault

1" w calcite vein 45°CA
1" w calcite vein 90°CA
0.5" w calcite vein 45°CA

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 5/20
LOGD BY: MUG	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION										STRAT															
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESITE	RHYOLITE	TEC BXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT		BRADY	MKRPOR	L	BUD	WILDROS	DOZER	DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT
			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				

SCALE:

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

SAMPLE INT

COMMENTS

more massive fine grained; no flow foliations LBT
500-501 - clay + fractured → fault.
506-506.5 massive calcite in crush zone 80° CA
509 1" w calcite vnlt 90° CA
0.5" calcite veinlet 75° Cd
poss fluid breccia Lt brown rock flower matrix.
3" crush zone, no lineation → fault
pervasive arg altn.
2' crush + clay zone → fault
slicks 55° CA
544-47 poss fluid bxa Lt brn rock flower matrix

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 6/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT											
																				Fe MIN																							
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC. BXA	BROKEN	GOUGE	VOID	MNOX	HEMIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT	BUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCNT
			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				
555																	2				2		1	3	2					2													
560																	3						1							2													
565																	2																										
570																	3								2					2													
575																	2																										
580																					3																						
585																																											
590																																											
595																					2																						
600																																											

SCALE:

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

SAMPLE INT

COMMENTS

550-52 poss. fluid bxa Lt brn rock flour matrix
v fine equigranular unit w/sparce local hnbl
LBT
fracture controlled alteration.

intrusive, v fine grained, equigranular w/ sparse hnbl.

6" w crushed zone w/calcite 40° CA

fracture: 60° CA

fracture controlled prop altn. mostly weak.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 7/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE #
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	RL-92

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION											STRAT							
																			Fe MIN																		
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC.BXA	BROKEN	GOUGE	VOID	MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT	BUD	BRADY	MKRPOR	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
605																	2				2			1						2									
610																																							
615																																							
620																					2			2															
625																	3																						
630																								3						2									
635																	2																						
640																							1		2					1									
645																	3																						
650																																							

DEPTH FT	LITH GRAPH	ALT GRAPH	STRCT	SCALE: / LITH. EXPLANATION:	COMMENTS	SAMPLE INT
				MUD CGL — Mud matrix conglomerate	v fine equigranular andesite → LBT	
				LITH TUF — Lithic clast dominant tuff		
				PUM TUF — Pumice rich tuff	wk fracture controlled prop altn.	
				SURGE TUF — Bedded matrix rich lithic tuff		
					stronger fracture controlled prop. altn.	
					1" crushzone 80° CA	
					more pervasive prop + grading into argillic altn.	

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 8/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION											STRAT										
																				Fe MIN																						
DEPTH FT	REC/CUT	R Q D	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT	BUD	BRADY	MKRPOR	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	LITH GRAPH	ALT GRAPH	STRCT

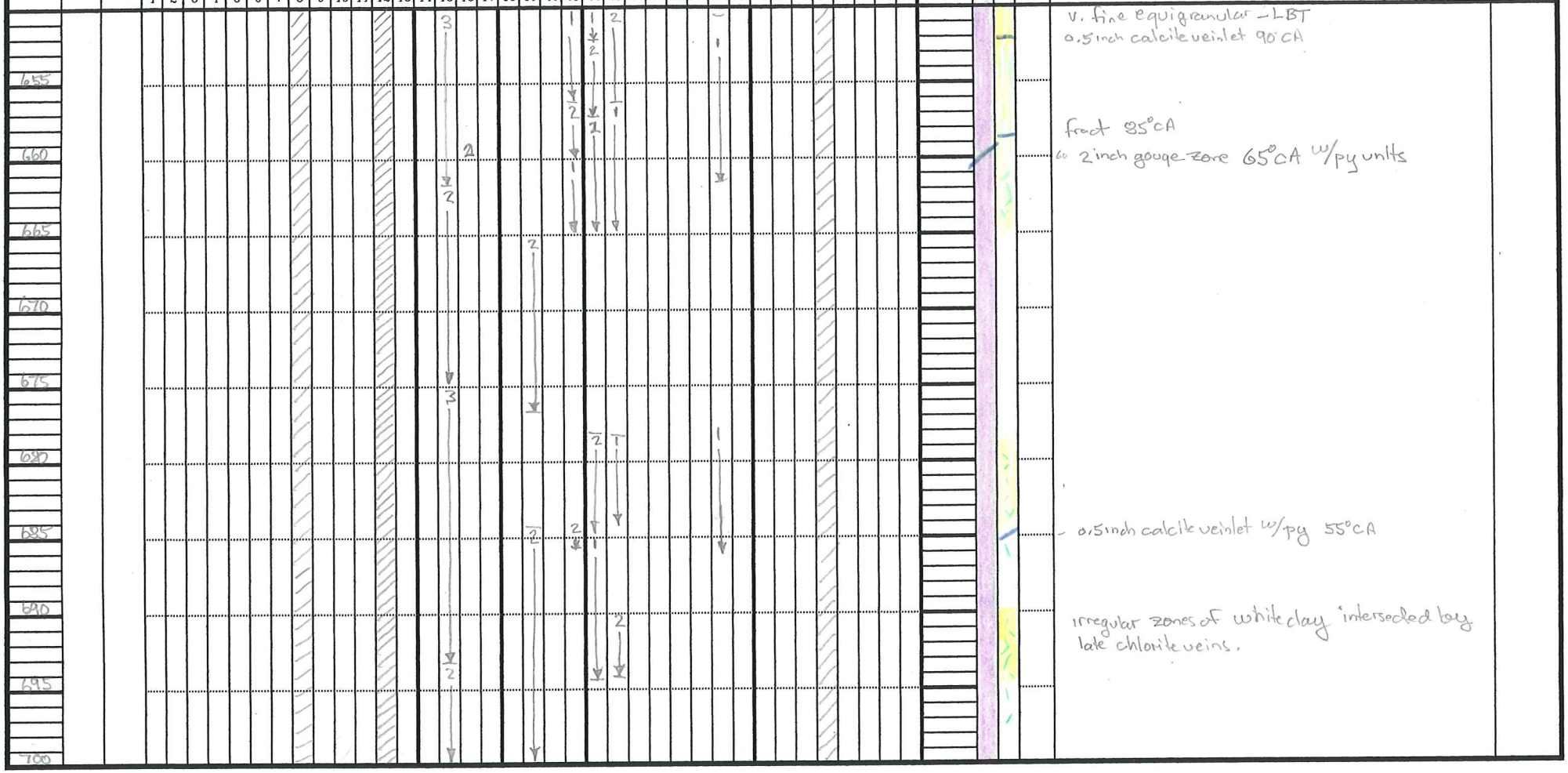
SCALE:

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

SAMPLE INT



PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 9/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION												STRAT											
																			Fe MIN																							
DEPTHFT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC	BRECBXA	GOUGE	VOID	MNOX	HEMIT	LIMON	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT	UBUD	BRADY	MKROR	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	DEPTHFT	LITHGRAPH	ALTGRAPH	STRCNT
																	2				2				2																		
705																																											
710																																											
715																																											
720																																											
725																																											
730																																											
735																																											
740																																											
745																																											
750																																											

SCALE:

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

vfinegrained Purple Brown andesite LBT

1" calcite vein 45°CA

only weakly prop. alt generally fracture controlled.

SAMPLINT

PROJECT: Rosebud JV UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 10/20
LOGD BY: mwb STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE: SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT								
																				Fe MIN																				
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUD CGL		LITH TUF	PUM TUF	SURG TUF	ASH FLO	LAVA	AUTO BX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC. BXA	BROKEN	GOUGE	VOID	MNOX	HEMTIT	LIMONT	PYRITE	PROP	ARG	ARG 2	RPL SIL		QTZ VNS	CALCITES	METCLAS	BADGER	CHOCOLT	UBUD	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

DEPTH FT | LITHGRAPH | ALTGRAPH | STRCT INT

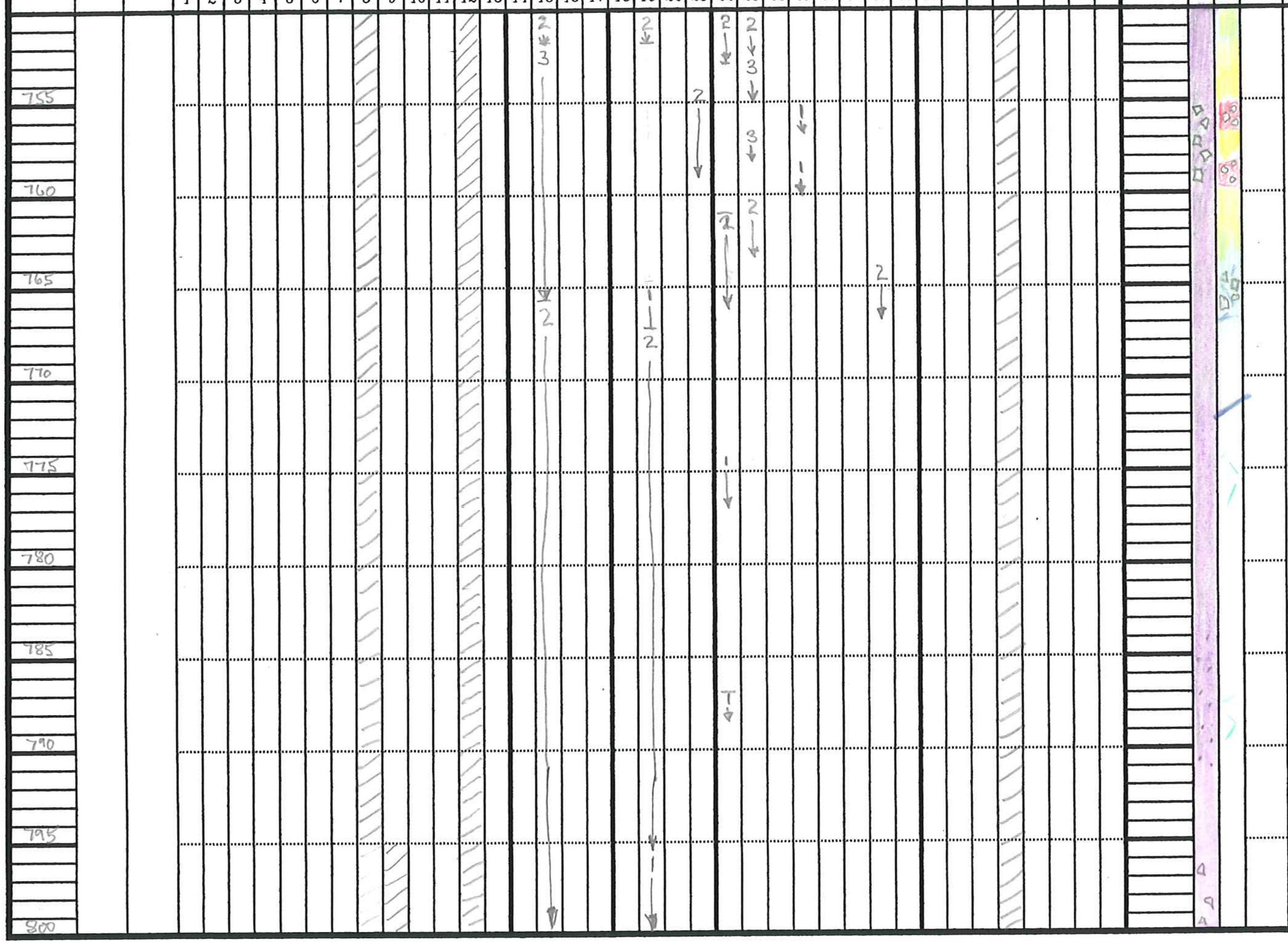
SCALE:

