60000646

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-163-98
AUTHOR	S. King; K. Allen
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; Hecla Mining Co; Rosebud Project; Rosebud Mining Co, LLC
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; [redacted]; total depth 150; receipts; downhole camera images; handwritten notes 22 p. 3 downhole 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: DD 4/28/2008
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

D-163-98

6000 0646

4010

6600 0646

Hecla MINING COMPANY

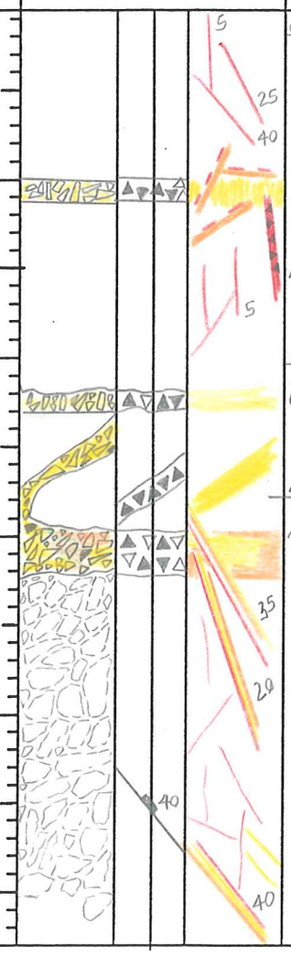
- quartz, chalcedony, silicification
- faults, fractures
- FeOx
- sulfide
- calcite, carbonate
- argillization, white clays
- propylitization
- potassic alteration
- chlorite, chloritic clays

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D-163-98	LOCATION	ACCESS 43, EAST
PAGE 1 OF 3		NORTHING	
DATE	01/23/98	EASTING	
LOGGED BY	RBM	ELEVATION	
SCALE	1"=10'	AZIMUTH	S54E
TOTAL DEPTH	150'	INCLINATION	+67

REMARKS

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
		0.0'-32.3': MASSIVE, APHANITIC, PALE BUFF-GRAY DOZER.	0		0-4': BROKEN ROCK	0-9.5': MOD. MARC +/- WHT CLAY VNLTS & THIN FRAX COATINGS. MOD. PYRITIC BLEBBING. FAINT RUDDY-BRN FeOx STAINING.
		9.5-14.0': ~1" THICK WHT CLAY PACKED CRACKLE BRECCIA VEINS. +/- MARCASITE. 10.0'-11.0': PARTIALLY SILICA-CEMENTED CRACKLE BRECCIA. MONOLITHIC DOZER FRAGMENTS. 9.5 = PIMA	10		9.5'-14.0': VEIN BRECCIA STOCKWORK ZONE. HYDROTHERMAL.	9.5-14.0': 1" THICK WHT CLAY +/- MARC UNHEALED CRACKLE BRECCIA VNS. 10-11': SILICA +/- MARC CEMENT
		22.4-23.3': MONOLITHIC SEMI-HEALED CRACKLE BXA.	20		22.4-23.3': MONOLITHIC DOZER HYDROTHERMAL CRACKLE BXA.	14.0'-22.4': MOD. MARC +/- WHT CLAY VNS. 22.4-23.3: SILICA + WHT CLAY +/- MARC PARTIALLY CEMENT BXA.
		27.5-32.5': STRANDS OF SILICA-CEMENTED FINE-GRAINED VEIN CRACKLE BRECCIA GIVE WAY DOWNWARDS TO PARTIALLY CEMENTED & UNHEALED BRECCIA OF THE SAME TEXTURE. VARIABLE CLAY ALTERATION & BLEACHING OF CLASTS RESULTS IN A SPECKLED APPEARANCE THO THE BXA IS PROBABLY MONOLITHIC. BELOW 31' IT IS VARIABLY ARGILLIZED AND SILICIFIED.	30		27.5'-32.5': FAULT-RELATED CRACKLE BRECCIA. ~30.5': GOUGY PALE GRN CLAY POSSIBLE FAULT TRACE.	27.5-32.5': SILICA-CEMENTED +/- MARC TO ~30'. ARGILLIZED & MODERATELY GOUGY TO 31'. 31.-32.5': MIXED CLAY ALT'N AND SPOTTY SILICA +/- MARC.
		32.5'-84.4': THE DOZER CONTINUES PALE BUFF-GRY AND APHANITIC BELOW THE HYDROTHERMALLY CEMENTED BXA ZONE ENDING AT 32.5'. FROM 32.5' ~~##~~ IT IS CONTINUOUSLY AUTOBRECCIATED. 30.4' = PIMA	40			32.5'-56': MOD. TO WK MARCASITE + CLAY VNLTS & FRACTURE COATINGS. CONT'D WK TO MOD. PY BLEBS IN THE WALLROCK AND TR. FeOx STAINING. 43.0': FAINT RUDDY FeOx STAINING DIES AWAY.
			50			



