6000 0831

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. D-29-94
AUTHOR	C. Winchester; 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; Hecla Mining Co.; Rosebud Project South Zone
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; total depth 230'; receipt; handwritten notes 11p.

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 5/1/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

D-29-94

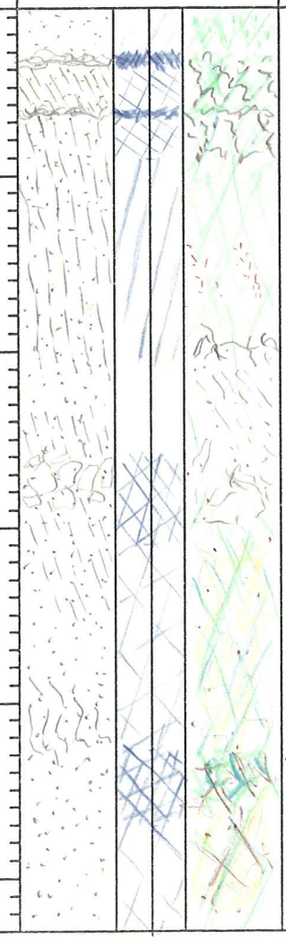
60000831
4010

60600831

Hecla MINING COMPANY

ROSEBUD PROJECT DIAMOND DRILL LOG

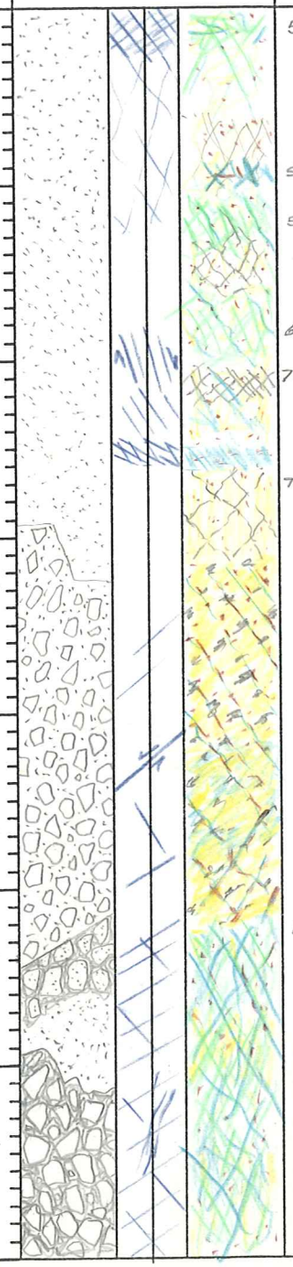
HOLE NUMBER	D-29-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED AS
PAGE 1 OF 4		NORTHING	2,203,602.7		∡ TO CORE AXIS; CORE PHOTO'D; WHOLE
DATE	9-8-94	EASTING	481,517.5		CORE ASSAY SAMPLES; COLLAR LOC. DRILL
LOGGED BY	CBWINETEER	ELEVATION	4701.0		STA. NO. 9 ; SECTION 500 N;
SCALE	1" = 10'	AZIMUTH	131°		
TOTAL DEPTH	230'	INCLINATION	+5° NDBGM		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-82' Fine to medium grained, well-sorted, non porphyritic, planar-laminated, thin and massive-bedded - waterlain ash flow tuff. Tectonic brecciation overprinted described at right.	10, 20, 30, 40, 50		3-4' fault bx angular frags in pale green clay gouge on 35°; 15° slicks. 6-7.5' S.A.A. 8-9' +5/ft. chlic slicks @ 25°; 50-55° 9-21' pale grn clay slicks parallel to bd-lam. @ 5-20° 26.5-28 healed crackle bx 26-30' pale to med grn $CaCO_3$ + chl clay gouge on slicked stk's @ 85°; 15°; 50° 30-43' S.A.A. w/ decr. density 43-47' S.A.A. INCR. density & thickness of frac-fill	0-3' v.wk silic / py-i7/ang-i7; chl on frac's, in clotted bands in g.m. 3-9' v.wk silic / py-i7/ang-i7; chl-ic alt on frac's, clotted bands ± $CaCO_3$ ± py; illic clay on discont. frac's 9-19' v.wk silic / py-i7/ang-i7 chl-ic clays on frac's ± minor $CaCO_3$ ± py 16-18' band diss. bladed sulf. Tr-1% 19-30' wk ang.; v.wk silic; wk py-i7 (Tr-1%), decr. chl discont. "tear" illic-frac-fillings 30-56' wk silic; wk ang.; wk py-i7 (Tr-1%) minor $CaCO_3$ ± ill ± py on frac's; wk chl on frac's.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0	3	3.0	<.001	<.02		
3	9	6.0	<.001	.02		
9	14	5.0	.002	.02		
14	19	5.0	.001	.02		
19	24	5.0	<.001	<.02		
24	30	6.0	<.001	<.02		
30	35	5.0	<.001	.02		
35	40	5.0	<.001	.02		
40	45	5.0	<.001	.04		
45	50	5.0	.001	.06		

