60001524

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-76-94
AUTHOR	C. Winchester; C. Muerhoff; S. Fairclotb
DATE OF DOC(S)	1994
MULTI_DIST Y / N? Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Hecla Mining Co., South Zone
COMMODITY If not obvious	gold silver
NOTES	Drill log; geology; assay; total depth 199' handwritten notes 10 p.

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:	MAA	
SCANNED:	NV Blue	

Revised: 1/22/08

D-76-94

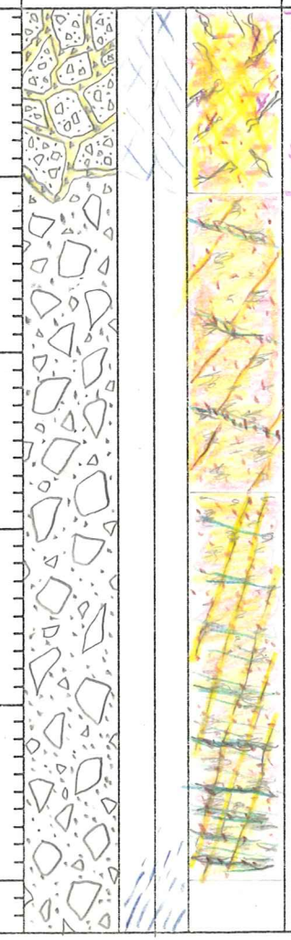
60001524 4010

6000 1524

Hecla
MINING COMPANY

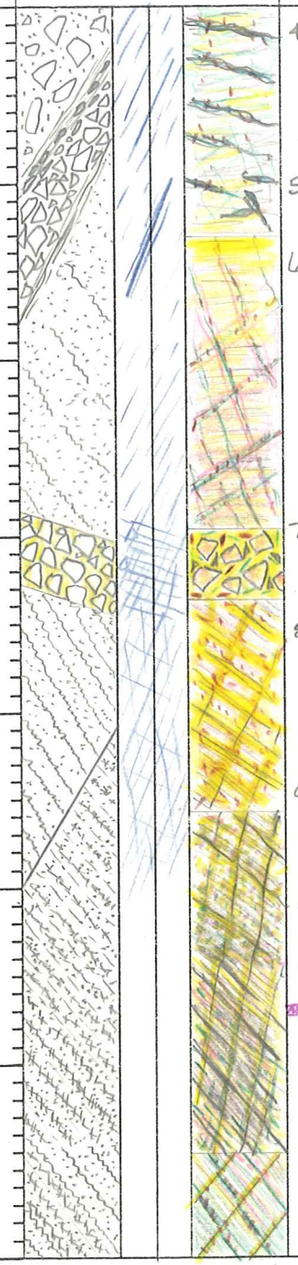
ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-76-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED
PAGE 1 OF 4		NORTHING	2203947.9		AS ∡ TO CORE AXIS; CORE PHOTO'D;
DATE	10-1-94	EASTING	481798.8		WHOLE CORE ASSAY SAMPLES; COLLAR
LOGGED BY	CB WINETEER	ELEVATION	4651.9		LOCATION DDS #18; SECTION 950 N;
SCALE	1" = 10'	AZIMUTH	124.0°		NDBGM CORE
TOTAL DEPTH	199'	INCLINATION	-1.0°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-11' silicified tectonic breccia: clast-supported angular fragments of intensely silicified lithic tuff breccia (ghost breccia-matrix-supported hetero-lithic, chaotic bedded) in a fragment-rich chalcedonic matrix, w/ open-space Quartz, illite, marcasite and barite. 11-56' Lithic tuff breccia: matrix-supported, poorly-sorted angular heterolithic fine-grained argillized &/or silicified &/or py-ritized tephra fragments in a siliceous pink (alunitic) tuffaceous chaotic-bedded matrix. Lithic tephra fragments pale green (argillized + sericitized ± chloritized), pink (silicified + alunitic), and grey (silicified + pyritization). Fragment size range from f.g. sand up to >5cm in diameter.	