60001477

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. 94-298C
AUTHOR	C. Wineteer; C. Muerhoff; S. Fairclotb
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.
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 463' handwritten notes; down hole camera images 18p. 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

94-298c

SOUTH ZONE

6000 1477 4010

6000 1477

Hecla MINING COMPANY

ROSEBUD PROJECT DIAMOND DRILL LOG

HOLE NUMBER	94-298C	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED
PAGE 1 OF	14	NORTHING	2,203,199.3		AS ∡ TO CORE AXIS; CORE PHOTO-
DATE	JUNE 23, 1994	EASTING	481,129.6		GRAPHED; WHOLE CORE SAMPLES
LOGGED BY	CB WINETEER	ELEVATION	5288.1		COLLECTED;
SCALE	1"=5"	AZIMUTH	18.5°		
TOTAL DEPTH	463'	INCLINATION	-89.0		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		0-7' No RECOVERY	5										
		7-22.5' Siliceous, fine-grained, heterolithic(?), matrix-supported tuff breccia or hydrothermal / supergene breccia, light to med. grey	10			MODERATE TO INTENSELY SILICIFIED ↓ 23.5' OXIDATION PRIM. ON FRAC'S ↓ 69'	7	13	6.0'	0.002	0.14		
					12-16 frac's @ 5' & 30°								
16	16		15		16-24' Mod. frac./density @ 65° (2-3/ft)		13	19	6.0'	0.004	0.10	0.004	
			20				19	23	4.0'	0.002	0.08		
	23	22.5-37' Pale green, coarse-grained (base) to fine-grained, moderately-sorted matrix-supp. porphyritic lapilli tuff w/ 5-10% white clay altered feldspar phenocrysts, Tr oxidized clay altered biotite and Tr fine to med. grained carbonaceous fragments. Medium grained lapilli w/ 2 to 3:1 FR'S.			22.5' apparent contact @ 55° INDICATES 20' OF STRUCTURAL ROTATION AFTER INFILTRATION/ SILICIFICATION	INFILTRATED - VARVED Silic - Clay strong ↓ to 21' banding and frac's @ 70° & 10° 23.5-37' MINOR DISCONT. THIN, IRREG. SiO_2 ± FeO_x ± Clay							
25			25				23	30	7.0'	<0.001	0.02		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
					weak frac @ 50' Δing to 40'↓ then to 30' @35-37'	
	33	Coarse lithics - appear to be prim. Coarser-grained non flattened pumice	30			
34			35		37' Sharp planar contact @30'	37- SiO_2 Micro hairline stkwk $SiO_2 \pm FeOx \pm$ minor clay @65 & 10-5'
		37-86' Pale (light) green, fine-grained, vitroclastic porphyritic, moderately-well to mod. sorted airfall tephra w/ Tr cast (voids) after altered tabular feldspar xl fragments, Tr fine-grained subhedral quartz phenocrysts/grains	40		37-48 frac'd @ 50 & 40' mod 2-4/ft. ± minor wht clay ± FeOx stn.	42'↓ diss. FeOx in pseudo's after f.g. diss. py <1 to 1%
43	43		45			
			50		48' frac'd @80' w/ infiltration clays & varved SiO_2 @ 80' 48-52' frac's ± FeOx ± SiO_2 ± clay @ 85-90' (5/ft) 52-61 frac's ± FeOx ± SiO_2 ± clay @ 70' & 30'; 2-3/ft.	
52	52	-50-52' CORE REVERSED IN BOX				
		DURING - CORE PHOTO'S BOX 6 & 7 REVERSED	55			
			60			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
30	37	7.0'	0.004	0.09		
37	42	5.0'	0.002	0.04		
42	47	5.0'	0.003	0.06		
47	52	5.0'	0.004	0.07		
52	57	5.0'	0.002	0.37		
57	62	5.0'	0.002	0.02		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
61	62				Frac's @ 90° w/open-space SiO_2 + FeOx + clay (infiltr)	FeOx PRIM. ALONG FRAC's / VNLTS ↓ to BASE OF OXIDE ZONE
			65		s.a.a.	
70.5			70		s.a.a.	
	73					
			75		open-space frac's w/ partial openspace fill w/ Qz + FeOx + clay (infiltr)	
80			80			
	83					
		84-104.5' VERY COARSE-GRAINED, MATRIX-SUPPORTED, HETERO & POLYLITHIC TUFF BRECCIA, W/ CLAY ALT. ANGULAR POORLY-SORTED FINE-GRAINED TUFF (DOMINANT) FRAGMENTS IN A PALE TO MEDIUM GREEN SILICEOUS CLAYEY MATRIX; SLIGHTLY PORPHYRITIC W/ <5% FRESH TO STRONGLY CLAY-ALT. SUBHEDRAL FELDSPAR; FR's V. LOW to 1:1; This breccia and breccia below 119-167' May be intrusive in origin	85		86' Apparent contact @ 60 w/ FeOx + SiO_2	
89			90		open-space frac's @ 40°, 50° & 80-90° w/ infiltr. clay ± SiO_2 ± FeOx ± SAND	
	93		95			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