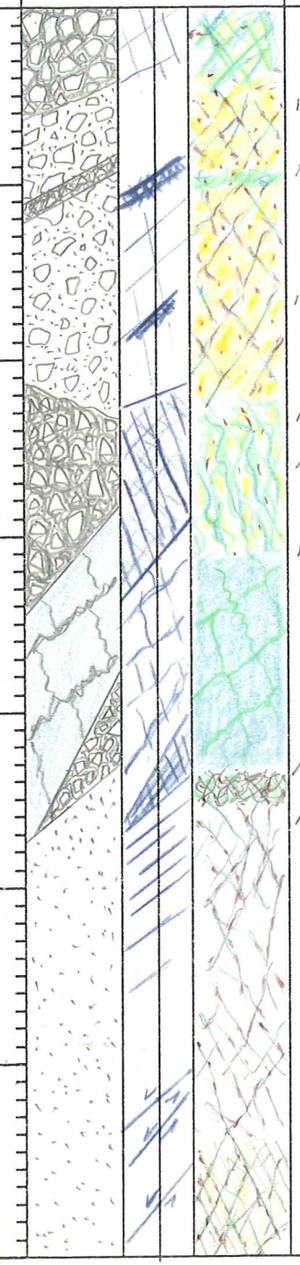
HOLE NUMBER D-29-94 PAGE 2 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		80-82' 15% Depositional contact 82-103' Lithic tuff breccia, matrix-supported, poorly-sorted, heterolithic, angular to subrounded f.g. tephra/tuff fragments in a siliceous fine-grained tuffaceous massive bedded matrix. DRILLER NOTE: 4 gpm H_2O @ 100' & 20 gpm @ 110' 103-125.5' Healed tectonic breccia w/in fine-grained, well-sorted, planar-laminated and massive non porphyritic tuff; w/ a carbonate-clay gouge rich matrix. Clast-supported & late-stage fractures & slicks on structures at 50-60'	60 70 80 90 100 110 120		50-53' fault breccia w/ angular silic. frags in partially carbonate-flooded pale green clay gouge matrix Principal slicks @ 35-40' 58.5-59 frac'd rubble w/ illitic clay fill. 53-63' chl-ic pale grn clay gouge on slicks @ 35° & 15 68-71' chl-sulf slicks @ 15' 71-74.5' ill-coated slicks @ 35' incr. ↓ to 74.5-76' fault bx & $CaCO_3$ vn w/ post $CaCO_3$ slicks @ 60' 76-104' Minor post-sulf slicks @ 50-30 as shown $CaCO_3$ + cubic py (loc tannish) ± Tr sgl ± f.g. celestite 103-125.5 healed fault breccia w/ post $CaCO_3$ matrix stx's @ 60' & 40' & 10'	56-60' wk to mod. arg. w/ ill-ic frac-filling & $CaCO_3$ filled frac's 59-60' 60-70' wk silic.; wk to mod. arg.; wk py-ip (Tr-1%); mod density frac w/ chl/ill ± py frac-filling; Minor thin 0.1" $CaCO_3$ + py str. @ 45' 70-82' wk to mod. silic, wk to mod arg.; wk py-ip (Tr-1%) incr. $CaCO_3$ vn/ltz; decr. chl. stringers. 75-76.5' C. xln. $CaCO_3$ in tectonic by cut by 50° stx's 82-93' Mod. intense silic g.m., mod intense arg. of clasts, mod py-ip (2-4%); Many frac's of $CaCO_3$ + sulf @ 40° 0.01" to .05" @ 3-9/ft.; g.m. arg w/ SiO_2 micro hairline vnlts. pink matrix bx No RR's 93-103' S.A.A + carbonate flooded g.m. + 1st order RR's; slight incr. in py-ip. (3-4%); arg & /or silic clasts 103-125.5' wk silic; wk-mod chl ± arg.; wk py-ip (1-2%) v.f.g. cubic py; no to 1st order RR; $CaCO_3$ vnlt stkwk (white barren calcite) & flooded matrix