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

SAMPL INT



v. finegrained andesite, reddish purple.
LBT

755-59 Bl + arg alt bxa frags, wk silic flooded matrix + silica leached vugs. Matrix strong clay + marcasite + wk silica → hydro. bxa

764-766 hydro bxa w/ Lt brn rock flour matrix
local late calcite

v fine grained andesite, reddish purple.
5mm wide calcite veinlet 60°CA

vfine grained, equigranular flow

Auto breccia 797-800

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 11/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	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	LITHGRAPH	ALTGRAPH	STRCT	COMMENTS	SAMPLINT
																				Fe MIN																										
DEPTHFT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TE.CBXA	BROKEN	GOUGE	VOID	MNOX	HEMMIT	LIMONIT	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BADGER	CHOCOLT	UBUD	BRADY	MKRPOR	LUD	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						
805																	2				1									1														Fine grained DK purple brown andesite flow 0.25 inch wide calcite veinlet 75°CA	
810																					2																									
815																																														
820																																														
825																																														
830																																														
835																								1																				0.5 inch wide calcite veinlet 85° CA	
840																																												flow foliated 843-45 1.0 inch calcite veinlet 90°CA	
845																									1 2																				waxy clay in narrow veinlets + irregular matrix films Poss. flow contact 65°CA fine grained andesite mudflow w/ andesite lithics local. more granular texture.	
850																																														

PROJECT: Rosebud JV UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 12/20
LOGD BY: mulB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT								
																				Fe MIN																				
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC. BXA	BROKEN	GOUGE	VOID	MNOX	HEMATIT	LIMONIT	PYRITE	PROP	ARG	ARGL 2	RPL SIL		QTZ VNS	CALCITE	METCLAS	BADGER	CHOCOLT	U BUD	BRADY	MKRPOR	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	

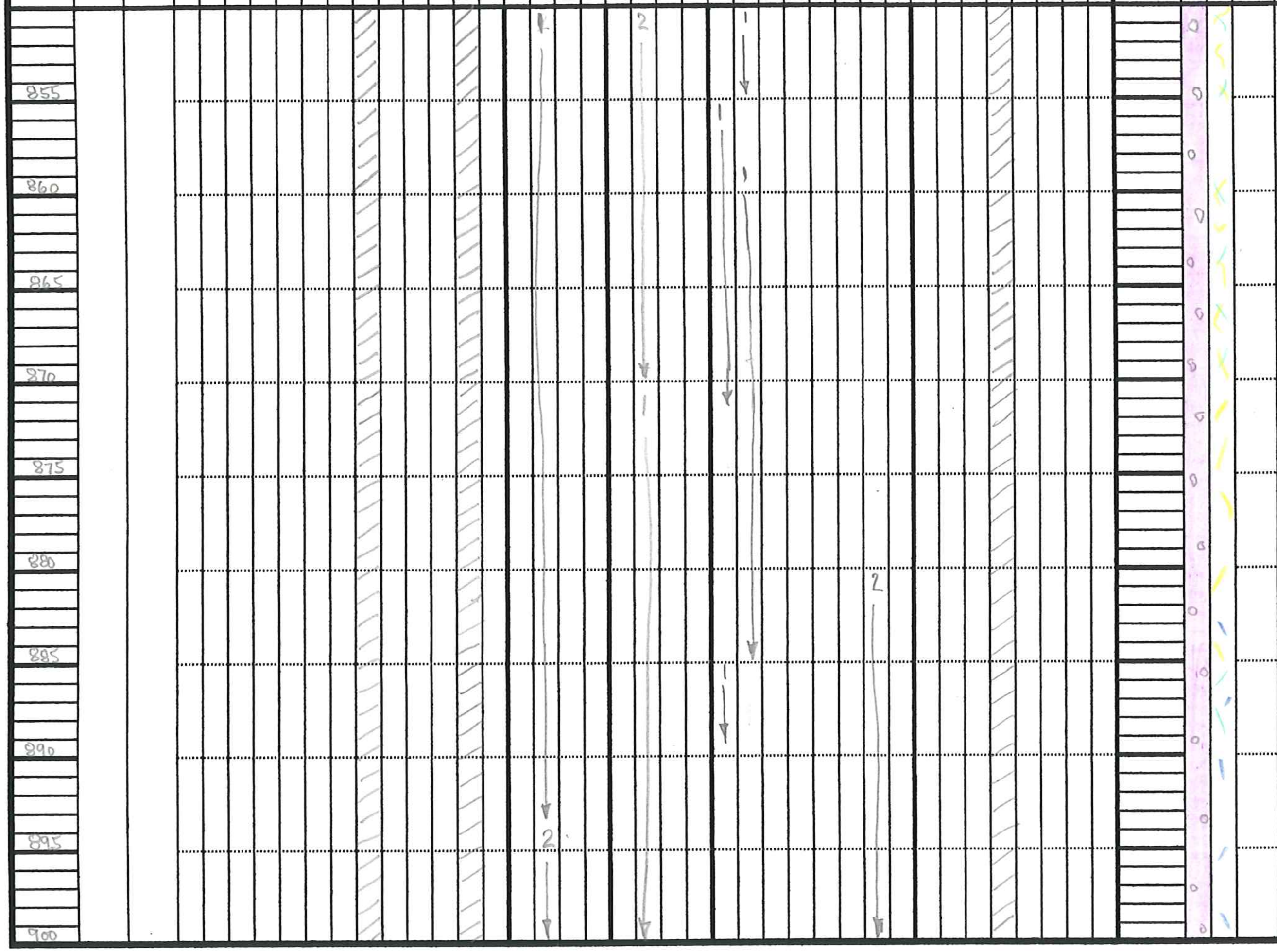
DEPTH FT | LITHGRAPH | ALT GRAPH | STRCT NT | SAMPL INT

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

COMMENTS



mudflow with andesite lithics more granular matrix texture.

rock basically unaltered, since mud matrix more porous, clay + calcite forms as weak vug replacements.

clay as waxy vug fillings

decreasing clay in vug fillings, weak calcite vug fillings instead

PROJECT: Rosebud JV UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 13/20
LOGD BY: mwb STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE: SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

