60001580

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. 95-342
AUTHOR	K. Allen; A. Davidson; C. Muerhoff; S. King
DATE OF DOC(S)	1996
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 East Target
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 501' handwritten notes 22p. 1 oversized sheet

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: MGH
Initials Date
SCANNED: NVB/JC
Initials Date

Revised: 1/22/08

95-342

60001580 4010

60001580

Hecla MINING COMPANY

ROSEBUD PROJECT DIAMOND DRILL LOG

Quick LOG

HOLE NUMBER	95-342	LOCATION	South East Target	REMARKS	
PAGE	1 OF 2	NORTHING			
DATE	3/11/96	EASTING			
LOGGED BY	KAA	ELEVATION			
SCALE	1"=50'	AZIMUTH			
TOTAL DEPTH	501	INCLINATION			

LITHOLOGY

0-61.6' - MODERATELY SOFT, MATRIX TO CLAST SUPPORTED, MONOLITHIC VOLCANIC BRECCIA. MATRIX IS BROWN IN COLOR DUE TO FeOx. CLASTS ARE PROPYLITIZED, AND ARGILLIZED TO GREENISH CLAY. ARG INCREASES DOWN UNIT. CLASTS APPEAR TO BE FINE-GRAINED MASSIVE ASH TUFF FRAGS - PROBABLY LATITIC IN COMPOSITION (TCT ?). CLASTS ARE SUB-ANGULAR, 70% CLASTS - 30% MATRIX, 100% LAPILLI SIZE.

61.6-78' - GOUGY FAULT ZONE. RUBBLE ZONE w/ AREAS OF CLAY GOUGE (GREEN). MINOR CLASTS OF UNIT DESCRIBED ABOVE & BELOW.

78-84.4' - BRECCIA SIMILAR TO 0-61.6 w/ CLASTS OF SiO2'd BMB DESCRIBED BELOW. MATRIX ALSO APPEARS TO BE COMPOSED OF BMB.

84.4-187.2 (BMB) - PORPHYRITIC LATITIC to ANDESITIC FLOW OR SILL, w/ AREAS OF AUTOBRECCIATION

- 84.4-111' - PORPHYRITIC LATITE - ANDESITE. MINOR FLOW LAMINATIONS @ 50°
- 111-117.7' - PORPHYRITIC LATITE-ANDESITE AUTOBRECCIA. POSSIBLE MINOR FAULT @ 114.6'.
- 117.7-126.1' - PORPHYRITIC LATITE-ANDESITE FLOW/SILL
- 126.1-133.5' - PORPHYRITIC LATITE-ANDESITE AUTOBRECCIA.
- 133.5-177.8' - PORPHYRITIC LATITE-ANDESITE FLOW/SILL.
- 177.8-187.2' porphyritic latite-Andesite, Autobreccia

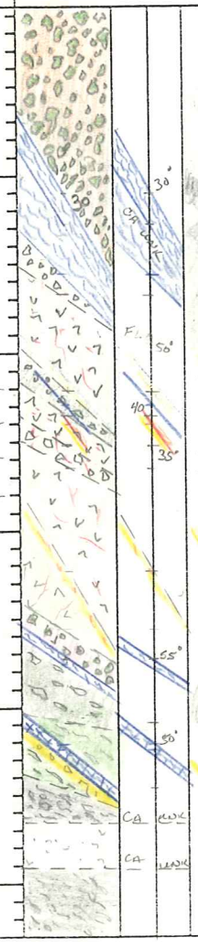
187.2-223.5' - MS-MH, MATRIX SUPPORTED, MINOR FLOW LAMINATED ASH-FLOW TUFF/BRECCIA. (BMB ?). PROP + ARG.

223.5-285' - FLOW LAMINATED OR BANDED ASH-FLOW TUFF? INTENSE ARGILLIC ALTERATION 223.5-233.8 & 245.6-285'. PORTIONS LOOK LIKE LITHOPHYSE. ABUNDANT WHITE CLAY, COMMON BARITE, MOD COMMON PYRITE + MARCASITE veinlets. BREAK & BROWN in COLOR.

- 233.8-245.6' - MASSIVE to MINOR FLOW LAMINATED ASH-TUFF. LESS ARGILLIZATION. BARITE VEINING + WHITE CLAY + MARC MOD COMMON. PINKISH BROWN IN COLOR. POSSIBLE Ag sulfos IN MINOR FRACTS. (ON BARITE XTALS).

Bmb ?

GRAPHIC LOG



STRUCTURE

0-61.6' - FRACTURES CONTAIN TRACE AMOUNTS OF BARITE + MINOR WHITE CLAY.

61.6-78' - FAULT ZONE

78-84.4' - MINOR FRACTS w/ FeOx.

84.4-111' - PYRITE ± GYPSUM w/ TRACE WHITE CLAY FRACTURES @ 50 & 40° to CA. STRONG PYRITE STOCKWORK @ 105-106.8'.

111-117.7' - MODERATE PYRITE FILLED FRACTURES @ 20 & 50° to CA. MINOR BARITE? POSS FAULT at 114.6'.