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
50	55	5.0'	<.001	.04		
55	60	5.0'	.002	.02		
60	65	5.0'	.001	.02		
65	70	5.0'	<.001	.02		
70	75	5.0'	.001	.03		
75	80	5.0'	<.001	.02		
80	85	5.0'	.002	.04		
85	90	5.0'	.002	.02		
90	93	3.0'	<.001	.04		
93	98	5.0'	.001	.05		
98	103	5.0'	.001	.02		
103	107	4.0'	<.001	.02		
107	111	4.0'	.001	.04		
111	116	5.0'	.001	.02		
116	121	5.0'	<.001	.04		

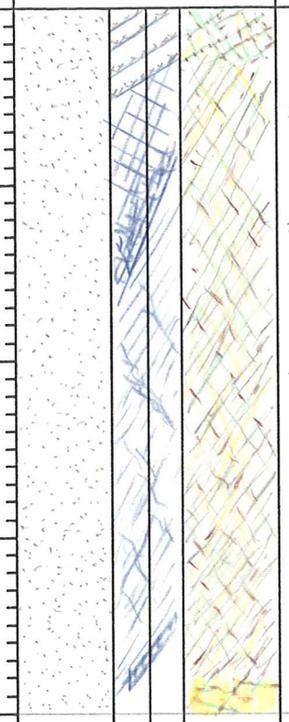
HOLE NUMBER _____ PAGE 3 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		125.5-142' Lithic tuff breccia a.a. 142-151.5' Fault breccia; clast-supported w/ angular fragments of lithic tuff breccia and f.g. tuff in a pale to medium green clay gouge matrix. 151.5-163.5' Coarse crystalline, white to pale pink, open-space calcite w/ minor pale green clay gouge & fault breccia on irregular 15° & 50° structure/contacts? 163.5-165.5 Fault breccia w/angular fragments of f.g. pale green tuff (Dozer tuff) in a pale green illitic clay gouge matrix; clast-supported. 165.5 - Fine-grained, dense, hard, massive-bedded, well-sorted, non-porphyritic tuff (Dozer Tuff).	130 140 150 160 170 180 190		125.5' contact - frac - microbx @ 70° 129.5-130.5' fault bx on 60° & 30° & 15° stx's. w/ clast-supported angular to rounded frags in clay gouge matrix 137.5-138' fault bx on post-sulf slides @ 45° 142' Irreg. rough fault contact @ ~ 70° 142-151.5' fault breccia w/ angular tuff bx frags in clay gouge matrix; slicks @ 20° 151.5' fault contact @ 40° 163.5 post-sulf slick @ 27° - fault bx below stx's 165.5' post-sulf slick @ 50° 180-188' Minor post-sulf chl slicks @ 50° & 40°	125.5-142' pink matrix bx mod. intense silic & g.m. & clasts; mod. arg-ity of clasts; 1st order RR's; weak py-ity (Tr-loc 3-5%); micro stringer stkwk (0.05-0.15") $CaCO_3$-sulf @ 35-40° & 30° @ 3-10/ft. 129.5-130.5 fault bx chl, $CaCO_3$ 142-151.5' chl-ic & $CaCO_3$ flooded fault bx w/ wk to mod. silic./arg./py-ity clasts. 151.5-163.5' c.xln barren white to pale pink $CaCO_3$ w/ minor, irreg. fault clay gouge-filled frac's @ 15° & 50° 163.5-165.5 fault bx w/ mod to intense arg-ity, wk py-ity; v. wk silic; wk chlic clay. 165.5-184' siliceous f.g. matrix w/ $CaCO_3$ + v.f.g. py ± ill microhairline stkwk.; wk py-ity (Tr-1%) 184-192' Crackle bx w/ microhairline stkwk of $CaCO_3$-chl-py ± micro bx & clay gouge; wk silic, wk arg.; wk py-ity (1%)

