60001532

Mining District File Summary Sheet

| | |
|---|---|
| DISTRICT | Rosebud |
| DIST_NO | 4010 |
| COUNTY<br>If different from written on document | Pershing |
| TITLE<br>If not obvious | Rosebud Drill Hole File - Hole No. D-84-94 |
| AUTHOR | C. Winchester; C. Muerhoff; S. Fairchild |
| DATE OF DOC(S) | 1994 |
| MULTI_DIST Y / (N?)<br>Additional Dist_Nos: | |
| QUAD_NAME | Sulphur 7.5' |
| P_M_C_NAME<br>(mine, claim & company names) | Rosebud Mine; Rosebud Project; Hecla Mining Co., South Zone |
| COMMODITY<br>If not obvious | gold silver |
| NOTES | Drill log; geology; assay; total depth 74'<br>handwritten notes<br><br>6 p. |

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 5/29/08
Initials Date
DB: mch
Initials Date
SCANNED: NV Blue
Initials Date

Revised: 1/22/08

D-84-94

6000 1532 4010

60001532

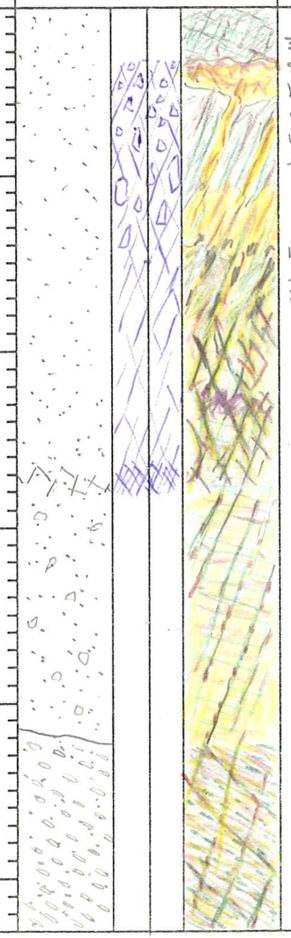
**Hecla**
MINING COMPANY

# ROSEBUD PROJECT
# DIAMOND DRILL LOG

| | | | | | |
|---|---|---|---|---|---|
| HOLE NUMBER | D-84-94 | LOCATION | South Zone | REMARKS | ORIENTATIONS STATED |
| PAGE 1 OF 2 | | NORTHING | 2203999.5 | | AS ∡ TO CORE AXIS; CORE PHOTO'D; |
| DATE | 9-29-94 | EASTING | 481816.1 | | WHOLE CORE ASSAY SAMPLES; COLLAR |
| LOGGED BY | CB WINETEER | ELEVATION | 4659.8 | | LOC. DDS # 19; SECTION 1000N; |
| SCALE | 1" = 10' | AZIMUTH | 120.5° | | |
| TOTAL DEPTH | 74' | INCLINATION | +71.5° | | |

| %REC | RQD | LITHOLOGY | FT |
|---|---|---|---|
| 100 | .60 4 | 0-18' Airfall tephra: very fine-grained (vitropheric ± 11'), well-sorted, massive to crudely planar bedded, slightly porphyritic 11→18' w/ chloritic tabular microphenocrysts roughly flow or compaction aligned. Bleached pale green ± 11' turning greenish-grey or pale reddish-brown (silic) 11-18'. | |
| 90 | .83 9 | | |
| 100 | .74 14 | | 10 |
| 85 | .08 18 | 18-28' Airfall tephra: very fine to fine-grained, crudely-planar-laminated (discont. $SiO_2$/chlorite lamalle at 80°), well-sorted, non-porphyritic; dense, pinkish-grey. | |
| 90 | .32 23 | | 20 |
| 60 | .00 28 | | |
| 64 | .31 35 | 28-41.8' Airfall tephra: fine-grained, moderately-well-sorted w/ occ. rounded devitrified pumice lapilli up to 0.3cm diameter; appears to be massive-bedded, but $SiO_2$ w/ arg. alt. halo & chl w/ $SiO_2$ halo micro stringers at 80° (wavy, commonly discontinuous) give impression reflect original bedding attitude? | 30 |
| 90 | .00 40 | | |
| 100 | .54 44 | 41.8-74' Airfall tephra - spotted leopard skin tuff: strongly argillized & weakly chloritized or sericitized matrix w/ crudely bedded (aligned) birds eye vesicles comprised of pink silica + alunite? & a variety of vesicle-fillings incl. opaline $SiO_2$, clay, zeolites, chlorite & open-space (71-74'). | 40 |
| 85 | .50 49 | | |
| | | | 50 |

