6000 0645

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-164-98
AUTHOR	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 Mining Co., LLC; Rosebud Project
COMMODITY If not obvious	gold; silver
NOTES	drill logs; assay; geology; photographs; [redacted]; total depth 233'; receipts; downhole camera images; handwritten notes 30p 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- 164-98

60000645

4010

6000645

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-164-98	LOCATION	
PAGE 1 OF 4		NORTHING	
DATE	01/24/98	EASTING	
LOGGED BY	HDM	ELEVATION	
SCALE	1" = 10'	AZIMUTH	
TOTAL DEPTH	233'	INCLINATION	

REMARKS

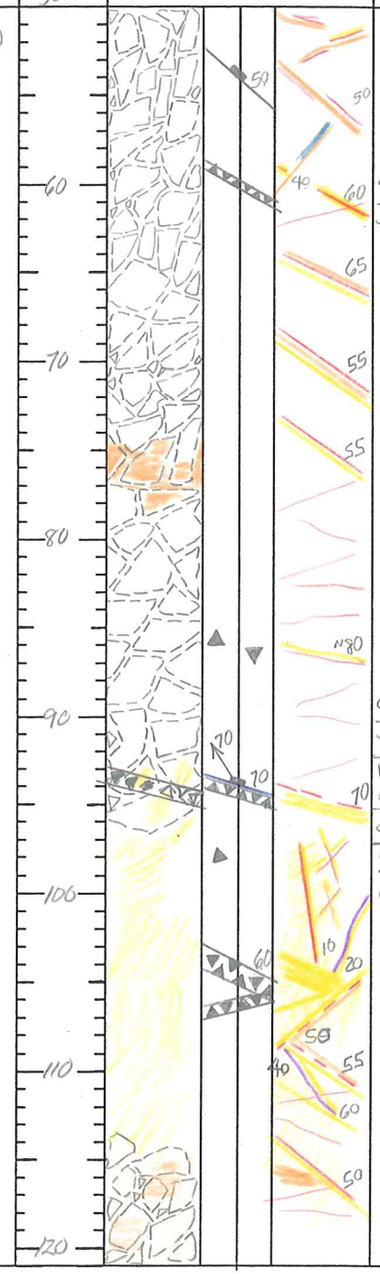
LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0'- DOZER	0'- REDUCED	0'-18.1': PALE GRY-GRN MASSIVE TO FLDW FOLIATED DOZER. INTERMITTENTLY STRONGLY ARGILLIZED AND PUNKY THRU THIS INTERVAL. 9': PIMA 4'-~8': MONOLITHIC DOZER CRACKLE BXA/STKWK. 12': PIMA 19.6'-25.0': MONOLITHIC DOZER CRACKLE BXA 28.8-34.2': MONOLITHIC DOZER CRACKLE BXA. 33.5': PIMA BELOW MODEST VN BXA AT 44.5': THE DOZER BECOMES AUTOBRECCIATED SOMEWHERE AROUND ~45'. WKLY DEVELOPED TO ~55'.	0 10 20 30 40 50	60 60 70 30 50 70 60 50 40 50	~4-8': THREADY CRACKLE BXA IN BOTH COMPETENT & PUNKY ROCK. FROM ~7-8' WK SILICIFICATION + MARC IN MATRIX ONLY. 0-50': MOD. CLEAN, ~~STRAIG~~ STRAIGHT JOINTING. 19.6'-25.0': INTERMITTENT TIGHT CRACKLE BXA TO VN STOCKWK. IN COMPETENT ROCK. HYDROTHERMAL 28.8'-34.2': FAULT-RELATED CRACKLE BXA. HYDROTHERMAL 32.8-32.9: MILLED GOUGE 44.5': V. WK MILLING IN WHT CLAY BRECCIA VN.	0-18.1': INTERMITTENT STR PUNKY ~~TOTAL~~ WALLROCK ARGILLIZATION THRU THIS INTERVAL. PUNKY PORTIONS ARE PALE GRY-GRN LIKE THE COMPETENT RK. CLAY ALTERED PORTION DECREASES DOWNWARDS. SAMPLE BREAKS: 0-4.5' & 7.6-10.1' = STR. ARGILLIZATION. 4.5-7.6' & 10.1-14.8': WK/MOD. CLAY. WK MARCASITE VNLTS AT HI ∠'S TO CIA COMMON IN GOOD ROCK. 19.6-25.0': WK SILICIFICATION + MARC IN LACY MATRIX. LATE WHT CLAY IN VUGS. 28.8'-34.2': WHT CLAY MATRIX + LOCAL WK SILICA + LATE BLOCKY BARITE ON FRAX. BELOW 34.2': FAINT RUDDY FeOx STAINING APPEARS IN WALLROCK. 38.5': ~3" WIDE SOFT WHT CLAY VN. 44.5': WHT CLAY BXA VN. + MARC. WK MARC VNLTS AT HI ∠'S TO CIA CONT'D COMMON IN SOLID DOZER. WK PY BLEBS

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	Ag
0	4.5					
4.5	7.6					
7.6	10.1					
10.1	14.8					
14.8	19.6					
19.6	24.9					
24.9	28.7					
28.7	34.4					
34.4	39.2					
39.2	44.3					
44.3	49.3					

HOLE NUMBER D-164-98 PAGE 2 OF 4

LITH.	OX/RED.	LITHOLOGY	STRUCTURE	ALTERATION AND MINERALIZATION
0- DOZER	0'- REDUCED	~55-94': CONT'D PALE GRY-GRN DOZER, AUTOBXA'D TO ~94'.		~53.5': WHT CLAY VNING PICKS UP; MODERATE TO ~60.0'. 57.7': MINOR CALCITE W/ WHT CLAY VN. FROM 69': VUGGY QUARTZ VNING COMMON (MOD. TO STR) TO ~72'.
			60.5': 1" WIDE FINE CRACKLE BXA (MICROBXA) VN. SILICA CEMENTED + MARC.	50'-120': AS ABOVE, THIN MARCASITE + QZ VNLTS AT HI ∠S TO CA ARE COMMON THRU OUT THIS INTERVAL, WHT CLAY + MARC COMMON ON FRAX. PYRITIC BLEBS IN WALLROCK CONTINUE MOD.
		94.0': AUTOBRECCIA TEXTURE AND FAINT RUDDY FeOx STAINING DISSIPATES.	94.5': SLICKED STRAIGHT JNT IN CTR. OF 3" WIDE SILICIFIED MICROBXA VN.	94.5': STR. SiO2 + GRY SULFIDES IN CEMENT & ON FRAX.
			94.5'-~107': WK TO MOD. CRACKLE BXA BELOW TO ~107'. SILICA +/- MARCASITE CEMENT.	94.5'-~107.0': SILICA + MARC VNING & VN BXA INCREASES TO STRONG, AND WEAK WALLROCK SILICIFICATION IS FOUND PROXIMAL TO VEINS, TO ~101.0'. 102': QZ + MARC + BARITE VN ~+ WHT CLAY. 105.5': LATE MILKY QZ VN X-CUTS EARLY SILICA + MARC VNLT.
				114.0': QUARTZ + WHT CLAY + MARC VN ~ 2" WIDE.



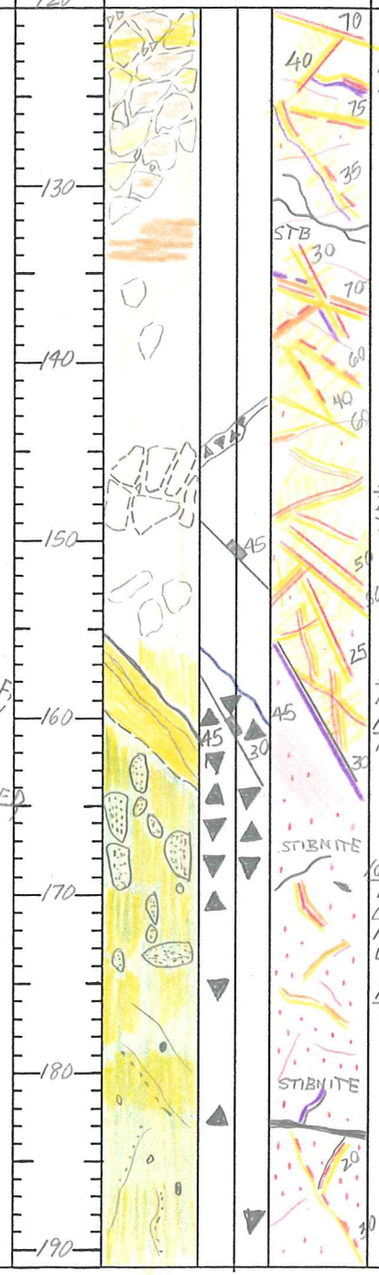
ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
49.3	53.6				
53.6	57.7				
57.7	62.0				
62.0	65.6				
65.6	69.0				
69.0	71.6				
71.6	74.7				
74.7	77.2				
77.2	81.7				
81.7	85.9				
85.9	90.3				
90.3	94.5				
94.5	98.2				
98.2	101.9				
101.9	105.8				
105.8	109.8				
109.8	114.0		0.202		
114.0	119.0		0.157		