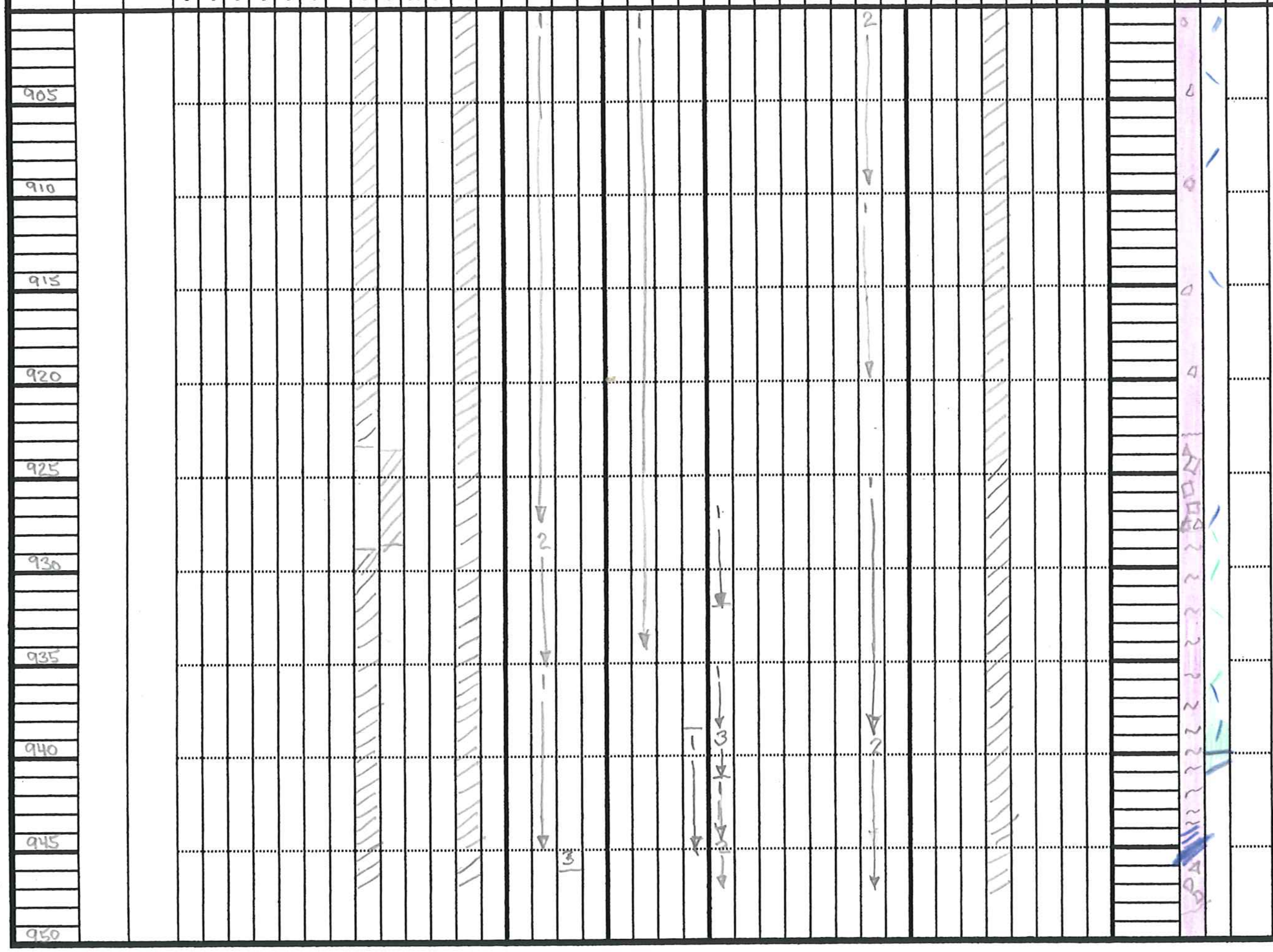
DRILLING	LITHOLOGY	STRUCT	ALTERATION/MINLIZATION	STRAT
DEPTH FT, REC/CUT, RQD	1 ALLUVUM, 2 MUD CGL, 3, 4 LITH TUF, 5 PUM TUF, 6 SURG TUF, 7 ASH FLO, 8 LAVA, 9 AUTO BX, 10 INTRUSV, 11 BASALT, 12 ANDESIT, 13 RHYOLITA	14 TEC BXA, 15 BROKEN, 16 GOUGE, 17 VOID	Fe MIN: 18 MNOX, 19 HEMTIT, 20 LIMON, 21 PYRITE; 22 PROP, 23 ARG, 24 ARG 2, 25 RPL SIL, 26, 27 QTZ VNS, 28 CALCITE, 29 METCLAS	30 BADGER, 31 CHOCOLT, 32 UBCUD, 33 BRADY, 34 MKRPOR, 35 LBUD, 36 WILDROS, 37 DOZER

DEPTH FT — LITHGRAPH — ALTGRAPH — STRCTNT — 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



COMMENTS

Fine grained purple matrix around sparse andesite breccia frags → mud flow

923 928 – flow breccia, no actual contact but abrupt change 50% Andesite breccia frags / 50% matrix

928 – v. fine grained Dk purple brn. flow Tr prop altn in fracts.

pervasive prop altn + diss py.

0.25 inch calcite veinlet 90°CA
4mm calcite veinlet 70°CA
941-944 v. fine grained dense Dk gray flow?

fault 65°CA 2" gouge with parallel shearing over 1 foot. Calcite cement
946-46 50% Lithics (LBT unalt) 50% matrix ground up LBT? wk calcite

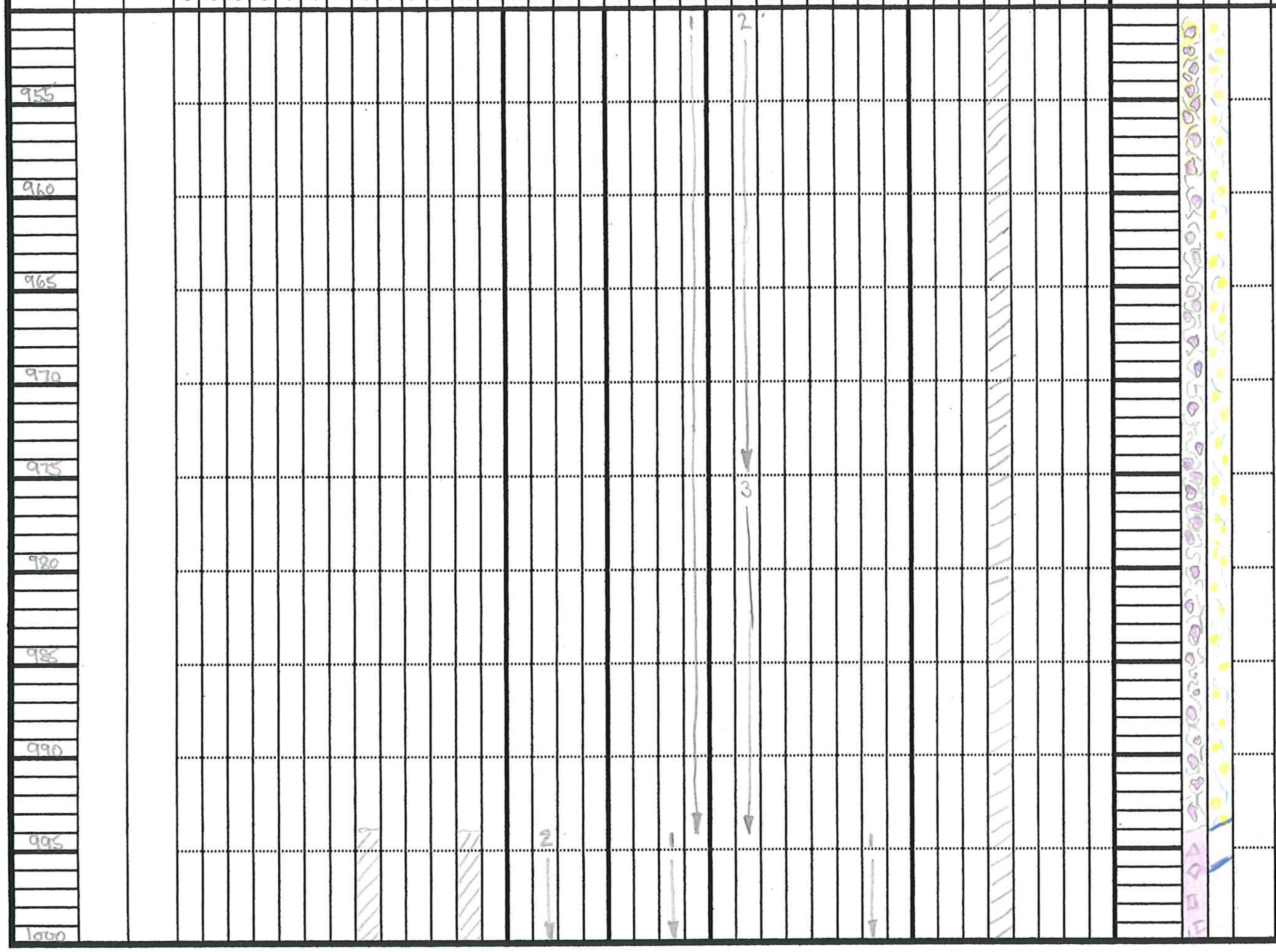
PROJECT: Rosebud JV UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 14/20
LOGD BY: MWB STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE: SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT								D	L	A	S	
																				Fe MIN																								
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUD CGL		LITH TUF	PUM TUF	SURG TUF	ASH FLO	LAVA	AUTO BX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	MNOX	HEMTIT	LIMON	PYRITE	PROP	ARG	ARG 2	RPL SIL		QTZ VNS	CALCITE	METCLAS	BADGER	CHOCOLT	UBUD	BRDY	MKRPOR	LBUD	WILDROS	DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCT INT	SAMPL INT
			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					

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

948-975 Hydrothermal fluid breccia?

30% Lithics - argillic altered andesite (LBT)
angular with partially coroded, resorbed edges wk diss py
70% matrix - tan rock flour vfinegrained
wk calcite cement
cut by late 1-3mm wide pyrite veinlets
+ 3-5mm calcite veinlets

975-994 same as above. Lithics increasing argillic alteration

sharp ctc 80°CA w/0.25 inch calcite veinlet @ ctc

dk Purple brown flow breccia (LBT)
0.25 inch Calcite veinlet 75°CA
basically unaltered.

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 15/20
LOGD BY: MWG	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION									STRAT								DEPTH	LITHGRAPH	ALTGRAPH	STRCT	SCALE: 1" =10 ft	SAMPLINT
DEPTHFT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUFF	PUMTUFF	SURGTUFF	ASHFLO	LAVA	AUTOBXA	INTRUSV	BASALT	ANDESIT	RHYOLIT	TE.COBXA	BROKEN	GOUGE	VOID	Fe MIN: MNOX, HEMTIT, LIMONIT, PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITES	METCLAS	BADGER	CHOCOLT	UBUD	BRADY	MKRPOR	LBUD	WILDROS	DOZER					LITH. EXPLANATION:
			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					

COMMENTS

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

1005
1010
1015
1020
1025
1030
1035
1040
1045
1050

DK purple brown andesite flow breccia

0.5 inch calcite 25°CA
0.5 inch calcite 60°CA

GRADATIONAL CTC 1032-1034
mostly weak perv. arg altn.
1034 – Hydrothermal fluid bxa?
60% frags 40% matrix 1034-1036
1036-1048 70% matrix fine rock flower
w/min prop altn, + wk arg, + wk $CaCO_3$
30% frags angular most arg
altn. prob LRT.

shear 60°CA
shear 60°CA
} silica flooded, stronger at shears py in veinlets + clots but weak overall

