60001408

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. 94-310
AUTHOR	C. Muerhoff; S. Fairchild; L. Bernard
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., East Zone
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 700' handwritten notes; correspondence 18p.

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)

	Initials	Date
SS:	DD	5/29/08
DB:	MAH	
SCANNED:		

Revised: 1/22/08

94-310 EAST ZONE

66001488 4010

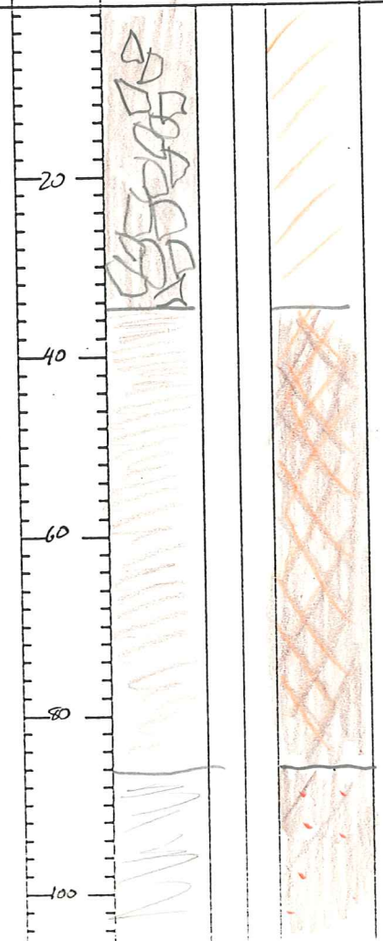
6000 1488

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	94-310	LOCATION	East Zone	REMARKS	
PAGE 1 OF 7		NORTHING	2203779.7	RC to 455 rapid logging	
DATE	12/1	EASTING	482730.9	CORE from 455 to 700	
LOGGED BY	LJD	ELEVATION	5315.1		
SCALE	RC 1"=20' CORE 1"=10'	AZIMUTH	76.5°		
TOTAL DEPTH	700	INCLINATION	-90.0°		

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-35 dk brown, hem volcanic by	20			0-35 wk FeOx clays
		35-85 95% Med brown clay w/ minor brown hem chips	40			35-85 95% Med brown clay
		85-155 99% lt-med gray clays v. fine pyrdissem	60, 80, 100			85-155 white-gray str argillized RK 95% clays



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0	15	15	.001			
15	25	10	<.001			
25	35	10	.003			
35	45	10	.003			
45	55	10	.004			
55	65	10	.006		0.005	
65	75	10	<.001			
75	85	10	.008			
85	95	10	.004			
95	105	10	.004			

HOLE NUMBER 94-310 PAGE 2 OF 7

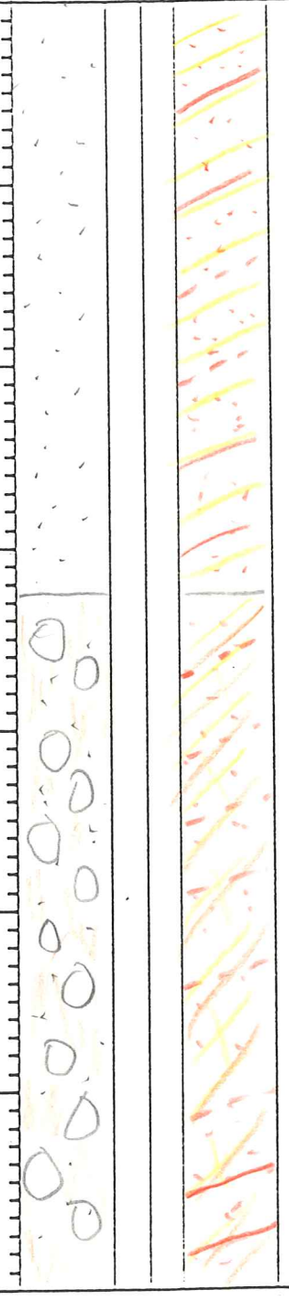
REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
				Clay; Argillic Alt		
		80% clay	120			
		155-195 0-10% clays (white) wk Argillized white Ashy chips w/ fine sandy grains (Minor) Mod py dissem Tuff	140			155-195 wk Argillic Alt Mod py vn
			160			wk py vn
			180			str py vn
		195-315 white Ashy Tuff w/ occational pink coating - Mod py dissem				wk py vn
			200			195-315 wk-mod sil-argillic Alt wk-Mod py vnlets
			220			
			240			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
105	115	10	.004			
115	125	10	.012			
125	135	10	.004			
135	145	10	.004			
145	155	10	.004			
155	165	10	.008			
165	175	10	.004			
175	185	10	.003			
185	195	10	.016			
195	205	10	.002			
205	215	10	.003		0.003	
215	225	10	.002			
225	235	10	.001			
235	245	10	.004			