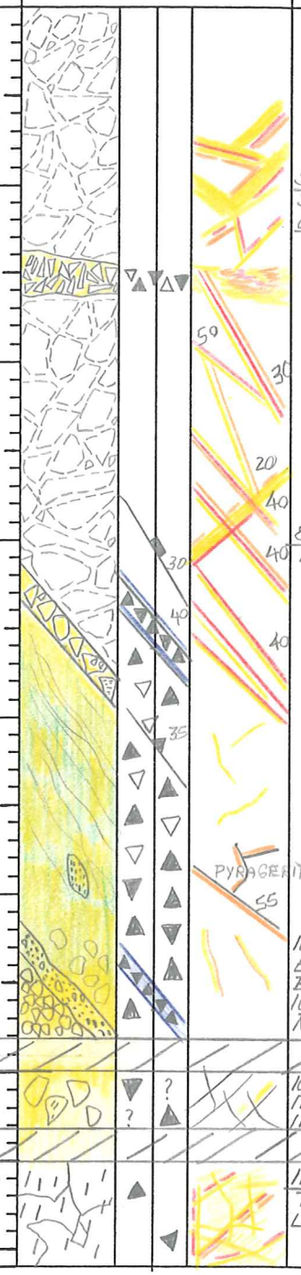
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ac
0	4.6					
4.6	9.5					
9.5	14.0					
14.0	18.0					
18.0	22.4					
22.4	23.3					
23.3	27.5					
27.5	29.9					
29.9	32.5					
32.5	36.3					
36.3	40.9					
40.9	46.2					
46.2	51.3					

HOLE NUMBER D-163-98 PAGE 2 OF 3

LITH.	OX/RED.	LITHOLOGY	FT	STRUCTURE	ALTERATION AND MINERALIZATION
0'-84.4' DOZER		32.5'-84.4': PALE BUFF-GRAY, APHANITIC AND AUTOBRECCIATED DOZER.	50		
			60	56.9'-66.0': STRONGLY VNED STOCKWORKED AND, FROM 64.4'-66.0, CRACKLE BXA'D.	56.9'-64.4': STRONG SILICA + MARCASITE + WHT CLAY STKWK VNING. QZ LATE WRT MARCASITE & OVERPRINTS OR FLOODS WHT CLAY.
					64.4-66.0': SILICA-CEMENTED + BLADED MARCASITE + LATE WHT CLAY.
			70		69.0': BLOCKY BARITE APPEARS IN VEINS WITH QZ + MARC +/- WHT CLAY.
		DOZER DOMINATED FAULT ZONE	80	84.4'-115.0': SOUTH RIDGE FAULT ZONE.	
84.4'-86.1' / 86.1-104.5' UBUD-DOMINATED FAULT ZONE		84.4'-86.1': STRONGLY SILICIFIED DOZER MOSAIC-BRECCIA. MONOLITHIC, ANGULAR DOZER ROCK FRAGMENTS ~~78~~ IN ROCK FLOUR TO 85.6'; MULTI-EPISODE DOZER +/- BUD TO 86.1'.			84.4-89': 3 SOOTY SULFIDE + SILICA
		86.1'-~100': BELOW THIN SILICIFIED DK-GRY TO SOOTY SULFIDE VEIN THE ROCK IS STRONGLY SILICIFIED, ~~WITH~~ TECTONIC BRECCIA WITH A MUSHY BLUE-GREEN MATRIX (UBUD DERIVED?) AND SPECKLED BRN (!) SUB-ROUNDED UBUD FRAGMENTS. MATRIX OR PSEUDOMATRIX-SUPPORTED. SIGNIFICANT TEXTURE DESTRUCTN, WEAKLY DEVELOPED SHEAR FOLIATION.	90		86.1'-104.5': GRN CLAY ALT'N OVERPRINTED ~~FIRST~~ WITH STRONG PERVASIVE SILICIFY CATION INCREASING TO INTENSE BY 104'. X-CUT BY MOD. WHT SiO_2 + MARCASITE + WHT CLAY VNS
		FROM ~100': CLASSIC GRN BUD FRAGMENTS IN GRNISH MUSH, WK SHEAR FOLIATION IS GONE.	100	96.0'-100': WHT CLAY + SUB-HEDRAL PYRARGERITE FRAX COATING. LATE WRT MOST SILICA + MARCASITE. WHT CLAY COATING FRAX CONTINUES TO 104.5'.	
		104.5'-~110': TOTAL REPLACEMENT, MULTIEPISODE SILICA BRECCIA IN THE HEART OF THE FAULT ZONE. 104.5'-105.6': DIFFUSE/FUZZY CLASTS OF WHT SiO_2 IN GRY SiO_2 MATRIX.		104.5-~110.0': MULTI-EPISODE HYDROTHERMAL BRECCIA. 104.5-105.6: HETEROLITHIC, MATRIX-SUPPORTED.	104.5'-106.4': INTENSELY SILICIFIED / SILICA REPLACED. GRAY.
				LOSS	
104.5-115.0 HYDROTHERMAL		106.4'-108.3': SUB-ROUNDED GRAY SILICA FRAGMENTS PARTIALLY CEMENTED WITH GRAINY WHT SILICA + ROCK FLOUR. CLAST-SUPPORTED.	110	105.6-106.4': INTENSELY SiO_2 MYLONITIC SHEAR ZONE. 110-113.2: RUBBLE	110-113.2': STRLY TO INTENSELY SILICIFIED.
				LOSS	
115.0'-127.3' FINE-GRAINED PINK PORPHYRY		110.0-113.2': BROKEN CORE, CONTAINING COMPLETE SILICA REPLACEMENT & FG PINK PORPHYRY FRAGMENTS. 115.0'-127.3': DULL DARK TAN PHENOCRYST-FLECKED W/ AN APHANITIC GROUNDMASS. MONOLITHIC CRACKLE BXA.	120	115.0-127.3': SILICA STKWKED TO CRACKLE BXA'D. MONOLITHIC FG PK PORPHYRY	115.0-127.3': INTENSE SILICA VEINING +/- MARCASITE & WHT CLAY. VUGGY QUARTZ WITH OPEN SPACE. TR. SILICIFICATION.