117.7-126.1' - RANDOMLY ORIENTED PYRITE STOCKWORK.

126.1-133.5' - PYRITE FRACTS MINOR @ 0-20° to CA.

133.5-140.2' - HIGH DENSITY OF PYRITE veinlets @ 40 & 60° to CA.

140.2-163' - MINOR to MOD PYRITE I WHITE CLAY I GREEN CLAY FRACTS @ 60 & 20° to CA.

163-163.7' - QUARTZ OPEN SPACE BX

163.7-177.8' - PYRITE + MARCASITE + WHITE CLAY FRACTS @ 20 & 60° to CA MODERATE.

177.8-187.2 - MOD PYRITE ± WHITE CLAY ± MARC veinlets RANDOM. ± SiO2 @ 20°

187.2-186.1' - FAULT (SHEAR ZONE) @ 55° to CA

223.5-265' - BARITE + WHITE CLAY ± SiO2 ± MARC ± Ag sulfos @ 30-40° to CA & 70° to CA.

ALTERATION AND MINERALIZATION

0-61.6 - PROPYLITIZATION + ARGILLIZATION MODERATE @ 0' to STRONG @ 61.6'

61.6-78' - STRONG ARG & PROP. GOUGY FAULT ZONE. WHITE CLAY FRACTS MODERATELY COMMON.

78-84.4' - ARGILLIZATION MODERATELY STRONG I PROP.

84.4-111' - MOD STRONG FeOx (84.4-93.4') REDOX @ 93.4'. 93.4'-111' - DISSEMINATED PYRITE up to 5%. "PYRITE BLEBS" COMMON.

111-117.7' - ARGILLIC ALT OF CLASTS DISSEMINATED PYRITE up to 6%.

117.7-126.1 - DISS PYRITE up to 5% MINOR PROPYLITIC ALT. 1" quartz + PYRITE + FeOx veinlet @ 120.2'. TRACE WHITE CLAY w/ veinlet.

126.1-133.5' - DISS PYRITE up to 10% MINOR PROPYLITIZATION

133.5-177.8' - MINOR PROP. PYRITE veinlets/STOWORK ± WHITE CLAY I CHLORITIC CLAY VARIES.

177.8-187.2' - POSSIBLE MINOR POT ALTERED MATRIX. DISS Py up to 6%.

187.2-204' - STRONG ARG I PROP

204-210.9 - STRONG PROP ± ARG

210.9-212.6 - FAULT RUBBLE w/ WHITE CLAY

212.6-214.3' - SiO2 + WHITE CLAY TCT HERLEA BX

214.3-223.5' - PROP. ± SiO2 FRACTS

223.5-285 - ARGILLIC ALT INTENSE @ 223.5-233.8 & 245.6-285'. MOD COMMON BARITE ± MARC + WHITE CLAY.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2

HOLE NUMBER 95-342 Quick Log PAGE 2 OF 2

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
	BUA?	285-361.5' - MODERATELY HARD TO HARD COARSE TO FINE-GRAINED, MASSIVE to VERY MINOR FLOW LAMINATED ASH-TUFF. 285' contact IS GRADATIONAL to ≈ 287'.											
		285-325.2' - PROPYLITIZED w/MOD STRONG Silicification LT to DARK GREEN.											
		285-295.5 - HIGH DENSITY of SiO2 stockwork w/OPEN SPACE BARITE XTALS. WHITE CLAY MINOR to MODERATELY COMMON. MINOR MARC + PYRITE											
		295.5-325.2' - MODERATE SiO2 stockwork w/ MINOR OPEN SPACE ± BARITE XTALS. MINOR WHITE CLAY, MINOR MARC + PYRITE.	300										
		325.2-361.4' - GRADATIONAL CONTACT FROM PROPYLITIC ALT to POTASSIC ALTERATION. LT PINKISH BROWN IN COLOR. COMMON HIGH DENSITY Silica stockwork w/OPEN SPACE MARCASITE BLADES +/- WHITE CLAY. BARITE IS ABSENT. STRONGLY silicified	350	CA UNK									
		361.5-384' - PROPYLITIZED, STRONGLY SILICIFIED COARSE GRAINS ASH TUFF. BRECCIATED & HEALED WITH SiO2 MINOR TO MOD SiO2 veinlets w/ OPEN SPACE WHITE CLAY ± MARCASITE.	400	CA UNK SRF 50° SRF 50°									
		384-386 - SOUTH RIDGE FAULT GOUGE @ ≈ 50°? to CA.											
	DOZER	386-447.8' - FG APHANITIC DOZER RHYOLITE MS Bx (AUTO Bx). LT GREEN PROPYLITICALLY ALT. MOD HARD.	450										
		447.8-501' TD - FG APHANITIC DOZER RHYOLITE. MS Bx (AUTO Bx) REDDISH-BROWN - (UNALTERED). LOOKS LIKE CHOCOLATE DUE TO LACK of ALT.	500	501' TD									