HOLE NUMBER D-164-98 PAGE 3 OF 4

LITH.	OX/RED.	LITHOLOGY
0'- DOZER	0'-233' REDUCED	FAINT VERY HARD TO SEE AUTOBXA BY ~115'. DOZER CONTINUES PALE GRY-GRN. THE DOZER IS AUTO-BRECCIATED TO THE CONTACT BUT ONLY FAINTLY & INTERMITTENTLY. COULD BE PSEUDOBXA.
		152.8-158.3': STOCKWK/CRACKLE BXA IN DOZER.
158.3'-208.8' S. RIDGE FLT ZONE		158.3-160.9': HETEROLITHIC MILLED MATRIX-SUPPORTED FAULT BRECCIA. SIGNIFICANT SILICA REPLACEMT OF MATRIX ROCK FLOUR +/- FRAGMENTS. THE MATRIX IS NOW LARGELY GRY SILICA. FRAGMENTS INCLUDE: 1) BUFF, ANGULAR DOZER 2) SMALLER GRN UBUD & 3) FUZZY WHITE SILICA.
		160.9'-173.0': SEA GREEN, INTERMITTENTLY WELL-SILICIFIED UBUD-DERIVED TECTONIC BRECCIA ZONE. SHAGGY INTACT, GRN CLAY ALTERED, VCG SAND-SIZED UBUD FRAGMENTS FLOAT IN A DISAGGREGATED UBUD-DERIVED MOD'LY TO STR'LY SILICIFIED MATRIX.
173.0'-197.5' UBUD		~173.0'-197.5': CONTINUOUS MUSH W/O CLEAR FRAGMT VS. MATRIX. INCREASINGLY SILICIFIED DOWNHOLE. NO WELL-DEVELOPED FOLIATION FABRIC. DESPITE SEA GRN COLOR THIS MAY NOT BE HOMOGENEOUS MONOLITHIC TECTONIZED UBUD. SIGNIFICANT DOZER COMPONENT TO FRAGMT POPULATION.

FT



GRAPHIC LOG

STRUCTURE

NO STRAIGHT JOINTS, NO FAULTING.

152.8'-158.3': MONOLITHIC DOZER STKWK GRADING TO CRACKLE BXA.

158.3'-208.8': SOUTH RIDGE FAULT ZONE.

158.3-160.9': STR'LY MILLED HETEROLITHIC FLT BXA.

160.9-173': UBUD BRECCIA: DISCRETE FRAGMENTS OF INTACT UBUD MATRIX-SUPPORTED IN UBUD MUSH.

173.0'-197.5': MORE TECTONIZED UBUD.

ALTERATION AND MINERALIZATION

107-125': MOD. TO STR. QUARTZ+MARCASITE +/- CLAY & BARITE VNING.

FROM ~115': SPOTTY WK WALLROCK ARGILLIZATION & SILICIFICATION NEAR QZVNS.

125'-158.3': STR. QUARTZ + MARCASITE +/- BARITE & WHT CLAY VNS.

132.5': STIBNITE ON FRAX AT LOW ∠ TO C/A.

144.5': SILICA+MARC+WHT CLAY BXA VN.

155.5': SPOTTY WK VN CONTROLLED BARITE BECOMES CONTINUOUS MOD. PERVASIVE SiO2.

152.8'-158.3': QUARTZ + MARCASITE + WHT CLAY INCREASES FROM STRONG VEINING TO TRUE STKWK & CRACKLE BXA IMMEDIATELY ABOVE THE FLT.

158.3-160.9': STR'LY TO INTENSELY SILICIFIED + DISS'D GRAY SULFIDES.

160.0': STIBNITE + BLOCKY BARITE VN.

~165.0'-~190': VUGGY/LEACHED IRREGULAR WHT SILICA VNLTS. MARC BLADES DISS'D. SOOT ONLY W/ STIBNITE

160.9-173.0': STR'LY TO MOD'LY SILICIFIED MATRIX W/KLY TO MOD'LY SILICIFIED.

~173.0'-197.5': MOD. TO STR. SiO2 OVERPRINTING GRN CLAY ALTN +/- MR. BLCHING

181.5'-184.4': FINE DRUSY QZ LINED VUGS & VEINS ARE LINED WITH LATE BARITE & SOOTY BLK SULFIDE. 183': 3/4" STIBNITE & SOOTY BLK SULFIDE VN.

194.0-197.5': MOD. SOOTY GRY-BLK SILICA-SULFIDE VNS.

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
119.0	124.0		0.063		
124.0	129.0		0.322		
129.0	132.3		0.073		
132.3	135.6		0.649		
135.6	138.7		0.197		
138.7	144.0		0.671		
144.0	148.6		0.901		
148.6	152.8		0.622		
152.8	155.5		1.715		
155.5	158.3		0.959		
158.3	160.9		0.209		
160.9	164.9		2.634		
164.9	169.0		0.295		
169.0	173.0		0.229		
173.0	176.7				
176.7	179.9				
179.9	181.5				
181.5	184.4				
184.4	187.8				

HOLE NUMBER D-164-98 PAGE 4 OF 4

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
158.3'-208.8' 0'-233'		INCREASINGLY TECTONIZED FROM ~194.0'.				
					LOSS	
S. RIDGE FLT ZONE	REDUCED	~195.5'-197.5': PALE SEA GREEN ROCK FLOUR A/O TEXTURE OBLITERATED WITH INCREASING SILICA.		30 40		197.5-198.0': BROKEN SOOTY GRY SULFIDE +/- STIBNITE RIMS PALE GRY CHUNKS OF SILICA.
					LOSS	
		197.5'-207.3': TOTAL TO NEAR TOTAL ~~RE~~ SILICA REPLACEMT OF WALLROCK.	200	50 25	199.0-199.5': SiO_2 BXA. 199.5'-202.5': BARITE CEMENTED SUB-ROUNDED GRY SILICA REPLACEMT FRAGMENTS ~50° TO C/A	204.6-206.0 & 207.3'-208.8': STR. /INTENSE SILICIFICATION IS MOD'LY LEACHED.
		FROM 208.8': LEVEL OF TEXTURE DESTRUCTION & INTENSITY OF SILICIFACATION DECREASES.				
208.8'-233'		~208.8-212.5': HETEROLITHIC (UBUD?) BRECCIA. PEBBLE-SIZED FG FRAGMENTS OF TAN TO PALE GRN RK, IN A GRN ROCK FLOUR MATRIX. FRAGMENTS TEND TO BE ANGULAR TO SUB-ANGULAR WITH PERLITIC DEVITRIFICATION TEXTURE.	210	5 STIBNITE 50		208.8'-233': MOD'LY SILICIFIED MATRIX, WKLY TO MOD'LY SILICIFIED CLASTS.
		212.5'-~223.5': ANGULAR DULL FLESH TAN COBBLES OF A FINE-GRAINED WKLY FOLIATED ROCK OF UNCERTAIN LITHOLOGY DOMINATES THE FRAGMT POP. BELOW 212.5'. MATRIX CONTINUES GRN & SPECKLED & PROBABLY UBUD DERIVED.	220	75 20	FROM 212.5': MOSAIC TEXTURED MATRIX-SUPPORTED BRECCIA. TECTONIC/HYDROTHERMAL OVERPRINT ON PROBABLE PRIMARY BXA.	215': GRY SILICA + PY REPLACES RK FLOUR MATRIX. 218.5': LATE SILICA + WHT CLAY VN.
		~223.5': LEOPARD SKIN TEXTURED BRN FRAGMT SHOWS UP IN PLACE OF FG MAT'L ABOVE.	230	35		FROM 227': LATE BARITE VNS ARE LINED WITH WHT CLAY & CRM COLORED, SOFT, BOTRYOIDAL MIN'L COATING.
		T.D. 233'	240			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
187.8	191.5		0.418		
194.0	197.5				
197.5	198.0				
199.0	202.5				
202.5	204.6				
204.6	206.0				
206.0	207.3				
207.3	208.8				
208.8	212.5				
212.5	216.1				
216.1	219.9				
219.9	223.9				
223.9	228.0				
228.0	233.0				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-164-98 DATE 01/24/98 LOGGED BY: ZDM PAGE 1 OF 4

