60001171

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-270-98
AUTHOR	S. King; K. Allen; A. Niles
DATE OF DOC(S)	1998
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7.5'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Rosebud Project; Rosebud Mining Co. LLC Hecla Mining Co.
COMMODITY If not obvious	gold; silver
NOTES	Drill log; geology; assay; photographs; total depth 320 receipt; hand written notes; downhole camera images 41p. 3 down hole camera images

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: DP 5/14/08
Initials Date
DB: mah
Initials Date
SCANNED: NB
Initials Date

Revised: 1/22/08

D-270-98

60001171 4010

6000 1171

Hecla MINING COMPANY

- quartz, chalcedony, silicification
- faults, fractures
- FeOx
- BARITE
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-270-98	LOCATION	STOPE 50 SEC. 1350
PAGE	1 OF 5	NORTHING	
DATE	8/19-8	EASTING	
LOGGED BY	ALLYN NILES	ELEVATION	
SCALE	1" = 10'	AZIMUTH	125
TOTAL DEPTH	320'	INCLINATION	62

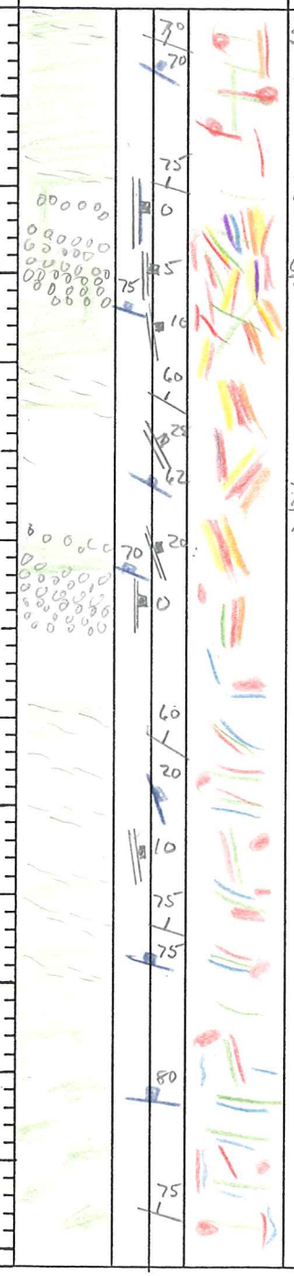
REMARKS

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0.0 – 22.6 TOS		0.0 – 22.6 GREEN, GRADING INTO PINKISH @ 19'. VERY LT. GREEN TO GREEN LITHIC LAPILLIS (SOME NEAR WHITE), MOSTLY ROUNDED, SOME VERY ANGULAR, IN AN APHANITIC VOLCANIC CLAY MATRIX. BEDDED W/ UNDULATING LAMINAR FEATURES. RARE BLACK CLAYEY FRAGS FROM ALS?	10 20			0.0 – 22.6 WHITE TO LT. GREEN CALCITE & VEINS.
22.6 – 176.3 PLANAR LAMINAR		22.6 – 154.0 PINK TO GREEN, INTERBEDDED FINE GRAIN VESICULAR TUFFY BEDS AND GREEN APHANITIC FLOWS W/ POORLY DEVELOPED FLOW BANDS.	30 40 50		22.6 CONTACT IS AUTO BRECCIATED AND IRREGULAR. 37.3 THIN BXA (AUTO?) W/ STRONG SULFIDES 40.0 CONTACT W/ PINK TUFFY BEDS CONTACT GRADATIONAL, INDETERMINATE.	22.0 – 23.0 STRONG DISSEM. PYRITE & MARC. 27.0 – 44.0 GREEN PROPYLITIC CLAY & MARC. CRUSTS & AGGREGATES FILLING FRACTURES. 33.0 – 38.0 ZONES OF HIGHLY CONCENTRATED SULFIDES UP TO 2" Ø, RELATED TO FRACTURE SETS OR BRECCIA ZONES. 40.0 STRONG SULFIDES ASSOC. W/ CONTACT 40.0 – 48.0 MOD. WHITE CLAY, MARC. 49.0 – 58.0 SULFIDIC SELVAGES TO 1.5" Ø ASSOC. W/ THIN FRACTURE FILLINGS, FINE GRAIN PYRITE

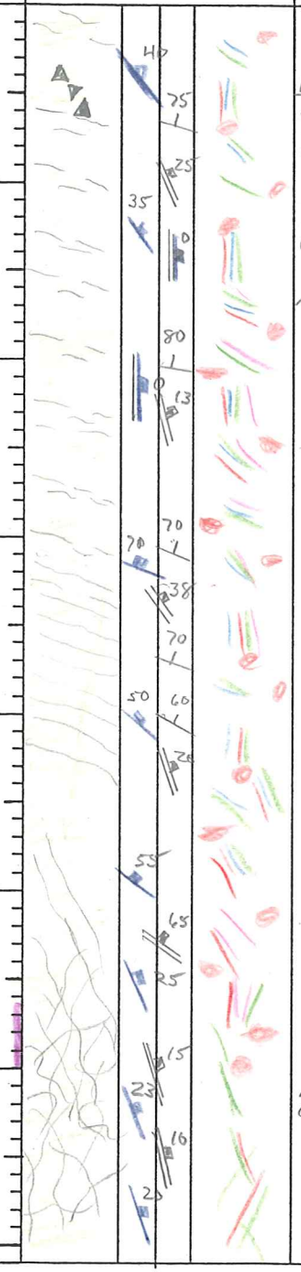
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag2
0.0	5.0					
5.0	10.0					
10.0	15.0					
15.0	20.0					
20.0	22.6					
22.6	25.0					
25.0	30.0					
30.0	35.0					
35.0	39.0					
39.0	42.0					
42.0	45.0					
45.0	48.0					
48.0	50.0					

HOLE NUMBER D-270-98 PAGE 2 OF 5

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
22.5-176.3 LB PLANAR LAMINAR	T NAR	22.5-154.0 SEE DESCRIPTION PAGE 1 78-85 PINKISH TUFFY BED(S) W/ NO VISIBLE CONTACTS 85.0-154.0 THICK SEQUENCE OF FLOW(S) W/ NO OBSERVED CONTACTS. COMMON, NOT WELL DEFINED VESICLE TRAINS & LINEAR FABRIC ALIGNMENTS INDICATE BEDDING/FLOW LINES.	60 70 80 90 100 110 120		50.0-85.0: OLDER FRACTURES ARE ∥ TO BEDDING FEATURES, 65°-75° TO CORE AXIS. YOUNGER MINERALIZED FRACTURES ARE 0°-15° TO CORE. 60.0-76.0 INCREASED VEINS/VUGS/FRACT. 76.0-85.0 WEAK → MOD. VEINING.	50.0-85.0 OLDER FRACTS FILLED W/ GREEN PROPYLITIC CLAY & FINE GRAIN SULFIDES. YOUNGER SETS USUALLY HAVE BLADED MARC., WHITE CLAY, +/- QUARTZ, VARIABLE GREEN CLAY. 60.0-76.0 MOD TO STRONG BLADED MARC., BARITE, WHITE CLAY, MINOR CALCITE, DRUZY QUARTZ, BLADED MARC. & SOME WHITE CLAY OR BARITE LINING VUGS. 76.0-85.0 MOD. VEINING W/ MARC. WHITE → LT. GREEN CLAY QUARTZ, DRUZY QUARTZ. 81.0-183.0 SULFIDIC SELVAGES ASSOC. W/ FRACTURES AND AS BULBOUS SULFIDIC CONCENTRATIONS. FINE GRAIN PYRITE 87.0-169.0 MINOR CALCITE VEINING USUALLY ASSOC. W/ GREEN PROPYLITIC CLAY VEINS. RARE CALCITE ONLY VEINS. MINOR SULFIDES IN VEINS W/ CLAYS & CALCITE. SEEMS TO PREFER LOW ANGLE FRACTURES.	50.0 55.0 60.0 62.5 65.0 67.3 70.0 72.5 75.8 78.3 82.5 85.0 90.0 95.0 100.0 105.0 110.0 115.0	55.0 60.0 62.5 65.0 67.3 70.0 72.5 75.8 78.3 82.5 85.0 90.0 95.0 100.0 105.0 110.0 115.0 120.0					