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	95-342	LOCATION	Far East Zone - Rosebud	REMARKS	
PAGE 1 OF 8		NORTHING			
DATE	03/08/96	EASTING			
LOGGED BY	Alex B. Davidson	ELEVATION			
SCALE	1"=10'	AZIMUTH	70°		
TOTAL DEPTH	501'	INCLINATION	89°		

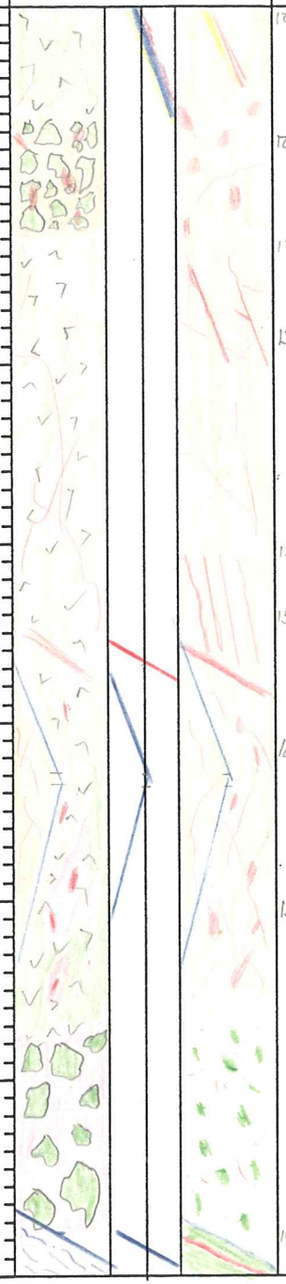
%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		0-30 - No Recovery	0										
		30-61.6' - Mod Soft - Volcanic Autobreccia - Clast to Matrix supported Matrix is Red Brown in color (FeOx Alteration). Clast are Bleach Lightgreen in color (Propylization/Argillization). - Interval is Andesitic to Latitic in composition. Clasts are Fine grained - small (<.5mm) race, xls of plaigioclase and hornblende are present. Clasts are subangular to subrounded, coarse to lapilli w/frequent Blocks	10 20 30 40 50		30 to 61.6 .38 ft/ft 0-20° to CA. .32 ft/ft 30-40° to CA .51 ft/ft 50-60° to CA .06 ft/ft 70-90° to CA 50.6 Fx @ 20° to CA. w/ Barite xls.	30-61.9 FeOx - Limonite from surface oxing - Downhole white clay and Barite is found. Intensel in Propylitic & argillic altered - progressively stronger downhole.	FROM 30 35 40 45	TO 35 40 45 49.7					

HOLE NUMBER 95-342 PAGE 2 OF 8

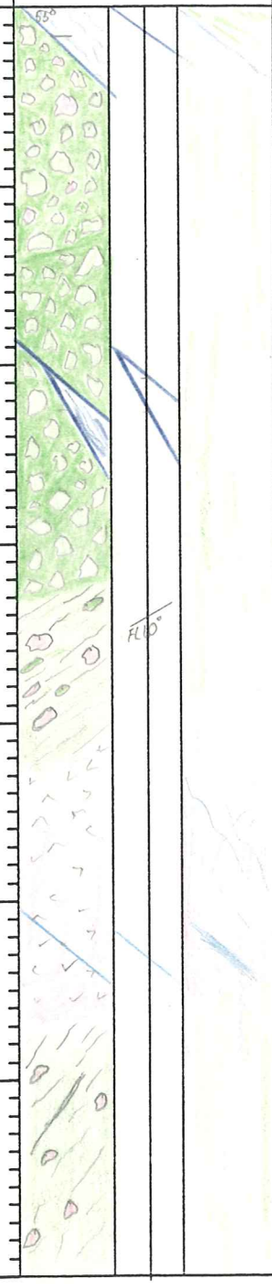
REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		53 to 61.6' same breccia described at 30-60.6	50		49.7 to 53 - Rubble zone.	
		61.6 to 78' - Fault zone - very soft gouge. propylitize - white clay associated	60		61.6 to 78 - Fault zone - soft gouge - Hanging wall at ~30° to CA Footwall contact is gone	60.6 to 78 - Fault is strongly propylitized white clay on rubble surfaces
		78 to 84.4' Same rock unit described at 30 to 60.6. Breccia has silicified clasts	70		78 to 84.4 - .46 ft/ft 50°-60° to CA .31 ft/ft 70°-90° to CA	
		84.4 to 187.2' (BmB Mod soft to hard - Andesitic to latitic volcanic porphyre good euhedral xls of plagioclase & hornblend. (±2mm) Interval has small zones of clasts in matrix supported breccia. Pyrite stockwork and Blebs found throughout interval.	80		84.4 to 133.5 .18 ft/ft 0-20° to CA .37 ft/ft 30-40° to CA .71 ft/ft 50-60° to CA .14 ft/ft 70-90° to CA	84.4 to 187.2 - FeOx - Pyrite - Barite - Argillization & propylitization 84.4 to 92 Heavy FeOx staining (limonite) diminishes down hole. 92 to 187.2 - prop AH becomes stronger down hole.
		84.4 to 111 - mod - massive flow - porphyritic - good euhedral xls prop. AH. gives Rx greenish color - becoming stronger down-hole.	90		91.7 Fx @ 60° to CA Filled w/ Barite	93.7 - Pyrite stockwork begins - is prevelant to end of interval @ 187.2
			100		102.1 to 105 - Flow laminations at 50° to CA.	102.1 to 105 Pyrite stockwork is preferentially following flow lams
				Fl. zone @ 105	105 to 106.8 - Heavy pyrite stockwork at random orientations	
		111 to 117.7' - mod soft to soft - breccia - same Rx described at 84.4 to 187.2 - dominantly matrix supported - lapilli to coarse in size, Few blocks - angular to subangular - Clasts are arg/prop and Bleached light green in color - Matrix is slightly darker green-grey color	110		114.1 to 114.8 - Rubble zone - at 114.8 Fx @ 30° to CA	114.1 to 114.8 - Soft, strongly argillized black fine grained sulfides and pyrite, disseminated throughout.
		117.7 to 126.1' - Same as 84.4 to 111	120			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
49.7	53					
53	61.6					
61.6	66.6					
66.6	71.5					
71.5	78					
78	81					
81	84.4					
84.4	89.4					
89.4	93.7					
93.7	99.3					
99.3	104.3					
104.3	111					
111	114.1					
114.1	114.8					
114.8	117.7					

