60001186

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-285-98 |
| AUTHOR | S. King; K. Allen, A. Niles |
| DATE OF DOC(S) | 1998 |
| 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; Rosebud Mining Co. LLC<br>Hecla Mining Co. |
| COMMODITY<br>If not obvious | gold; silver |
| NOTES | Drill log; geology; assay; photographs; total depth 418'<br>receipt; handwritten notes; downhole camera images<br><br>NOTE: scan notes on front of folder<br><br>52p 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: mdr
Initials Date
SCANNED: NB
Initials Date

Revised: 1/22/08

D-285-98

60001186 4016

Stope 33 4413 @ D-285-98 + 262-316

6000 1186

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

**Hecla**
MINING COMPANY

# ROSEBUD PROJECT
# DIAMOND DRILL LOG

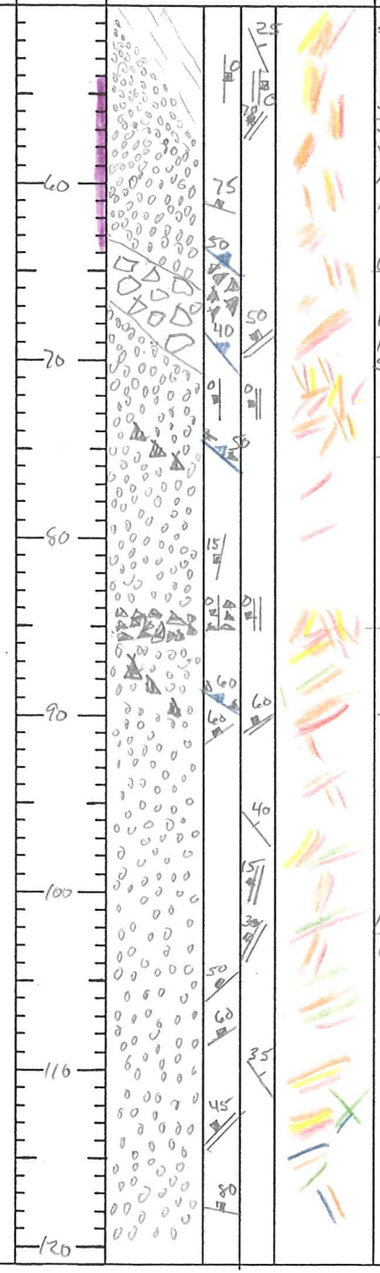
| | | | | | |
|---|---|---|---|---|---|
| HOLE NUMBER | D-285-98 | LOCATION | STOPE 50 SEC 1450 | REMARKS | |
| PAGE 1 OF 7 | | NORTHING | | | |
| DATE | 9/15-9/22/98 | EASTING | | | |
| LOGGED BY | ALLYN NILES | ELEVATION | | | |
| SCALE | 1" = 10' | AZIMUTH | 125 | | |
| TOTAL DEPTH | 418 | INCLINATION | 18 | | |

| REC | RQD | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 0.0 - 2.0 | | TOS GREEN → PINKISH LAPILLI TUFF | | | 2.0 CONTACT SHARP W/ FLOW BASE AUTO BXA IN F.G. MASSIVE | 0.0 - 52.0 MINOR CALCITE VEINING W/ PROPYLITIC CLAY, WHITE CLAY; USUALLY W/ MARC. OR PYRITE |
| 2.0 - | 42.0? | 2.0 - 28.0 | | | | |
| F.G. MASSIVE | | LT. PINK. → LT. GREEN, VERY FINE GRAIN MASSIVE FLOW(S). NO INTERNAL STRUCTURE EXCEPT AUTO BXA'S. | 10 | | 2.0 - 8.5 AUTO BXA ROUND → IRREGULAR SHAPED FRAGS IN PINK VOLCANIC CLAY, MAYBE HEALED TECTONIC BXA 8.0 - 8.5. | 8.0 - 8.5 QUARTZ & MARC. / PYRITE LINING OPEN SPACES IN BXA |
| | | | | | 12.0 - 28.0 FRACTURES RESEMBLE LAMINAR PLANES. | 9.5 - 10.0 QUARTZ & MARC. / PYRITE FILLING / LINING OPEN SPACES & AS CEMENT IN BXA |
| | | | 20 | | 21.0 - 21.4 TWO CLAY & BLADE MARC. FILLED VEIN / FRACTURES | |
| | | 28.0 - 42.0 PINKISH → LT. GREEN FINE TO VERY FINE GRAIN FLOWS, VERY RARE FLOW BANDS. | 30 | | 28.0 - 34.0 AUTO BXA MAYBE TECTONIC 28-29.0 ROUND FRAGS, SOME ANGULAR, IN A PINK TO GREENISH VOLCANIC CLAY MATRIX. | |
| | | | 40 | | 42.0 CONTACT SEEMS TO BE LOW ANGLE FAULT | |
| 42.0 - | 193.0 | 42.0 - 144.0 | | | | |
| PLANAR LAMINAR? | | LT GREEN CHANGING TO PINKISH ~47', FINE GRAIN FLOW(S) & VESICULAR FLOWS & TUFFACEOUS FLOWS, RARE, SCATTERED VESICLE TRAINS OR FLOW BANDS | 50 | | 51.0 - 59.0 STRONG FRACTING, VEINING & OPEN SPACE FILLING | 51.0 - 59.0 FRACTURES / VEINS LINED / FILLED W/ WHITE CLAY, MARC., QUARTZ |

## ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 | Ac |
|---|---|---|---|---|---|---|
| 0.0 | 2.0 | | | | | |
| 2.0 | 5.0 | | | | | |
| 5.0 | 9.0 | | | | | |
| 9.0 | 14.0 | | | | | |
| 14.0 | 19.0 | | | | | |
| 19.0 | 24.0 | | | | | |
| 24.0 | 29.0 | | | | | |
| 29.0 | 34.0 | | | | | |
| 34.0 | 39.0 | | | | | |
| 39.0 | 42.0 | | | | | |
| 42.0 | 44.0 | | | | | |
| 44.0 | 49.0 | | | | | |

HOLE NUMBER D-285-98 PAGE 2 OF 7

| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 42.0 – 193.0 PLANAR LAMINAR? | | 42.0 – 144.0 SEE DESCRIPTION PAGE 1 | |  | 51.0 – 59.0 FRACTURES NEAR 0° TO CORE AXIS, POSSIBLE NEAR BY FAULT. 57.0 – 100.0 MOD. → STRONG FRACTURING/ VEINING & OPEN SPACES ASSOC. W/ BXA ZONES/ FAULTS 64.5 – 69.0 FAULT ZONE, BXA FRAGS IN SOME BXA FRAGS, MATRIX IS PINK → GREENISH CLAY, SOME OPEN FRACTURES. 73.8 – 74.8 HEALED BXA 84.0 – 86.0 WEAKLY HEALE BXA 88.0 – 89.1 HEALED BXA 100.0 – 122.5 WEAK VEINING | 51.0 – 100.0 FRACTURES, VEINS & OPEN SPACES LINED / FILLED W/ WHITE CLAY, BLADDED MARC., PYRITE, SOME QUARTZ 64.5 – 69.0. OPEN FRACTURES FILLED/LINED W/ WHITE CLAY, MARC., MINOR QUARTZ. 73.8 – 74.8 CEMENTED W/ QUARTZ, WHITE CLAY, MARC. 84.0 – 86.0 CEMENTED W/ QUARTZ, WHITE CLAY, LT. GREEN CLAY, MARC. 88.0 – 89.1 CEMENTED W/ WHITE CLAY, MARC., MINOR QUARTZ 100.0 – 122.5 THIN VEINS OF PROPYLITIC CLAY, MARC., SOME WHITE CLAY, MINOR QUARTZ 112.0 – 123.0 MINOR CALCITE W/ WHITE CLAY, MARC., QUARTZ. |

ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 |
|---|---|---|---|---|---|
| 49.0 | 51.0 | | | | |
| 51.0 | 54.0 | | | | |
| 54.0 | 59.0 | | | | |
| 59.0 | 64.0 | | | | |
| 64.0 | 69.0 | | | | |
| 69.0 | 74.0 | | | | |
| 74.0 | 79.0 | | | | |
| 79.0 | 84.0 | | | | |
| 84.0 | 89.0 | | | | |
| 89.0 | 94.0 | | | | |
| 94.0 | 99.0 | | | | |
| 99.0 | 104.0 | | | | |
| 104.0 | 109.0 | | | | |
| 109.0 | 114.0 | | | | |
| 114.0 | 119.0 | | | | |

| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 42.0 - PLANAR LAMINAR? | 193.0 | 42.0 - 144.0 | | | 122.5 - 145.0 STRONG VEINING, OPEN FRACTURE FILLING | 122.5 - 145.0 VEINS & OPEN FRACTURES FILLED/LINED W/ WHITE CLAY, GREEN CLAY, MARC., PYRITE ON MARC., DRUZY QUARTZ |
| | | | 130 | | 129.5 - 137.5 BRECCIA ZONE, HEALED MOSAIC TYPE, SEVERAL BXA'S CLUSTERED TOGETHER HOMOLITHIC | 129.5 - 137.5 CEMENTED W/ WHITE CLAY, BLADED MARC., DRUZY QUARTZ, |
| | | PMA → | 140 | | | |
| | | 144.0 - 193.0 SAME DESCRIPTION AS 42.0-144.0 EXCEPT VESICLE TRAINS & FLOW FEATURES ARE MORE COMMON | | | | |
| | | | 150 | | | |
| | | | | | 154.0 - 159.0 MOD. VEINING. | 154.0 - 159.0 SAME AS 122.5 - 145.0 |
| | | | 160 | | 161.5 - 162.0 HEALED BXA<br>164.8 - 165.8 HEALED BXA | 161.5 - 162.0 & 164.8 - 165.8 CEMENTED W/ QUARTZ HARD WHITE CLAY, BLADED MARC. |
| | | | | | 162.6 - 172.0 STRONG VEINING, OPEN FRACTURE FILLING | 162.6 - 172.0 VEINS & OPEN FRACTURES FILLED/LINED W/ PROPYLITIC CLAY, DRUZY QUARTZ, BLADED MARC. |
| | | | 170 | | | |
| | | | 180 | | 176.5 - 185.0 MOD - STRONG VEINING & OPEN FRACTURE FILLING BXA @ 179.5 - 180.0 | 176.5 - 185.0 VEINS & FRACTURES FILLED W/ WHITE CLAY, PROPYLITIC CLAY, MARC., QUARTZ & DRUZY QUARTZ, BXA ALSO HAS BARITE |
| | | | 190 | | | |

