60001230

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-330-98
AUTHOR	S. King; K. Allen; Whitacy
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 349' receipt; handwritten notes; downhole camera images 41 p. 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: NVBlue
Initials Date

Revised: 1/22/08

D-330-98

60001230 4010

600051230

Hecla MINING COMPANY

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

ROSEBUD PROJECT
DIAMOND DRILL LOG

HOLE NUMBER	D330-98	LOCATION	Stope 50 Access, Section 1500	REMARKS	
PAGE 1 OF 6		NORTHING		completed 10/20/98	
DATE	11-16-98	EASTING			
LOGGED BY	WHITNEY	ELEVATION			
SCALE	1" = 10'	AZIMUTH	125°		
TOTAL DEPTH	349'	INCLINATION	46°		

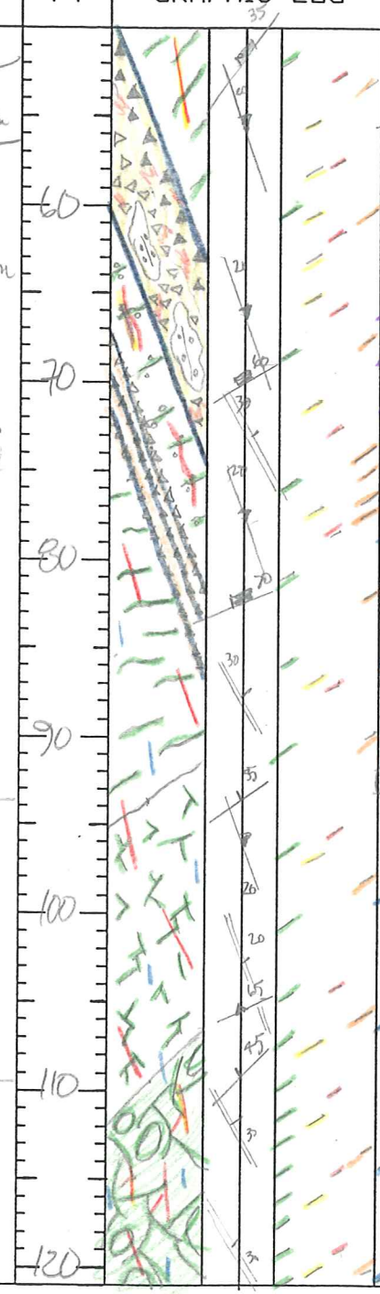
LITH	OX/RE	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
0-93.8		PLANAR/LAMINAR [0-6] dense vfg phase w/only faint foliation. Transitional texture to FGM. [9-33.5] bx, composite. 9-28 is monolithic, angular clast mosaic w/ minimal to moderate expansion. 28-33.5 is monolithic, subrnd-angular clast, w/ appearance of milling, transport, & expansion. Clasts isolated in silicified rk & lwr matrix. 11.5 PIMA 17 PIMA [Note: rock type in bx is as described 33.5-55.4] [33.5-55.4] dense, fg phase w/only faint foliation. Slightly coarser appearing than 0-6. Speckled natural gives appearance of being originally porphyritic. Numerous chlorite clots after lithics (?) generally < 12 mm though some to 25 mm.	10 20 30 40 50		[4] fol. 50° to CA [6-] fxs common along vnlts & parting. [9] bx ctc ground away [33.5] bx ctc 30° to CA [45] fol. 35° to CA	[0-33.5] common vnlts chlor-musc-q-cly-py. ≤1/8". 40°, 30° to CA, sparse ≤20° to CA [9-28] in bx: q-musc-wh cly matrix in open space. Appears that grn wxy cly preexisted & was replaced [17] minor barite [28-41] irreg vnlts, irreg bx vnlts & reg vnlts, q-wh cly-musc-py-chlor. From 60° to 10° to CA, though major ~30°-40°, generally ≤1/8". [41] sparse close bx vnlts & most irreg vnlts. Vnlts 10°, 75°, 35°, 55° to CA.

ANALYTICAL DATA						
FROM	TO	W	Au	Ag	Au2	Ac
0	5					
5	9					
9	12.2					
12.2	15.3					
15.3	18.6					
18.6	21.8					
21.8	24.9					
24.9	28					
28	31.3					
31.3	34.6					
34.6	37.8					
37.8	41					
41	45					
45	49					
49	52.3					

HOLE NUMBER D 330-98 PAGE 2 OF 6

LITH.	OX/RED.	LITHOLOGY	STRUCTURE	ALTERATION AND MINERALIZATION
0 – 93.8		PLANAR/LAMINAR [55.6-66.2] bx. composite, 5% PIMA 55.6-59 is monolithic, subrnd-angular clasts w/ appearance of milling, transport, & expansion. Clasts isolated in silicified rock flour matrix. 59-66.2 is monolithic. Angular clasts as low expansion mosaic and as irregular vnlts/seams. Several unbeated blocks within this. Note: @ 59' pick up texture w/ common vesicle trains. lose dense vfg & porphyritic(?) textures. Core becomes prominently foliated w/ pronounced partings. [73.5-78] 3 crushed/gouge seams, 20° to CA. unbeated/unmineralized. [85.5-87] wk wormy text. perpend. to fol. [87-92+] wk/faint spotted texture.	[50-] continue fxs common along veinlets & partings! [55.6] bx ctc 20° [65] foliation of block within bx zone 30° to CA. [70] fol. 60° to CA [66.2] ctc irreg. [73.5-78] bx 20° to CA [87] fol. 70° to CA	[55.6-66.2] within bx: partial replacement of matrix by q-marc-py-chlor-±clay, wk. Appears to be developed w/ open space after green clay. [66.2-73.5] irregular seams of green clay and uncommon vnlts of grn clay-marc-±py, ~30° to CA. * Note: these are older set? marc is vfg-no plates. overprinted by vuggy & wh clay-marc-py-chlor-±barite. ?? [73.5] mineralization becomes weak; veins sparse. mostly grn clay-marc-±q & chlor. @ 85° & 20° to CA ≤1/8". Pick up sparse calcite w/ vnlts & in hairline, irreg, discontinuous vnlts.
93.8 – 109.5		FINE GRAINED MASSIVE tan-gry vfg nonfoliated volcanic. cut by weak webwork of crackle fxs, chloritic on cracklies & along vnlts. vnlts have wk bleached & chloritic selvedge.	[93.8] ctc 55° to CA fx become sparse 65°, 70°, 20° to CA [105] ctc 45° to CA fx become rare 65°, 40°, 30°, 20° to CA	[93.8] continue wk mineralization as described above. grn clay-marc-±q & chlor [105-124] mineralization wk to mod. vnlts common. ≤1/16", ~30° to CA plus crackle fx. Rare q-calc-marc-py vnlts. marc is vfg
109.5 – 143		VITROPHYRE mod-strongly chloritic vfg, dense volcanic. distinctive conchoidal crackle fxs.		