62	67	5.0'	0.003	0.04		
67	72	5.0'	0.003	0.04		
72	77	5.0'	0.001	0.06		
77	82	5.0'	0.003	0.07	0.004	
82	86	4.0'	0.003	0.03		
86	90	4.0'	0.002	0.04		
90	95	5.0'	0.002	0.04		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
97					open-space frac's w/ partial FeOx + SiO2 + clay ± sand (infilt.)	
	103	104.5-119' Crackle breccia w/in pale green fine-grained vitroclastic, moderately-well sorted airfall tephra w/ clast-supported bx fragments w/ clear to med. grass green SiO2 matrix	100			
107			105		104.5' Sharp planar 85° contact w/ FeOx + SiO2 open-space frac's a.a.	104.5-119' v.v.f.g. FeOx stnd casts after py diss. thru-out
	113		110			
116.5		119-167' VERY coarse-grained, poorly-sorted, hetero- & polylithic, matrix-supported breccia, w/ a siliceous aphanitic to vitroclastic greenish grey intrusive(?) breccia; poorly-sorted angular clasts range from ash to >> core diam. in size. Weakly argillic alt., sulfidation, and silicification.	115		119' Sharp planar-FeOx + SiO2 contact @ 70° Open-space frac's a.a.	119-167 v.f. to f.g. FeOx casts & pseudomorphs after diss. py
	123		120			
125			125			
			130			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
95	100	5.0'	0.001	0.04		
100	105	5.0'	0.002	0.04		
105	110	5.0'	0.005	0.04		
110	115	5.0'	0.003	0.06		
115	120	5.0'	0.002	0.06		
120	125	5.0'	0.003	0.13		
125	130	5.0	0.004	0.19		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
135	133		135		open-space frac's w/ partial filling w/ FeOx + Clay ± Q + Sand (open-space Q xls) + to 155'	
144	143		140			MIXED OXIDE/SULFIDES
154	153		145		Densely frac's 148-153.5' w/ partial frac-filling a.a.	OXIDES
163	163		150			MIXED OXIDES/SULFIDES
			155			PREDOMINANTLY SULFIDES 163-164' 0.75" open-space frac @ 30° w/ cl → Q → py → Marc → cl → Q Q Py Marc. Cl? Q
			160			
			165			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
130	135	5.0'	0.003	0.06		
135	140	5.0'	0.002	0.06		
140	145	5.0'	0.004	0.22		
145	150	5.0'	0.006	0.17		
150	155	5.0'	0.002	0.06		
155	160	5.0	0.003	0.10		
160	165	5.0'	0.003	0.11		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		167-188.5' VERY FINE-GRAINED, CLAYEY, MASSIVE-BEDDED, WELL-SORTED AIRFALL TEPHRA; mod. hardness, pale grey w/ slight green tint,			167' Bx'iated contact w/ LARGE (>> core diam) clasts of lith below w/in bx above	MOD. ARGILLIC ALT & SULFIDATION & SILICIFATION minor py + smec/ill @ 80-85' diss. f.g. py <1% minor spotty silic.
		172-188.5 Matrix-supported, hetero- & polylithic, poorly-sorted tuff breccia w/ angular to subang. fine-grained to porphyritic tuff fragments in a f.g. silic. tan to cream matrix, mod. hd.	170		←70-96' undulating w/ f.g. massive sulfosalts w/ thin gel coatings 172' Contact planar 60' w/ marc. coating	smec/ill clay on frac's @ 5' 172-188.5' Q + py/marc + smec/ill @ 60-70'; 30°; diss. f.g. py <1%
173 Box 19	173		175			
		— 180-182 pale green vitrophyric-glassy.	180			178-180' Q + py/mar + smec/ill @ 0-5'
182 20	183				183-188.5' fragmented Q-sulf. veinlets w/ clear Q ± py stkwk x-cutting	mod. argillic alt. + to 203'
		188.5-199' Massive fine-grained airfall tephra w/ sandy porous texture/groundmass, also Δ from green to grey color to tan to pink color. mod. hd @ top ↓ mod. hd.	185		YELLOW STAIN FROM OXIDIZED YELLOW py & marc. IN SITU w/ no smear-slides 188.5 Contact & unknown	185' INITIAL OXIDATION OF SMEC/ILL (DUCKS BUTTER) THIN & ACCESS. TO 188.5
190.5 21	193		190		FRACTURING - COINCIDENT w/ smec/ill + mar	188.5-203' Frac-opening >> than above 0.05-0.3" w/ >> smec/ill than above & > sulf (prin. marc.) >> Q Frac. stkwk @ 60' & 5' & 70-80' diss. py < diss marc. total 2-3%
			195		193-205' Local patchy vuggy dissolution w/ partial void filling Q + smec/ill + marc + c. x/ln bar (strong @ 200-201)	siliceous frag.-rich matrix oxid yellow waxy (DUCKS BUTTER) ON ALL ORIENT. FRAC's
199 22			200		199 Contact & unknown	

