60001508

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 94-331
AUTHOR	C. Muerhoff; S. Fairclotth
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 800' handwritten notes; receipt 30p.

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: mah
Initials Date
SCANNED: NV Blue
Initials Date

Revised: 1/22/08

EAST ZONE 94-331

60001508 4010

60001508

Hecla
MINING COMPANY

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	94-331	LOCATION	East Zone	REMARKS	
PAGE 1 OF 9		NORTHING	2204045.5	RC to 495	
DATE		EASTING	482892.7	CORE from 495 to	
LOGGED BY		ELEVATION	5318.4		
SCALE	RC 1"=20' CORE 1"=10'	AZIMUTH	198.5°		
TOTAL DEPTH	800'	INCLINATION	-88.5°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-25 poss gravel or near surface Alt. Minor clay seams				0-25 wk FeOx coating & clays
		25-75 fine grain dk brown hem chips Tuff ?	20, 40, 60			25-55 Hem rich
						55-75 wk-mod FeOx wk argillic
		75-105 Tan orange clays 95%	80, 100	clay		75-105 str clay alt wk FeOx

ANALYTICAL DATA						
FROM	TO	W	Au ppb	Ag	Au2	Ag2
0	15	15	14	0.6		
15	25	10	6	<0.5		
25	35	10	<5	<0.5		
35	45	10	<5	0.6	<5 Au(R)	
45	55	10	<5	0.6		
55	65	10	<5	0.5		
65	75	10	<5	0.9		
75	85	10	20	0.5		
85	95	10	23	1.1		
95	105	10	30	2.0		

HOLE NUMBER 94-331 PAGE 2 OF 9

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		105-135 lt-med gray clay 98%	120	gr clay		105-135 str Argillic
		135-165 lt gray/green fine grain poss bedded ash	140			135-165 wk chl wk Argillic (soft)
		minor hem	160			hem rock
		165-175 dk hem fine grain chips				
		175-215 mixed lt green/white and dk brown hem chips	180			175-215 wk Argillic wk chl
			200			
		215-235 dk brown fine grain hem chips				hem rock
			220			
		235-245 mixed gray+brown chips fine grain clastic texture	240			235 wk Argillic v. wk chl

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
			ppb			
105	115	10	32	1.4		
115	125	10	50	2.1		
125	135	10	90	1.4	84 Au(R)	
135	145	10	<5	0.5		
145	155	10	<5	0.5		
155	165	10	<5	<0.5		
165	175	10	<5	<0.5		
175	185	10	<5	0.6	<5 Au(R)	
185	195	10	<5	0.5		
195	205	10	<5	<0.5		
205	215	10	<5	<0.5		
215	225	10	<5	<0.5		
225	235	10	<5	<0.5		
235	245	10	<5	<0.5		

HOLE NUMBER 94-331 PAGE 3 OF 9

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
										ppb			
							245	255	10	<5	<0.5		
			260				255	265	10	<5	0.5		
							265	275	10	<5	<0.5		
		275-295 dk purple brown Hgray chips - str hem matrix	280				275	285	10	<5	<0.5	<5 Au(R)	
							285	295	10	8	0.5		
			300				295	305	10	<5	0.5		
							305	315	10	<5	<0.5		
			320				315	325	10	<5	0.5		
							325	335	10	<5	<0.5		
			340				335	345	10	<5	0.5		
		345-355 purple/brown hem fine grain Tsd +				hem rock	345	355	10	<5	<0.5		
		355-495 mixed ashy green, fine grain Hgr/gr, + Tsu to Hbrown chips Volcanichetic Texture	360			355-495 wh chl wh Argilla	355	365	10	<5	0.7	<5 Au(R)	
							365	375	10	28	2.1		
			380				375	385	10	94	3.5		

HOLE NUMBER 94-331 PAGE 4 OF 9

REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		Volcaniclastic w/ wh. hem matrix	400, 420, 440, 460, 480, 500, 520			wh-argillic/chl alt.
		CT				
		↓ SEE 1"=10' CORE LOGS				

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
			ppb			
385	395	10	42	1.6		
395	405	10	148	1.7		
405	415	10	38	0.5		
415	425	10	<5	<0.5		
425	435	10	40	1.0		
435	445	10	32	1.8		
445	455	10	62	3.5		
455	465	10	176	3.0		
465	475	10	62	1.7		
475	485	10	22	1.3		
485	495	10	64	2.2	52 Au(R)	