GRAPHIC LOG



ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2	A
49	52.3					
52.3	55.6					
55.6	59					
59	62.6					
62.6	66.2					
66.2	69.8					
69.8	73.5					
73.5	76					
76	79					
79	84					
84	89					
89	94					
94	99					
99	104					
104	109.5					
109.5	112					
112	115					
115	118					
118	121					

HOLE NUMBER D330-98 PAGE 3 OF 6

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION	ANALYTICAL DATA FROM	TO	W	Au	Ag	Au2
109.5–143		VITROPHYRE continue chloritic volc. as described above	130 140		continue rare fxs	continue calcite as previous 124 return to wk mineralizn	118 121 124 129 134 139 144	121 124 129 134 139 144 149				
143–177.5		FINEGRAINED MASSIVE wkly chloritic, vfg, nonfoliated volcanic as described previous. 173-ctc weakly developed vitrophyric texture	150 160 170		143 ctc 35° to CA continue rare fxs.	143 continue wk mineralizn & spars vnlts. 159-162 wkly developed bx matrix infill: q-calc-platy mnr - ±py - ± wh cly. grn cly - mnr - ± q & chlor 173-ctc vnlts common. Note @ 174 vuggy q-cly-mnr-pyr vnlt xcuts older vnlt(s)	149 154 159 164 167 173	154 159 164 169 173 177.5				
177.5–233		PLANAR/LAMINAR tan-gry fg volc w/ prominent foliation (rare crenulated partings & vesicle trains. Chloritic along partings. Typical appearance. 189 PIMA	180 190		177.5 ctc 75° to CA. 178 fol. 75° to CA 180-182 fx common w/ fol & 40°, 10° to CA counter fol. 182 back to rare fx - with ∠ ⊥ to fol. 190 fol. 65° to CA	177.5 splotchy vfg dk S⁻ throughout entire interval. Weak crackle network of chlor-vfg mnr vnlts crudely ⊥ to foliation thru entire interval. 183-199 numerous irreg vnlts of q-whcly-platy mnr-chlor - to ½". roughly 30° to CA.	177.5 180 183 186 189	180 183 186 189 191.5				

HOLE NUMBER D330-98 PAGE 4 OF 6

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
177.5-233		PLANAR/LAMINAR continue prominent parting fol. [200-207] prominent vesicle trains. 201.5-203.5 poorly developed LST. [207-217] bx, monolithic, subang-ang clasts. clast to matrix support. lo to hi expansion/transport. gently sub// to CA. 207-212.8 appears to be chlor-q-wh clay-platy mnr-calc vult overprinting pre min. bx - unsilic matrix, slight rotation of lrgr clasts (upto 90° rot. of small clasts. shatter bx along structure w/ little movement? 212.8 PIMA [217] faint fol. to 221 [221] well developed foliation defined by partings. 229- foliation becomes extremely faint 230 PIMA	200 210 220 230 240 250 260	65 20 70 85 10 15 20 30 35 20 35 50	[190] fol. 65° to CA continue rare fx ⊥ to fol. [200] fol. 70° to CA [207] fol 85° to CA bx ctc 10° [217] bx ctc 15° [219] fol. 50° to CA [225] fol. 75° to CA [230] fol. 35° to CA [233] ctc is bx @ 30° to CA rare fx 35°-45° to CA [243] black ctc (?) 30° to CA [244.5] black ctc (?) 85° to CA	continue veining [207-212.8] vult 1/4-1/2" wide. descr. to left. [212.8-ctc] continue calc in vults.
233-279		FINE GRAINED MASSIVE - Bx [ctc-ctc] bx, monolithic/polytextured, Clasts of vitrophyre, FGM, & foliated highly vesicular(?) planar/laminar in soft matrix of unknown affinity. Generally less than distinct except where argillized. Clast size granule to boulder. subrnd to subangular. generally matrix support w/ patches of matrix >>> clasts. Moderately chloritic except where bleached/arg'd. [253.5-259] vitrophyre clasts				[233-238] wk-mod arg. uncommon spotty vfg dk S- in bx matrix. uncommon open q-platy mnr. vults. [247-257] a few open-texture vults of calc-wh clay-q-platy mnr-py. 20°-30° to CA. 1/4"-1" wide. [255] vult of blue opaline S, w/ vfg dk S- [257] to ctc - sparse vults of chlor-vfg mnr. hairline to 1/8". 10°, 35°, 50°

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
189	191.5				
191.5	195.3				
195.3	199				
199	201.5				
201.5	204.5				
204.5	207				
207	209.8				
209.8	212.8				
212.8	216				
216	219				
219	224				
224	229				
229	233				
233	235.5				
235.5	238				
238	242.5				
242.5	247				
247	250.5				
250.5	254				
254	257				
257	262				

HOLE NUMBER D330-98 PAGE 5 OF 6

ITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
233-279		FINEGRAINED MASSIVE BX 276-ctc matrix >> clasts 276 ctc moderately developed welding texture in clasts. ctc ground away	270		continue rare fxs	continue veining
279 — 323.4		PLANAR/LAMINAR moderately chloritic, fg, prominent set of parting w/attendant foliation. Rare vesicle trains. 285-ctc uncommon crackle bx matrix & vein fill red, or, & med brn. w/ chlor, but generally w/o other minerals. 297-302 wkly-mally developed spotted text. vesicles are flattened.	280 290 300 310 320		279 ctc ground away 280 fol 60° to CA 290 fol. 60° to CA 302-320 common fxs ≤20° to CA 303 fol. 75° to CA 310 fol. 65° to CA 320 fol. 75° to CA return to rare fxs 25°, 50°, 65° to CA	279 unit is calcareous, w/ sparse, irregular calc. vults. chlor-mar vults xtremely rare to 295.5. 295.5-310 wk bleaching & leaching of calcite. common vults of chlor-py-mus-q-± wk cly. ≤ 1/8". ≤20° to CA. cauliflower splotchy vfg dark 5-. 310-ctc calcareous as 279 veining continues, but sparse to rare. splotches rare.
323.4-349 TD		FINEGRAINED MASSIVE 327-333 bx vult, sub// to CA. wk orientation to clasts. mar sid, soft matrix. layered walls	330		323.4 ctc vult @ 60° CA	323.4 chlor-Fe?ox-5- vult, hairline. weakly calcareous to 333. sparse calc vults to TD

ANALYTICAL DATA					
FROM	TO	W	Au	Ag	Au2
257	262				
262	266				
266	270				
270	274				
274	279				
279	284				
284	288				
288	292				
292	295.5				
295.5	299				
299	302.5				
302.5	306.2				
306.2	310				
310	314				
314	319				
319	323.4				
323.4	328				
328	333				

