6000 0793

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. MW-7
AUTHOR	W. Hanson; 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 Hecla-Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; geology; assay; total depth 900' receipt; handwritten notes 15 pgs

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 4/30/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

MW-7 (#5)

60000793
4010

6000 0793

MONITORING WELL INSTALLATION SHEET

JOB NO. Hecla - Rosebud Project

PIEZOMETER NO. P- MW-7

LOCATION: NE 1/4, NW 1/4, Sec 19, T34N, R30E

DATE OF INSTALLATION: 6/1/94

TOTAL DEPTH: 900'

PIEZOMETER TYPE: observation well

ELEVATION OF THE PIPE TOP: ~5382.7'

ELEVATION OF THE TIP: Not surveyed yet

ELEVATION OF THE GROUND SURFACE: ~5380

WATER LEVEL AT ~~COMPLETION~~: 6/2/94
DEPTH (FT.): 194' @ top of 2" casing
ELEVATION (FT.): ~5188.7'

FLUSHING OF THE HOLE: airlift

PROTECTION STEEL CASING:
O. D.: 6"
FROM: -1.8'
TO: +3.2'

CLIENT: Hecla Mining Company

DRILLING CONTRACTOR: Humboldt Drilling

FIELD ENGINEER: W. Hanson

DRILLING SYSTEM: RC

DRILLING TOOLS: 5 1/2" hammer

PIPE MATERIAL: PVC O.D. 2" I.D. schedule 80

LENGTH OF SECTIONS: 20'

JOINING METHOD: screw

PERFORATION TYPE: 0.020 slotted

SIZE OF SLOTS: 0.020 NO. OF SLOTS:

PERFORATED AREA: 20'

NON PERFORATED PIPES: FROM: +2.7' TO: -495'

PERFORATED PIPES: FROM: 495' TO: 515'

GRAVEL PACK: FROM: 470' TO: 515'

TYPE AND DEPTH OF SEALING: bentonite
@ 435' - 447'
@ 523' - 535'

HYDRO-GEO CONSULTANTS

OWNER: HECLA MINING COMPANY

PROJECT: ROSEBUD

LOCATION: NE 1/4, NW 1/4, SEC 19, T34N, R30E

COORDINATES: N _____ E _____ ELEV. _____ (NOT SURVEY YET)

BORING NO. MW-7

TYPE OF DRILLING: RC

ANGLE FROM HORIZONTAL: -90°

PAGE 1 OF 6

MW-7

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%)	FRACTURES PER FOOT	WEATHERING	SOIL DELLEW	STRENGTH	SOIL DELLEW	SAMPLE INTERVAL	ANALYTICAL Au (opt)	ANALYTICAL Ag (opt)	Au checks
		0-2' OVERBURDEN									0-10	.001	.10	
		CHOCOLATE TUFF. OXIDIZED, SILICIFIED, FINE-GRAIN TUFF. HEMATITIC W/ LIMONITE & GOETHITE ON FRACTURE SURFACES		CEMENT SEAL							10-20	<.001	.04	
20											20-30	<.001	.04	
											30-40	<.001	<.02	
40											40-50	<.001	<.02	<.001
				2" SCHEDULE 80 BLANK CASING							50-60	.003	<.02	
60											60-70	<.001	<.02	
											70-80	.003	.02	
80				GRAVEL BACKFILL							80-90	<.001	.02	
											90-100	.001	.04	
100											100-110	.001	.07	
											110-120	.001	.06	
120											120-130	<.001	.04	
		BUD TUFF. STRONGLY BLEACHED & ARGILLIZED V. FINE GRAIN TUFF W/ < 1/2% MAFICS (HORNBLENDE ± BIOTITE) & SPORADIC AGGLOMERATIONS OF FINE-GRAIN PYRITE. CRYSTAL- & LITHIC POOR									130-140	<.001	.04	
140											140-150	<.001	.06	
											150-160	.001	.04	
160														

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER
PROJECT
LOCATION
COORDINATES N E ELEV.