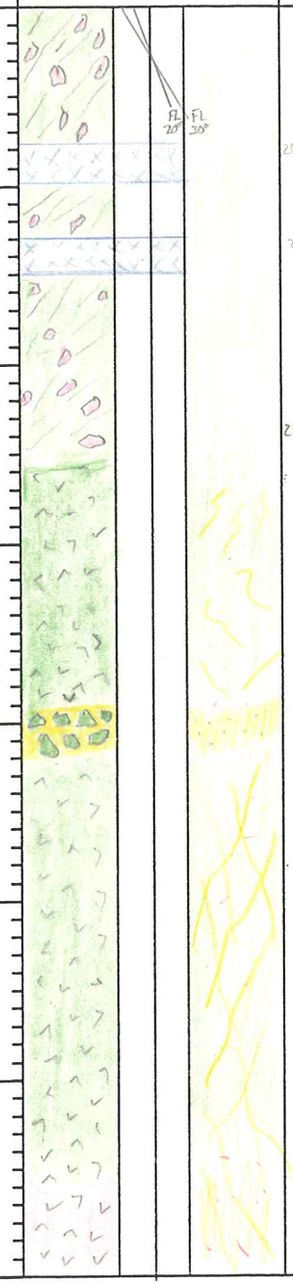
HOLE NUMBER 95-342 PAGE 3 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		126.1 to 133.5' - mod-Au to breccia - clast supported coarse to blocky w/ frequent lapilli's between. Clasts are strongly prop/alt and are green in color matrix has light brown color w/ greenish cast -	120		120.4 to 120.7 Fx at 40° to CA 3ft gouge - prop clay, white clay and pyrite - at 120.7 Fx is line w/ quartz w/ 3/4" wide.		117.7	122.7					
							122.7	126.1					
					126.1 - Fx at 90° to CA.	126.1 to 133.5 - has some pyrite stockwork most large blebs of dissemenated pyrite gray where from 1/2" in diameter to 2" in diameter	126.1	133.5					
		133.5 to 177.8' - massive Andesite to latite porphyre - prop. Alt'd - green in color w/ spots of pink - Fxs are line w/ dark green prop clay, pyrite and white clay	130		133.5 to 140.2 - heavy pyrite stock-work at 20° and 60° to CA.		133.5	138.5					
					133.5 to 140.2 . 75 fx/ft 0-20° to CA 45 fx/ft 30-40° to CA .60 fx/ft 50-60° to CA 30 fx/ft 70-90° to CA	133.5 to 177.8 - prop Alt - Fx filled w/ prop clay - white clay & pyrite stockwork & blebs.	138.5	143.5					
			140				143.5	148.5					
					150.4 to 156.8 - Heavy pyrite stockwork at 10° to CA.		148.5	153.5					
					156.8 - Fx at 60° to CA. w 1/4" wide filled w/ pyrite		153.5	158.5					
			150			156.8 to 163 - large blebs of dissemenated pyrite occur in pink spots only! Fx filled w/ most prop. clay and white clay - some pyrite	158.5	163					
					163. to 163.7 Fx filled w/ quartz, white clay and pyrite - interval is vuggy. Fx at 163 is 20° to CA Fx at 163.7 is 15° to CA		163	163.7					
						163 to 177.8 - heavy pyrite in Fx w/ prop & white clays - pyrite blebs still occuring in pink spots	163.7	168					
			160				168	173					
					150.4 to 177.8 .55 fx/ft 0-20° to CA .36 fx/ft 30-40° to CA .51 fx/ft 50-60° to CA .63 fx/ft 70-90 to CA.	177.8 to 187.2 - prop / Arg - alt. w/ blebs of dissemenated Pyrite - white clay - and some bleded marcasite	173	177.8					
		177.8 to 187.2' Soft to mod soft - Autobreccia - matrix supported - light brown pink color - clasts are coarse to blocky w/ lapilli - clasts are strongly prop/Arg. Alt'd - green in color. Andesitic to latitic porphyre					177.8	182					
			170				182	187.2					
		187.2 to 223.5' mod soft w/ hard silicified zones - Autobreccia, clast to matrix supported - clasts are lapilli to coarse w/few blocks angular to subangular - Andesitic to latitic in composion			187.2 to 190.7 - Fault zn? - interval is very soft - Fx surfaces are strong		187.2	190.7					
			180										
			190										