HOLE NUMBER 94-331 PAGE 5 OF 9

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
495	503	mod hard ↓ 495-524 Pinkish/Tan aphenetic tuff w/ 10% sericite and clay alt. Feldspars. Fine dissem py + blebs of py. Poss rock clasts replaced by py + clay. mod sil	500		495-510 str frac w/ >10 frac/ft @ 60, 30 other str fractured zones w/ numerous rough frac	495-501 x-cutting 1/20-1/10" py veinlets @ 30, 60, 130 3-4/foot 501-502 1/10" vn @ 5
	509.5		510		510-530 1-2 frac/ft @ 60, 55, 50	509-543 py + qtz-py vn 4 vn/ft @ 50, 90 1/20"-1/10" (dilational veinlets)
	519.5	523 1 ft of sub-rounded to rounded clasts	520			
	529.5	524-553 aph tuff w/10% sericite + clay alt feldspar with a brow + gray spotted matrix. py dissem	530		530-551 1-2 frac/ft @ 30 ⊥ 60, (0-5± 544-543)	
	533		540			543-551.5 wk crackle bx, dilational qtz-py vn (1/10") @ 50 + 0° x-cut by gray qtz x-cut by white qtz, minor vugs w/ drussy qtz., str sil 551-551.5 Rubble bx w/ qtz-marcasite, py cement
		553- SAb w/ mod foliation of spotted or mottled texture @ 80, poss soft sed slumping	550		551-573 1 frac/ft @ 60	551.5-568 .5-1 py vn/ft @ 30 + 70 dilation veins
			560			

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
495	500	5	.002	.05		
500	505	5	<.001	<.02		
505	510	5	<.001	<.02		
510	515	5	<.001	.02		
515	520	5	.004	.10		
520	525	5	.003	.06		
525	530	5	.004	.08		
530	535		.003	.05		
535	540		.002	.03		
540	545		.004	.06		
545	550		.002	.06		
550	555		.003	.15		
555	560		<.001	<.02		

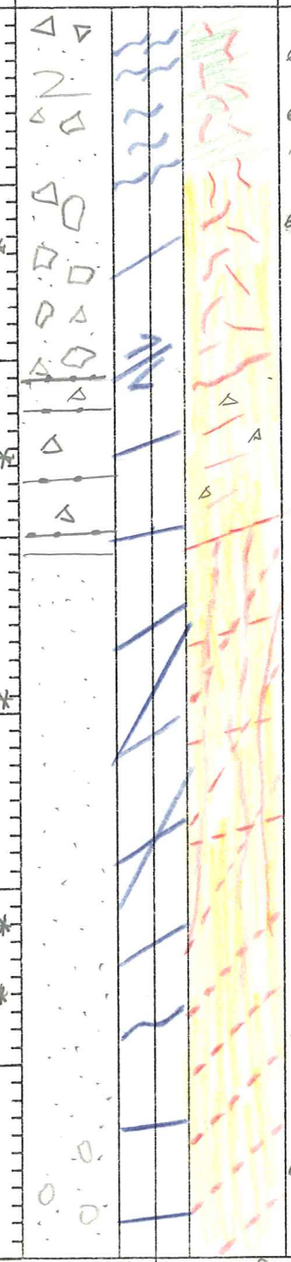
HOLE NUMBER 94-331 PAGE 6 OF 9

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		553-621 aph tuff w/ 5% ser+clay alt feldspars py dissem, mod foliation @ 70 white/tan 1" rounded spots of py+clay pyritized clasts ??, mod-str sil	560			
		572-574 pre mineral rubble bx w/wk FeOx matrix	570		573-573.5 crushed zone w/ minor brown/sy gouge 375-375.5 crushed zone w/ brown/sy gouge @ 40?	568-573 Vusy qtz vn qtz-sulf vn @ 15, 30 1-4 vn/ft
		foliation @ 80	580		376-600 1-2 frac/ft @ 40, 60, 80	573-577 sil, minor clay alt. 577-602 Mod crackle vn system > 10 vn/ft @ 10, 40 1/10-1/20" qtz-sulf vn w/ 1/10-1/4 qtz-py-marc vn rubble bx cements @ 583 barite cryst. mod-str sil
			590			601 Rubble bx qtz-illite filled vugs - minor sulf
			600		600-623 1-2 frac/ft @ 60-70 minor illite (wk cly) on frac.	602-621 wk sil crackle bx 1/20-1/10" vnlets @ 25 ⊥ 40 698-600 frac @ 0° Vusy qtz-drusy
		610 fine grain NO-wk foliation large 1" blocks of py+clay after clasts	610		602 minor frac zone 6" (wk Fault?)	617.5 colloidal silica on frac @ 60
		621-630 green sheared rock + veinlets fragmental rock w/ veinlet material str chloritic alt.	620		621-630 sheared rock - FAULT zone. frac @ 40 1-2/ft	621-630 crackle bx vein in chloritic SRF sheared rock
			630			