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 16/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY												STRUCT				ALTERATION/MINLIZATION									STRAT							
																			Fe MIN															
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUFF	PUMTUFF	SURGTUFF	ASHFLO	LAVA	AUTOBX	INTRUSV	BASALT	ANDESITE	RHYOLITE	TECBXA	BROKEN	GOUGE	VOID	MNOX	HEMIT	LIMONIT	PYRITE	PROP	ARG	ARGG2	RPLSIL		QTZVNS	CALCITE	METCLAS	BAD	CHOCOLT	BUD	BRAD	MKRPOR	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

DEPTH FT	LITHGRAPH	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 COMMENTS	SAMPLINT
1050				1050-1111 Hydrothermal fluid bxa?	
				lineation 65°CA wk silica flooding + clay	
1055				70% Fragments arg alt. LBT(?)	
				30% matrix - lt brn rock flour w/ wk Calcite	
1060				all cut by few late qtz+py veinlets	
				Fracture w/ open spaced d-qtz+barite fillings	
1065				2" wide qtz+clay vein, barite growing on open vug	
				1" crushed zone w/ pyrite 45°CA	
1070					
1075					
1080					
1085					
				0.5 inch calcite vein 40°CA	
1090					
1095					
1100					

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 17/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION										STRAT								DEPTH	LITH GRAPH	ALT GRAPH	STRCT	SAMPLE
																				Fe MIN																							
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUDCGL		LITHTUF	PUMTUF	SURGTUF	ASHFALL	LAVA	AUTOBX	INTRUSV	BASALT	ANDESITE	RHYOLITE	TEC.CBXA	BROKEN	GOUGE	VOID	MNOX	HEMTIT	LIMONIT	PYRITE	PROP	ARG	ARG2	RPLSIL		QTZVNS	CALCITES	METCLAS	BAHCOLT	CHCOD	UBUD	BRADY	MKRPOR	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				

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

HYDROTHERMAL fluid bxa? to 1111
50% fine rock flour matrix w/ wk $CaCO_3$.
50% angular frags but smaller than above mostly arg altered.
gradational cte @ 1111 but marked by 0.5 inch calcite vein 65°CA

ox brown purple flow bxa → LBT
wk calcite fillings to 1116

calcite veinlet 65° CA

fine grained andesite flows gry-lt brn

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 18/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING: DEPTH, REC/CUT, RQD

LITHOLOGY: 1 ALLUVUM, 2 MUD CGL, 3, 4 LITH TUFF, 5 PUM TUFF, 6 SURG TUFF, 7 ASH FLO, 8 LAVA, 9 AUTO BX, 10 INTRUSIV, 11 BASALT, 12 ANDESIT, 13 RHYOLITA

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

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

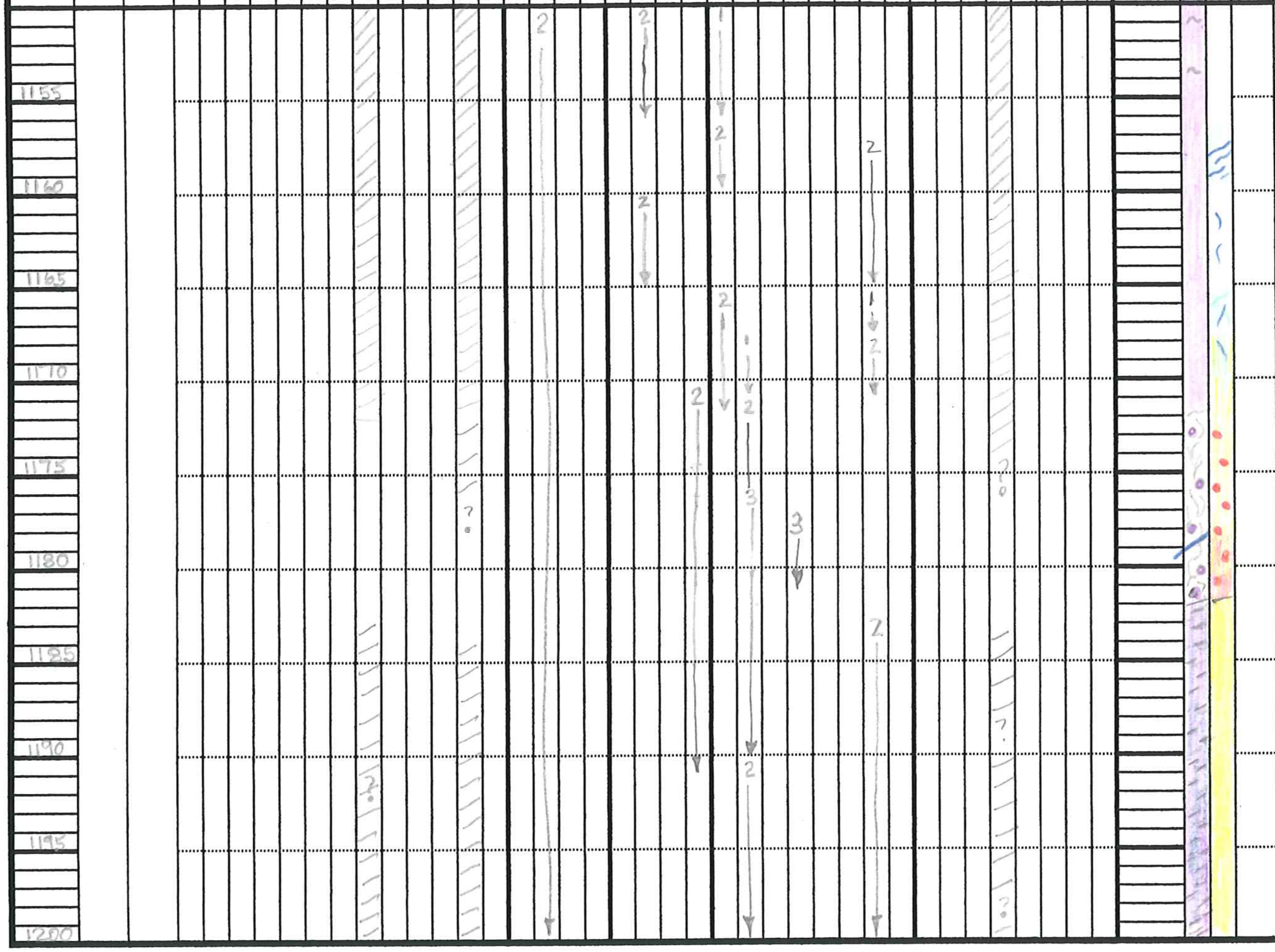
STRAT: 30 BADGER, 31 CHOCOLT, 32 UBUD, 33 BRADY, 34 MKRPOR, 35 BUD L, 36 WILDROS, 37 DOZER

DEPTH FT, LITHGRAPH, ALT GRAPH, STRCT NT, 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



COMMENTS

Gry - DK brownish purple fine grained andesite flow

calcite veinlets 65°CA

gradational ctc.

1172 - Hydrothermal fluid bxa?
pyrite diss in matrix + fragments
60% matrix - tan rock flower + wk clay
40% fragments - many appear silica flooded
more silica flooded matrix @ 1178
1179 crush zone 2"w 50°CA
1180-82 vugs in bxa w/ d-qtz + coarse pyrite

strongly laminated v. fine grained flow bxa ctc @ 1182 not marked by distinctive sharp point → gradational.

entire unit wk CaCO3 cut by CaCO3 veinlet

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 19/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	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 MUD CGL	3	4 LITH TUF	5 PUM TUF	6 SURGE TUF	7 ASH FLO	8 LAVA	9 AUTO BX	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 LIMON	21 PYRITE	22 PROP	23 ARG	24 ARG 2	25 RPL SIL	26	27 QTZ VNS	28 CALCITE	29 METCLAS	STRAT 30 ADGER	31 CHOCOLT	32 UBD	33 BRADY	34 MKROPOR	35 LBUD	36 WILDROS	37 DOZER	DEPTH FT	LITHGRAPH	ALTGRAPH	STRCNT	COMMENTS	SAMPLINT
1205									?					?			2							2	1					2						?								65° CA	v fine grained flow foliated Andesite? much calcite in matrix. Actually looks like qtzt w/ CaCO3 cement.	
1210																									2																			late qtz+py veinlets w/ some cal.	
1215																																											40° CA	qtz+py vnlt 40° CA	
1220																											3																70° CA	qtz+py vnlt silica flooded bxa both flow foliated and breccia textures	
1225																																														
1230																	3										3																75° CA	silica flooded bxa immediate silica flooded bxa zones.	
1235																											3																			
1240																																												silica flooded bud bxa; contains bxa silica frags	
1245																																												contact 65° CA sharp but not a fault fine grained arkose, non-calcareous. qtz veinlets pervasive w/ local py	
1250																																														

PROJECT: Rosebud JV	UTM: NK 11-10-06 C	NORTHING:	TOTAL DEPTH:	STARTED:	PAGE: 20/20
LOGD BY: MWB	STATE: Nevada County Pershing	EASTING:	BEARING:	COMPLETED:	HOLE # RL-92
DATE:	SEC. T. N., E.	ELEVATION:	ANGLE:	DRILLER:	

DRILLING			LITHOLOGY													STRUCT				ALTERATION/MINLIZATION												STRAT							
																				Fe MIN																			
DEPTH FT	REC/CUT	RQD	ALLUVUM	MUD CGL		LITH TUF	PUM TUF	SURG TUF	ASH FLO	LAVA	AUTO BX	INTRUSV	BASALT	ANDESIT	RHYOLIT	TEC BXA	BROKEN	GOUGE	VOID	MNOX	HEMATIT	LIMONIT	PYRITE	PROP	ARG	ARG 2	RP SIL		QTZ VNS	CALCITES	METCLAS	BADGER	CHOCOLT	CU BUD	BRADY	MKARPOR	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
1255																																							
1260																																							
1265																																							
1270																																							
1275																																							
1280																																							

DEPTH FT	LITHGRAPH	ALTGRAPH	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

