6000817

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-14-94
AUTHOR	C. Winchester; C. Muerhoff; S. Faircloth
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 220' receipt; handwritten notes 10p

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-14-94

6000 0817
4010

60000817

Hecla
MINING COMPANY

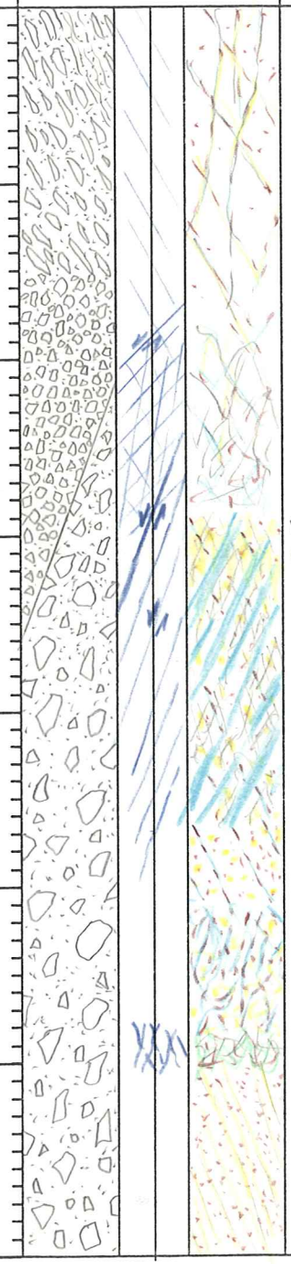
ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-14-94	LOCATION	South Zone	REMARKS	ORIENTATIONS STATED AS
PAGE 1 OF	4	NORTHING	2203496.0		∡ TO CORE AXIS; CORE PHOTO'D; WHOLE
DATE	8-29-94	EASTING	481407.5		CORE ASSAY SAMPLES; COLLAR LOC. DRILL
LOGGED BY	C.B. WINETEER	ELEVATION	4731.6		STATION NO. 6; SECTION 350 N,
SCALE	1" = 10'	AZIMUTH	133°		
TOTAL DEPTH	220'	INCLINATION	+75°		

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0-31' Lithic tuff and fine grained tuff, interbedded. Fine-grained, flow-laminated dense, mod. hard, well-sorted waterlain tuff interbedded w/ lithic tuff w/ siliceous f.g. tuffaceous matrix & elongated tuff clasts, mod to strongly flow-laminated.	10 20 30 40 50		0-2' Frac'd cradele bx & fault bx ∡ to slich @25° 2-4.5' Densely frac'd @70° & 25° flow-lam. @50° 9-11' post $CaCO_3$ + sulf slicks @70° 13-16.5' Frac'd cradele bx ∡ to fault bx on 40° slicks 16.5-23' post sulf concave & convex slicks at variety of angles densely frac'd 23-32' post sulf slicks @ 10° & 50° (bd plane) mod. density decv. ∡ flow-lam. @15°-25° 32-37' Mod. density bd plane joints @30° w/ ill 37-45' $CaCO_3$ + sulf + ill ± post min'l. slicks @25° 45-69' Minor $CaCO_3$ + sulf ± post min'l. slicks @30°	0-16.5' dense hard siliceous ground mass, only slightly greater avg. & lithic frags, py-ization (Tr-1%) in py clotts .03-.075" along bdd planes; chl + $CaCO_3$ m-frac's, 1-3/ft. 50° $CaCO_3$ + py/marc .01" on bd. planes. 16.5-28' Siliceous, dense, hard ground mass, weakly avg. clasts no RR's; v. wk py-ization (Tr) chl ± $CaCO_3$ ± ill ± py on frac's. & v. wk stn of g.m./clasts. py w/ chl. is brassy; brassy py ∡ bladed sulf in $CaCO_3$ + ill 28-79' Wk silic. g.m., wk to mod. avg. clasts; wk py-ization (1-2%); wk chl ± $CaCO_3$ ± sulf. on frac's.; 2-5/ft. 0.05-0.10" @ 5°; 20-30° $CaCO_3$ ± ill ± f.g. open-sp. Q + soot + py ∡ pseudo hexagonal sulf.
		31-79' Flow-laminated, coarse-grained (clasts) poorly-sorted, matrix-supported lithic tuff breccia and lithic tuff. Angular f.g. flow-laminated tephra/tuff fragments in a f.g. tuffaceous matrix. Flow-lamination at 25°				