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	5.0	100.0	102.0	0										
5.0	9.0	97.5	97.5	44.0										
9.0	14.0	92.0	92.0	46.0										
14.0	19.0	102.0	102.0	26.0										
19.0	24.0	102.0	102.0	64.0										
24.0	34.0	99.0	99.0	54.0										
34.0	44.0	98.0	98.0	53.0										
44.0	54.0	100.0	100.0	55.0										
54.0	62.0	101.3	101.3	55.0										
62.0	69.0	97.0	97.0	78.6										
69.0	74.0	100.0	100.0	30.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-164-98 DATE 01/25/98 LOGGED BY: RM PAGE 2 OF 4

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)
74.0	84.0	100.0	100.0	63.0										
84.0	94.0	97.0	97.0	75.0										
94.0	103.0	102.2	102.2	55.6										
103.0	109.0	100.0	100.0	63.3										
109.0	119.0	104.0	104.0	62.0										
119.0	129.0	97.	97.	43.0										
129.0	134.5	112.7	112.7	96.4										
134.5	144.0	87.4	87.4	37.9										
144.0	153.0	102.2	102.2	68.9										
153.0	159.0	105.5	105.5	58.3										
159.0	169.0	100.0	100.0	62.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-167-98 DATE 01/26/98 LOGGED BY: HSM PAGE 3 OF 4

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)
169.0	178.0	94.4	96.0	46.7										
178.0	181.0	96.7	96.7	40.0										
181.0	185.0	90.0	90.0	62.5										
185.0	194.0	70.0	72.2	53.3										
194.0	199.0	72.0	80.0	30.0										
199.0	202.0	70.0	76.7	46.7										
202.0	203.5	100.0	100.0	40.0										
203.5	204.0	70.0	100.0	0										
204.0	206.0	90.0	102.0	40.0										
206.0	208.0	40.0	100.0	0										
208.0	213.0	106.0	106.0	52.0										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-164-98 DATE 01/25/98 LOGGED BY: HJM PAGE 4 OF 4

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)
213.0	218.0	90.0	90.0	32.0										
218.0	223.0	96.0	96.0	62.0										
223.0	228.0	90.0	92.0	86.7										
228.0	233.0	98.0	98.0	72.0										

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047989

PO BOX 11539
RENO NV,USA
Ph.(702) 356-0696, Fax.(702) 356-1413

HECLA MINING COMPANY

COPIES TO : KURT ALLEN

:

:

:

CLIENT REFERENCE No: D-164-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 62 REPORTED : 18 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)	DZ10	10%	OPT	0.02

AUTHORIZED : Susan King M.S.

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047989

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-164-98 0.0-4.5	0.005			0.42
D-164-98 4.5-7.6	0.006			0.10
D-164-98 7.6-10.1	0.013			0.14
D-164-98 10.1-14.8	0.012	0.013		0.09
D-164-98 14.8-19.6	0.032	0.030		0.22
D-164-98 19.6-24.9	0.009			0.10
D-164-98 24.9-28.7	0.010			0.07
D-164-98 28.7-34.4	0.006			0.10
D-164-98 34.4-39.2	0.002			0.05
D-164-98 39.2-44.3	0.002			0.06
D-164-98 44.3-49.3	0.006			0.07
D-164-98 49.3-53.6	0.016			0.05
D-164-98 53.6-57.7	0.088		0.100	0.13
D-164-98 57.7-62.0	0.038			0.08
D-164-98 62.0-65.6	0.050		0.044	0.13
D-164-98 65.6-69.0	0.024			0.09
D-164-98 69.0-71.6	0.037			0.11
D-164-98 71.6-74.7	0.029			0.08
D-164-98 74.7-77.2	0.107		0.075	0.11
D-164-98 77.2-81.7	0.013			0.05
D-164-98 81.7-85.9	0.010			0.04
D-164-98 85.9-90.3	0.033			0.07
D-164-98 90.3-94.3	0.035			0.10
D-164-98 94.3-98.2	0.070		0.060	0.07
D-164-98 98.2-101.9	0.112			0.12

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047989

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-164-98 101.9-105.8	0.103		0.137	0.14	
D-164-98 105.8-109.8	0.025			0.11	
D-164-98 109.8-114.0	0.202		0.156	0.13	
D-164-98 114-119	0.157		0.120	0.25	0.185 opt Ag
D-164-98 119-124	0.063		0.061	0.13	0.26 Ag
D-164-98 124-129	0.322	0.282	0.368	0.52	
D-164-98 129.0-132.3	0.023			0.14	
D-164-98 132.3-135.6	0.049			0.36	
D-164-98 135.6-138.7	0.197		0.207	0.89	
D-164-98 138.7-144.0	0.671		0.645	1.17	
D-164-98 144.0-148.6	0.901		1.105	0.76	
D-164-98 148.6-152.8	0.622		0.611	1.31	0.850 opt Au
D-164-98 152.8-155.5	1.715		1.875	2.16	1.02 opt Ag
D-164-98 155.5-158.3	0.959		0.888	0.84	
D-164-98 158.3-161.9	0.389	0.209	0.275	1.11	
D-164-98 160.9-164.9	2.634		2.697	2.03	
D-164-98 164.9-169.0	0.295		0.295	0.17	
D-164-98 169.0-173.2	0.229		0.230	0.13	
D-164-98 173.2-176.7	0.059		0.068	0.38	
D-164-98 176.7-179.9	0.102		0.153	0.18	
D-164-98 179.9-181.5	0.102		0.091	0.09	
D-164-98 181.5-184.4	0.096		0.065	0.91	
D-164-98 184.4-187.8	0.015			0.06	187.8-207.3' 19.5' @
D-164-98 187.8-191.5 3.7	0.418		0.355	0.13	0.110 Au
D-164-98 194.0-197.5 3.5'	0.029			3.26	2.00 Ag

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP047989

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-164-98 197.5-198.0 0.5	0.040			6.71
D-164-98 199.0-202.5 3.5	0.010			2.22
D-164-98 202.5-204.6 2.1	0.009			1.10
D-164-98 204.6-206.0 1.4	0.003			0.11
D-164-98 206.0-207.3 1.3	0.022			4.70
D-164-98 207.3-208.8	0.018			0.18
D-164-98 208.8-212.5	0.003			0.60
D-164-98 212.5-216.1	0.003			0.11
D-164-98 216.1-219.9	0.002			0.05
D-164-98 219.9-223.9	0.002			0.11
D-164-98 223.9-228.0	0.002			0.14
D-164-98 228-233	0.002			0.14

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 0047989-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-164-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
62	SAMPLES RECEIVED	.00	.00
62	DRYING	1.00	62.00
62	JAW CRUSHING CHARGE	1.30	80.60
62	COARSE MILLING CHARGE	4.50	279.00
62	SPLITTING CHARGE	2.40	148.80
62	FINE MILLING CHARGE	2.00	124.00
62	Au (1 A.T. FIRE ASSAY)	8.00	496.00
24	Au ANALYSES/GRAVIMETRIC	8.75	210.00
62	HYDROCHLORIC/NITRIC DIGESTION	2.00	124.00
62	Ag ANALYSES	1.00	62.00
6	Ag (ore grade) ANALYSES	5.00	30.00

86-5110-477

RM

NET INVOICE:	1,616.40
LESS DISCOUNT:	323.28
FREIGHT:	.00
INVOICE TOTAL:	1,293.12

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ANALYSIS REPORT SP047989

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-164-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 62 REPORTED : 18 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 SP047989