GRAPHIC LOG



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
46.2	51.3				
51.3	56.6				
56.6	60.0				
60.0	64.4				
64.4	66.0				
66.0	69.0				
69.0	74.0				
74.0	79.0				
79.0	84.4				
84.4	86.1				
86.1	90.0				
90.0	95.0				
95.0	100.0				
100.0	104.5				
104.5	105.6				
105.6	106.4				
106.4	108.3				
110.0	113.2				
115.0	119.3				

HOLE NUMBER D-163-98 PAGE 3 OF 3

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
115.0-127.3' FG PINK PORPHYRY			120		115.0'-127.3': WK TO MOD. SILICA-CEMENTED CRACKLE BRECCIA.	127.3: 2" THICK SILICA + WHT CLAY + BARITE VEIN	119.3	123.5				
							123.5	127.3				
127.3- PRIMARY BXA? (VITROPHYRE? OR CHOCOLATE LLT?)	150'	127.3-150.': MANGLED HETEROLITHIC BRECCIA. POSSIBLY PRIMARY AND POSSIBLY CONTAINING GLASSY JUVENILE MATERIAL, NOW SHOT TO GREEN CLAY. THIS MATERIAL IS MIXED WITH MORE ANGULAR FRAGMENTS OF FINE-GRAINED PINK PORPHYRY, AND FINE FLOW-BANDED ROCK. THIS "BRECCIA" DOESN'T SEEM TO HAVE A DISCRETE MATRIX. THE GRN CLAY ALTERED MATERIAL APPEARS TO HAVE PLASTICALLY DEFORMED AROUND HARDER CLASTS.	130			FROM 127.3': MOD. ARGILLIZATION OF CERTAIN CLASTS. DISSEMINATED MARCASITE INCREASES TO MODERATE, TOGETHER WITH IRREGULAR MARC VNLTS. WK TO MOD. SILICA + MARC + WHT CLAY.	127.3	130.0				
							130.0	135.0				
			140		139.5': WK CLAY GOUGE		135.0	140.0				
					145.6'-145.9': CLAY GOUGE. PALE GRY-GRN POSSIBLY		140.0	145.0				
			150				145.0	150.0				
		150.0' T.D.										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-163-98 DATE 01/23/98 LOGGED BY: HLM 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	4.0	112.5	112.5	22.5										
4.0	9.0	94.0	94.0	76.0										
9.0	14.0	96.0	100.0	12.0										
14.0	19.0	100.0	100.0	70.0										
19.0	24.0	96.0	96.0	60.0										
24.0	29.0	98.0	98.0	54.0										
29.0	34.0	102.0	102.0	36.0										
34.0	39.0	100.0	100.0	88.0										
39.0	44.0	102.0	102.0	92.0										
44.0	49.0	100.0	100.0	90.0										
49.0	54.0	100.0	100.0	84.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-163-98 DATE 01/23/98 LOGGED BY: HDM 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)
54.0	59.0	100.0	100.0	68.0										
59.0	64.0	106.0	106.0	28.0										
64.0	69.0	102.0	102.0	74.0										
69.0	74.0	104.0	104.0	52.0										
74.0	79.0	90.0	90.0	76.0										
79.0	84.0	88.0	88.0	80.0										
84.0	85.0	100.0	100.0	40.0										
85.0	90.0	94.0	94.0	94.0										
90.0	95.0	104.0	104.0	56.0										
95.0	100.0	100.0	100.0	44.0										
100.0	105.0	96.0	96.0	66.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-162-98 3 DATE: 01/24/98 LOGGED BY: JSM 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)
105.0	109.0	80.0	82.5	30.0										
109.0	115.0	30.0	68.0	0										
115.0	120.0	100.0	100.0	88.0										
120.0	125.0	98.0	98.0	78.0										
125.0	130.0	100.0	100.0	78.0										
130.0	135.0	100.0	100.0	62.0										
135.0	140.0	100.0	100.0	18.0										
140.0	145.0	102.0	102.0	44.0										
145.0	150.0	96.0	96.0	48.0										

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

(702) 356-0606

INVOICE NO: SP 0047988-IN
INVOICE DATE: 02/19/98

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-163-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
38	SAMPLES RECEIVED	.00	.00
38	DRYING	1.00	38.00
38	JAW CRUSHING CHARGE	1.30	49.40
38	COARSE MILLING CHARGE	4.50	171.00
38	SPLITTING CHARGE	2.40	91.20
38	RING MILLING CHARGE	2.00	76.00
38	Au (1 A.T. FIRE ASSAY)	8.00	304.00
9	Au ANALYSES/GRAVIMETRIC	8.75	78.75
38	HYDROCHLORIC/NITRIC DIGESTION	2.00	76.00
38	Ag ANALYSES	1.00	38.00
4	Ag (ore grade) ANALYSES	5.00	20.00