ANALYTICAL DATA

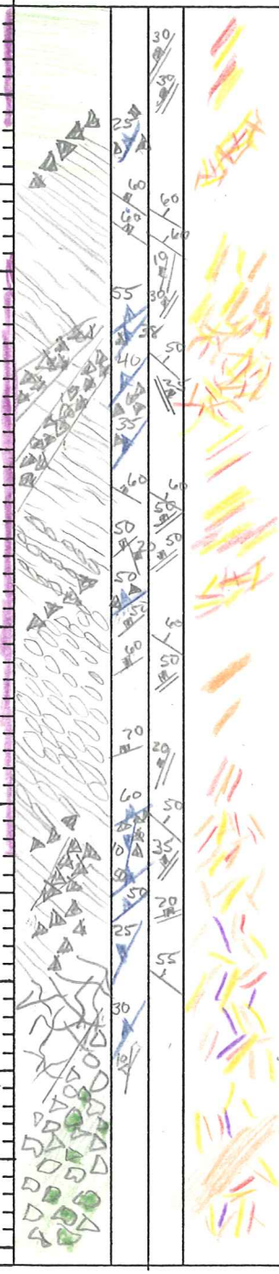
| FROM | TO | W | Au | Ag | Au2 |
|---|---|---|---|---|---|
| 119.0 | 121.0 | | | | |
| 121.0 | 124.0 | | | | |
| 124.0 | 126.6 | | | | |
| 126.6 | 129.0 | | | | |
| 129.0 | 134.0 | | | | |
| 134.0 | 139.0 | | | | |
| 139.0 | 144.0 | | | | |
| 144.0 | 149.0 | | | | |
| 149.0 | 154.0 | | | | |
| 154.0 | 159.0 | | | | |
| 159.0 | 164.0 | | | | |
| 164.0 | 169.0 | | | | |
| 169.0 | 172.0 | | | | |
| 172.0 | 174.0 | | | | |
| 174.0 | 179.0 | | | | |
| 179.0 | 184.0 | | | | |
| 184.0 | 189.0 | | | | |

HOLE NUMBER D-285-98 PAGE 4 OF 7

| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION | ANALYTICAL DATA FROM | TO | W | Au | Ag | Au2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 42.0 - 193.0 PLANAR LAMINAR | | 42.0 - 193.0 SEE DESCRIPTIONS PAGE 1 & 3 | | | | | | | | | | |
| 193.0 - 204.0 SPOTTED TUFF? OR TUFF FACIES OF PLANAR LAMINAR | | 193.0 - 204.0 PINK & GREEN FINE GRAIN TUFF, 193.0-194.0 EXHIBITS SPOTTED FEATURES BUT THERE AFTER TEXTURE IS IRREGULAR, MOTTLED W/ SPOTS OFTEN DIFFICULT TO DISTINGUISH, SPOTS ARE PINK, TUFF MATRIX IS GREEN. | 200 | | 193.0 GRADATIONAL CONTACT<br>197.0 - 201.8 STRONG OPEN FRACTURES<br>201.8 - 222.5 MOD OPEN FRACTURES.<br>204.0 CONTACT GRADATIONAL | 194.0 - 200.0 WEAK → MOD. ARGILLIC ALT. OF PROPYLITIC ALT. CLAY MATRIX.<br>197.0 - 201.8 OPEN FRACTS FILLED/LINED W/ MARC., DRUZY QUARTZ, WHITE CLAY, QUARTZ, SOME BARITE<br>201.8 - OPEN FRACTURES LINED/FILLED W/ BLADED MARC., DRUZY QUARTZ, BARITE, MINOR WHITE CLAY. | 189.0<br>193.0<br>197.6<br>199.0 | 193.0<br>197.6<br>199.0<br>204.0 | | | | |
| 204.0 - 224.0 F.G. MASSIVE | | 204.0 - 207.0 GREEN W/ PINK IRREGULAR BANDS TO 207.0, FINE GRAIN, WEAKLY VESICULAR.<br>207.0 - 224.0 GREEN, EXTREEMLY FINE GRAIN W/ FRACTURE PATTERN SIMILAR TO VITROPHYRE, CRACKED GLASS APPEARENCE W/O LOBATE FEATURES. RARE FLOW STRUCTURES. | 210<br>220 | | 200.0 - FEW NATURAL FRACTURES THAT ARE NOT OPEN SPACES/VEIN-LIKE FEATURES.<br>213.5 - 214.8 BXA, HEALED, | 204.0 - 216.3 WEAK ARGILLIC ALT.<br>213.5 - 214.8 CEMENTED W/ BLADED MARC., BARITE, QUARTZ. | 204.0<br>209.0<br>214.0 | 209.0<br>214.0<br>219.0 | | | | |
| 224.0 - 243.7 VITROPHYRE | | 224.0 - 243.7 GREEN, EXTREEMLY FINE GRAIN TO GLASSY. FRACTURE PATTERN RESEMBLES CRACKED GLASS. | 230 | | 224.0 GRADATIONAL CONTACT<br>224.6 - 225.2 1" + Ø VEIN<br>225.2 - 229.0 MOD. OPEN SPACES/FRACTURES | 224.6 - 225.2 LINED/FILLED W/ BLADED MARC., QUARTZ & DRUZY QUARTZ, MINOR WHITE CLAY<br>225.2 - 229.0 VUGS/FRACTURES LINED/FILLED W/ | 219.0<br>224.0<br>226.0<br>229.0<br>231.6 | 224.0<br>226.0<br>229.0<br>231.6<br>234.0 | | | | |
| 243.7 - 268.7 F.G. MASSIVE | | 243.7 - 268.7 GRAYISH GREEN → YELLOW-GREEN, FINE GRAIN, MOSTLY FEATURELESS FLOW(S) PLANAR BEDDED, WEAKLY SPOTTED TUFF 247.3 - 248.8 | 240<br>250<br>260 | | 242.5 - 243.7 FAULT BXA CONTACT, ROUND VITROPHYRE & F.G. MASSIVE, CLAST SUPPORT.<br>249.0 - 269.3 MOD. → STRONG VEINING & OPEN FRACTURES.<br>255.5 - 256.0 BXA, HEALED, CLAST SUPPORT | 242.5 - 243.7 CEMENTED W/ ROCK FLOUR, MINOR WHITE CLAY, QUARTZ & MARC.<br>249.0 - 269.3 VEINS & OPEN FRACTS. LINED/FILLED W/ BLADED MARC. QUARTZ, WHITE CLAY<br>255.5 - 256.0 CEMENTED W/ BLADED MARC., QUARTZ DRUZY QUARTZ | 234.0<br>239.0<br>241.3<br>243.7<br>246.4<br>249.0<br>251.9<br>254.0<br>256.0 | 239.0<br>241.3<br>243.7<br>246.4<br>249.0<br>251.9<br>254.0<br>256.0<br>259.0 | | | | |

HOLE NUMBER D-285-98 PAGE 5 OF 7

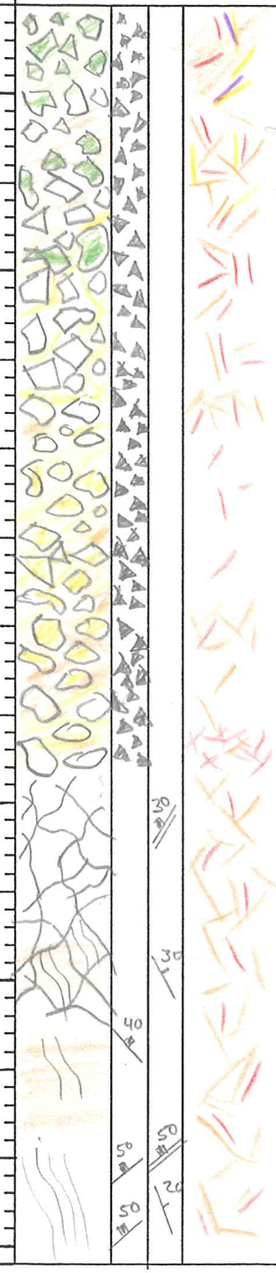
| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 243.7-268.7 F.G. MASSIVE | | 243.7-268.7<br>SEE DESCRIPTION PAGE 4 | | | | |
| 268.7-294.3 PLANAR LAMINAR | | 268.7-273.5<br>PINKISH TO GREENISH, STRONG PLANAR & MOD LAMINAR FEATURES, FINE GRAIN,<br>273.5-294.3<br>PINKISH GRAY → GRAYISH GREEN, FINE GRAIN PLANAR FLOWS W/ BANDING & SOME LAMINAR PARTINGS, | 270<br>280<br>290 | | 268.7 FAULT CONTACT BXA 267.8-269.2<br>272.0-279.1 MOD. VUGS VEINS, OPEN FRACTURES 272.0-294.0 FRACTURES AT OBLIQUE OR NEAR 90° TO BED PLANES<br>279.1-281.0 HEALED CLAST SUPPORT BXA,<br>282.0-284.5 HEALED, CLAST SUPPORT MOSAIC BXA.<br>289.0-291.3 STRONG VEINING & OPEN FRACTS. | 267.8-269.2 CEMENTED W/ROCK FLOUR, VARIABLE QUARTZ, MINOR MARC. & WHITE CLAY, SILIC. CLASTS IN QUARTZ CEMENT 268.6-269.2<br>272.0-279.1 FILLED W/ QUARTZ WHITE CLAY, MINOR MARC.<br>279.1-281.0 CEMENTED W/ QUARTZ MOD. MARC., MINOR WHITE CLAY<br>282.0-284.5 CEMENTED W/ QUARTZ, DRUZY QUARTZ, BLADED MARC., MINOR WHITE CLAY.<br>289.0-291.3 FILLED/LINED W/ DRUZY QUARTZ, BLADED MARC., WHITE CLAY |
| 294.3-303.2 SPOTTED TUFF | | 294.3-303.2<br>GREEN VOLCANIC CLAY W/ PINK IRREGULAR TO ROUND VESICLE-LIKE SPOTS. GREEN CLAY MATRIX IS WEAKLY → MOD. ARGILLIC ALT. | 300 | | 294.3 FAULT CONTACT, SHARP, BRECCIATED, CLAST SUPPORTED | 293.4-294.3 CEMENTED W/ QUARTZ, QUARTZ AFTER MARC., ROCK FLOUR, MINOR WHITE CLAY & MARC. |
| 303.2-353.0 PLANAR LAMINAR | | 303.2-307.0<br>GRADUAL TRANSITION TO PLANAR LAMINAR<br>307.0-318.0<br>PINKISH, FINE GRAIN, PLANAR FLOW(S) W/ SOME VESICLE TRAINS. NO OBSERVED LAMINAR FEATURE - MAY BE LOST IN BXA'S.<br>318.0-353.0<br>FAULT ZONE COINCIDENTAL W/ OR PART OF SRF. MOSAIC BXA, W/ SUBANGULAR TO ROUNDED CLASTS OF PLANAR FLOW ROCK. ZONES TO 2' Ø, MOSTLY 4"-6" OF PROPYLITIC ALT. OF MOST/ALL CLASTS. | 310<br>320<br>330 | | 303.2 GRADATIONAL CONTACT 303-307.<br>307.0-318.0<br>BRECCIAS ARE COMMON., MOSAIC TYPE, CLAST → MATRIX SUPPORTED<br>314.5-318.0 CRACKLE ZONE<br>318.0-353.0 THICK BXA ZONE W/ HOMOLITHIC BXA, MOSAIC TYPE. MOSTLY CLAST SUPPORT. VEIN FREQUENCY INCREASES W/ LENGTH. | 307.0-318.0<br>MATRIX-CEMENT IS QUARTZ, QUART-RICH HARD CLAY, DRUZY QUARTZ, BLADED MARC., SOME BARITE<br>318.0-353.0 SOME CLASTS HAVE WEAK → STRONG PROPYLITIC ALT., ZONED, MATRIX & CEMENT IS DRUZY QUARTZ, QUARTZ WHITE CLAY, MINOR MARC. TO 344.0. QUARTZ VEINING IS STOCKWORK VARIETY |



ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 |
|---|---|---|---|---|---|
| 259.0 | 261.8 | | | | |
| 261.8 | 264.0 | | | | |
| 264.0 | 266.8 | | | | |
| 266.8 | 269.0 | | | | |
| 269.0 | 272.3 | | | | |
| 272.3 | 274.0 | | | | |
| 274.0 | 277.0 | | | | |
| 277.0 | 279.0 | | | | |
| 279.0 | 281.3 | | | | |
| 281.3 | 284.5 | | | | |
| 284.5 | 289.0 | | | | |
| 289.0 | 291.3 | | | | |
| 291.3 | 294.4 | | | | |
| 294.4 | 299.0 | | | | |
| 299.0 | 303.3 | | | | |
| 303.3 | 308.2 | | | | |
| 308.2 | 311.4 | | | | |
| 311.4 | 314.0 | | | | |
| 314.0 | 316.5 | | | | |
| 316.5 | 319.0 | | | | |
| 319.0 | 321.0 | | | | |
| 321.0 | 324.0 | | | | |
| 324.0 | 326.5 | | | | |
| 326.5 | 329.0 | | | | |

HOLE NUMBER D-285-98 PAGE 6 OF 7

| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 303.2 - 353.0 PLANAR LAMINAR | | 318.0 - 353.0 SEE DESCRIPTION PAGE 5. | 340, 350, 360, 370, 380, 390, 400 |  | 339.0 - 342.0 VERY INCOMPETENT, BADLY BROKEN UP. | 318.0 - 336.0 WEAK BARITE FILLING OPEN SPACES<br>341.5 - 348.0 STRONG STOCKWORK QUARTZ VEINING.<br>344.0 - 346.5. PEACOCK COLORS COATING MARC. BLADES. MOD. MARC. COMPARED W/ 318-344.<br>348.0 - 353.0 VERY STRONG STOCKWORK VEINING W/ QUARTZ, MINOR WHITE CLAY, MOD. BLADED MARC. |
| 353.0 - 375.0 SRF | | 353.0 - 375.0<br>HETEROLITIC? BXA. POSSIBLE COMPOSED OF CLASTS FROM DOZER & PLANAR UNITS. SILICA REPLACEMENT OR ARGILLIC ALT. MASKS MOST OF PROTOLITHIC TEXTURES. CLASTS MOSTLY ROUNDED, SOME ANGULAR. ZONES OF ARGILLIC ALT., MOST MATRIX & CLASTS ARE SILICIFIED TO VARIABLE DEGREES.<br>354-364 SUBSTANTIAL CORE LOSS 5.8 REC. FOR 10' DRILLED<br>378.5 - 382.5 SIGNIFICANT CORE LOSS, 1.4' REC. FOR 4' DRILLED | | | 353.0 - 358.0 VERY BROKEN UP, INCOMPETENT<br>363.0 - 369.0 STRONGLY BROKEN / FRACTURED - INCOMPETENT<br>373.0-376.0 RUBBLE.<br>375.0 - 388 CRACKLE ZONE<br>376.0 - 418.0 STRONG FRACTURING & ARGILLIC ALT. ALONG FRACTURES, MOSTLY INCOMPETENT. | 356.0? - 358.0 ? STRONG ARGILLIC ALT. OF CEMENT & CLASTS,<br>353.0 - 356.0? VERY STRONG TO COMPLETE SILICA REP., MOD. BLADED MARC.<br>358.0 ? - 369.3 VERY STRONG TO COMPLETE SILICA REP. OF MATRIX & CLASTS, WEAK → MOD BLADED MARC. & WHITE CLAY.<br>372.8 - 375.0 SULFIDES ARE PYRITE IN SILICA, NO MARC. OBSERVED. |
| 375.0 - 418.0 DOZER | | 375.0 - 418.0<br>LT. GRAY → GRAY, FINE GRAIN, FAINT FLOW BANDS FAIRLY COMMON. | | | | 375.0 - 418.0 ZONES OF WEAK → MOD. ARGILLIC ALT. TO 3' Ø. COMMON CLAY FORMATION ASSOC. W/ FRACTURES,<br>375.0 - 394.0 MOD. → STRONG CLAY IN FRACTS. WEAK, BLADED MARC.<br>394.0 - 400.0 MOD. BLADED MARC. ASSOC. W/ STRONG CLAY FILLING FRACTS.<br>397.6 - 403.3 MOD. → STRONG SILICA FLOODING OF WALL ROCK |

| ANALYTICAL DATA | | | | | |
|---|---|---|---|---|---|
| FROM | TO | W | Au | Ag | Au2 |
| 329.0 | 331.5 | | | | |
| 331.5 | 334.0 | | | | |
| 334.0 | 336.5 | | | | |
| 336.5 | 339.0 | | | | |
| 339.0 | 341.5 | | | | |
| 341.5 | 344.0 | | | | |
| 344.0 | 346.5 | | | | |
| 346.5 | 349.0 | | | | |
| 349.0 | 353.0 | | | | |
| 353.0 | 356.0 | | | | |
| 356.0 | 359.0 | | | | |
| 359.0 | 361.1 | | | | |
| 361.1 | 364.0 | | | | |
| 364.0 | 366.5 | | | | |
| 366.5 | 369.0 | | | | |
| 369.0 | 373.0 | | | | |
| 373.0 | 375.0 | | | | |
| 375.0 | 378.5 | | | | |
| 378.5 | 382.5 | | | | |
| 382.5 | 386.5 | | | | |
| 386.5 | 389.0 | | | | |
| 389.0 | 392.5 | | | | |
| 392.5 | 394.0 | | | | |
| 394.0 | 397.5 | | | | |
| 397.5 | 399.0 | | | | |

HOLE NUMBER D-285-98 PAGE 7 OF 7

| LITH. | OX/RED. | LITHOLOGY | FT | GRAPHIC LOG | STRUCTURE | ALTERATION AND MINERALIZATION |
|---|---|---|---|---|---|---|
| 375.0 - 418.0 DOZER | | 375.0-418.0 SEE DESCRIPTION PAGE 6 | | | | 400.0 - 418.0 PYRITE IS MAIN SULFIDE RARE MARC. BLADES USUALLY COATED W/ PYRITE. |
| | | 407.5-418.0 SUBSTANTIAL CORE LOSS 5.2' REC. FOR 10.5' DRILLED | 410 | 40 40 20 50 | | |
| | | T.D. 418.0 | 418 | | | |

ANALYTICAL DATA

| FROM | TO | W | Au | Ag | Au2 |
|---|---|---|---|---|---|
| 399.0 | 402.5 | | | | |
| 402.5 | 407.5 | | | | |
| 407.5 | 413.0 | | | | |
| 413.0 | 418.0 | | | | |

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

HOLE # D-285-98 DATE: 9/15/98 LOGGED BY: ALLYN NICES PAGE 1 OF 8

| DRILL RUN | | SOLID CORE RECOVERY (%) | TOTAL CORE RECOVERY (%) | RQD | ROCK STRENGTH | | FRACTURE DATA | | | | DENSITY DATA | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FROM | TO | | | | DOWNHOLE DEPTH | POINT LOAD INDEX (psi) | FRACTURE DENSITY/FT. | AVG. ANGLE TO C.A. | ROUGHNESS | INFILL | DOWNHOLE DEPTH | SAMPLE WEIGHT (g) | DISPLACEMENT (cc) | DENSITY (g/cc) |
| 0.0 | 5.0 | 96.0 | 98.0 | 56.0 | | | | | | | | | | |
| 5.0 | 9.0 | 92.5 | 92.5 | 52.5 | | | | | | | | | | |
| 9.0 | 14.0 | 96.0 | 96.0 | 72.0 | | | | | | | | | | |
| 14.0 | 19.0 | 92.0 | 92.0 | 44.0 | | | | | | | | | | |
| 19.0 | 24.0 | 94.0 | 100.0 | 30.0 | | | | | | | | | | |
| 24.0 | 29.0 | 60.0 | 104.0 | 42.0 | | | | | | | | | | |
| 29.0 | 34.0 | 100.0 | 100.0 | 100.0 | | | | | | | | | | |
| 34.0 | 39.0 | 100.0 | 100.0 | 88.0 | | | | | | | | | | |
| 39.0 | 44.0 | 100.0 | 100.0 | 92.0 | | | | | | | | | | |
| 44.0 | 49.0 | 100.0 | 100.0 | 86.0 | | | | | | | | | | |
| 49.0 | 54.0 | 70.0 | 100.0 | 58.0 | | | | | | | | | | |

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

HOLE # D-285-98 DATE: 9/15/98 LOGGED BY: _____ PAGE 2 OF 8

| 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) |
| 54.0 | 59.0 | 100.0 | 100.0 | 80.0 | | | | | | | | | | |
| 59.0 | 64.0 | 96.0 | 100.0 | 66.0 | | | | | | | | | | |
| 64.0 | 69.0 | 92.0 | 94.0 | 78.0 | | | | | | | | | | |
| 69.0 | 74.0 | 102.0 | 102.0 | 64.0 | | | | | | | | | | |
| 74.0 | 79.0 | 100.0 | 100.0 | 44.0 | | | | | | | | | | |
| 79.0 | 84.0 | 100.0 | 100.0 | 60.0 | | | | | | | | | | |
| 84.0 | 89.0 | 34.0 | 90.0 | 34.0 | | | | | | | | | | |
| 89.0 | 94.0 | 100.0 | 100.0 | 80.0 | | | | | | | | | | |
| 94.0 | 99.0 | 100.0 | 100.0 | 78.0 | | | | | | | | | | |
| 99.0 | 104.0 | 100.0 | 100.0 | 72.0 | | | | | | | | | | |
| 104.0 | 109.0 | 100.0 | 100.0 | 90.0 | | | | | | | | | | |

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

HOLE # D-285-98 DATE 9/16/98 LOGGED BY: _____ PAGE 3 OF 8

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 109.0 | 114.0 | 100.0 | 100.0 | 82.0 | | | | | | | | | | |
| 114.0 | 119.0 | 100.0 | 100.0 | 78.0 | | | | | | | | | | |
| 119.0 | 124.0 | 100.0 | 100.0 | 96.0 | | | | | | | | | | |
| 124.0 | 129.0 | 100.0 | 100.0 | 58.0 | | | | | | | | | | |
| 129.0 | 134.0 | 100.0 | 100.0 | 82.0 | | | | | | | | | | |
| 134.0 | 139.0 | 100.0 | 100.0 | 80.0 | | | | | | | | | | |
| 139.0 | 144.0 | 100.0 | 100.0 | 50.0 | | | | | | | | | | |
| 144.0 | 149.0 | 100.0 | 100.0 | 70.0 | | | | | | | | | | |
| 149.0 | 154.0 | 100.0 | 100.0 | 58.0 | | | | | | | | | | |
| 154.0 | 159.0 | 100.0 | 100.0 | 32.0 | | | | | | | | | | |
| 159.0 | 164.0 | 100.0 | 100.0 | 38.0 | | | | | | | | | | |

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-285-98 DATE: 9/16/98 LOGGED BY: _____ PAGE 4 OF 8

| 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) |
| 164.0 | 169.0 | 100.0 | 100.0 | 64.0 | | | | | | | | | | |
| 169.0 | 174.0 | 100.0 | 100.0 | 88.0 | | | | | | | | | | |
| 174.0 | 179.0 | 100.0 | 100.0 | 86.0 | | | | | | | | | | |
| 179.0 | 184.0 | 100.0 | 100.0 | 82.0 | | | | | | | | | | |
| 184.0 | 189.0 | 100.0 | 100.0 | 82.0 | | | | | | | | | | |
| 189.0 | 194.0 | 100.0 | 100.0 | 24.0 | | | | | | | | | | |
| 194.0 | 199.0 | 100.0 | 100.0 | 82.0 | | | | | | | | | | |
| 199.0 | 204.0 | 100.0 | 100.0 | 72.0 | | | | | | | | | | |
| 204.0 | 209.0 | 100.0 | 100.0 | 100.0 | | | | | | | | | | |
| 209.0 | 214.0 | 100.0 | 100.0 | 98.0 | | | | | | | | | | |
| 214.0 | 219.0 | 100.0 | 100.0 | 100.0 | | | | | | | | | | |