HOLE NUMBER D-270-98 PAGE 3 OF 5

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
22.6 – 176.3 LBT PLANAR LAMINAR		22.6 – 154.0 SEE DESCRIPTION PAGE 2	130 140 150 160 170 180 190		125.0 1" ø BXA, HEALED W/ WHITE CLAY, QUARTZ, F.G. PY, GREEN CLAY, MARC. 120.0 – 148.0 INCREASED FREQUENCY OF LOW ANGLE FRACTURE/VEINS 0° – 20° TO CORE AXIS	81.0 – 183.0 SULFIDIC SELVAGES ASSOC. W/ FRACTURES AND AS BULBOUS SULFIDIC CONCETRATIONS OF FINE GRAIN PYRITE 120.0 – 148.0 FRACTURE/VEINS FILLED W/ GREEN CLAY, CALCITE, MINOR SULFIDES 135.0 – 157.0 PINKISH CLAY INTERMIXED W/ GREEN CLAY, MAY BE FRACTURE ASSOC. OXIDATION OF SULFIDES. 135 – 178 WEAK, THIN, PROPYLITIC CLAY & SULFIDE VEINS, SOME CALCITE
		154.0 – 162.5 GRADATIONAL CHANGE TO WEAKLY PLANAR-LAMINAR FLOW. STILL APHANITIC, PROPYLITIC STAINED W/ WELL DEFINED PLANAR FEATURES.				
162.5 – 176.3 F.G. MASSIVE		162.5 – 176.3 DK. GREEN W/ GREEN SELVAGES ALONG FRACTURES, EXTREEMLY APHANITIC / GLASSY TEXTURE. FRACTURE PATTERN INDICATED GENETIC ASSOC. W/ NITROPYRE. DEVOID OF FABRIC ALIGNMENT FEATURES.				
176.3 – 213.7 VITROPHYRE		176.3 – 213.7 VITROPYRE: GREEN, GLASSY TEXTURE W/ DESSICATION TYPE FRACTURE PATTERN – CRACKED GLASS APPEARENCE			173.6 – R13.7 MOST VEINS & FRACTS, AT LOW ANGLE TO CORE AXIS 5° – 25°.	170.0 – 180.0 SAMPLE BREAKS ARBITRARY OR LITH CHANGE. ODD PINKISH STAIN IN WALLROCK ALONG FRACTS. 178.0 – 215.5 WEAK → MOD., THIN VEINLETS FILLED W/ GREEN CLAY, SULFIDES, RARE CALCITE.

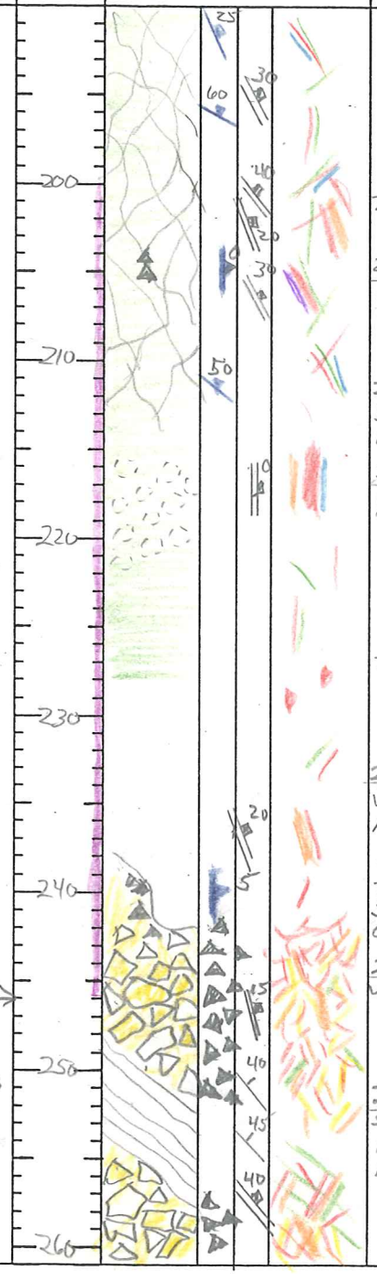
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
120.0	124.5				
124.5	126.5				
126.5	130.0				
130.0	135.0				
135.0	140.0				
140.0	145.0				
145.	150.0				
150.0	155.0				
155.0	159.0				
159.0	162.5				
162.5	165.0				
165.0	170.0				
170.0	173.8				
173.8	176.3				
176.3	180.0				
180.0	185.0				
185.0	190.0				

HOLE NUMBER D-270-98 PAGE 4 OF 5

ITH.	OX/RED.	LITHOLOGY	STRUCTURE	ALTERATION AND MINERALIZATION
176.3 - 213.7 VITROPHYRE		176.3 - 213.7 SEE DESCRIPTION PAGE 3		SEE PAGE 3 178.0 - 215.5
213.7 - 240.0 F.G. MASSIVE		213.7 - 240.0 GREEN, VERY FINE GRAIN, MASSIVE FLOW? ALMOST FEATURELESS EXCEPT FOR A POSSIBLE VERY FAINT MOTTLED TEXTURE WHICH IS AUTOBRECCIA 215.5 - 221.0 W/ ROUNDED CLASTS.	204.0 - 205.0 MOSAIC, HEALED BXA ROUND CLASTS. 211.0 - 230.0 DEVOID OF NATURAL FRACTURES 215.5 - 217.0 1/2" Ø VEIN 215.5 - 217.0 VEIN, 1/2" Ø 235.0 - 240.0 INCREASED VEINING & FRACTURES ASSOC. W/ SRF.	200.8 - 201.4 WHITE CLAY & MARC. VEIN, 1/4" Ø 204.0 - 205.0 CEMENTED W/ GREEN CLAY, BARITE? (F.G. CLEAR/WHITE X-TAL MASSES); MARC. 215.5 - 217.0 WHITE CLAY, BLADED MARC, CALCITE 215.5 - 217.0 BLADED MARC., WHITE CLAY & CALCITE FILLING VEIN. 1st SIGNIFICANT VEIN SINCE 85'
240.0 - 274.0 SRF TYPE		240.0 - 265.0 SOUTH RIDGE FAULT. HETEROLITHIC FAULT BRECCIA w/ PINKISH, DK. GRAY & RARE GREEN ROUND FRAGS, MOSTLY SMALL, SOME TO 3" + Ø. APPROX 70% OF CLASTS ARE SILICA REP. AND ARE GENERALLY SMALLER FRAGS. BXA IS VARIABLY CLAST & MATRIX SUPPORTED. PIMA →	240.0 - 241.0 SRF BXA BISECTS CORE @ 5°. 241.0 - 250.5 VUGS VERY COMMON 250.5 - 255.0 POSSIBLE SLAB OF DOZIER IN FAULT OR SEGMENT IN BISECTED FAULT	241.0 - ABRUPT CHANGE TO COMPLETE SILICA REP. OF ALL CLASTS, VERY STRONG PYRITE & MARC. AS PRIMARY CEMENT. POSSIBLE REACTIVATION OF FAULT @ 241.0. 241.0 - 250.5 STRONG MARC., WHITE CLAY, DRUZY QUARTZ LINING/FILLING VUGS

GRAPHIC LOG



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	A
190.0	195.0					
195.0	200.0					
200.0	205.0					
205.0	210.0					
210.0	213.7					
213.7	215.0					
215.0	217.0					
217.0	220.0					
220.0	225.0					
225.0	230.0					
230.0	235.0					
235.0	236.5					
236.5	239.7					
239.7	241.0					
241.0	244.0					
244.0	246.0					
246.0	248.5					
248.5	251.0					
251.0	253.5					
253.5	256.0					
256.0	259.0					

HOLE NUMBER D-270-98 PAGE 5 OF 5

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
240.0 - 274.0		240-265.0 SEE DESCRIPTION PAGE 4 PIMA → 265.0 - 274.0 BRECCIA IS COMPOSED ENTIRELY OF GREEN FINE GRAIN DOZER CLASTS W/ VERY LITTLE SILICA REP.	270		255.0 - 265.0 VERY VUGGY. 265.0 - 274.0 BXA IS CLAST SUPPORTED W/ MOSTLY ANGULAR FRAGS. 270.5 - 274.0 ROUND BRECCIA CLASTS, MATRIX SUPPORT	255.0 - 265.0 VUGS FILLED/LINED W/ DRUZY QUARTZ, BLADED MARC., WHITE CLAY MINOR LT. GREEN CLAY. STRONG → INTENSE SILICA REP. & SILICA CEMENT. 265.0 - 274.0 CEMENT IS RED QUARTZ (HEMATITE) CLEAR DRUZY QUARTZ, MARC., MINOR PYRITE, VARIABLE PROPYLITIC CLAY, MINOR WHITE CLAY. 270.5 - 274.0 MATRIX IS GREEN. SILICIOUS CLAY W/ DISSEM. PYRITE, CLASTS ARE MOD → STRONG ARGILLIC ALT.	259.0 262.0 265.0 267.3 269.5 270.7	262.0 265.0 267.3 269.5 270.7 274.0				
SRF TYPE												
274.0 - 303.9		274.0 - 303.9 LT. GREEN TO GREEN, FINE GRAIN, WEAKLY ARGILLIZED TO 281, MOD. → STRONG PROPYLITIC STAINED, FLOW BANDED.	280		274.0 - 288.0 VEINING @ 30°-45° TO CORE AXIS. 278.0 - 304.0 VERY RARE NATURAL FRACTURES.	274.0 - 288.0 MOD. MARC. VEINING UP TO 1/2" ø, 276.5 - 278.0 STRONG ARGILLIC ALT 284-310 CALCITE VEINS 284.3 - 287.8 SEVERAL 1/2" ø SULFIDE VEINS	274.0 276.5 278.0 283.0 284.3 287.8	276.5 278.0 283.0 284.3 287.8 291.5				
PLANAR LAMINAR												
		303.9 - 306.5 DK. GRAY → VERY DK. GREEN, APHANITIC, MAFIC INTRUSIVE? POSSIBLE VERY SMALL CHLORITE	290				291.5	297.0				
			300				297.0	300.0				
303.9 - 306.5 MAFIC INTRUSIVE					303.9 CONTACT SHARP	304.1 - 306.4 MOD. SILICIOUS, PRIMARY? FRACTURES LINED W/ DK. GREEN CLAY, CALCITE MINOR MARC, HEMATITIC CLAY.	300.0 304.0	304.0 306.5				
306.5 - 320.0		306.5 - 320.0 PINKISH GRAY → PINKISH GREEN, MOTTLED TEXT, FLOW BANDED.	310		306.5 CONTACT OBSCURED 311.0 - 320.0 SELVAGES & PODS OF CONCENTRATED SULFIDES ASSOC. W/ FRACTURES.	306.5 - 307.0 SILICA REPLACEMENT OF DOZER RELATED TO INTRUSIVE 311.0 - 320.0 MOD. VEINING & OPEN FRACTURES FILLED/LINED W/ MARC, WHITE CLAY, GREEN CLAY, QUARTZ & DRUZY QUARTZ	306.5 310.0	310.0 315.0				
PLANAR, LAMINAR												
		T.D. 320'	320				315.0	320.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/19/98 LOGGED BY: ALLYN MILES PAGE 1 OF 6