86-5110-477
DA

NET INVOICE:	942.35
LESS DISCOUNT:	188.47
FREIGHT:	.00
INVOICE TOTAL:	753.88

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047988

American Assay Laboratories

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: D-163-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 38 REPORTED : 17 FEB 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 SP047988

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-163-98 0.0-4.6	0.006			0.08
D-163-98 4.6-9.5	0.011			0.10
D-163-98 9.5-14.0	0.010			0.36
D-163-98 14-18	0.007			0.10
D-163-98 18.0-22.4	0.031	0.033		0.17
D-163-98 22.4-23.3	0.015			0.20
D-163-98 23.3-27.5	0.016			0.12
D-163-98 27.5-29.9	0.016			0.10
D-163-98 29.9-32.5	0.022			0.18
D-163-98 32.5-36.3	0.010			0.13
D-163-98 36.3-40.9	0.007			0.07
D-163-98 40.9-46.2	0.005			0.05
D-163-98 46.2-51.3	0.013			0.07
D-163-98 51.3-56.6	0.098		0.088	0.12
D-163-98 56.6-60.0	0.015			0.05
D-163-98 60.0-64.4	0.520		0.521	0.27
D-163-98 64.4-66.0	0.643		0.618	1.46
D-163-98 66-69	0.036		0.042	0.27
D-163-98 69-74	0.148		0.117	1.37
D-163-98 74-79	0.262		0.288	0.48
D-163-98 79.0-84.4	0.045			0.16
D-163-98 84.4-86.1	0.085		0.071	0.06
D-163-98 86.1-90.0	0.026			0.86
D-163-98 90-95	0.050		0.056	0.11
D-163-98 95-100	0.070		0.057	1.35

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047988

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-163-98 100.0-104.5	0.028			14.85
D-163-98 104.5-105.6	0.044			20.85
D-163-98 105.6-106.4	0.011			7.41
D-163-98 106.4-108.3	0.011			0.71
D-163-98 110.0-113.2	0.009			0.43
D-163-98 115.0-119.3	0.006			0.14
D-163-98 119.3-123.5	0.012			0.70
D-163-98 123.5-127.3	0.010			0.24
D-163-98 127.3-130.0	0.006	0.007		0.26
D-163-98 130-135	0.006			0.33
D-163-98 135-140	0.019			1.01
D-163-98 140-145	0.015			0.55
D-163-98 145-150	0.020			1.05

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ANALYSIS REPORT SP047988

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HECLA MINING COMPANY

COPIES TO : KURT ALLEN

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CLIENT REFERENCE No: D-163-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 38 REPORTED : 17 FEB 1998

MAIN SAMPLE TYPE : DRILL CORE

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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 SP047988

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-163-98 0.0-4.6	0.006			0.08
D-163-98 4.6-9.5	0.011			0.10
D-163-98 9.5-14.0	0.010			0.36
D-163-98 14-18	0.007			0.10
D-163-98 18.0-22.4	0.031	0.033		0.17
D-163-98 22.4-23.3	0.015			0.20
D-163-98 23.3-27.5	0.016			0.12
D-163-98 27.5-29.9	0.016			0.10
D-163-98 29.9-32.5	0.022			0.18
D-163-98 32.5-36.3	0.010			0.13
D-163-98 36.3-40.9	0.007			0.07
D-163-98 40.9-46.2	0.005			0.05
D-163-98 46.2-51.3	0.013			0.07
D-163-98 51.3-56.6	0.098		0.088	0.12
D-163-98 56.6-60.0	0.015			0.05
D-163-98 60.0-64.4	0.520		0.521	0.27
D-163-98 64.4-66.0	0.643		0.618	1.46
D-163-98 66-69	0.036		0.042	0.27
D-163-98 69-74	0.148		0.117	1.37
D-163-98 74-79	0.262		0.288	0.48
D-163-98 79.0-84.4	0.045			0.16
D-163-98 84.4-86.1	0.085		0.071	0.06
D-163-98 86.1-90.0	0.026			0.86
D-163-98 90-95	0.050		0.056	0.11
D-163-98 95-100	0.070		0.057	1.35

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047988

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-163-98 100.0-104.5	0.028			14.85
D-163-98 104.5-105.6	0.044			20.85
D-163-98 105.6-106.4	0.011			7.41
D-163-98 106.4-108.3	0.011			0.71
D-163-98 110.0-113.2	0.009			0.43
D-163-98 115.0-119.3	0.006			0.14
D-163-98 119.3-123.5	0.012			0.70
D-163-98 123.5-127.3	0.010			0.24
D-163-98 127.3-130.0	0.006	0.007		0.26
D-163-98 130-135	0.006			0.33
D-163-98 135-140	0.019			1.01
D-163-98 140-145	0.015			0.55
D-163-98 145-150	0.020			1.05

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047988

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

HECLA MINING COMPANY

COPIES TO : KURT ALLEN
:
:
:

CLIENT REFERENCE No: D-163-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 38 REPORTED : 17 FEB 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