HOLE NUMBER D330-98 PAGE 6 OF 6

LITH.	OX/RED.	LITHOLOGY	FT	GRAPHIC LOG	STRUCTURE	ALTERATION AND MINERALIZATION
323.4 – 349 TD		FINEGRAINED MASSIVE 333 – TD bx. chlorite matrix, vitroplyre & chlorite speckled FGM clasts	340		continue rare fxs 25°, 50°, 65° to CA.	cont. sparse calc vnlts 343 – TD common replacement of matrix by open textured calcite - pyr - marc.
		349 TD	350 360 370 380 390 400			

ANALYTICAL DATA

FROM	TO	W	Au	Ag	Au2
328	333				
333	338				
338	343				
343	346				
346	349				

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D 330-98 DATE: 11-16-98 LOGGED BY: WHITNEY PAGE 1 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)
0	5	76	96	0										
5	9	47	90	11										
9	19	97	97	59										
19	29	87	97	45										
29	39	97	100	45										
39	49	92	misshapen core, frequent redrilled 98	13										
49	59	90	100	22										
59	69	100	102	57										
69	79	45	94	4										
79	89	102	102	24										
89	99	101	101	41										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D 330-98 DATE: 11-16-98 LOGGED BY: WHITNEY PAGE 2 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)
99	109	100	100	58										
109	119	100	100	67										
119	129	94	97	61										
129	139	94	100	72										
139	149	100	100	87										
149	159	100	100	100										
159	169	98	98	96										
169	179	100	100	78										
179	189	89	102	41										
189	199	101	101	97										
199	209	97	97	77										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D 330-98 DATE: 11-17-98 LOGGED BY: WHITNEY PAGE 3 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)
209	219	97	97	62										
219	229	100	100	73										
229	239	100	100	65										
239	249	98	98	89										
249	259	100	100	89										
259	269	103	103	90										
269	279	100	100	96										
279	289	100	100	90										
289	299	100	100	88										
299	309	80	100	56										
309	319	80	100	30										

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D 330-98 DATE: 11-18-98 LOGGED BY: WHITTLEY 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)
319	329	93	97	80										
329	339	100	100	88										
339	349 TD	101	101	95										

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051680

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-330-98 RECEIVED : 23 NOV 1998

No. SAMPLES : 92 REPORTED : 9 DEC 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 SP051680

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-330-98 0-5	0.002			0.05
D-330-98 5-9	0.008			0.06
D-330-98 9.0-12.2	0.009			0.13
D-330-98 12.2-15.3	0.004			0.04
D-330-98 15.3-18.6	0.004			0.06
D-330-98 18.6-21.8	0.004	0.007		0.06
D-330-98 21.8-24.9	0.003			0.05
D-330-98 24.9-28.0	0.006			0.08
D-330-98 28.0-31.3	0.004			0.05
D-330-98 31.3-34.6	0.004			0.04
D-330-98 34.6-37.8	0.010			0.02
D-330-98 37.8-41.0	0.069		0.070	0.19
D-330-98 41-45	0.010			0.03
D-330-98 45-49	0.006			0.03
D-330-98 49.0-52.3	0.005			0.06
D-330-98 52.3-55.6	0.013			0.05
D-330-98 55.6-59.0	0.006			0.07
D-330-98 59.0-62.6	0.008			0.06
D-330-98 62.6-66.2	0.003			0.05
D-330-98 66.2-69.8	0.005	0.005		0.02
D-330-98 69.8-73.5	0.011	0.014		0.30
D-330-98 73.5-76.0	0.005			<0.02
D-330-98 76-79	0.002			<0.02
D-330-98 79-84	0.004			<0.02
D-330-98 84-89	0.019			<0.02

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051680

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)	
D-330-98 89-94	0.006			0.05	
D-330-98 94-99	<0.001			<0.02	
D-330-98 99-104	0.003			<0.02	
D-330-98 104.0-109.5	0.002			<0.02	
D-330-98 109.5-112.0	0.033			0.08	
D-330-98 112-115	0.006			<0.02	
D-330-98 115-118	0.002			<0.02	
D-330-98 118-121	0.002			<0.02	
D-330-98 121-124	0.017	0.012		0.03	
D-330-98 124-129	0.006			<0.02	
D-330-98 129-134	0.010			<0.02	
D-330-98 134-139	0.002			0.02	
D-330-98 139-144	0.003			<0.02	
D-330-98 144-149	0.002			<0.02	
D-330-98 149-154	0.007			<0.02	
D-330-98 154-159	0.033			<0.02	
D-330-98 159-164	0.102		0.139	0.43	
D-330-98 164-169	0.178		0.206	0.33	
D-330-98 169-173	0.004			<0.02	
D-330-98 173.0-177.5	0.371		0.520	0.21	
D-330-98 177.5-180.0	0.003		0.002	0.02	183 - 195.3
D-330-98 180-183	0.024			0.06	= 12.3'
D-330-98 183-186 3	0.514		0.447	0.40	
D-330-98 186-189 3	0.420		0.332	0.34	0.401 Au
D-330-98 189.0-191.5 2.5	0.417		0.454	0.27	0.32 Ag

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051680

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-330-98 191.5-195.3 3.8	0.286		0.267	0.26
D-330-98 195.3-199.0	0.054		0.050	0.26
D-330-98 199.0-201.5	0.122		0.116	1.31
D-330-98 201.5-204.5	0.010			0.05
D-330-98 204.5-207.0	0.007			0.04
D-330-98 207.0-209.8	0.072		0.067	0.12
D-330-98 209.8-212.8	0.074		0.082	0.20
D-330-98 212.8-216.0	0.097		0.149	0.11
D-330-98 216-219	0.115		0.092	0.11
D-330-98 219-224	0.051		0.098	0.12
D-330-98 224-229	0.038			0.10
D-330-98 229-233	0.047			0.14
D-330-98 233.0-235.5	0.060		0.097	0.25
D-330-98 235.5-238.0	0.143		0.107	0.14
D-330-98 238.0-242.5	0.053		0.090	0.12
D-330-98 242.5-247.0	0.004			0.08
D-330-98 247.0-250.5	0.039			0.05
D-330-98 250.5-254.0	0.123		0.149	0.31
D-330-98 254-257	0.051		0.053	0.11
D-330-98 257-262	0.005			0.07
D-330-98 262-266	0.007			0.12
D-330-98 266-270	0.004			0.15
D-330-98 270-274	0.002			0.02
D-330-98 274-279	0.009	0.004		0.02
D-330-98 279-284	<0.001			0.05

AMERICAN ASSAY LABORATORIES

PROVISIONAL REPORT SP051680

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ)	Au(RZ)	AuGRAV	Ag(OZ)
D-330-98 284-288	<0.001	<0.001		<0.02
D-330-98 288-292	0.004			<0.02
D-330-98 292.0-295.5	<0.001			<0.02
D-330-98 295.5-299.0	0.006			0.03
D-330-98 299.0-302.5	0.005			0.03
D-330-98 302.5-306.2	0.012			0.04
D-330-98 306.2-310.0	0.013			0.03
D-330-98 310-314	<0.001			<0.02
D-330-98 314-319	<0.001			<0.02
D-330-98 319.0-323.4	0.004			<0.02
D-330-98 323.4-328.0	<0.001			<0.02
D-330-98 328-333	<0.001			<0.02
D-330-98 333-338	<0.001			<0.02
D-330-98 338-343	<0.001			0.02
D-330-98 343-346	0.022			0.06
D-330-98 346-349	0.040			0.04
46628	0.549			ISF