ANALYTICAL DATA

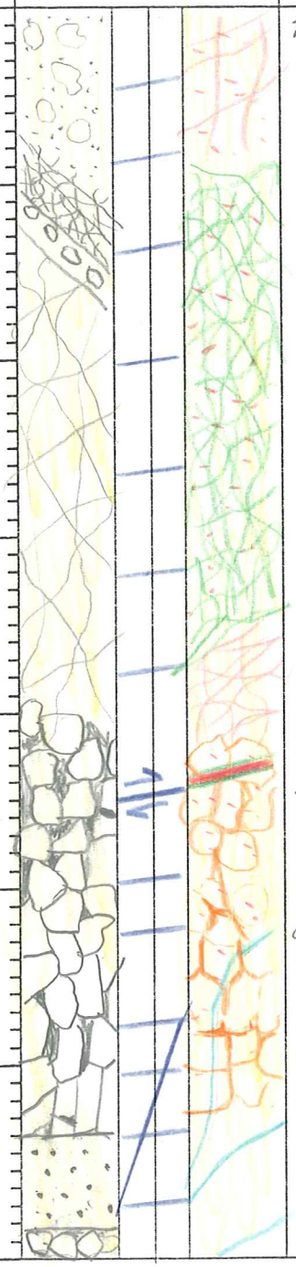
FROM	TO	W	Au	Ag	Au2	Ag2
560	565	5	<.001	.04		
565	568	3	.001	.04		
568	573	5	.002	.06		
573	578	5	<.001	.02		
578	583	5	.003	.09	.003	
583	588	5	.003	.09		
588	593	5	.001	.04		
593	597	4	.003	.07		
597	602	5	.006	.76		
602	607	5	.004	.29		
607	612	5	.005	.14		
612	617	5	.006	.05		
617	622	5	.004	.09		
622	627	5	.004	.10		

HOLE NUMBER 94-331 PAGE 7 OF 9

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
		630-632.5 1" gray/brown fragmentals silicic in a med green silicic matrix 632.5-639 soft to mod hard, chloritic to sil, sheared to fragmental rock 639-651 fragmental tectonic bx similar to above but strongly silicic with vein material ⊥ to main jointing dk green sil frags in a green + sometimes brown silicic matrix 651-661 Silicic structure or vein, silica flooded fault bx, med green sub angular to subrounded frags, matrix supported 661-710 lt gy/gr tint tuff aph, lithic gost textures, str silicic overprint lithic clast more visible	630 640 650 660 670 680 690 700		632.5-633.5 str sheared rk frac @ 50 633.5-339 sheared + fragmental rock w/ frac @ 60 (1 frac/ft) ground frags 1/10-1/2" 639-661 silicic vein? w/ fragmentals 1-2 frac/ft @ 60-80 639 3 clay gouge zones 1/4" dk gray @ 60 crushed sulf? 661-675 1 frac/ft @ 50-60, 30 675-687 1 frac/ft @ 80, 40 1-6 vn/ft ⟹ minor calcopy 687-689 softer wk sheared at base 1 ft w/ chlorite s @ 40 689-700 1 frac/ft @ 80	630-639 sheared py vn 639-647 fragmental zone w/ minor white qtz cement, qtz-marc-py vnlets, strl 647-649 fragmental zone w/ silicic brown matrix str sil 649-661 silica veined + silica flooded frag zone. poss fine dissem sulfosalts, calcopyrite, occasion grains of ruby silver, dissem py, white/gy qtz, 651.5 dk 1/4" sulf-qtz vn @ 60 661-687 sil rock v. fine crackle bx - gray hairline silica * cutting qtz-py vn @ 70, 25, 0 1/10-1/4" white qtz vn @ 0 1/4" 662.75 dk sulfosalts - Ruby silver, massive earthy 687-700 1/10" qtz-py vn @ 40 2-3/ft	627 632 637 642 647 652 657 661 663 668 673 678 683 688 693 698	632 637 642 647 652 657 661 663 668 673 678 683 688 693 698 703	5 5 5 5 5 5 4 2 5 5 5 5 5 5 5 5	.006 .007 .004 .037 .010 .038 .013 .052 .011 .011 .003 .012 .146 .025 .011 .030	.11 .09 .10 1.82 .84 .09 2.98 24.50 .17 .03 <.02 .09 .32 .07 .03 .03	.064 .041 (Ag) .006 .145	