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)
0.0	5.0	88.0	88.0	28.0										
5.0	10.0	92.0	92.0	62.0										
10.0	15.0	100.0	100.0	72.0										
15.0	20.0	100.0	100.0	88.0										
20.0	25.0	100.0	100.0	82.0										
25.0	30.0	96.0	96.0	64.0										
30.0	35.0	94.0	94.0	78.0										
35.0	40.0	104.0	104.0	84.0										
40.0	45.0	70.0	96.0	56.0										
45.0	50.0	98.0	98.0	78.0										
50.0	55.0	98.0	98.0	90.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/19/98 LOGGED BY: _____ PAGE 2 OF 6

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)
55.0	60.0	100.0	100.0	78.0										
60.0	65.0	100.0	100.0	76.0										
65.0	70.0	100.0	100.0	66.0										
70.0	75.0	96.0	96.0	60.0										
75.0	80.0	100.0	100.0	38.0										
80.0	85.0	98.0	98.0	64.0										
85.0	90.0	96.0	96.0	40.0										
90.0	95.0	102.0	102.0	82.0										
95.0	100.0	100.0	100.0	70.0										
100.0	105.0	102.0	102.0	86.0										
105.0	110.0	100.0	100.0	80.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/20/98 LOGGED BY: _____ PAGE 3 OF 6

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)
110.0	115.0	100.0	100.0	1.2 80.0										
115.0	120.0	100.0	100.0	78.0										
120.0	125.0	100.0	100.0	66.0										
125.0	130.0	98.0	98.0	68.0										
130.0	135.0	90.0	98.0	38.0										
135.0	140.0	100.0	100.0	38.0										
140.0	145.0	98.0	98.0	46.0										
145.0	150.0	100.0	100.0	62.0										
150.0	155.0	100.0	100.0	74.0										
155.0	159.0	115.0	115.0	37.1										
159.0	168.0	86.0	96.6	55.5										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/20-21/98 LOGGED BY: _____ PAGE 4 OF 6

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)
168.0	175.0	100.0	100.0	62.2										
175.0	185.0	97.0	97.0	87.0										
185.0	195.0	99.0	99.0	77.0										
195.0	205.0	102.0	102.0	92.0										
205.0	215.0	93.0	96.0	79.0										
215.0	225.0	97.0	103.0	94.0										
225.0	235.0	100.0	100.0	93.0										
235.0	241.0	58.0	91.6	35.0										
241.0	246.0	0	70.0	53.0										
246.0	251.0	0	70.0	15.0										
251.0	256.0	0	82.5	20.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/21/98 LOGGED BY: _____ PAGE 5 OF 6

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)
256.0	259.0	30.0	86.6	12.0										
259.0	265.0	60.0	75.0	50.0										
265.0	269.5	22.2	100.0	33.3										
269.5	272.5	33.3	71.4	16.6										
272.5	276.5	100.0	100.0	80.0										
276.5	278.0	100.0	100.0	0										
278.0	283.0	100.0	100.0	98.0										
283.0	284.0	90.0	90.0	60.0										
284.0	289.0	98.0	98.0	72.0										
289.0	294.0	104.0	104.0	100.0										
294.0	297.0	83.3	83.3	83.3										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-270-98 DATE: 8/21/98 LOGGED BY: ALLYN NILES PAGE 6 OF 6

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)
297.0	300.0	100.0	100.0	93.3										
300.0	304.0	95.0	95.0	92.5										
304.0	305.0	100.0	100.	40.0										
305.0	310.0	0	92.0	26.0										
310.0	315.0	30.0	86.0	28.0										
315.0	320.0	98.0	98.0	66.0										

American Assay Laboratories

INVOICE

Remit To: P.O. Box11530
Reno, Nevada 89510
Phone NO.: 702-356-0606
Fax No.: 702-356-1413

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431-5902

(702) 356-0606

INVOICE NO: SP 0050361-IN
INVOICE DATE: 09/25/98

INVOICE TO:
THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

THE ROSEBUD MINING CO., LLC
HECLA MINING COMPANY, OPERATOR
P.O. BOX 2610
WINNEMUCCA NV 89446

CUSTOMER P.O.	PROJECT	TERMS
D-270-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
90	SAMPLES RECEIVED	.00	.00
89	DRYING	1.00	89.00
89	JAW CRUSHING CHARGE	1.30	115.70
89	COARSE MILLING CHARGE	4.50	400.50
89	SPLITTING CHARGE	2.40	213.60
89	RING MILLING CHARGE	2.00	178.00
90	Au (1 A.T. FIRE ASSAY)	8.00	720.00
14	Au ANALYSES/GRAVIMETRIC	8.75	122.50
90	HYDROCHLORIC/NITRIC DIGESTION	2.00	180.00
90	Ag ANALYSES	1.00	90.00
2	Ag (ore grade) ANALYSES	5.00	10.00

86-5NO-477

NET INVOICE:	2,119.30
LESS DISCOUNT:	423.86
FREIGHT:	.00
INVOICE TOTAL:	1,695.44

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP050361

American Assay Laboratories

PO BOX 11530
RENO NV,USA
Ph.(702) 356-0606, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

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CLIENT REFERENCE No: D-270-98 RECEIVED : 1 SEP 1998

No. SAMPLES : 90 REPORTED : 25 SEP 1998

MAIN SAMPLE TYPE : DRILL CORE

NEVADA LEGISLATIVE DISCLAIMER :-
The results of this assay were based solely upon the content of the sample submitted. Any decision to invest should be made only after the potential investment value of the claim or deposit has been determined based on the results of assays of multiple samples of geological materials collected by the prospective investor or by a qualified person selected by him and based on an evaluation of all engineering data which is available concerning any proposed project.

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

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP050361

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-270-98

REPORTED : 25 SEP 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-270-98 00-05	<0.001			<0.02
D-270-98 05-10	<0.001			<0.02
D-270-98 10-15	<0.001			<0.02
D-270-98 15-20	<0.001			<0.02
D-270-98 20.0-22.6	<0.001			0.08
D-270-98 22.6-25.0	0.001			0.04
D-270-98 25-30	<0.001			<0.02
D-270-98 30-35	<0.001			<0.02
D-270-98 35-39	<0.001			<0.02
D-270-98 39-42	0.003			0.07
D-270-98 42-45	0.002			0.03
D-270-98 45-48	0.004			0.06
D-270-98 48-50	0.002			0.05
D-270-98 50-55	<0.001			0.03
D-270-98 55-60	<0.001			0.02
D-270-98 60.0-62.5	0.024			0.12
D-270-98 62.5-65.0	0.008			0.10
D-270-98 65.0-67.3	0.016			0.13
D-270-98 67.3-70.0	0.012			0.08
D-270-98 70.0-72.5	0.008			0.09
D-270-98 72.5-75.8	0.004			0.04
D-270-98 75.8-78.3	0.009			0.04
D-270-98 78.3-82.5	0.017			0.09
D-270-98 82.5-85.0	0.007			0.10
D-270-98 85-90	0.014			0.05