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 0051680-IN
INVOICE DATE: 12/10/98

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-330-98	DEVELOPMENT	NET 30 - DUE IN U.S. DOLLARS

QUANTITY	DESCRIPTION	PRICE	AMOUNT
92	SAMPLES RECEIVED	.00	.00
91	DRYING	1.00	91.00
91	JAW CRUSHING CHARGE	1.30	118.30
91	COARSE MILLING CHARGE	4.50	409.50
91	SPLITTING CHARGE	2.40	218.40
91	RING MILLING CHARGE	2.00	182.00
92	Au (1 A.T. FIRE ASSAY)	8.00	736.00
21	Au ANALYSES/GRAVIMETRIC	8.75	183.75
91	HYDROCHLORIC/NITRIC DIGESTION	2.00	182.00
91	Ag ANALYSES	1.00	91.00

86-5110-477
KEM

NET INVOICE:	2,211.55
LESS DISCOUNT:	442.39
FREIGHT:	.00
INVOICE TOTAL:	1,769.56

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

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-330-98 RECEIVED : 23 NOV 1998

No. SAMPLES : 92 REPORTED : 9 DEC 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 SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 0-5	0.002			0.05
D-330-98 5-9	0.008			0.06
D-330-98 9.0-12.2	0.009			0.13
D-330-98 12.2-15.3	0.004			0.04
D-330-98 15.3-18.6	0.004			0.06
D-330-98 18.6-21.8	0.004	0.007		0.06
D-330-98 21.8-24.9	0.003			0.05
D-330-98 24.9-28.0	0.006			0.08
D-330-98 28.0-31.3	0.004			0.05
D-330-98 31.3-34.6	0.004			0.04
D-330-98 34.6-37.8	0.010			0.02
D-330-98 37.8-41.0	0.069		0.070	0.19
D-330-98 41-45	0.010			0.03
D-330-98 45-49	0.006			0.03
D-330-98 49.0-52.3	0.005			0.06
D-330-98 52.3-55.6	0.013			0.05
D-330-98 55.6-59.0	0.006			0.07
D-330-98 59.0-62.6	0.008			0.06
D-330-98 62.6-66.2	0.003			0.05
D-330-98 66.2-69.8	0.005	0.005		0.02
D-330-98 69.8-73.5	0.011	0.014		0.30
D-330-98 73.5-76.0	0.005			<0.02
D-330-98 76-79	0.002			<0.02
D-330-98 79-84	0.004			<0.02
D-330-98 84-89	0.019			<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 89-94	0.006			0.05
D-330-98 94-99	<0.001			<0.02
D-330-98 99-104	0.003			<0.02
D-330-98 104.0-109.5	0.002			<0.02
D-330-98 109.5-112.0	0.033			0.08
D-330-98 112-115	0.006			<0.02
D-330-98 115-118	0.002			<0.02
D-330-98 118-121	0.002			<0.02
D-330-98 121-124	0.017	0.012		0.03
D-330-98 124-129	0.006			<0.02
D-330-98 129-134	0.010			<0.02
D-330-98 134-139	0.002			0.02
D-330-98 139-144	0.003			<0.02
D-330-98 144-149	0.002			<0.02
D-330-98 149-154	0.007			<0.02
D-330-98 154-159	0.033			<0.02
D-330-98 159-164	0.102		0.139	0.43
D-330-98 164-169	0.178		0.206	0.33
D-330-98 169-173	0.004			<0.02
D-330-98 173.0-177.5	0.371		0.520	0.21
D-330-98 177.5-180.0	0.003		0.002	0.02
D-330-98 180-183	0.024			0.06
D-330-98 183-186	0.514		0.447	0.40
D-330-98 186-189	0.420		0.332	0.34
D-330-98 189.0-191.5	0.417		0.454	0.27

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 191.5-195.3	0.286		0.267	0.26
D-330-98 195.3-199.0	0.054		0.050	0.26
D-330-98 199.0-201.5	0.122		0.116	1.31
D-330-98 201.5-204.5	0.010			0.05
D-330-98 204.5-207.0	0.007			0.04
D-330-98 207.0-209.8	0.072		0.067	0.12
D-330-98 209.8-212.8	0.074		0.082	0.20
D-330-98 212.8-216.0	0.097		0.149	0.11
D-330-98 216-219	0.115		0.092	0.11
D-330-98 219-224	0.051		0.098	0.12
D-330-98 224-229	0.038			0.10
D-330-98 229-233	0.047			0.14
D-330-98 233.0-235.5	0.060		0.097	0.25
D-330-98 235.5-238.0	0.143		0.107	0.14
D-330-98 238.0-242.5	0.053		0.090	0.12
D-330-98 242.5-247.0	0.004			0.08
D-330-98 247.0-250.5	0.039			0.05
D-330-98 250.5-254.0	0.123		0.149	0.31
D-330-98 254-257	0.051		0.053	0.11
D-330-98 257-262	0.005			0.07
D-330-98 262-266	0.007			0.12
D-330-98 266-270	0.004			0.15
D-330-98 270-274	0.002			0.02
D-330-98 274-279	0.009	0.004		0.02
D-330-98 279-284	<0.001			0.05

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 284-288	<0.001	<0.001		<0.02
D-330-98 288-292	0.004			<0.02
D-330-98 292.0-295.5	<0.001			<0.02
D-330-98 295.5-299.0	0.006			0.03
D-330-98 299.0-302.5	0.005			0.03
D-330-98 302.5-306.2	0.012			0.04
D-330-98 306.2-310.0	0.013			0.03
D-330-98 310-314	<0.001			<0.02
D-330-98 314-319	<0.001			<0.02
D-330-98 319.0-323.4	0.004			<0.02
D-330-98 323.4-328.0	<0.001			<0.02
D-330-98 328-333	<0.001			<0.02
D-330-98 333-338	<0.001			<0.02
D-330-98 338-343	<0.001			0.02
D-330-98 343-346	0.022			0.06
D-330-98 346-349	0.040			0.04
46628	0.549			ISF

xAMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

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-330-98 RECEIVED : 23 NOV 1998

No. SAMPLES : 92 REPORTED : 9 DEC 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 SP051680