Fine grained arkose, non-calcareous
qtzveinlets pervasive w/ local py

Breccia 1256-1257 no silica, no calcite no lineation

Black argillite w/ clay rich veinlets
non-calcareous

EOH 1281

RL-92 6-3-90 1 of 6

RC to 290' (sampled to 295'-300')

Recovery Footage	% Recovery	Sample Interval	Lithology
290-299	9/9 ~100%	290-295	290-322
299-302	3.4/3	295-300	wht-lt grn, FGT
302-312	93%	300-304.2	local bx, local calcite
312-322	99%	304.2-310	vns to massive
322-332	102%	310-315	
332-342	98%	315-320	323.4-429.8
342-352	102%	320-323.4	maroon, Fragmental
352-362	102%	✓323.4-327	w/red, hematitic matrix
362-372	100%+	327-332	
372-382	100%+	332-337	[396-397.2]
382-392	100%	337-342	lt grn, blk, fam lt/bx
392-402	104%	342-347	[413.9-418.5]
402-409	7.4/7	347-352	blk, lt grn FGT, grn
409-419	100%	352-357	429.8-437
419-429	103%	357-362	lt grn, FGT + Fault
429-437$^{\underline{5}}$	7.2/8.5	362-367	grn; sty calcite
437$^{\underline{5}}$-448	10/10.5	367-372	
448-458	103%	372-377	437-
458-468	102%	377-382	gry, grn, FGT
(2.8) 468-		382-387	local Fract
		387-392	
		392-396	[453.8-461.5]
		✓396-397.2	lt grn, blk
		✓397.2-402	local sty fractured
		✓402-407	+ pend w/lt.
		✓407-413.9	[469.6-]
		✓413.9-418.5	lt grn, blk FGT
		✓418.5-424	local bx, local
		✓424-429.8	calcite veining
		✓429.8-434.5	+ local blk to lt grn
		✓434.5-437	
		✓437-441.2	
		✓441.2-445	
		445-449	
		449-453.8	
		453.8-458	

RL-92

Recovery Footage	% Recovery
468-478	100% +
478-488	90%
488-494	5.5%
494-500	100%
500-510	100% +
510-520	100%
520-530	104%
530-540	98%
540-550	104%
(8.5) 550-	

Sample Interval	Lithology
458-461.5	
461.5-465.5	
✓ 469.6-475	469.6-
475-480	FGT
480-483	
483-485	488-499.5
485-488	Fault + Zone
488-493	530-535
493-495	
495-500	500-501 Fault gouge
500-501	526.6-530
501-506	Favorable? pending
506-510	lt gm, blk FGT
510-515	
515-520	
520-522.2	
522.2-526.6	
526.6-530	
530-535	
535-538	
538-542	
542-545	
545-550	
✓ 550-551	
✓ 551-553.7	
✓ 553.7-559	

RL-92

Recovery footage	% Recovery
550 - 560.5	9.9 /10.5 = 94%
560.5 - 570.5	100%
570.5 - 581	10.3/10.5 = 98%
581 - 591.5	10.5/10.5 = 100%
591.5 - 602	10 /10.5 = 95%
602 - 612	103%
612 - 621	9.5 /9 = 106%
621 - 628	7.3 /7 = 104%
628 - 632	4 /4 = 100%
632 - 642	103%
642 - 652	98%
652 - 662	103%
662 - 672	102%
672 - 682	94%
682 - 687	4.3/5 = 86%
687 - 693	6.4/6 = 107%
693 - 702	8.8 /9 = 98%
702 - 712	102%
712 - 722	100%
722 - 732	95%
732 - 742	98%
742 - 752	100% +
(7.4) 752-	

Sample Interval
559 - 562.2
562.2 - 565
565 - 570
570 - 575
575 - 580
580 - 585
585 - 590
590 - 595
595 - 600
600 - 605
605 - 610
610 - 615
615 - 620
620 - 625
625 - 629
629 - 635
635 - 640
640 - 645
645 - 650
650 - 652.2
652.2 - 656
656 - 660.5
660.5 - 665.5
665.5 - 670
670 - 675
675 - 680
680 - 685
685 - 690
690 - 695
695 - 700
700 - 705
705 - 710
710 - 715
715 - 720
720 - 725
725 - 730
730 - 735

Lithology

469.6 - 750
FGT, red-brown, gm
local bx, mod
fracts

559 - 575
FGT, red-brown - gm
stg local bx

~612 - 629
FGT, wk fracts

629 - 665.5
FGT, gm - gy, blc
w/ high angle fract.

652.2 - 660.5
stg fract, schistose
fault zone

665.5 - 750
red brown FGT
wk local blc,
+ stg, local, hematite
bx zones

750 - 766
wht, pink blc
zone

755 - 760
stg chy, fault
zone, blc, pink
+ gm chy

RL-92 6-13-90

Recovery Footage	% Recovery	Sample Interval	Lithology
		735-740	
		740-745	
		745-750	
		750-755	
		755-760 ✓	
752-762	98%	760-763	
762-772	104%	763-766	766-938
772-782	100%	766-770	red, brown, fGT, welded
782-792	102%	770-775	local sty bx, poro inclu
792-802	100% +	775-780	local calcite/siderite
802-812	105%	780-785	842-850
812-822	100%	785-790	Lomalli? or flow
822-832	100% +	790-795	brecciating sty evident
832-842	100%	795-800	~922-928
842-852	100% +	800-805	flow banded tuff bx
852-862	100%	805-810	+ epiclastic ?? local?
862-872	100%	810-815	
872-882	(4.7+) 100%	815-820	
882-892	100%	820-825	
892-902	104%	825-830	
902-912	100% +	830-835	
912-922	95%	835-840	
922-932	(10'+) 100% +	840-845	
		845-850	
		850-855	
		855 860	
		860-865	
		865 870	
		870-875	
		875-880 ✓	
		880-885	
		885-890	
		890-895	
		895-900	
		900-905	
		905-910	
		910-915	
		915-920	920-925 925-930
	930-935		

RL-92 6-14-90

Recovery Footage	% Recovery
932 - 942	100%
942 - 950	8.7 /8 = 109%
950 - 955	4.7 /5 = 94%
955 - 962	5.6 /7 = 80%
962 - 972	99%
972 - 982	100%
982 - 992	99%
992 - 1002	102%
1002 - 1012	98%
1012 1022	102%
1022 - 1032	97%
1032 - 1042	102%
1042 - 1052	98%
1052 - 1062	98%
1062 - 1072	100%
1072 - 1082	100%
1082 -	(8.5+1.5) 100%

Sample Interval	Lithology
920-925	
925-930	
930-935	938-944.6
935-938	dk gm, wk blc, local
938-941	bx FGT, welded
941-944.6	w/calcite
944.6-948.5	944.6-948.5
948.5-951	Fault zone
951-955	rehealed
955-960	w/sulfides
965	
970	948.5-994.1
975.3	wht-peach, blc,
975.3-977.7	FGT local stg bx
977.7-982	
982-986.4	975.3-977.7
986.4-989	stg clay zone
989-994.1	w/sulfide veins
994.1-1000	
1000-1005	986.9-989
1005-1010	sulfide clay bx zone
1010-1015	
1015-1020	994.1-1032.8
1020-1025	red, brown,
1025-1029	welded fragmental?
1029-1032.8	
1032.8-1035	1032.8-1110.2
1035-1036.7	peach-gm welded??
1036.7-1040	fn gm TUFF-fragmental
1040-1046	blc, stg bx
1046-1050	
1050-1055	1035-1036.7
1055-1060	fault zone, silic
1060-1065 ✓	1046-1110.2
1065-1070	fault zone, stg bx silic
1070-1075	
1075-1080	

RL-92

Recovery Footage	% Recovery
1082-1092	100%
1092 - 1098	5.6/7 = 80%
1098- 1105	6.8/7 = 97%
1115	102%
1125	99%
1135	105%
1135- 1142	6.6 /7 = 94%
1152	99%
1162	100%
1172	100%+
1182	100%
1192	99%
1202	100%
1202- 1210	7.8/8 = 98%
1210 - 1220.5	10.2/10.5 = 97%
1220.5 - 1231	10.3/10.5 = 98%
1231 - 1240	~~7.1~~ + 9.2/9 = 100%+
1240 - 1250	92%
1250 - 1260	92%
1260 - 1271	103%
1271 - 1281 TD	102%

Sample Interval	Lithology
1080 -1085	1110.2 - 1165
1085 - 1090	red-brown-gry, FGT,
1090 - 1095 ✓	welded to fragmental?
1095- 1100	local fmnt
1100- 1105	
1105- 1111.2	1165 - 1245.4
1111.2- 1115	lt gry - grn, blc
1115- 1120	FGT alt
1120 - 1125	
1125- 1130	
1130 - 1135	1172 - 1184
1135- 1140	rehealed fault zone
1140 - 1145	
1145- 1150	1220 - 1245.5
1150 - 1155	narrow < 1ft rehealed
1155 1160 ✓	fault zones, stg silicific
1160-1165	stg local sulfid
1165-1168	1230 - 1235
1168- 1172	barite xtals in uns
1172- 1175	1240 - 1245.4
1175- 1180	rehealed, stg silic
1180- 1184	flt zone
1184-1190	
1190- 1195	1245.4 - 1255
1195- 1200	lt gry FGT
1200- 1205	wk qtz sulfid uns
1205 1210	
1210 - 1215	1255 - 1257.5
1215- 1220	contact bx
1220- 1225	contact at 1257.5
1225- 1230	
1230 - 1235	
1235-1240	1257.5 - 1281 TD
1240 - 1245.4	Jk shale, stg
1245.4 - 1250	bx stg silic
1250 - 1255	
1255 - 1257.5	

1257.5 - 1260
1260 - 1260.5
1260.5 - 1265
1265 - 1270
1270 - 1275
1275 - 1278 1278 - 1281

