60001479

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. 94-300C
AUTHOR	C. Winteer; C. Muerhoff; S. Faircloth
DATE OF DOC(S)	1994
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Hecla Mining Co. South Zone
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 463' handwritten notes; down hole camera images 21 p 5 down hole camera images

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 5/29/08
Initials Date

DB: mch
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

94-300 C

SOUTH ZONE

60001479

60001479

Hecla MINING COMPANY

ROSEBUD PROJECT DIAMOND DRILL LOG

HOLE NUMBER	94-300C	LOCATION	South Zone	REMARKS	
PAGE 1 OF		NORTHING	2,203,292.5		
DATE	5-12-94	EASTING	481,087.1		
LOGGED BY	CBW	ELEVATION	5267.4		
SCALE	1" = 10'	AZIMUTH	202		
TOTAL DEPTH	463'	INCLINATION	-89.5		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG (LITH / Stx / Alt.)	STRUCTURE	ALTERATION AND MINERALIZATION
No Rec.						
7 Box 1		7-27.1' F.g. ash flow tuff. Lt. tan to gry. Silic. grndm. Minor f.g. clay alt. pheno's after feldspar? V. hrd 7-8' Mod. Hrd 8-27.1' Vuggy 7.5-8'. Loc. ghost frags > 1.0cm that are prob. inter-frac/alt. areas. Rounded blocks from 7.0-7.5' from rolling around in core barrel.	10 20	SiO_2 Oxid Clay on frac's ↓ decr. SiO_2 ↓ incr. clay	Partially disaggre. ↓ to 21'. Frac's @ 10-15° weak @ 50-65° mod. 10.3-15 fect. bx w/ strong lim/hem and clay filled matrix Crackle bx 8-15'	F.g. diss. FeOx after sulf. Intensely Silic. repl. by SiO_2 (Chalcedonic) from 7'↓ 8' decr. intensity ↓ from 8'↓ Clay alt. strong along frac's
17 2					22-23.5' Frac's @ 30-40° w/ open-space hem/lim/geoth, minor Q, bar. lt. tan (infiltrate) clay veneers Minor s.a.a. @ 75°	
25 3		27.1' Apparent contact ∡ = 50° 27.1—39' Vitroclastic latite bx w/ lt. gry, grn, brn vitropheric g.m. and glassy latitic angular clasts (loc. flow-banded), Clast-supported w/ clasts >> 1.0cm Mod Hrd to soft.			Post bx frac's 27.1-29' @ 20-25° w/clay + lim	Weak clay alt w/ mod. clay alt. clasts loc.
33 4			30	Weak to strong Clay alt.	29-39' wk frac' @ 50-65° w/ clay + lim. + minor @ 20°	Siliceous - dentric alt. w/ irreg. discont. clear to lt gry SiO_2 micro vnlt-stkwk
41.5 5		39-47.1 Milled vitroclastic bx w/ chl. alt. clasts in granular, angular clast-rich vitroclastic g.m. Clasts. sub ang. to subrnd w/ clay-rich gouge loc. Clasts become more porph ↓ w/ clay. alt. pheno's. 47.1 ↓ incr. wht. chalc. SiO_2 stkwk repl. of matrix	40		39-47.1 Milled bx w/ ang. frag's in clayey gouge. Clasts str clay alt.	43.5-47.1 Mod. strong hem. stnd. clasts w/ diss. & stkwk vnlt chl.-FeO_x 47.1 ↓ incr. wht chalc. SiO_2 repl. + strong hem stnd clay repl. of matrix
50.5			50			

FROM	TO	W	Au (opt)	Ag (opt)	Au2 (opt)	Ag2
7'	8'	1'	.002	.12	.002	
8'	10.3'	2.3'	<.001	.05		
10.3'	15'	4.7'	<.001	.08		
15'	21'	6'	<.001	.06		
21'	24'	3'	<.001	.04		
24'	27.1'	3.1'	<.001	.06		
27.1'	33'	6.1'	.001	.04		
33'	39'	6'	<.001	<.02		
39'	41.6'	2.6'	.001	.08		
41.6'	47.1'	5.5'	<.001	.03		
47.1	50.5	3.4'	.001	.07		
			.002	.05		

HOLE NUMBER 94-300 C PAGE 2 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG (Lith / Stx / Alt.)	STRUCTURE	ALTERATION AND MINERALIZATION
Box 6		Milled, tect. bx vitroclastic bx glassy f.g. matrix w/ glassy &/or clay-lim alt. clasts. Matrix-support		Oxid. Weak clay Alt. V. Weak SiO_2 ↓ decr. oxid.	conj. set of frac's w/ slicks in wht clay gouge @ 20° & 40°	pale grn prop. alt w/ loc. hem/lim stn frac's & loc. stn clasts, 51.5-56.5'
					50.5-52 tect. frac' zone w/minor wht chalc. SiO_2 in microvnlts @ 20°	56.5' ↓ to 60' pale tan to orange FeOx stnd
60 / 7		Vitrophyric latitic	60		54.5' frac + minor wht Chalcedonic SiO_2 microvnlts @ 50°; Secondary vuggy SiO_2+$CaCO_3$+lim.	strong hem + clay filled frac-bx @ 51.5-52
		86.5-93' Ash flow tuff w/ mod. to strong flow-banded weakly flattened lithic clasts of similar comp.			58' frac + lim + clay @ 50°	Patchy irreg. cloths of clay + FeOx str of bx clasts & halo's surr. frac's from 51.5-73.3
69 / 8		93- Latitic vitrophore.	70		58-59.5' 0.2" wht clay + minor lim vnlt @ 10-15° irreg. Also, similar micro Vnlts 55-56	
					59-60' Frac zone w/ 4+ lim + clay lined frac's @ 50°	
78 / 9		Angular matrix to loc. clast-supported V. C. grd clasts > 4cm flattening ratios 1:1 incr. clast size & abund ↓ to 85.5	80		61-62.5' Frac's @ 50° clay + lim. loc. vuggy patches adj. to stx.	
					63.3' frac @ 30°	
					64 frac @ 50°	
					65 lim + hem + clay @ 50°	
					85.5-86.5 fault gouge w/ basal frac' @ 50° w/ FeOx (hem + lim) + clay angl. to rnd frag's in clay	
		86.5 ↓ v. wk flow-alignment of clasts w/ minor flattening.				
87 / 10		91-93 strong flow-banding of elong. clats @ 70°				
		91' Apparent contact ∡ = 60°				
		93' Contact ⊥ to C.A.	90		66' Frac w/ clay + lim @ 30°	
		Pale grn v.f.g. vitrophere hy. intr. or flow. Mod. clast-rich matrix-supported ↓ 92.5' Clay + lim repl. subhed. pheno's & sub ang. ∆ml clasts < 5mm. 92.5 ↓ f.g. pale grn glass w/ faint stkwk appearance from deuteric silic.-microstkwk			73.3' lim + hem + clay lined frac's @ 45°	73.3-75' oxid. FeOx stnd irreg str. + clotts of wht clay
					74.2' hem + lim @ 60°	
97 / 11	9" 5.2" 3.0' 8.5" 4.0' 1.8" 4.8" 5.5" 9.0' 3.5" 1.0' 10.7" 8.0' 1.0' 9.0" ↓c 17.5' 3.5' ↓ next run				75.5' poss. bd parting @ 80°	75-97' Clay alt clast > matrix; FeOx stn limited to frac's & irreg clotts - repl. of clasts.
					76' joints @ 60°	
		97.8' Contact - bd surf. @ 70° below 97.8' Flow-banding @ 60° (oblig to contact above)	100		77-79.3' 0.1-0.2 Clay + lim vnlts @ 10-15°	
				Next Page + Scale Change to 1"=5'	80' Vuggy frac-filling clay + lim @ 50-60'	
		97.8-100' Pale to med grn latitic ash flow tuff, w/ flow aligned crystal & lithic frags of ash size, loc. coarser-grained pumice lapilli. Pheno's of felds. pseudom. repl. by wht ill/smect. clays, loc. ash size aggreg. of clay & lim. are prob. pseudom. repl. of mafic xl frags (bio, hrn, pyx) Matrix-supported, grnd m. f. g. to sugary			81' Clay-filled frac's @ 35° 0.2' zone	77.5 frac open-space filling of lim + hem + geoth + poss. scorodite
106					86.3' Frac @ 60° w/ hem + lim + geoth. (yell clay)	
					87' single frac. @ 50° clay + FeOx	
					89-91 Frac zone w/ wht clay-filled frac's @ 20-25°	
					92.5-93 frac's @ 35°	92.5-93 Patchy dissolution w/ clay + lim vug-filling & loc. clean dogs tooth @ xl
					97-97.7 microvnlts FeOx + clay @ 10°	
					97.7 Frac. @ 50°	93-97' SiO_2 micro stkwk, w/ loc low % to C.A. Clay + FeOx str. oxid. lim to frac's & repl. of loc. xl pheno's & pumice/lithic frags
					99.7-100' conj. set of frac's @ 45° & 30° w/ lim + clay	