GRAPHIC LOG



| STRUCTURE | MINZ FRACS /FT | ALTERATION AND MINERALIZATION |
|---|---|---|
| 3.5-15' chalcedonic ± op. sp. f.g. Q flooded tectonic bx; pale grn to l. gry $SiO_2$ matrix ± sulf & minor ill w/ angular f.g. tephra frags. | 6 30° 80° | 0-3.5' ND silic; intense arg-T, mod chl-T - stkwk; Tr py-T; ND. alun; minz frac's brassy py + frac. lining chl. |
| | 8 60° 20° | 3.5-15' (3.5-11' intense arg-T w/ $SiO_2$ filled frac's), Tr py-T; mod. chl-T stkwk; 11-15' intense silic + $FeO_x$ stn clotted chl-T + py-T. |
| 15-28' crackle to loc. fault bx w/ $SiO_2$ + sulf + ill flooded frac-filling. | | 14-28' crackle bx: mod. silic Tr-1% py-T; wk to mod. alun.; chl-T on bdd planes & frac's; mod. arg-T; minz frac's chl → Q → ill → py & + cpy-ss intergrowths ± f. to m. g. xln v.g. in ill clay. 22-23' c. xln. bar w/ f.g. Q overgrowths → $SiO_2$ flooding post chl/sulf/ill minz.! |
| * CST-17 28-28.5' | 20 20° 25° 75° | |
| | 12 70° 25° | 28-41.8' mod. incr. to mod. intense silic + wk alun + int. chl-T on frac's + wk arg-T & wk py-T; minz frac's chl → Q → marc/py & marc → ± ill |
| | 6 20° 40° | 41.8-57' intensely arg-T g/m w/ eliptical birds eye alun + silica ± chl cores vesicles; wk py-T; chl-ill-Q-marc on frac's |

ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 | Ag2 |
|---|---|---|---|---|---|---|
| 0 | 3.5 | 3.5' | .014 | .16 | | |
| 3.5 | 8.0 | 4.5' | .079 | .15 | .076 (g) | Au Avg |
| 8.0 | 11.0 | 3.0' | .090 | .22 | .118 (g) | .104 |
| 11.0 | 14.0 | 3.0' | .028 | .10 | | .028 |
| ** 14.0 | 16.8 | 2.8' | .724 | .85 | .603 (g) | .664 |
| * 16.8 | 20 | 3.2' | 1.816 | 2.67 | 2.087 (g) | 1.952 |
| * 20 | 23 | 3.0' | 1.102 | 1.93 | 1.573 (g) | 1.338 |
| * 23 | 28 | 5.0' | .022 | .31 | .030 | .022 |
| 28 | 32 | 4.0' | .344 | .14 | .393 (g) | .359 |
| 32 | 37 | 5.0' | .007 | .05 | | |
| 37 | 41.8 | 4.8' | .004 | .04 | | |
| 41.8 | 47 | 5.2' | .020 | .09 | | |
| 47 | 52 | 5.0' | .037 | .14 | | |

HOLE NUMBER D-84-94 PAGE 2 OF 2

| %REC | RQD | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 97 | .64 54 | | | | | 5' ≑ 25' 0.3" Q → ill + py ft marc + Tr xln f.g. U.G. |
| 100 | .64 59 | | | | 57-58.8' healed un bx on 25° stx's. | 57-64 mod intense arg-T + wk alun. + mod. intense silic + chl-T on frac's & w/in vesicles; minr frac's chl-Q-brassy py in part ft marc → grades to py + SS intergrowths. |
| 90 | .64 64 | * CST - 18: 66.5-67' | 60 | | | |
| 98 | .80 69 | | | | 65.5' discord. 1.5" vns w/ f.g. open-space Q (tubular worms) + marc + py + ill. | 64-74' → mod. silic + mod. arg-T + mod. chl-T-frac's & vesicle-fillings + wk alun. minr. frac's chl-py ± ill + Sulfate encrustations. chl-py-spl slicks @ 75' |
| 87 | .87 74 | | 70 | | | |
| | | END OF HOLE @ 74' | | | | |

ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 | Ag2 |
|---|---|---|---|---|---|---|
| * 52 | 54 | 2.0' | .111 | .24 | .115 (g) | |
| * wk 54 | 59 | 5.0' | .021 | .08 | | |
| 59 | 64 | 5.0' | .011 | .32 | | |
| 64 | 69 | 5.0' | .003 | .05 | | |
| 69 | 74 | 5.0' | .001 | .03 | | |

# HECLA MINING COMPANY – ROSEBUD PROJECT
## GEOTECHNICAL DRILL LOG

HOLE # D-84-94 DATE: 9-28-94 LOGGED BY: CBW / RK PAGE 1 OF 2

| 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 | core broken up by | see geo | log | 02 | R2 | 1.0 | 30° | curved | Q-ill-marc | 02 | 268 | 118 | 2.27 |
| 4 | 9 | CBW prior to | | | 7 | R2 | 0.4 | 70° | " | Py-Q | 07 | 295 | 120 | 2.46 |
| 9 | 14 | complete of geotech | | | 11 | R3 | 0.4 | 25° | R | $SiO_2$-marc | 11 | 288 | 120 | 2.40 |
| 14 | 18 | logging | | | 16 | R1 | 4.2 | 65° | S | ill-ser. | 16 | 278 | 118 | 2.36 |
| 18 | 23 | | | | 20 | R1 | 2.6 | 60° | R | ill-chl-py | 20 | 338.5 | 140 | 2.42 |
| 23 | 28 | | | | 25 | R1 | 4.6 | 70°/15° | S/R | chl-ill-py | 25 | 382.5 | 158 | 2.42 |
| 28 | 35 | | | | 31 | R1 | 2.8 | 65/10° | S | chl-ill-py | 31 | 236 | 98 | 2.41 |
| 35 | 40 | | | | 37 | R3 | 7.0 | 75° | S | chl | 37 | 333.5 | 138 | 2.42 |
| 40 | 44 | | | | 42 | R2 | 1.8 | 75° | R | chl | 42 | 263.5 | 110 | 2.40 |
| 44 | 49 | | | | 46 | R2 | 0.3 | 15° | R | Py-Q | 46 | 298 | 130 | 2.30 |
| 49 | 54 | | | | 51 | R2 | 0.6 | 20° | R | ill-marc-Q | 51 | 365.5 | 160 | 2.29 |

# HECLA MINING COMPANY – ROSEBUD PROJECT
## GEOTECHNICAL DRILL LOG

HOLE # D-84-94 DATE: 9-28-94 LOGGED BY: CBW / RK PAGE 2 OF 2

| 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 | 59 | | see geo log | | 56 | R2 | 0.8 | 20° | S | chl-Q-ill py | 56 | 267 | 110 | 2.43 |
| 59 | 64 | | | | 61 | R3 | 1.4 | 20°/80 | R | chl-ill | 61 | 308 | 125 | 2.46 |
| 64 | 69 | | | | 66 | R3 | 1.2 | 5°/30° | R | ill-py | 66 | 344 | 142 | 2.42 |
| 69 | 74 | | | | 72 | R3 | 1.0 | 75° | R | chl-ill-py | 72 | 273 | 112 | 2.44 |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

# ANALYSIS REPORT

American Assay Laboratories

P.O. BOX 71060
RENO, NV,,U.S.A.,
Ph.1-702-356-0606, Fax.1-702-356-1413
Telex:

## HECLA MINING CO.

COPIES TO : CHARLIE MUERHOFF

:

:

:

CLIENT REFERENCE No: D-84-94

LABORATORY JOB No. : SP031147

SAMPLE TYPE :

RECEIVED : 4 OCT 1994

REPORTED : 20 OCT 1994

No. SAMPLES : 18

| ANALYSIS | ANALYTICAL METHOD | QUALITY PARAMETER | UNIT | DETECTION |
|---|---|---|---|---|
| Au(OZ) | FA60 | 15% | OPT | 0.001 |
| Au(RZ) | FA60 | 15% | OPT | 0.001 |
| AuGRAV | GRAV | 15% | OPT | 0.001 |
| Ag(OZ) | D210 | 10% | OPT | 0.02 |