BORING NO. MW-7
TYPE OF DRILLING
ANGLE FROM HORIZONTAL
PAGE 2 OF 6

MW-7

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%)	FRACTURES PER FOOT	WEATHERING	WELL DELL(W)	STRENGTH	WELL DELL(W)	OTHER DATA: Sample Interval	Analytical: Au(opt)	Ag(opt)
		BLEACHED, ARGILLIZED VFG TUFF CONTINUES									160-170	.001	.03
											170-180	<.001	.04
180											180-190	.001	.04
				8" SCREEN BLANK CASING							190-200	.002	.05
200											200-210	.001	.06
											210-220	.001	.06
220				GRAVEL BACKFILL							220-230	.001	.05
240			First water @ 240' (<1gpm)								230-240	<.001	.05
											240-250	<.001	.03
260											250-260	.001	.03
		@ 270', INCREASING DISSEMINATED EUHEDRAL PYRITE.									260-270	.001	.03
280											270-280	.001	.03
											280-290	<.001	<.02
300		BUD TUFF. DISTINCT LIGHT TO MEDIUM GREEN COLOR. OCCASSIONAL ARGILLIZED K-SPAR PHENOS ± 10% VFM-SIZE SUB-ROUNDED LITHIC FRAGMENTS. ALSO OCCASSIONAL FLATTENED PUMICE FIAMME'.									290-300	<.001	<.02
											300-310	<.001	.03
320			TEST #1 @320', 13gpm								310-320	<.001	.03

Au checks

<.001

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER
PROJECT
LOCATION
COORDINATES N E ELEV.

BORING NO. MW-1
TYPE OF DRILLING
ANGLE FROM HORIZONTAL
PAGE 3 OF 6

MW-7

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%)	FRACTURES PER FOOT	WEATHERING	STRENGTH	Sample Interval	Analytical Au(opt)	Analytical Ag(opt)
		GREEN BOD TUFF CONTINUES.		2" SCHEDULE 80 BLANK CASING					320-330	.008	.04
									330-340	.005	.05
340			TEST #2 @340', 15gpm						340-350	.001	.02
		@350' BEGIN TO SEE OCCASSIONAL FRAGMENTS OF Cu-RICH PYRITE AGGLOMERATIONS. & INCREASE OF LITHIC FRAGMENTS.							350-360	.002	.02
360			TEST #3 @360', 14gpm	GRAVEL BACKFILL					360-370	<.001	<.02
									370-380		.02
380			TEST #4 @380', 18gpm						380-390		.03
									390-400		.03
400		TUFF BECOMING INCREASINGLY ALBITIZED W/ DEPTH ↓	TEST #5 @400', 22gpm						400-410	<.001	.06
420			TEST #6 @420', 18gpm						410-420	.008	.07
									420-430	<.001	.04
440			TEST #7 @440', 25gpm	UPPER BENTONITE SEAL					430-440	.001	.04
									440-450	.004	.09
460			TEST #8 @460', 39gpm	SILICA SAND					450-460	.029	.34
									460-470	.010	.15
480			TEST #9 @480', 50gpm	GRAVEL					470-480	.007	.11

Au checks

.001

begin to see mildly anomalous values

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION

COORDINATES N E ELEV.

BORING NO. MW-7

TYPE OF DRILLING

ANGLE FROM HORIZONTAL

PAGE 4 OF 6

MW-7

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS
		BUD TUFF CONTINUES @ 490 INCREASING PYRITE CONTENT → OCCURS DISSEMINATED IN TUFF FRAGMENTS & AS EUHEDRAL AGGLOMERATIONS.	TEST #10 @500', 50gpm
500		INCREASING CHLORITIZATION OF MAFICS ↓	TEST #11 @520', 50gpm
520			
540		@540', BEGIN TO SEE OCCASSIONAL QUARTZ GRAINS. ↓	TEST #12 @540', 60gpm
560			TEST #13 @560', 60gpm
580			TEST #14 @580', 60gpm
		LOWER BUD TUFF (?) EXTREMELY FINE-GRAIN, BUFF COLORED, LITHIC & CRYSTAL POOR TUFF. ~10% OF CHIPS ARE DARK GREEN (CHLORITE). ABUNDANT AGGLOMERATIONS OF PYRITE ± MARCASITE.	TEST #15 @600', 60gpm
600			TEST #16 @620', 60gpm
620			TEST #17 @640', 60gpm
640			