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 0.0-4.5	0.005			0.42
D-164-98 4.5-7.6	0.006			0.10
D-164-98 7.6-10.1	0.011			0.14
D-164-98 10.1-14.8	0.012	0.013		0.09
D-164-98 14.8-19.6	0.032	0.030		0.22
D-164-98 19.6-24.9	0.009			0.10
D-164-98 24.9-28.7	0.010			0.07
D-164-98 28.7-34.4	0.006			0.10
D-164-98 34.4-39.2	0.002			0.05
D-164-98 39.2-44.3	0.002			0.06
D-164-98 44.3-49.3	0.006			0.07
D-164-98 49.3-53.6	0.016			0.05
D-164-98 53.6-57.7	0.088		0.100	0.13
D-164-98 57.7-62.0	0.038			0.08
D-164-98 62.0-65.6	0.050		0.044	0.13
D-164-98 65.6-69.0	0.024			0.09
D-164-98 69.0-71.6	0.037			0.11
D-164-98 71.6-74.7	0.029			0.08
D-164-98 74.7-77.2	0.107		0.075	0.11
D-164-98 77.2-81.7	0.013			0.05
D-164-98 81.7-85.9	0.010			0.04
D-164-98 85.9-90.3	0.038			0.07
D-164-98 90.3-94.3	0.035			0.10
D-164-98 94.3-98.2	0.070		0.060	0.07
D-164-98 98.2-101.9	0.112			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047989

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 101.9-105.8	0.103		0.137	0.14
D-164-98 105.8-109.8	0.025			0.11
D-164-98 109.8-114.0	0.202		0.156	0.13
D-164-98 114-119	0.157		0.120	0.25
D-164-98 119-124	0.063		0.061	0.13
D-164-98 124-129	0.322	0.282	0.368	0.52
D-164-98 129.0-132.3	0.023			0.14
D-164-98 132.3-135.6	0.049			0.36
D-164-98 135.6-138.7	0.197		0.207	0.89
D-164-98 138.7-144.0	0.671		0.645	1.17
D-164-98 144.0-148.6	0.901		1.105	0.76
D-164-98 148.6-152.8	0.622		0.611	1.31
D-164-98 152.8-155.5	1.715		1.875	2.16
D-164-98 155.5-158.3	0.959		0.888	0.84
D-164-98 158.3-161.9	0.389	0.209	0.275	1.11
D-164-98 160.9-164.9	2.634		2.697	2.03
D-164-98 164.9-169.0	0.295		0.295	0.17
D-164-98 169.0-173.2	0.229		0.230	0.13
D-164-98 173.2-176.7	0.059		0.068	0.38
D-164-98 176.7-179.9	0.102		0.153	0.18
D-164-98 179.9-181.5	0.102		0.091	0.09
D-164-98 181.5-184.4	0.096		0.065	0.91
D-164-98 184.4-187.8	0.015			0.06
D-164-98 187.8-191.5	0.418		0.355	0.13
D-164-98 194.0-197.5	0.029			3.26

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047989

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REFERENCE : D-164-98

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 197.5-198.0	0.040			6.71
D-164-98 199.0-202.5	0.010			2.22
D-164-98 202.5-204.6	0.009			1.10
D-164-98 204.6-206.0	0.003			0.11
D-164-98 206.0-207.3	0.022			4.70
D-164-98 207.3-208.8	0.018			0.18
D-164-98 208.8-212.5	0.003			0.60
D-164-98 212.5-216.1	0.003			0.11
D-164-98 216.1-219.9	0.002			0.05
D-164-98 219.9-223.9	0.002			0.11
D-164-98 223.9-228.0	0.002			0.14
D-164-98 228-233	0.002			0.14

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ANALYSIS REPORT SP047989

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-164-98 RECEIVED : 28 JAN 1998

No. SAMPLES : 62 REPORTED : 18 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 SP047989

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 0.0-4.5	0.005			0.42
D-164-98 4.5-7.6	0.006			0.10
D-164-98 7.6-10.1	0.011			0.14
D-164-98 10.1-14.8	0.012	0.013		0.09
D-164-98 14.8-19.6	0.032	0.030		0.22
D-164-98 19.6-24.9	0.009			0.10
D-164-98 24.9-28.7	0.010			0.07
D-164-98 28.7-34.4	0.006			0.10
D-164-98 34.4-39.2	0.002			0.05
D-164-98 39.2-44.3	0.002			0.06
D-164-98 44.3-49.3	0.006			0.07
D-164-98 49.3-53.6	0.016			0.05
D-164-98 53.6-57.7	0.088		0.100	0.13
D-164-98 57.7-62.0	0.038			0.08
D-164-98 62.0-65.6	0.050		0.044	0.13
D-164-98 65.6-69.0	0.024			0.09
D-164-98 69.0-71.6	0.037			0.11
D-164-98 71.6-74.7	0.029			0.08
D-164-98 74.7-77.2	0.107		0.075	0.11
D-164-98 77.2-81.7	0.013			0.05
D-164-98 81.7-85.9	0.010			0.04
D-164-98 85.9-90.3	0.038			0.07
D-164-98 90.3-94.3	0.035			0.10
D-164-98 94.3-98.2	0.070		0.060	0.07
D-164-98 98.2-101.9	0.112			0.12

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP047989

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-164-98

REPORTED : 18 FEB 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 101.9-105.8	0.103		0.137	0.14
D-164-98 105.8-109.8	0.025			0.11
D-164-98 109.8-114.0	0.202		0.156	0.13
D-164-98 114-119	0.157		0.120	0.25
D-164-98 119-124	0.063		0.061	0.13
D-164-98 124-129	0.322	0.282	0.368	0.52
D-164-98 129.0-132.3	0.023			0.14
D-164-98 132.3-135.6	0.049			0.36
D-164-98 135.6-138.7	0.197		0.207	0.89
D-164-98 138.7-144.0	0.671		0.645	1.17
D-164-98 144.0-148.6	0.901		1.105	0.76
D-164-98 148.6-152.8	0.622		0.611	1.31
D-164-98 152.8-155.5	1.715		1.875	2.16
D-164-98 155.5-158.3	0.959		0.888	0.84
D-164-98 158.3-161.9	0.389	0.209	0.275	1.11
D-164-98 160.9-164.9	2.634		2.697	2.03
D-164-98 164.9-169.0	0.295		0.295	0.17
D-164-98 169.0-173.2	0.229		0.230	0.13
D-164-98 173.2-176.7	0.059		0.068	0.38
D-164-98 176.7-179.9	0.102		0.153	0.18
D-164-98 179.9-181.5	0.102		0.091	0.09
D-164-98 181.5-184.4	0.096		0.065	0.91
D-164-98 184.4-187.8	0.015			0.06
D-164-98 187.8-191.5	0.418		0.355	0.13
D-164-98 194.0-197.5	0.029			3.26

AMERICAN ASSAY LABORATORIES

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REFERENCE : D-164-98

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-164-98 197.5-198.0	0.040			6.71
D-164-98 199.0-202.5	0.010			2.22
D-164-98 202.5-204.6	0.009			1.10
D-164-98 204.6-206.0	0.003			0.11
D-164-98 206.0-207.3	0.022			4.70
D-164-98 207.3-208.8	0.018			0.18
D-164-98 208.8-212.5	0.003			0.60
D-164-98 212.5-216.1	0.003			0.11
D-164-98 216.1-219.9	0.002			0.05
D-164-98 219.9-223.9	0.002			0.11
D-164-98 223.9-228.0	0.002			0.14
D-164-98 228-233	0.002			0.14