HOLE NUMBER 94-310 PAGE 3 OF 9

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		305 - 395 Mixed white Asty pyritic dissem chips and 60% lt brown hem chips - grainy, clastic Volcaniclastic w/ hem matrix	260 280 300 320 340 360 380			305 - 395 wk-mod Argillic - sil alt wk py w/ lots wk-mod hem 365 - 395 mod py w/



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
245	255	10	.007			
255	265	10	.004			
265	275	10	.008		0.008	
275	285	10	.006			
285	295	10	.007			
295	305	10	.004			
305	315	10	.010			
315	325	10	.008			
325	335	10	.015 .018			
335	345	10	.013			
345	355	10	.007			
355	365	10	.004			
365	375	10	.008			
375	385	10	.034			

HOLE NUMBER 94-310 PAGE 4 OF

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		405-425 30% white/H green clay grey, green, H brown, pink chips, fine chips Hetero lithic volcaniclastic/bx	400 420	NO chips	poss Fault zone poss shearing (clays)	405-425 mod argillic Mod py-qtz vn
		425-495 mixed white Ashy, white sil, pinkish clastic chips Volcaniclastic w/ poss Ashy beds or blocks wk-Mod py disem	440 460 480 500 520			425-495 wk-mod sil-Arg alt wk py vn mod qtz vn

SEE 1"=10' CORE LOGS

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
385	395	10	.017			
395	405	10	.014			
405	415	10	.007			
415	425	10	.013			
425	435	10	.018			
435	445	10	.014			
445	455	10	.013			
455	465	10	.008			
465	475	10	.011			
475	485	10	.005			
485	495	10	.004			

HOLE NUMBER 94-310 PAGE 5 OF 7

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		494-598 Volcaniclastics, heterolitic 1/8 to 4" clast, Angular to subrounded green, white, gray, & pink clasts in fine grain brown matrix dissem py in clasts + matrix most clasts are wk-mod chloritic	500		494-508 1frac/ft @ 50-60, 85	499-505 mod silica flooding of matrix gray-H blue qtz vn @ 70 associated white sil clay 1-2/ft qtz-py vn @ 80 1-2/ft
		598-515 lt green/gray Ash bed with narrow Volcaniclastic beds (1") or bolder size chloritic clasts	510		508-509.5 minor frac zone 509.5-566 1frac/ft @ 70, 50	508 2" zone of dk py silica cements 506 blob of py → After marcasite surrounded by dk qtz w/ dissem sulf.
		515-521 Volcaniclastics as above	520			506-557 minor erratically spaced 1/8-1/4" qtz-sulf vn and qtz-py vnlets in wk-mod sil-hem matrix, clay+chl alt clasts.
		521-524.5 bedded tuff w/ foliation @ 30 representing a 3.5 ft bolder			frac @ 50 40 & 40	
		524.5-538 Volcaniclastics as before, but has additional bolder size clasts 5-9" in diameter.	530		frac @ 20	
		538-559 heterolithic volcaniclastics 1/8-4" clasts in a fine brown matrix	540			
		559-565.5	550			557-565.5 SAS w/ str qtz-sulf flooding + qtz-vn @ 80
			560			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
494	500	6	.004	.11		
500	505	5	.003	.09		
505	510	5	.004	.16		
510	515	5	.005	.06		
515	520	5	.003	.07		
520	525	5	.002	.07		
525	530	5	.003	.06		
530	535	5	.003	.08		
535	540	5	.004	.15		
540	545	5	.005	.06		
545	550	5	.003	.06		
550	555	5	.004	.05		
555	560	5	.004	.53		