10 20 30 40 50		0-11' silicified clast-supported hydrothermal or tectonic bx w/ angular frags of silic lithic tuff bx in & x-cut by lt. grey to pale grn chalcedonic SiO_2 Ba or pinkish brown int. silic. of clasts. * CST-21 40.5-41'	0-11' Mod int. to int. silic + mod. int. alun + loc. mod. arg-T + Tr-2% cubic, py-ohedron & bladed py-T + SiO_2 matrix; minr frac's x-cut by chalc. SiO_2 matrix discont.-irreg-vuggy-f.g. op. sp. Q + ill + mar + bar ± cpy ± Tr f.g. xln V.G. & SS. Dto 3rd order RR's 11-28' mod. int. silic. + mod. int. alun + mod. py-T 1-5% cubic/bladed/& py-ohedrons; wk to mod. arg-T of clasts; 2nd & weak 3rd order RR's; minr. frac's 5-7/ft @ 75-80° & 40° syn 0.03-0.08" w/ 80's loc x-cutting 40's; w/ Q + marc + py on 40's & $CaCO_3$ ± Q ± ill + marc ± V. minor Tr V.G. 28-50' mod. int. silic decr.↓ + mod. intense alun decr.↓ + mod. arg-T + wk frac chl-T + 1-4% cubic & bladed py-T; clasts are either arg-T + py or py-T + silic; minr frac's 4-10/ft @ 70-90° & 30° 0.05 to 0.35" w/ Q + $CaCO_3$ + ill + marc + py + cpy + SS + Ruby Ag ± f.g. xln V.G. on 70-90° & Q-marc ± ill Ruby Ag ± Tr V.G. on 5-30° strs.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
* 0	5.5	5.5'	.036			
* 5.5	11.0	5.5'	.006			
11	15.0	4.0'	.025			
15	20	5.0'	.047			
20	24	4.0'	.004			
24	28	3.0'	.040			
* 28	33	5.0'	.125		.134 (g)	
* 33	38	5.0'	.043			
* 38	43	5.0'	.041			
* 43	45	2.0'	.762		.836 (g)	
* 45	50	5.0'	.036			