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
121	125.5	4.5'	.001	.06		
125.5	130.5	5.0'	.002	.02		
130.5	136	5.5'	.014	.04	.013	
136	142	6.0'	.258	8.48	.242(g)	
142	147	5.0'	.215	2.92	.211(g)	
147	151.5	4.5'	.229	3.14	.226(g)	
151.5	156	4.5'	.031	.20		
156	160	4.0'	<.001	<.02		
160	163.5	3.5'	<.001	<.02		
163.5	165.5	2.0'	<.001	.03		
165.5	170	4.5'	<.001	<.02		
170	175	5.0'	<.001	.02		
175	180	5.0'	<.001	.02		
180	185	5.0'	<.001	<.02		
185	190	5.0'	<.001	<.02		

HOLE NUMBER D-29-94 PAGE 4 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
			200 210 220 230		190–194' slicks & microfx on 60° stx's 194–202.5' Crackle breccia Δ + to fault breccia on 60° & 20° stx's. 202.5–228' densely frac'd @ 35° & loc. 60° w/ hairline frac's partially filled w/ illitic clay; loc. crackle bx.	192–228' Siliceous – slightly silic. g.m.; high density frac'ing w/ $CaCO_3$ + chl + ill ± open-space Q ± py ± spl princ. on 30-35° micro frac's; wk g.m. arg./py-il./chl. 228–230' silic. hard, w/ minor $CaCO_3$ + py micro str. @ 50°, 70°, 30°
		END OF HOLE @ 230'				

FROM	TO	W	Au	Ag	Au2	Ag2
190	195	5.0'	<.001	<.02		
195	200		<.001	<.02		
200	205		<.001	<.02		
205	210		<.001	<.02		
210	215		<.001	<.02		
215	220		<.001	<.02		
220	225		<.001	<.02		
225	230	5.0'	<.001	<.02		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-29-94 DATE: 9-8-94 LOGGED BY: RK / CBW PAGE 1 OF 3

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)
0	7.5	51	73	.40	2.0'	3825	5.0	40°	S	chl + py	2.0'	369.5	150	2.46
7.5	14	55	.75	.43	9.0'	450	4.0	50°	S	ill-chl-py	9.0'	422	165	2.56
14	19	70	94	.20	16.5'	3075	4.0	20°	S	chl-py	16.5'	375.5	160	2.35
19	29	75	77	.50	22'	3450	2.5	40°	S	$CaCO_3$-chl-py	22'	390	160	2.44
29	40	67	83	.45	34'	3450	1.7	45°	S to R	chl-py-$CaCO_3$	34'	242	95	2.54
40	49	53	90	.20	42.5'	1500	6.5	35/50°	S	chl-py	42.5'	397.5	160	2.48
49	54	38	90	.08	51'	975	4.9	35°	S	chl-py-gouge	51'	257.5	110	2.34
54	60	57	77	.18	57.5'	600	5.1	35°	S	ill-chl-py	57.5'	289.5	120	2.41
60	70	70	85	.33	63	2550	3.4	45°	S	chl-py	63	307	130	2.36
70	80	78	91	.39	73.5	1575	3.1	55°	R	ill ± py	73.5	373	150	2.49
80	90	89	93	.60	84	2400	1.0	55°	R	± ill ± py	84	387.5	155	2.5

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-29-94 DATE: 9-8-94 LOGGED BY: RK / CBW PAGE 2 OF 3

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)
90	100	91	94	.70	96	3150	1.1	35°	K	chl-py	96	385	160	2.41
100	110	76	88	.50	105	1950	1.2	60°	R	ill-chl-py	105	329	140	2.35
110	120	82	94	.46	116	2100	1.7	40°	K-R	chl-py-ill	116	383.5	160	2.40
120	130	83	97	.76	127.5	3900	1.5	20°	R	clay gouge & bx frags	127.5	396	160	2.48
130	140	71	85	.45	133	360	1.7	40°	K-R R&G stx's	caco3+chl+py	133	425.5	170	2.50
140	150	47	88	.31			2.9	50°	K-R	clay gouge	145	422	175	2.41
150	160	67	88	.41			2.8	70°	R	pale grn clay gouge	156	527.5	215	2.45
160	170	62	76	.37			1.5	30°	K-S	chl-py	166.5	227.5	90	2.53
170	178	113	113	.61			1.2	60°	R	py ± chl.	173	421.5	170	2.48
178	188	100	100	.80			0.2	50°	K-S	chl-py	187	359	140	2.56
188	198	95	95	.61			0.8	50°	R	chl	194	447.5	170	2.63