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-285-98 DATE: 9/17/98 LOGGED BY: _____ PAGE 5 OF 8

| 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) |
| 219.0 | 224.0 | 96.0 | 96.0 | 96.0 | | | | | | | | | | |
| 224.0 | 229.0 | 100.0 | 100.0 | 88.0 | | | | | | | | | | |
| 229.0 | 234.0 | 100.0 | 100.0 | 96.0 | | | | | | | | | | |
| 234.0 | 239.0 | 100.0 | 100.0 | 94.0 | | | | | | | | | | |
| 239.0 | 244.0 | 100.0 | 100.0 | 78.0 | | | | | | | | | | |
| 244.0 | 249.0 | 94.0 | 94.0 | 80.0 | | | | | | | | | | |
| 249.0 | 254.0 | 100.0 | 100.0 | 80.0 | | | | | | | | | | |
| 254.0 | 259.0 | 100.0 | 100.0 | 72.0 | | | | | | | | | | |
| 259.0 | 264.0 | 100.0 | 100.0 | 100.0 | | | | | | | | | | |
| 264.0 | 269.0 | 100.0 | 100.0 | 56.0 | | | | | | | | | | |
| 269.0 | 274.0 | 100.0 | 100.0 | 70.0 | | | | | | | | | | |

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-285-98 DATE: 9/17/98 LOGGED BY: PAGE 6 OF 8

| 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) |
| 274.0 | 279.0 | 96.0 | 100.0 | 76.0 | | | | | | | | | | |
| 279.0 | 284.0 | 100.0 | 100.0 | 64.0 | | | | | | | | | | |
| 284.0 | 289.0 | 100.0 | 100.0 | 50.0 | | | | | | | | | | |
| 289.0 | 294.0 | 86.0 | 100.0 | 34.0 | | | | | | | | | | |
| 294.0 | 299.0 | 92.0 | 96.0 | 64.0 | | | | | | | | | | |
| 299.0 | 304.0 | 100.0 | 100.0 | 66.0 | | | | | | | | | | |
| 304.0 | 309.0 | 100.0 | 100.0 | 60.0 | | | | | | | | | | |
| 309.0 | 314.0 | 100.0 | 100.0 | 64.0 | | | | | | | | | | |
| 314.0 | 319.0 | 98.0 | 100.0 | 44.0 | | | | | | | | | | |
| 319.0 | 324.0 | 70.0 | 80.0 | 64.0 | | | | | | | | | | |
| 324.0 | 329.0 | 90.0 | 96.0 | 80.0 | | | | | | | | | | |

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE #: D-285-98 DATE: 9/22/98 LOGGED BY: PAGE 7 OF 8

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 329.0 | 334.0 | 98.0 | 100.0 | 68.0 | | | | | | | | | | |
| 334.0 | 339.0 | 70.0 | 100.0 | 32.0 | | | | | | | | | | |
| 339.0 | 344.0 | 64.0 | 100.0 | 24.0 | | | | | | | | | | |
| 344.0 | 349.0 | 60.0 | 100.0 | 54.0 | | | | | | | | | | |
| 349.0 | 354.0 | 72.0 | 86.0 | 62.0 | | | | | | | | | | |
| 354.0 | 359.0 | 20.0 | 56.0 | 20.0 | | | | | | | | | | |
| 359.0 | 364.0 | 44.0 | 66.0 | 0 | | | | | | | | | | |
| 364.0 | 366.5 | 0 | 108.0 | 0 | | | | | | | | | | |
| 366.5 | 369.0 | 0 | 80.0 | 0 | | | | | | | | | | |
| 369.0 | 373.0 | 25.0 | 92.5 | 25.0 | | | | | | | | | | |
| 373.0 | 375.0 | 0 | 100.0 | 0 | | | | | | | | | | |

HECLA MINING COMPANY – ROSEBUD PROJECT
GEOTECHNICAL DRILL LOG

HOLE # D-285-98 DATE: 9/22/98 LOGGED BY: ALLYN NILES. PAGE 8 OF 8

| 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) |
| 375.0 | 378.5 | 0 | 91.5 | 11.4 | | | | | | | | | | |
| 378.5 | 382.5 | 0 | 37.5 | 0 | | | | | | | | | | |
| 382.5 | 386.5 | 37.5 | 90.0 | 0 | | | | | | | | | | |
| 386.5 | 389.0 | 0 | 80.0 | 16.0 | | | | | | | | | | |
| 389.0 | 392.5 | 80.0 | 94.3 | 31.4 | | | | | | | | | | |
| 392.5 | 394.0 | 0 | 86.6 | 0 | | | | | | | | | | |
| 394.0 | 397.5 | 0 | 100.0 | 0 | | | | | | | | | | |
| 397.5 | 399.0 | 33.3 | 100.0 | 0 | | | | | | | | | | |
| 399.0 | 402.5 | 71.4 | 100.0 | 0 | | | | | | | | | | |
| 402.5 | 407.5 | 68.0 | 96.0 | 12.0 | | | | | | | | | | |
| 407.5 | 413.0 | 0 | 60.0 | 0 | | | | | | | | | | |
| 413.0 | 418.0 | 0 | 48.0 | 0 | | | | | | | | | | |

AMERICAN ASSAY LABORATORIES

# PROVISIONAL REPORT SP051164

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-285-98 RECEIVED : 16 OCT 1998

No. SAMPLES : 119 REPORTED : 29 OCT 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 SP051164

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 29 OCT 1998

| SAMPLES | Au(OZ) | Au(RZ) | AuGRAV | Ag(OZ) | |
|---|---|---|---|---|---|
| D-285-98 0-2 | 0.002 | | | 0.03 | |
| D-285-98 2-5 | 0.006 | | | 0.02 | |
| D-285-98 5-9 | 0.003 | | | 0.03 | |
| D-285-98 9-14 | 0.002 | | | 0.02 | |
| D-285-98 14-19 | 0.002 | | | 0.02 | |
| D-285-98 19-24 | 0.003 | | | 0.02 | |
| D-285-98 24-29 | 0.002 | | | <0.02 | |
| D-285-98 29-34 | 0.002 | | | 0.03 | |
| D-285-98 34-39 | 0.081 | | 0.093 | 0.12 | |
| D-285-98 39-42 | 0.161 | | 0.250 | 0.14 | |
| D-285-98 42-44 | 0.092 | | 0.100 | 0.19 | |
| D-285-98 44-49 | 0.139 | | 0.190 | 0.31 | |
| D-285-98 49-51 | 0.036 | 0.029 | | 0.07 | |
| D-285-98 51-54 | 0.058 | | 0.083 | 0.08 | |
| D-285-98 54-59 | 0.146 | | 0.198 | 0.15 | 0.232 Au |
| D-285-98 59-64 | 0.317 | | 0.288 | 0.24 | 0.20 Ag |
| D-285-98 64-69 | 0.017 | | | 0.22 | |
| D-285-98 69-74 | 0.012 | | | 0.08 | |
| D-285-98 74-79 | 0.015 | | | 0.09 | |
| D-285-98 79-84 | 0.005 | | | 0.07 | |
| D-285-98 84-89 | 0.009 | | | 0.06 | |
| D-285-98 89-94 | 0.006 | | | 0.07 | |
| D-285-98 94-99 | 0.012 | | | 0.12 | |
| D-285-98 99-104 | 0.077 | | 0.084 | 0.11 | |
| D-285-98 104-109 | 0.019 | | | 0.13 | |

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| SAMPLES | Au(OZ) | Au(RZ) | AuGRAV | Ag(OZ) |
|---|---|---|---|---|
| D-285-98 109-114 | 0.007 | | | 0.08 |
| D-285-98 114-119 | 0.089 | | 0.127 | 0.08 |
| D-285-98 119-121 | 0.046 | | | 0.11 |
| D-285-98 121-124 | 0.035 | | | 0.15 |
| D-285-98 124.0-126.6 | 0.015 | | | 1.17 |
| D-285-98 126.6-129.0 | 0.010 | | | 0.13 |
| D-285-98 129-134 | 0.007 | | | 0.05 |
| D-285-98 134-139 | 0.007 | | | 0.10 |
| D-285-98 139-144 | 0.007 | | | 0.08 |
| D-285-98 144-149 | 0.030 | | | 0.72 |
| D-285-98 149-154 | 0.068 | | 0.065 | 0.06 |
| D-285-98 154-159 | 0.007 | | | 0.08 |
| D-285-98 159-164 | 0.005 | | | 0.05 |
| D-285-98 164-169 | 0.006 | | | 0.04 |
| D-285-98 169-172 | 0.009 | | | 0.11 |
| D-285-98 172-174 | 0.005 | | | 0.03 |
| D-285-98 174-179 | 0.010 | | | 0.07 |
| D-285-98 179-184 | 0.010 | | | 0.08 |
| D-285-98 184-189 | 0.006 | | | 0.07 |
| D-285-98 189-193 | 0.006 | | | 0.12 |
| D-285-98 193.0-197.6 | 0.006 | | | 0.06 |
| D-285-98 197.6-199.0 | 0.012 | | | 0.11 |
| D-285-98 199-204 | 0.022 | | | 0.62 |
| D-285-98 204-209 | 0.012 | | | 1.12 |
| D-285-98 209-214 | 0.009 | | | 0.08 |

AMERICAN ASSAY LABORATORIES

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| SAMPLES | | Au(OZ) | Au(RZ) | AuGRAV | Ag(OZ) | |
|---|---|---|---|---|---|---|
| D-285-98 214-219 | | 0.011 | | | 0.07 | |
| D-285-98 219-224 | | 0.005 | | | 0.05 | |
| D-285-98 224-226 | | 0.021 | | | 0.14 | |
| D-285-98 226-229 | | 0.010 | | | 0.06 | |
| D-285-98 229.0-231.6 | | 0.009 | | | 0.04 | |
| D-285-98 231.6-234.0 | | 0.027 | | | 0.11 | |
| D-285-98 234-239 | | 0.026 | | | 0.09 | |
| D-285-98 239.0-241.3 | | 0.021 | | | 0.12 | |
| D-285-98 241.3-243.7 | | 0.021 | | | 0.11 | |
| D-285-98 243.7-246.4 | | 0.010 | | | 0.07 | |
| D-285-98 246.4-249.0 | | 0.009 | | | 0.04 | 251.9-266.8 = |
| D-285-98 249.0-251.9 | | 0.056 | | 0.067 | 0.15 | 14.9' = |
| D-285-98 251.9-254.0 | 2.1 | 0.221 | | 0.204 | 0.14 | |
| D-285-98 254-256 | 2 | 0.262 | | 0.316 | 0.15 | 0.184 Au |
| D-285-98 256-259 | 3 | 0.075 | | 0.106 | 0.13 | 0.14 Ag |
| D-285-98 259.0-261.8 | 2.8 | 0.197 | | 0.188 | 0.14 | |
| D-285-98 261.8-264.0 | 2.2 | 0.213 | | 0.316 | 0.14 | |
| D-285-98 264.0-266.8 | 2.8 | 0.181 | | 0.251 | 0.14 | |
| D-285-98 266.8-269.0 | | 0.102 | | 0.073 | 0.13 | |
| D-285-98 269.0-272.3 | | 0.010 | | | 0.12 | 274-308.2 |
| D-285-98 272.3-274.0 | | 0.028 | | | 0.13 | 34.2' |
| D-285-98 274-277 | 3 | 0.386 | | 0.290 | 0.20 | |
| D-285-98 277-279 | 2 | 0.312 | | 0.434 | 1.33 | 0.618 Au |
| D-285-98 279.0-281.3 | 2.3 | 0.281 | | 0.344 | 0.73 | 0.85 Ag |
| D-285-98 281.3-284.5 | 3.2 | 3.591 | | 3.290 | 4.15 | |