ANALYTICAL DATA

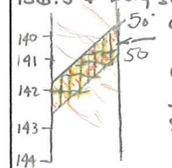
FROM	TO	W	Au	Ag	Au2	Ag2
50.5	56.3	5.8'	.002	.05		
56.3	62.7	6.4'	.002	.06	.002	
62.7	67	4.3'	<.001	.04		
67	73	6.0'	<.001	.04		
73	74.8	1.8'	.003	.07		
74.8	77.5	2.7'	.002	.05		
77.5	82	4.5'	.002	.07		
82	85.5	3.5'	.002	.05		
85.5	86.5	1.0'	.001	.06		
86.5	91	5.5'	.011	.05		
91	97	6.0'	.007	.06	.009	
97	103	6.0'	.010	.07		

HOLE NUMBER 94-300C PAGE 3 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG (Lith / Stx / Alt.)	STRUCTURE	ALTERATION AND MINERALIZATION
Box 11	9+17.5" 3.5" 102 22" 7.5" 16.5" ↓cont. w/ 6" 3" 12.5" ↓cont. 3" w/ 5.5" 6.5" 3" EoR	Latitic lapilli ash flow tuff. w/ angular to sub-angular lithic / pumice lapilli; matrix-supported mod. to poorly sorted; flattening ratios < 2:1; ground mass v. fg. slightly suggary, clay alt, but < than clasts; crystal fragments minor abund. clay alt. loc lim stnd.; clasts (lap.) loc. porph.		Clay Alt. vugs; v. weak silic. Oxid. Lim. to Frac's & phen's	100.5' @ .1" vnlt @ 60° comp. of clay + lim.	Weak clay alt. of ground mass, mod clay alt of crystal and lapilli frags.
106 12		106-112.8 Large, abund. clasts approaching clast-supp.	105		101' frac's @ 40° & 60° + clay + FeOx	Oxid. loc. along frac's bleading into & staining frags loc. (108-109) & (111.5-112)
					102-103 subpar. to c.a. part. dissol. in 1.0" zone.	
					103-106 high ∠ vnlt-frac. @ 20° to c.a.	
					108.2' FeOx + clay frac @ 35°	
					108.4 s.a.a	
		110-111.5' Larger clasts are elongated (FR up to 4:1) and imbricated w/ fabric @ 50°	110		110' FeOx + clay + milled bx frags in 0.2" frac.	
	113				111.8' FeOx + clay @ 60°	
					113.8 FeOx + clay @ 60°	
	3" ↓cont w/ 6"				115.5 FeOx + clay @ 75°	
115 13	15" ↓cont w/ 6" 1" 17" ↓cont. w/ 9" 11.5" ↓cont w/ 7.5" 13.5" 21" ↓cont w/		115		117.3 Frac w/ part. diss. @ 40°	
					119.1' FeOx + clay @ 60°	
		119' Individual angular, silic, black J-Triassic graphitic meta sed. frag			119.4' s.a.a. @ 60°	
	123 7" EoR	122-123' clasts crudely imbr. @ 50°	120		122.2' Patchy vugs, w/ clay, lim. void-filling @ intersection of 35° & 25° conj. joint set.	123-127.5 Patchy, irreg. lim/hem stn of clasts
124 14	3" 6" 4" + 2" Cont 10" 8" + 4" Cont 5.5" 4.5" 8" 1.5" 15" 3.5 + 3.5" + 5" 7 + 1.5" EoR				124.2' frac @ 45° + FeOx + clay	
					124.2-.7 open-space vugs / frac w/ lim + clay @ 20°	
			125		125 discont. irreg fracs @ 40°	
					125.2 frac @ 65°	
					127.5-128' frac's @ 30° & 50° w/ FeOx + clay ± SiO2	127.5-134.5' Weakly silic / bleached and oxid w/ minor SiO2 microvnlts @ 30°
		130' Angular black J-Tr meta sed. clasts ↓ 132'	130			130-132 irreg vugs w/ FeOx ± clay coatings
	133					
133.5 15	5" 13" 0.5" 7.5" 2" + 5"		135		134.5 frac's w/ FeOx stn @ 50°	134.5 ↓ sulfidation w/ minor oxid. - limited to frac's.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
97	103	6.0'	.010	.07		
103	108	5.0'	.008	.09		
108	113	5.0'	.002	.05		
113	118	5.0'	.001	.02		
118	123	5.0'	.001	.10		
123	128	5.0'	.002	.11	.002	
128	133	5.0'	.003	.15		