American Assay Laboratories

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PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 0-5	0.002			0.05
D-330-98 5-9	0.008			0.06
D-330-98 9.0-12.2	0.009			0.13
D-330-98 12.2-15.3	0.004			0.04
D-330-98 15.3-18.6	0.004			0.06
D-330-98 18.6-21.8	0.004	0.007		0.06
D-330-98 21.8-24.9	0.003			0.05
D-330-98 24.9-28.0	0.006			0.08
D-330-98 28.0-31.3	0.004			0.05
D-330-98 31.3-34.6	0.004			0.04
D-330-98 34.6-37.8	0.010			0.02
D-330-98 37.8-41.0	0.069		0.070	0.19
D-330-98 41-45	0.010			0.03
D-330-98 45-49	0.006			0.03
D-330-98 49.0-52.3	0.005			0.06
D-330-98 52.3-55.6	0.013			0.05
D-330-98 55.6-59.0	0.006			0.07
D-330-98 59.0-62.6	0.008			0.06
D-330-98 62.6-66.2	0.003			0.05
D-330-98 66.2-69.8	0.005	0.005		0.02
D-330-98 69.8-73.5	0.011	0.014		0.30
D-330-98 73.5-76.0	0.005			<0.02
D-330-98 76-79	0.002			<0.02
D-330-98 79-84	0.004			<0.02
D-330-98 84-89	0.019			<0.02

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

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PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 89-94	0.006			0.05
D-330-98 94-99	<0.001			<0.02
D-330-98 99-104	0.003			<0.02
D-330-98 104.0-109.5	0.002			<0.02
D-330-98 109.5-112.0	0.033			0.08
D-330-98 112-115	0.006			<0.02
D-330-98 115-118	0.002			<0.02
D-330-98 118-121	0.002			<0.02
D-330-98 121-124	0.017	0.012		0.03
D-330-98 124-129	0.006			<0.02
D-330-98 129-134	0.010			<0.02
D-330-98 134-139	0.002			0.02
D-330-98 139-144	0.003			<0.02
D-330-98 144-149	0.002			<0.02
D-330-98 149-154	0.007			<0.02
D-330-98 154-159	0.033			<0.02
D-330-98 159-164	0.102		0.139	0.43
D-330-98 164-169	0.178		0.206	0.33
D-330-98 169-173	0.004			<0.02
D-330-98 173.0-177.5	0.371		0.520	0.21
D-330-98 177.5-180.0	0.003		0.002	0.02
D-330-98 180-183	0.024			0.06
D-330-98 183-186	0.514		0.447	0.40
D-330-98 186-189	0.420		0.332	0.34
D-330-98 189.0-191.5	0.417		0.454	0.27

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

REPORTED : 9 DEC 1998

SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 191.5-195.3	0.286		0.267	0.26
D-330-98 195.3-199.0	0.054		0.050	0.26
D-330-98 199.0-201.5	0.122		0.116	1.31
D-330-98 201.5-204.5	0.010			0.05
D-330-98 204.5-207.0	0.007			0.04
D-330-98 207.0-209.8	0.072		0.067	0.12
D-330-98 209.8-212.8	0.074		0.082	0.20
D-330-98 212.8-216.0	0.097		0.149	0.11
D-330-98 216-219	0.115		0.092	0.11
D-330-98 219-224	0.051		0.098	0.12
D-330-98 224-229	0.038			0.10
D-330-98 229-233	0.047			0.14
D-330-98 233.0-235.5	0.060		0.097	0.25
D-330-98 235.5-238.0	0.143		0.107	0.14
D-330-98 238.0-242.5	0.053		0.090	0.12
D-330-98 242.5-247.0	0.004			0.08
D-330-98 247.0-250.5	0.039			0.05
D-330-98 250.5-254.0	0.123		0.149	0.31
D-330-98 254-257	0.051		0.053	0.11
D-330-98 257-262	0.005			0.07
D-330-98 262-266	0.007			0.12
D-330-98 266-270	0.004			0.15
D-330-98 270-274	0.002			0.02
D-330-98 274-279	0.009	0.004		0.02
D-330-98 279-284	<0.001			0.05

AMERICAN ASSAY LABORATORIES

ANALYSIS REPORT SP051680

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD PRODUCTION
REFERENCE : D-330-98

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SAMPLES	Au(OZ) FA30 OPT	Au(RZ) FA30 OPT	AuGRAV GRAV OPT	Ag(OZ) D210 OPT
D-330-98 284-288	<0.001	<0.001		<0.02
D-330-98 288-292	0.004			<0.02
D-330-98 292.0-295.5	<0.001			<0.02
D-330-98 295.5-299.0	0.006			0.03
D-330-98 299.0-302.5	0.005			0.03
D-330-98 302.5-306.2	0.012			0.04
D-330-98 306.2-310.0	0.013			0.03
D-330-98 310-314	<0.001			<0.02
D-330-98 314-319	<0.001			<0.02
D-330-98 319.0-323.4	0.004			<0.02
D-330-98 323.4-328.0	<0.001			<0.02
D-330-98 328-333	<0.001			<0.02
D-330-98 333-338	<0.001			<0.02
D-330-98 338-343	<0.001			0.02
D-330-98 343-346	0.022			0.06
D-330-98 346-349	0.040			0.04
46628	0.549			ISF

SP

SUBMITTAL FORM

American Assay Laboratories

Geochemical • Environmental • Metallurgical

Sparks Office
1500 Glendale Ave.
Nevada 89431
Box 11530
Reno, NV 89510
Telephone
(702) 356-0606
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(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
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(520) 294-8078
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Elko Office
2320 Last Chance Rd.
Nevada 89801
Box 2908
Elko, NV 89801
Telephone
(702) 738-9100
Fax
(702) 738-2594

Mazatlan Office
Telephone/Fax
011-52-69-170035

Other Offices
Lima, Peru
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: 11/19/98 Number of Samples: 91

RESULTS REPORTED IN: ppm [ ] ppb [ ] opt [ ] Au/Ag according to Rosebud Mine Protocol

D 330-98 SAMPLE IDENTIFICATION				TYPE	ELEMENTS REQUIRED		
0-5	52.3-55.6	112-115	177.5-180		224-229	284-288	346-349 TD
5-9	55.6-59	115-118	180-183		229-233	288-292	
9-12.2	59-62.6	118-121	183-186		233-235.5	292-295.5	
12.2-15.3	62.6-66.2	121-124	186-189		235.5-238	295.5-299	
15.3-18.6	66.2-69.8	124-129	189-191.5		238-242.5	299-302.5	
18.6-21.8	69.8-73.5	129-134	191.5-195.3		242.5-247	302.5-306.2	
21.8-24.9	73.5-76	134-139	195.3-199		247-250.5	306.2-310	
24.9-28	76-79	139-144	199-201.5		250.5-254	310-314	
28-31.3	79-84	144-149	201.5-204.5		254-257	314-319	
31.3-34.6	84-89	149-154	204.5-207		257-262	319-323.4	
34.6-37.8	89-94	154-159	207-209.8		262-266	323.4-328	
37.8-41	94-99	159-164	209.8-212.8		266-270	328-333	
41-45	99-104	164-169	212.8-216		270-274	333-338	
45-49	104-109.5	169-173	216-219		274-279	338-343	
49-52.3	109.5-112	173-177.5	219-224		279-284	343 346	