PROVISIONAL REPORT SP047988

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-163-98 0.0-4.6	0.006			0.08	
D-163-98 4.6-9.5	0.011			0.10	
D-163-98 9.5-14.0	0.010			0.36	
D-163-98 14-18	0.007			0.10	
D-163-98 18.0-22.4	0.031	0.033		0.17	
D-163-98 22.4-23.3	0.015			0.20	
D-163-98 23.3-27.5	0.016			0.12	
D-163-98 27.5-29.9	0.016			0.19	
D-163-98 29.9-32.5	0.022			0.18	
D-163-98 32.5-36.3	0.010			0.13	
D-163-98 36.3-40.9	0.007			0.07	
D-163-98 40.9-46.2	0.005			0.05	
D-163-98 46.2-51.3	0.013			0.07	
D-163-98 51.3-56.6	0.098		0.088	0.12	60-79 = 19' @
D-163-98 56.6-60.0	0.015			0.05	
D-163-98 60.0-64.4	0.520		0.521	0.27	0.28 Au
D-163-98 64.4-66.0	0.643		0.618	1.46	0.71 Ag
D-163-98 66-69	0.036		0.042	0.27	
D-163-98 69-74	0.148		0.117	1.37	
D-163-98 74-79	0.262		0.288	0.48	
D-163-98 79.0-84.4	0.045			0.15	
D-163-98 84.4-86.1	0.085		0.071	0.06	
D-163-98 86.1-90.0	0.026			0.86	
D-163-98 90-95	0.050		0.055	0.11	
D-163-98 95-100	0.070		0.057	1.35	

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047988

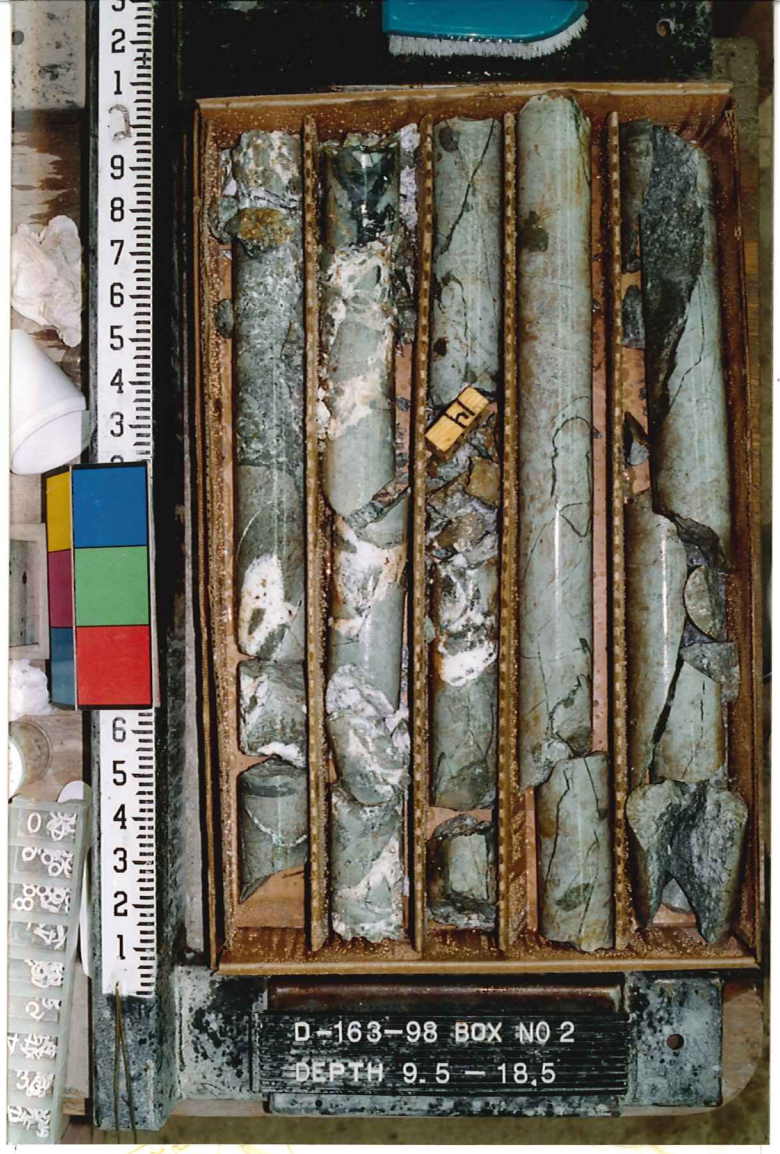
CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-163-98

REPORTED : 17 FEB 1998

100-106.4'
6.4'

SAMPLES		Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-163-98 100.0-104.5	4.5	0.028			14.35
D-163-98 104.5-105.6	1.1	0.044			20.85
D-163-98 105.6-106.4	0.8	0.011			7.41
D-163-98 106.4-108.3		0.011			0.71
D-163-98 110.0-113.2		0.009			0.43
D-163-98 115.0-119.3		0.006			0.14
D-163-98 119.3-123.5		0.012			0.70
D-163-98 123.5-127.3		0.010			0.24
D-163-98 127.3-130.0		0.006	0.007		0.26
D-163-98 130-135		0.006			0.33
D-163-98 135-140		0.019			1.01
D-163-98 140-145		0.015			0.55
D-163-98 145-150		0.020			1.05