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
0	5	5.0'	.001	.08		
5	10	5.0'	<.001	<.02		
10	15	5.0'	.004	.07		
15	20	5.0'	.002	.02		
20	25	5.0'	.001	.05		
25	30	5.0'	.001	.03		
30	35	5.0'	.023	.04		
35	40	5.0'	.006	.04		
40	45	5.0'	.047	.19		
45	50	5.0'	.038	.07		

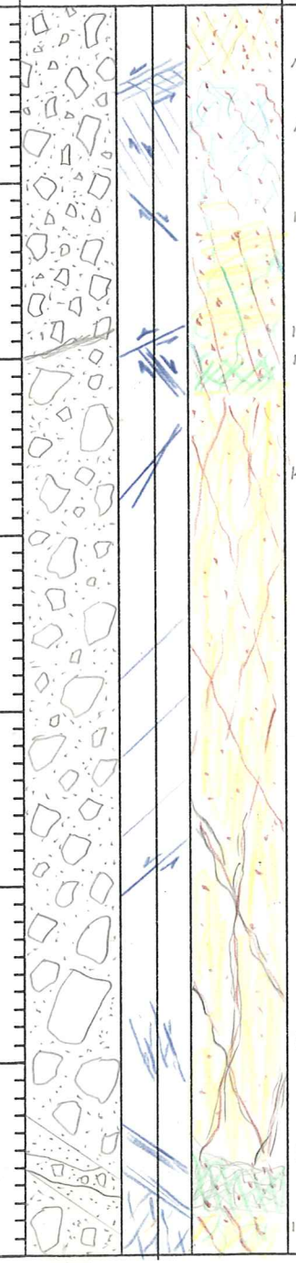
HOLE NUMBER D-14-94 PAGE 2 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		65-79 moderate-sorted, finer clast size; matrix-supported lithic tuff breccia	60			
			70		69-79' Mod. dense frac-slicks @ 40-45°; 15° & <30'	69-79 discont. $CaCO_3$+ill+chl+py vnlts x-cut by slicks.
		79-140' Massive-bedded, poorly-sorted, coarse-grained (clasts), matrix & locally clast-supported lithic tuff breccia. Angular, fine-grained, planar-laminated and massive tephra/tuff clasts (variable argillic &/or silicification &/or pyritization) in a fine-grained argillized tuffaceous matrix	80		Fault-slicked contact @ 20° 79-97' $CaCO_3$+ill+bar ± py flooded fault contact. Frac's, slicks & $CaCO_3$ vnlts @ 20'	79-97' Mod silic & loc. mod. arg. g.m.; mod to intense arg. clasts + mod intense silic. clasts, 1st order RR's; 0.01-0.1" $CaCO_3$ + py ft marc. @ 30-35° x-cut by c. xln. open-space $CaCO_3$ ± c. xln dol @ 20°; smec clay in stkwk; py-i? 2-3% v.f.g. diss. cubic py.
			90			
			100			97-101' S.A.A. w/out 20° $CaCO_3$ vns. 101-109 S.A.A. w/ $CaCO_3$ ± f.g. py stkwk - carbonate-flooded cradle bx
			110		108-110' Moderate density frac'ing w/ med. grass green chl clay slicks @ 15°-irregr	109-124' Mod. silic. g.m.; mod arg. clasts /or mod. to intense silic. clasts.; 2nd & loc. 3rd order RR's; mod. py-i? (3-6%) diss. f. to m. gr cubic py; loc. 4th order RR's; loc. pervasive pink micro hairline stringer stkwk. No other prominent vnlts.
			120			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
50	55	5.0'	.004	.03		
55	60	5.0'	.001	<.02		
60	65	5.0'	<.001	<.02		
65	70	5.0'	<.001	<.02		
70	75	5.0'	.001	.02		
75	79	4.0'	<.001	.02		
79	84	5.0'	.004	<.02		
84	89	5.0'	.007	.02		
89	94	5.0'	.003	<.02		
94	97	3.0'	.002	.03		
97	102	5.0'	.012	.05		
102	107	5.0'	.042	.23	.036	
107	110	3.0'	.001	.03		
110	115	5.0'	.001	<.02		
115	120	5.0	<.001	<.02		