	1032.8	1111.2								Vol/Bleached Red Bwn Tuff			buff-flesh,local sage gn	
RL92C	1032.8	1035	0	0	0	1	0	0		Volc/very little alt/FGT			"	
RL92C	1035	1036.7	0	0	0	1	0	0		"			"	
RL92C	1036.7	1040	0	0	0	1	0	0		"			"	
RL92C	1040	1046	0	0	0	1	0	0		"			"	
RL92C	1046	1050	4	0.038	0.038	1	0.038	1303		", mod sx,3" vein/clay/sx			"	
RL92C	1050	1055	0	0.011	0.011	1	0.011	377		".some bx, crackle-auto			"	
RL92C	1055	1060	0	0.004	0.004	1	0.004	137		".some bx, crackle-auto			"	
RL92C	1060	1065	0	0.005	0.005	1	0.005	171		",2" sx/clay vein			"	
RL92C	1065	1070	0	0.001	0.001	1	0.001	34		".some bx, crackle-auto			"	
RL92C	1070	1075	0	0.012	0.012	1	0.012	411		".some bx, crackle-auto			"	
RL92C	1075	1080	0	0.003	0.003	1	0.003	103		".some bx, crackle-auto			"	
RL92C	1080	1085	0	0	0	1	0	0		".some bx, crackle-auto			"	
RL92C	1085	1090	0	0.001	0.001	1	0.001	34		"			"	
RL92C	1090	1095	0	0	0	1	0	0		"			"	
RL92C	1095	1100	0	0	0	1	0	0		"			"	
RL92C	1100	1105	0	0.009	0.009	1	0.009	309		"			"	
RL92C	1105	1111.2	0	0	0	1	0	0		"			"	
RL92C	1111.2	1115	0	0	0	1	0	0		Volc/very little alt/FGT			fine frac/hem selvages	
HOLE#	FROM	TO	FEET	AUAVG	AU SUM	SAM	AU1	AU2						
RL92C	1115	1140	5 ft interv	0	0	1	0			Volc/very little alt/FGT			fine frac/hem selvages	
RL92C	1140	1160	5 ft interv	0	0	1	0			Vol/Unaltered Red Brwn FGT			Red Bwn	
RL92C	1160	1165	0	0	0	1	0						"	
RL92C	1165	1168	0	0	0	1	0			Vol/Altered FGT			Buff-lght Flesh	
RL92C	1168	1172	0	0	0	1	0			Vol/Altered FGT			Buff-lght Flesh	
RL92C	1172	1175	0	0.001	0.001	1	0.001	34		Vol/alt FGT/bleached/clay alt			Buff-lght Flesh	
RL92C	1175	1180	0	0.003	0.003	1	0.003	103		Fault/Py/clay			as above sx Bx, wh kaolinit	
RL92C	1180	1184	0	0.012	0.012	1	0.012	411		Vol/alt FGT/blch/cl alt/vein/sulfides			as above fract banding	
RL92C	1184	1190	0	0.039	0.039	1	0.039	1337						
RL92C	1190	1195	0	0	0	1	0	0		Vol/alt FGT/bleached/clay alt			as above fract banding	
RL92C	1195	1200	0	0	0	1	0	0		Vol/alt FGT/bleached/clay alt			as above fract banding	
RL92C	1200	1205	0	0	0	1	0	0		Vol/alt FGT/bleached/clay alt			decrease bleach	
RL92C	1205	1210	0	0	0	1	0	0		Vol/alt FGT/less altered			decrease bleach	
RL92C	1210	1215	0	0	0	1	0	0		Vol/alt FGT/less altered			decrease bleach	
RL92C	1215	1220	0	0.029	0.029	1	0.029	994		Vol/ FGT/ altered sx, clay/sulfides			decrease bleach	
RL92C	1220	1225	0	0.003	0.003	1	0.003	103		Vol/ FGT/ altered sx, clay/sulfides			buff-wk flesh colour	
RL92C	1225	1230	0	0.005	0.005	1	0.005	171		Vol/ FGT/ altered sx, clay/sulfides			buff-wk flesh colour	
RL92C	1230	1235	0	0.01	0.01	1	0.01	343		Vol/ FGT/ altered sx, clay/sulfides			buff-wk flesh colour	

RL92C	1235	1240	0	0.018	0.018	1	0.018	617		Fault/SRF			as above sx Bx, wh kaolinit	
FAR NORTH / SRF ZONE (Sec1800 N & 1750NW)														
HOLE#	FROM	TO	FEET	AUAVG	AU SUM	SAM	AU1/GSI	Au ppb	Au * Wth					
RL92C	1240.0	1245.4	5.4	0.093	0.093	1	0.093	3189	0.502	Fault/SRF			as above sx Bx, wh kaolinit	
RL92C	1245.4	1250.0	4.6	0.015	0.015	1	0.015	514	0.069	Tran Seds/SS			gray-tan arkosic s.s.	
RL92C	1250.0	1255.0	5.0	0.023	0.023	1	0.023	789	0.115	Tran Seds/SS			gray-tan arkosic s.s.	
RL92C	1255.0	1257.5	2.5	0.107	0.107	1	0.107	3669	0.268	Tran Seds/SS			gray-tan arkosic s.s.	
	1240.0	1257.5	17.5	0.054					0.954					
RL92C	1257.5	1265.0	7.5	0.008	0.008	1	0.008	274		Jr Seds			black shales	
RL92C	1265.0	1270.0	5.0	0.049	0.049	1	0.049	1680		Jr Seds			black shales	
RL92C	1270.0	1275.0	5.0	0.009	0.009	1	0.009	309		Jr Seds			black shales	
RL92C	1275.0	1278.0	3.0	0.009	0.009	1	0.009	309		Jr Seds			black shales	
RL92C	1278.0	1281.0	3.0	0.005	0.005	1	0.005	171		Jr Seds			black shales	

	SAMPLE I.D.			Au o/t	Ag o/t
35.	RL-95C	1020	1025	-0.001	-0.10
36.	RL-95C	1025	1030	-0.001	-0.10
37.	RL-95C	1030	1035	0.006	-0.10
38.	RL-95C	1035	1040	0.001	-0.10
39.	RL-95C	1040	1045	0.001	-0.10
40.	RL-95C	1045	1050	0.002	-0.10
41.	RL-95C	1050	1055	0.001	-0.10
42.	RL-95C	1055	1060	0.001	-0.10
43.	RL-95C	1060	1065	0.001	-0.10
44.	RL-95C	1065	1070	0.001	-0.10
45.	RL-95C	1070	1075	0.002	-0.10
46.	RL-95C	1075	1079	0.002	0.12
47.	RL-95C	1079	1083.7	0.002	-0.10
48.	RL-95C	1083.7	1085	-0.001	-0.10
49.	RL-95C	1085	1090	-0.001	-0.10
50.	RL-95C	1090	1095	-0.001	-0.10
51.	RL-95C	1095	1100	-0.001	-0.10
52.	RL-95C	1100	1102	0.003	0.20
53.	RL-95C	1102	1105	0.001	-0.10
54.	RL-95C	1105	1110	0.001	-0.10
55.	RL-95C	1110	1115	0.001	0.12
56.	RL-95C	1115	1120	0.002	0.12
57.	RL-95C	1120	1125	-0.001	0.10
58.	RL-95C	1125	1130	-0.001	-0.10
59.	RL-95C	1130	1135	-0.001	-0.10
60.	RL-95C	1135	1140	-0.001	-0.10
61.	RL-95C	1140	1145	-0.001	-0.10
62.	RL-95C	1145	1150	-0.001	0.17
63.	RL-95C	1150	1155	-0.001	0.13
64.	RL-95C	1155	1160	0.004	0.18
65.	RL-95C	1160	1165	-0.001	0.11
66.	RL-95C	1165	1170	-0.001	-0.10
67.	RL-95C	1170	1175	-0.001	-0.10
68.	RL-95C	1175	1180	0.001	-0.10
69.	RL-95C	1180	1185	-0.001	-0.10
70.	RL-95C	1185	1190	-0.001	-0.10
71.	RL-95C	1190	1192.6	-0.001	-0.10
72.	RL-95C	1192.6	1193.1	0.014	-0.10
73.	RL-95C	1193.1	1195	-0.001	-0.10
74.	RL-95C	1195	1200	-0.001	-0.10
75.	RL-95C	1200	1205	0.002	-0.10
76.	RL-95C	1205	1210	0.001	-0.10
77.	RL-95C	1210	1215	-0.001	-0.10
78.	RL-95C	1215	1220	-0.001	-0.10
79.	RL-95C	1220	1225	0.001	-0.10
80.	RL-95C	1225	1230	-0.001	-0.10
81.	RL-95C	1230	1235	-0.001	-0.10
82.	RL-95C	1235	1240	0.001	-0.10

	SAMPLE I.D.			Au o/t	Ag o/t
83.	RL-95C	1240	1244.4	0.001	-0.10
84.	RL-95C	1244.4	1250	-0.001	-0.10
85.	RL-95C	1250	1252.7	-0.001	0.15
86.	RL-95C	1252.7	1253.4	-0.001	-0.10
87.	RL-95C	1253.4	1255.5	-0.001	0.34
88.	RL-95C	1255.5	1259	-0.001	0.15
89.	RL-95C	1259	1260.8	-0.001	0.11
90.	RL-95C	1260.8	1265	-0.001	-0.10
91.	RL-95C	1265	1270	-0.001	-0.10

This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

NEVADA GSI

JUN 26 1990

GEOCHEMICAL ANALYSIS REPORT

June 20, 1990

CUST. CODE: LOA
PROJECT: URBD-79014
P.O. #: XXXX
LOT ID: 7491

GEOLOGIST: NATE BREWER
COPIES TO: KRISTEN KENNER AND KEN TULLAR
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.
FIRE ASSAY FOR GOLD, WITH AN A.A. FINISH. (CHECKS)