AMERICAN ASSAY LABORATORIES

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| SAMPLES | | Au(OZ.) | Au(RZ.) | AuGRAV | Ag(OZ.) |
|---|---|---|---|---|---|
| D-285-98 284.5-289.0 | 4.5 | 0.097 | | 0.182 | 0.98 |
| D-285-98 289.0-291.3 | 2.3 | 0.232 | | 0.301 | 0.33 |
| D-285-98 291.3-294.4 | 3.1 | 0.151 | | 0.275 | 0.17 |
| D-285-98 294.4-299.0 | 4.6 | 0.034 | | | 0.17 |
| D-285-98 299.0-303.3 | 4.3 | 0.476 | | 0.489 | 0.57 |
| D-285-98 303.3-308.2 | 4.9 | 0.732 | | 1.084 | 0.42 |
| D-285-98 308.2-311.4 | | 0.046 | | | 0.17 |
| D-285-98 311.4-314.0 | | 0.013 | | | 0.09 |
| D-285-98 314.0-316.5 | | 0.042 | | | 0.13 |
| D-285-98 316.5-319.0 | | 0.052 | | 0.052 | 0.11 |
| D-285-98 319-321 | | 0.003 | | | 0.03 |
| D-285-98 321-324 | | 0.005 | | | 0.05 |
| D-285-98 324.0-326.5 | | 0.006 | | | 0.06 |
| D-285-98 326.5-329.0 | | 0.008 | | | 0.08 |
| D-285-98 329.0-331.5 | | 0.006 | | | 0.05 |
| D-285-98 331.5-334.0 | | 0.022 | | | 0.09 |
| D-285-98 334.0-336.5 | | 0.032 | | | 0.10 |
| D-285-98 336.5-339.0 | | 0.033 | | | 0.11 |
| D-285-98 339.0-341.5 | | 0.012 | | | 0.12 |
| D-285-98 341.5-344.0 | | 0.022 | | | 0.07 |
| D-285-98 344.0-346.5 | | 0.010 | | | 0.08 |
| D-285-98 346.5-349.0 | | 0.008 | | | 0.11 |
| D-285-98 349-353 | | 0.006 | | | 0.07 |
| D-285-98 353-356 | | 0.066 | | 0.055 | 1.14 |
| D-285-98 356-359 | | 0.034 | | | 0.52 |

AMERICAN ASSAY LABORATORIES

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| SAMPLES | Au(OZ.) | Au(RZ.) | AuGRAV | Ag(OZ.) |
|---|---|---|---|---|
| D-285-98 359.0-361.1 | 0.021 | | | 0.12 |
| D-285-98 361.1-364.0 | 0.018 | | | 0.40 |
| D-285-98 364.0-366.5 | 0.026 | | | 0.30 |
| D-285-98 366.5-369.0 | 0.006 | | | 0.20 |
| D-285-98 369-373 | 0.003 | | | 0.16 |
| D-285-98 373-375 | 0.036 | | | 0.43 |
| D-285-98 375.0-378.5 | 0.006 | | | 0.08 |
| D-285-98 378.5-382.5 | 0.023 | | | 0.33 |
| D-285-98 382.5-386.5 | 0.004 | | | 0.11 |
| D-285-98 386.5-389.0 | 0.005 | | | 0.21 |
| D-285-98 389.0-392.5 | 0.005 | | | 0.15 |
| D-285-98 392.5-394.0 | 0.020 | | | 0.34 |
| D-285-98 394.0-397.5 | 0.002 | | | 0.14 |
| D-285-98 397.5-399.0 | 0.001 | | | 0.05 |
| D-285-98 399.0-402.5 | 0.001 | | | 0.07 |
| D-285-98 402.5-407.5 | 0.001 | | | 0.08 |
| D-285-98 407.5-413.0 | 0.002 | | | 0.06 |
| D-285-98 413-418 | 0.002 | | | 0.15 |
| 43553 | 0.117 | | | 2.79 |

**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 0051164-IN
INVOICE DATE: 11/11/98

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-285-98 | DEVELOPMENT | NET 30 - DUE IN U.S. DOLLARS |

| QUANTITY | DESCRIPTION | PRICE | AMOUNT |
|---|---|---|---|
| 119 | SAMPLES RECEIVED | .00 | .00 |
| 118 | JAW CRUSHING CHARGE | 1.30 | 153.40 |
| 118 | COARSE MILLING CHARGE | 4.50 | 531.00 |
| 118 | SPLITTING CHARGE | 2.40 | 283.20 |
| 118 | FINE MILLING CHARGE | 2.00 | 236.00 |
| 119 | Au (1 A.T. FIRE ASSAY) | 8.00 | 952.00 |
| 29 | Au ANALYSES/GRAVIMETRIC | 8.75 | 253.75 |
| 119 | HYDROCHLORIC/NITRIC DIGESTION | 2.00 | 238.00 |
| 119 | Ag ANALYSES | 1.00 | 119.00 |
| 1 | Ag (ore grade) ANALYSES | 5.00 | 5.00 |

86-5110-477

| | |
|---|---|
| NET INVOICE: | 2,771.35 |
| LESS DISCOUNT: | 554.27 |
| FREIGHT: | .00 |
| INVOICE TOTAL: | 2,217.08 |

xAMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

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-285-98 RECEIVED : 16 OCT 1998

No. SAMPLES : 119 REPORTED : 11 NOV 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 SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 0-2 | 0.002 | | | 0.03 |
| D-285-98 2-5 | 0.006 | | | 0.02 |
| D-285-98 5-9 | 0.003 | | | 0.03 |
| D-285-98 9-14 | 0.002 | | | 0.02 |
| D-285-98 14-19 | 0.002 | | | 0.02 |
| D-285-98 19-24 | 0.003 | | | 0.02 |
| D-285-98 24-29 | 0.002 | | | <0.02 |
| D-285-98 29-34 | 0.002 | | | 0.03 |
| D-285-98 34-39 | 0.081 | | 0.093 | 0.12 |
| D-285-98 39-42 | 0.161 | | 0.250 | 0.14 |
| D-285-98 42-44 | 0.092 | | 0.100 | 0.19 |
| D-285-98 44-49 | 0.139 | | 0.190 | 0.31 |
| D-285-98 49-51 | 0.036 | 0.029 | | 0.07 |
| D-285-98 51-54 | 0.058 | | 0.083 | 0.08 |
| D-285-98 54-59 | 0.146 | | 0.198 | 0.15 |
| D-285-98 59-64 | 0.317 | | 0.288 | 0.24 |
| D-285-98 64-69 | 0.017 | | | 0.22 |
| D-285-98 69-74 | 0.012 | | | 0.08 |
| D-285-98 74-79 | 0.015 | | | 0.09 |
| D-285-98 79-84 | 0.005 | | | 0.07 |
| D-285-98 84-89 | 0.009 | | | 0.06 |
| D-285-98 89-94 | 0.006 | | | 0.07 |
| D-285-98 94-99 | 0.012 | | | 0.12 |
| D-285-98 99-104 | 0.077 | | 0.084 | 0.11 |
| D-285-98 104-109 | 0.019 | | | 0.13 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 109-114 | 0.007 | | | 0.08 |
| D-285-98 114-119 | 0.089 | | 0.127 | 0.08 |
| D-285-98 119-121 | 0.046 | | | 0.11 |
| D-285-98 121-124 | 0.035 | | | 0.15 |
| D-285-98 124.0-126.6 | 0.015 | | | 1.17 |
| D-285-98 126.6-129.0 | 0.010 | | | 0.13 |
| D-285-98 129-134 | 0.007 | | | 0.05 |
| D-285-98 134-139 | 0.007 | | | 0.10 |
| D-285-98 139-144 | 0.007 | | | 0.08 |
| D-285-98 144-149 | 0.030 | | | 0.72 |
| D-285-98 149-154 | 0.068 | | 0.065 | 0.06 |
| D-285-98 154-159 | 0.007 | | | 0.08 |
| D-285-98 159-164 | 0.005 | | | 0.05 |
| D-285-98 164-169 | 0.006 | | | 0.04 |
| D-285-98 169-172 | 0.009 | | | 0.11 |
| D-285-98 172-174 | 0.005 | | | 0.03 |
| D-285-98 174-179 | 0.010 | | | 0.07 |
| D-285-98 179-184 | 0.010 | | | 0.08 |
| D-285-98 184-189 | 0.006 | | | 0.07 |
| D-285-98 189-193 | 0.006 | | | 0.12 |
| D-285-98 193.0-197.6 | 0.006 | | | 0.06 |
| D-285-98 197.6-199.0 | 0.012 | | | 0.11 |
| D-285-98 199-204 | 0.022 | | | 0.62 |
| D-285-98 204-209 | 0.012 | | | 1.12 |
| D-285-98 209-214 | 0.009 | | | 0.08 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 214-219 | 0.011 | | | 0.07 |
| D-285-98 219-224 | 0.005 | | | 0.05 |
| D-285-98 224-226 | 0.021 | | | 0.14 |
| D-285-98 226-229 | 0.010 | | | 0.06 |
| D-285-98 229.0-231.6 | 0.009 | | | 0.04 |
| D-285-98 231.6-234.0 | 0.027 | | | 0.11 |
| D-285-98 234-239 | 0.026 | | | 0.09 |
| D-285-98 239.0-241.3 | 0.021 | | | 0.12 |
| D-285-98 241.3-243.7 | 0.021 | | | 0.11 |
| D-285-98 243.7-246.4 | 0.010 | | | 0.07 |
| D-285-98 246.4-249.0 | 0.009 | | | 0.04 |
| D-285-98 249.0-251.9 | 0.056 | | 0.067 | 0.15 |
| D-285-98 251.9-254.0 | 0.221 | | 0.204 | 0.14 |
| D-285-98 254-256 | 0.262 | | 0.316 | 0.15 |
| D-285-98 256-259 | 0.075 | | 0.106 | 0.13 |
| D-285-98 259.0-261.8 | 0.197 | | 0.188 | 0.14 |
| D-285-98 261.8-264.0 | 0.213 | | 0.316 | 0.14 |
| D-285-98 264.0-266.8 | 0.181 | | 0.251 | 0.14 |
| D-285-98 266.8-269.0 | 0.102 | | 0.073 | 0.13 |
| D-285-98 269.0-272.3 | 0.010 | | | 0.12 |
| D-285-98 272.3-274.0 | 0.028 | | | 0.13 |
| D-285-98 274-277 | 0.386 | | 0.290 | 0.20 |
| D-285-98 277-279 | 0.312 | | 0.434 | 1.33 |
| D-285-98 279.0-281.3 | 0.281 | | 0.344 | 0.73 |
| D-285-98 281.3-284.5 | 3.591 | | 3.290 | 4.15 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 284.5-289.0 | 0.097 | | 0.182 | 0.98 |
| D-285-98 289.0-291.3 | 0.232 | | 0.301 | 0.33 |
| D-285-98 291.3-294.4 | 0.151 | | 0.275 | 0.17 |
| D-285-98 294.4-299.0 | 0.034 | | | 0.17 |
| D-285-98 299.0-303.3 | 0.476 | | 0.489 | 0.57 |
| D-285-98 303.3-308.2 | 0.732 | | 1.084 | 0.42 |
| D-285-98 308.2-311.4 | 0.046 | | | 0.17 |
| D-285-98 311.4-314.0 | 0.013 | | | 0.09 |
| D-285-98 314.0-316.5 | 0.042 | | | 0.13 |
| D-285-98 316.5-319.0 | 0.052 | | 0.052 | 0.11 |
| D-285-98 319-321 | 0.003 | | | 0.03 |
| D-285-98 321-324 | 0.005 | | | 0.05 |
| D-285-98 324.0-326.5 | 0.006 | | | 0.06 |
| D-285-98 326.5-329.0 | 0.008 | | | 0.08 |
| D-285-98 329.0-331.5 | 0.006 | | | 0.05 |
| D-285-98 331.5-334.0 | 0.022 | | | 0.09 |
| D-285-98 334.0-336.5 | 0.032 | | | 0.10 |
| D-285-98 336.5-339.0 | 0.033 | | | 0.11 |
| D-285-98 339.0-341.5 | 0.012 | | | 0.12 |
| D-285-98 341.5-344.0 | 0.022 | | | 0.07 |
| D-285-98 344.0-346.5 | 0.010 | | | 0.08 |
| D-285-98 346.5-349.0 | 0.008 | | | 0.11 |
| D-285-98 349-353 | 0.006 | | | 0.07 |
| D-285-98 353-356 | 0.056 | | 0.055 | 1.14 |
| D-285-98 356-359 | 0.034 | | | 0.52 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 359.0-361.1 | 0.021 | | | 0.12 |
| D-285-98 361.1-364.0 | 0.018 | | | 0.40 |
| D-285-98 364.0-366.5 | 0.026 | | | 0.30 |
| D-285-98 366.5-369.0 | 0.006 | | | 0.20 |
| D-285-98 369-373 | 0.003 | | | 0.16 |
| D-285-98 373-375 | 0.036 | | | 0.43 |
| D-285-98 375.0-378.5 | 0.006 | | | 0.08 |
| D-285-98 378.5-382.5 | 0.023 | | | 0.33 |
| D-285-98 382.5-386.5 | 0.004 | | | 0.11 |
| D-285-98 386.5-389.0 | 0.005 | | | 0.21 |
| D-285-98 389.0-392.5 | 0.005 | | | 0.15 |
| D-285-98 392.5-394.0 | 0.020 | | | 0.34 |
| D-285-98 394.0-397.5 | 0.002 | | | 0.14 |
| D-285-98 397.5-399.0 | 0.001 | | | 0.05 |
| D-285-98 399.0-402.5 | 0.001 | | | 0.07 |
| D-285-98 402.5-407.5 | 0.001 | | | 0.08 |
| D-285-98 407.5-413.0 | 0.002 | | | 0.06 |
| D-285-98 413-418 | 0.002 | | | 0.15 |
| 43553 | 0.117 | | | 2.79 |

xAMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

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-285-98 RECEIVED : 16 OCT 1998

No. SAMPLES : 119 REPORTED : 11 NOV 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 SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 0-2 | 0.002 | | | 0.03 |
| D-285-98 2-5 | 0.006 | | | 0.02 |
| D-285-98 5-9 | 0.003 | | | 0.03 |
| D-285-98 9-14 | 0.002 | | | 0.02 |
| D-285-98 14-19 | 0.002 | | | 0.02 |
| D-285-98 19-24 | 0.003 | | | 0.02 |
| D-285-98 24-29 | 0.002 | | | <0.02 |
| D-285-98 29-34 | 0.002 | | | 0.03 |
| D-285-98 34-39 | 0.081 | | 0.093 | 0.12 |
| D-285-98 39-42 | 0.161 | | 0.250 | 0.14 |
| D-285-98 42-44 | 0.092 | | 0.100 | 0.19 |
| D-285-98 44-49 | 0.139 | | 0.190 | 0.31 |
| D-285-98 49-51 | 0.036 | 0.029 | | 0.07 |
| D-285-98 51-54 | 0.058 | | 0.083 | 0.08 |
| D-285-98 54-59 | 0.146 | | 0.198 | 0.15 |
| D-285-98 59-64 | 0.317 | | 0.288 | 0.24 |
| D-285-98 64-69 | 0.017 | | | 0.22 |
| D-285-98 69-74 | 0.012 | | | 0.08 |
| D-285-98 74-79 | 0.015 | | | 0.09 |
| D-285-98 79-84 | 0.005 | | | 0.07 |
| D-285-98 84-89 | 0.009 | | | 0.06 |
| D-285-98 89-94 | 0.006 | | | 0.07 |
| D-285-98 94-99 | 0.012 | | | 0.12 |
| D-285-98 99-104 | 0.077 | | 0.084 | 0.11 |
| D-285-98 104-109 | 0.019 | | | 0.13 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 109-114 | 0.007 | | | 0.08 |
| D-285-98 114-119 | 0.089 | | 0.127 | 0.08 |
| D-285-98 119-121 | 0.046 | | | 0.11 |
| D-285-98 121-124 | 0.035 | | | 0.15 |
| D-285-98 124.0-126.6 | 0.015 | | | 1.17 |
| D-285-98 126.6-129.0 | 0.010 | | | 0.13 |
| D-285-98 129-134 | 0.007 | | | 0.05 |
| D-285-98 134-139 | 0.007 | | | 0.10 |
| D-285-98 139-144 | 0.007 | | | 0.08 |
| D-285-98 144-149 | 0.030 | | | 0.72 |
| D-285-98 149-154 | 0.068 | | 0.065 | 0.06 |
| D-285-98 154-159 | 0.007 | | | 0.08 |
| D-285-98 159-164 | 0.005 | | | 0.05 |
| D-285-98 164-169 | 0.006 | | | 0.04 |
| D-285-98 169-172 | 0.009 | | | 0.11 |
| D-285-98 172-174 | 0.005 | | | 0.03 |
| D-285-98 174-179 | 0.010 | | | 0.07 |
| D-285-98 179-184 | 0.010 | | | 0.08 |
| D-285-98 184-189 | 0.006 | | | 0.07 |
| D-285-98 189-193 | 0.006 | | | 0.12 |
| D-285-98 193.0-197.6 | 0.006 | | | 0.06 |
| D-285-98 197.6-199.0 | 0.012 | | | 0.11 |
| D-285-98 199-204 | 0.022 | | | 0.62 |
| D-285-98 204-209 | 0.012 | | | 1.12 |
| D-285-98 209-214 | 0.009 | | | 0.08 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 214-219 | 0.011 | | | 0.07 |
| D-285-98 219-224 | 0.005 | | | 0.05 |
| D-285-98 224-226 | 0.021 | | | 0.14 |
| D-285-98 226-229 | 0.010 | | | 0.06 |
| D-285-98 229.0-231.6 | 0.009 | | | 0.04 |
| D-285-98 231.6-234.0 | 0.027 | | | 0.11 |
| D-285-98 234-239 | 0.026 | | | 0.09 |
| D-285-98 239.0-241.3 | 0.021 | | | 0.12 |
| D-285-98 241.3-243.7 | 0.021 | | | 0.11 |
| D-285-98 243.7-246.4 | 0.010 | | | 0.07 |
| D-285-98 246.4-249.0 | 0.009 | | | 0.04 |
| D-285-98 249.0-251.9 | 0.056 | | 0.067 | 0.15 |
| D-285-98 251.9-254.0 | 0.221 | | 0.204 | 0.14 |
| D-285-98 254-256 | 0.262 | | 0.316 | 0.15 |
| D-285-98 256-259 | 0.075 | | 0.106 | 0.13 |
| D-285-98 259.0-261.8 | 0.197 | | 0.188 | 0.14 |
| D-285-98 261.8-264.0 | 0.213 | | 0.316 | 0.14 |
| D-285-98 264.0-266.8 | 0.181 | | 0.251 | 0.14 |
| D-285-98 266.8-269.0 | 0.102 | | 0.073 | 0.13 |
| D-285-98 269.0-272.3 | 0.010 | | | 0.12 |
| D-285-98 272.3-274.0 | 0.028 | | | 0.13 |
| D-285-98 274-277 | 0.386 | | 0.290 | 0.20 |
| D-285-98 277-279 | 0.312 | | 0.434 | 1.33 |
| D-285-98 279.0-281.3 | 0.281 | | 0.344 | 0.73 |
| D-285-98 281.3-284.5 | 3.591 | | 3.290 | 4.15 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 284.5-289.0 | 0.097 | | 0.182 | 0.98 |
| D-285-98 289.0-291.3 | 0.232 | | 0.301 | 0.33 |
| D-285-98 291.3-294.4 | 0.151 | | 0.275 | 0.17 |
| D-285-98 294.4-299.0 | 0.034 | | | 0.17 |
| D-285-98 299.0-303.3 | 0.476 | | 0.489 | 0.57 |
| D-285-98 303.3-308.2 | 0.732 | | 1.084 | 0.42 |
| D-285-98 308.2-311.4 | 0.046 | | | 0.17 |
| D-285-98 311.4-314.0 | 0.013 | | | 0.09 |
| D-285-98 314.0-316.5 | 0.042 | | | 0.13 |
| D-285-98 316.5-319.0 | 0.052 | | 0.052 | 0.11 |
| D-285-98 319-321 | 0.003 | | | 0.03 |
| D-285-98 321-324 | 0.005 | | | 0.05 |
| D-285-98 324.0-326.5 | 0.006 | | | 0.06 |
| D-285-98 326.5-329.0 | 0.008 | | | 0.08 |
| D-285-98 329.0-331.5 | 0.006 | | | 0.05 |
| D-285-98 331.5-334.0 | 0.022 | | | 0.09 |
| D-285-98 334.0-336.5 | 0.032 | | | 0.10 |
| D-285-98 336.5-339.0 | 0.033 | | | 0.11 |
| D-285-98 339.0-341.5 | 0.012 | | | 0.12 |
| D-285-98 341.5-344.0 | 0.022 | | | 0.07 |
| D-285-98 344.0-346.5 | 0.010 | | | 0.08 |
| D-285-98 346.5-349.0 | 0.008 | | | 0.11 |
| D-285-98 349-353 | 0.006 | | | 0.07 |
| D-285-98 353-356 | 0.056 | | 0.055 | 1.14 |
| D-285-98 356-359 | 0.034 | | | 0.52 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP051164

American Assay Laboratories

CLIENT : HECLA MINING COMPANY
PROJECT : ROSEBUD DEVELOPMENT
REFERENCE : D-285-98

REPORTED : 11 NOV 1998

| SAMPLES | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | AuGRAV GRAV OPT | Ag(OZ) D210 OPT |
|---|---|---|---|---|
| D-285-98 359.0-361.1 | 0.021 | | | 0.12 |
| D-285-98 361.1-364.0 | 0.018 | | | 0.40 |
| D-285-98 364.0-366.5 | 0.026 | | | 0.30 |
| D-285-98 366.5-369.0 | 0.006 | | | 0.20 |
| D-285-98 369-373 | 0.003 | | | 0.16 |
| D-285-98 373-375 | 0.036 | | | 0.43 |
| D-285-98 375.0-378.5 | 0.006 | | | 0.08 |
| D-285-98 378.5-382.5 | 0.023 | | | 0.33 |
| D-285-98 382.5-386.5 | 0.004 | | | 0.11 |
| D-285-98 386.5-389.0 | 0.005 | | | 0.21 |
| D-285-98 389.0-392.5 | 0.005 | | | 0.15 |
| D-285-98 392.5-394.0 | 0.020 | | | 0.34 |
| D-285-98 394.0-397.5 | 0.002 | | | 0.14 |
| D-285-98 397.5-399.0 | 0.001 | | | 0.05 |
| D-285-98 399.0-402.5 | 0.001 | | | 0.07 |
| D-285-98 402.5-407.5 | 0.001 | | | 0.08 |
| D-285-98 407.5-413.0 | 0.002 | | | 0.06 |
| D-285-98 413-418 | 0.002 | | | 0.15 |
| 43553 | 0.117 | | | 2.79 |