0.029 Au
14.95 Ag


D-163-98 BOX NO 2
DEPTH 9.5 — 18.5

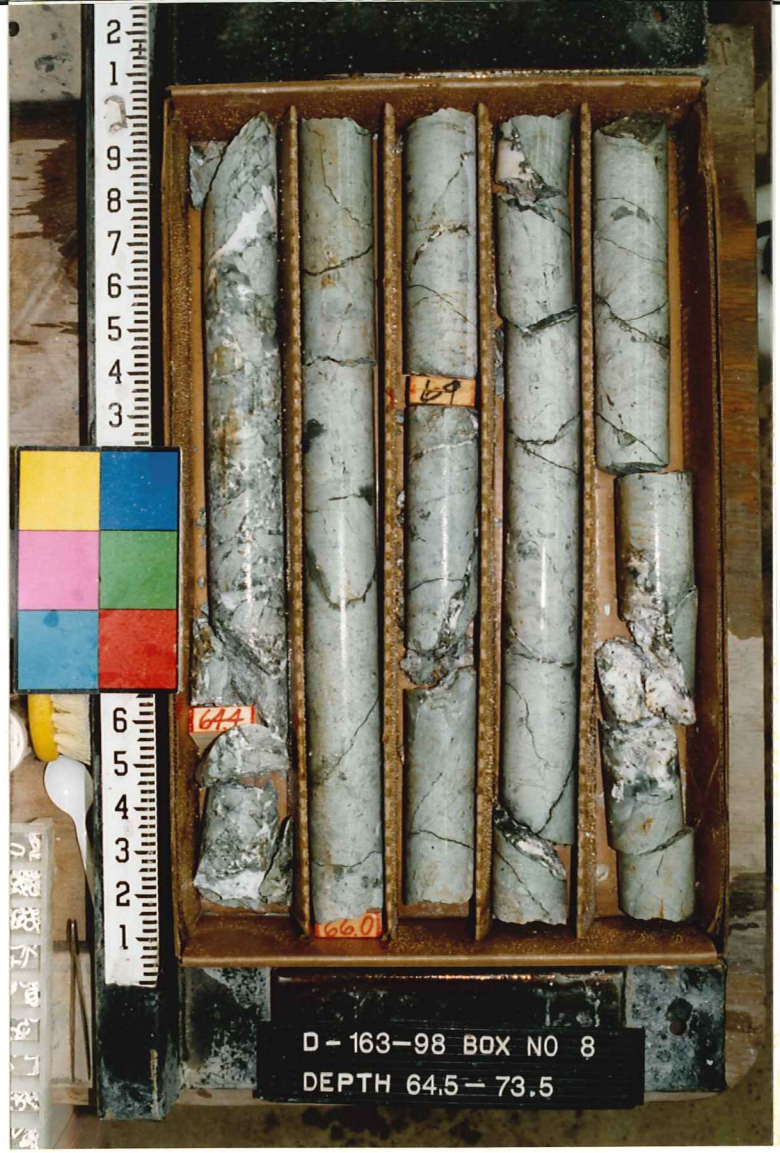
D-163-98 BOX NO 1
DEPTH 0.0 — 9.5

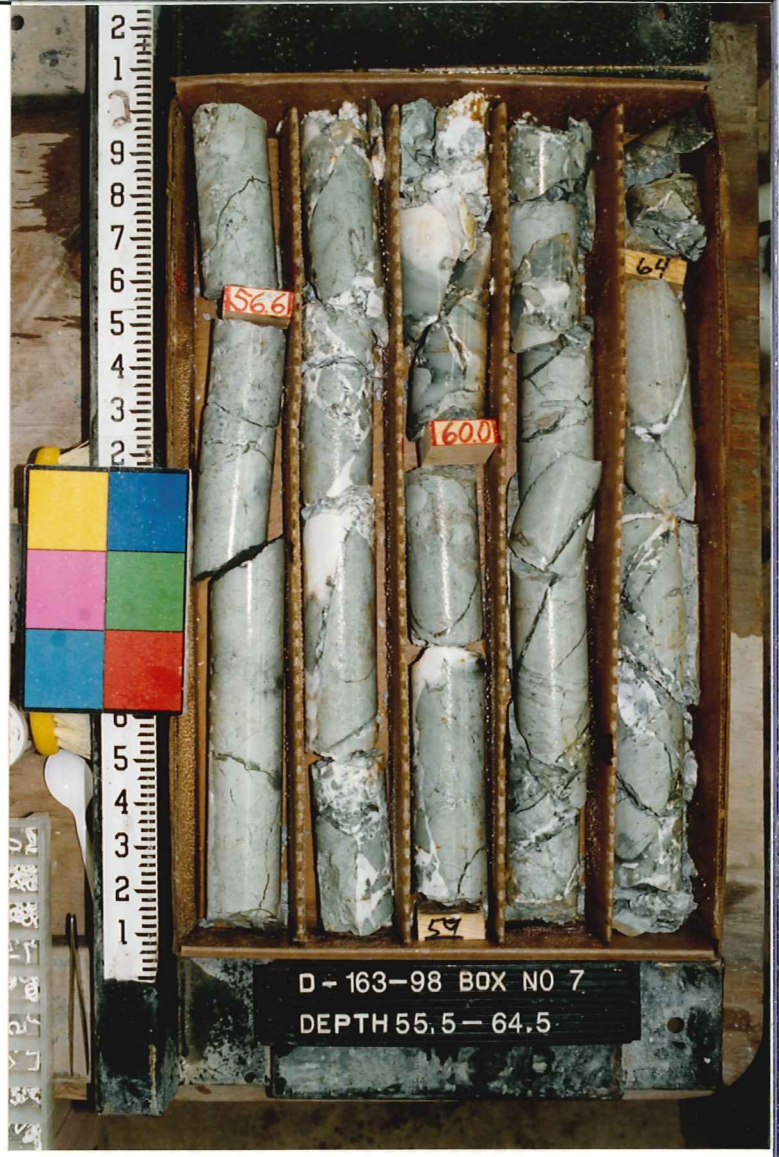
D-163-98 BOX NO 3
DEPTH 18.5 — 28

34
D-163-98 BOX NO 4
DEPTH 28 — 37.5

34
46.2
44
40.9
D-163-98 BOX NO 5.
DEPTH 37.5 — 46.5

51.3
54
D-163-98 BOX NO 6.
DEPTH 46.5 — 55.5


69
64.4
66.0
D - 163-98 BOX NO 8
DEPTH 64.5 - 73.5