HOLE NUMBER 94-310 PAGE 6 OF 7

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		560 - 565.5 Silicia floaded dk brown, hem matrix - Mostly non-chl, sil mostly pink sil + gray Argillic 1/8 to 1" Volcaniclastics					560	-565.5	5.5	.009	1.33		
		565.5 - 568 - Broken rock, and white clay gouge a silicic vein fragmentals			565.5 - 568 white clay gouge + ground (SR) vn + rk FAULT ZONE	565.5 - 568 gouge zone w/ qtz + sulf vn chips	565.5	568	5	.010	.81	.010	
		568 - 581: str. chloritic and clay alted v. wk sil matrix and brown hem.	570		568 - 570 broken rock >10 Frac/ft	568 - 581 str chl-clay alt clast w/ v. wk sil Matrix + brown hem Minor qtz-py vnlets	568	573	5	.005	.13		
					570 - 576.5 5 >10 Frac/ft		573	578	5	.004	.12		
		581 - 589 v. str. silica floading of matrix pale-green rock, str sil volcaniclastic? vugy	580		576 - 583 1.5 frac/ft @ 70	581 - 596.5 silicia floaded rock w/ white qtz Vn @ 5. 1/4" blebs of dissem py, elongated in matrix wh qtz vn @ 70-80 wk vugy	578	583	5	.004	.08	.004	
					583 - 598 1 - 1.5 frac/ft @ 60, 15 Rare (555)		583	588	5	.004	.07		
		589 - 597 V. str sil floaded breccia w/ sil green and sil brown sub-angular - sub rounded clasts 1/8 - 1/2" rarely 2" Minor vugy fractures, sulfide dissem in matrix	590		598 - 600 2 frac/ft @ 70		588	593	5	.004	.06		
		597 - 601 shattered gray/green qtz-vn dissem py + dk v. fine sulfides			600 - 202 4 frac/ft @ 70	596.5 - 601 shattered gray-green qtz vn or completely replaced rock bx dissem py, fine dissem dk blue-blk sulfides - sulfosalts	593	596.5	3.5	.002	.04		
		601 - 606 mixture of white silica cemented breccia fault gouge + crushed rock + clay alt rk	600		602 2-3" zone of H+dh gray gouge and ground silicic rk		596.5	601	4.5	<.001	.03		
		606 - 612 volcaniclastic bx? brown sub-round clasts 1/4 - 1", clay alt matrix - lt gray + clay alt clasts mod - clay alt.			602 - 606 4 frac/ft @ 80	601 - 604 white silica cemented breccia - Fault? rounded fragments	601	605	4	.002	.08		
			610		606 - 608 2 frac/ft @ 70	604 - 605 str clay Alt	605	610	5	<.001	.02		
DT?		612 - 639 str sil volcaniclastic bx - med grain lt gray w/ pinkish mottled foliations and gost-like clasts			608 - 636 1 frac/ft @ 60	605 - 612 mod clay alt	610	615	5	<.001	<.02		
						612 - 624 crackle bx w/ fine sy silica cements ± py, str sil	615	620	5	<.001	<.02		
			620			624 - mod crackle bx w qtz-py-marcasite vnlet cements fine white clay films	620	625	5	.002	.02		
							625	630	5	.005	.03		
			630										

* MET sample 593.0 - 594.1, 611 - 611.5

HOLE NUMBER 94-310 PAGE 7 OF 7

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		637 foliation @ ~90 639-700 Tuff as before w/ rare crust and strong grey/brown foliations @ 60-70 fine dissem py, med grain	640 650 660 670 680 690 700		636-643 2 frac/ft @ 70-80 undulating 643-675 1.5 frac/ft @ (30,40,50) 80 → increasing each 10 ft 675-700 1 frac/ft @ 70	624-695 mod crackle by w/ qtz-MARC-py veinlets, minor clay films vnlet trend @ 40,10 (plus others) 695-700 V. wk crackle by v. fine silica vn.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
630	635	5	.008	.04		
635	640	5	.008	.03		
640	645	5	.005	.06		
645	650	5	.003	.05		
650	655	5	.021	.08		
655	660	5	.007	.05		
660	665	5	.008	.08		
665	670	5	.004	.07		
670	675	5	.029	.07		
675	680	5	.003	.04		
680	685	5	.006	.03		
685	690	5	.004	.02	.003	
690	695	5	.004	.03		
695	700	5	<.001	<.02		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-310 DATE: 9/9/94 LOGGED BY: _____ PAGE 1 OF _____

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)
494	495	65	100	0										
495	505	93	94	.80			1	60, 85	R	nil	500	450.5	180	2.50
505	513	89	100	.66			1.5	50, 60	R	1/16 qtz+clay	508	507.5	210	2.42
513	523	100	100	.95			.9	75, 50	R	nil	517	433	175	2.47
523	533	100	100	.96			1	40 ⊥ 40 50	R	qtz-py 1/8" clay	526.5	380	160	2.38
533	535	100	100	.90			1	20	R	clay coating	534	476	190	2.51
535	545	98	98	.92			1	70	R	qtz vn 1/8" + clay	541	447.5	180	2.49
545	555	92	92	.92			.7	50	R	clay films + powders	550	334.5	130	2.57
555	565	100	100	.98			.3	80	VR	nil	560	442.5	180	2.46
565	573	60	100	.41			>10	Rubble / clay zone	VR	clay	567	479.5	195	2.46
573	583	96	100	.80			1.5	70	R	chl.	579	339	140	2.42