SP

# SUBMITTAL FORM


American Assay Laboratories

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Company: ROSEBUD MINING LLC

Address: P.O. 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: 10/15 Number of Samples: 118

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

Au-Ag ACCORDING TO ROSEBUD MINING PROTOCOL

| D-285-98 SAMPLE IDENTIFICATION | | | | TYPE | ELEMENTS REQUIRED | | | |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 59-64 | 126.6-129 | 193-197.6 | | 246.4-249 | 284.5-289 | 331.5-334 | 373-375 |
| 2-5 | 64-69 | 129-134 | 197.6-199 | | 249-251.9 | 289-291.3 | 334-336.5 | 375-378.5 |
| 5-9 | 69-74 | 134-139 | 199-204 | | 251.9-254 | 291.3-294.4 | 336.5-339 | 378.5-382.5 |
| 9-14 | 74-79 | 139-144 | 204-209 | | 254-256 | 294.4-299 | 339-341.5 | 382.5-386.5 |
| 14-19 | 79-84 | 144-149 | 209-214 | | 256-259 | 299-303.3 | 341.5-344 | 386.5-389 |
| 19-24 | 84-89 | 149-154 | 214-219 | | 259-261.8 | 303.3-308.2 | 344-346.5 | 389-392.5 |
| 24-29 | 89-94 | 154-159 | 219-224 | | 261.8-264 | 308.2-311.4 | 346.5-349 | 392.5-394 |
| 29-34 | 94-99 | 159-164 | 224-226 | | 264-266.8 | 311.4-314 | 349-353 | 394-397.5 |
| 34-39 | 99-104 | 164-169 | 226-229 | | 266.8-269 | 314-316.5 | 353-356 | 397.5-399 |
| 39-42 | 104-109 | 169-172 | 229-231.6 | | 269-272.3 | 316.5-319 | 356-359 | 399-402.5 |
| 42-44 | 109-114 | 172-174 | 231.6-234 | | 272.3-274 | 319-321 | 359-361.1 | 402.5-407.5 |
| 44-49 | 114-119 | 174-179 | 234-239 | | 274-277 | 321-324 | 361.1-364 | 407.5-413 |
| 49-51 | 119-121 | 179-184 | 239-241.3 | | 277-279 | 324-326.5 | 364-366.5 | 413-418.50 |
| 51-54 | 121-124 | 184-189 | 241.3-243.7 | | 279-281.3 | 326.5-329 | 366.5-369 | |
| 54-59 | 124-126.6 | 189-193 | 243.7-246.4 | | 281.3-284.5 | 329-331.5 | 369-373 | |

**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-285-98 | COLLAR | | 17 | 124.7 |
| | | 200 | 16 | 123.7 |
| | | 418 | 16.5 | 124.2 |

D-285-98 BOX 3
DEPTH 19_5 - 29

D-285-98 BOX 1
DEPTH 0 - 9_5

D-285-98 BOX 4
DEPTH 29 - 38_5

49'
54'
D-285-98 BOX 6
DEPTH 48 - 57

39'
44'
D-285-98 BOX 5
DEPTH 38_5 - 48

59'
64'
D-285-98 BOX 7
DEPTH 57 - 66

74
84
D-285-98 BOX 9
DEPTH 75_5 - 84_5

69
74
D-285-98 BOX 8
DEPTH 66 - 75_5

89
94
D-285-98 BOX 10
DEPTH 84_5 - 94_5

D-285-98
DEPTH
BOX 12
104 - 113_5
104
109

D-285-98
DEPTH
BOX 11
94_5 - 104

D-285-98
DEPTH
BOX 13
113_5 - 123
114
116

D-285-98 BOX 15
DEPTH 132 - 141.5
139
134

D-285-98 BOX 14
DEPTH 123 - 132
129
129

D-285-98 BOX 16
DEPTH 141.5 - 150.5
144
149

164
D-285-98 BOX 18
DEPTH 159 - 168_5

169
154
D-285-98 BOX 17
DEPTH 150_5 - 159

169
174
D-285-98 BOX 19
DEPTH 168_5 - 178

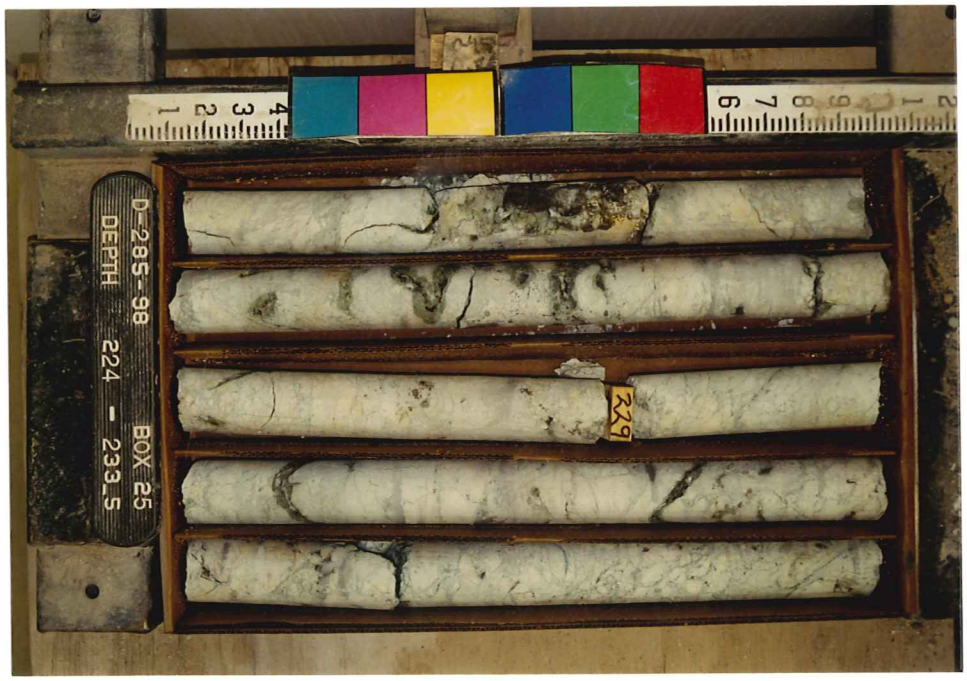
D-285-98 BOX 21
DEPTH 187 - 196
189
194

D-285-98 BOX 20
DEPTH 178 - 187
179
184

D-285-98 BOX 22
DEPTH 196 - 202.5
204

224
219
D-285-98 BOX 24
DEPTH 214_5 - 224

209
214
D-285-98 BOX 23
DEPTH 202_5 - 214_5


229
D-285-98 BOX 25
DEPTH 224 - 233_5

249
244
D-285-98 BOX 27
DEPTH 243 - 253

239
234
D-285-98 BOX 26
DEPTH 233_5 - 243

254
259
D-285-98 BOX 28
DEPTH 253 - 262

279
274
D-285-98 BOX 30
DEPTH 271.5 - 281

264
269
D-285-98 BOX 29
DEPTH 262 - 271.5

D-285-98 BOX 31
DEPTH 281 - 290.5
284
289

304'
D-285-98 BOX 33
DEPTH 300 - 309

294'
299'
D-285-98 BOX 32
DEPTH 290_5 - 300

309'
314'
D-285-98 BOX 34
DEPTH 309 - 318

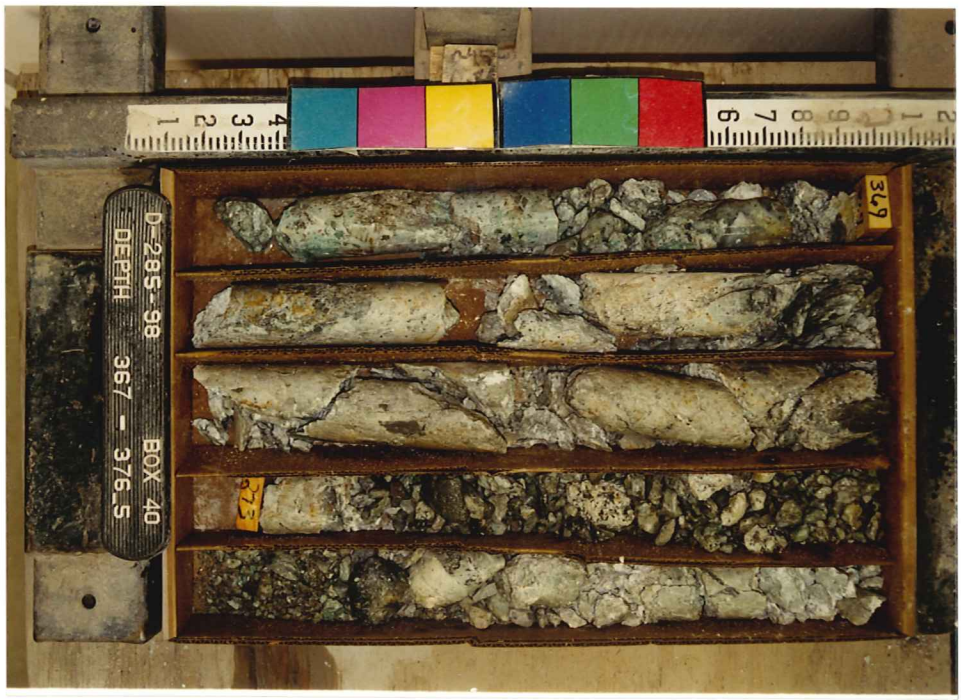
329'
334
D-285-98
BOX 36
DEPTH 328 - 337