WELL CONSTRUCTION: 2" SCHEDULE 80 BLANK CASING; 2" SCHEDULE 80 0.02 SLOTTED PVC; SILICA SAND; LOWER BENTONITE SEAL; GRAVEL BACKFILL

RQD (%): 25 50 75

FRACTURES PER FOOT: 3 10 27

WEATHERING (SEE BELOW): XW HW MW SW FR

STRENGTH (SEE BELOW): VW W MS S VS

OTHER DATA

Sample Interval	Analytical Au (opt)	Analytical Ag (opt)	Au checks
480-490	.012	.17	
490-500	.027	.11	.025
500-510	.003	.10	
510-520	.003	.05	
520-530	.002	.04	
530-540	.004	.07	
540-550	.003	.17	
550-560	.020	.19	
560-570	.056	.23	
570-580	.024	.15	
580-590	.006	.04	
590-600	.022	.11	
600-610	.005	.07	
610-620	.077	.21	
620-630	.036	.13	
630-640	AVG .429	.74	.417 .440

@ .181, .36

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION:

COORDINATES N. E. ELEV.

BORING NO. MW-7

TYPE OF DRILLING:

ANGLE FROM HORIZONTAL

PAGE 5 OF 6

MW-7

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%) 25 50 75	FRACTURES PER FOOT 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Sample Interval	Analytical Au(opt)	Analytical Ag(opt)
		LBT CONTINUES.							640-650	.035	.29
									650-660	.032	.12
660			TEST #18 @660', 60 gpm						660-670	.002	.10
									670-680	.008	.15
680			TEST #19 @680', 60 gpm						680-690	.026	.29
									690-700	.003	.06
700			TEST #20 @700', 60 gpm		GRAVEL BACKFILL				700-710	.019	.14
									710-720	.035	.31
720			TEST #21 @720', 60 gpm						720-730	.052	.14
									730-740	.061	.23
740			TEST #22 @740', 60 gpm						740-750	.066	1.02
									750-760	.067	.15
760			TEST #23 @760', 60 gpm						760-770	.081	.23
780		@ 780 & BELOW, APPROXIMATELY 15-20% OF SAMPLE CONSISTS OF QUARTZ GRAINS. (VEINING/STKWORK AS QUARTZ IS NOT WITHIN TUFF FRAGMENTS)	TEST #24 @780', 60 gpm						770-780	.044	.17
									780-790	.036	.12
800			TEST #25 @800', 60 gpm						790-800	.020	.10

An Checks

50' @ 0.045, 0.35

XW HW MW SW FR

VW W MS S VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

OWNER

PROJECT

LOCATION

COORDINATES N. E. ELEV.

BORING NO. MW-1

TYPE OF DRILLING

ANGLE FROM HORIZONTAL

PAGE 6 OF 6

MW-1

ELEVATION / DEPTH	GRAPHIC LOG	DESCRIPTION OF ROCK MATERIAL	DESCRIPTION OF ROCK DEFECTS	WELL CONSTRUCTION	RQD (%) 25 50 75	FRACTURES PER FOOT 1 3 9 27	WEATHERING (SEE BELOW)	STRENGTH (SEE BELOW)	OTHER DATA: Sample Interval	Analytical: Au (opt)	Analytical: Ag (opt)	Au Checks
		LBT CONTINUES							800-810	.084	.12	
		@ 810' COLOR CHANGES TO DULL GREY.							810-820	.830	.45	
820			TEST #26 @820', 60gpm						820-830	.225	.26	
									830-840	.739 AVG	.89	.723 .754
840			TEST #27 @840', 60gpm						840-850	.382	.48	
				GRAVEL BACKFILL					850-860	.478	.66	90' @ .493, .59
860			TEST #28 @860', 60gpm						860-870	1.507	1.94	
		Gradational							870-880	.103	.21	
880		@ 880' COLOR CHANGES TO LIGHT GREEN TO BUFF. LOSES QUARTZ & SULFIDE CONTENT. BECOMES LITHIC RICH.	TEST #29 @880', 60gpm						880-890	.091	.26	
			TEST #30 @900, 60gpm						890-900	.013	.07	
900		T.D. 900'										