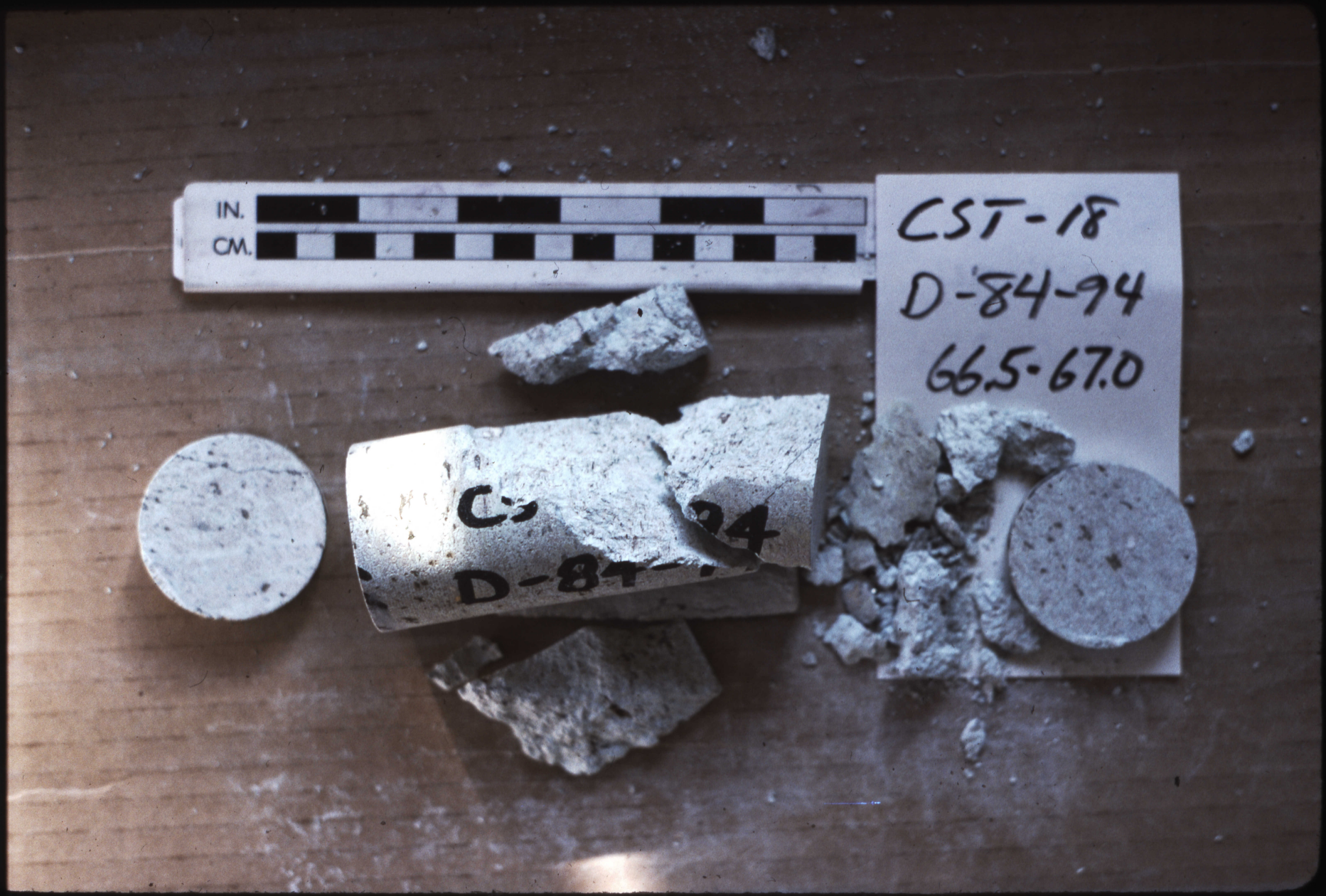
SIGNATORY : Sue Faircloth M.S.