319'
D-285-98
BOX 35
DEPTH 318 - 328

D-285-98
BOX 37
DEPTH 337 - 344.5
339
344

D-285-98 BOX 39
DEPTH 354 - 367
359
364
366.5

D-285-98 BOX 38
DEPTH 344.5 - 354
349
354


D-285-98 BOX 40
DEPTH 367 - 376.5
369
373

392.5
394
397.5
D-285-98 BOX 42
DEPTH 389 - 398_5

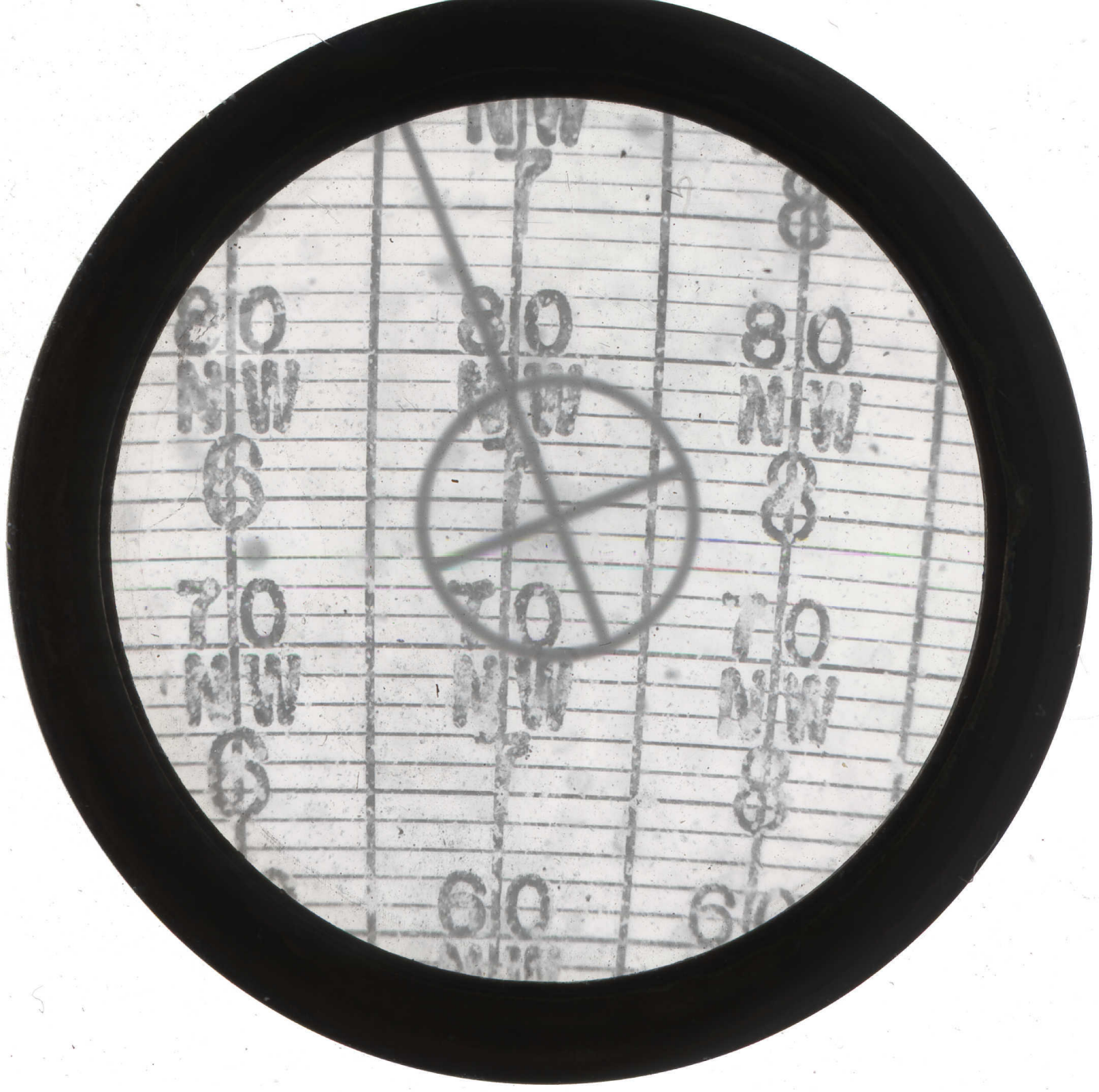
378.5
382.5
386.5
389
D-285-98 BOX 41
DEPTH 376_5 - 389

D-285-98 BOX 43
DEPTH 398_5 - 408
399
402.5
405.5

TD
418
413
D-285-98
BOX 44
DEPTH 408 - 418 TD

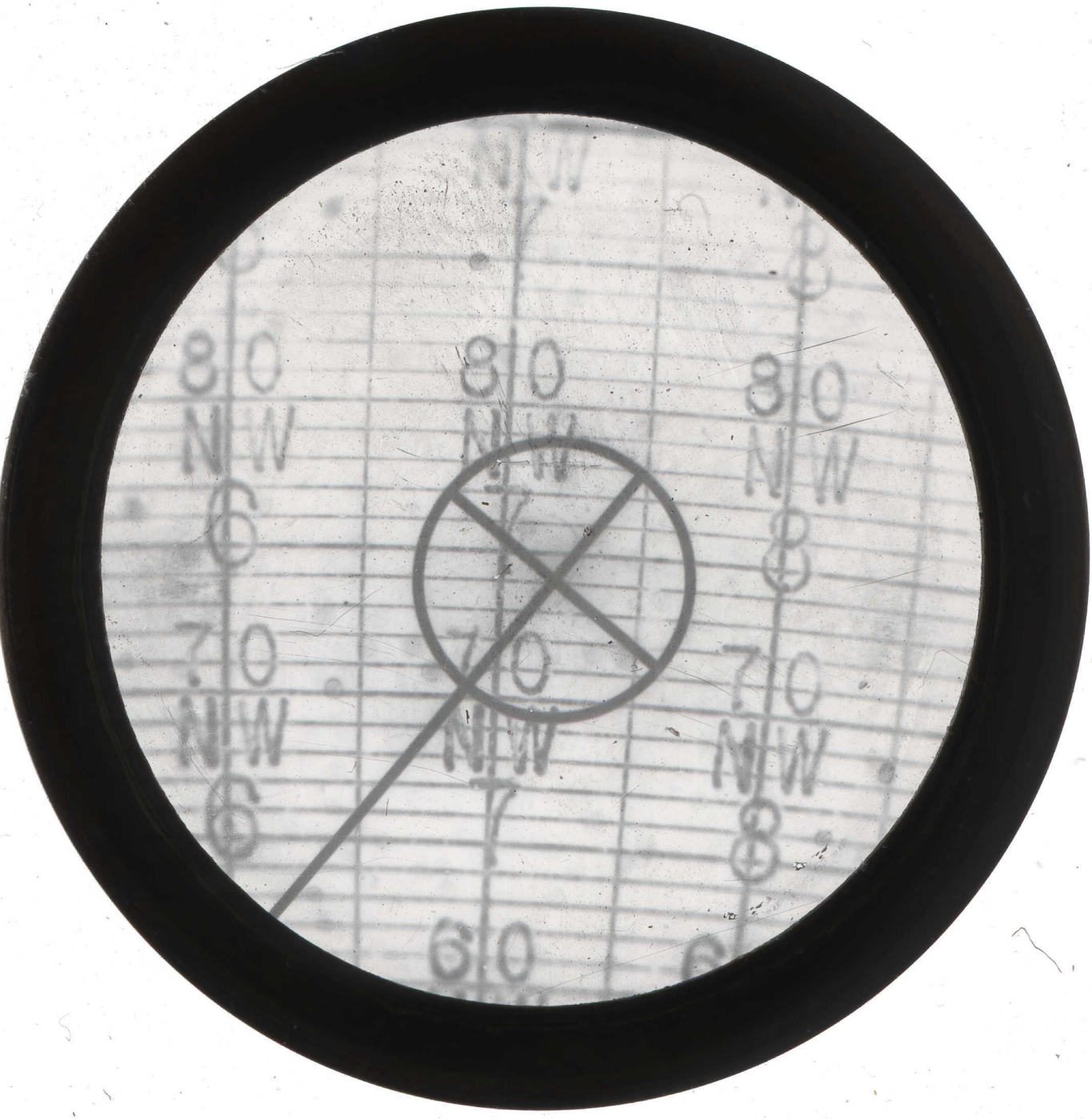
SINGLE SHOT
PHOTO DISC RECORD

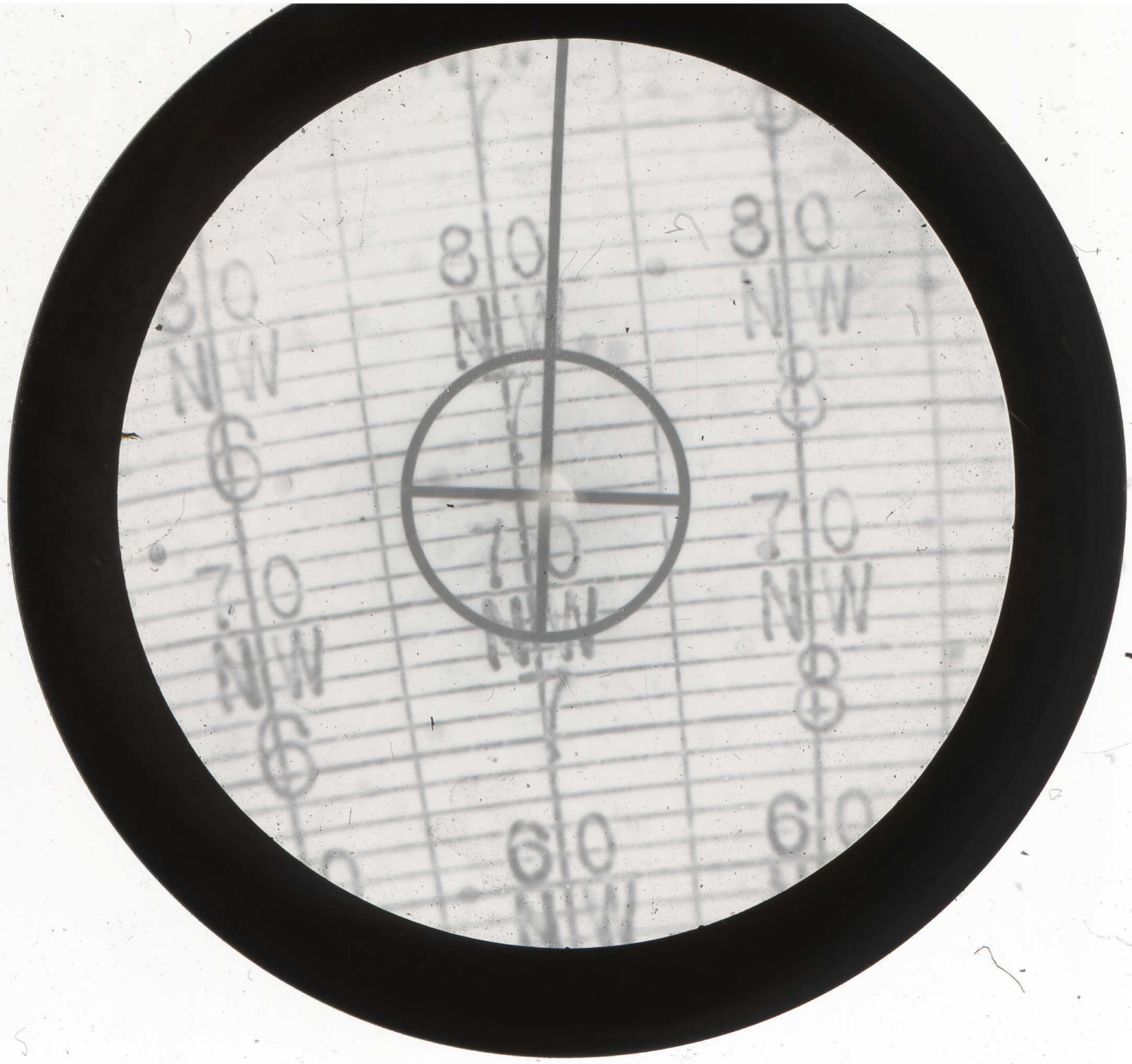
COMPANY Hecla
WELL NAME D-285-98
LEASE
TAKEN BY Hughes
DEPTH 418
DATE 8/2/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408



SINGLE SHOT
PHOTO DISC RECORD

COMPANY HECLA
WELL NAME D-285-98
LEASE
TAKEN BY Hughes
DEPTH 200
DATE 8/2/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408


80
NW
6
70
NW
6
80
NW
7
70
NW
7
60
80
NW
8
70
NW
8

SINGLE SHOT
PHOTO DISC RECORD

COMPANY Hecla
WELL NAME D-285-98
LEASE
TAKEN BY Hughes
DEPTH Collar
DATE 8/2/98
DRIFT ANGLE
DIRECTION
TYPE
JOB NO.
HI-1408