HOLE NUMBER 94-300 C PAGE 4 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG (Lith, Stx, Alt.)	STRUCTURE	ALTERATION AND MINERALIZATION
Box 15	14" 4"+3" 9.5" 5" 5.5" 0.5" 0.5" 3.0" 5.5" 12.5" 8.5" 3.5"+6" 2.5"+2" EoR	mod to mod hd g.m.; soft clayey lapilli	C. g. latitic lapilli tuff. porphyritic, poorly-sorted, fairly massive, loc. apparent flow-banding is prob. alt. @ 25' @ 143'			136' @ 40° sulf + outer clay lined frac. 136.3 @ 65° clayey slicks w/ platey sulf. 139.5-140.5 frac zone @ 50° w/ thin 0.05" Q open-space lining, 141 frac @ 50°. 142.2 frac 50°. 143' frac @ 50° w/ wht clay + platey sulf. ↕ irreg. high & clay-lined frac's @ 5-15° to c.a. 143.8 clay-lined frac @ 55° ↓ clay-lined frac's @ 60° & 30°	Incr. clay alt. + Sulfidation along stx & selective repl. of lapilli. Clays on frac's, no $CaCO_3$, v. minor SiO_2. 136.5 + very sulf. rich.  c.a. pav. SiO_2 + cross-cutting & feeder ⊥ to c.a. SiO_2 stockwork webbing. Interst. areas w/ sooty py, platy py, v.f.g. py framb.; emerald grn prismatic crystals (actinolite color) 144.8' Bar plate + v.f.g. py + blk sooty carb. mat. @ 60' 0.15" 145.5-146.5 frac's @ 55-75° oxid w/ lim + clay 144-148' sulf + wht. clay on frac's @ 50°, 30° & 75° 150' Barite, blocky open-space + lim. stn clay @ 60' 151.1 Platey marc. on parting surf. @ 80° 152.6 irreg. sinuous f.g. py + blk sooty carb. mat. 153.5 discont. silic vug w/ open-space clear microxl. Q + slender radiating laths of py aggregates 157-157.5 @ 65°, 80° & 30° lt. gry silic., sulf-rich bands, partly stk between bands sulf.-rich band ⊥ to 159.5' @ 70° 161.5-162' sulf. partings @ 80° 162.7-163.2 massive f.g. py lence w/ blk sooty carb mat. off-set (soft-sed?) 164' + Q ± sulf ± barite in angular fragments
143	143						
16	10" 1.5" 6.5+3" 2" 12" 4.5+5" 9" 7.5+3.5 15 0.5 8.5 3.0" 7.5" 8.0" 13.5" EoR	alternating hd & s.a.a. & clayey soft matrix	groundmass f.g. sugary, lt brn w/ pale grn clay alt. lap. frags.				
152		incr. clay content of matrix; hardness of g.m. & clasts sim. mod to mod soft.	contact @ 149' @ 75° Latitic lapilli ash flow tuff. Crystal grndm. pale grn frag.-poor clayey w/ wht to lt gry, non-porph. v. pale grn. clay alt. angular pumice lap. up to 1.5cm scattered and low abund at top incr. in abund & variation in size downward				
17	153 7.5+18" 3"+3.5" 8.5" 5" 2.5+5.5 12" 3.5" 20+5" 6" 11" EoR	– hard @ silic. vug. mod soft				149.7-151.3 oxid-FeO_x stnd frac's @ 35° & 75°	
			gradat. contact & unkn. tuff. becomes porphy. interm. + 160'			155.2-156 weakly frac'd w/ FeO_x + SiO_2 coated frac's @ 50, 30° & 70°	
161							
18	163 2" 6.5+11.5" 1.5" 10"+8.5+2.5" 9.5+5.5+5+0.5" 5.5" 3.5" 11.5+8" 3" 3" 1.5" 10" 3.5" 2.5 EoR	loc. hd @ silic + sulf. Mod. soft	gradat. contact to latitic lapilli ash flow tuff, w/ devitrified v. pale grn pumice fiamme w/ flattening ratios up to 8:1 164' lithic frags, non-flattened, composed of gry, tan, grn silic. lithics are angular and intensely scattered-frac'd. commonly w/ sulf. lithics incl. f.g. siliceous siltst metased, generally non-porph. Also, clear to blue-grey barite ± Q ± gen. pale grn f.g. clayey sulf. g.m. w/ loc. dk grn lithic/pumice lapilli.				Drilling Mud dk grey & v. clayey (sulf-rich from 145-171'
170							

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
133	138	5.0'	.002	.12		
138	141	3.0'	.002	.07		
141	142	1.0'	.003	.07		
142	146	4.0'	.002	.08		
146	151	5.0'	.002	.06		
151	156	5.0	<.001	.04		
156	161	5.0	.001	.06		
161	166	5.0	.002	.08		
166	171	5.0	.002	.06		