D-164-98 BOX NO 20
DEPTH 178 — 187.5
185
181

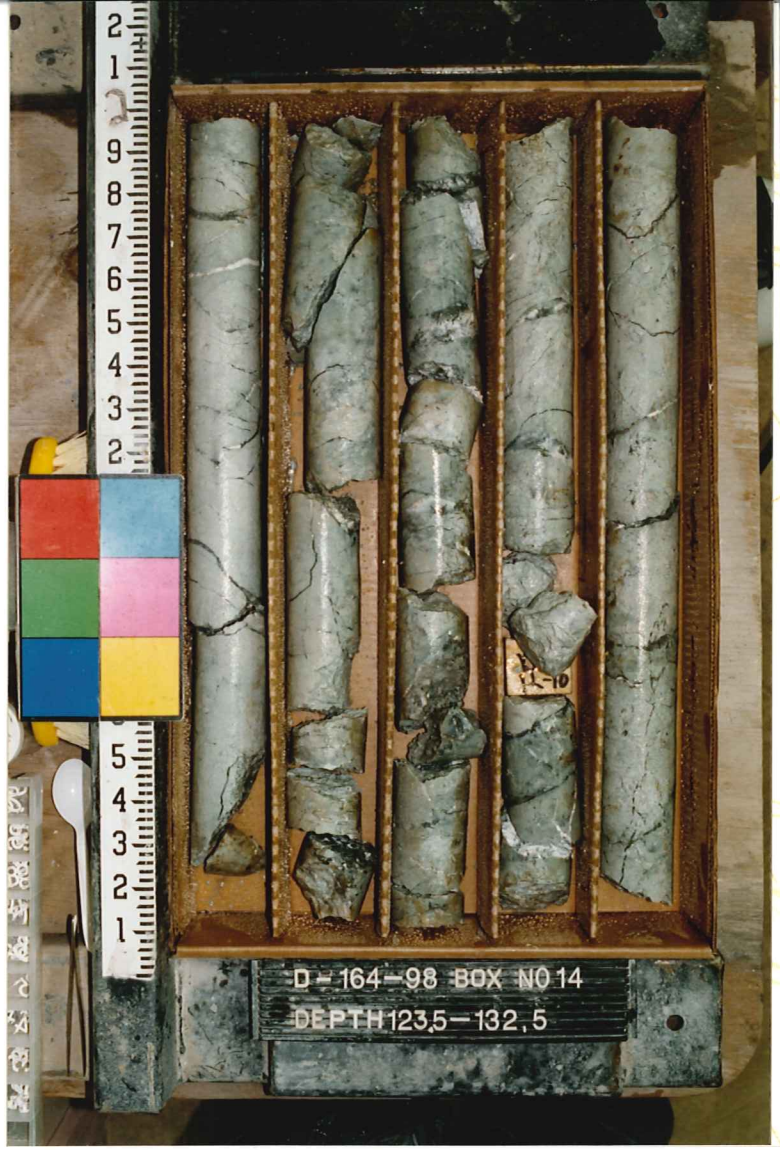
D-164-98 BOX NO 19
DEPTH 168.5 —178
178
169

D-164-98 BOX NO 21
DEPTH 187.5 — 200.5
191
LDSS
191.5
199
LDSS
199.5

D-164-98 BOX NO 23
DEPTH 209 — 218.5
213
218

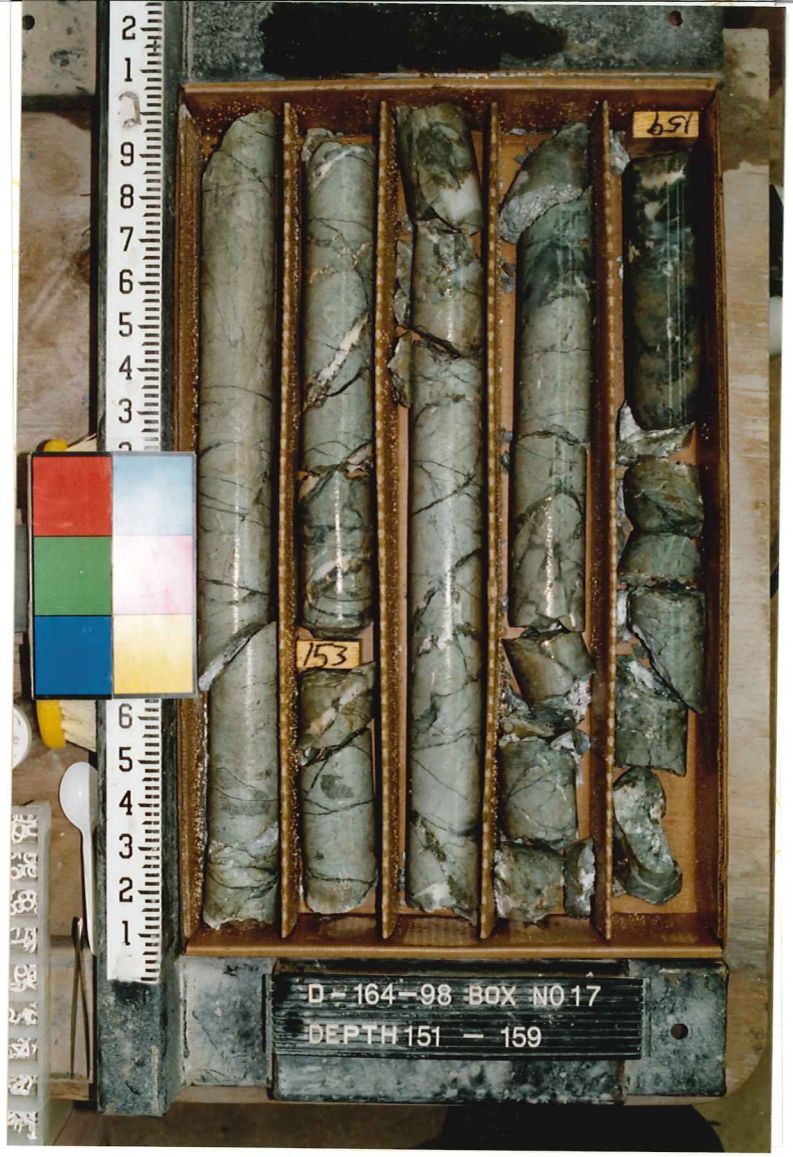
D-164-98 BOX NO 22
DEPTH 200.5 — 209
202
203.5
204
204
206
208

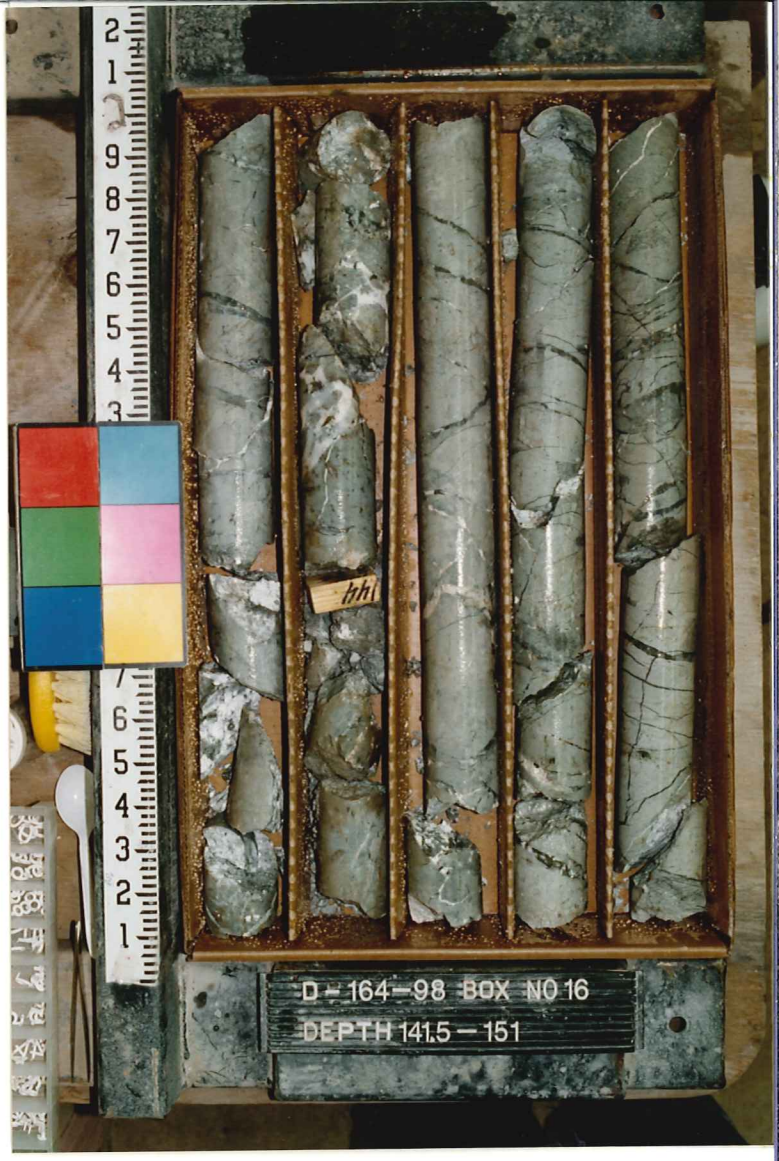
D-164-98 BOX NO 24
DEPTH 218.5 — 228
223