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ANALYSIS REPORT SP050361

American Assay Laboratories

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-270-98 90-95	0.026			0.02
D-270-98 95-100	0.004			0.03
D-270-98 100-105	0.009			0.58
D-270-98 105-110	<0.001			<0.02
D-270-98 110-115	<0.001			<0.02
D-270-98 115-120	<0.001			<0.02
D-270-98 120.0-124.5	0.002			0.02
D-270-98 124.5-126.5	0.106		0.070	0.04
D-270-98 126.5-130.0	0.004			0.03
D-270-98 130-135	0.004			0.03
D-270-98 135-140	<0.001			<0.02
D-270-98 140-145	<0.001			<0.02
D-270-98 145-150	0.003			0.03
D-270-98 150-155	0.005			<0.02
D-270-98 155-159	<0.001			<0.02
D-270-98 159.0-162.5	<0.001			<0.02
D-270-98 162.5-165.0	0.004			0.04
D-270-98 165-170	0.001			0.02
D-270-98 170.0-173.8	0.006			0.02
D-270-98 173.8-176.3	0.004			0.03
D-270-98 176.3-180.0	0.236		0.320	0.22
D-270-98 180-185	0.014			0.10
D-270-98 185-190	0.008			0.20
D-270-98 190-195	<0.001			0.06
D-270-98 195-200	0.017			0.08

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REPORTED : 25 SEP 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-270-98 200-205	0.989		1.403	0.19
D-270-98 205-210	0.230		0.163	0.04
D-270-98 210.0-213.7	0.584		0.658	0.83
D-270-98 213.7-215.0	0.395		0.333	0.33
D-270-98 215-217	1.183		1.494	1.90
D-270-98 217-220	0.540		0.489	0.17
D-270-98 220-225	0.019			0.03
D-270-98 225-230	0.067			0.08
D-270-98 230-235	0.845		0.782	0.18
D-270-98 235.0-236.5	1.179		1.336	1.37
D-270-98 236.5-239.7	0.754		0.918	0.98
D-270-98 239.7-241.0	0.760		1.040	0.68
D-270-98 241-244	5.869			5.14
D-270-98 244-246	0.804		0.724	0.44
D-270-98 246.0-248.5	0.054		0.067	0.13
D-270-98 248.5-251.0	0.023			0.07
D-270-98 251.0-253.5	0.008			0.05
D-270-98 253.5-256.0	0.011			0.05
D-270-98 256-259	0.006			0.04
D-270-98 259-262	0.006			0.13
D-270-98 262-265	0.005			0.07
D-270-98 265.0-267.2	0.023			0.21
D-270-98 267.2-267.3	0.017			0.11
D-270-98 267.3-269.5	0.013			0.13
D-270-98 269.5-270.7	0.014			0.12

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-270-98 270.7-274.0	0.007			0.07
D-270-98 274.0-276.5	0.009			0.05
D-270-98 276.5-278.0	0.006			0.05
D-270-98 278-283	0.004			0.05
D-270-98 283.0-284.3	<0.001			0.03
D-270-98 284.3-287.8	0.004			0.05
D-270-98 287.8-291.5	<0.001			0.03
D-270-98 291.5-297.0	<0.001			0.02
D-270-98 297-300	<0.001			<0.02
D-270-98 300-304	<0.001			<0.02
D-270-98 304.0-306.5	<0.001			<0.02
D-270-98 306.5-310.0	0.002			<0.02
D-270-98 310-315	0.004			0.06
D-270-98 315-320	0.003			0.06
40483	0.535			4.59

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

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D-270-98 00-05	<0.001			<0.02
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D-270-98 10-15	<0.001			<0.02
D-270-98 15-20	<0.001			<0.02
D-270-98 20.0-22.6	<0.001			0.08
D-270-98 22.6-25.0	0.001			0.04
D-270-98 25-30	<0.001			<0.02
D-270-98 30-35	<0.001			<0.02
D-270-98 35-39	<0.001			<0.02
D-270-98 39-42	0.003			0.07
D-270-98 42-45	0.002			0.03
D-270-98 45-48	0.004			0.06
D-270-98 48-50	0.002			0.05
D-270-98 50-55	<0.001			0.03
D-270-98 55-60	<0.001			0.02
D-270-98 60.0-62.5	0.024			0.12
D-270-98 62.5-65.0	0.008			0.10
D-270-98 65.0-67.3	0.016			0.13
D-270-98 67.3-70.0	0.012			0.08
D-270-98 70.0-72.5	0.008			0.09
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D-270-98 75.8-78.3	0.009			0.04
D-270-98 78.3-82.5	0.017			0.09
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D-270-98 115-120	<0.001			<0.02
D-270-98 120.0-124.5	0.002			0.02
D-270-98 124.5-126.5	0.106		0.070	0.04
D-270-98 126.5-130.0	0.004			0.03
D-270-98 130-135	0.004			0.03
D-270-98 135-140	<0.001			<0.02
D-270-98 140-145	<0.001			<0.02
D-270-98 145-150	0.003			0.03
D-270-98 150-155	0.005			<0.02
D-270-98 155-159	<0.001			<0.02
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D-270-98 185-190	0.008			0.20
D-270-98 190-195	<0.001			0.06
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D-270-98 225-230	0.067			0.08
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D-270-98 246.0-248.5	0.054		0.067	0.13
D-270-98 248.5-251.0	0.023			0.07
D-270-98 251.0-253.5	0.008			0.05
D-270-98 253.5-256.0	0.011			0.05
D-270-98 256-259	0.006			0.04
D-270-98 259-262	0.006			0.13
D-270-98 262-265	0.005			0.07
D-270-98 265.0-267.2	0.023			0.21
D-270-98 267.2-267.3	0.017			0.11
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D-270-98 269.5-270.7	0.014			0.12

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D-270-98 276.5-278.0	0.006			0.05
D-270-98 278-283	0.004			0.05
D-270-98 283.0-284.3	<0.001			0.03
D-270-98 284.3-287.8	0.004			0.05
D-270-98 287.8-291.5	<0.001			0.03
D-270-98 291.5-297.0	<0.001			0.02
D-270-98 297-300	<0.001			<0.02
D-270-98 300-304	<0.001			<0.02
D-270-98 304.0-306.5	<0.001			<0.02
D-270-98 306.5-310.0	0.002			<0.02
D-270-98 310-315	0.004			0.06
D-270-98 315-320	0.003			0.06
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Au(RZ)	FA30	15%	OPT	0.001
AuGRAV	GRAV	15%	OPT	0.001
Ag(OZ)	D210	10%	OPT	0.02

SIGNATORY : Susan King M.S.

9/25/1998 10:36 7023561413 AMERICAN ASSAY LABS PAGE 01
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AMERICAN ASSAY LABORATORIES

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SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-270-98 00-05	<0.001			<0.02
D-270-98 05-10	<0.001			<0.02
D-270-98 10-15	<0.001			<0.02
D-270-98 15-20	<0.001			<0.02
D-270-98 20.0-22.6	<0.001			0.08
D-270-98 22.6-25.0	0.001			0.04
D-270-98 25-30	<0.001			<0.02
D-270-98 30-35	<0.001			<0.02
D-270-98 35-39	<0.001			<0.02
D-270-98 39-42	0.003			0.07
D-270-98 42-45	0.002			0.03
D-270-98 45-48	0.004			0.06
D-270-98 48-50	0.002			0.05
D-270-98 50-55	<0.001			0.03
D-270-98 55-60	<0.001			0.02
D-270-98 60.0-62.5	0.024			0.12
D-270-98 62.5-65.0	0.008			0.10
D-270-98 65.0-67.3	0.016			0.13
D-270-98 67.3-70.0	0.012			0.08
D-270-98 70.0-72.5	0.008			0.09
D-270-98 72.5-75.8	0.004			0.04
D-270-98 75.8-78.3	0.009			0.04
D-270-98 78.3-82.5	0.017			0.09
D-270-98 82.5-85.0	0.007			0.10
D-270-98 85-90	0.014			0.05

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D-270-98 90-95	0.026			0.02
D-270-98 95-100	0.004			0.03
D-270-98 100-105	0.009			0.58
D-270-98 105-110	<0.001			<0.02
D-270-98 110-115	<0.001			<0.02
D-270-98 115-120	<0.001			<0.02
D-270-98 120.0-124.5	0.002			0.02
D-270-98 124.5-126.5	0.106		0.070	0.04
D-270-98 126.5-130.0	0.004			0.03
D-270-98 130-135	0.004			0.03
D-270-98 135-140	<0.001			<0.02
D-270-98 140-145	<0.001			<0.02
D-270-98 145-150	0.003			0.03
D-270-98 150-155	0.005			<0.02
D-270-98 155-159	<0.001			<0.02
D-270-98 159.0-162.5	<0.001			<0.02
D-270-98 162.5-165.0	0.004			0.04
D-270-98 165-170	0.001			0.02
D-270-98 170.0-173.8	0.006			0.02
D-270-98 173.8-176.3	0.004			0.03
D-270-98 176.3-180.0	0.236		0.320	0.22
D-270-98 180-185	0.014			0.10
D-270-98 185-190	0.008			0.20
D-270-98 190-195	<0.001			0.06
D-270-98 195-200	0.017			0.08