HOLE NUMBER 94-300C PAGE 5 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG (Lith / Stx / Alt)	STRUCTURE	ALTERATION AND MINERALIZATION
Box 19	173: 5.5", 1.5", 3+9", 9.5", 5+5.5", 12", 3+12.5", 5", 5.5+2", 7", 4", 10.5+12", 1.5, 1.5, 0.5, 3.0, 3.0+EoR	soft; mod soft to mod hard. FR's up to 10:1 majority are devitri. clay alt. occ. wht clay alt. pseudom repl. of feldspar phenol's. fabric of flow-aligned, imbricated fiamme @ 65'. pale grn @ top changing to med. dk grn in middle & reddish brn at base	175		Fault zone @ 50' from 171.7 - 174.5' w/very strong slick fabric, completely alt to clay w/ occ. to common angular to sub rnded qtz vn; qtzite, calcite fragments. 174.5 ↓ chloritized slicks ± sulf @ 50°; 80°; 60' ↳ occ. euhedral-hexagonal plates	sulf platelets along slick surf., loc. sulf-rich clasts bx frags
20	179: 19.5+2+4+10", 7+6", 4", 3", 3", 1.0, 1.5, 1.5, 0.5	mod hd to hard.	180		↳ Barite+Q ZONE TO 197'	175 ↓ very weak silic. v.f.g. diss. py ↓ tabular frag's? repl. by sulf. 181' ↓ weakly silic. w/ sucrosic sugary text.
21	188: 5" rubble zone, 14" zone, 1.5+8", 15+3, 1.5, 1.5, 2.5+EoR	mod. 193.7' Contact betwn flow units @ 80°. Latitic flow breccia w/angular, non-flattened non-porph. devitr. pumice lap. & blocks + angular dk grn silic. sulf-bearing flow-banded f.g. ash flow tuffs. heterolithic latitic flow bx	185		187-188.5 Narrow frac zone w/ high % wht clay-lined frac's @ 5-15° x-cut by clay ± sulf-lined frac's @ 50°	182.1-182.5 vuggy irreg. dissolution w/ low-temp, spheroidal py + v.f. grd. Q loc. w/ rd-purple film/crust + barite. 184 minor S.a.a.
22	193: 1ft rubble zone, 3.5", 13.5+10.5", 11+3.5", 2", 1.5", 1.5", 4", 6", 1.5, 0.5, 5", 1ft rubble, 5", 1ft rubble, 202: 3" rubble, 4", 2", 3" rubble, 4", 4.5"	mod to mod soft w/ thin mod hd lenses w/silic & vugs; mod hd. 199.2' apparent contact @ 75°. Brecciated f.g. ash flow tuff. SiO_2 + clay ± sulf microvnlt stockwork ↳ wht ± grn chl. Grndm. & clasts of same composition non-porph.; pale to med grn, loc. brn tint 206.5 - 209. LBT	190			183-186 sulf repl. (carb?) frags par. to fiamme fabric. 190-192 occ. SiO_2 microvnlts @ 35-40°. Separate sulf-microvnlts @ 50-60°. 194 clear vug-filling barite. 195-197 minor clay partings @ 35°. 197 minor barite lined vug. 198 minor vugs w/ slender bladed, strai'd sulf ± chl.
			195			
			200			disc. sulf. loc. adj. to SiO_2 + clay vnlts. 200- Silica-flooded w/ princ. vnlt orient. @ 10°, 15°, & 20° + sulf.
			205		Black to med. gry carbonac. clay sect.	disc. sulf + Q @ 40-60°

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
171	176	5.0'	.002	.08		
176	180	4.0'	.002	.08		
180	185	5.0'	.008	.13	.007	
185	190	5.0'	.003	.12		
190	195	5.0'	.002	.06		
195	200	5.0'	.002	.07		
200	205	5.0'	.002	.07		

HOLE NUMBER 94-300 C PAGE 6 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box22 204 Box23	3" rubble 1" 5" 1.25" 12.5"+6.5+ 4" 6+3.5"+ 8" 7" 3" 6"+8.5" 4" 4" 7.12 4"	mod hd	199.2 - 221' Pale grn f.g. tuff bx w/ ground mass and clasts of sim. composition. Loc. clasts are pref. enriched w/ f.g. diss. py. Faint bdd in clasts loc. Clast frag's are gen. angular, matrix-supported and are loc. comprised of multiple gen. frags (clasts w/ clasts). mod. intense SiO2 stkwk decr. below 221	210		clayey frac's @30'	v.f. grd. diss. py in sugary clayey matrix. Clear SiO2 w/ ± internal sulf. microvenlets.
	3" 4" 2" 2.5" 4"+4" 5.5"	mod. loc. mod hd		215		s.a.a. @50'	
215 24	3.5" 2" rubble 7+1" 9" rubble 6" 6.5+2.5" 3" rubble 7.5" 3" 1.5" 2.0" 2+5" 6.5" 2		221 - 231 Pink to tan f.g. sandy tuff and tuff bx w/ clasts & matrix of same composition. Sandy or sugary texture from diss. py. g.m. is v.f.g. clayey - devitr. glass, gradational transition from pale grn to dk grn w/ red-brn tint to red-pink w/ grn blotches + to pinkish tan	220		@60' @70' @70'	mod. intense v.f.g. diss. py
222.5	1.5" rubble 4" 7" rubble 5" 4" rubble	mod hd to hd					
224.5 25	3" 1.5" 3" 6" 4" 5" 1.5" 6" 6" 5" 6+1.5" 4.5" 3" 12" rubble 5.5" 9.5" 5.0" 2+8" 4" rubble 7" 3" 5" rubble	mod. soft mod. to mod hd		225			f.g. py pseudom. repl. bladed platey min. + clay alt. SiO2 @5-15° & 50-60°
233		soft.	231 - 233.1' fault. Intensely clay alt. pale grn, sulf diss. & disc. vnlts slicks disc. & varing orientations	230			frags & disc. str. of blue gry Q ± sulf.
234.5 26	2" 2.5" 2.5" 2.0" 1.5" 5.5"+1.5" 10.5" 7.5" 1.5" 1.5+3" 6" 7+6+8" 14.5 3"	mod to mod hd	233.1 - 236.5' Tan f.g. airfall or waterlain tephra	235			Sulf-rich, chalcedvnlts @ 70-80° & 30-40° & 5-10°
		mod to mod soft	236.5 - 240' Pale, tan, dk grn mottled, clayey tuff breccia w/ dk grey silic-sulf. rich clasts loc. contact @ 240' @ 30°	240		maybe annealed tectonic by at base angular frags w/ partial open-space matrix	

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
205	210	5.0'	.007	.09		
210	215	5.0'	.006	.12		
215	220	5.0'	.019	.11	.014	
220	225	5.0'	.008	.13		
225	230	5.0'	.006	.13		
230	233.1'	3.1'	.007	.22		
233.1	236.5	3.4'	.005	.12		
236.5	240	3.5'	.002	.07		