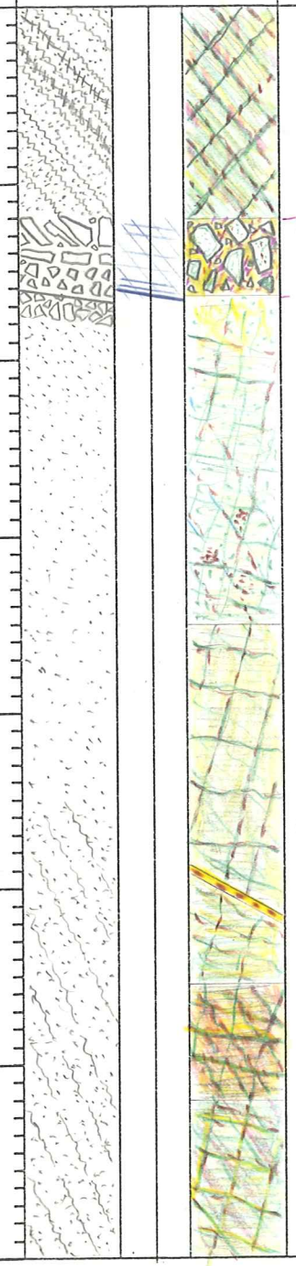
HOLE NUMBER D-76-94 PAGE 2 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		56-63' Lithic tuff breccia: clast-supported, poorly-sorted, angular heterolithic f.g. tephra fragments in a lithic fragment-rich, siliceous, tuffaceous, greenish-brown fine-grained matrix. Shear fabric developed 59-61' & 63-64'. predom. arg + ser ± chl vitroclastic-spheroidal tephra clasts 63-70' Silicified crackle breccia: w/in f.g. massive-bedded vitroclastic airfall? tephra. Clast-supported, angular fragments in a silica-sericite ± chlorite hairline stockwork. porphyritic w/ elongated, chlorite & clear kspar microphenos 70-79.5' Airfall? tephra: finely laminated (wavy), well-sorted, fine-grained. Light green, grey and tan. Wavy-lamination at 30-40°. 79.5-83' silicified tectonic breccia w/in airfall tephra above. 83-95.7' Silicified crackle breccia w/in airfall tephra above. 95.7-115.5' silicified spotted tuff - w/ leopard skin texture, banded @ 40° silica-alunite vesicles in a very-fine-grained argillized matrix. 115.5-132' Interbedded or gradations between wavy-laminated airfall tephra & banded spotted tuff w/ spotted tuff as alteration product of wavy laminated airfall tephra. Laminations at 40°	60 70 80 90 100 110 120		49-59' frac'd w/ 20-30° stx's - minor slicks/or microbx's. 3-10/ft. *CST-22 58-58.55' 59-63.5' s.a.a. 64-79.5' silic. hydrother mal vn bx's @ 25-30° w/in crackle bx. 79.5-83.5' silic. tectonic bx w/ 20-30° & 70° controlling stx's. 83.5-98' silic. crackle bx on 10°, 25°, 65° stx's. 95.7' Silica-flooded Contact @ 30° ⊥ to both wavy-lam. & vesicular tephra lam. *CST-23 101.4-102' -107' 80° vuggy vnlt w/ c.g. yellowish-brn open-space bar intergrown py ft marc w/ f.g. open-space Q overgrowths incr. ↓ g/m chl-T + decr. ↓ g/m arg-T.	50-63' mod to wk silic decr. ↓ + wk alun decr ↓ + mod to mod. int. ser-T + Tr-2% py-T + incr. chl-T ↓ + wk to mod arg-T; minr frac's 7-12/ft @ 80-90° + 5-20° 0.05 to 0.4" w/ f.g. op. sp. Q → ill + py ft + v.f.g. xln v.g. (CaCO3) 63-79.5' int. silic decr. ↓ + wk arg-T + Tr-1% py-T + matrix chl-T + wk alun (as halo's surrounding chl → ill → ser stkwk vnlts) incr. alun band ↓ + incr. arg-T; minr frac's @ 70°, 25°, 10° 0.01-0.15" w/ chl → f.g. Q → ill + py / py ft marc ± CaCO3 ± ss (Tr) 79.5'-83.5' clast alt/minr as above w/ f.g. open-space Q matrix; silic is post-chl/sulf/ill/CaCO3-occurring as vnlt fragments 83.5-95.7' banded mod int. silic / alun / arg-T / chl-T micro vnts / py-T; x-cut by open-space & chalcedonic SiO2 at 60° parallel to lamination & 10-30° x-cutting lam. as syn stkwk; minr frac's 15->30/ft Q ± vnlt frags of chl/ill/sulf bar. (86-87') 95.7-115' intense arg-T of g/m w/ micro hairline SiO2 stkwk, banded SiO2 + alun. ± chl coves; vesicular open-sp. Q; ill clotts w/ f.g. xln v.g. ± f.g. ss.; minr frac's 8-10/ft @ 50° & 10° w/ Q ± brn-rd hem. stn ± chl ± ill ± py ± cpy ± ss + py ft marc. 113-115' v.f.g. xln v.g. & Q/ill interface & on py ft marc surf's. 115-132' strongly banded-lam'd mod. silic + mod. int. arg-T + mod. alun. + wk to mod. int. frac-controlled py-T + frac-controlled; speckled-spotted Chl-T; minr frac's 10-15/ft w/ Chl → brassy py ± ill par to laminations x-cut by 35° ⊥ to lam Q + py ft marc that is x-cut by 35-40° ⊥ to lam Chl → Q → ill + py ft marc + sp' + ss (@ frac intersections)