* 643.5-644, 656-656.5, 668.5-669, 681.5-682, 683.5-684 MET samples

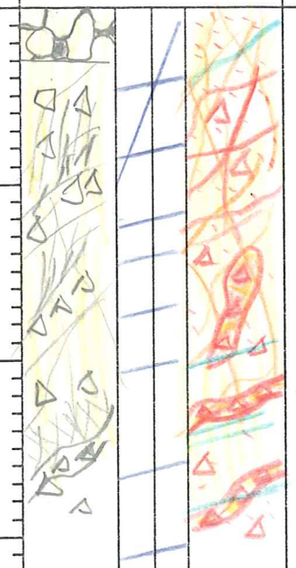
HOLE NUMBER 94-331 PAGE 8 OF 9

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		661-710 alloglomerate w/ pale tan clasts (sub Angular) in a aph lt green MATRIX, wk brown reaction rim at clast contact. selective py dissem as rounded blobs not aparently related to clasts 710-739 fine, but densely concentrated crackle veining composed of hairline pale green chlorite ± silica and 1/4" calcite cements. rk textures obliterated although there may be wk laminations	700 710 720 730 740 750 760 770		700-753 1 frac/ft @ 70-80 Minor clay or chlorite films	700-709 wk crackle bx w/ 1/20-1/10" qtz-py-MARC Vnlets @ 0 & 60 710-735 fine, but densely concentrated hairline crackle bx w/ chlorite ± silica cements. minor highangle qtz-py vnlets 0-10, 60 2-3/ft
		739-748 Volcaniclastic lt gray point and edge supported clast with fine brown (FeOx) MATRIX. Clast are 1/2" to bolder size while MATRIX host smaller clasts ≤ 1/2". py dissem associated with both MATRIX & clasts 748-764.5 SAb but less fine matrix and clasts & matrix may have been glassy 764.5-768.5 Med. grain tuff w/ feldspar cryst ? replaced by qtz & py			745 slicks @ 80 653-783 1-1.5 frac/ft @ 70 & 20	735-753 1/20-1/10" qtz-sulf vnlets @ 20, 50, 40, 10 3-4/ft 745 1/4" dk chlorite-sulf vn - v.f. sulf dissem 753-774 1/4 → 1/2" calcite vn @ 0-40 1-2/ft w/ bladed marcasite ± py minor 1/20" qtz-sulf vn

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
703	708	5	.028	.11	.030	
708	713	5	.445	.12	.382(g)	
713	718	5	.002	.07		
718	723	5	.016	.04		
723	728	5	.009	.03		
728	733	5	.007	.03		
733	738	5	.004	.03		
738	743	5	.002	.03		
743	748	5	.015	.04	.014	
748	-753	5	.073	.02		
753	758	5	.068	.05	.068(g)	
758	763	5	.050	.05	.054(g)	
763	768	5	.034	.04		
768	773	5	.012	.06		

HOLE NUMBER 94-331 PAGE 9 OF 9

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		768.5 - 773.5 altered feldspar med grain volcaniclastics matrix, point, & edge supported clasts, red/brow matrix 773.5 - 785 SAb w/ wk-Mod rubble & crackle bx components 785 - 800 strong silica flooding of matrix aparent rubble bx crosscutting original volcaniclastics. hem-hairline matrix ~ Mainly rubble + crackle bx ~ rubble w/ crackle Tops	770 780 790 800		783 - 793 1.5 frac/ft @ 80 793 - 800 1 frac/ft @ 70-80	774 - 785 sil, FeOx hydro rubble + crackle bx matrix. rounded blobs of py in clast + matrix 785 - 800 SAb w/ silica floodal matrix mult stages of x-cutting rubble bx + sulf dissem 785.5 - 587.5 high Angle rubble bx 795 5" x-cuttin rubble bx 798 dk silicic band (1/8") @ 70 w/ py dissem + dk sulf dissem 799 1" x-cutting rubble bx 791 - 800 x-cutting 1/8 to 1/4" calcite vn @ 70 1-2/ft