HOLE NUMBER 94-300 C PAGE 7 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box 26	1.5" 0.5" 1.5" 0.5" 1.5" 2.0" 6' 5' 4.5 8' EoR	mod. hd	240–241' tan f.g. airfall or water lain tephra contact apparent @ 30°			chalced + sulf @ 55-70° and @ 25° sulf's brassy grn and platey minor diss. cubic py	microvlts @ 276' @ 70° w/ clear Q + sulf platelets w/ occ. blk jack spl core w/ cpy rims open-space Q platey sulf w/ pale cpy yellow spl luster
243.5	243	mod to mod hd	241–255.4' Mottled pale grn, tan, cream, pinkish brn c. g. tuff breccia, loc. appears porph. from wide-range in clast-size clast-supported, clasts subang. to rndd. loc. w/ silic. ± sulf reaction-rims. stkwk of chl. ± sulf microvlts. protolith. appears to have been lapilli tuff. – mutiple bx gen.	245		chalced. + sulf @ 45–70° and @ 20° rubble zone 247-260	
27	6"+1.5" 2" 2" 1.5" 2.5" 1.0" 4.0 6" 3.5" 13" 5"+9.5" 13"+8" 11" 2" 2+4" 8" 1" 9.5" + EoR						
85%		mod hd		250			
253	253						
28	1" 11.5" 10" 1.5+6" 18" rubble 6" 2" rubble 2" 10" rubble	soft zone	contact @ 30° 255.4–272 Tan w/ pink tint matrix-supported tuff bx comprised of f.g. airfall or water lain tepra, Mod. strong silic-sulf. w/ microvlts stkwk, bx vnlts diss. py, sulf.	255		frac's @ 30° chalced. + sulf prim @ 70° w/ syn x-cutting @ 20°	255.4' + silicified-sulf. reaction rims (@ outer edge of clasts w/ clear SiO_2 → wht SiO_2 + clay → bleached silic. + sulf; diss. sulf in interior of clasts silic. x-cut by sulf-rich microveinlets silver colored, high Z py blades & pyritahedrons, sooty blk streak, minor exsolved V.G. @ 266'
85%				260		hydrot. bx in vnlts @ ~50'	
	259						
	7" rubble 5" 4" rubble 3" 2.5" 6" 2" 4" 3.5+8" 2" rubble	black streak					
264							
29	265			265		blue-grn tarnish on platey sulf.	
	3" 6" 2" 1" 2" 6" 5.5" 6+3.5" 2" 3" 9.5" 3" 10" 6" 1.5" 2.0"		272–274.5' F.g. water lain epiclastic seds 272 contact @ 20' Interbedded pink, silic. air fall / water-lain tephra as above w/ thinly bedded, planar-laminated pale grn ash (clayalt?), contorted lamination from soft-sed deposition	270			
	273 3.0" 3.0"	Alternating soft & mod hd					
274	8" 4½ EoR 4.5" 3" 5.5" 3.0"	soft					
		mod to mod hd		275			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
240	245	5.0'	.003	.09		
245	250	5.0'	.002	.08		
250	255.4	5.4'	.002	.05		
255.4	260	4.6'	.005	.08		
260	265	5.0'	.005	.10		
265	270	5.0'	.005	.11		
270	275	5.0'	.006	.12		

HOLE NUMBER 94-300C PAGE 8 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box 30	6" 2" 2" 2.5" 3.0" 12" 4" 6" 8.5" 7" 2" 10.5 3" 6" 4" 8" 3" 4.5"	mod to mod hd ↓ mod ↓	274.5 – lt. gry f.g. airfall or waterlain tephra w/ frags of clayey waterlain ash			frac - rubble @ 30° & 70°	chalced ± clear Q + sulf. prim. @ 75° ± 20° weak to mod. silic weak to mod sulf.-diss.
283	283 3" EoR			280		277-278 rubble frac zone	
31	1" 3" 2" 6" 6" 2" 2" 4" 2" 2" 6" 7" 3" 3" 3.5" 8.5" 2.5" 6" 8.5" 5" 5" 2.5+5" 8" 8"+8" EoR	mod to mod hd ↓ black streak from diss. py	283.5' Contact @ 40° 283.5 – 325.8 pale to med grn v.f.g., non-porph airfall or waterlain tephra, planar-laminated, rhym-graded laminations blk carbonaceous (?) - organic mat. along lamination partings			279-281 rubble frac zone	
292				285		283' waxy grn chalced w/ slick surf's @ 20°	
32	293			290		285-289 planar-lam. par.	chalced ± sulf ± chloritic clays parallel to & w/in planar-lam. syngenetic w/ 45-60° & ⊥ to lam. vnlts of same comp.
	6" 6" 5" 19" 1" 1" 3" 1.5" 12" 3" 2.5+3" 4" 5" 5.5" 5.5" 2" 5" 24" rubble	Soft mod hd soft ↓		295		289-289.5 anealled tect bx 289.5-293 planar-lam. @ 20-25° 293-293.5 tect. bx/hydrol. bx w/ chl. + sulf + SiO_2 matrix 293.5-301' planar-lam. @ 5-10° w/ parallel - concordant clay + Q + sulf. stringers + x-cutting Q + clay + sulf stringers @ 50-60°	diss. py concent. along lam. adj. to vnlts
302				300		301-304.8' tect. bx w/ apparent orient. ⊥ to c.a., angular to sub rnd., poorly-sorted frags of same comp. as above w/ sulf-chl. ± SiO_2 matrix Marked decr. in vning & intensity & diss. sulf.	decr. in vning & abund. of diss. sulf.
33	303 1.5" 4.5" 3.5" 1.5" 4.5" rubble 3" + 0.5" 5" 9" 3" + 11.5" 1.5" 2.5" 6" 1.5 2.0 1.0	mod. hd ↓ no black streak Soft black streak		305		304.8-309 Faint planar-lam @ 30° v. thin lam-parallel microvnts much < abund.	
				310		309-309.3' tect. bx controlled by frac @ 60°	

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
275	280	5.0'	.005	.09		
280	283.5	3.5'	.005	.08		
283.5	289	5.5'	.009	.13		
289	293.5	4.5'	.030	.21	.031	
293.5	297.5	4.0'	.065	.90	.068	
297.5	301	3.5'	.350	.84	.354	
301	305	4.0'	.179	.34	.188	
305	309	4.0'	.005	.04		

11.5' @ .194, .69

HOLE NUMBER 94-300C PAGE 9 OF

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
312 Box 34	4" 4" 5" 3" 1.5" / 4.5" 5.0" 1.5" 4.0" 5.0" 6.0" / 313 / 2" 2" 1.5 1.5 2.5 1.0 1.0 1.0 2.0 2.5 2.5 7.5 / 7.0" 2.0" Eol / 5" 1.5" 4.5 1.0 1.0 4.0 2.5 4.5 / 2ft rubble shattered / 6" 12" 5" 12" 5" 5" / 321 35 / 323	mod hd / soft / mod hd / blk streak in lenses incr ↓	283.5–325.8' Continued		309.3–311' rhythm. planar-graded - lam @ 45' / 311-311.5' tect. bx - fault gouge w/ slicks @ 60' / 311.5–325.2' rhythm. planar-graded - lam @ 40° to 50° less distct. ↓	barren clay alt. chalced. vnlts @ 60° & 30° & lam parallel.
	8.0" 1.0 2.0 2.0' 2.0 3.0 2.5 3.0 3.0 1.0 1.0 / 1.0 4.5 3.0 2.5 1.5 7.5 3.0 4.5 / 12" rubble / 1.0 1.0 3.0 2.5 2.5 / 7.5 7.0 3.0 3.54 7 2" rubble / 330 36 / 333	mod soft / mod hd, decr. to mod	325.8–366.0' Greenish grey to pinkish grey, f.g. sandy; brecciated waterlain tephra; brecciation varing from highly frac'd, crackle bx, tectonic bx, clasts highly angular, clast-supported and composed of sandy f.g. waterlain tephra, clast-size ranges from f.g. up to 2 cm.	315 / 320 / 325 / 330 / 335 / 340 / 345	325.2–326.3' frac'd crackle bx - tect bx w/ slicks @ 60° / 326.3 – bx'd w/ angular rotated to non-rotated frag's of same comp. w/ $CaCO_3$ + sulf. - rich matrix / slicks w/ SiO_2 + sulf. vnlts / Multiple frac's @ 70-80°	Vning min. change to SiO_2 ± sulf ± clear to blue-gry or yellowish ferrugenous $CaCO_3$ + chl. / 322.5–323 c. xln $CaCO_3$ + minor SiO_2 w/ frac'd wall rock – water coarse / SiO_2 + $CaCO_3$ ± minor sulf. @ 45° & 70° / 328–329 water coarse bx w/ $CaCO_3$ ± SiO_2 matrix / 330–335 chalc. SiO_2 ± $CaCO_3$ @ 5°, 75°, 80° / 330–366 minor v. f.g. diss. py + v. minor sulf in SiO_2–$CaCO_3$ vnlts. Chalc, microvnlts @ 30, 20, 70° 70°. / 340–366' Minor disc. chalc. vnlts @ 70-85° w/ little or no sulf.
339 37	70% >3" 17 total / 343	mod soft / mod to mod soft				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
309	315	6.0'	.003	.03		
315	320	5.0'	.002	.04		
320	325	5.0'	.003	.03		
325	330	5.0'	.005	.06		
330	335	5.0'	.003	.06		
335	340	5.0'	.011	.11		
340	345	5.0'	.009	.13		