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
S.S. 165	170	5.0'	0.003	0.45		
S.S. 170	175	5.0'	0.002	0.38		
175	180	5.0'	0.001	0.05		
180	185	5.0'	0.004	0.06		
185	190	5.0'	0.006	0.08		
190	195	5.0'	0.003	0.05	0.003	
195	200	5.0'	0.003	0.06		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	203	199 - 218.5 Crude to well laminated fine-grained, sandy textured airfall or waterlain tephra.	205		200 - 205' frac'd w/ partial open-space	203 - 218.5' Frac - stkwork as above w/ increased Q+sulf decr. smec/ill + increased silic. of wall rock. + incr. diss. f.g. py 2 to 5% loc.
208 Box 23			210		Ga? ± Ag; planar-laminations @ 60'	
	213		215			211' - on 5' smec/ill "db" marc ± f.g. galena; 213-214' hydrat bx w/ minor orange-red, purple SiO_2 + py + Tr spl.
217 24		218.5 - 238.5 Clast-supported tuff breccia w/in planar-laminated sandy textured f.g. tephra; Clast rotation evident at top decreasing to 238'	220			218.5 - 238 @ 60° 2-4/ft marc + < Q + < smec/ill + < DB's; @ 15' 0.2/ft. smec/ill + < DB's + < marc + < py; @ 30' 1/ft. smec/ill + < py + < marc + < Q; minor frac's w/ thick smec./ill, but generally Tr DB's. diss. v.f.g. py 2-3%
	223		225			
226 25			230		230 - FOOTWALL OF SRF ROCK IS RUBBLY-FRACTURED	
	233		235			
235.5						