	SAMPLE I.D.			Au o/t	Ag o/t	Checks Au o/t
1.	RL-92	5	10	0.009	0.25	-
2.	RL-92	10	15	-0.001	0.20	-
3.	RL-92	15	20	-0.001	0.28	-
4.	RL-92	20	25	-0.001	0.20	-
5.	RL-92	25	30	-0.001	0.28	-
6.	RL-92	30	35	-0.001	0.22	-
7.	RL-92	35	40	0.003	0.21	-
8.	RL-92	40	45	0.003	0.20	-
9.	RL-92	45	50	0.001	0.15	-
10.	RL-92	50	55	0.001	0.22	-
11.	RL-92	55	60	0.003	0.24	-
12.	RL-92	60	65	0.002	0.23	-
13.	RL-92	65	70	0.004	0.21	-
14.	RL-92	70	75	0.003	0.17	-
15.	RL-92	75	80	0.002	0.17	-
16.	RL-92	80	85	0.002	0.22	-
17.	RL-92	85	90	0.002	0.10	-
18.	RL-92	90	95	0.001	0.11	-
19.	RL-92	95	100	0.002	-0.10	-
20.	RL-92	100	105	0.001	0.14	-
21.	RL-92	105	110	0.001	0.21	-
22.	RL-92	110	115	0.004	0.21	-
23.	RL-92	115	120	0.002	0.20	-
24.	RL-92	120	125	0.001	0.15	-
25.	RL-92	125	130	0.006	0.14	-
26.	RL-92	130	135	0.006	0.22	-
27.	RL-92	135	140	0.002	0.19	-
28.	RL-92	140	145	0.002	0.19	-
29.	RL-92	145	150	0.001	0.17	-
30.	RL-92	150	155	0.001	0.22	-

1498 Kleppe Lane • Sparks, Nevada 89431 • FAX: 702/359-6605 • 702/359-6600

	SAMPLE I.D.			Au o/t	Ag o/t	Checks Au o/t
31.	RL-92	155	160	0.001	0.23	-
32.	RL-92	160	165	0.009	0.14	-
33.	RL-92	165	170	0.003	0.22	-
34.	RL-92	170	175	0.002	0.25	-
35.	RL-92	175	180	0.015	0.21	-
36.	RL-92	180	185	0.003	0.27	-
37.	RL-92	185	190	0.001	0.15	-
38.	RL-92	190	195	0.011	0.21	-
39.	RL-92	195	200	0.004	0.22	-
40.	RL-92	200	205	0.003	0.18	-
41.	RL-92	205	210	0.004	0.14	-
42.	RL-92	210	215	0.051	0.27	0.065
43.	RL-92	215	220	0.085	0.25	0.098
44.	RL-92	220	225	0.003	0.26	-
45.	RL-92	225	230	0.003	0.17	-
46.	RL-92	230	235	0.002	0.12	-
47.	RL-92	235	240	0.001	-0.10	-
48.	RL-92	240	245	0.007	0.19	-
49.	RL-92	245	250	0.002	0.13	-
50.	RL-92	250	255	0.004	0.19	-
51.	RL-92	255	260	0.003	0.14	-
52.	RL-92	260	265	0.005	0.24	-
53.	RL-92	265	270	0.005	0.20	-
54.	RL-92	270	275	0.010	-0.10	-
55.	RL-92	275	280	0.023	-0.10	-
56.	RL-92	280	285	0.005	-0.10	-
57.	RL-92	285	290	0.010	-0.10	-
58.	RL-92	290	295	-0.001	-0.10	-
59.	RL-92	295	300	0.001	-0.10	-

THIS REPORT REVIEWED AND APPROVED BY:

Richard A. Grondin

RICHARD GRONDIN, LABORATORY MANAGER

NEVADA GSI

JUL 31 1990

GEOCHEMICAL ANALYSIS REPORT

July 28, 1990

CUST. CODE: LOA
PROJECT: URBD-79014
P.O. #: XXXX
LOT ID: 7821

GEOLOGIST: NATE BREWER
COPIES TO: SAME
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-92C	290	295	-0.001	-0.10
2.	RL-92C	295	300	-0.001	-0.10
3.	RL-92C	300	304.2	-0.001	-0.10
4.	RL-92C	304.2	310	-0.001	-0.10
5.	RL-92C	310	315	-0.001	-0.10
6.	RL-92C	315	320	-0.001	-0.10
7.	RL-92C	320	323.4	-0.001	-0.10
8.	RL-92C	323.4	327	-0.001	-0.10
9.	RL-92C	327	332	-0.001	-0.10
10.	RL-92C	332	337	-0.001	-0.10
11.	RL-92C	337	342	-0.001	-0.10
12.	RL-92C	342	347	-0.001	-0.10
13.	RL-92C	347	352	-0.001	-0.10
14.	RL-92C	352	357	-0.001	-0.10
15.	RL-92C	357	362	-0.001	-0.10
16.	RL-92C	362	367	-0.001	-0.10
17.	RL-92C	367	372	-0.001	-0.10
18.	RL-92C	372	377	-0.001	-0.10
19.	RL-92C	377	382	-0.001	-0.10
20.	RL-95C	955	960	-0.001	-0.10
21.	RL-95C	960	962.4	-0.001	-0.10
22.	RL-95C	962.4	966	0.002	-0.10
23.	RL-95C	966	970	0.029	-0.10
24.	RL-95C	970	974	0.008	-0.10
25.	RL-95C	974	977	0.012	-0.10
26.	RL-95C	997	982	-0.001	-0.10
27.	RL-95C	982	985	-0.001	-0.10
28.	RL-95C	985	990	-0.001	-0.10
29.	RL-95C	990	995	-0.001	-0.10
30.	RL-95C	995	1000.5	-0.001	-0.10
31.	RL-95C	1000.5	1005	-0.001	-0.10
32.	RL-95C	1005	1010	0.001	-0.10
33.	RL-95C	1010	1015	0.001	-0.10
34.	RL-95C	1015	1020	-0.001	-0.10

1498 Kleppe Lane • Sparks, Nevada 89431 • FAX: 702/359-6605 • 702/359-6600

NEVADA GSI

AUG 14 1990

GEOCHEMICAL ANALYSIS REPORT

August 9, 1990

CUST. CODE: LOA
PROJECT: URBD
P.O. #: XXXX
LOT ID: 7987

GEOLOGIST: NATE BREWER
COPIES TO: SAME
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-92C	382	387	-0.001	-.10
2.	RL-92C	387	392	-0.001	-.10
3.	RL-92C	392	396	-0.001	-.10
4.	RL-92C	396	397.2	-0.001	-.10
5.	RL-92C	397.2	402	-0.001	-.10
6.	RL-92C	402	407	-0.001	-.10
7.	RL-92C	407	413.9	-0.001	-.10
8.	RL-92C	413.9	418.5	-0.001	-.10
9.	RL-92C	418.5	424	-0.001	-.10
10.	RL-92C	424	429.8	-0.001	-.10
11.	RL-92C	429.8	434.5	-0.001	-.10
12.	RL-92C	434.5	437	-0.001	-.10
13.	RL-92C	437	441.2	-0.001	-.10
14.	RL-92C	441.2	445	-0.001	-.10
15.	RL-92C	445	449	-0.001	-.10
16.	RL-92C	449	453.8	-0.001	-.10
17.	RL-92C	453.8	458	-0.001	-.10
18.	RL-92C	458	461.5	-0.001	-.10
19.	RL-92C	461.5	465.5	-0.001	-.10
20.	RL-92C	465.5	469.6	-0.001	-.10
21.	RL-92C	469.6	475	-0.001	-.10
22.	RL-92C	475	480	-0.001	-.10
23.	RL-92C	480	483	-0.001	-.10
24.	RL-92C	483	485	-0.001	-.10
25.	RL-92C	485	488	-0.001	-.10
26.	RL-92C	488	493	-0.001	-.10
27.	RL-92C	493	495	-0.001	-.10
28.	RL-92C	495	500	-0.001	-.10
29.	RL-92C	500	501	-0.001	-.10
30.	RL-92C	501	506	-0.001	-.10
31.	RL-92C	506	510	-0.001	-.10
32.	RL-92C	510	515	-0.001	-.10
33.	RL-92C	515	520	-0.001	-.10
34.	RL-92C	520	522.2	-0.001	0.11
35.	RL-92C	522.2	526.6	-0.001	0.11
36.	RL-92C	526.6	530	-0.001	-.10
37.	RL-92C	530	535	-0.001	-.10

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	SAMPLE I.D.			Au o/t	Ag o/t
38.	RL-92C	535	538	-0.001	-.10
39.	RL-92C	538	542	-0.001	-.10
40.	RL-92C	542	545	-0.001	-.10
41.	RL-92C	545	550	-0.001	-.10
42.	RL-92C	550	551	-0.001	-.10
43.	RL-92C	551	553.7	-0.001	-.10
44.	RL-92C	553.7	559	-0.001	-.10
45.	RL-92C	559	562.2	-0.001	-.10
46.	RL-92C	562.2	565	-0.001	-.10
47.	RL-92C	565	570	-0.001	-.10
48.	RL-92C	570	575	-0.001	-.10
49.	RL-92C	575	580	-0.001	-.10
50.	RL-92C	580	585	-0.001	-.10
51.	RL-92C	585	590	-0.001	-.10
52.	RL-92C	590	595	-0.001	-.10
53.	RL-92C	595	600	-0.001	-.10
54.	RL-92C	600	605	-0.001	-.10
55.	RL-92C	605	610	-0.001	-.10
56.	RL-92C	610	615	-0.001	-.10
57.	RL-92C	615	620	-0.001	-.10
58.	RL-92C	620	625	-0.001	-.10
59.	RL-92C	625	629	-0.001	-.10
60.	RL-92C	629	635	-0.001	-.10
61.	RL-92C	635	640	-0.001	-.10
62.	RL-92C	640	645	-0.001	-.10
63.	RL-92C	645	650	-0.001	-.10
64.	RL-92C	650	652.2	-0.001	-.10
65.	RL-92C	652.2	656	-0.001	-.10
66.	RL-92C	656	660.5	-0.001	-.10
67.	RL-92C	660.5	665.2	-0.001	-.10
68.	RL-92C	665.5	670	0.002	-.10
69.	RL-92C	670	675	-0.001	-.10
70.	RL-92C	675	680	-0.001	-.10
71.	RL-92C	680	685	-0.001	-.10
72.	RL-92C	685	690	0.024	-.10
73.	RL-92C	690	695	-0.001	-.10
74.	RL-92C	695	700	-0.001	-.10
75.	RL-92C	700	705	-0.001	-.10
76.	RL-92C	705	710	-0.001	0.11
77.	RL-92C	710	715	-0.001	-.10
78.	RL-92C	715	720	-0.001	-.10
79.	RL-92C	720	725	0.001	-.10
80.	RL-92C	725	730	-0.001	-.10