HOLE NUMBER 94-300C PAGE 10 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
349 Box 38	65% >3" 12 total	mod soft	S.a.a. w/exceptions below: -346-347' slightly rotated frags displaying lamination & interbedding w/clayey v.f.g. ash	350		Crackle bx - tectonic w/generally non-rotated frag's	340-366 Minor 70-85' SiO_2 + v. minor sulf. diss. sulf's may be localized by carbonaceous (v.f.g.) material.
353	47% >3" w/11 total	mod to mod soft	355-357 heterolithic lapilli ash flow tuff w/ super-imposed tectonic bx'iation.	355			minor high ∀ chalc. ± sulf. @ 20'
359 39				360			
363	55% >3" w/ 9 total	mod to mod hd w/in $CaCO_3$ incr. hdness (black streak from diss sulf)	366-370.5' Carbonate cemented bx similiar to bx above, c.x'ln calcite barren.	365		c.g. open-space-watercourse $CaCO_3$ vn/bx contact @ 75° @ 366'	
369 40 370	80% >3" w/ 18 total		370.5-86' drab grn F.g. waterlain or airfall tepra faint planar lamination loc.; loc. "ghost" bx, common bluish-grey $CaCO_3$ ± SiO_2 ± grn chl. clay ± minor f.g. sulf. @ 20-30°	370		@ 30° @ 370.5 c.g. (xl) open-space water-course $CaCO_3$ vn/bx contact	minor sulf-rich vnlts @ 50°
378	379	mod hd to hd black streak only in thin lenses		375			
				380			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
345	350	5.0'	.025	.10		
350	355	5.0'	.007	.06	.007	
355	360	5.0'	.010	.07		
360	366	6.0'	.017	.07		
366	370.5	4.5'	.007	.03		
370.5	375	4.5'	.008	.05		
375	380'	5.0'	.002	.03		

HOLE NUMBER 94-300C PAGE 11 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box 41	92% >3" w/12 total	mod hd to hd blk streaks only in thin lenses					$CaCO_3$ ± grn chalc. + v. minor sulf. in microvnlts @ 30°
387			386-387 Pale grn Crackle-bx changing down ward into hydrot. bx @ 387 w/ barren med. grn waxy clay alt. chalc. matrix / frac-filling; frac & chalc. post-sulf, predom. frac's @ 50°	385		frac'd @ 60° w/ grn chalc. (barren) cross-x sulf + SiO_2 frac-fault contact @ 60° @ 387	bleached, silic. mod. argillic alt.
	389 90% >3" w/ 9 total	mod to mod soft	387-392 Tectonic bx w/ angular to subrnd. (rolled) frags of f.g. water lain tephra w/ grn clay alt chalc. matrix	390		loc. highly silic.-sulf bearing bx frags; bx is clast-supported, heterolithic	Clay gouge w/ loc. silic + sulf-rich bx frags. Sulf's in bx frag & ground up g.m.
		mod to mod hd	392-407.5 Lt grn latitic lapilli-ash flow tuff, w/ H to med dk grn pumice lapilli w/ FR's up to 10:1 w/ fabric @ 35°; heterolithic and polylithic lithic frags; porphyritic w/ f.g. ash size clay alt. fld phenos			392' frac-fault contact @ 42° w/ chl + sulf stringers	393-394' white w/ blue tint $CaCO_3$ + sulf. vnlts at 35° 0.05 to 0.5"
396		mod	397.5-398' Lithic & crystal moderate ash flow tuff w/ dker grn pumice fiamme w/ FR's 10:1 to 15:1 @ 60-70° heterolithic angular lithic frags medium grn color, sulf's limited to lithic frags. propylitic alt., porphyritic texture	395			
	399 94% >3" w/ 4 total	mod to mod hd					398-399' 0.1" $CaCO_3$ + SiO_2 + sulf vnlt @ 17°
	403 98% >3" w/10 total			400			401- discontinuous barren $CaCO_3$ stringers & clotts. + @ 402-403 chl + sulf stringers @ 70°
406				405			propyl. - weakly argillized
		soft	407.5-408' grn clay gouge @ irreg. ∡			dark grn chl. clay + brassy-yellow py string @ 40°	
		mod hd					
		soft					
		soft	409-409.2' grn clay gouge @ 40°	410			
		mod hd	409.4-410' s.a.a @ 40° at top				$CaCO_3$: c. xln, wht in disc, str. & clotts 407.5-410
	413		407.5-453 Lithologic description as below				loc. sulf.-rich matrix in clotts - may be bx'iated sulf-rich silic. frags as in unit above
415				415			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
380	385	5.0'	<.001	.04		
385	390	5.0'	.005	.07		
390	395	5.0'	.007	.07		
395	400	5.0'	.013	.06		
400	405	5.0'	.019	.10		
405	407.5	2.5'	.008	.10		
407.5	410	2.5'	<.001	.02		
410	415	5.0'	.003	<.02		