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
200	205	5.0'	0.002	0.06		
205	210	5.0'	0.002	0.10		
210	215	5.0'	0.003	0.07		
215	220	5.0'	0.003	0.04		
220	225	5.0'	0.002	0.04		
225	230	5.0'	0.002	0.05		
230	235	5.0'	0.002	0.04		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box 26		238.5'–280.3' Matrix-supported, poorly-sorted, fine to coarse-grained, heterolithic sandy-textured tuff breccia w/ angular to sub rounded clasts of f.g. clay-alt. & silic. tephra in a siliceous f.g. groundmass.			238.5' sharp contact @ 55'	238.5'–266' diss. f.g. py 1-2 w/ loc 3-4% @ 70-90° < 1/ft. discont.– irreg. < 0.1" py/marc. @ 30-45° < 1/ft. discont– irreg. < 0.1' py/marc/ smec. ill/q @ 5-5° minor s.a.a. Blotchy "ducks butter" oxidation stain thru-out
244 27	243		240			
		– 249 Subangular clasts of v.f.g. siliceous, slightly carbonaceous planar-laminated siltstone	245			246 Bar + mar. open-space in < 05' smec/ill + mar.
			250		discont. bar c.xln	
253 28	253		255			
			260			
261.5 29	263		265			266–280.3' s.a.a. (238.5–266) w/ INCREASE IN FRAC-OPEN-SPACE & INCR. SMEC/ill & FRAC DENSITY + mod. strong arg. alt. diss. py 2-3%
270			270			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
235	240	5.0'	0.003	0.04		
240	245	5.0'	0.002	0.05		
245	250	5.0'	0.002	0.05		
250	255	5.0'	0.003	0.06		
255	260	5.0'	0.002	0.04		
260	265	5.0'	0.002	0.04		
265	270	5.0'	0.002	0.06		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
Box 30	273		275			266-280.3 Cont. ducks butter orid. of smec/ill is insitu oxid. of diss. py & vnlt marc/py w/ no apparent slrchs. or smearing. mod intense org. alt.
280 31	282	280.3'-287.5' Matrix & clast-supported poorly-sorted milled and hydrothermal silicified breccia w/ rounded to sub-angular siliceous flow-laminated rhyolite frags in a sandy-clayey matrix(?)	280		280.3' sharp planar contact @ 55'	280.3-287.5' marc/py vnlt frags sub parallel to C.A. diss cubic py + yellow py-ohedrons 1-20% locally minor duck's butter
		— 287.5-292 Large clast w/in hydrotherm breccia of frac'd planar-laminated or flow-banded siliceous rhyolitic flow water-lain tephra.	285		287.5 sharp planar contact @ 55°	287.5-292' Silica replaced flow lam. frags w/ smec/ill + Butter matrix minor sulf spl. access.
290	292.5		290		292' contact-sharp-planar @ 25'	292-301.7 Siliceous frags in smec/ill + Q + sulf.-rich matrix
298			295		300-302' Silica repl. of matrix & clasts w/ f.g. cubic py w/ disorted stx - brass color.	298-300' Patchy lt-tomed aqua-marine sericitic clay + smec/ill + bright yellow py-ohedrons
	303	301.7-303' Wavy-laminated sandy textured f.g. waterlain tephra? or siliceous flow-laminated rhyolite flow(?) 303-307' Matrix- and clast-supported homogeneous breccia w/ yellow (DB'ish) clayey matrix & silic. laminated tephra clasts (angular).	300 305		301.7' Planar contact @	301.7-303' Concordant w/ flow-lam? f.g. open-space Q + smec/ill + marc + tarnished red py + aqua-marine green clay commonly sliceed.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
270	275	5.0'	0.002	0.06		
275	280.3	5.0'	0.002	0.06		
280.3	284	3.7'	0.002	0.05		
284	287.5	3.5'	0.002	0.04		
287.5	292	4.5'	0.002	0.03		
292	295	3.0'	0.002	0.08		
295	298	3.0'	0.002	0.06		
AQM 298	300	2.0	0.004	0.07		
300	301.7	1.7	0.005	0.04	0.005	
AQM 301.7	303	1.3	0.004	0.06		
AQM 303	307	4.0	0.003	0.03		