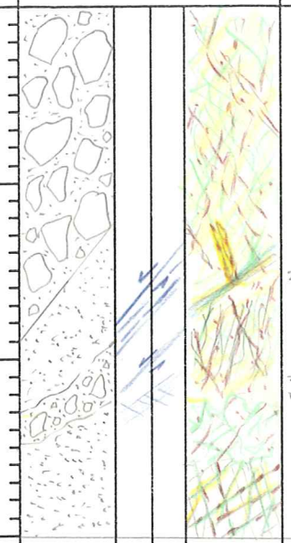
HOLE NUMBER D-14-94 PAGE 3 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		140-206' Very coarse-grained, poorly-sorted, massive bedded, matrix-supported, hetero-lithic lithic tuff breccia.	130, 140, 150, 160, 170, 180, 190		124-125 frac'd rubble zone w/ 70° & 45-50° slicks. 125-130' Slicks @ 30° w/ micro-bx 1-2/ft. 132' slick & micro bx @ 45' 139' slick & micro bx @ 65° 140-140.5' Slick w/clay & microbx @ 40° 146' Slicks bounding arg. alt f.g. tephra/tuff clast @ 30 & 40° 155-170' frac's @ 50°, occ. slicked. 177-178 Rubbly frac'd. 185-188' Slicks @ 55° w/in massive f.g. arg & chl. tephra thin unit - bed c.a. in D-15-94 188-190' frac's - irreg @ 35° & 5°.	124-132' Wk silic. g.m.; wk to mod. arg. clasts, wk py-iz (Tr-2%); $CaCO_3$ vnlts & flooding; py coated irreg. frac's @ 30' 132-142' Mod. silic. g.m.; mod. arg & pref. py-iz. clasts; 1st order RR.; py iz (1-4%) cubic. f.g. diss py w/ diss. bladed manc. 140-142' sulf-rich; $CaCO_3$ + py @ 20' @ 0.5/ft.; v. wk chl. w/ frac's ↓ to 140', mod. strong chl. on frac's & in g.m 140-142' 142-185' mod. intense silic. + arg. of g.m. & clasts; pref. py-iz. of clasts; clasts are either silic or arg. + py / manc repl. py-iz 1-3%, patchy, mottled chl. arg. of g.m. & clasts w/ clasts more intensely chl. than g.m.; py & manc microvnlts @ 20° & 5° x-cutting chl. + py str. 1-2/ft. 0.05-0.10" incr. ill w/ py & manc I manc. downward 185-188 vitroclastic f.g. airfall tephra/tuff w/ texture of soapstone; intense arg. alt w/ chl. frac stkwk wk py-iz'ation (Tr-1%

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
120	125	5.0'	.006	.27		
125	130	5.0'	.011	.74		
130	134	4.0'	.004	.07		
134	138	4.0'	.007	.13		
138	142	4.0'	.019	1.11	.017	
142	147	5.0'	.003	.10		
147	152	5.0'	.005	.12		
152	157	5.0'	.012	.14		
157	162	5.0'	.010	.13		
162	167	5.0'	.007	.12		
167	172	5.0'	.014	.14	.015	
172	177	5.0'	.005	.09		
177	181	4.0'	.005	.11		
181	185	4.0'	.003	.07	.004	
185	188	3.0'	.005	.10		
188	193	5.0'	.003	.03		