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-330-98	45	43.5	130.7
	175	44	130.2
	349	44	128.7

D-330-98 BOX 2
DEPTH 9 - 18_5

D-330-98 BOX 1
DEPTH 0 - 9

D-330-98 BOX 3
DEPTH 18_5 - 28_5

39
D-330-98 BOX 5
DEPTH 38 - 47_5

29
D-330-98 BOX 4
DEPTH 28_5 - 38

49
D-330-98 BOX 6
DEPTH 47_5 - 57

69
D-330-98 BOX 8
DEPTH 66 - 75

59
D-330-98 BOX 7
DEPTH 57 - 66

79
D-330-98 BOX 9
DEPTH 75 - 84_5

D-330-98 BOX 11
DEPTH 93 - 102_5
99

D-330-98 BOX 10
DEPTH 84_5 - 93
89

D-330-98 BOX 12
DEPTH 102_5 - 112
101

D-330-98 BOX 14
DEPTH 121 - 131
129

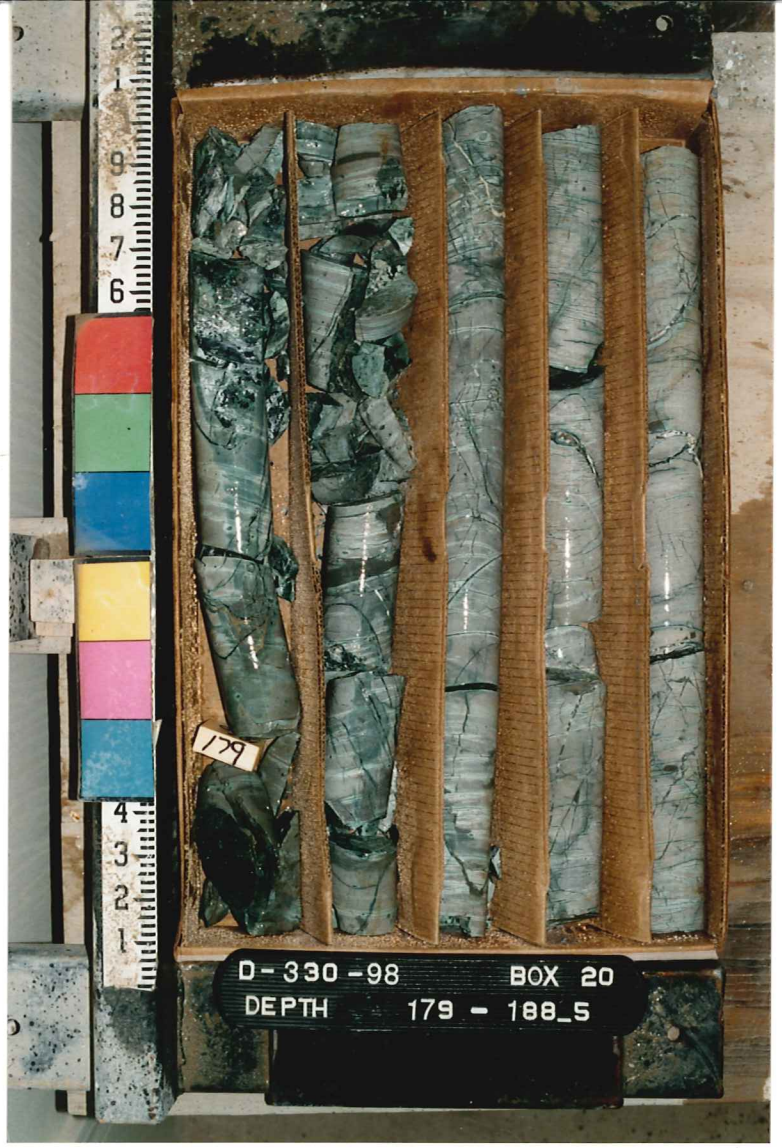
D-330-98 BOX 13
DEPTH 112 - 121
119

D-330-98 BOX 15
DEPTH 131 - 140
139

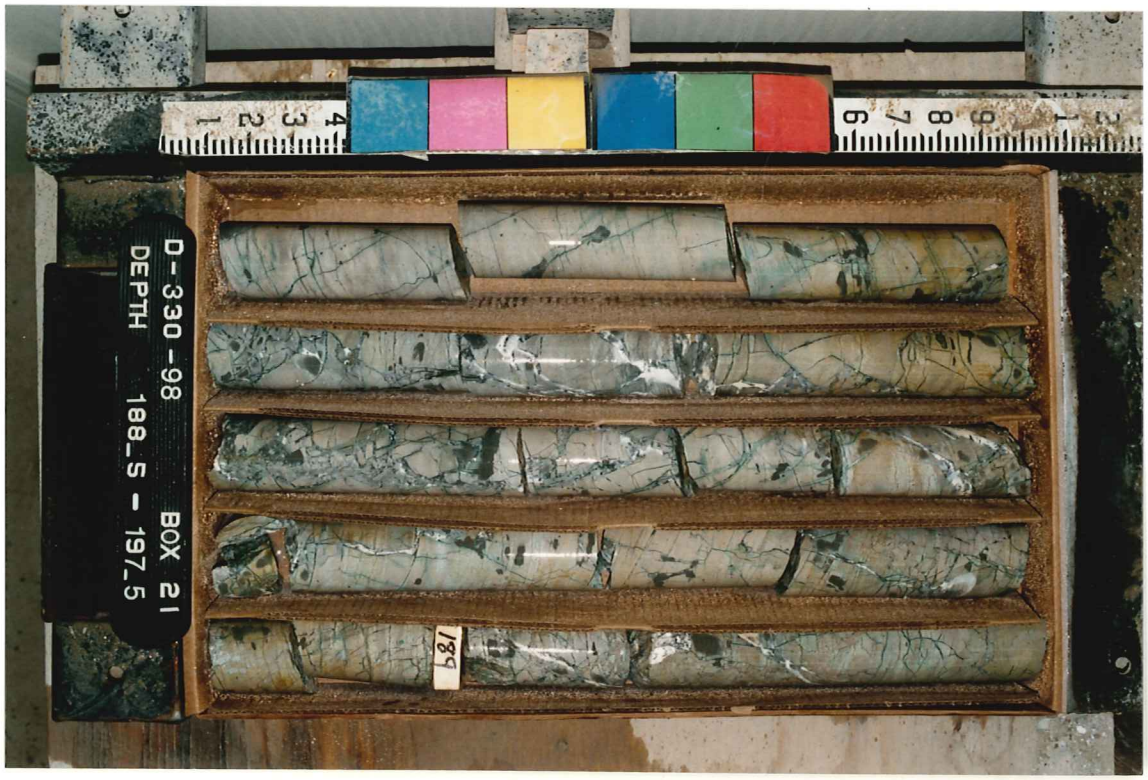
159
D-330-98 BOX 17
DEPTH 150 - 175

149