XW — VW
HW — W
MW — MS
SW — S
FR — VS

LOG OF BORING

HYDRO-GEO CONSULTANTS

Sheet ____ of ____

HISTORY OF HOLE

Job # ____ Date MAY 25/94 Boring # MW7

ologist W. HANSON Weather SUNNY Temperature 75° °F

iller JEFF Surface Elevation ____ Depth ____ to ____

ntractor HUMBOLT Drill Fluid ____ Casing Size 6 5/8" Core Size 4"

cation ROSEBURG Type of Barrel ____

BEGINNING OF SHIFT	END OF SHIFT
me ____ Depth of Hole ____	Time ____ Hrs. Productive ____ Hrs. Delayed ____
epth to WL ____ Depth to Casing ____	Depth of Hole ____ Depth of Casing ____ Depth to WL ____

MW7 24/05/94

10:30 - 11:30 AM - MOVE RIG MW6 - MW7

11:30AM - 12:30PM - SET 20' CSG IN CEMENT

12:30 - 2:00 PM - ALLOW CONCRETE TO SET

2:00 PM START DRILLING

0' - 130' - BRN/GRAY DENSE TFF MED CLAY ALT

6:30 PM 240' EOS HIT WATER < 1 gpm

130' - 240' DENSE - PALE GRAY W LIG CLAY ALT

25/05/94

1:00 AM START DRILLING 240 - 250' MOIST CLAYS - NOT ENOUGH RETURN

6:25 AM 300' WT 18 gpm @ 120 PSI DOWNHOLE ROCK CHANGE @ 280'

TO BLUE TFF BLUE/GREEN TR PY

6:55 AM 320' WT 13 gpm @ 120 PSI DOWNHOLE

7:30 AM 340' WT 15 gpm @ 125 PSI DOWNHOLE

7:56 AM 360' WT 14 gpm @ 125 PSI

8:25 AM 380' WT 18 gpm @ 125 PSI

8:40 AM 400' WT 22 gpm @ 125 PSI

9:00 AM 420' WT 18 gpm @ 125 PSI

9:25 AM 440' WT 25 gpm @ 125 PSI

9:43 AM 460' WT 38 gpm @ 150 PSI

10:08 AM 480' WT 50 gpm @ 225 PSI

10:30 AM 500' WT 50 gpm @ 250 PSI

11:05 AM 520' WT 50 gpm @ 200 PSI

11:37 AM 540 WT 60 gpm @ 200 PSI

11:37 - 4:00 PM - TROUBLE W BIT & RIG - BIT PLUGGED - TRIP IN & OUT OF HOLE

4:35 PM 540' WT 60 gpm @ 200 PSI

4:35 PM - 7:00 PM - GO TO LOAD PIPE TO FINISH HOLE

END OF SHIFT

~~7:43 AM 580' WT 60 gpm @ 177 PSI E.O.S.~~

25/05/94 SUNNY CLEAR HOT

MW7

6:30 AM - 7:00 AM GEAR UP

7:43 AM 580' WT 60 gpm @ 177 PSI

9:04 AM 600' WT 60 gpm @ 200 PSI

10:55 AM 620' WT 60 gpm @ 200 PSI

11:30 AM 640' WT 60 gpm @ 200 PSI

12:06 PM 660' WT 60 gpm @ 250 PSI

12:30 PM 680' WT 60 gpm @ 250 PSI

12:40 PM DRILL B/O - POP VOFF VALVE JAMMED

2:03 PM 700' WT 60 gpm @ 250 PSI

2:30 PM DOWN FOR BIT CHANGE

6:30 PM END OF SHIFT

Checked by:

HISTORY OF HOLE

[redacted] Sheet ___ of ___

Job # ___ Date May 27/94 Boring # ___

ologist W.H Weather Sunny / Clear Temperature ___ °F

iller Jeff Surface Elevation ___ Depth ___ to ___

ntractor Humboldt Drill Fluid None Casing Size 6 5/8 Core Size 4

cation Rancho Type of Barrel ___

BEGINNING OF SHIFT

me ___ Depth of Hole ___

pth to WL ___ Depth to Casing ___

END OF SHIFT

Time ___ Hrs. Productive ___ Hrs. Delayed ___

Depth of Hole ___ Depth of Casing ___ Depth to WL ___

27/05/94 MW7

7:00 AM - 9:30 pm - TRIPP RODS INTO HOLE

10:15 pm 720' WT = 60 gpm @ 250 PSI

11:10 am 740' WT = 60 gpm @ 225 PSI

11:50 am 760' WT = 60 gpm @ 225 PSI

12:35 pm 780' WT = 60 gpm @ 225 PSI

1:25 pm 800' WT = 60 gpm @ 225 PSI

1:55 pm 820 WT = 60 gpm @ 225 PSI

2:05 pm 840 WT = 60 gpm @ 225 PSI

3:20 pm 860 WT = 60 gpm @ 225 PSI

3:30 pm 880 WT = 60 gpm @ 225 PSI

4:15 pm 900 WT = 60 gpm @ 225 PSI EOS

31/05/94 MW7

11:00 AM - BEGIN FILLING HOLE W GRAVEL TO DEPTH OF 535

12:45 pm - COMPLETED 535

12:50 pm - BEGIN PUMPING PELLETS TO 523' - COMPLETED @ 1:00 PM

1:10 pm - POUR SAND TO 515 (515)

2:00 pm - SET 20' SCREEN TO 480' @ TOP (?)

2:10 pm - BEGIN PUTTING CSG 2" TO DEPTH OF

3:30 pm - CASING IN PLACE ADD #1020 GRAVEL TO 470

4:00 pm - ADD SAND TO 447 @ 4:45 PM

4:45 pm - ADD PELLETS TO 435' @ 5:15 pm

5:15 pm - BEGIN BACKFILL TO

01/06/94 MW7

8:00 AM - BREAKING GROUT - BLOW OUT

9:00 AM - BEGIN GRAVEL BACKFILL TO COLLAR

12:00 pm - BEGIN TRIPPING 1" RODS TO DEVELOP WELL

12:50 pm - BEGIN WELL DEVELOPMENT ≈ 7-10 gpm @ 150 PSI

1:15 pm - STILL 7-10 gpm

1:35 pm - DISCHARGE CLOUDY ≈ 7-10 gpm @ 120 PSI

1:50 pm - DISCHARGE SAME - UNCHANGED

2:00 pm - PS = 1160 PH = 6.45 FLOW 7-10

2:15 pm 1160 PH = 6.48 " "

2:19 pm - AIR OFF TRIED RISING HEAD TEST - TOTAL FAILURE

WILL TRY LATER - PROBE REGISTERS CONSTANTLY

3:03 pm 193'

2:30 pm - 4:30 pm MOVE TO MW8

4:30 pm - 6:30 pm DRILL & SET 20' 6" CASING

6:30 EOS

Checked by: ___

FIELD PERMEABILITY TEST

Falling/Rising Head

Project Hedz Mining Company Tested By W. Hanson Date 6/1/94
Project No. Rosebud Calculated By _____ Date _____
Boring No. MW-7 Checked By _____ Date _____
Type of Test (Falling/Rising) —
Diameter of Boring 5 1/2" Permeability, K _____
Diameter of Casing 2" schedule 80
Height of Casing (Ref. Level)
Above Ground Surface 2.7' Filling/Pumping From: _____ To: _____
Perforated Casing From: 495' To: 515'
Type of Perforation 0.020 slotted
Depth to Ground Water From
Top of Casing 194' on 6/2/94 Filling/Pumping Rate _____ gpm

	Date and Time	Elapsed Time (Min.)	Depth to Water (ft.)	S.W.L. - Depth to Water (ft.) H	H/Ho
6/1/94	12:50 pm			began developing well	
	2:19 pm		?	air off - attempted rising head test	
				probe is too short.	
6/2/94	10:00 am		194'	next time well is probed	

COMMENTS: After pumping or addition of water, water level measurements should be recorded as follows: t = 0, t = 30 sec/5 min, t = 1 min/10 min, t= 5 min/15 min, t = 30 min/ 1-1/2 hr, t = 1 hr/until WL = +/- 90% SWL.

ANALYSIS REPORT

American Assay Laboratories Inc.