56.6
64
60.0
59
D - 163-98 BOX NO 7
DEPTH 55.5 - 64.5

74
79
D - 163-98 BOX NO 9
DEPTH 73.5 - 83

85
86.1
90
D-163-98 BOX NO 10
DEPTH 83 - 92.5

100
D-163-98 BOX NO 11
DEPTH 92.5 - 102

D-163-98 BOX NO 12
DEPTH 102 - 111
1045
1057
1064
1083
LOSS
1100

123.5
127.3
125
130
D-163-98 BOX NO 14
DEPTH 122 - 131

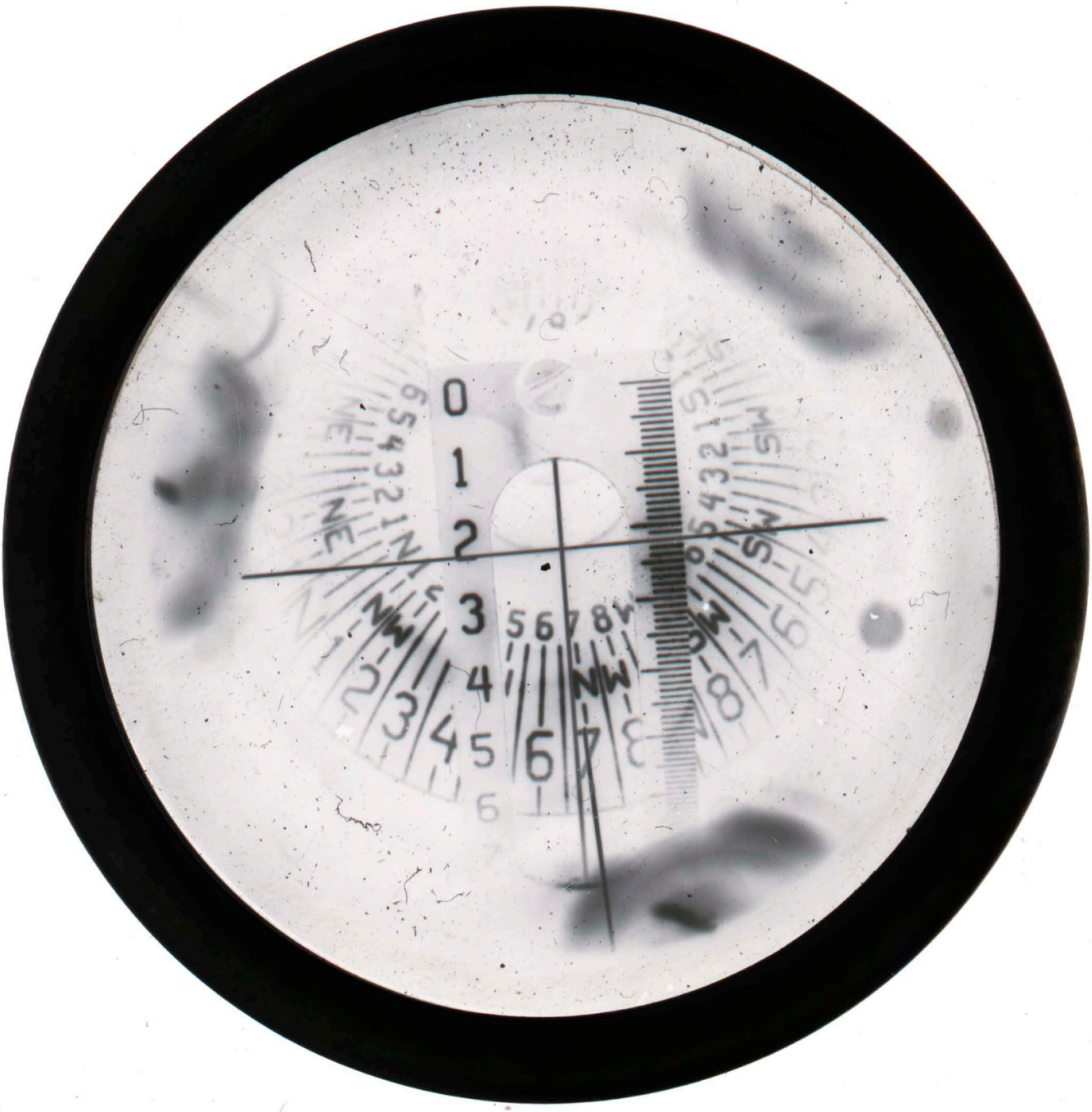
120
115
LOSS
113.2
D-163-98 BOX NO 13
DEPTH 111 - 122