HOLE NUMBER 95-342 PAGE 4 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	FROM	TO	W	Au	Ag	Au2	Ag2
		187.2 to 223.5' continued: Possibly Bud?? - Interval is strongly propylitically altered' Progressivly loses, argillization downhole. - Matrix is dark green to green in color and clasts are lightgreen to pink in color	190		187.2 to 198.7' - Continued: Slicked - Interval is highly sheared - Hangwall is 60° to CA - Footwall is 55° to CA.		190.7	195					
		223.5 to 285' Mod hard - Andesitic to Latitic Breccia, appears to be moltitic in nature - Large zones of flow banding - 223.5 to 233.8 and 245.6 to 285 (note: banded interval has intermixed clasts). Breccia is Clast supported - coarse to blocky w/few lapilli size clasts, subrounded. - Interval is strongly argillized w/ mostly white clay and some prop clay. - Baritg xls are common in fxs - few pyrite vienlets w/associated marcisite	200		188.1' - Thick band of pyrite ~ 3/4" wide at 60° to CA		195	200					
							200	205					
			210		210.9 to 212.6 - Rubble zn - material is gouey - White clay hangwall is at 50° to CA. Footwall is at 30° to CA		205	210					
							210	215					
			220		223.5 to 233.8 Flow banded/laminated bands at 60° to 70° to CA.	223.5 to 285 - Strong argillization - White clay + prop clay - Baritg xls - pyrite/marcisite common in fxs. - Sulpha-salts?	215	220					
							220	223.5					
							223.5	228					
		233.8 to 245.6 - hard - massive flow - pinkish in color	230			233.8 to 245.6 - White clay in open spaces and fxs - Barite veinlet at 242.4', ~1" wide @ ~50° to CA.	228	233.8					
							233.8	238					
			240			242.7' Barite veinlet ~1" wide at 50° to CA	238	245.6					
		245.6 to 285 - mod hard - Flow banded/laminated - bands at 20° to 30° to CA. irregularly dissporsed clasts - coarse to blocky - This interval is more prop altered than 223.5 to 233.8 - gives a more greenish color. - Clasts are pinkbrown in color	250				245.6	250					
							250	255					
			260				255	260					

HOLE NUMBER 95-342 PAGE 5 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		285 to 384 - Hard to Mod Hard - Fine grained, massive, w/ Bx zones - Andesite (Bad?) to latitic flow. Strongly propylitic @ 285 progressialy decreases downhole. Changes to Potassic Alt @ 325.2 - Interval is Vuggy-filled w/ Barite and SiO_2. 285 to 325.2 Barite xls are very common - 325.2 to 361.4 Barite is absent. SiO_2 is dominant.	260		267.8 to 269.9 - Rubble zn 273 to 275 Rubble zn - Surfaces are strongly slicked 285 to 384 .04 Fx/Ft 0-20° to CA .18 Fx/Ft 30-40° to CA .20 Fx/Ft 50-60° to CA .08 Fx/Ft 70-90° to CA	287 - Large Vug lined w/ large Barite xls.
		299.2 to 302 - Brecciated - healed w/ quartz - coarse sized grains - angular to subangular	270			
		325.2 to 361.4 - Changes from propylitic Alt to potassic lt pinkish in color. Interval is vuggy - quartz stockwork common - Phogasite blades/ Pyrite and white clay frequent in vugs Interval is hard - strongly silicified.	280			
			290			
			300			
			310			
			320			
			330			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
260	265					
265	267.8					
267.8	269.9					
269.9	273					
273	275					
275	280					
280	285					
285	290					
290	295.5					
295.5	299.2					
299.2	302					
302	307					
307	312					
312	317					
317	322					
322	325.2					
325.2	330					

HOLE NUMBER 95-342 PAGE 6 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		345 to 361.4 - Interval becomes brecciated - clast supported, coarse to Blocky 361.4 to 384 - Interval has changed from potassic Alt to Prop. Alt - Interval retains same brecciation and mineralization as 345 to 361.4. 361.4 to 365 <5% of clast are moderatly argillized 384 to 386 South Ridge Fault at 50° to Core Axis 386 to 501 - Dozer - Hard to moderate hard - Fine grained volcanic flow - Ryolite Autobreccia - Clast supported, coarse to blocky w/ frequent lapilli size clasts angular to subangular. Clasts are not to strongly laminated.	330 340 350 360 370 380 390 400		376.9 - Fx at 40° to CA - Strongly slicked 388.7 Fx at 40° to CA - weakly slicked minor white clay and pyrite 397.3 Fx at 70° to CA	386 to 447.8 - Interval is prop alt unitorgly dissperced (widly spaced) pyrite xls - very small to 2mm and are euhedral.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
330	335					
335	340					
340	345					
345	350					
350	355					
355	361.4					
361.4	365					
365	370					
370	375					
375	380					
380	384					
384	386					
386	390					
390	395					
395	400					