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
* 50	55	5.0'	.139		.254 (g)	
* 55	59	4.0'	.251		.220 (g)	
* 59	63	4.0'	.475		.350 (g)	
63	68	5.0'	.015			
68	73	5.0'	.004			
73	79.5	6.5'	.005			
79.5	83.5	4.0'	.003			
83.5	88	4.5'	.007			
88	92	4.0'	.008			
92	95.7	3.7'	.013			
95.7	100	4.3'	.010			
** x1 v.g. + ss. 100	105	5.0'	.101			
105	110	5.0'	.067		.070 (g)	
* 110	115	5.0'	.614		.708 (g)	
115	120	5.0'	.029			

HOLE NUMBER D-76-94 PAGE 3 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		132-136.5' Silicified crackle and fault breccia w/in massive bedded fine-grained air-fall tephra; angular fragments w/ minor to strong clast-rotation & weak chloritic alteration halo's in a f. to m. g. open-space Q matrix 136-136.5' Rubbly late-stage brecciation on 80° slick/fractures. Principal frac's @ 40° & 80° 136.5-137.5' Chalcedonic SiO_2 flooded crackle breccia w/ angular clasts-supported fragments of medium green fine-grained dense, moderately hard massive to finely-laminated tephra. Crude/faint lam's @ 40° w/in same tephra below 137.5' 136.5-199' Fine-grained airfall tephra, well to moderately-well sorted, massive to crudely planar-wavy laminated, slightly porphyritic w/ chloritized ferromag? microphenos and equant devitrified pumice lapilli up to 0.35cm Dense, hard medium green 136.5-175.5' Δ ing to light pinkish-grey, cream & pale green ↓ 199'.	130 140 150 160 170 180 190		*CST-24 118.4-119' Ba * CST-25 134.5-135.1' wavy-planar lam @ 30' & 166'	115-132' cont. banded silic/alun/ang-T locally intensified into spotted-leopard skin texture w/ dk grn chl. vesicle cores 132-136.5' fragments: wk to mod. silic + speckled to massive chl-T + wk Tr py-T wk to mod ang-T + Tr alun + faint 1st order chl-tic RR's; matrix f.g. open-space Q + ill + manc + f. to m.g. bar. jug-gy open-space common. 136.5-155' mod. silic decr. ↓ + mod. chl-T as frac-fill & dissem. repl. & g/m + wk ang-T; Tr alun as salvage to units; v.v. wk py-T; min frac's 15-20/ft micro hairline @ 80-90°; 10-15° & 30° w/ chl-SiO_2-ill-manc Δ ↓ to chl-$CaCO_3$-py & manc ± soft chalky sulfate-frac-coatings. py-T localized on frac's & lg. intense 155-175.5' similar to above w/ slightly incr. ang-T + silic + 1% to massive py-T adj. to stx's + silic; incr. sulfate frac-coating; min frac's 10-15/ft @ s.a.a. w/ chl-Q-py ± ill -170.5' 1.5" Q + f. to c. g. py ± ill @ 60° 175.5-182' wk silic + chl-T on lam's & frac's + mod ang-T + wk to mod. alun. + py-T intense adj. to frac's; min stx's 5-10/ft @ 70-80°; 30°; & w/ chl-Q-py-ill 182-191 s.a.a. w/ decr. ↓ silic, alun. + ang-T. & incr. chl-T. → cubic, dimorph py-ohedron

FROM	TO	W	Au	Ag	Au2	Ag2
120	125	5.0	.007		.006	
125	130	5.0'	.006			
130	132	2.0'	.005			
132	136.5	4.5'	.009			
136.5	140	3.5'	.001			
140	145	5.0'	.005			
145	150	5.0'	.001			
150	155	5.0'	<.001			
155	160	5.0'	.005			
160	165	5.0'	.005			
165	169	4.0'	.009			
169	171	2.0'	.005			
171	175.5	4.5'	.003			
175.5	182	6.5'	.003			
182	188	6.0'	.006			

HOLE NUMBER D-76-94 PAGE 4 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2	Ag2
							188	193	5.0	.004			
							193	199	6.0'	.001			
		END OF HOLE @ 199'											

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-76-94 DATE: 10-1-94 LOGGED BY: CBW / RK PAGE 1 OF 2

0–49' Ft. blocks OFF

CORE LAY'D OUT IN BOX BACK-ASS WARD

BLOCKS & BOXES FOOTAGES DO NOT CORRESPOND FOR THE ENTIRE ---HOLE!

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	9	70	92	.65	4	R3	1.4	80°	R	.05" marc-Q-ill	4	419	175	2.39
9	18	103	106	.67	13	R3	1.2	80°	R	s.a.a.	13	280	120	2.33
18	27	92	100	.75	22	R3	0.8	75°	R	s.a.a	22	386.5	162	2.39
27	39	95	100	.77	33	R3	0.5	55°	R	0.05-0.10" ill-Q-py	33	485.6	200	2.43
39	49	79	90	.66	44	R3	0.9	60°	R	0.05-0.2" marc-ill	44	250.5	117	2.14
49	59	25	75	.16	54	R2	2.4	30°	VR	0.1-0.3" bx-ill-marc	54	278.5	120	2.32
59	69	87	100	.80	64	R3	0.5	50°	R	0.05-0.1" ill+marc	64	284.5	120	2.37
69	79	62	105	.43	74	R2	2.7	75°	S	.05-.10" chl-ill-py	74	481	200	2.41
79	89	64	100	.62	84	R3	1.7	60°	R	0.05-0.2" Q-chl-ill-	84	518	210	2.47
89	99	49	95	.42	94	R3	3.1	60°	R	s.a.a.	94	388.5	160	2.43
99	108	90	100	.68	104	R2	1.1	80°	R	ill-marc	104	375	160	2.35