HOLE NUMBER D-14-94 PAGE 4 OF 4

%REC	RQD	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		206-213' Fine-grained, well-sorted, massive-bedded aug. alt.; Frac'd crackle breccia 206-210' airfall tephra 213-214.5' Coarse-grained tuff breccia w/ c. clasts of f.g. massive-bedded airfall tephra frac'd contacts & unkn. 214.5-220'	200 210 220		206-207.5' Frac'd + slicks 40' — Crackle bx 213'-214' rubbly frac'd	188-206' Mod. silic. g.m., mod to intensely aug. clasts no to 1st order KR's; py-i). wk (Tr-1%); patchy-mottled chl. alt in g.m. pref chl. ct in clasts 203-206' highly vuggy frac @ 10° w/ open-sp. f.g. Q+py+more, 1-3/ft. py ± ill stretch. mark (dilulation) str. @ 10° & 30° 206-213' mod silic. of matrix + mod intense aug.; wk py-i) (Tr-1%); wk chl. microhairline str.; minor discont. 5° & 35° ill + py (segregated) microstr. 213-214.5' S.A.A. in 188-206' 214.5-220' mod. dense frac's w/ ill + py + musc + chl + open-sp. f.g. Q in wk silic mod int. aug. + mod to wk chl. + wk py-i) (Tr-1%)
		END OF HOLE @ 220'				

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ag2
193	198	5.0'	.002	.05		
198	203	5.0'	.002	.04		
203	207	4.0'	.006	.05		
207	211	4.0'	.002	.03		
211	216	4.0'	.005	.08		
216	220	4.0'	.010	.10		

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-14-94 DATE: Aug 29, 1994 LOGGED BY: Rodney Keller, C.B. WINETEER 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	5	30	73	.10	No MAT. SUITABLE		>10/ft	50° 15°	R S	.05" green clay ± sulf. green clay + $CaCO_3$ + sulf				
5	10	83	93	.70	6.1'	60000	2/ft	40° 60°	R S	.05" green clay + sulf.				
10	15	84	93	.46	11.8'	3675	1.5/ft	45°	R	.05" clay + sulf.				
15	20	47	88	.27	16.5'	3800	4/ft.	45°	S	.05" clay ± sulf.				
20	28	42	80	.34	23.7'	1590	4.3/ft.	15°	S	.05" pale green clay				
28	35	86	97	.55	34.2'	3900	1.8/ft.	40°	S	.01" pale green clay ± ill				
35	45	87	90	.54	41.0'	3300	1.0	25°	S	.05" pale green clay, $CaCO_3$ ± ill ± sulf.				
45	55	88	93	.77	46.7'	3500	0.5	15°	S	.01 $CaCO_3$ ± pale green clay				
55	65	97	97	.76	58.5'	1500	0.2	30°	S	.01 pale green clay				
65	75	68	88	.40	68'	1800	0.8	45° 10°	S S	.01 clay				
75	85	79	84	.50	83	2775	1.0	25°	V	.05 clay				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-14-94 DATE: Aug 29, 1994 LOGGED BY: R.K. 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)
85	93	64	75	.19	No mat. Suitable.		1.0	25°	S	0.05-0.1" clay				
93	100	93	98	.47	97.0'	1600	1.0	30°	K	.05" pale green clay w/ R&G.				
100	110	78	86	.50	109'	3975	1.2	75°	S	.005" sulf.				
110	120	93	94	.78	114.4'	3600	.30	45°	K-S irreg.	.01" pale green clay				
120	130	85	88	.71	124	1875	.60	50°	R	.05" $CaCO_3$ + pale grn clay.				
130	140	92	97	.90	134.8	3000	.30	65°	R	.01" Py + $CaCO_3$				
140	150	88	95	.84	145.8	2550	.30	60°	S	.01 grn clay				
150	160	90	94	.81	154.2	1650	.55	45°	R	.01" marcasite				
160	170	89	93	.81	164	1800	.45	50°	K-R slicks w/ R&G	.01" green clay sulf.				
170	180	67	82	.57	171.5	1500	.60	15°	S	.05" py-marcasite				
180	190	62	82	.49	185.5	1500	1.0	25°	S	.01-.05" py-marcasite				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-14-94 DATE: Aug 30, 1994 LOGGED BY: RK PAGE 3 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)
190	200	84	89	.70	196	1800	.70	30°	S	.01-.05" py-marc-green clay gouge				
200	210	79	89	.61	201.7	1500	.30	40°	S	.05"-.10" ill+green clay+marc.				
210	220	59	79	.38	No Material	Suitable	+1.5	20°	S	.05-.10 ill-green chl. clay-marc				