D-164-98 BOX NO 14
DEPTH 123.5-132.5

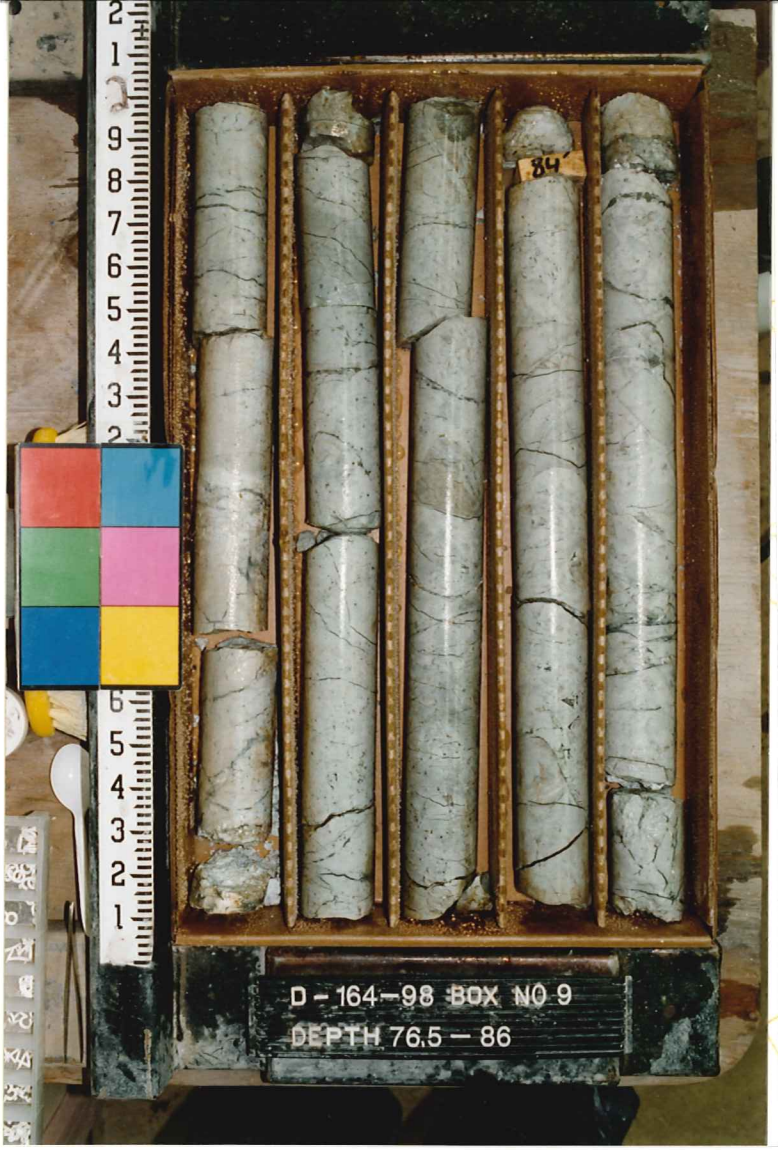
D-164-98 BOX NO 13
DEPTH 114.5-123.5

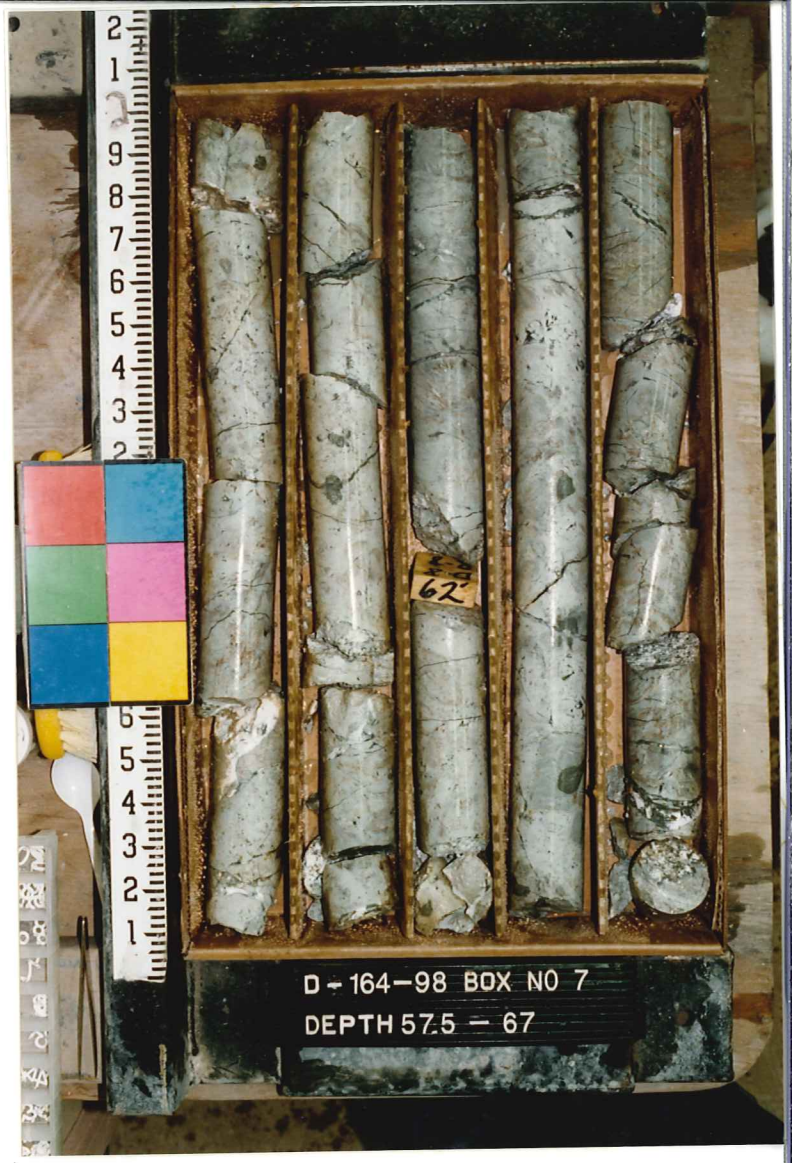
D-164-98 BOX NO 15
DEPTH 132.5-141.5


D-164-98 BOX NO 17
DEPTH 151 — 159
153
159

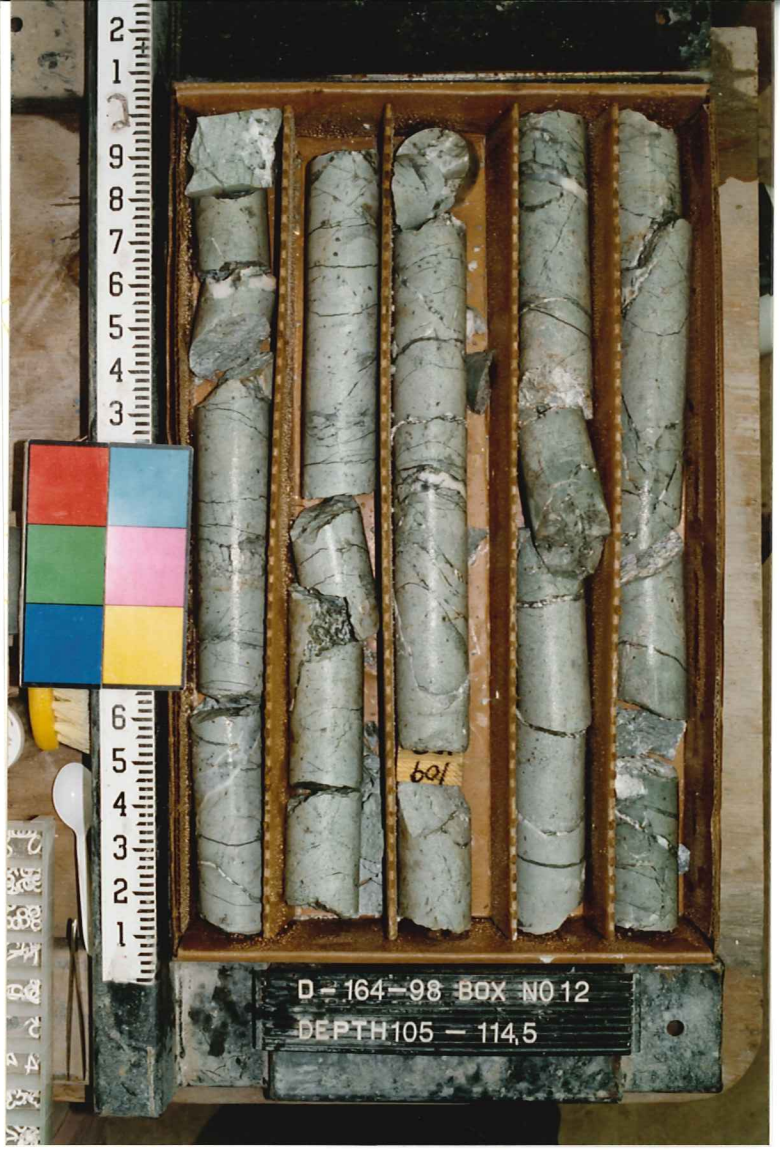

D-164-98 BOX NO 16
DEPTH 141.5 — 151
144

D-164-98 BOX NO 18
DEPTH 159 — 168.5


84
D - 164-98 BOX NO 9
DEPTH 76.5 - 86


62
D - 164-98 BOX NO 7
DEPTH 57.5 - 67

69
74
D - 164-98 BOX NO 8
DEPTH 67 - 76.5