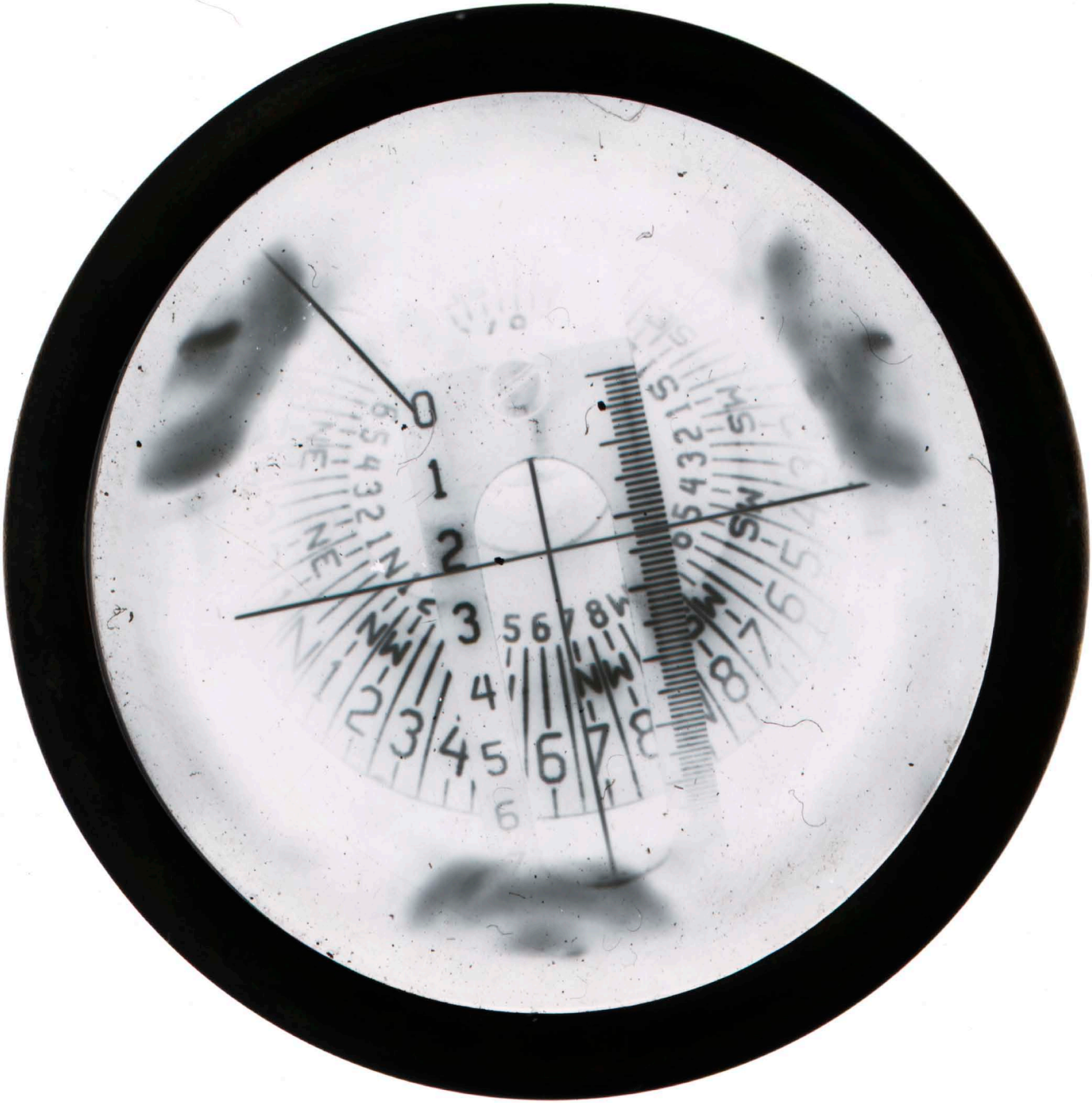
D-163-98 BOX NO 15
DEPTH 131 - 140.5
135
140

145'
150'
D-163-98 BOX NO 16
DEPTH 140.5 — 150 - TD

DOWNHOLE SURVEY MAGNETIC DECLINATION: -15.7°

DRILL ~~DOWNHOLE~~ #	FILM FOOTAGE	BEARING	DIP	TRUE BEARING	TRUE DIP
D-163-98	COLLAR	N58.0°W	22.0°	S42.3°E	+68.0
	75'	N68.0°W	22.5°	S52.3°E	+67.5°
	150'	N67.5°W	22.0°	S51.8°E	+68.0




0
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NE
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NW
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SW
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