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-76-94 DATE: 10-3-94 LOGGED BY: CBW/RR PAGE 2 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)
108	119	80	90	.75	113	R2	1.0	50°	R	0.1" Q-ill-marc	113	347.5	145	2.40
119	129	92	97	.76	124	R2	1.7	50°	S	0.1" chl-ill-marc	124	414	180	2.3
129	139	83	95	.61	134	R2	1.1	75°	S	0.05" chl-ill	134	511.5	215	2.38
139	149	90	97	.69	144	R3	2.1	65°/30°	S	.01-.05" chl-ca-py	144	541.5	215	2.52
149	159	80	98	.48	154	R3	2.3	85°/20	R/S	s.a.a.	154	462.5	185	2.5
159	169	95	97	.57	164	R2	1.7	80°	S	chl-py±ill	164	431.5	170	2.53
169	179	95	100	.83	174	R2	1.2	65°	S	s.a.a.	174	511.5	215	2.38
179	189	95	100	.68	184	R2	1.0	60°	R	Q-ill-py	184	391	160	2.44
189	199	84	94	.57	194	R2	2.5	65	S	s.a.a.	194	404	165	2.45

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:

Telephone Number: ( ) Fax Number: ( )

Project Name: ROSEBUD Purchase Order Number:

Transport Company: Waybill Number:

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

ANALYSIS REQUIRED

SAMPLE			TYPE	ELEMENTS REQUIRED
D-76-94 0-5.5	68-73	136.5-140	CORE	2 AT FIRE ASSAY
5.5-11.0	73-79.5	140-145		w/ HECLA ROSEBUD
11.0-15.0	79.5-83.5	145-150		CUSTOM PREP
15-20	83.5-88	150-155		
20-24	88-92	155-160		* GRAV FINISH ON ALL
24-28	92-95.7	160-165		
28-33	95.7-100	165-169		Au ≥ 0.05 opt
33-38	100-105	169-171		
38-43	105-110	171-175.5		
43-45	110-115	175.5-182		
45-50	115-120	182-188		
50-55	120-125	188-193		
55-59	125-130	193-199		
59-63	130-132			
63-68	132-136.5			

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-76-94

LABORATORY JOB No. : SP031229

SAMPLE TYPE :

RECEIVED : 10 OCT 1994

REPORTED : 2 NOV 1994

No. SAMPLES : 43

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

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-76-94
JOB NUMBER : SP031229
REPORTED : 2 NOV 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT
D-76-94 000-5.5	0.036		
D-76-94 5.5-11	0.006		
D-76-94 11-15	0.025		
D-76-94 15-20	0.047		
D-76-94 20-24	0.004		
D-76-94 24-28	0.040		
D-76-94 28-33	0.125		0.134
D-76-94 33-38	0.043		
D-76-94 38-43	0.041		
D-76-94 43-45	0.762		0.836
D-76-94 45-50	0.036		
D-76-94 50-55	0.139		0.254
D-76-94 55-59	0.251		0.220
D-76-94 59-63	0.475		0.350
D-76-94 63-68	0.015		
D-76-94 68-73	0.004		
D-76-94 73-79.5	0.005		
D-76-94 79.5-83.5	0.003		
D-76-94 83.5-88	0.007		
D-76-94 88-92	0.008		
D-76-94 92-95.7	0.013		
D-76-94 95.7-100	0.010		
D-76-94 100-105	0.101		
D-76-94 105-110	0.067		0.070
D-76-94 110-115	0.614		0.708

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-76-94
JOB NUMBER : SP031229
REPORTED : 2 NOV 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	AuGRAV GRAV OPT
D-76-94 115-120	0.029		
D-76-94 120-125	0.007	0.006	
D-76-94 125-130	0.006		
D-76-94 130-132	0.005		
D-76-94 132-136.5	0.009		
D-76-94 136.5-140	0.001		
D-76-94 140-145	0.005		
D-76-94 145-150	0.001		
D-76-94 150-155	<0.001		
D-76-94 155-160	0.005		
D-76-94 160-165	0.005		
D-76-94 165-169	0.009		
D-76-94 169-171	0.005		
D-76-94 171-175.5	0.003		
D-76-94 175.5-182	0.003		
D-76-94 182-188	0.006		
D-76-94 188-193	0.004		
D-76-94 193-199	0.001		