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
773	778	5	.004	.04		
778	783	5	.001	.06		
783	788	5	.024	.04		
788	793	5	.035	.14		
793	798	5	.022	.06		
798	800	2	.022	.08		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-331 DATE: 8/31/94 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)
495	503	80	99	.34	497.6'	1500	>10	30, 60	S	1/20" PY				
503	509.5	18	85	.14	506.3'	1800	>10	60	S	minor PY chlorite				
509.5	519.5	87	93	.50	513.5'	2925	1-2	60	S	minor PY minor clay				
519.5	527.5	99	99	.89	526'	3675	1	55, 60	R	minor clay				
529.5	533	80	80	.54	531.5'	2550	1	50	R	minor clay				
533	543	92	94	.66	534.5'	2250	1	30 ⊥ 40 5	S R S	minor PY + white clay				
543	553	93	93	.67	547.2'	2550	1	40, 50	VR	mod clay				
553	563	82	88	.57	559'	1350	1-2	70	R	1/80-1/4" PY minor clay				
563	573	94	94	.71	567.5'	2700	1	60	VR	clay gouge				
573	583	56	83	.39	581'	2700	>10	60	VR	minor clay qtz vn				
583	593	94	98	.70	591.5'	2550	1-2	70	VR	SAB				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-331 DATE: 8/31/94 LOGGED BY: RK PAGE ____ 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)
593	603	79	93	.56	597'	3900	1->10 crushed zone @ 601	60	R	white clay/illite				
603	613	90	93	.55	609.3'	2925	1-2	70	R	Minor chlorite/ clay				
613	623	87	87	.73	616.4'	2250	1-2	60	R	silica/PY framboids				
623	633	59	90	.41	624.5'	975	3	40	VR	chlorite/ clay shear				
633	643	82	93	.57	641.7'	2100	2	65	VR	SAB				
643	653	88	94	.72	648.5'	2100	1	55	R-S	SAB				
653	663	83	94	.43	656'	4425	2-3	30,70	VR	white illite cly				
663	673	97	97	.63	667'	4650	1	30,50	R	minor illite				
673	683	96	96	.81	679.5'	3825	1	80,40	R					
683	693	95	95	.56	687'	3000	1	40,80	R					
693	703	93	93	.85	700	3550	1	70,80	R	V				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # 94-331 DATE: 9/1/94 LOGGED BY: R.K. PAGE ____ 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)
703	713	98	98	.92	707.4'	3375	1.5	70-80	VR	chlorite + clay film py				
713	723	96	96	.77	717.2'	3600	1	70	R	chl film				
723	733	98	98	.89	726'	3100	1	80	R	nil				
733	743	99	99	.76	737.2'	2700	1	80	S	nil				
743	753	96	96	.88	746.2'	3675	1	80	S-R	chl + cly film				
753	763	96	96	.84	757.8'	3900	2	50; 80	R+P	nil				
763	773	99	99	.78	767.1'	3600	1	70	R	illite, chl film				
773	783	94	94	.78	777.6'	3600	1.5	20, 70	R	illite + chl film				
783	793	96	96	.78	787.5'	4200	1.5	80	R	nil				
793	800	100	100	.94	795.9'	5400	1	70-80	R	nil				
EOH														

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-331
JOB NUMBER : SP030356
REPORTED : 17/08/94

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Ag D210 ppm
94-331 00-15	14		0.6
94-331 15-25	6		<0.5
94-331 25-35	<5		<0.5
94-331 35-45	<5	<5	0.6
94-331 45-55	<5		0.6
94-331 55-65	<5		0.5
94-331 65-75	<5		0.9
94-331 75-85	20		0.5
94-331 85-95	23		1.1
94-331 95-105	30		2.0
94-331 105-115	32		1.4
94-331 115-125	50		2.1
94-331 125-135	90	84	1.4
94-331 135-145	<5		0.5
94-331 145-155	<5		0.5
94-331 155-165	<5		<0.5
94-331 165-175	<5		<0.5
94-331 175-185	<5	<5	0.6
94-331 185-195	<5		0.5
94-331 195-205	<5		<0.5
94-331 205-215	<5		<0.5
94-331 215-225	<5		<0.5
94-331 225-235	<5		<0.5
94-331 235-245	<5		<0.5
94-331 245-255	<5		<0.5

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-331
JOB NUMBER : SP030356
REPORTED : 17/08/94

SAMPLES	Au FA30 ppb	Au(R) FA30 ppb	Ag D210 ppm
94-331 255-265	<5		0.5
94-331 265-275	<5		<0.5
94-331 275-285	<5	<5	<0.5
94-331 285-295	8		0.5
94-331 295-305	<5		0.5
94-331 305-315	<5		<0.5
94-331 315-325	<5		0.5
94-331 325-335	<5		<0.5
94-331 335-345	<5		0.5
94-331 345-355	<5		<0.5
94-331 355-365	<5	<5	0.7
94-331 365-375	28		2.1
94-331 375-385	94		3.5
94-331 385-395	42		1.6
94-331 395-405	148		1.7
94-331 405-415	38		0.5
94-331 415-425	<5		<0.5
94-331 425-435	40		1.0
94-331 435-445	32		1.8
94-331 445-455	62		3.5
94-331 455-465	176		3.0
94-331 465-475	62		1.7
94-331 475-485	22		1.3
94-331 485-495	64	52	2.2