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-29-94 DATE: 9-8-94 LOGGED BY: RK / CBW PAGE 3 OF 3

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)
198	207	77	92	.51			2.2	20°	R	microbx	203	440	170	2.59
207	215	100	106	.64			1.7	20°	R	microbx	211	330.5	130	2.54
215	225	88	90	.76			1.1	30°	S	$CaCO_3$+py	220	323.5	130	2.49
225	230	48	72	34			1.1	60°	S	chl clay	227	340	140	2.43

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:

Telephone Number: ( ) Fax Number: ( )

Project Name: ROSEBUD Purchase Order Number:

Transport Company: Waybill Number:

Date Shipped: Number of Packages: 48 [ ] Prepaid [ ] Collect

9-9-94

ANALYSIS REQUIRED

SAMPLE			TYPE	ELEMENTS REQUIRED
D-29-94 0-3	75-80	147-151.5	CORE	2 AT FIRE ASSAY Au & Ag
3-9	80-85	151.5-156		w/ HECLA ROSEBUD
9-14	85-90	156-160		CUSTOM PREP
14-19	90-93	160-163.5		
19-24	93-98	163.5-165.5		
24-30	98-103	165.5-170		* GRAV FINISH ON
30-35	103-107	170-175		ALL ≥ 0.05 opt
35-40	107-111	175-180		
40-45	111-116	180-185		
45-50	116-121	185-190		
50-55	121-125.5	190-195		
55-60	125.5-130.5	195-200		
60-65	130.5-136	200-205		
65-70	136-142	205-210		
70-75	142-147	210-215		
		215-220		
		220-225		
		225-230		

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

(2)

(3)

Comments:

CLIENT FILE COPY

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: D-29-94

LABORATORY JOB No. : SP030957

SAMPLE TYPE :

RECEIVED : 21 SEP 1994

REPORTED : 6 OCT 1994

No. SAMPLES : 48

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 : D-29-94
JOB NUMBER : SP030957
REPORTED : 6 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-29-94 0-3	<0.001			<0.02
D-29-94 3-9	<0.001			0.02
D-29-94 9-14	0.002			0.02
D-29-94 14-19	0.001			0.02
D-29-94 19-24	<0.001			<0.02
D-29-94 24-30	<0.001			<0.02
D-29-94 30-35	<0.001			0.02
D-29-94 35-40	<0.001			0.02
D-29-94 40-45	<0.001			0.04
D-29-94 45-50	0.001			0.06
D-29-94 50-55	<0.001			0.04
D-29-94 55-60	0.002			0.02
D-29-94 60-65	0.001			0.02
D-29-94 65-70	<0.001			0.02
D-29-94 70-75	0.001			0.02
D-29-94 75-80	<0.001			0.02
D-29-94 80-85	0.002			0.04
D-29-94 85-90	0.002			0.02
D-29-94 90-93	<0.001			0.04
D-29-94 93-98	0.001			0.05
D-29-94 98-103	0.001			0.02
D-29-94 103-107	<0.001			0.02
D-29-94 107-111	0.001			0.04
D-29-94 111-116	0.001			0.02
D-29-94 116-121	<0.001			0.04

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-29-94
JOB NUMBER : SP030957
REPORTED : 6 OCT 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-29-94 121-125.5	0.001			0.06
D-29-94 125.5-130.5	0.002			0.02
D-29-94 130.5-136	0.014	0.013		0.04
D-29-94 136-142	0.258		0.242	8.48
D-29-94 142-147	0.215		0.211	2.92
D-29-94 147-151.5	0.229		0.226	3.14
D-29-94 151.5-156	0.031			0.20
D-29-94 156-160	<0.001			<0.02
D-29-94 160-163.5	<0.001			<0.02
D-29-94 163.5-165.5	<0.001			0.03
D-29-94 165.5-170	<0.001			<0.02
D-29-94 170-175	<0.001			0.02
D-29-94 175-180	<0.001			0.02
D-29-94 180-185	<0.001			<0.02
D-29-94 185-190	<0.001			<0.02
D-29-94 190-195	<0.001			<0.02
D-29-94 195-200	<0.001			<0.02
D-29-94 200-205	<0.001			<0.02
D-29-94 205-210	<0.001			<0.02
D-29-94 210-215	<0.001			<0.02
D-29-94 215-220	<0.001			<0.02
D-29-94 220-225	<0.001			<0.02
D-29-94 225-230	<0.001			<0.02