HOLE NUMBER 95-342 PAGE 7 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
			400				400	405					
			410		411.- Fx at 30° to CA	409.3 to 419.3 - mod pyrite stockwork at random orientations to CA.	405	410	not assayed beyond 405'				
						413.2 - $CaCO_3$ veinlet @ 40° to CA 413.2 to 501 - $CaCO_3$ Blob occur widely spaced	410	415					
			420				415	420					
					424.3 Fx at 60° to CA w/ pyrite x/s		420	425					
							425	430					
			430		434.5 Fx at 70° to CA	434.5 Fx lined w/ pyrite x/s	430	435					
							435	440					
			440		442.8 Fx at 50° to CA	442.8 Fx lined w/ pyrite x/s							
					444.6 Fx at 48° to CA	444.6 Fx lined w/ pyrite x/s	440	445					
		447.8 to 501 - Interval has changed from prop. alt to relatively unaltd' (Slight primary FeOx Alt) Resembles Chocolate				447.8 to 501 - strong liesegang banding	445	447.8					
			450		453.5 Fx at 60° to CA 454.5 Fx at 50° to CA.		447.8	452					
							452	457					
			460				457	462					
					464.4 Fx at 50° to CA		462	462					
			470				467	472					

HOLE NUMBER 95-342 PAGE 8 OF 8

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
			470				472	477					
			480				477	482					
							482	487					
			490				487	492					
					497.7 Fr at 60° to CA		492	497					
			500	TD			497	501					
			510										
			520										
			530										
			540										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-34z DATE: 03/8/96 LOGGED BY: Alex B Davidson PAGE 1 OF 5

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA A/G ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
30	33	43	100	0							32.1	503.9	240	2.10
33	43	46	109	12										
43	53	9	95	0										
53	63	29	100	7							53.4 62.6	523.3 401.8	240 220	2.18 1.83
63	71.5	10	91	0										
71.5	78	12	66	0										
78	85	54	109	33							78.5	420.4	200	2.10
85	95	68	100	51							85.5	480.4	240	2.00
95	105	82	98	73										
105	115	71	101	53							112.1	550.3	260	2.12
115	125	69	93	58							119.1	6098	240	250

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-342 DATE: 3/11/96 LOGGED BY: Alex B Davidson PAGE 2 OF 5

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY /FT.	FRACTURE DATA A/G ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY g/cc
125	135	83	98	69							126.9	347.2	140	2.48
135	145	89	96	70							135.7	774.4	320	2.42
145	155	82	100	76							146.8	534.4	230	2.32
155	165	55	100	45							163.4	618.1	240	2.57
165	175	72	97	63							169.2	779.2	320	2.44
175	185	80	100	54							177.9	846.5	340	2.49
185	195	75	93	47							187.7 188.3 194.0	706.2 767.7 843.5	300 340 400	2.35 2.26 2.11
195	205	63	90	38										
205	215	60	101	43							206.9 212.6 213.5	733.3 360.6 724.5	320 160 300	2.29 2.25 2.42
215	225	61	104	54							215.1 223.9	933.7	400	2.33
225	235	80	96	13							234.5	1295.2	540	2.40

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-342 DATE: 3/11/96 LOGGED BY: Alex B Davidson PAGE 3 OF 5

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA A/G ANGLE TO C.A	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
235	245	80	100	63										
245	255	82	100	57							247.	940.7	400	2.35
255	265	65	101	56										
265	275	40	100	22										
275	285	81	99	76							280	535.4	220	2.43
285	293	80	100	80							288	964.4	360	2.67
293	303	81	98	73							295.6	650.0	260	2.50
303	313	79	97	76										
313	323	92	100	79							320.6	802.0	300	2.67
323	329	72	100	67							329.1	603.7	240	2.52
329	339	70	100	55										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-342 DATE: 7/12/96 LOGGED BY: ABD PAGE 4 OF 5