HOLE NUMBER 94-300 C PAGE 12 OF

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	88% >3" w/ 13 total	mod hd; soft	407.5 - 453' Med. to loc. dk grn w/reddish v brown tint, v. c. g. heterolithic, polylithic, propylitic alt., porphyritic tuff breccia w/ stx & alt. variations as noted to right. Lithic frags angular to subang. ranging from ash to >> diameter of core; preferentially en-riched w/ f. g. py. prim. composed of siliceous f.g. tephra. Groundmass is composed of fine-grained bx frags w/ chlorite + calcite ± minor sulf. ± SiO_2 micro-partings. Some of the wht clay alt'd ash-size frag's may be altered/repl. feldspar pheno's.			417.5-418.5 Pale grn clay gouge, slicks, ang. frags @ 80°	some bx frag's pref. enriched in sulf.
		mod to mod hd; soft		420			dk grn chl./gluconite-rich matrix surrounding some frag's
424	423; 93% >3" w/12 total	mod to mod hd; soft		425			wht, c. xln., barren $CaCO_3$ vns & vnlts @ 60° up to 2.5" tt.
		mod hd; Soft		430		$CaCO_3$ vn frag's	
433	433; 90% >3" w/ 13 total	mod to mod soft	430-431 fiamme w/ FR's up to 5:1 @ 40°. 429-431 f.g. porphyritic lithic frags w/ sulf. repl. ferromag. pheno's (hrn, bio).	435			438 - 445 sporatic dk'er grn chl. + sulf-rich matrix
		mod to mod hd	Soft grey clay gouge w/ angular frags				
443	443; 88% >3" w/9 total	mod; soft; soft; mod hd		440; 445			
		mod to mod soft		450			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
415	420	5.0'	<.001	.02		
420	425	5.0'	.010	.12	.011	
425	430	5.0'	<.001	.03		
430	435	5.0'	<.001	.02		
435	440	5.0'	.001	.03		
440	445	5.0'	.001	.02		
445	450	5.0'	<.001	<.02		

HOLE NUMBER 94-300C PAGE 13 OF 13

%REC	RQD	Hardness	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
452	453	mod to mod soft ↓	450-453 Porphyritic, propylitic alt. heterolith tuff breccia w/ 5% clay alt crystal frags or flow				propylitized w/ carbonate-rich + grn chl. clay-matrix.
	88% w/ 9 total	Mod hd ↓	453-463' Intrusive heterolithic breccia w/ f.g. aphanitic groundmass pale green, w/ clast-supported, heterolithic angular to subrnd, poor to mod. well-sorted, siliceous slightly porphyritic flow-laminated tuff or flows. Groundmass is flow-banded @ 15-20'. relatively fresh sanidine ± minor Q ± sulf repl. ferromag (hrn/bro) DT	455 460		454' clay + $CaCO_3$ + sulf filled frac @ 20'	clast have v. thin chl-clay + SiO_2 reaction rims. minor thin, barren, disc. $CaCO_3$ stringers @ 50' Sulf's occ. prim. in sml clotts - after repl. clasts
463	463		463' EOH	465			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
450	455	5.0	<.001	<.02		
455	459	4.0'	<.001	.02		
459	463	4.0	<.001	<.02		

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	94-300 C	LOCATION	SOUTH ZONE	REMARKS	SUMMARY LOG
PAGE 1 OF	1	NORTHING	2,203,292.5		
DATE	5-17-94	EASTING	481,087.1		
LOGGED BY	CBW	ELEVATION	5267.4		
SCALE	1" = 100'	AZIMUTH	202°		
TOTAL DEPTH	463'	INCLINATION	-89.5°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		silicified, oxidized, weakly argillized, weathered leached 27' Vitropheric latitic lapilli tuff breccia and tuff. Pale to dark green, oxidized, FeOx stained, fractured. Porphyritic.	100		Bud								
		199' Contact @ 75° Brecciated, fine-grained, massive, non-porphyritic, pale green, pink and tan airfall or waterlain tephra 241' Contact @ 30° Mottled green, tan coarse-grained tuff breccia. 255' Planar laminated, fine-grained airfall tepra and ash, locally brecciated.	200 300	80° 75°	Lower Bud Tuff								
		392' 386' tectonic bx Light green, porphyritic, latitic lapilli tuff. 407' Brecciated, heterolithic - polylithic, coarse-grained, pseudo-porphyritic tuff breccia. Light to medium green, carbonate cemented/veined, weakly silicified, weak sulfidation. EOH 463'	400 500	42'	South Ridge Fault ? splay ? Bud-Like TOS								

ANALYSIS REPORT

American Assay Laboratories Inc.

RENO: 1500 Glendale Ave,SPARKS 89431
P.O. Box 71060, RENO 89570
Ph (702)356 0606 Fax 3561413

HECLA MINING CO.

REPORT : SP 029123 3 Page(s) Date : 05/31/94

Client reference : 94-300C Project : ROSEBUD

Cost code :

Copies to : CHARLIE MUERHOFF

Samples : Type Preparation code
Received : 05/17/94

Analysis	Code	Quality Parameter	Detection	Units
Au(OZ)	FA60	Acc. 15 %	0.001	OZ/TON
Au(RZ)	FA60	Acc. 15 %	0.001	OZ/TON
AuGRAV	GRAV	Prec.10 %	0.001	OZ/TON
Ag(OZ)	D210	Prec.10 %	0.02	OZ/TON

QA Manager : Sue Faircloth M.S.

ANALYSIS REPORT

American Assay Laboratories Inc.

REPORT : SP 029123

Sample	Au(OZ) OZ/TON	Au(RZ) OZ/TON	AuGRAV OZ/TON	Ag(OZ) OZ/TON
94-300C 7-8	0.002	0.002	--	0.12
94-300C 8-10.3	<0.001		--	0.05
94-300C 10.3-15	<0.001		--	0.08
94-300C 15-21	<0.001		--	0.06
94-300C 21-24	<0.001		--	0.04
94-300C 24-27.1	<0.001		--	0.06
94-300C 27.1-33	0.001		--	0.04
94-300C 33-39	<0.001		--	<0.02
94-300C 39-41.6	0.001		--	0.08
94-300C 41.6-47.1	<0.001		--	0.03
94-300C 47.1-50.5	0.001		--	0.07
94-300C 50.5-56.3	0.002		--	0.05
94-300C 56.3-62.7	0.002	0.002	--	0.06
94-300C 62.7-67	<0.001		--	0.04
94-300C 67-73	<0.001		--	0.04
94-300C 73-74.8	0.003		--	0.07
94-300C 74.8-77.5	0.002		--	0.05
94-300C 77.5-82	0.002		--	0.07
94-300C 82-85.5	0.002		--	0.05
94-300C 85.5-86.5	0.001		--	0.06
94-300C 86.5-91	0.011		--	0.05
94-300C 91-97	0.007	0.009	--	0.06
94-300C 97-103	0.010		--	0.07
94-300C 103-108	0.008		--	0.09
94-300C 108-113	0.002		--	0.05

Please refer to the cover sheet for further analysis details.