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-331
JOB NUMBER : SP030765
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
94-331 495-500	0.002		0.05
94-331 500-505	<0.001		<0.02
94-331 505-510	<0.001		<0.02
94-331 510-515	<0.001		0.02
94-331 515-520	0.004		0.10
94-331 520-525	0.003		0.06
94-331 525-530	0.004		0.08
94-331 530-535	0.003		0.05
94-331 535-540	0.002		0.03
94-331 540-545	0.004		0.06
94-331 545-550	0.002		0.06
94-331 550-555	0.003		0.15
94-331 555-560	<0.001		<0.02
94-331 560-565	<0.001		0.04
94-331 565-568	0.001		0.04
94-331 568-573	0.002		0.06
94-331 573-578	<0.001		0.02
94-331 578-583	0.003	0.003	0.09
94-331 583-588	0.003		0.09
94-331 588-593	0.001		0.04
94-331 593-597	0.003		0.07

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-331
JOB NUMBER : SP030766
REPORTED : 22 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-331 597-602	0.006			0.76
94-331 602-607	0.004			0.29
94-331 607-612	0.005			0.14
94-331 612-617	0.006			0.05
94-331 617-622	0.004			0.09
94-331 622-627	0.004			0.10
94-331 627-632	0.006			0.11
94-331 632-637	0.007			0.09
94-331 637-642	0.004			0.10
94-331 642-647	0.037			1.82
94-331 647-652	0.010			0.84
94-331 652-657	0.038			0.09
94-331 657-661	0.013			2.98
94-331 661-663	0.052	0.064	0.041	24.50
94-331 663-668	0.011	0.006		0.17
94-331 668-673	0.011			0.03
94-331 673-678	0.003			<0.02
94-331 678-683	0.012			0.09
94-331 683-688	0.146		0.145	0.32
94-331 688-693	0.025			0.07
94-331 693-698	0.011			0.03

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : 94-331
JOB NUMBER : SP030767
REPORTED : 22 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-331 698-703	0.030			0.03
94-331 703-708	0.028	0.030		0.11
94-331 708-713	0.445		0.382	0.12
94-331 713-718	0.002			0.07
94-331 718-723	0.016			0.04
94-331 723-728	0.009			0.03
94-331 728-733	0.007			0.03
94-331 733-738	0.004			0.03
94-331 738-743	0.002			0.03
94-331 743-748	0.015	0.014		0.04
94-331 748-753	0.073			0.02
94-331 753-758	0.068		0.068	0.05
94-331 758-763	0.050		0.054	0.05
94-331 763-768	0.034			0.04
94-331 768-773	0.012			0.06
94-331 773-778	0.004			0.04
94-331 778-783	0.001			0.06
94-331 783-788	0.024			0.04
94-331 788-793	0.035			0.14
94-331 793-798	0.022			0.06
94-331 798-800	0.022			0.08

American Assay Laboratories

INVOICE

Remit To: P.O. Box 71060
Reno, NV 89570
Phone No.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431

(702) 356-0606

INVOICE NO: SP 0030356-IN
INVOICE DATE: 08/18/94

East Zone 94-331

INVOICE TO:
HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

CUSTOMER P.O.	PROJECT	TERMS
	ROSEBUD	NET 30

QUANTITY	DESCRIPTION	PRICE	AMOUNT
49	SAMPLES RECEIVED	.00	.00
49	JAW CRUSHING CHARGE	1.20	58.80
49	SPLITTING CHARGE	1.00	49.00
49	KEEGOR MILLING CHARGE	2.00	98.00
49	Au (1 A.T. FIRE ASSAY)	7.25	355.25
49	HYDROCHLORIC/NITRIC DIGESTION	2.00	98.00
49	Ag ANALYSES	.80	39.20

OK to pay
P.O. # 400027; line 4
Charles K. Muerhoff

NET INVOICE:	698.25
LESS DISCOUNT:	209.48
FREIGHT:	.00
INVOICE TOTAL:	488.77

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: 94-331

LABORATORY JOB No. : SP030356

SAMPLE TYPE :

RECEIVED : 8/08/94

REPORTED : 17/08/94

No. SAMPLES : 49

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au	FA30	15%	ppb	5
Au(R)	FA30	15%	ppb	5
Ag	D210	10%	ppm	0.5

SIGNATORY : Sue Faircloth M.S.

American Assay Laboratories

INVOICE

Remit To: P.O. Box 71060
Reno, NV 89570
Phone No.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431

(702) 356-0606

INVOICE NO: SP 0030765-IN
INVOICE DATE: 09/15/94

INVOICE TO:
HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

CUSTOMER P.O.	PROJECT	TERMS
C. MUERHOFF	ROSEBUD 94-331	NET 30

QUANTITY	DESCRIPTION	PRICE	AMOUNT
21	SAMPLES RECEIVED	.00	.00
21	JAW CRUSHING CHARGE	2.40	50.40
21	COARSE MILLING CHARGE	8.00	168.00
21	SPLITTING CHARGE	2.00	42.00
21	KEEGOR MILLING CHARGE	2.00	42.00
21	BLENDING CHARGE	1.00	21.00
21	RING MILLING CHARGE	1.50	31.50
21	Au (2 A.T. FIRE ASSAY)	9.50	199.50
21	HYDROCHLORIC/NITRIC DIGESTION	2.00	42.00
21	Ag ANALYSES	.80	16.80