This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

NEVADA GSI

AUG 21 1990

GEOCHEMICAL ANALYSIS REPORT

August 15, 1990

CUST. CODE: LOA
PROJECT: URBD
P.O. #: XXXX
LOT ID: 8065

GEOLOGIST: NATE BREWER
COPIES TO: SAME
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-92C	730	735	-0.001	-.10
2.	RL-92C	735	740	-0.001	-.10
3.	RL-92C	740	745	-0.001	-.10
4.	RL-92C	745	750	-0.001	0.17
5.	RL-92C	750	755	-0.001	-.10
6.	RL-92C	755	760	0.004	-.10
7.	RL-92C	760	763	0.001	0.21
8.	RL-92C	763	766	-0.001	0.13
9.	RL-92C	766	770	-0.001	-.10
10.	RL-92C	770	775	-0.001	-.10
11.	RL-92C	775	780	-0.001	0.18
12.	RL-92C	780	785	-0.001	-.10
13.	RL-92C	785	790	-0.001	-.10
14.	RL-92C	790	795	-0.001	-.10
15.	RL-92C	795	800	-0.001	-.10
16.	RL-92C	800	805	-0.001	-.10
17.	RL-92C	805	810	-0.001	-.10
18.	RL-92C	810	815	-0.001	0.20
19.	RL-92C	815	820	-0.001	0.23
20.	RL-92C	820	825	-0.001	-.10
21.	RL-92C	825	830	-0.001	-.10
22.	RL-92C	830	835	0.001	-.10
23.	RL-92C	835	840	0.001	-.10
24.	RL-92C	840	845	-0.001	-.10
25.	RL-92C	845	850	0.001	-.10
26.	RL-92C	850	855	0.001	0.11
27.	RL-92C	855	860	0.001	0.16
28.	RL-92C	860	865	0.001	-.10
29.	RL-92C	865	870	-0.001	-.10
30.	RL-92C	870	875	0.001	-.10
31.	RL-92C	875	880	0.001	-.10
32.	RL-92C	880	885	0.001	-.10
33.	RL-92C	885	890	-0.001	-.10
34.	RL-92C	890	895	-0.001	-.10

1498 Kleppe Lane • Sparks, Nevada 89431 • FAX: 702/359-6605 • 702/359-6600

	SAMPLE I.D.			Au o/t	Ag o/t
35.	RL-92C	895	900	-0.001	-.10
36.	RL-92C	900	905	-0.001	-.10
37.	RL-92C	905	910	-0.001	-.10
38.	RL-92C	910	915	-0.001	-.10
39.	RL-92C	915	920	0.001	-.10
40.	RL-92C	920	925	-0.001	-.10
41.	RL-92C	925	930	-0.001	-.10
42.	RL-92C	930	935	-0.001	-.10
43.	RL-92C	935	938	-0.001	-.10
44.	RL-92C	938	941	-0.001	-.10

==========

This report reviewed and approved by:

Richard A. Grondin

Richard Grondin, Laboratory Director

NEVADA GSI

JUL 0 2 1990

GEOCHEMICAL ANALYSIS REPORT

June 28, 1990

CUST. CODE: LOA
PROJECT: URBD
P.O. #: XXXX
LOT ID: 7674

GEOLOGIST: NATE BREWER
COPIES TO: SAME
COMPANY: LAC MINERALS
ANALYSIS: FIRE ASSAY FOR GOLD AND SILVER, WITH AN A.A. FINISH.

	SAMPLE I.D.			Au o/t	Ag o/t
1.	RL-92C	941	944.6	-0.001	-0.10
2.	RL-92C	944.6	948.5	-0.001	-0.10
3.	RL-92C	948.5	951	-0.001	-0.10
4.	RL-92C	951	955	0.006	-0.10
5.	RL-92C	955	960	0.001	-0.10
6.	RL-92C	960	965	0.004	-0.10
7.	RL-92C	965	970	0.001	-0.10
8.	RL-92C	970	975.3	-0.001	-0.10
9.	RL-92C	975.3	977.7	0.002	-0.10
10.	RL-92C	977.7	982	0.003	-0.10
11.	RL-92C	982	986.4	-0.001	-0.10
12.	RL-92C	986.4	989	-0.001	-0.10
13.	RL-92C	989	994.1	-0.001	-0.10
14.	RL-92C	994.1	1000	-0.001	0.54
15.	RL-92C	1000	1005	-0.001	-0.10
16.	RL-92C	1005	1010	-0.001	-0.10
17.	RL-92C	1010	1015	-0.001	-0.10
18.	RL-92C	1015	1020	-0.001	-0.10
19.	RL-92C	1020	1025	-0.001	-0.10
20.	RL-92C	1025	1029	-0.001	-0.10
21.	RL-92C	1029	1032.8	-0.001	-0.10
22.	RL-92C	1032.8	1035	-0.001	-0.10
23.	RL-92C	1035	1036.7	-0.001	-0.10
24.	RL-92C	1036.7	1040	-0.001	-0.10
25.	RL-92C	1040	1046	-0.001	0.22
26.	RL-92C	1046	1050	0.038	0.22
27.	RL-92C	1050	1055	0.011	-0.10
28.	RL-92C	1055	1060	0.004	-0.10
29.	RL-92C	1060	1065	0.005	-0.10
30.	RL-92C	1065	1070	0.001	0.19

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	SAMPLE I.D.			Au o/t	Ag o/t
31.	RL-92C	1070	1075	0.012	-0.10
32.	RL-92C	1075	1080	0.003	-0.10
33.	RL-92C	1080	1085	-0.001	-0.10
34.	RL-92C	1085	1090	0.001	-0.10
35.	RL-92C	1090	1095	-0.001	-0.10
36.	RL-92C	1095	1100	-0.001	-0.10
37.	RL-92C	1100	1105	0.009	0.25
38.	RL-92C	1105	1111.2	-0.001	-0.10
39.	RL-92C	1111.2	1115	-0.001	-0.10
40.	RL-92C	1115	1120	-0.001	-0.10
41.	RL-92C	1120	1125	-0.001	-0.10
42.	RL-92C	1125	1130	-0.001	-0.10
43.	RL-92C	1130	1135	-0.001	-0.10
44.	RL-92C	1135	1140	-0.001	0.17
45.	RL-92C	1140	1145	-0.001	-0.10
46.	RL-92C	1145	1150	-0.001	-0.10
47.	RL-92C	1150	1155	-0.001	-0.10
48.	RL-92C	1155	1160	-0.001	-0.10
49.	RL-92C	1160	1165	-0.001	-0.10
50.	RL-92C	1165	1168	-0.001	0.10
51.	RL-92C	1168	1172	-0.001	-0.10
52.	RL-92C	1172	1175	0.001	-0.10
53.	RL-92C	1175	1180	0.003	-0.10
54.	RL-92C	1180	1184	0.012	-0.10
55.	RL-92C	1184	1190	0.039	0.10
56.	RL-92C	1190	1195	-0.001	-0.10
57.	RL-92C	1195	1200	-0.001	-0.10
58.	RL-92C	1200	1205	-0.001	-0.10
59.	RL-92C	1205	1210	-0.001	-0.10
60.	RL-92C	1210	1215	-0.001	-0.10
61.	RL-92C	1215	1220	0.029	0.10
62.	RL-92C	1220	1225	0.003	0.60
63.	RL-92C	1225	1230	0.005	-0.10
64.	RL-92C	1230	1235	0.010	0.20
65.	RL-92C	1235	1240	0.018	-0.10
66.	RL-92C	1240	1245.4	0.093	0.72
67.	RL-92C	1245.4	1250	0.015	0.24
68.	RL-92C	1250	1255	0.023	0.30
69.	RL-92C	1255	1257.5	0.107	0.57
70.	RL-92C	1257.5	1265	0.008	0.60
71.	RL-92C	1265	1270	0.049	0.21
72.	RL-92C	1270	1275	0.009	0.42
73.	RL-92C	1275	1278	0.009	0.40
74.	RL-92C	1278	1281	0.005	-0.10

THIS REPORT REVIEWED AND APPROVED BY:

Jerry Gaige

JERRY GAIGE, CHIEF CHEMIST

RL-92 CORE LOG SUMMARY

290 - 1237.6 RED BROWN UGLY - CHOCOLATE

290-323.4 bl
396 - 397.2 bl + Δ
413.9 - 418.2 bl w/ $CaCO_3$ vns
429.8 - 437 bl
453.8 - 461.5 bl
474 - 479.5 bl x rubble
487 - 496 bl rubble zone
505 - 511 bl
526.6 - 553.7 bl 545-550 Δ
642 - 665.5 bl X Δ
677 - 684 bl
750 - 766 bl 755 - 760 xx shear?

FAULT 944.6 - 948.5 60° to CORE AXIS ΔX
948.5 - 994.1 bl Δ Δ
1032.8 - 1111.2 bl X Δ → CRACKLE TO AUTO
1168 - 1237.6 bl

FAULT 1175 - 1180.7 XXX Δ str white clay vns
1180.7 - 1237.6 bl xx Δ veined

FAULT 1237.6 - 1245.6 ΔXΔXΔX
1245.6 - 1257.5 transitional volc. seds.
1257.5 - 1281 JURASSIC SHALES

ROTARY LOG SUMMARY

0 - 290 CHOCOLATE
5-45 unalt
45 - 130 bl + clay alt
130-300 bl X