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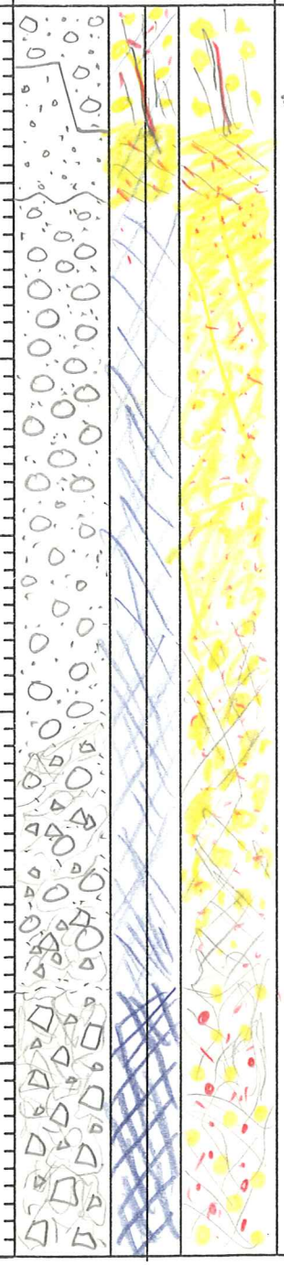
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
308		305-307 Bx'iated Hydrothermal breccia 307-310.5' Medium-grained sandy milled Tbxa silicified & intensely clay alt. medium-grained clasts in matrix-supported a clear to pale green SiO_2 matrix,	310		307' contact sharp, near planar @ 15'	303-307' 0-10' smec/ill + Qt agua-marine slicked clay + yellow-orange-red tarnish tarnished py-ohedrons
316	313	310.5-333' Moderate to well-sorted, clast-supported hydrothermal breccia w/ a clear to bluish-grey silica matrix, hetero lithic equant rounded to subrounded clasts (including med. grey silica t.v.f.g. py clasts) -313+ poor to moderate-sorting matrix & clast-supported.	315			310.5-333' groundmass composed of +90% SiO_2 minor interstitial yellow tarnished py no sulf. string or clay lined str. occ. chalc. SiO_2 vnlts & stkwk (coarser than matrix)
	323		320			
46% REC. → 327	327	-327 Fault breccia w/prim. clasts composed of hydrothermal breccia + 333'	325			
70% REC →	329		330			
	334	-333 Mixed lithic fragments w/in fault breccia; pebble congl. above + green tuff/tuff breccia frags	335		↔	Angular clasts of silic. tuff, propylitically alt. tuff, Qvein, Sulf. vein & smec/ill vein frags in soft pale green fault gouge clay
338			340			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
307	310.5	3.5'	0.002	<0.02		
310.5	315	4.5'	0.013	0.06		
315	320	5.0'	0.019	2.54		
320	325	5.0'	0.020	1.57	0.018	
325	330	5.0'	0.010	0.25		
330	335	5.0'	0.011	0.02		
335	340	5.0'	0.003	<0.02		

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
	342	FAULT BRECCIA ↓ TO 361.5'				341-353' $CaCO_3$ flooded tectonic - fault breccia as above, flooding along 50' bands. PRGS - SULF, SMEC/ILL / $CaCO_3$ / Q ± SULF
			345		345.5' @ 60° Slick	
348						
			350			
	352.5					353-361.5 $CaCO_3$ as angular fragments bxiation post-dates $CaCO_3$ flooding.
			355		357.5' grey clay slicks @ 40° & 90°	
358.5						
			360		360.5' @ 40° Planar-sharp slick w/ Ridge & groove stx @ 70° to C.A. 361.5 @ 54° Planar-sharp slick w/ Ridge-Groove Stx's @ 60° to core axis FOOTWALL OF SOUTH RIDGE FAULT	
	363	361.5-463' Pale green-grey, banded, fine-grained slightly porphyritic waterlain or airfall tephra, dense hard compact, silicified (deutric) & carbonate flooded along banding.				361.5-365' Minor frac-controlled tectonic bx w/ $CaCO_3$ + py matrix on high ∡ frac's.; $CaCO_3$ + py on high & low ∡ discont. frac's. <1% diss. cubic py
			365			
367						365-378' discont. high & low ∡ narrow frac's w/ $CaCO_3$ + smec/ill + py + spl.
			370			
	373					
			375			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
340	345	5.0'	0.004	<0.02		
345	350	5.0'	0.002	<0.02		
350	355	5.0'	0.004	<0.02		
355	361.5	6.5'	0.005	0.05		
361.5	366	4.5'	<0.001	<0.02		
366	371	5.0'	0.001	<0.02		
371	376	5.0'	<0.001	<0.02		