OK to pay
P.O. # 400027 ; Line 4
Charles V. Muerhoff

NET INVOICE:	613.20
LESS DISCOUNT:	183.96
FREIGHT:	.00
INVOICE TOTAL:	429.24

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: 94-331
LABORATORY JOB No. : SP030765
SAMPLE TYPE :

RECEIVED : 6 SEP 1994
REPORTED : 14 SEP 1994
No. SAMPLES : 21

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

INVOICE

Remit To: P.O. Box 71060
Reno, NV 89570
Phone No.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431

(702) 356-0606

INVOICE NO: SP 0030766-IN
INVOICE DATE: 09/22/94

Ezst Zone

INVOICE TO:
HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

CUSTOMER P.O.	PROJECT	TERMS
C. MUERHOFF	ROSEBUD 94-331	NET 30

QUANTITY	DESCRIPTION	PRICE	AMOUNT
21	SAMPLES RECEIVED	.00	.00
21	JAW CRUSHING CHARGE	2.40	50.40
21	COARSE MILLING CHARGE	8.00	168.00
21	SPLITTING CHARGE	2.00	42.00
21	KEEGOR MILLING CHARGE	2.00	42.00
21	BLENDING CHARGE	1.00	21.00
21	RING MILLING CHARGE	1.50	31.50
21	Au (2 A.T. FIRE ASSAY)	9.50	199.50
21	HYDROCHLORIC/NITRIC DIGESTION	2.00	42.00
21	Ag ANALYSES	.80	16.80
3	Ag (ore grade) ANALYSES	5.00	15.00
2	Au ANALYSES/GRAVIMETRIC	7.75	15.50

OK to pay
P.O. # 400027; line 4
Charles V. Muerhoff

NET INVOICE:	643.70
LESS DISCOUNT:	193.11
FREIGHT:	.00
INVOICE TOTAL:	450.59

ANALYSIS REPORT

American Assay Laboratories

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HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF
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:
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CLIENT REFERENCE No: 94-331
LABORATORY JOB No. : SP030766
SAMPLE TYPE :

RECEIVED : 6 SEP 1994
REPORTED : 22 SEP 1994
No. SAMPLES : 21

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

SIGNATORY : Sue Faircloth M.S.

ANALYSIS REPORT

American Assay Laboratories

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
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HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

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:

CLIENT REFERENCE No: 94-331 RECEIVED : 6 SEP 1994

LABORATORY JOB No. : SP030766 REPORTED : 22 SEP 1994

SAMPLE TYPE : No. SAMPLES : 21

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA60	15%	OPT	0.001
Au(RZ)	FA60	15%	OPT	0.001
AuGRAV	GRAV	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 : 94-331
JOB NUMBER : SP030766
REPORTED : 22 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
94-331 597-602	0.006			0.76
94-331 602-607	0.004			0.29
94-331 607-612	0.005			0.14
94-331 612-617	0.006			0.05
94-331 617-622	0.004			0.09
94-331 622-627	0.004			0.10
94-331 627-632	0.006			0.11
94-331 632-637	0.007			0.09
94-331 637-642	0.004			0.10
94-331 642-647	0.037			1.82
94-331 647-652	0.010			0.84
94-331 652-657	0.038			0.09
94-331 657-661	0.013			2.98
94-331 661-663	0.052	0.064	0.041	24.50
94-331 663-668	0.011	0.006		0.17
94-331 668-673	0.011			0.03
94-331 673-678	0.003			<0.02
94-331 678-683	0.012			0.09
94-331 683-688	0.146		0.145	0.32
94-331 688-693	0.025			0.07
94-331 693-698	0.011			0.03

American Assay Laboratories

INVOICE

Remit To: P.O. Box 71060
Reno, NV 89570
Phone No.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431

(702) 356-0606

INVOICE NO: SP 0030767-IN
INVOICE DATE: 09/22/94

East Zone

INVOICE TO:
HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

HECLA MINING COMPANY
1225 UPPER VALLEY ROAD
P. O. BOX 1861
LOVELOCK NV 89419

CUSTOMER P.O.	PROJECT	TERMS
C. MUERHOFF	ROSEBUD 94-331	NET 30

QUANTITY	DESCRIPTION	PRICE	AMOUNT
21	SAMPLES RECEIVED	.00	.00
21	JAW CRUSHING CHARGE	2.40	50.40
21	COARSE MILLING CHARGE	8.00	168.00
21	SPLITTING CHARGE	2.00	42.00
21	KEEGOR MILLING CHARGE	2.00	42.00
21	BLENDING CHARGE	1.00	21.00
21	RING MILLING CHARGE	1.50	31.50
21	Au (2 A.T. FIRE ASSAY)	9.50	199.50
21	HYDROCHLORIC/NITRIC DIGESTION	2.00	42.00
21	Ag ANALYSES	.80	16.80
3	Au ANALYSES/GRAVIMETRIC	7.75	23.25