D - 164 - 98 BOX NO 12
DEPTH 105 — 114,5
109

D - 164 - 98 BOX NO 11
DEPTH 96 — 105
103

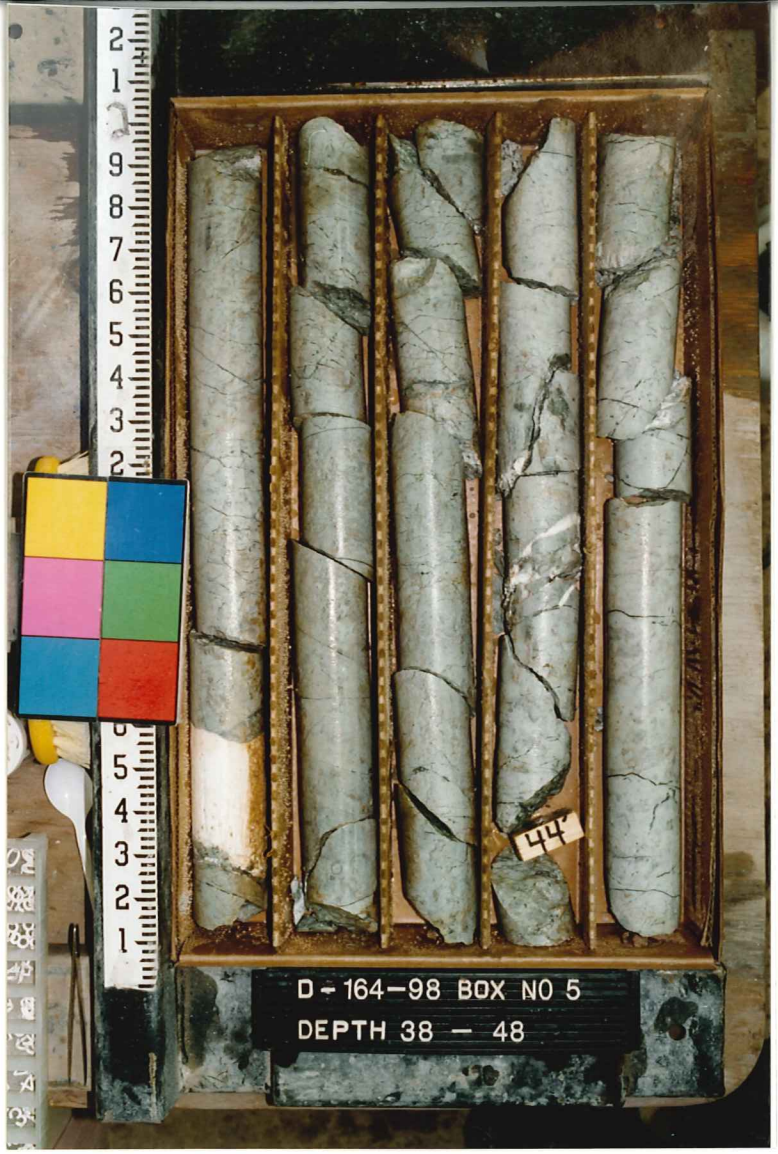
D - 164 - 98 BOX NO 10
DEPTH 86 — 96
94

D-164-98 BOX NO 24
DEPTH 228 - 233 TD
228
233

D - 164-98 BOX NO 1
DEPTH 0 - 9

D - 164-98 BOX NO 2
DEPTH 9 - 19

D - 164-98 BOX NO 6
DEPTH 48 - 57.5


D-164-98 BOX NO 5
DEPTH 38 — 48
44'

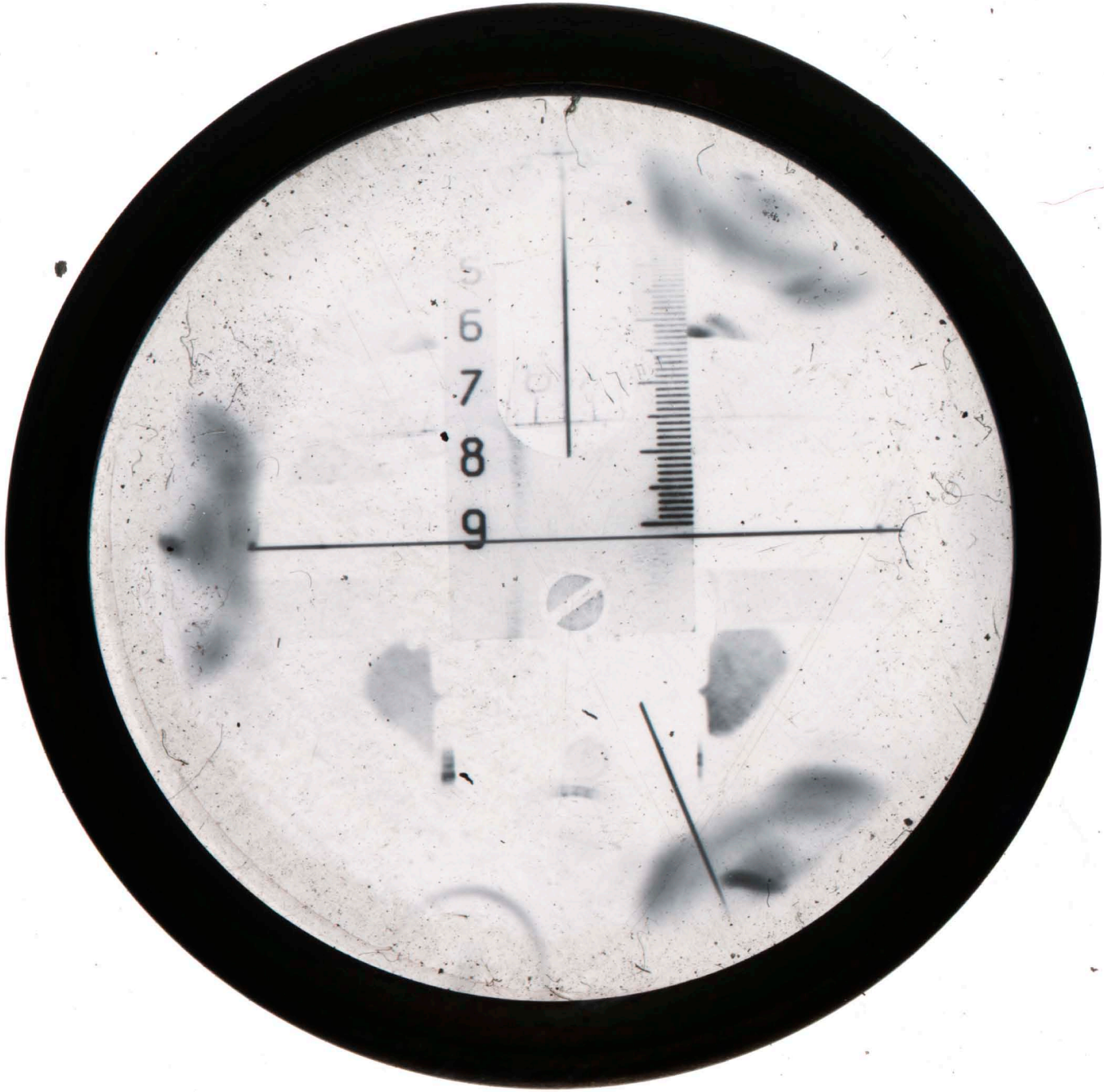
D-164-98 BOX NO 4
DEPTH 28.5 — 38
34'

D-164-98 BOX NO 3
DEPTH 19 — 28.5
29'