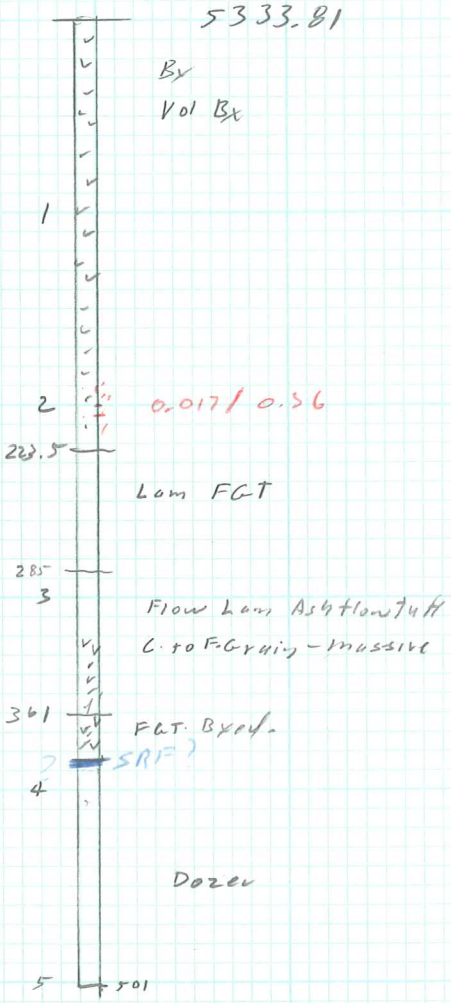
DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA A/G ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
339	345	77	87	77										
345	355	83	95	78										
355	365	92	98	78							361.8	937.6	320	253
365	375	84	99	74										
375	383.5	71	98	67										
383.5	386	30	80	0							385.6 384.5	525.5 953.7	200 420	262 2.27
386	395	87	88	75							386.1 387.8	792.0 896.9	300 380	2.64 2.36
395	405	91	97	79										
405	415	93	102	93										
415	425	99	99	98										
425	435	98	98	96										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 95-342 DATE: 3/12/96 LOGGED BY: Alex B Davidson PAGE 5 OF 5

DRILL RUN FROM	DRILL RUN TO	SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH DOWNHOLE DEPTH	ROCK STRENGTH POINT LOAD INDEX (psi)	FRACTURE DATA FRACTURE DENSITY/FT.	FRACTURE DATA AVG. ANGLE TO C.A.	FRACTURE DATA ROUGHNESS	FRACTURE DATA INFILL	DENSITY DATA DOWNHOLE DEPTH	DENSITY DATA SAMPLE WEIGHT (g)	DENSITY DATA DISPLACEMENT (cc)	DENSITY DATA DENSITY (g/cc)
435	445	98	100	98							437	772.8	310	2.49
445	450	99	99	96										
450	460	97	100	97										
460	470.3	86	101	79										
470.3	480.5	98	100	90										
480.5	490.7	100	100	92							487.7	995.8	420	2.37
490.7	501	100	101	98										

2,203,370.0 N
483,289.8 E



old Log

Two Logs

Rosebud
95-342
1" = 100'

DRILLHOLE DIP AND DIRECTION MEASUREMENTS WITH REFLEX FOTOBOR DDI

CUSTOMER:	HECLA
CUSTOMER REFERENCE:	ROSEBUD
SURVEYOR:	KURT ALLEN
DATE:	10-14-95
DRILL HOLE:	95-342

COLLAR POSITION

X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
482289.8	2203370	5333.82	89	70

POSITION AT 470 FT

X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
482293.2	2203386	5803.5	86.73	76.11

LOCAL COORDINATES AT 470 FT
Y-LOC= 2.26 FT TO THE RIGHT
Z-LOC= 7.77 FT UPWARDS

N

RESULTS

STATION (FT)	X(FT)	Y(FT)	Z(FT)	DIP (DEG.)	DIR. (DEG.)
0	482289.8	2203370	5333.82	89	70
20	482289.9	2203371	5353.81	88.96	71.66
40	482290.1	2203371	5373.81	88.82	67.33
60	482290.2	2203371	5393.8	88.99	65.79
80	482290.4	2203372	5413.8	88.76	71.1
100	482290.5	2203372	5433.8	88.56	72.22
* 100	2.17	.02	.42		
120	482290.7	2203373	5453.79	88.52	69.39
140	482290.9	2203373	5473.78	88.33	73.66
160	482291	2203374	5493.77	88.27	79.84
180	482291.2	2203374	5513.76	88.12	83.29
200	482291.2	2203375	5533.75	88.08	83.75
* 200	4.9	.31	1.41		
220	482291.3	2203375	5553.74	88.14	77.86
240	482291.5	2203376	5573.73	88.16	79.62
260	482291.6	2203377	5593.72	88	80.9
280	482291.7	2203377	5613.71	87.75	75.01
300	482291.9	2203378	5633.69	87.58	72.41
* 300	8.23	.76	2.99		
320	482292.2	2203379	5653.67	87.52	77.34
340	482292.4	2203380	5673.66	87.6	78.43
360	482292.5	2203381	5693.64	87.62	81.61
380	482292.6	2203381	5713.62	87.39	83.89
400	482292.8	2203382	5733.6	87.22	86.86
* 400	12.36	1.39	5.38		
420	482292.8	2203383	5753.58	87	85.87
440	482292.9	2203384	5773.55	86.74	83.14
470	482293.2	2203386	5803.5	86.73	76.11

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP037713

American Assay Laboratories

P.O. BOX 11530
RENO, NV,,USA
Ph.1-702-356-0606, Fax.1-702-356-1413

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: 95-342
No. SAMPLES : 81
MAIN SAMPLE TYPE : DRILL CORE