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200-246'
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SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-270-98 200-205	5	0.989		1.403	0.19	
D-270-98 205-210	5	0.230		0.163	0.04	0.909 Au
D-270-98 210.0-213.7	3.7	0.584		0.658	0.83	
D-270-98 213.7-215.0	1.3	0.395		0.333	0.33	0.71 Ag
D-270-98 215-217	2	1.183		1.494	1.90	
D-270-98 217-220	3	0.540		0.489	0.17	
D-270-98 220-225	5	0.019			0.03	
D-270-98 225-230	5	0.067			0.08	
D-270-98 230-235	5	0.845		0.782	0.18	
D-270-98 235.0-236.5	1.5	1.179		1.336	1.37	
D-270-98 236.5-239.7	3.2	0.754		0.918	0.98	
D-270-98 239.7-241.0	1.3	0.760		1.040	0.68	
D-270-98 241-244	3	5.869			5.14	
D-270-98 244-246	2	0.804		0.724	0.44	
D-270-98 246.0-248.5		0.054		0.067	0.13	
D-270-98 248.5-251.0		0.023			0.07	
D-270-98 251.0-253.5		0.008			0.05	
D-270-98 253.5-256.0		0.011			0.05	
D-270-98 256-259		0.006			0.04	
D-270-98 259-262		0.006			0.13	
D-270-98 262-265		0.005			0.07	
D-270-98 265.0-267.2		0.023			0.21	
D-270-98 267.2-267.3		0.017			0.11	
D-270-98 267.3-269.5		0.013			0.13	
D-270-98 269.5-270.7		0.014			0.12	

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D-270-98 283.0-284.3	<0.001			0.03
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D-270-98 287.8-291.5	<0.001			0.03
D-270-98 291.5-297.0	<0.001			0.02
D-270-98 297-300	<0.001			<0.02
D-270-98 300-304	<0.001			<0.02
D-270-98 304.0-306.5	<0.001			<0.02
D-270-98 306.5-310.0	0.002			<0.02
D-270-98 310-315	0.004			0.06
D-270-98 315-320	0.003			0.06
40483	0.535			4.59

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
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Elko, NV 89801
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Fax
(702) 738-2594

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011-52-69-170035

Other Offices
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Santiago, Chile
Mendoza, Argentina

Company: ROSEBUD MINING LLC

Address: PO. BOX 2610

City WINNEMUCCA State NV Zip 89445

Telephone Number: (702) 623-6912 Fax Number: (702) 623-6967

Project Name: DEVELOPMENT Purchase Order Number:

Date Submitted: 8/25/98 Number of Samples: 88

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [ ]

SAMPLE IDENTIFICATION				TYPE	ELEMENTS REQUIRED		
D-270-98					Au-Ag ACCORDING TO		
0-5	55-60	105-110	165-170		ROSEBUD MINE PROTOCOL		
5-10	60-62.5	110-115	170-173.8				
10-15	62.5-65	115-120	173.8-176.3		220-225	256-259	287.8-291.5
15-20	65-67.3	120-124.5	176.3-180		225-230	259-262	291.5-297
20-22.6	67.3-70	124.5-126.5	180-185		230-235	262-265	297-300
22.6-25	70-72.5	126.5-130	185-190		235-236.5	265-267.3	300-304
25-30	72.5-75.8	130-135	190-195		236.5-239.7	267.3-269.5	304-306.5
30-35	75.8-78.3	135-140	195-200		239.7-241	269.5-270.7	306.5-310
35-39	78.3-82.5	140-145	200-205		241-244	270.7-274	310-315
39-42	82.5-85	145-150	205-210		244-246	274-276.5	315-320 TO
42-45	85-90	150-155	210-213.7		246-248.5	276.5-278	
45-48	90-95	155-159	213.7-215		248.5-251	278-283	
48-50	95-100	159-162.5	215-217		251-253.5	283-284.3	
50-55	100-105	162.5-165	217-220		253.5-256	284.3-287.8	

COARSE REJECTS (Normally Discarded After 60 Days)

[ ] Return COD after analysis complete

PULPS (Normally Stored Free For One Month)

[ ] Discard after one month

[ ] Return COD after one month

RESULTS AND INVOICES TO BE SENT TO:

Invoice to:

KURT ALLEN

Results to:

KURT ALLEN

Comments:

CLIENT FILE COPY

D-270-98	0	61	125.7
	160	62	124.2
	320	61.5	124.7

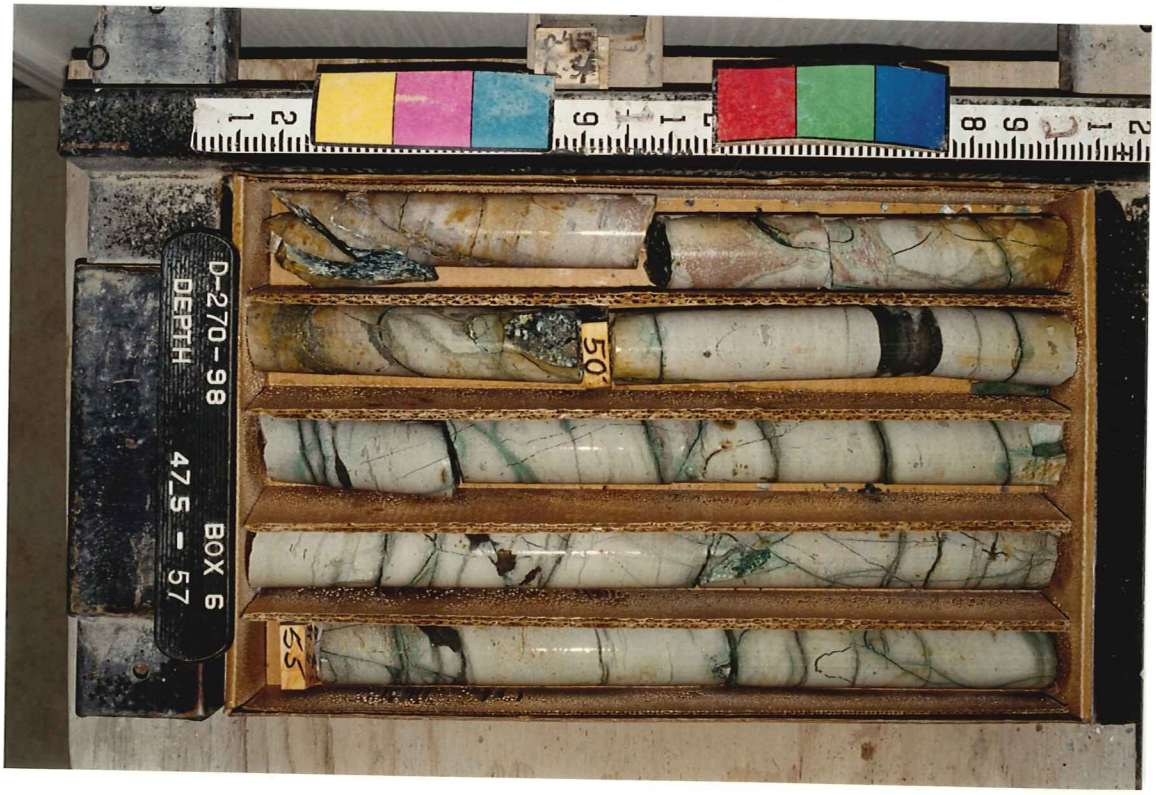
D-270-98 BOX 2
DEPTH 10- 19_5
15

D-270-98 BOX 1
DEPTH 0 - 10
10
5

D-270-98 BOX 3
DEPTH 19_5 - 29
20
25

40'
45'
D-270-98 BOX 5
DEPTH 38_5 - 47_5

30'
35'
D-270-98 BOX 4
DEPTH 29 - 38_5


50'
55'
D-270-98 BOX 6
DEPTH 47_5 - 57

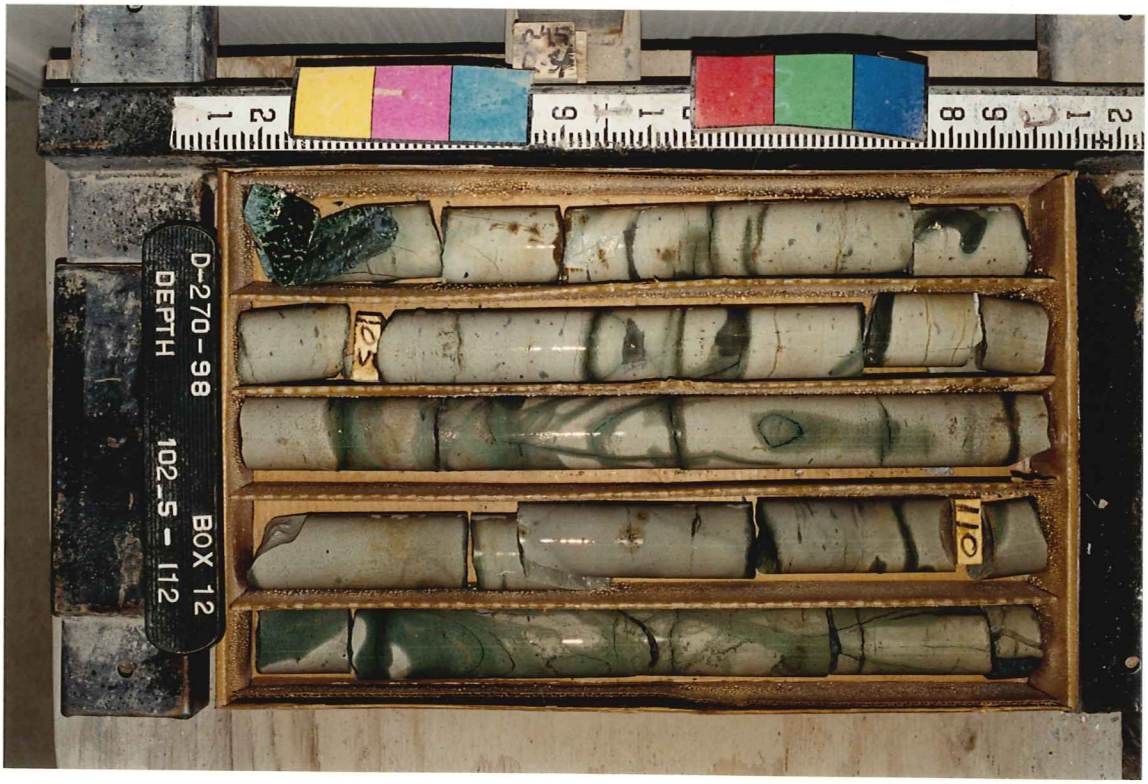
D-270-98
BOX 8
DEPTH
66_5 - 75
70
75

D-270-98
BOX 7
DEPTH
57 - 66_5
60
65

D-270-98
BOX 9
DEPTH
75 - 84_5
80

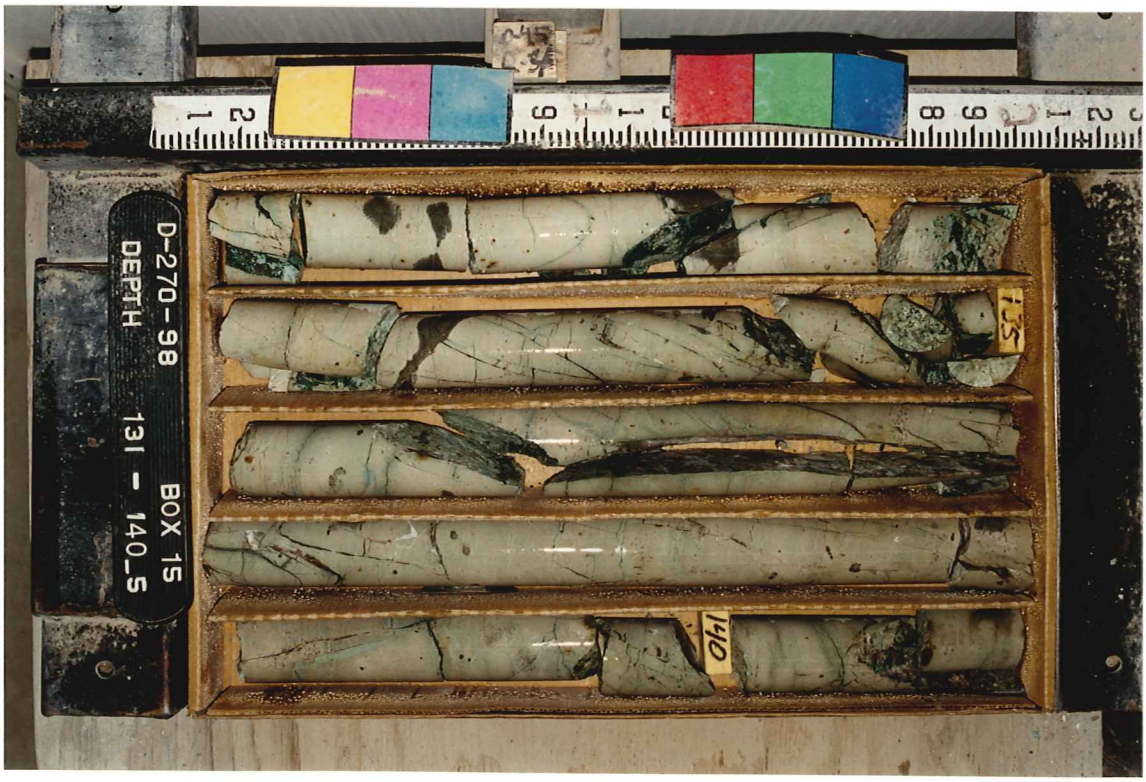
95
100
D-270-98
BOX 11
DEPTH
94 - 102_5

90
85
D-270-98
BOX 10
DEPTH
84_5 - 94


105
110
D-270-98
BOX 12
DEPTH
102_5 - 112

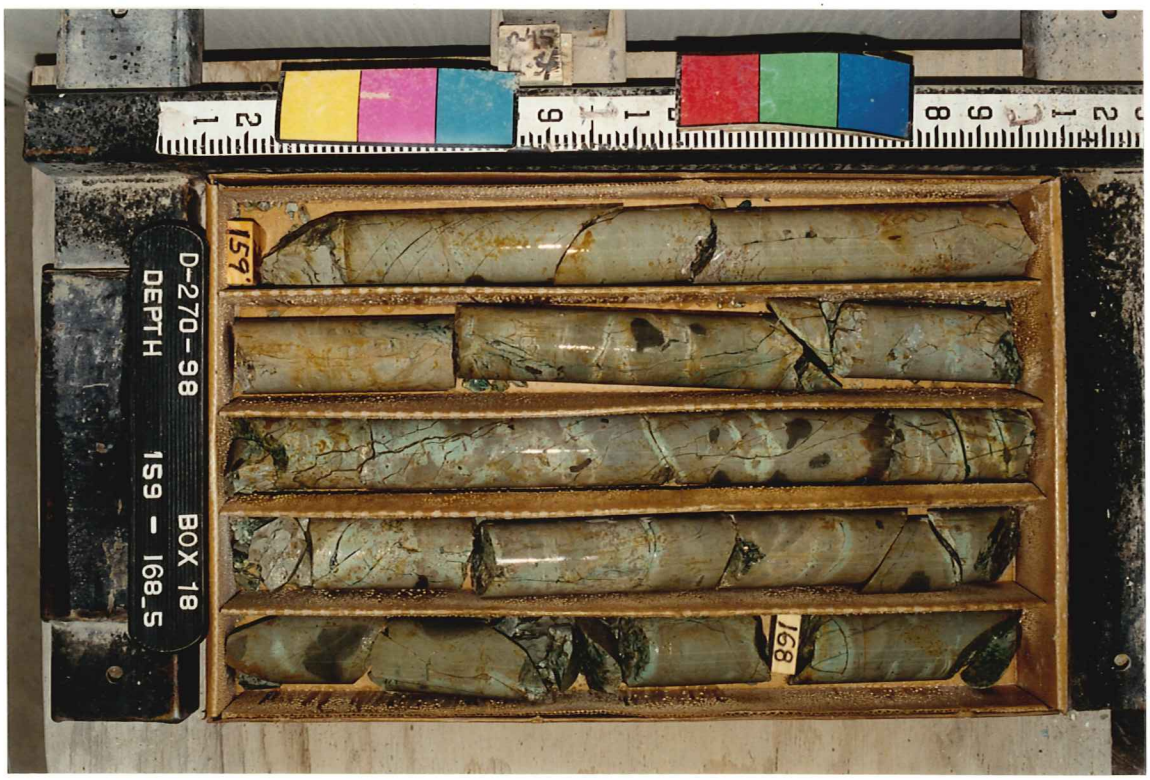
D-270-98
BOX 14
DEPTH
121_5 - 131
125
130