DOWNHOLE SURVEY MAGNETIC DECLINATION: 15.7°

DRILLHOLE	FILM FOOTAGE	BEARING	DIP	TRUE BEARING	TRUE DIP
D-164-98	COLLAR	? N70.5°W	-1	N54.8°W	-1.0°
	115'	? N65.5°W	-1.5	N49.8°W	-1.5°
	233'	? N65.5°W	-1.5°	N49.8°W	-1.5°

UNSURE WHETHER + OR -. THE COMPASS DIRECTION WAS TOO FAINT TO DETERMINE WHETHER THE READING WAS TAKEN IN THE TRUE DIRECTION OF THE DRILLHOLE OR 180° REVERSED.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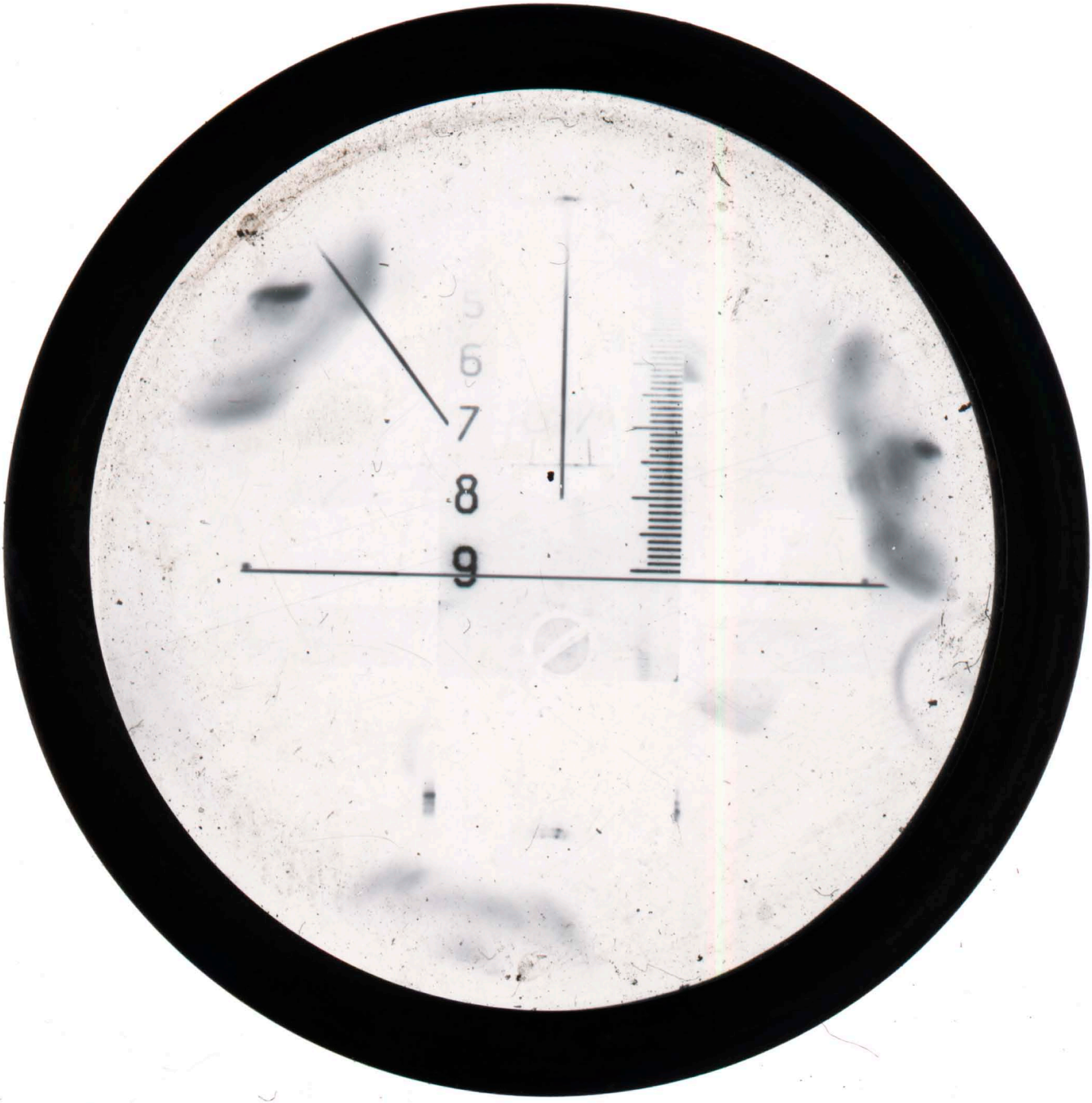
7
8
9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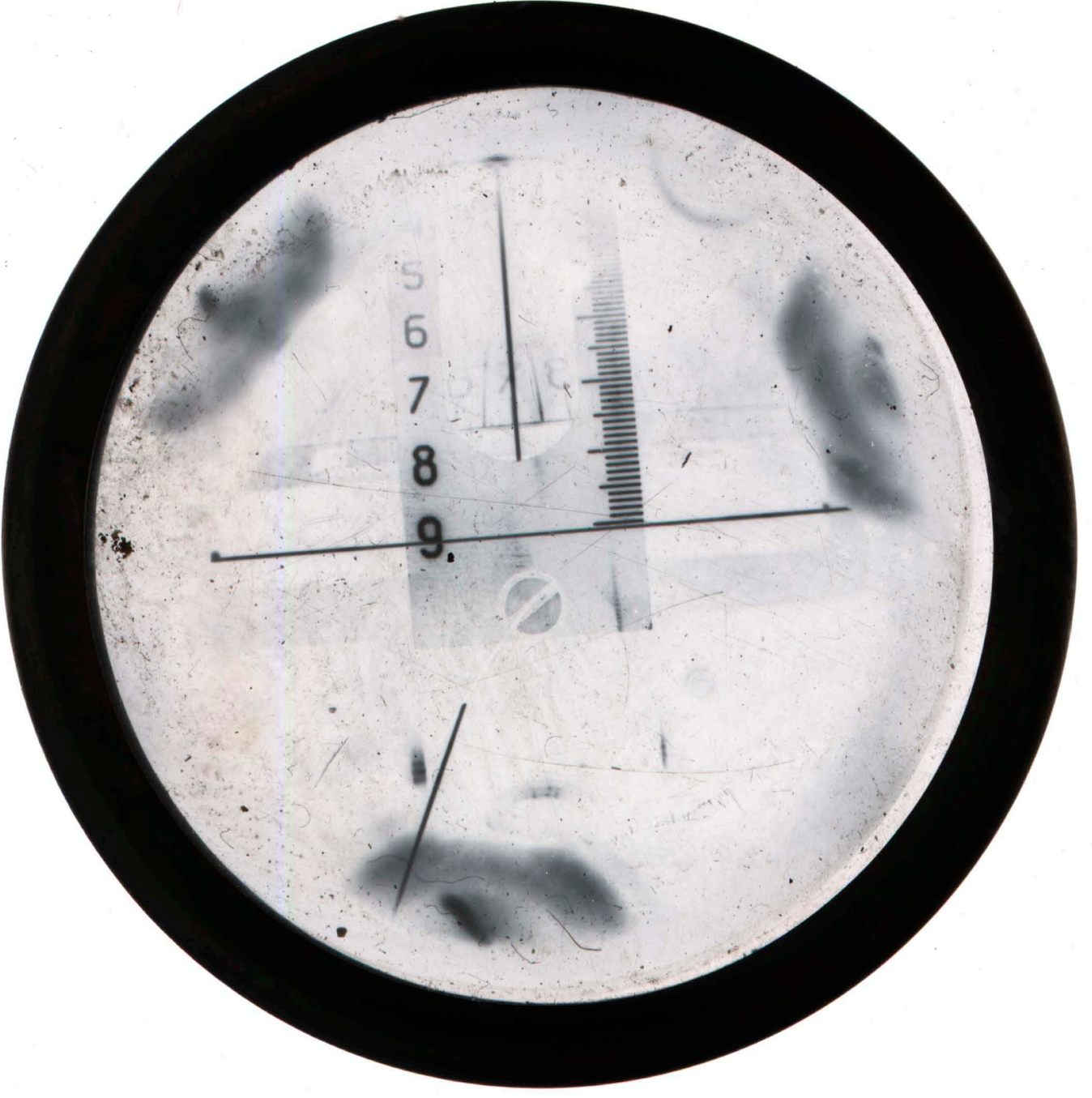
6
7
8
9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6
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8
9