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: #5 MW-7
LABORATORY JOB No. : SP029599
SAMPLE TYPE :

RECEIVED : 17/06/94
REPORTED : 23/06/94
No. SAMPLES : 90

ANALYSIS	ANALYTICAL METHOD	QUALITY PARAMETER	UNIT	DETECTION
Au(OZ)	FA30	15%	OPT	0.001
Au(RZ)	FA30	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #5
JOB NUMBER : SP029599
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#5 000-010	0.001		0.10
#5 010-020	<0.001		0.04
#5 020-030	<0.001		0.04
#5 030-040	<0.001		<0.02
#5 040-050	<0.001	<0.001	<0.02
#5 050-060	0.003		<0.02
MW-7 #5 060-070	<0.001		<0.02
#5 070-080	0.003		0.02
#5 080-090	<0.001		0.02
#5 090-100	0.001		0.04
#5 100-110	0.001		0.07
#5 110-120	0.001		0.06
#5 120-130	<0.001		0.04
#5 130-140	<0.001		0.04
#5 140-150	<0.001		0.06
#5 150-160	0.001		0.04
#5 160-170	0.001		0.03
#5 170-180	<0.001		0.04
#5 180-190	0.001		0.04
#5 190-200	0.002		0.05
#5 200-210	0.001		0.06
#5 210-220	0.001		0.06
#5 220-230	0.001		0.05
#5 230-240	<0.001		0.05
#5 240-250	<0.001		0.03

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #5
JOB NUMBER : SP029599
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#5 250-260	0.001		0.03
#5 260-270	0.001		0.03
#5 270-280	0.001		0.03
#5 280-290	<0.001		<0.02
#5 290-300	<0.001		<0.02
#5 300-310	<0.001		0.03
MW-7 #5 310-320	<0.001	<0.001	0.03
#5 320-330	0.008		0.04
#5 330-340	0.005		0.05
#5 340-350	0.001		0.02
#5 350-360	0.002		0.02
#5 360-370	<0.001		<0.02
#5 370-380	<0.001		0.02
#5 380-390	<0.001		0.03
#5 390-400	<0.001		0.03
#5 400-410	<0.001	<0.001	0.06
#5 410-420	0.008		0.07
#5 420-430	<0.001		0.04
#5 430-440	0.001		0.04
#5 440-450	0.004		0.09
#5 450-460	0.029		0.34
#5 460-470	0.010		0.15
#5 470-480	0.007		0.11
#5 480-490	0.012		0.17
#5 490-500	0.027	0.025	0.11

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #5
JOB NUMBER : SP029599
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#5 500-510	0.003		0.10
#5 510-520	0.003		0.05
#5 520-530	0.002		0.04
#5 530-540	0.004		0.07
#5 540-550	0.003		0.17
#5 550-560	0.020		0.19
#5 560-570	MW·7 0.056		0.23
#5 570-580	0.024		0.15
#5 580-590	0.006		0.04
#5 590-600	0.022		0.11
#5 600-610	0.005		0.07
#5 610-620	0.077		0.21
#5 620-630	0.036		0.13
#5 630-640	0.417	0.440	0.74
#5 640-650	0.035		0.29
#5 650-660	0.032		0.12
#5 660-670	0.002		0.10
#5 670-680	0.008		0.15
#5 680-690	0.026		0.29
#5 690-700	0.003		0.06
#5 700-710	0.019		0.14
#5 710-720	0.035		0.31
#5 720-730	0.052		0.14
#5 730-740	0.061		0.23
#5 740-750	0.066		1.02

AMERICAN ASSAY LABORATORIES
ANALYSIS REPORT

American Assay Laboratories Inc.

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : #5
JOB NUMBER : SP029599
REPORTED : 23/06/94

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	Ag(OZ) D210 OPT
#5 750-760	0.067		0.15
#5 760-770	0.081		0.23
#5 770-780	0.044		0.17
#5 780-790	0.036		0.12
#5 790-800	0.020		0.10
#5 800-810	0.084		0.12
#5 810-820	MW-7 0.830		0.45
#5 820-830	0.225		0.26
#5 830-840	0.723	0.754	0.89
#5 840-850	0.382		0.48
#5 850-860	0.478		0.66
#5 860-870	1.507		1.94
#5 870-880	0.103		0.21
#5 880-890	0.091		0.26
#5 890-900	0.013		0.07