OK to pay.
P.O. # 400027, line 4
Charles V. Muerhoff

NET INVOICE:	636.45
LESS DISCOUNT:	190.94
FREIGHT:	.00
INVOICE TOTAL:	445.51

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: 94-331

LABORATORY JOB No. : SP030767

SAMPLE TYPE :

RECEIVED : 6 SEP 1994

REPORTED : 22 SEP 1994

No. SAMPLES : 21

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

SIGNATORY : Sue Faircloth M.S.

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 71060
Reno, NV. 89570
Telephone
(702) 356-0606
Fax
(702) 356-1413

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV. 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Company: Hecla Mining Company

Address: P.O. Box 1261, Lovelock NV 89419

Telephone Number: (702) 273-0300 Fax Number: ( ) 273-1716

Project Name: Rosebud Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: Number of Packages: 21 [ ] Prepaid [ ] Collect

(9/1)

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-331 698-703	773-778	CORE	Au, Ag 2AT FA
703-708	778-783		w/ Hecla-rosebud
708-713	783-788		custom prep.
713-718	788-793		
718-723	793-798		* repeat w/ grav finish
723-728	798-800		Au ≥ .050 OPT
728-733			
733-738			
738-743			
743-748			
748-753			
753-758			
758-763			
763-768			
768-773			

COARSE REJECTS (Normally Discarded)

[ ] Return COD after analysis complete
[ ] By prior arrangements

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month
[ ] By prior arrangements

RESULTS AND INVOICES TO BE SENT TO:

Please mark invoice person and address [I]

(1) Charlie Muerhoff
SAL

(2)

(3)

Comments:

GB / sf

CLIENT FILE COPY

SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 71060
Reno, NV. 89570
Telephone
(702) 356-0606
Fax
(702) 356-1413

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV. 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Company: Hecla Mining Co

Address: PO Box 1861 Lovelock NV 89419

Telephone Number: ~~(775) [illegible]~~ (702) 273-0300 Fax Number: ( ) 273-1716

Project Name: Rosebud Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: (9/1 AM) Number of Packages: 21 [ ] Prepaid [ ] Collect

ANALYSIS REQUIRED

SAMPLE		TYPE	ELEMENTS REQUIRED
94-331 597-602	668-673	CORE	Au, Ag 2AT FA
602-607	673-678		w/ Hecla-Rosebud
607-612	678-683		custom Prep.
612-617	683-688		
617-622	688-693		* report w/ grav. finish
622-627	693-698		
627-632			Au ≥ .05 opt
632-637			
637-642			
642-647			
647-652			
652-657			
657-661			
661-663			
663-668			

COARSE REJECTS (Normally Discarded)

[ ] Return COD after analysis complete
[ ] By prior arrangements

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month
[ ] By prior arrangements

RESULTS AND INVOICES TO BE SENT TO:

Please mark invoice person and address [I]

(1) Charlie Muerhoff
SAb

(2)

(3)

Comments:

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SAMPLE SUBMITTAL FORM

American Assay Laboratories Inc.

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 71060
Reno, NV. 89570
Telephone
(702) 356-0606
Fax
(702) 356-1413

Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV. 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Company: Hecla Mining Co.

Address: P.O. Box 1861 Lovelock NV 89419

Telephone Number: (702) 273-0300 Fax Number: ( ) 273-1716

Project Name: Rosebud Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: Number of Packages: 21 [ ] Prepaid [ ] Collect

(8/31)

ANALYSIS REQUIRED

SAMPLE	TYPE	ELEMENTS REQUIRED
94-331: 495-500 568-573	CORE	Au, Ag 2AT FA
500-505 573-578		w/ Hecla-Rosebud
505-510 578-583		Custom Prep.
510-515 583-588		
515-520 588-593		* repeat w/ grav. finish
520-525 593-597		
525-530		Au ≥ .050 OPT
530-535		
535-540		
540-545		
545-550		
550-555		
555-560		
560-565		
565-568		

COARSE REJECTS (Normally Discarded)

[ ] Return COD after analysis complete
[ ] By prior arrangements

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month
[ ] Return COD after one month
[ ] By prior arrangements

RESULTS AND INVOICES TO BE SENT TO:

Please mark invoice person and address [I]

(1) Charlie Muerhoff
SAb

(2)

(3)

Comments:

GB / sf

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