D-330-98 BOX 16
DEPTH 140 - 150

D-330-98 BOX 18
DEPTH 175 - 169
169


D-330-98 BOX 20
DEPTH 179 - 188_5
179

D-330-98 BOX 19
DEPTH 169 - 179


D-330-98 BOX 21
DEPTH 188_5 - 197_5
189

209
D-330-98 BOX 23
DEPTH 206_5 - 216

199
D-330-98 BOX 22
DEPTH 197_5 - 206_5

219
D-330-98 BOX 24
DEPTH 216 - 225_5

239
D-330-98 BOX 26
DEPTH 235 - 243_5

229
D-330-98 BOX 25
DEPTH 225_5 - 235

249
D-330-98 BOX 27
DEPTH 243_5 - 253

269
D-330-98 BOX 29
DEPTH 262_5 - 272

259
D-330-98 BOX 28
DEPTH 253 - 262_5

D-330-98 BOX 30
DEPTH 272 - 281
279

299
D-330-98 BOX 32
DEPTH 290 - 299_5

289
D-330-98 BOX 31
DEPTH 281 - 290

D-330-98 BOX 33
DEPTH 299_5 - 308_5

317
D-330-98 BOX 35
DEPTH 316 - 325

309
D-330-98 BOX 34
DEPTH 308_5 - 316

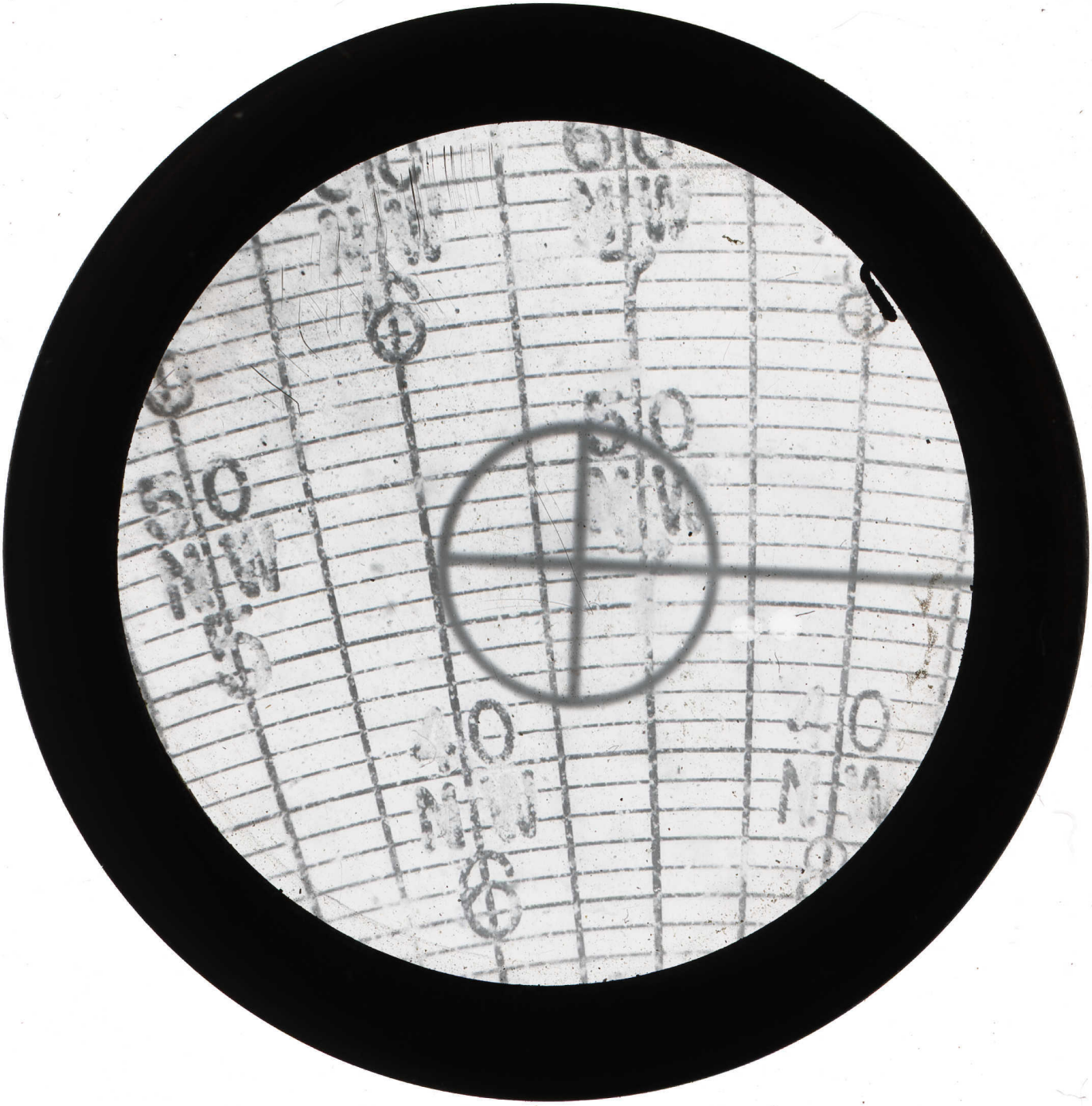