D-270-98
BOX 13
DEPTH
112 - 121_5
115
120


D-270-98
BOX 15
DEPTH
131 - 140_5
135
140

155
D-270-98
BOX 17
DEPTH
150 - 159

150
145
D-270-98
BOX 16
DEPTH
140_5 - 150


159
168
D-270-98
BOX 18
DEPTH
159 - 168_5

185
D-270-98
BOX 20
DEPTH
178 - 187_5

175
D-270-98
BOX 19
DEPTH
168_5 - 178

195
D-270-98
BOX 21
DEPTH
187_5 - 197

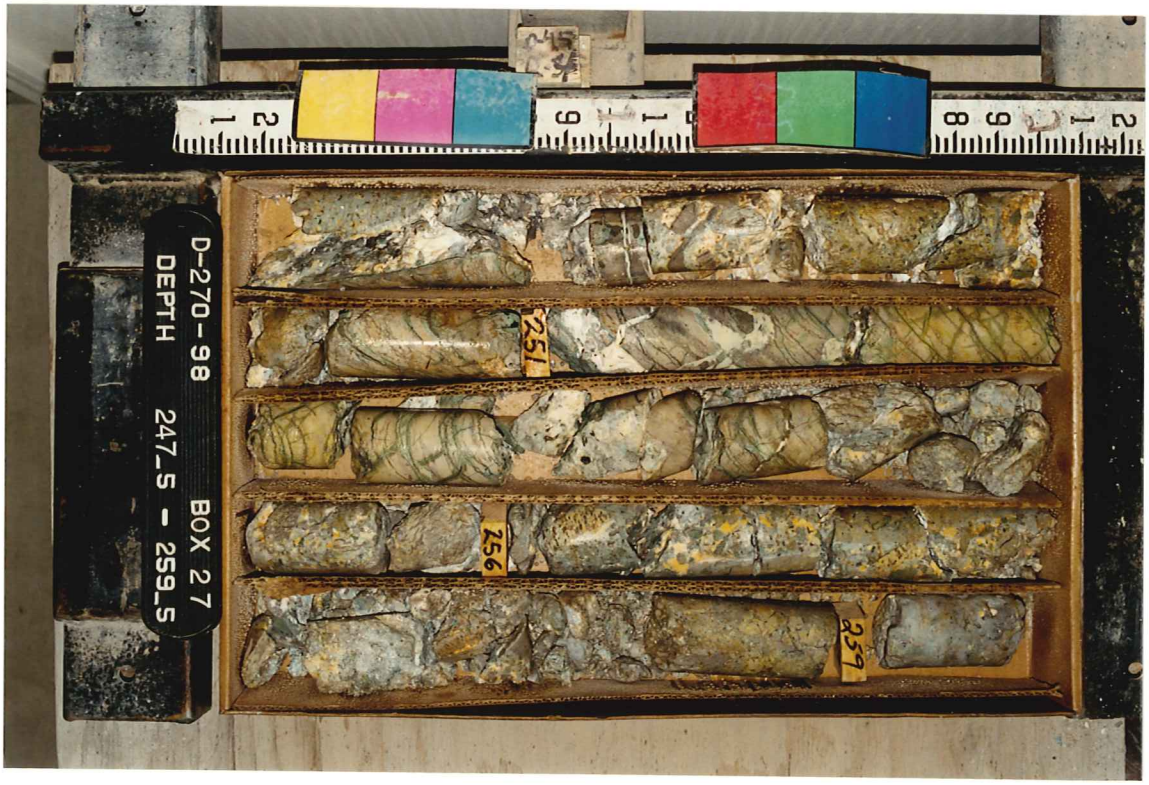
D-270-98
BOX 23
DEPTH
207 - 217
215

D-270-98
BOX 22
DEPTH
197 - 207
205

D-270-98
BOX 24
DEPTH
217 - 226_5
225

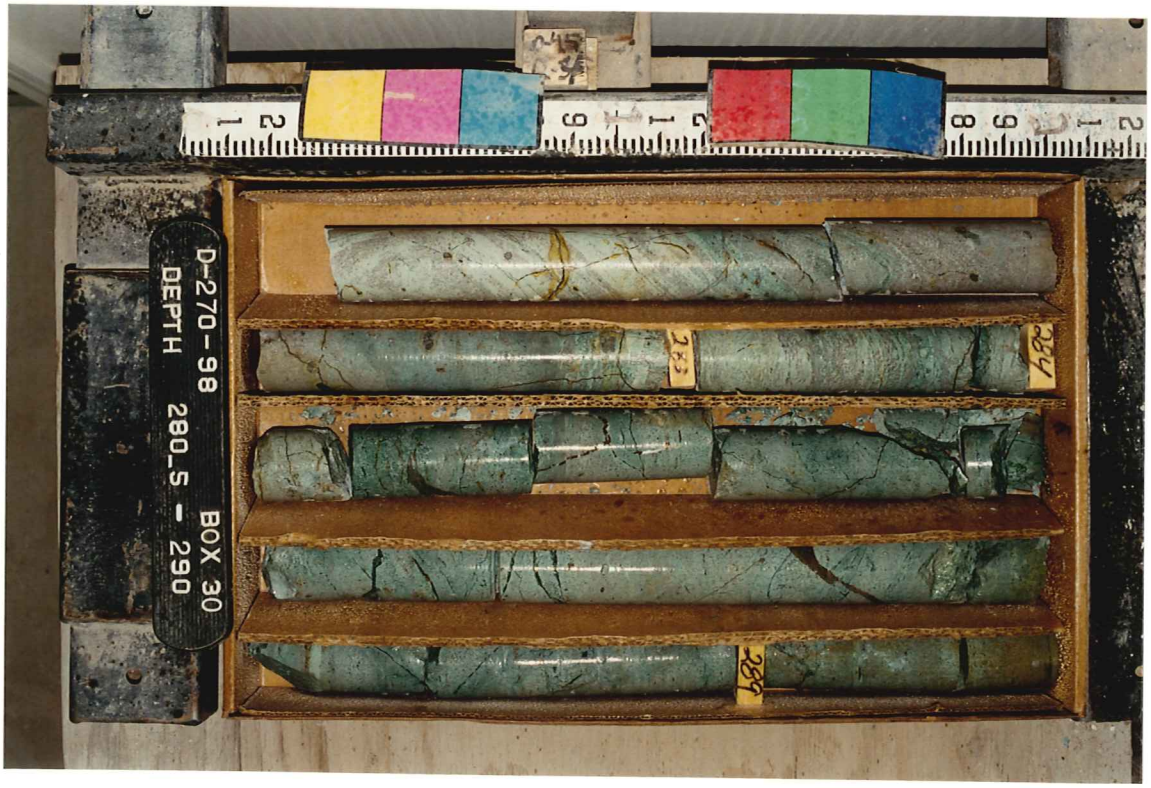
D-270-98
BOX 26
DEPTH
236 - 247_5
241
MIS-LATCH
246

D-270-98
BOX 25
DEPTH
226_5 - 236
235


D-270-98
BOX 27
DEPTH
247_5 - 259_5
251
256
259

D-270-98 BOX 29
DEPTH 270 - 280_5
272.5
276.5
278

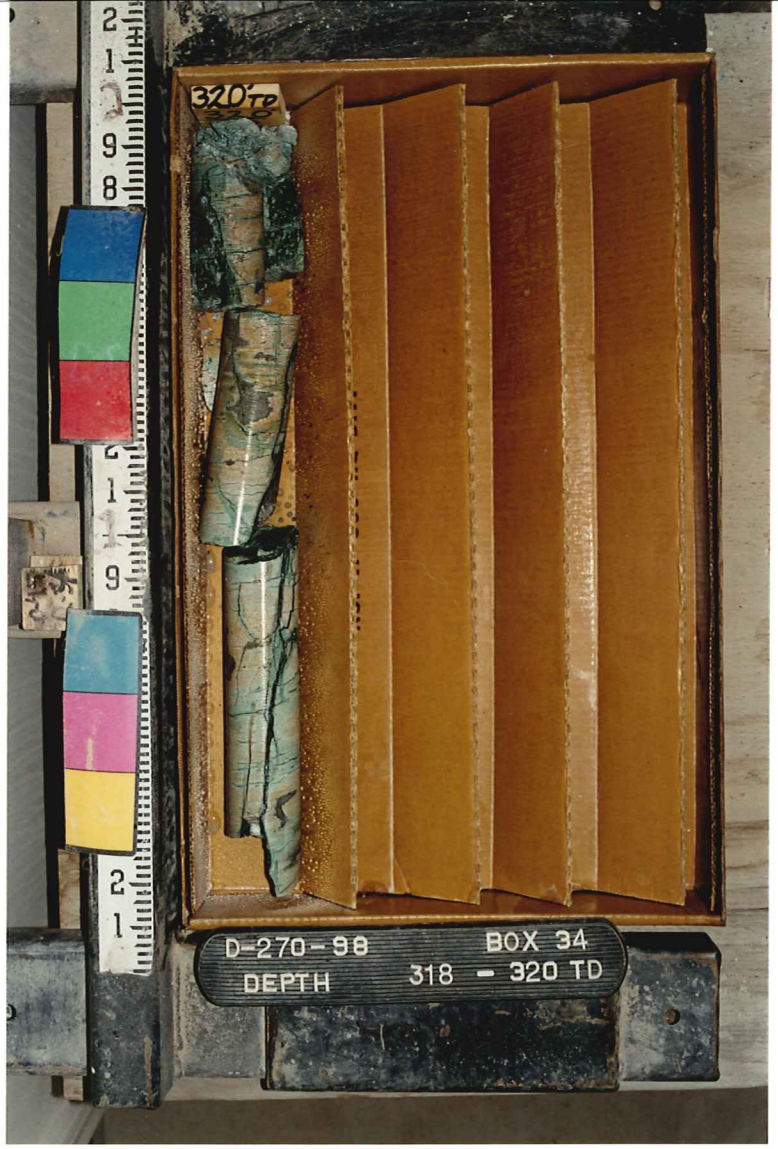
D-270-98 BOX 28
DEPTH 259_5 - 270
265
269.5