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-14-94
LABORATORY JOB No. : SP030762
SAMPLE TYPE :

RECEIVED : 6 SEP 1994
REPORTED : 14 SEP 1994
No. SAMPLES : 47

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 : D-14-94
JOB NUMBER : SP030762
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
D-14-94 00-05	0.001		0.08
D-14-94 05-10	<0.001		<0.02
D-14-94 10-15	0.004		0.07
D-14-94 15-20	0.002		0.02
D-14-94 20-25	0.001		0.05
D-14-94 25-30	0.001		0.03
D-14-94 30-35	0.023		0.04
D-14-94 35-40	0.006		0.04
D-14-94 40-45	0.047		0.19
D-14-94 45-50	0.038		0.07
D-14-94 50-55	0.004		0.03
D-14-94 55-60	0.001		<0.02
D-14-94 60-65	<0.001		<0.02
D-14-94 65-70	<0.001		<0.02
D-14-94 70-75	0.001		0.02
D-14-94 75-79	<0.001		0.02
D-14-94 79-84	0.004		<0.02
D-14-94 84-89	0.007		0.02
D-14-94 89-94	0.003		<0.02
D-14-94 94-97	0.002		0.03
D-14-94 97-102	0.012		0.05
D-14-94 102-107	0.042	0.036	0.23
D-14-94 107-110	0.001		0.03
D-14-94 110-115	0.001		<0.02
D-14-94 115-120	<0.001		<0.02

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-14-94
JOB NUMBER : SP030762
REPORTED : 14 SEP 1994

SAMPLES	Au(OZ) FA60 OPT	Au(RZ) FA60 OPT	Ag(OZ) D210 OPT
D-14-94 120-125	0.006		0.27
D-14-94 125-130	0.011		0.74
D-14-94 130-134	0.004		0.07
D-14-94 134-138	0.007		0.13
D-14-94 138-142	0.019	0.017	1.11
D-14-94 142-147	0.003		0.10
D-14-94 147-152	0.005		0.12
D-14-94 152-157	0.012		0.14
D-14-94 157-162	0.010		0.13
D-14-94 162-167	0.007		0.12
D-14-94 167-172	0.014	0.015	0.14
D-14-94 172-177	0.005		0.09
D-14-94 177-181	0.005		0.11
D-14-94 181-185	0.003	0.004	0.07
D-14-94 185-188	0.005		0.10
D-14-94 188-193	0.003		0.03
D-14-94 193-198	0.002		0.05
D-14-94 198-203	0.002		0.04
D-14-94 203-207	0.006		0.05
D-14-94 207-211	0.002		0.03
D-14-94 211-216	0.005		0.08
D-14-94 216-220	0.010		0.10

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: 47 [ ] Prepaid [ ] Collect

8-30-94

ANALYSIS REQUIRED

SAMPLE			TYPE	ELEMENTS REQUIRED
D-14-94 0-5	75-79	142-147	CORE	2 AT FIRE ASSAY Au & Ag
5-10	79-84	147-152		* w/ HECLA ROSEBUD
10-15	84-89	152-157		CUSTOM PREP
15-20	89-94	157-162		
20-25	94-97	162-167		
25-30	97-102	167-172		* GRAV FINISH ON ALL
30-35	102-107	172-177		Au ≥ 0.05 opt
35-40	107-110	177-181		
40-45	110-115	181-185		
45-50	115-120	185-188		
50-55	120-125	188-193		
55-60	125-130	193-198		
60-65	130-134	198-203		
65-70	134-138	203-207		
70-75	138-142	207-211		
		211-216		
		216-220		

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:

GB / sf

CLIENT FILE COPY