AMERICAN ASSAY LABORATORIES
# ANALYSIS REPORT

American Assay Laboratories

CLIENT : HECLA MINING CO.
PROJECT : ROSEBUD
REFERENCE : D-84-94
JOB NUMBER : SP031147
REPORTED : 20 OCT 1994

| SAMPLES | Au(OZ) FA60 OPT | Au(RZ) FA60 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-84-94 000-3.5 | 0.014 | | | 0.16 |
| D-84-94 3.5-8 | 0.079 | | 0.076 | 0.15 |
| D-84-94 8-11 | 0.090 | | 0.118 | 0.22 |
| D-84-94 11-14 | 0.028 | | | 0.10 |
| D-84-94 14-16.8 | 0.724 | | 0.603 | 0.85 |
| D-84-94 16.8-20 | 1.816 | | 2.087 | 2.67 |
| D-84-94 20-23 | 1.102 | | 1.573 | 1.93 |
| D-84-94 23-28 | 0.022 | 0.030 | | 0.31 |
| D-84-94 28-32 | 0.344 | | 0.393 | 0.14 |
| D-84-94 32-37 | 0.007 | | | 0.05 |
| D-84-94 37-41.8 | 0.004 | | | 0.04 |
| D-84-94 41.8-47 | 0.020 | | | 0.09 |
| D-84-94 47-52 | 0.037 | | | 0.14 |
| D-84-94 52-54 | 0.111 | | 0.115 | 0.24 |
| D-84-94 54-59 | 0.021 | | | 0.08 |
| D-84-94 59-64 | 0.011 | | | 0.32 |
| D-84-94 64-69 | 0.003 | | | 0.05 |
| D-84-94 69-74 | 0.001 | | | 0.03 |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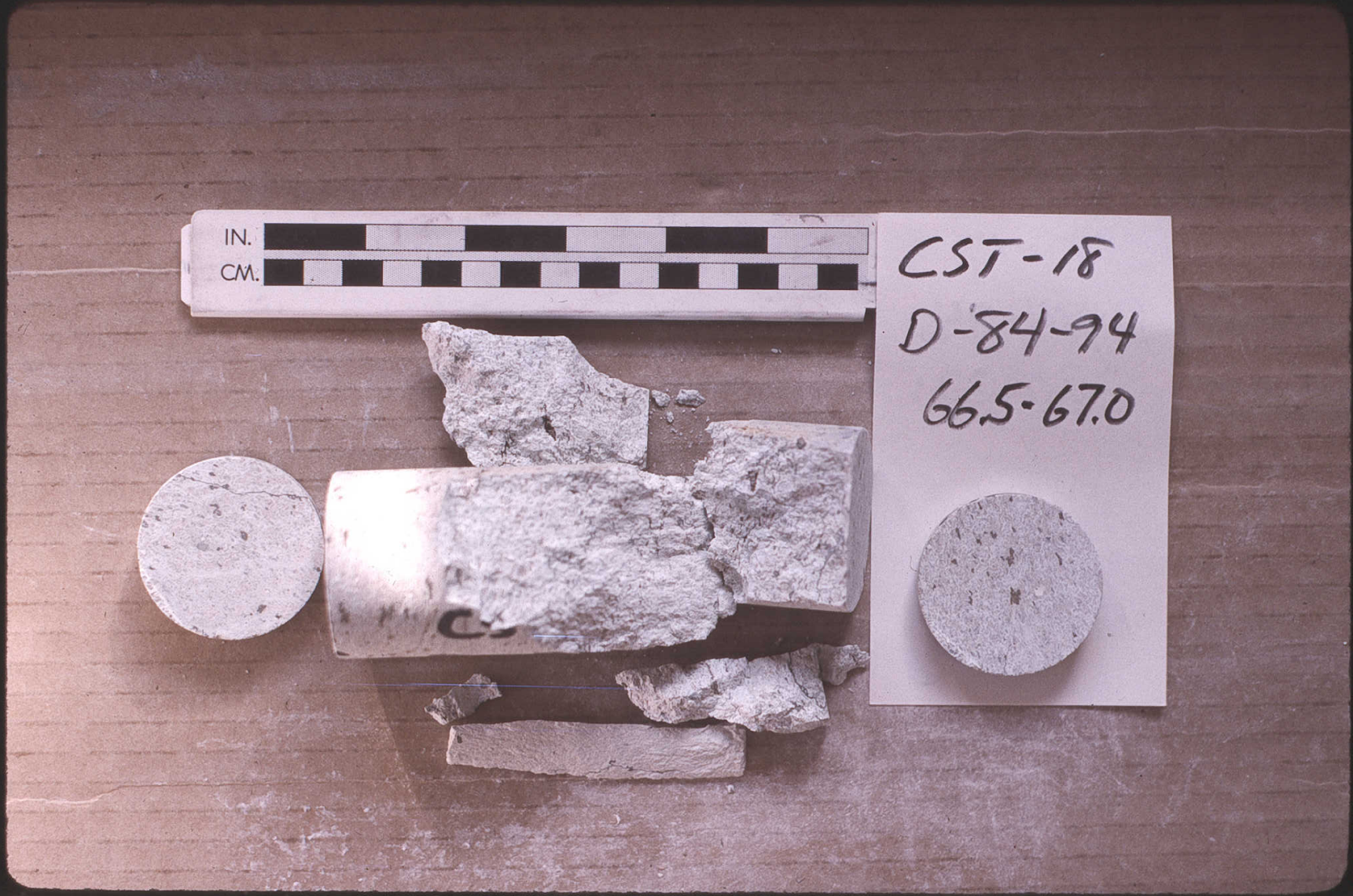
CM.
CST-18
D-84-94
66.5-67.0