RECEIVED : 26 MAR 1996
REPORTED : 2 APR 1996

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

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 King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP037713

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 95-342

REPORTED : 2 APR 1996

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
95-342 30-35	<0.001		<0.02
95-342 35-40	<0.001		<0.02
95-342 40-45	<0.001		<0.02
95-342 45-49.7	<0.001		<0.02
95-342 49.7-53	<0.001		0.02
95-342 53-61.6	<0.001		<0.02
95-342 61.6-66.6	0.001	0.001	0.05
95-342 66.6-71.5	0.002		0.10
95-342 71.5-78	0.003		0.05
95-342 78-81	<0.001		<0.02
95-342 81-84.4	<0.001		<0.02
95-342 84.4-89.4	<0.001		<0.02
95-342 89.4-93.7	<0.001		0.02
95-342 93.7-99.3	0.003		0.09
95-342 99.3-104.3	<0.001		0.06
95-342 104.3-111	0.003		0.12
95-342 111-114.1	0.004		0.12
95-342 114.1-114.8	0.004		0.14
95-342 114.8-117.7	0.004		0.15
95-342 117.7-122.7	0.004		0.10
95-342 122.7-126.1	0.003		0.09
95-342 126.1-133.5	<0.001		0.03
95-342 133.5-138.5	0.006		0.09
95-342 138.5-143.5	0.002		0.07
95-342 143.5-148.5	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

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REFERENCE : 95-342

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SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
95-342 148.5-153.5	<0.001		0.04
95-342 153.5-158.5	0.001		0.07
95-342 158.5-163	0.002		0.06
95-342 163-163.7	0.006		0.10
95-342 163.7-168	0.002		0.04
95-342 168-173	0.003		0.05
95-342 173-177.8	0.005		0.11
95-342 177.8-182	0.005		0.14
95-342 182-187.2	0.005		0.13
95-342 187.2-190.7	0.004		0.05
95-342 190.7-195	<0.001	<0.001	<0.02
95-342 195-200	<0.001		<0.02
95-342 200-205	0.001		0.02
95-342 205-210	0.003		0.30
95-342 210-215	0.004		0.80
95-342 215-220	0.004		0.21
95-342 220-223.5	0.017		0.36
95-342 223.5-228	0.004		0.15
95-342 228-233.8	0.004		0.12
95-342 233.8-238	0.003		0.09
95-342 238-245.6	0.003		0.15
95-342 245.6-250	0.003		0.13
95-342 250-255	0.004		0.11
95-342 255-260	0.004		0.08
95-342 260-265	0.003		0.07

AMERICAN ASSAY LABORATORIES

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REFERENCE : 95-342

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SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
95-342 265-269.9	0.003		0.08
95-342 269.9-273	0.003		0.06
95-342 273-275	0.003		0.09
95-342 275-280	0.003		0.11
95-342 280-285	0.004		0.10
95-342 285-290	0.004		0.09
95-342 290-295.5	0.002		0.05
95-342 295.5-299.2	0.004		0.07
95-342 299.2-302	0.003		0.05
95-342 302-307	0.002		0.04
95-342 307-312	0.003		0.05
95-342 312-317	0.004	0.004	0.07
95-342 317-322	0.003		0.07
95-342 322-325.2	0.003		0.07
95-342 325.2-330	0.003		0.06
95-342 330-335	0.002		0.06
95-342 335-340	0.002		0.06
95-342 340-345	0.002		0.07
95-342 345-350	0.002		0.06
95-342 350-355	0.002		0.13
95-342 355-361.4	0.002		0.06
95-342 361.4-365	0.001		0.02
95-342 365-370	0.001		0.03
95-342 370-375	0.001		0.03
95-342 375-380	0.001		0.03

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP037713

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REFERENCE : 95-342

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SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
95-342 380-384	0.001		0.03
95-342 384-386	0.003		0.09
95-342 386-391	<0.001		<0.02
95-342 391-395	<0.001		<0.02
95-342 395-400	<0.001		<0.02
95-342 400-405	<0.001		0.04

FIELD NOTE SHEET

DRILLHOLE 95-342

REFLEX–FOTOBOR DDI

LOCATION

BY KDO

DIP -89° DATE 10/14/95

TIME MIN	DEPTH	NOTES	DEPTH	NOTES	TIME MIN	DEPTH	NOTES	DEPTH	NOTES
1	SETUP				31				
2	SETUP				32				
3	Setup				33				
4	Setup				34				
5	BLURED				35				
6	0'				36				
7	20'				37				
8	40'				38				
9	60'				39				
10	80'				40				
11	100'				41				
12	120'				42				
13	140'				43				
14	160'				44				
15	180'				45				
16	200'				46				
17	220'				47				
18	240'				48				
19	260'				49				
20	280'				50				
21	300'				51				
22	320'				52				
23	340'				53				
24	360'				54				
25	380'				55				
26	400'				56				
27	420'				57				
28	440'				58				
29					59				
30					60				

Hole - 501
BIT - 6
495
Tub - 0
495

Rods - 40'
455

Survey to 440