16 min

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-310 DATE: 9/13/94 LOGGED BY: _____ PAGE 2 OF _____

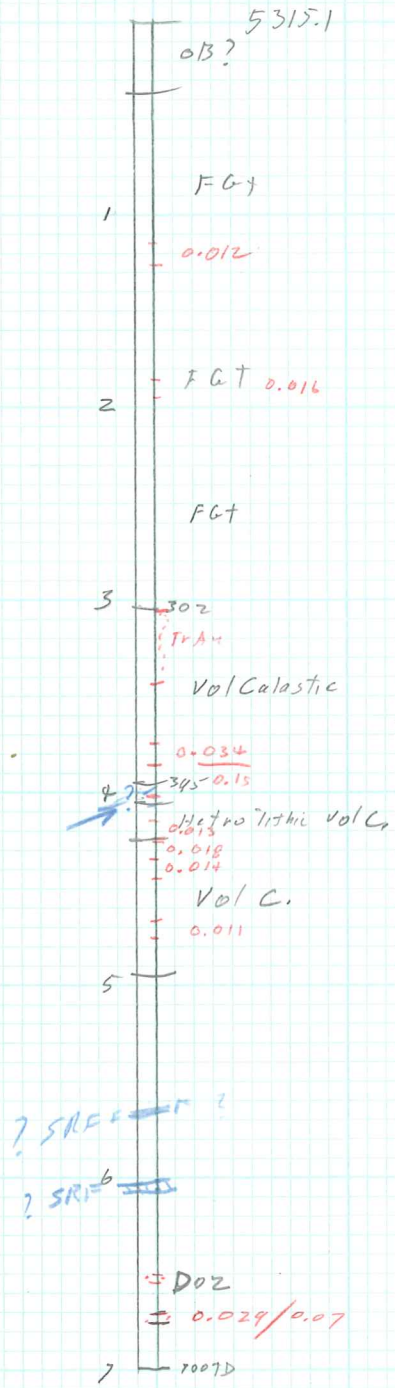
DRILL RUN		SOLID CORE RECOVERY (%)	TOTAL CORE RECOVERY (%)	RQD	ROCK STRENGTH		FRACTURE DATA				DENSITY DATA			
FROM	TO				DOWNHOLE DEPTH	POINT LOAD INDEX (psi)	FRACTURE DENSITY/FT.	AVG. ANGLE TO C.A.	ROUGHNESS	INFILL	DOWNHOLE DEPTH	SAMPLE WEIGHT (g)	DISPLACEMENT (cc)	DENSITY (g/cc)
583	593	2.4+ 99	2.4+ 99	2.0+ .67	588	R1	.7	80, 15	R	nill	588	553.5	220	2.52
593	603	85	95	.70	598	R2	1.5	60	R	nill	598	593.5	240	2.47
603	613	84	97	.52	608	R2	2.0	60	R	nil	608	538.5	220	2.45
613	615	85	85	.60	618	R3	2.5	75	R	clay film	618	519	210	2.47
615	625	75	99	.51	620	R3	1.1	20, 80	R	nil	620	440	170	2.59
625	635	69	94	.55	632	R3	1.0	60	R	clay film	632	404.5	170	2.38
635	645	99	99	.72	641	R3	1.8	60	S	clay film	641	610	240	2.54
645	655	98	98	.78	650	R3	.9	30, 80	S	nil	650	410	160	2.56
655	665	90	98	.68	660	R3	1.5	40, 80	S	nil	660	429.5	170	2.53
665	675	97	97	.75	670	R3	1.5	50, 80	S	PY 1/20"	670	571.5	230	2.48

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-310 DATE: 9/14 LOGGED BY: _____ PAGE 3 OF ____

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)
675	685	98	98	.91	684.5	R3	1.3	40, 70	S	1/20" PY clay film	681	398.1	160	2.49
685	695	100	100	.98	680	R3	.9	70	S	nil	690	267.9	110	2.44
695	700	100	100	.90	697	R3	.8	70, 40	S	nil	699	227.6	100	2.28

2,203,779.7 N
482,730.9 E



Rosebud
94-310C
1" = 100'

ANALYSIS REPORT

American Assay Laboratories

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

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: 94-310
LABORATORY JOB No. : SP030773
SAMPLE TYPE :