ANALYSIS REPORT

American Assay Laboratories Inc.

REPORT : SP 029123

Sample	Au(OZ) OZ/TON	Au(RZ) OZ/TON	AuGRAV OZ/TON	Ag(OZ) OZ/TON
94-300C 113-118	0.001		--	0.02
94-300C 118-123	0.001		--	0.10
94-300C 123-128	0.002	0.002	--	0.11
94-300C 128-133	0.003		--	0.15
94-300C 133-138	0.002		--	0.12
94-300C 138-141	0.002		--	0.07
94-300C 141-142	0.003		--	0.07
94-300C 142-146	0.002		--	0.08
94-300C 146-151	0.002		--	0.06
94-300C 151-156	<0.001		--	0.04
94-300C 156-161	0.001		--	0.06
94-300C 161-166	0.002		--	0.08
94-300C 166-171	0.002		--	0.06
94-300C 171-176	0.002		--	0.08
94-300C 176-180	0.002		--	0.08
94-300C 180-185	0.008	0.007	--	0.13
94-300C 185-190	0.003		--	0.12
94-300C 190-195	0.002		--	0.06
94-300C 195-200	0.002		--	0.07
94-300C 200-205	0.002		--	0.07
94-300C 205-210	0.007		--	0.09
94-300C 210-215	0.006		--	0.12
94-300C 215-220	0.019	0.014	--	0.11
94-300C 220-225	0.008		--	0.13
94-300C 225-230	0.006		--	0.13

Please refer to the cover sheet for further analysis details.

ANALYSIS REPORT

American Assay Laboratories Inc.

REPORT : SP 029123

Sample	Au(OZ) OZ/TON	Au(RZ) OZ/TON	AuGRAV OZ/TON	Ag(OZ) OZ/TON
94-300C 230-233.1	0.007		--	0.22
94-300C 233.1-236.5	0.005		--	0.12
94-300C 236.5-240	0.002		--	0.07
94-300C 240-245	0.003		--	0.09
94-300C 245-250	0.002		--	0.08
94-300C 250-255.4	0.002		--	0.05
94-300C 255.4-260	0.005		--	0.08
94-300C 260-265	0.005		--	0.10
94-300C 265-270	0.005		--	0.11
94-300C 270-275	0.006		--	0.12
94-300C 275-280	0.005		--	0.09
94-300C 280-283.5	0.005		--	0.08
94-300C 283.5-289	0.009		--	0.13
94-300C 289-293.5	0.030	0.031	--	0.21
94-300C 293.5-297.5	0.065		0.068	0.90
94-300C 297.5-301	0.350		0.354	0.84
94-300C 301-305	0.179		0.188	0.34
94-300C 305-309	0.005		--	0.04
94-300C 309-315	0.003		--	0.03
94-300C 315-320	0.002		--	0.04
94-300C 320-325	0.003		--	0.03
94-300C 325-330	0.005		--	0.06

Please refer to the cover sheet for further analysis details.

ANALYSIS REPORT

American Assay Laboratories Inc.

RENO: 1500 Glendale Ave,SPARKS 89431
P.O. Box 71060, RENO 89570
Ph (702)356 0606 Fax 3561413

HECLA MINING CO.

REPORT : SP 029243 2 Page(s) Date : 06/08/94

Client reference : 94-300C Project : ROSEBUD

Cost code :

Copies to : CHARLIE MUERHOFF

Samples : Type Preparation code
Received : 05/25/94

Analysis	Code	Quality Parameter	Detection	Units
Au(OZ)	FA60	Acc. 15 %	0.001	OZ/TON
Au(RZ)	FA60	Acc. 15 %	0.001	OZ/TON
Ag(OZ)	D210	Prec.10 %	0.02	OZ/TON

QA Manager : Sue Faircloth M.S.

ANALYSIS REPORT

American Assay Laboratories Inc.

REPORT : SP 029243

Sample	Au(OZ) OZ/TON	Au(RZ) OZ/TON	Ag(OZ) OZ/TON
94-300C 330-335	0.003		0.06
94-300C 335-340	0.011		0.11
94-300C 340-345	0.009		0.13
94-300C 345-350	0.025		0.10
94-300C 350-355	0.007	0.007	0.06
94-300C 355-360	0.010		0.07
94-300C 360-366	0.017		0.07
94-300C 366-370.5	0.007		0.03
94-300C 370.5-375	0.008		0.05
94-300C 375-380	0.002		0.03
94-300C 380-385	<0.001		0.04
94-300C 385-390	0.005		0.07
94-300C 390-395	0.007		0.07
94-300C 395-400	0.013		0.06
94-300C 400-405	0.019		0.10
94-300C 405-407.5	0.008		0.10
94-300C 407.5-410	<0.001		0.02
94-300C 410-415	0.003		<0.02
94-300C 415-420	<0.001		0.02
94-300C 420-425	0.010	0.011	0.12
94-300C 425-430	<0.001		0.03
94-300C 430-435	<0.001		0.02
94-300C 435-440	0.001		0.03
94-300C 440-445	0.001		0.02
94-300C 445-450	<0.001		<0.02

Please refer to the cover sheet for further analysis details.

ANALYSIS REPORT

American Assay Laboratories Inc.

REPORT : SP 029243

Sample	Au(OZ) OZ/TON	Au(RZ) OZ/TON	Ag(OZ) OZ/TON
94-300C 450-455	<0.001		<0.02
94-300C 455-459	<0.001		0.02
94-300C 459-463	<0.001		<0.02

Please refer to the cover sheet for further analysis details.

WELL 300 C
DEPTH 110'
PICTURE NO.
INCLINATION
OBS. DIR
COR. DIR.
TOOL FACE
RUN BY
DATE
CHECKED BY

sperry-sun
DRILLING SERVICES

WELL 300 C
DEPTH 10'
PICTURE NO.
INCLINATION
OBS. DIR
COR. DIR.
TOOL FACE
RUN BY
DATE
CHECKED BY

sperry-sun
DRILLING SERVICES

#300C
330'

#300C
220'

#300C
440'

N
1
2
3
4
5
6
7
8
W
8
7
6
5
4
3
2
1
S
1
2
3
4
5
6
7
8
5
5
5
10

0
1-2-3-4-5-6-7-8
8-7-6-5-4-3-2-1-S-
5
5
5
5

N
1
2
3
4
5
6
7
8
W
8
7
6
5
4
3
2
1
S
1
2
3
4
5
5
5
5
10
10

1-2-3-4-5-6-7-8
5
5
3-4-5-6-7

N
1
2
3
4
5
6
7
8
W
8
7
6
5
4
3
2
1
S
1
2
3
4
5
6
7
8
E
8
7
6
5
4
3
2
1
5
5
5