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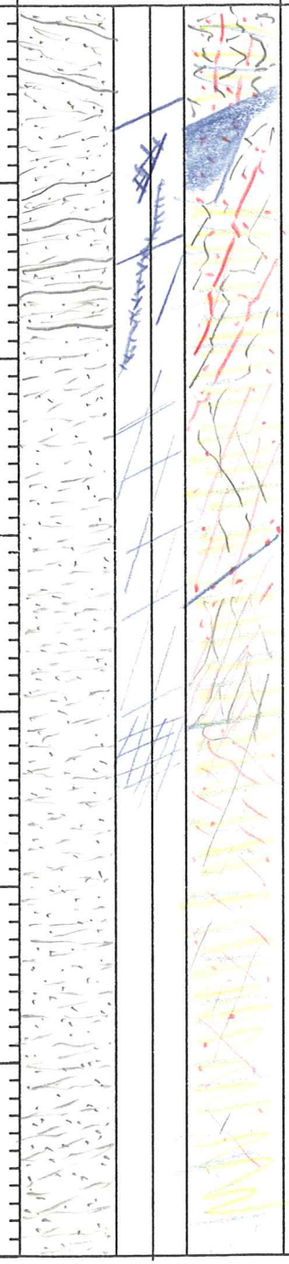
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
377					378' slick @ 65° w/ $CaCO_3$ c. xln → fault bx → slick @ 379.5 @ 20' ↘	discont. fragmented smec/ill ± py ± $CaCO_3$ 378-379.5' c. xln $CaCO_3$ w/ v.f.g. py inclusions & interstitial smec/ill ± py 379.5 – 386' High % (20') thin (0.01-0.05") $CaCO_3$ + smec/ill + py - cubic & massive + amber → red → black spl. ± minor s.s. Silicification & carbonate flooding coincident w/ banding.
386.5	383		380 385 390			
395	393		395 400			
404	403		405 410			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
376	381	5.0'	0.001	<0.02		
381	386	5.0'	<0.001	<0.02		
386	391	5.0'				
391	396	5.0'				
396	401	5.0'				
401	406	5.0'				
406	411	5.0'				

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
414	413		415			416-418' Micro hairline str. @ 60; 20° w/ py + common amber to orange sp l.
422.5	423		420			
432	433		425			
441	443		430			
			435			
			440			
			445			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
411	416	5.0	<0.001	<0.02		
416	421	5.0				
421	426	5.0				
426	431	5.0				
431	436	5.0				
436	441	5.0				
441	446	5.0				

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%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
451			450			
	453		455			
461			460		Dark grey sulf-rich shale @10° w/ rounded sand-size frags. in clay gouge	
463	463	END OF HOLE @ 463'				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
44L	451.5	5.5	<0.001	<0.02		
451.5	457	5.5				
457	463	6.0'				

ANALYSIS REPORT

American Assay Laboratories Inc.

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

POSTED

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
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CLIENT REFERENCE No: 94-298C
LABORATORY JOB No. : SP029714
SAMPLE TYPE :

RECEIVED : 24/06/94
REPORTED : 6/07/94
No. SAMPLES : 31

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-298C
JOB NUMBER : SP029714
REPORTED : 6/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-298C 7-13	0.002		0.14
94-298C 13-19	0.004	0.004	0.10
94-298C 19-23	0.002		0.08
94-298C 23-30	<0.001		0.02
94-298C 30-37	0.004		0.09
94-298C 37-42	0.002		0.04
94-298C 42-47	0.003		0.06
94-298C 47-52	0.004		0.07
94-298C 52-57	0.002		0.37
94-298C 57-62	0.002		0.02
94-298C 62-67	0.003		0.04
94-298C 67-72	0.003		0.04
94-298C 72-77	0.001		0.06
94-298C 77-82	0.003	0.004	0.07
94-298C 82-86	0.003		0.03
94-298C 86-90	0.002		0.04
94-298C 90-95	0.002		0.04
94-298C 95-100	0.001		0.04
94-298C 100-105	0.002		0.04
94-298C 105-110	0.005		0.04
94-298C 110-115	0.003		0.06
94-298C 115-120	0.002		0.06
94-298C 120-125	0.003		0.13
94-298C 125-130	0.004		0.19
94-298C 130-135	0.003		0.06