RECEIVED : 6 SEP 1994
REPORTED : 14 SEP 1994
No. SAMPLES : 49

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-310
JOB NUMBER : SP030773
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT
94-310 00-15	0.001	
94-310 15-25	<0.001	
94-310 25-35	0.003	
94-310 35-45	0.003	
94-310 45-55	0.004	
94-310 55-65	0.006	0.005
94-310 65-75	<0.001	
94-310 75-85	0.008	
94-310 85-95	0.004	
94-310 95-105	0.004	
94-310 105-115	0.004	
94-310 115-125	0.012	
94-310 125-135	0.004	
94-310 135-145	0.004	
94-310 145-155	0.004	
94-310 155-165	0.008	
94-310 165-175	0.004	
94-310 175-185	0.003	
94-310 185-195	0.016	
94-310 195-205	0.002	
94-310 205-215	0.003	0.003
94-310 215-225	0.002	
94-310 225-235	0.001	
94-310 235-245	0.004	
94-310 245-255	0.007	

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-310
JOB NUMBER : SP030773
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT
94-310 255-265	0.004	
94-310 265-275	0.008	0.008
94-310 275-285	0.006	
94-310 285-295	0.007	
94-310 295-305	0.004	
94-310 305-315	0.010	
94-310 315-325	0.008	
94-310 325-335	0.015	0.018
94-310 335-345	0.013	
94-310 345-355	0.007	
94-310 355-365	0.004	
94-310 365-375	0.008	
94-310 375-385	0.034	
94-310 385-395	0.017	
94-310 395-405	0.041	
94-310 405-415	0.007	
94-310 415-425	0.013	
94-310 425-435	0.018	
94-310 435-445	0.014	
94-310 445-455	0.013	
94-310 455-465	0.008	
94-310 465-475	0.011	
94-310 475-485	0.005	
94-310 485-495	0.004	

ANALYSIS REPORT

American Assay Laboratories

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

HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
:
:
:

CLIENT REFERENCE No: 94-310
LABORATORY JOB No. : SP030962
SAMPLE TYPE :

RECEIVED : 21 SEP 1994
REPORTED :
No. SAMPLES : 42

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

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-310
JOB NUMBER : SP030962
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-310 494-500	0.004		0.11
94-310 500-505	0.003		0.09
94-310 505-510	0.004		0.16
94-310 510-515	0.005		0.06
94-310 515-520	0.003		0.07
94-310 520-525	0.002		0.07
94-310 525-530	0.003		0.06
94-310 530-535	0.003		0.08
94-310 535-540	0.004		0.15
94-310 540-545	0.005		0.06
94-310 545-550	0.003		0.06
94-310 550-555	0.004		0.05
94-310 555-560	0.004		0.53
94-310 560-565.5	0.009		1.33
94-310 565.5-568	0.010	0.010	0.81
94-310 568-573	0.005		0.13
94-310 573-578	0.004		0.12
94-310 578-583	0.004	0.004	0.08
94-310583-588	0.004		0.07
94-310588-593	0.004		0.06
94-310593-596.5	0.002		0.04
94-310596.5-601	<0.001		0.03
94-310601-605	0.002		0.08
94-310605-610	<0.001		0.02
94-310610-615	<0.001		<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-310
JOB NUMBER : SP030962
REPORTED :

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-310615-620	<0.001		<0.02
94-310620-625	0.002		0.02
94-310625-630	0.005		0.03
94-310630-635	0.008		0.04
94-310635-640	0.008		0.03
94-310640-645	0.005		0.06
94-310645-650	0.003		0.05
94-310650-655	0.021		0.08
94-310655-660	0.007		0.05
94-310660-665	0.008		0.08
94-310665-670	0.004		0.07
94-310670-675	0.029		0.07
94-310675-680	0.003		0.04
94-310680-685	0.006		0.03
94-310685-690	0.004	0.003	0.02
94-310690-695	0.004		0.03
94-310695-700	<0.001		<0.02

DATE: 9-13-94

FACSIMILE COMMUNICATION

AMERICAN ASSAY LABORATORIES

TO: Charlie Muenhoff

COMPANY: Hecla Mining

PROJECT: Rosebud

AAL JOB CODE: SP00 30723

CLIENT REFERENCE 94-310

SUBJECT: DTF Results

SAMPLE NUMBER		Au	Au(R)
94-310	185-195	0.016	
	465-475	0.011	

AUTHORIZED BY: SUSAN FAIRCLOTH

NOTE: IF ANY PROBLEMS RECEIVING THIS TRANSMISSION PLEASE CALL: (702) 356-0606 OR FAX: (702) 356-1413.

American Assay Laboratories Inc.