IN.
CM.
CST-18
D-84-94
66.5-67.0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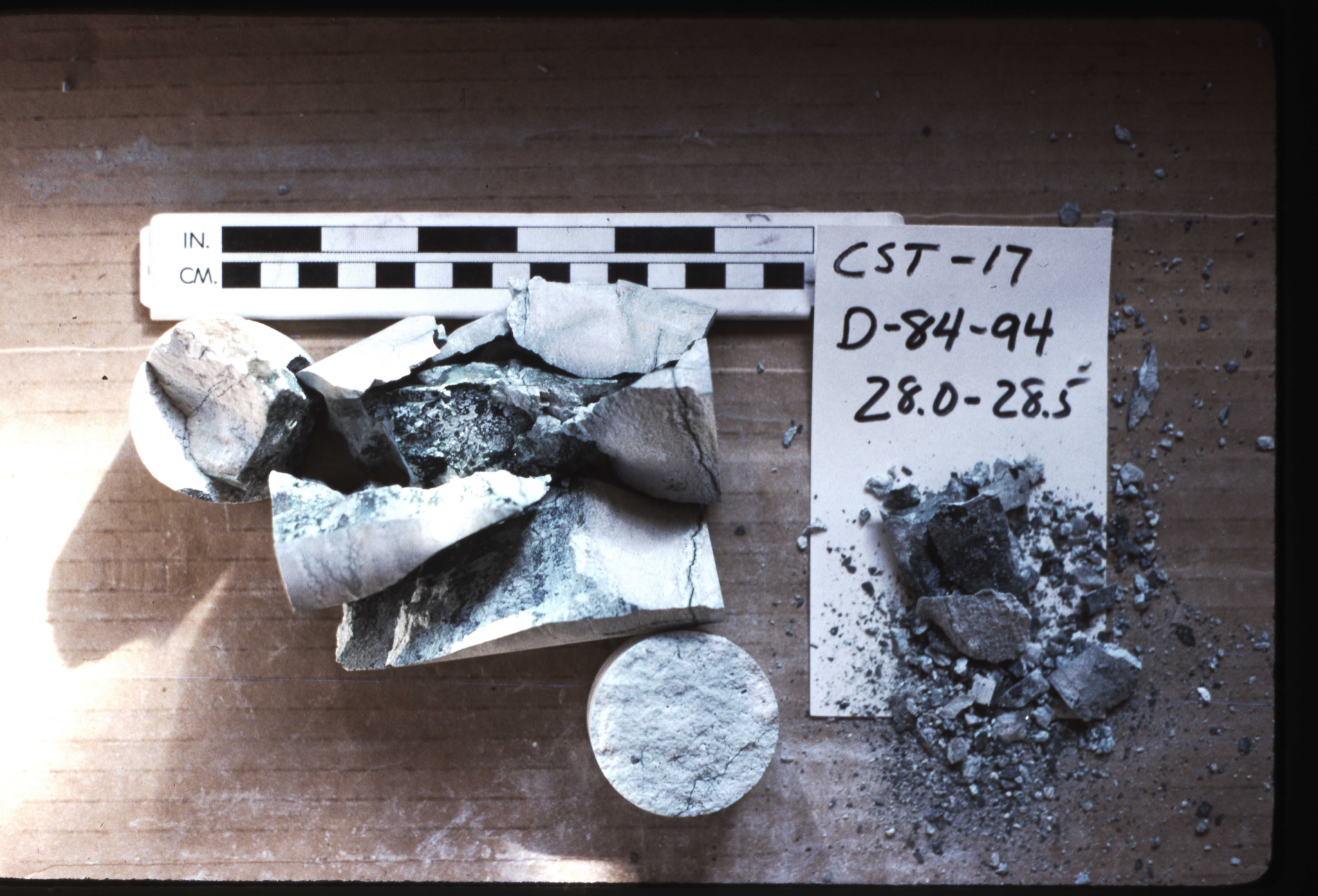
66.5-67.0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CM.
CST-17
D-84-94
28.0-28.5'