329
D-330-98 BOX 36
DEPTH 325 - 334

TD
349
D-330-98 BOX 38
DEPTH 343 - 349 TD

339
D-330-98 BOX 37
DEPTH 334 - 343

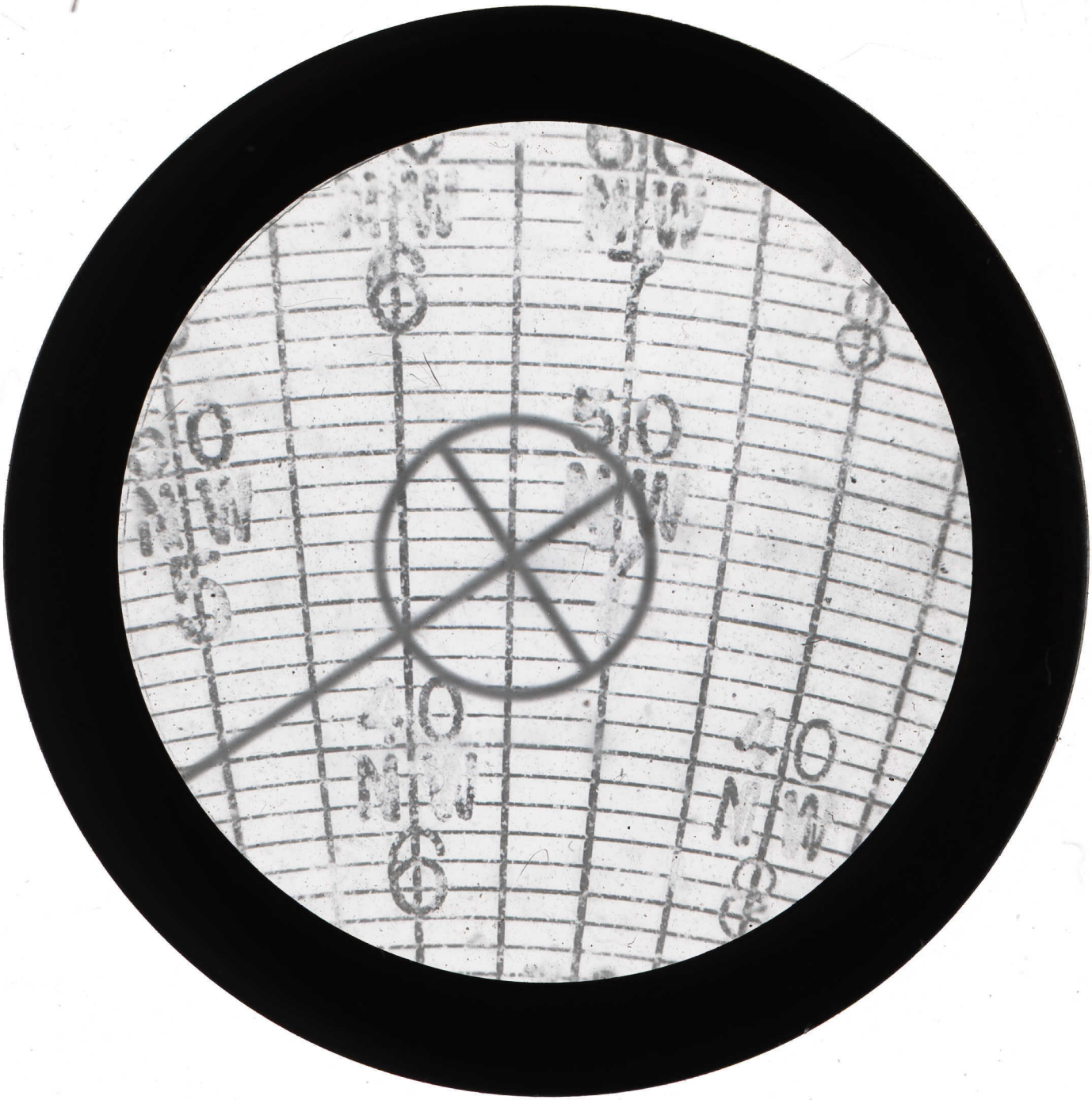
SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-330-98
LEASE
TAKEN BY Hughes
DEPTH 349
DATE 10/20/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408



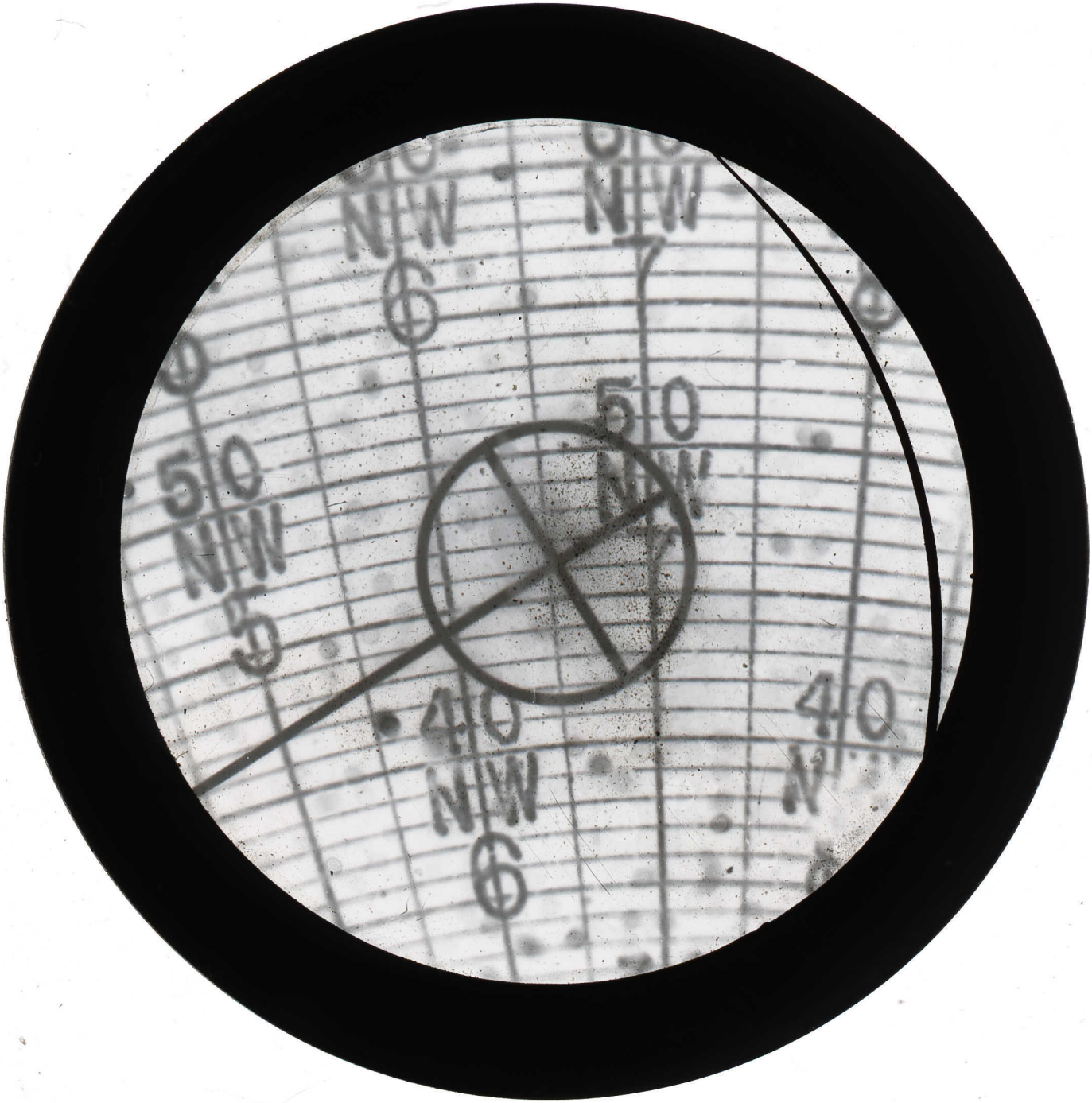
SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-330-98
LEASE
TAKEN BY Hughes
DEPTH 45
DATE 10/20/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408



SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-330-98
LEASE
TAKEN BY Hughes
DEPTH 175
DATE 10/20/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408


NW
6
NW
7
50
NW
50
NW
5
40
NW
6
40
N