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-298C
JOB NUMBER : SP029714
REPORTED : 6/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-298C 135-140	0.002		0.06
94-298C 140-145	0.004		0.22
94-298C 145-150	0.006		0.17
94-298C 150-155	0.002		0.06
94-298C 155-160	0.003		0.10
94-298C 160-165	0.003		0.11

ANALYSIS REPORT

American Assay Laboratories Inc.

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RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

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POSTED

CLIENT REFERENCE No: 94-298C

LABORATORY JOB No. : SP029873

SAMPLE TYPE :

RECEIVED : 7/07/94

REPORTED : 14/07/94

No. SAMPLES : 63

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-298C
JOB NUMBER : SP029873
REPORTED : 14/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-298C 165-170	0.003		0.45
94-298C 170-175	0.002		0.38
94-298C 175-180	0.001		0.05
94-298C 180-185	0.004		0.06
94-298C 185-190	0.006		0.08
94-298C 190-195	0.003	0.003	0.05
94-298C 195-200	0.003		0.06
94-298C 200-205	0.002		0.06
94-298C 205-210	0.002		0.10
94-298C 210-215	0.003		0.07
94-298C 215-220	0.003		0.04
94-298C 220-225	0.002		0.04
94-298C 225-230	0.002		0.05
94-298C 230-235	0.002		0.04
94-298C 235-240	0.003		0.04
94-298C 240-245	0.002		0.05
94-298C 245-250	0.002		0.05
94-298C 250-255	0.003		0.06
94-298C 255-260	0.002		0.04
94-298C 260-265	0.002		0.04
94-298C 265-270	0.002		0.06
94-298C 270-275	0.002		0.06
94-298C 275-280.3	0.002		0.06
94-298C 280.3-284	0.002		0.05
94-298C 284-287.5	0.002		0.04

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-298C
JOB NUMBER : SP029873
REPORTED : 14/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-298C 287.5-292	0.002		0.03
94-298C 292-295	0.002		0.08
94-298C 295-298	0.002		0.06
94-298C 298-300	0.004		0.07
94-298C 300-301.7	0.005	0.005	0.04
94-298C 301.7-303	0.004		0.06
94-298C 303-307	0.003		0.03
94-298C 307-310.5	0.002		<0.02
94-298C 310.5-315	0.013		0.06
94-298C 315-320	0.019		2.54
94-298C 320-325	0.020	0.018	1.57
94-298C 325-330	0.010		0.25
94-298C 330-335	0.011		0.02
94-298C 335-340	0.003		<0.02
94-298C 340-345	0.004		<0.02
94-298C 345-350	0.002		<0.02
94-298C 350-355	0.004		<0.02
94-298C 355-361.5	0.005		0.05
94-298C 361.5-366	<0.001		<0.02
94-298C 366-371	0.001		<0.02
94-298C 371-376	<0.001		<0.02
94-298C 376-381	0.001		<0.02
94-298C 381-386	<0.001		<0.02
94-298C 386-391	<0.001		<0.02
94-298C 391-396	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-298C
JOB NUMBER : SP029873
REPORTED : 14/07/94

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-298C 396-401	<0.001		<0.02
94-298C 401-406	<0.001		<0.02
94-298C 406-411	<0.001		<0.02
94-298C 411-416	<0.001		<0.02
94-298C 416-421	<0.001		<0.02
94-298C 421-426	<0.001		<0.02
94-298C 426-431	<0.001		<0.02
94-298C 431-436	<0.001		<0.02
94-298C 436-441	<0.001		<0.02
94-298C 441-446	<0.001		<0.02
94-298C 446-451.5	<0.001		<0.02
94-298C 451.5-457	<0.001		<0.02
94-298C 457-463	<0.001		<0.02

100'
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#398

420'
#398

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#398

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