D-270-98 BOX 30
DEPTH 280_5 - 290
283
284
285

305
304
300
D-270-98 BOX 32
DEPTH 299_5 - 308_5

297
D-270-98 BOX 31
DEPTH 290 - 299_5

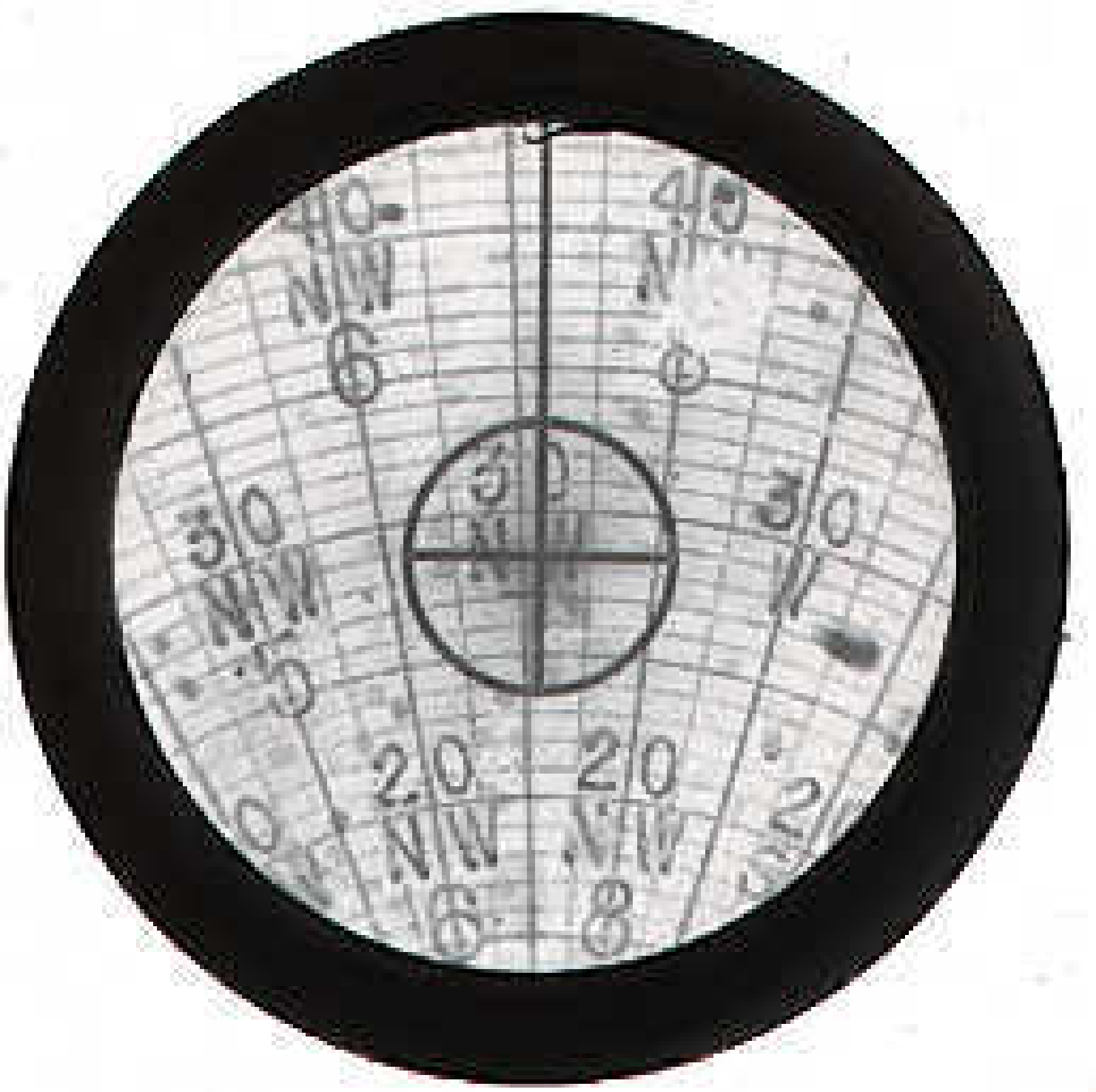
310
315
D-270-98 BOX 33
DEPTH 308_5 - 318


320' TD
D-270-98
BOX 34
DEPTH
318 - 320 TD

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-270-98
LEASE
TAKEN BY Hunter
DEPTH 320
DATE 6-17-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO. 1

HI-1408

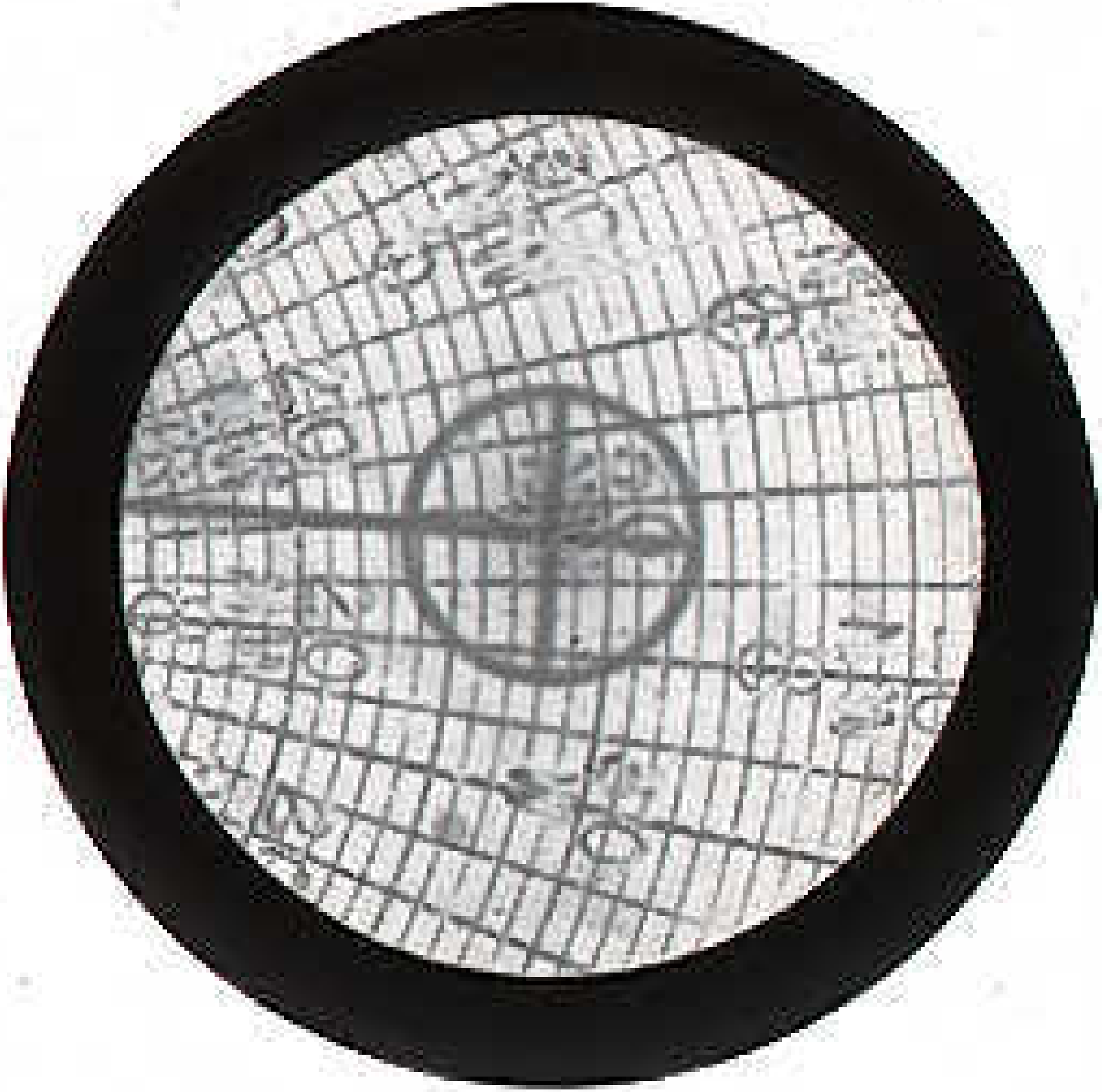

40
NW
6
30
NW
5
20
NW
16
40
NW
6
30
NW
5
20
NW
18

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-270-98
LEASE
TAKEN BY Hunter
DEPTH Collar
DATE 6-17-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO. 1
HI-1408

40
NW
6
40
NW
8
30
NW
5
30
NW
4
30
NW
2
20
NW
6
20
NW
8

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-270-98
LEASE
TAKEN BY Hunter
DEPTH 160'
DATE 6-17-98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO. 1

HI-1408